

**Geoconservation of abandoned goldmines and
granite quarries in the Vredefort Dome
World Heritage Site, South Africa**

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Dissertation submitted in fulfilment of the requirements for the degree
Magister Scientiae in Environmental Sciences
in the Faculty of Natural Sciences, Potchefstroom Campus
of the North-West University.

Promoter: Prof MS Coetzee

November 2012

ACKNOWLEDGEMENTS

I would like to sincerely thank the following awesome individuals who energized and drove my passion for the topic and the work involved in compiling this dissertation:

- Awesome God Almighty, Creator of this awe inspiring wonder – the Vredefort Dome, in which I could work.
- My wife, Ronel, who always reminds me of the talents I received from above and my wonderfully gifted children, Emile, Nolene and Jolani, who understood the nights that I went to bed early when they wanted to watch movies.
- My dad, who stimulated my love of nature.
- My mom, the one who always comforted me.
- My promoter, Prof M S Coetzee (North-West University), who has been a friend, a supporter and driver of my success in life. She was also bold enough to tackle a topic such as this which is relatively new in our country.
- The North West Province, Department of Agriculture Conservation and Environment, who agreed to sponsor this study in an attempt to empower them to rehabilitate defunct mines and ensure safety of tourists in the Province. In specific Lebo Diale for her assistance and Gustav Engelbrecht for his support in the field.

ABSTRACT

Since the Vredefort Dome's listing as a World Heritage Site in June 2005, the area has seen a steady increase in tourists to both the local towns of Parys and Vredefort and the Vredefort Structure. Tourists venturing into the field in an attempt to explore the area have an insatiable appetite for information. By unfolding the gold and granite mining heritage of the area, a world of interesting facts and fables is exposed.

The special geological character of the Vredefort Dome World Heritage Site is enhanced by the mining interventions which started in the 1800s. The mines provide a glimpse into the earth's fresh crust which would otherwise have been obscured from the eye of the scientist/researchers, young potential earth scientists and the enquiring tourist.

This study is aimed at identifying, for the first time, the localities of the major mining and quarrying sites in the area. This enabled investigation into and characterization of the exposed sites on the basis of their tourism and academic value. These sites were classified in order to identify those sites that should be made safe, rehabilitated and allowed access to tourists and scientists and those where access should be restricted but made safe in such a way that will allow access to animals and birds.

The value of this initiative with regard to the stimulation of learners' scientific needs should not be under-estimated. The wide spectrum of natural, biological and physical sciences can be inspiring.

Keywords: Vredefort Dome World Heritage Site, gold mines, granite quarries, geoconservation, geoheritage, geotourism.

UITTREKSEL

Sedert die Vredefortkoepel gelys is as Wêrelderfenisgebied in June 2005, het die area 'n geleidelike toename in toerisme gesien, beide na die plaaslike dorpe Parys en Vredefort en die die Vredefortstruktuur. Toeriste wat in die veld ingaan in 'n poging om die area te verken het 'n onversadigbare aptyt vir inligting. Deur die ontplooiing van die goud- en granietmynbou-erfenis van die area kan 'n wêreld van interessante feite en fabels ontbloot word.

Die spesiale geologiese karakter van die Vredefortkoepel Wêreld Erfenisgebied is bevorder deur die mynbou-aktiwiteite wat sedert die 1800's voorgekom het. Die myne verskaf 'n blik op die aarde se vars kors wat andersins die waarneming van die wetenskaplike/navorsers, jong potensiële aardwetenskaplike en toeris sou ontwyk het.

Hierdie studie het ten doel om die eerste keer die liggings van die belangrikste myne en groewe in die area te identifiseer. Dit het dit moontlik gemaak om die blootgestelde plekke te ondersoek en te karakteriseer op grond van hul toerisme- en akademiese waarde. 'n Klassifisering van lokaliteite is gedoen om 'n verteenwoordigende stel myne en groewe te identifiseer. Hierdie lokaliteite moet veilig gemaak word, gerehabiliteer word en toeganklik gemaak word vir akademici, toeriste en toekomstige wetenskaplikes.

Die oorblywende areas moet selektief veilig gemaak word om sodoende die verkennende toeris toegang te verbied, maar terselfdertyd vrye toegang vir voëls en diere te bied, wat die areas vir skuilings en broeiplekke gebruik het vir langer as 'n honderd jaar.

Die waarde van hierdie inisiatief ten opsigte van die stimulering van leerders se wetenskaplike behoeftes kan nie oorskat word nie. Die wye spektrum van natuurkundige, biologiese en fisiese wetenskappe kan inspirerend wees.

Sleutelwoorde: Vredefortkoepel Wêreld Erfenisgebied, goudmyne, granietgroewe, geobewaring, geoerfenis, geotoerisme.

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LIST OF ABBREVIATIONS

AMD	Acid Mine Drainage
GIS	Geographical information system
GPS	Geographical positioning system
Ha	Hectares
ILG	Inland see Leukogranofels
LRA	Labour Relations Act (LRA) no. 66 of 1995 (South Africa, 1995)
MHSA	Mines Health and Safety Act (MHSA) no. 29 of 1996 (South Africa, 1996)
MPRDA	Mineral and Petroleum Resources Development Act no. 28 of 2002
NEM:AQA	National Environmental Management: Air Quality Act 39 of 2004
NEM:BA	National Environmental Management: Biodiversity Act 10 of 200
NEM:PAA	National Environmental Management: Protected Areas Act
NEMA	National Environmental Management Act 107 of 1998
NWA	National Water Act 36 of 1998
OGG	Outer Granite Gneiss
SACS	South African Council for Stratigraphy
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VD	Vredefort Dome
VDWHS	Vredefort Dome World Heritage Site
WHS	World Heritage Site
WSA	Water Services Act 108 of 1997