

## Grootfontein College of Agriculture Student Award

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**A** GSSA trophy, together with a certificate, is awarded to a deserving third year student at Grootfontein Agricultural College. This award is made to a final year student who achieved the highest marks for rangeland, pasture and environmental management modules, with an average of at least 70% for all modules.

In 2012 this prestigious award was presented to Suné Mentz during the diploma ceremony at Grootfontein. Suné was also the third year dux student and excelled in all other fields within the diploma programme. She is currently working at Oos Vrystaat Kaap Operations Limited (OVK) in the Burgersdorp central region as an assistant branch inspector.



Mrs Rhoda McMaster handing the GSSA trophy to Suné Mentz

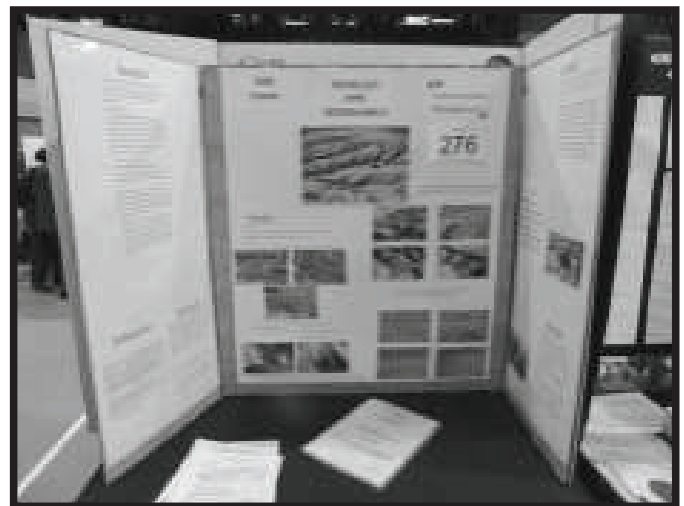
## Eskom EXPO for Young Scientists Bloemfontein

Dr BB Janecke & Prof HA Snyman  
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The Eskom Expo for Young Scientists is an annual science fair at the Callie Human Centre of the University of the Free State. This year it took place from 15 – 17 August 2013 and also celebrated its 30<sup>th</sup> year of existence in Bloemfontein! Learners from schools all over the region exhibited their scientific investigations and mini research projects at the Expo. The learners could discuss their work with judges, other learners and the public. There were 25 different categories that learners could enter into, like Agricultural Sciences, Environmental Sciences, Plant Sciences, Physics, and Chemistry – to name but a few.

Projects with an ecological theme that dealt with a grassland science issue were judged by Dr Beanétri Janecke and prof Hennie Snyman on behalf of the GSSA. The GSSA Award for the Best Ecological Project was awarded to Louis Frewen, a grade 11 learner from Middelburg High School in the Eastern Cape. The title of his project was: Bailing out bare patches. The aim was to reclaim bare patches by using bales of grass, which would otherwise have been burnt, in order to establish plant growth and stop erosion.

Grass (mostly *Eragrostisplana*, *Bromuscatharticus*, *Hordeummurinum*) that sprouted in the lucerne land on their Karoo farm was cut and baled after flooding conditions made the lucerne land unusable. Erosion dongas were then covered with these bales. It resulted in seed coming from the bales germinating and the established grass plants prevented further soil erosion. Bales of other more palatable grass species were also used, but were devoured by cattle and thus became less effective. The project ran for just over two years. Insightful photographs indicated the results before the bales were used, where the bales were put and after the grass plants had established.



Louis Frewen's science project entitled: "Bailing out bare patches"

## **Eskom EXPO for Young Scientists Mahikeng**

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NAME: Ms.KamogeloMafete  
SCHOOL: Sol Plaatje Secondary School,  
Mahikeng  
GRADE: 8  
CONTACT no: 072 642 1201  
PROJECT NAME: Desertification  
POSTAL ADDRESS: 1273  
Ramushutawanastreet, Montshioa, 2735,  
Mmabatho (NW Province)

The scholar had a very clear understanding concerning desertification and she showed a remarkable interest in environmental/ ecological matters, especially the ones in and around the community that she lives in. Apparently the students were initially (at school-level) offered the opportunity to choose between a number of different subjects/ themes to do their projects on.

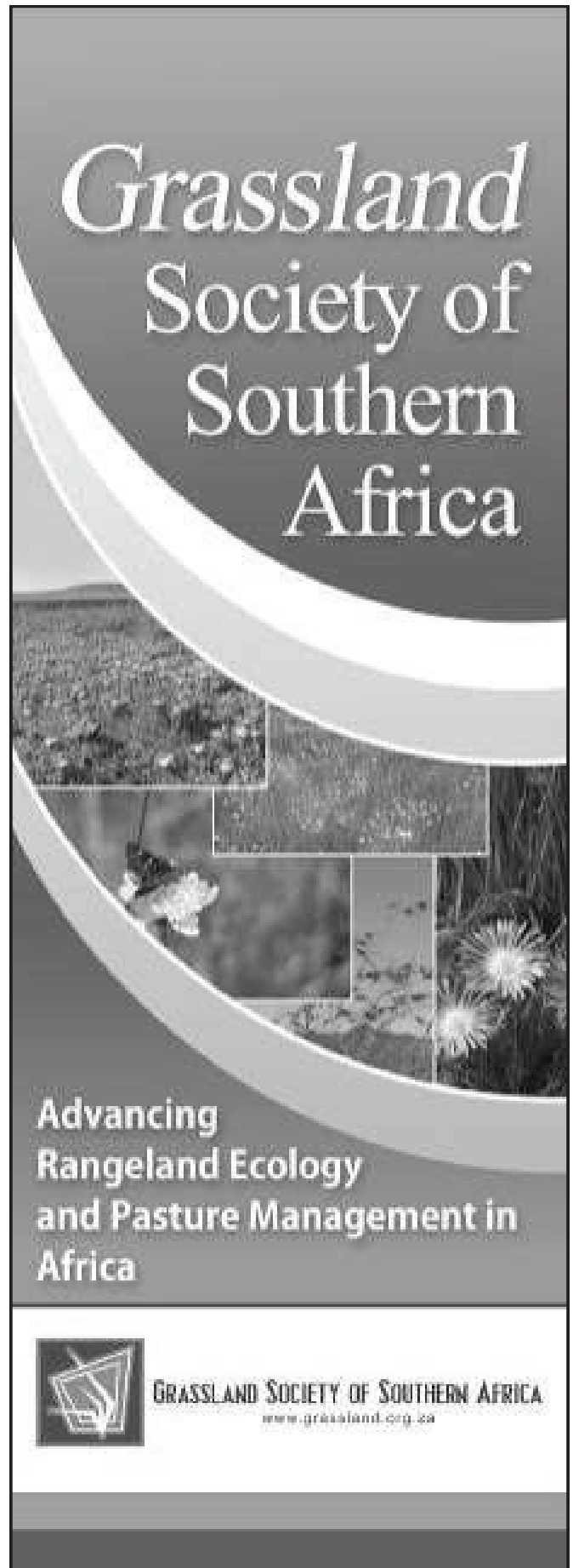
She was however not interested in also doing a project on electricity / energy sources etc related to environmental aspects, as were the rest of the pupils of her age-group. Instead she decided to do some research on the internet in order to determine a matter / problem considered to be of great concern in the ecological field of science.

Her search brought her to the decision to carry out a detailed desktop-study on the concept of desertification as seen from an international point of view, as well as from an African, a southern African (regional) and South African and more to the point a local (district or municipal) point of view (in and around her hometown of Mahikeng).

The scholar has studied the causes of desertification as well as proposed solutions for controlling or restoring desertified rangelands in and around her community. She clearly distinguished the layout of her study between causes, problems experienced, conclusions and made notice of several sources that served as references for this study. I however felt that she could have tried to obtain more scientifically based references to be used in her project as well, together with her more general references regarding this matter. On the other hand, I suppose it might not have been easy for a Grade 8 pupil to have access to such scientific publications either via the school library or the internet.

To gain access to scientific journals one usually has to be a registered student with a tertiary educational institution and thus would need passwords to access such publications and official requests would have to be made through inter-library requisitions and order-processes to obtain some of these publications.

Thus in hindsight I suppose that the references she provided regarding research done on this topic, is sufficient for a project at this level (Grade.8) As mentioned, she does have a good understanding of the matter at hand and seemed to be very excited and positive about the choice of project that she has made. The pupil mentioned that after finishing school she would like to focus her studies on an environmental (more ecological it seems to me) career. So watch out GSSA members!!! We might be seeing more of Kamogelo Mafete in future! May she strive to also become a grassland scientist like all of us as GSSA members!!



## 33<sup>rd</sup> Eskom Expo for Young Scientists International Science Fair: GSSA Award for Best Ecological Project

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The 33<sup>rd</sup> Eskom Expo for Young Scientists International Science Fair (Eskom Expo ISF), formerly known as Eskom Expo for Young Scientists National Finals, was held from the 26 to 28 September 2013 at the Birchwood Hotel and Conference Centre in Boksburg, Gauteng Province. Eskom Expo ISF, which is hosted annually by Eskom in partnership with the Department of Science and Technology, currently represents the largest school-level science event that provides a platform for primary and high school learners to showcase projects within the fields of science, technology, engineering, maths and innovation (STEMI). These projects are judged/ assessed according to internationally accepted ethics and standards.

Once again, the GSSA Award for Best Ecological Project was one of the many organisation-specific awards that formed part of the special awards category at the expo. The GSSA was represented by two judges who adjudicated for this award according to the following criteria:

- The project must deal with a grass land science issue (rangelands/ pastures, rehabilitation, alien and invasive species, game surveys, animal production, etc.)
- The students must exhibit a clear understanding of the problem
- The project must have a sound scientific approach
- Presentation must be good

After viewing various projects that satisfied the above mentioned criteria and listening to learners as they speak enthusiastically about these projects, the judges selected Theo Pretorius and Shannen de Coning as winners of the GSSA Award. These two learners will each receive a prize that consists of a GSSA certificate and medal which will be sent to their respective schools before the end of the year.

## Awards/Achievements

**1. Theo Pretorius:** a Grade 7 learner from Menlopark Laerskool in Pretoria East, Gauteng Province

**Project Tittle:** Thaba Moriri: Game Grazing Patterns

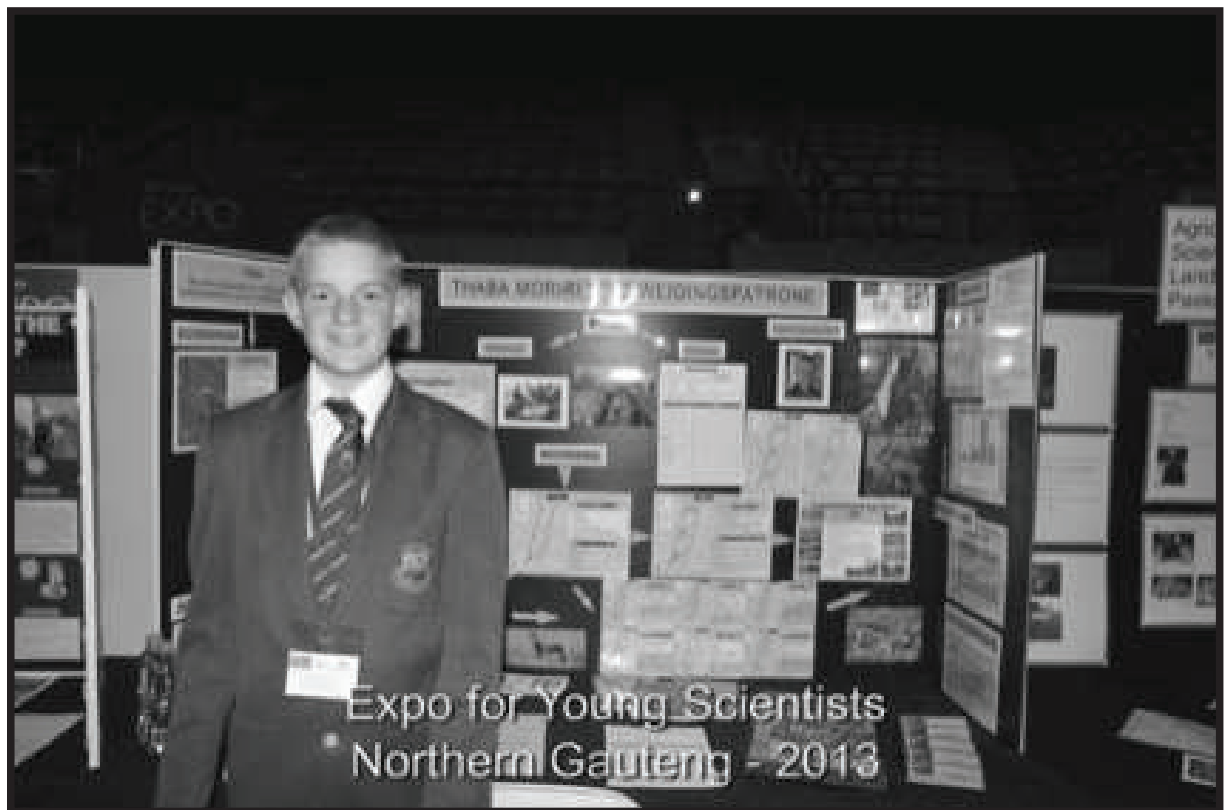
**Project Summary:** Mr Pretorius' project was aimed at assessing and identifying the various human activities at Thaba Moriri Game Farm in order to identify which activity had the largest influence on grazing patterns of animals on since the establishment of 30 houses on the farm in 2005. Following a methodology that involved processing of interviews and questionnaires from the original landowner (white game farmer) and current occupants, critical factors of change were identified and the largest contributing factors were made.

**2. Shannen de Coning:** a Grade 10 learner from Stirling High School in Stutterheim, Eastern Cape Province

**Project Tittle:** Biological Nitrogen-Fixing with Trifolium, Key to nutritious forage and soil fertility

**Project Summary:** Following the success of a previous project that Ms. de Coning conducted in order to demonstrate that establishing grasses and legumes together on a sourveld produces good forage without the need of fertilizers or ploughing in Stutterheim, she was motivated by these results to undertake another project in order to investigate if legumes (*Trifolium* spp) provide nutritious forage as well as improve soil fertility, and to compare if inoculated legumes which are not grazed by cattle perform better than non-inoculated legumes which were is grazed and also compare the results with the natural sourveld. Following a methodology that involved nutritional analysis of forage samples, soil testing and coast analysis, Ms. de Coning concluded that both the inoculated and non-inoculated legumes trials performed better than the natural sourveld. However, the non-inoculated *Trifolium* performed slightly better and could be regarded as a better option due to the fact that the manure from the grazing cattle is important for improving soil fertility.





## Two Young Scientists Invited to the International Grassland Congress in Sydney

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**P**ieter Swanepoel and Janke van der Colf, scientists with the Directorate of Plant Sciences at the Western Cape Department of Agriculture, were both invited to the International Grassland Congress in Sydney, Australia, in September 2013 to deliver paper presentations.

Janke started working at the Outeniqua Research Farm near George in 2007 and Pieter followed in 2009. They worked as MSc students under mentorship of Dr. Philip Botha, Specialist Scientist: Pasture Systems, with financial support from the Western Cape Agricultural Research Trust. Pieter's MSc study focussed on the impact of soil organic matter on *Rhizobium* bacterial populations in soil and nitrogen fixation by white clover. Janke passed her MSc study on the production potential of kikuyu over-sown with ryegrass, *cum laude*. At the Grassland Society of Southern Africa (GSSA) Congress in 2009, Janke received the second place for the young scientist award in Johannesburg.

Pieter and Janke were appointed by the Department in 2011 as Candidate Scientists, and immediately started further research towards their PhD studies. For his

PhD research proposal on soil quality of pastures in the Southern Cape, Pieter received the award for the best research proposal at the 46th GSSA Congress.

The first data from this project was presented as a paper at the 47th GSSA Congress in 2012, for which he also received the award for best paper by a young scientist. At the same congress, Janke received the second place for the Norman Rethman award for planted pastures. At the 48th congress in Modimolle, Janke van der Colf received two awards, one for the best poster presentation and the other was the Norman Rethman Planted Pastures Award.

Both Pieter and Janke were invited to the International Grassland Congress in Sydney, Australia in September 2013 based on the importance of their research. This invitation to the two young scientists shows that both the importance and relevance of the pasture research programme at Outeniqua Research Farm is recognized by an international scientific society.





## Melissa Whitecross Awarded the GSSA Award for Outstanding Academic Achievement in Range and Forage Science

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I am currently a Masters student at the University of the Witwatersrand, Johannesburg (WITS). In May 2013 I was honoured to receive an award from the GSSA for Outstanding Academic Achievement in Range and Forage Science.

The award was given to me for my published work on the impacts of a freeze event in the Venetia-Limpopo Nature Reserve, Limpopo Province, South Africa. Frost has been suggested as a driver of savanna systems in southern Africa. However, little work has been extensively researched in this field. We investigated how a severe freeze event in the winter of 2010 damaged a stand of *Colophospermum mopane* (Mopane tree) and how the damaged trees recovered over the following growing season. This work forms part of a broader study looking into the limiting factors of *C. mopane*'s southern distribution boundary. This study formed part of my Honours degree at WITS and I am currently co-supervising further work on frost events and *C. mopane* in Limpopo Province. My Masters research has taken a slightly different course and is focused mainly on plant physiology and phenology in savannas.

I am investigating what benefits early-leafing savanna trees can gain over their facultative-leafing competitors. Early-leafers are species which flush out their leaves ahead of the start of seasonal rainfall, whilst facultative-leafers will only flush once the rains have begun. We are comparing nitrogen usage, photosynthesis and herbivory rates between these two life history strategies to determine whether the riskier early-leafing strategy has clear benefits over the other. This work is still in its early stages but we hope to publish what we find in the near future.

