

North West Province:

Feedback on Biodiversity Planning in the Province: 2012 -2013

SANBI's 10th Biodiversity Planning Forum
Golden Gate National Park: 7th -10th May 2013

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Presentation layout

- Background
- The Biodiversity Inventory
- The Land Cover Change Detection Analysis
 - The Degradation Workshop
- 2012 – 2013 projects
- Challenges
- Way Forward



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The Biodiversity Inventory Project (1)

- As a result of little biodiversity information being accessible for the 2009 Biodiversity Conservation Assessment, three taxon specialists were employed in September 2010, to undertake a three year survey of the Province.



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The Biodiversity Inventory Project (2)

- As there was not enough budget to cover all taxon groups, the taxon groups to be surveyed were prioritized. The vegetation, reptiles and amphibians are important taxon groups that needed to be surveyed first.
- However, due to a lack of qualified specialists applying for these specialist positions DEDECT had to select mammals, birds and plants as the biodiversity features to be surveyed.



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NW Biodiversity inventory project (3)

Key Objectives of the project:

- To identify and determine the distribution and priority ranking of areas that are of importance to botanical, mammal and bird diversity in the North West.
- To consolidate the resulting GIS layers of all elements of biodiversity in the North West.
- The whole province was surveyed on a district municipality level. Each district had between 6 months to a year devoted to its surveying.



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NW Biodiversity inventory project (4)

Current Progress:

- Bojanala Platinum District survey completed
- Ngaka Modiri Molema District survey completed
- Dr Ruth Segomotsi Mompati District survey completed
- Dr Kenneth Kuanda District currently in progress

Project on track for completion by August 2013.



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Botanical surveys: Approach (1)

Due to the **seasonal** nature and **erratic distribution** of known plants under investigation the botanic section work plan is based on an **inferred approach** using:

- Known distribution (Herbarium records and Data Bases)
- Literature (Library searches)
- Specialist Consultation
- Field Verification
- Hotspot identification

The more orthodox grid or random point survey approach is less effective due to the sheer enormity of the area under investigation and the timeframe given to complete the study



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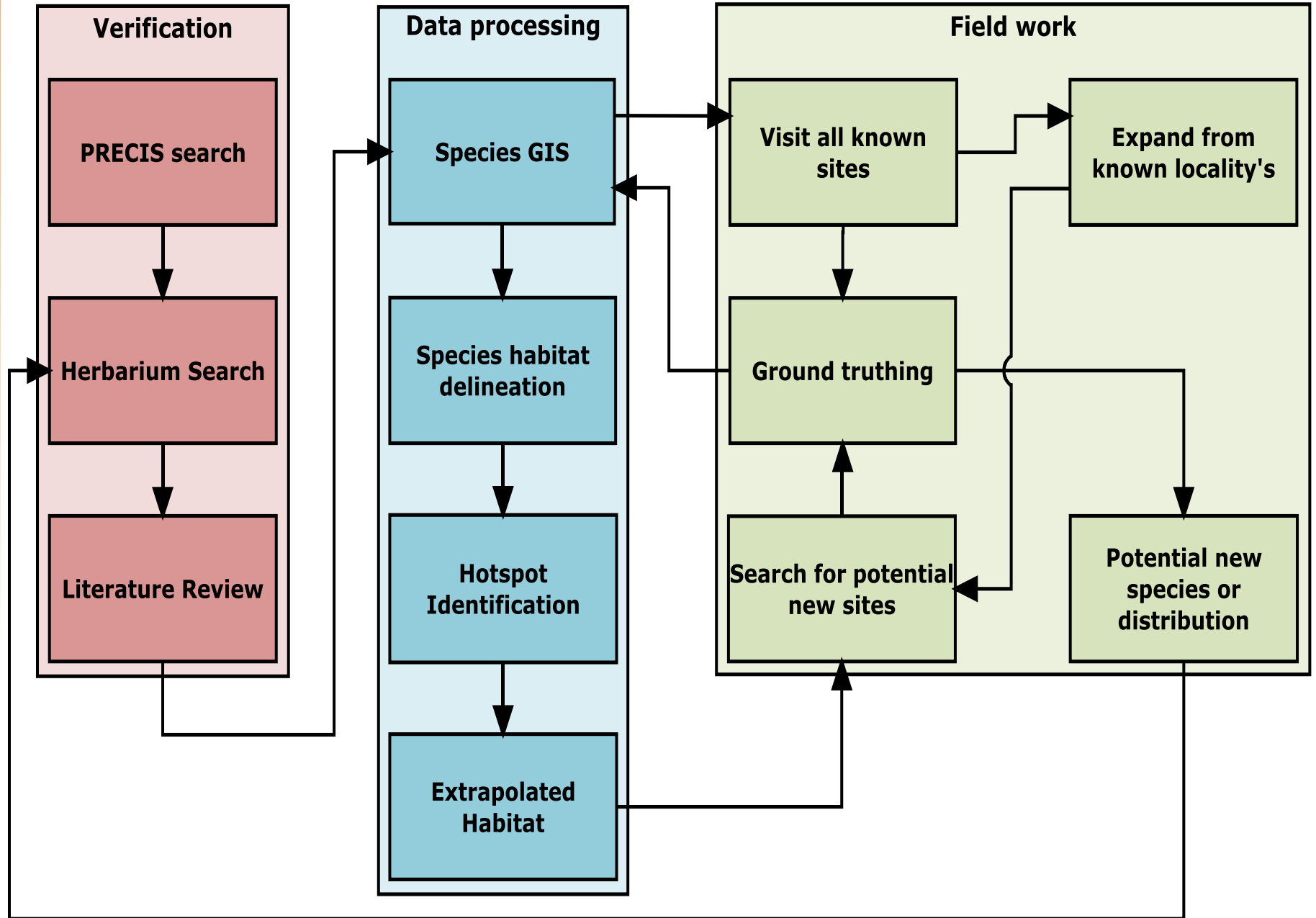
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Approach (2)



Important / interesting findings

- 39 plant species are listed as priority taxa for the North West of which 30 species are definitely known for the Province, 9 of which have an official IUCN Rare and Endangered status



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Challenges (1)

- The botanical diversity of the province is poorly studied with only about 2500 taxa recorded. To date not a single *Eucalyptus* sp. has been recorded for the North West Province a good example of our lack of available data!
- The need for an improved vegetation map of the province
- Within the period of this study 42 taxa have been added to the provincial list.
- To date 15 taxa on the priority list have not been accounted for.



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Challenges (2)

- 10 cryptic plants which are totally seasonally bound, are still eluding this study. These could not be located due to the prevailing drought conditions of the past two seasons.
- From a biodiversity planning standpoint, it is imperative that the surveying of the province's botanical diversity continues so that important biodiversity sites are identified in time, before they are lost to development. Apart from presence data the Province needs to look at where threatened species are indeed absent.



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Mammal Surveys: Approach (1)

- Ecological approach - vegetation type map of the North West was used to assign survey locations.
- Every vegetation type was surveyed for at least a full week, with all equipment in use for this.
- The survey sites were often at parks, as this was part of the agreement with NWPTB, and other areas covered were rural tribal areas and private farmland.
- Priority biodiversity areas identified in the 2009 Biodiversity Conservation Assessment were also considered.



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Bird Surveys: Approach (1)

- General atlassing was done using the SABAP 2 (project run by the Animal Demographic Unit at UCT) protocol of covering pentads – (i.e 5 minutes by 5 minutes grid). This is a well established procedure, so it made sense to go this route. In exchange we get all the data contributed by the public and SABAP 2 get our data.
- All rare, red data birds, or mere interesting species were recorded with point location data.
- Methods: binoculars used and drove around bird watching.



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Approach (2)

- Bird surveys were conducted throughout the North West Province between November 2010 and August 2012.
- 312 pentads were surveyed during this period.
- A total of 14 770 bird distribution records were added to the existing SABAP2 database (16% of all the records currently available for the North West Province). These records comprised of 362 species (77% of the species recorded to date in the North West Province in SABAP2).



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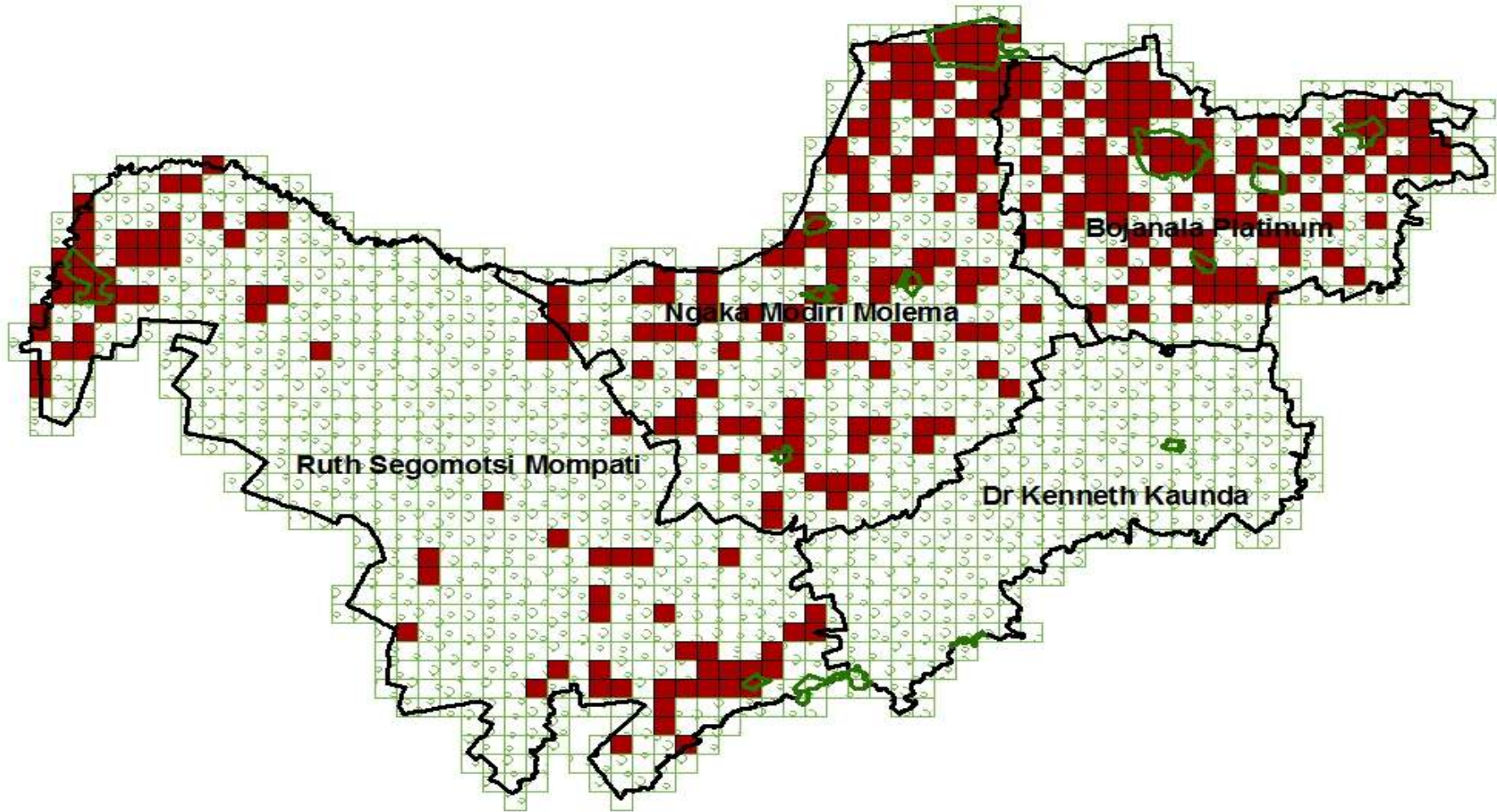
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Approach (3)



Important / interesting findings

Summary of data collected during the Biodiversity Inventory Project (BIP) and that available from SABAP2 for the North West Province (as at 30-9-2012)

- Total numbers of records:
 - BIP – 14 770
 - SABAP2 – 95 232

- Total number of species recorded:
 - BIP – 362
 - SABAP2 - 473



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Land Cover Change Detection Analysis

- The Province continues to assess the Biodiversity Intactness of the Province.
- As a result of the Land-cover change detection analysis, the Province is losing in excess of 100 000 ha. a year to anthropogenic means.



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Land Cover Change: Degradation

- Many areas that the 2006 land cover identified as natural have in fact been lost to cultivation, mining, plantations or urbanization. There are also “natural” areas that are in fact badly degraded i.e. loss of topsoil through sheet erosion and/or bush encroachment.
- A provincial workshop looking at issues around mapping of degradation was held in November 2012



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Issues that arose from the Degradation workshop (1):

- What is degradation?
- Concerns about the standard of land cover products that have been generated, i.e. methodologies been used.
- A central repository where all information on land cover, land use, degradation etc. could be accessed.



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Issues that arose from the Degradation workshop (2)

- What is meant by natural vegetation?
- E.g. Many of the farmers that ranch etc. within the Molopo Bushveld have undertaken extensive bush clearing exercises. These same areas have been classified as “natural” in our land cover products.



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Issues that arose from the Degradation workshop (3)

- Gaps that have been identified in the National Soil Erosion Map developed by ARC.
 - E.g. Extensive areas in the north western parts of the Province that appear to be in a natural state are in fact heavily degraded with impenetrable thickets and no grass cover due to sheet and gully erosion.



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2012-2013 Continued (1):

- Due to budget constraints and Departmental Red Tape, the four biodiversity sector plans that were supposed to get underway in 2011/2012 financial year were not started.
- The National Department of Rural Development and Land Reform are about to release a new land cover product for the province.



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2012-2013 Continued (2)

- Due to budget cutbacks that NGI are now facing they weren't able to undertake the land-use component. There is however a possibility of them doing some areas of the Province in 2013/2014. Sites that were identified through the land cover change detection analysis study, will also be used to ground truth the latest land cover



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Challenges:

- Lack of Resources (coupled with institutional behaviour).
- The need for an integrated Biodiversity Information Management System (BIMS).
- Lack of an integrated approach to land use planning.
 - Look at developing a land use conflict identification strategy.
 - Mapping Ecological Infrastructure
 - Identification of the resource critical regions with relevance to biodiversity



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Way Forward: 2013 - 2015

- Over the next two years the Province will develop the next version of the Biodiversity Conservation Assessment (Plan) and the four Biodiversity Sector Plans for the District. The plans will incorporate the following
 - The Biodiversity Inventory Data
 - The 2010/2011 Land Cover for the Province
 - Expert Mapping (Ecological Infrastructure, ecosystems and species)
 - A chapter on Biodiversity and Climate Change
 - Land Use Guidelines



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Way Forward: 2013 - 2015

- Hopefully an extension of the Biodiversity Inventory Project with emphasis on the missing taxon groups, i.e. reptiles, amphibians and invertebrates
- Adopted Protected Area Expansion Strategy
- Land use map.
- A refined vegetation map.



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Proposed Habitat Integrity Study of the Terrestrial Component.

- As a result of the Change Detection Study and the Degradation Workshop, the Province is looking at the feasibility of undertaking a Habitat Integrity Study of the Terrestrial Component along similar lines that has been done when looking at the freshwater component.
- Coupled with the above is the possibility of the Province mapping it's Novel Ecosystems.

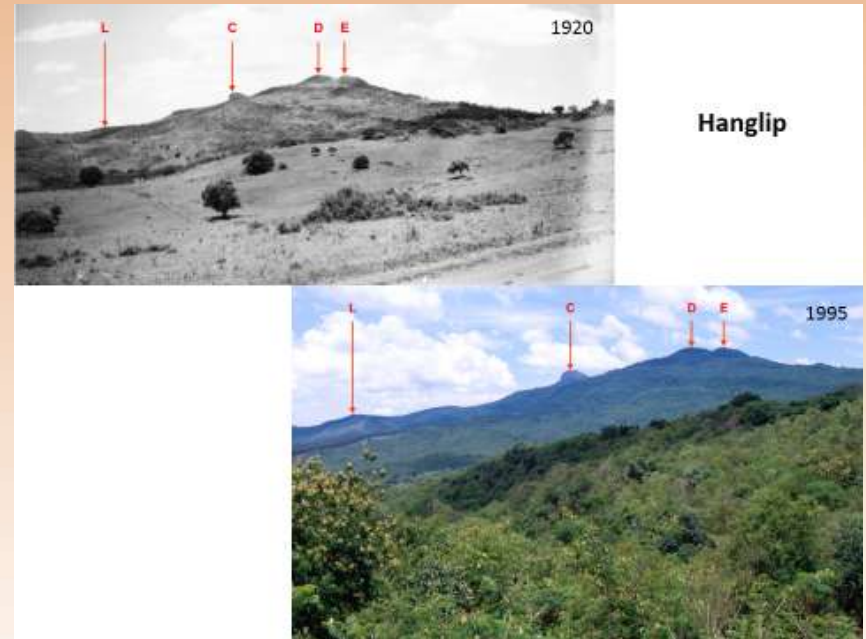


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Proposed Habitat Integrity Study of the Terrestrial Component.

An important component of the Habitat Integrity Study would be to build up a repository of historical landscape photographs, that we can use to compare images taken today, to see how the landscape has changed



Ref: i) *A pictorial description of the Transvaal*, By H.F. Gros in the 1880's
ii) *Limpopo Photos*. N Hahn (PhD)

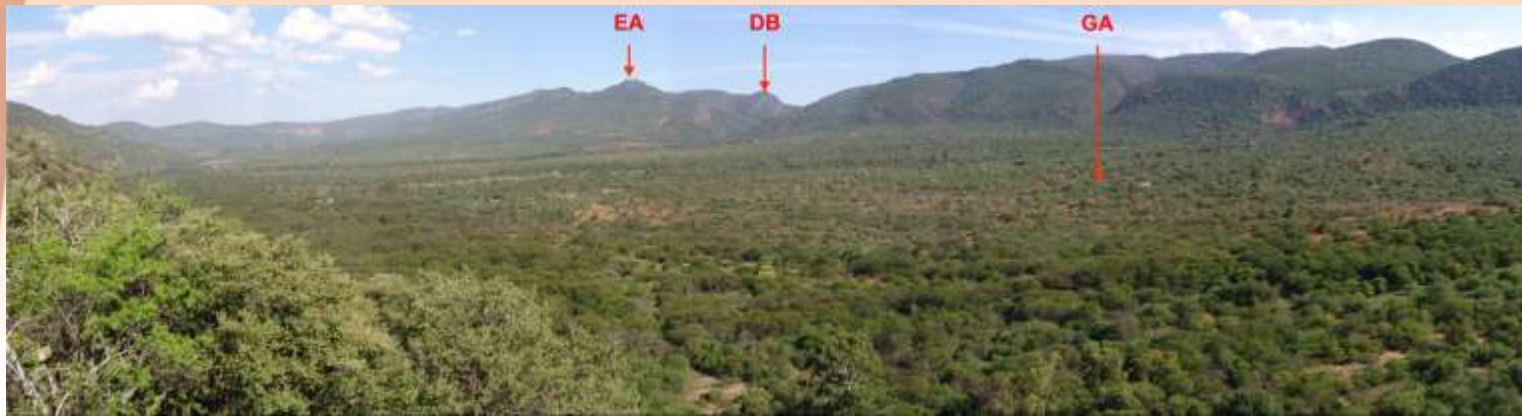
An example from the Limpopo Province:



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Wallacedale (Limpopo Province)



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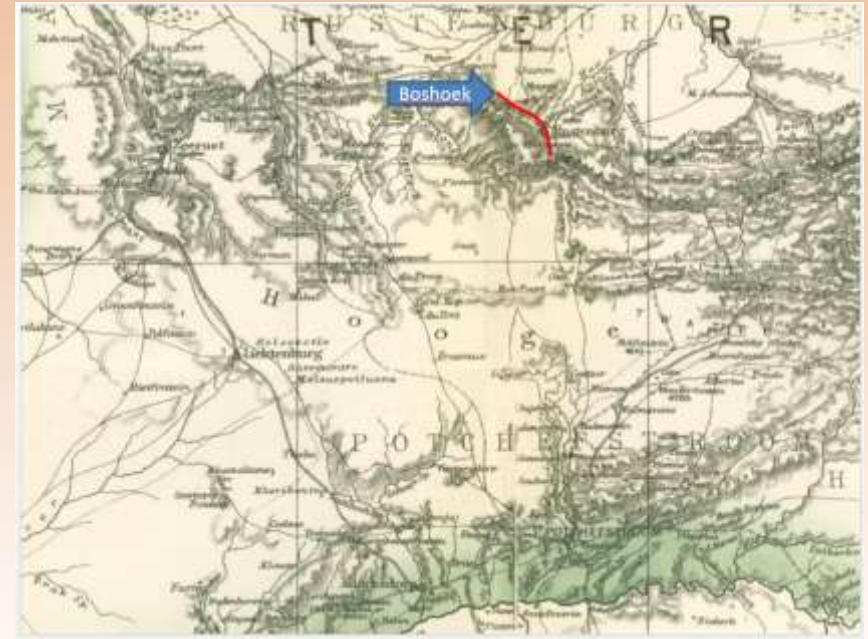
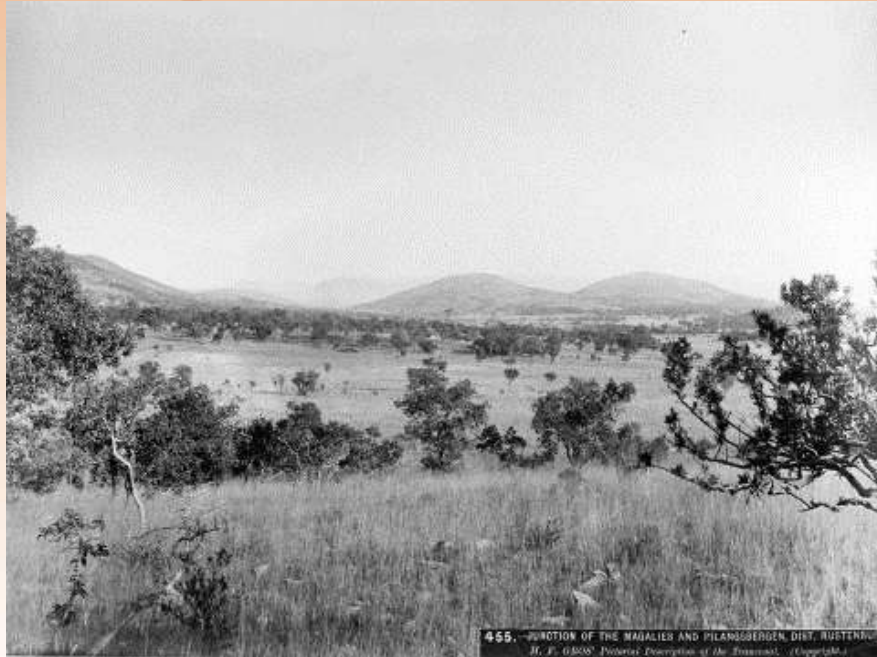
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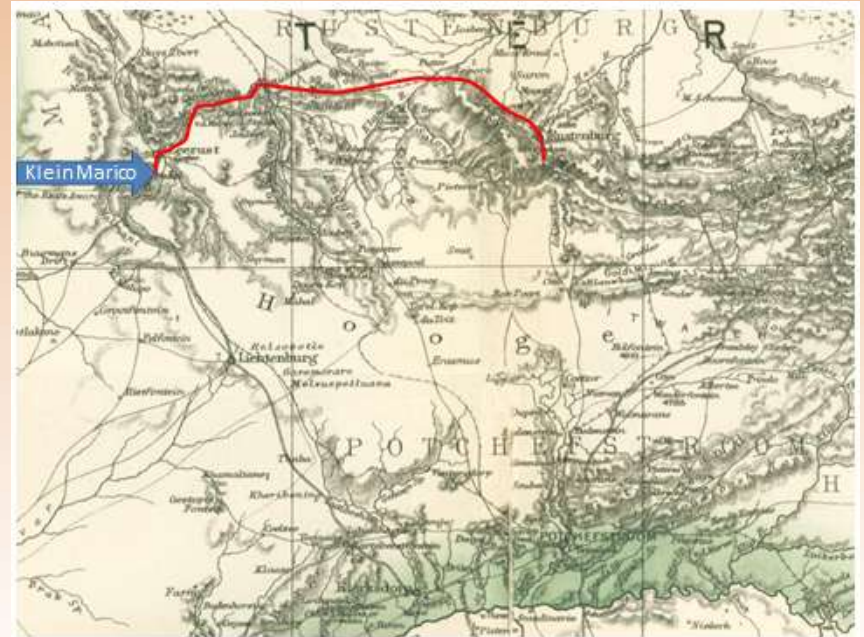
Looking west wards towards Pilanesberg from the Magaliesberg (what impact has mining had on this landscape?)



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Along the Klein Marico River



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Thank You



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