

## **COMLAND**

### **Conference: "LAND DENUDATION OR LAND DEGRADATION" SOUTH AFRICAN ASSOCIATION OF GEOMORPHOLOGISTS CONFERENCE RHODES UNIVERSITY – GRAHAMSTOWN – SOUTH AFRICA 3 – 5 SEPTEMBER 2010**

This COMLAND supported Conference and Field Trip was hosted by Rhodes University and capably managed by Professor Kate Rowntree.

A one day workshop on soil mineral magnetic tracing preceded the Conference field trip. Sediment tracing techniques were workshopped and these were put to the test in the field.

The three day pre-Conference field trip focused on the Karoo area around Compassberg, some 300 km WNW of Grahamstown. Our two University mini-busses were driven by students and they did a magnificent job in the difficult windy conditions. En route to the field area, participants were treated with good views of game animals including zebras, springboks and pink flamingos.

Field accommodation was at the Ganora farm. There we were joined by a group from the University of Cape Town led by Professor Mike Meadows. The Ganora staff warmly welcomed participants and everyone was impressed by the lodging and standard of catering. We learnt about farm's Meerkat rehabilitation program and this provided interesting insight into the animals.

In the field, there were discussions on the sources and rates of sediment that became trapped in farm dams. This included the relative contribution of dongas (gullies) and hillsides to this accumulated sediment. There was easy access to several dam floors because they had been recently breached. This enabled the collection of sediment cores for laboratory analysis. Techniques under discussion in and upstream of the dams included magnetic tracing, erosion pins, geochemical tracers, pollen, particle size as well as infiltration rates and techniques.

The site inspections allowed consideration of the recent cultural history of the area which included farming systems and agricultural trends. We were joined by a local farmer who had a strong ecological background and he provided practical insights into his day to day decision making processes for land management. Field trip participants appreciated his open and frank input into discussions on catchment planning for land and water use and this added a valuable extra dimension to the proceedings.

There were practical implications for downstream water users, in particular public water supply authorities. While farm dams had protected major downstream storages from sedimentation for up to 200 years, this protection was no longer assured given dam breaches. Indeed, it was demonstrated that significant peaks in downstream sedimentation could occur as dam sediments are released over time from breached dams. It was expected that future catchment management planning could benefit from the erosion dynamics and sediment analysis techniques that were discussed on the field trip.

The formal Conference sessions included 30 scheduled presentations which were well attended by students and other delegates. Theme topics included: scale issues and modelling; landuse and land degradation in South Africa; gully erosion and sediment yields; biogeomorphology and wetlands; mass movements; wet to dry – mass movements and arid lands; and cold climate geomorphology and weathering. There was healthy discussion after each session and students provided an interesting extra dimension when they presented their posters during refreshment breaks.

Visitors gained a good insight into the local geomorphic conditions and land management responses. It was evident that there were opportunities for further research into catchment scale management and how this may help landholders maximise productivity while minimising land degradation. Likewise, the field examples of sediment release from failed dams offered scope for applied research which could be of benefit to downstream public authorities. These aspects, together with climate change, suggest that there is an exciting future for Southern African applied geomorphic research.

-- Owen Graham  
Sydney, Australia