
Grassland Society of Southern Africa Eskom Expo for Young Scientists, 2007

The GSSA award for the Best Ecological Project

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Every year, Eskom hosts the Eskom Expo for Young Scientists, with the aim of encouraging a passion for science amongst learners in South Africa. The GSSA awards a prize at regional science expos and at the National Finals held annually in Pretoria. The Eskom Expo covers a huge range of science categories and the GSSA considers only those projects which cover rangeland ecology or pasture science. The GSSA Award for Best Ecological Project was judged according to the certain criteria: the project must deal with an ecological issue falling within the ambit of the GSSA; the students must exhibit a clear understanding of the problem; the project must have a sound scientific approach; and presentation must be good.

Regional winners are awarded a GSSA certificate, while the winner at the national final in Pretoria is awarded a GSSA medal.

The number of expos attended

by representatives from the GSSA grows every year – this year 20 regional expos were judged, of which five produced no suitable candidate, as well as the national finals in Pretoria. A wide variety of topics were recognized by the Society, including projects dealing with water issues, plant encroachment (alien and native), soil erosion, parasites, soil fertility, invertebrate ecology, and others. Gilbert Pule of the ARC, who judged several expos including the final, remarked that the number of ecological projects means that learners are “gaining interest in natural sciences. I think it is also our responsibility to continue encouraging them to always strive to do better in natural sciences for sustainable use of these resources”.

The standard of some of these projects is extraordinary, particularly considering how young some of the participants are. The response of the organisers of the Eskom Expo to the GSSA's partici-

pation has been enthusiastic. The organisers are mostly volunteers, generally teachers from local schools, and they appreciate their efforts being recognized by outside organisations such as ours.

Below is a summary of the regional expos that GSSA representatives attended, and the recipients of the GSSA award for Best Ecological Project. Our thanks go out to all those members who gave up their time to help judge these expos.

Regional Expos

Grahamstown: Julie Dixon, Victoria Girls High School, Grahamstown.
Does food make babies?

James Gambiza, Rhodes University.

Johannesburg: D Finaughty and M Gouws, Grade 11, Maragon Private School, Stubensvallei.
A river runs through.

The boys assessed the ecological state of the river ecosystem in relation to urban effluent, by measuring water quality level at different distance points from the effluent source and its impact downstream on aquatic life such as invertebrate organisms and frogs. They also developed indicators for aquatic life for the municipal authorities to monitor over long term. They received the gold medal in their section.

Khanyisile Mbatha and Mahlodi Tau, Gauteng Department of Agriculture, Conservation and Environment, Johannesburg.



D Finaughty and M Gouws from Maragon Private School in Stubensvallei

East London: Jethru Hundling, Grade 8, Merrifield College, East London.

"A Thorny Issue" What is the most effective method to control thorn trees (Acacia karroo).

Runners-up: *The Greenhouse Effect - Portable plastic bottle greenhouses*, Megan Preston, Grade 8, Merrifield College, East London and *Reclamation of soil erosion*, Katherine James, Grade 9, Stirling High School, East London.

Pieter Conradie and Mfundo Macanda, Eastern Cape Department of Agriculture.

Bloemfontein: Tarina Nel and Anri Lessing, Middelburg Hoërskool, Middelburg EC.

Hervestiging van kaalkolle in die veld (Rehabilitation of bare patches in the veld).

In their project they used a dyker plough in loosening the soil on bare patches in the veld. Different grass species were used on these bare patches with smuts finger grass (*Digitaria eriantha*) the most successful one. After three years most of the bare patches were covered with grass, with bare patches still on the control.

Hennie Snyman, University of the Free State, Bloemfontein.

Northern KwaZulu-Natal: Amy Smythe, Grade 8, Ladysmith High School, Ladysmith.

Soil erosion.

Her project looked at different techniques for erosion control, particularly donga reclamation. She showed a good grasp of the importance of preventing soil erosion and also why corrective action is needed once erosion has taken place.

Graham Peddie and Erika van Zyl, KwaZulu-Natal Department of Agricultural and Environmental Affairs, Dundee.

Ehlanzeni/Nelspruit: Richard Buchanan and Joshua Snyman, Grade 10, Uplands College, White River.

The life history, entomophagy and conservation of the Emperor Moths, Gynanisa maia and Imbrasia belina, in the Kruger National Park and neighbouring environs.

Moagi Keretsetse and Mmoto Mabaselele, South African National Parks, Skukuza.

Southern KwaZulu-Natal: Steven Clowes, Grade 6, Underberg Primary School, Underberg.

Effect of fertilisers on grass growth.

This project examined the effect of different types of inorganic and organic fertilisers on the production of annual ryegrass grown in subsoil. He demonstrated a good understanding of the importance of soil structure and chemistry to plant growth. The Expo judges also recognized the quality of his work by awarding him a gold medal.

Alan Short and William Diko, KwaZulu-Natal Department of Agriculture and Environmental Affairs.

Mmabatho: Chrisna Mostert, Grade 11, Hoërskool Lichtenburg, Lichtenburg.

Onkruid of Wonderkruid? (Weeds or wonder plants?)

Runners-up: *Don't go artificial, Go organic!* Kelebogile Mogomelo and Refilwe Setlhare, Grade 10, Tiger Kloof Educational Institution, Vryburg.

Chrisna sent out questionnaires to other farmers and public enquiring as to whether they experience problems with fleas and ticks on their pets, as well as problems with plant pests (e.g. parasites on rose

Christina Mostert with her project



bushes etc.). She prepared a tincture with a combination of the *Datura* (thorn apple) leaves and seeds, mixed with the leaf and stem material of *Tagetes minuta* (khaki weed). The tincture was handed out to several people to try out on their pets and plants and report-back was done regarding the efficiency of the product. All people gave positive feedback! She also had examples of the mixture in spray-bottles on the table at the exhibition, each with a funky self-designed label.

Anuschka Barac, North West Department of Agriculture, Conservation and Environment, Mafikeng.

Stellenbosch: Inge van Wyk, Grade 11, Augsburg Agricultural Gymnasium, Clanwilliam.

Is economic farming possible in the Cederberg and is a holistic approach attainable?

Annelene Swanepoel, Western Cape Department of Agriculture, Elsenburg

Mopani/Tzaneen: Jack Mthembu, Meridian College, Phalaborwa.

Will we have Mopani worms in the future?

While visiting Giyani, Jack became aware of the large number of people selling Mopani worms. To investigate whether Mopani worm harvesting is sustainable, he estimated the amount of worms collected currently and in the past, by interviewing worm sellers. Jack showed a good understanding of the concept of, and need for, the sustainable use of natural resources. He also showed some

creativity, in the form of Mopani worm recipes that he had created (and cooked) to demonstrate how filling meals can be made using fewer worms.

Tony Swemmer, SAEON, Phalaborwa

Nkangala: Ayanda Mohlamonyane, Marhagi High
Climate change.

Climate change, how it affects vegetation (introduction of encroachment species and or invasive alien plants) and livestock production (change in rainfall patterns resulting in poor grass production required for extensive beef production). All this was said to affect the sustainability of farming enterprises and thus the economic viability of households or farming communities.

Luthando Dziba and Gilbert Pule, Agricultural Research Council – Livestock Business Division, Pretoria

Nylstroom: Cornelia de Lange, Grade 10, Hoërskool Warmbad, Bela Bela

Bosverdigting versus bosbeheer (Bush encroachment versus bush control)

Jorrie Jordaan and Reint van de Pol, Limpopo Department of Agriculture, Bela Bela.

Northern Gauteng: Chantell Enslin and John Enslin, Grades 10 & 12, Pretoria Boys High School.

Water fiasco.

An investigation, research and possible solutions for the water pollution and the degeneration of the water quality in our rivers. This project dealt with the role of reeds in

improving water quality and how reeds protect wetlands.

Luthando Dziba and Julius Tjelele, Agricultural Research Council – Livestock Business Division, Pretoria.

East Rand: Carmen Gassman and Meghan Hamman, Veritas College Senior School, Springs

The fishy side of life.

This project explained the importance of reeds in species biodiversity: the importance of reeds as shelter for aquatic and amphibians and their importance in regulating temperatures in the water.

Gilbert Pule and Julius Tjelele, Agricultural Research Council – Livestock Business Division, Pretoria.

National Finals

Henrico Gouws and Michelle Olivier, Grades 10 -12, Mclachlan Hoërskool, Joubertina

Wat gemaak met wattles?
(What to do with wattles?)

Their project dealt with ways of controlling wattle and how it could be used rather than cutting and leaving it laying down on the ground; for example harvest it for fire wood, making charcoal or processing it to make furniture.

Gilbert Pule and Julius Tjelele, Agricultural Research Council – Livestock Business Division, Pretoria

The winners of the GSSA award at the National Finals, Henrico Gouws and Michelle Olivier

Other expos

GSSA representatives attended a number of other expos, but did not find any of the projects suitable for the GSSA award. The expos and the judges were:

Durban: Nokuzola Mgxashe, Mangosuthu Technikon, Durban and Nicky Findlay and Lu Kobus, KwaZulu-Natal Department of Agriculture and Environmental Affairs.

Bojanala: Bruce Brockett, North West Parks and Tourism Board, Rustenburg.

Port Elizabeth: Adrian Shrader, Nelson Mandela Metropolitan University, Port Elizabeth

Potchefstroom: Franci Jordaan, North West Department of Agriculture, Conservation and Environment, Potchefstroom

