

SOVENTIX SOLAR PV PROJECT IN THE HANOVER DISTRICT, NORTHERN CAPE (DE AAR/HANOVER AREA)

GRAZING ASSESSMENT REPORT

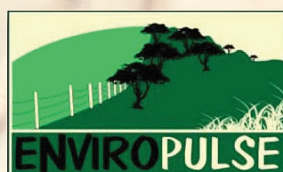
FEBRUARY 2017



by

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(DE AAR/HANOVER AREA)

GRAZING ASSESSMENT REPORT

By **S. F. de Wet** Pr.Sci.Nat

FEBRUARY 2017

EXECUTIVE SUMMARY

Potential grazing capacity, based on different ecological units identified within the soil and wetland delineation by Van den Berg (2017), is estimated for the study area. Current grazing capacity is determined by using the Veld Condition Index method from Du Toit, 1997). Veld condition at the time when the veld condition was assessed was characterised by a dormant Karoo-bossie component, an abundance of bare ground and an almost absence of the grass component. Stocking rates for sheep under the last few years of relative dry years correspond well to guidelines provided by the Department of Agriculture, but it is expected that improvement in veld condition can be expected with not only improved rainfall, but also by applying management recommendations provided in this report. Long term veld condition assessment and annual monitoring under different rainfall conditions is recommended to provide the range of fluctuations envisaged in veld condition and grazing capacity.

1. INTRODUCTION

1.1. Terms of Reference

Enviropulse CC was tasked to provide

- Grazing potential within the study area, which provides guidelines for development on the distribution of sensitive areas, based on information from soil mapping and classification by Hennie van den Berg (IRIS International) and
- Grazing management guidelines, based on veld condition.

1.2. Study Area – Soventix Saproosed Solar Installation

Location

The study area is located in the Northern Cape, approximately 32 km from De Aar and 22 km from Hanover, directly northeast of the N10 highway. There are three potential footprints, which are the same size (minimum of 450 ha) as illustrated in the soil report of IRIS International (Van den Berg, 2017 and also appended in this report).

Geology and Soils

From the soil study of the Soventix SA Solar PV project at the De Bad area by Van den Berg (2017) the following information has become available.

A total of 12 ecological units have been identified, based on geology, soil texture and depth. These are:

1. Class 1. Sandstone outcrops,
2. Class 2. Dolerite outcrops,
3. Class 3. Very shallow yellow brown loamy soils,
4. Class 4. Very shallow yellow brown clayey soils,
5. Class 5. Very shallow red loamy soils,
6. Class 6. Very shallow red clayey soils,
7. Class 7. Shallow to medium deep yellow brown loamy soils,
8. Class 8. Shallow to medium deep yellow brown clayey soils,
9. Class 9. Shallow to medium deep red loamy soils,
10. Class 10. Shallow to medium deep red clayey soils,
11. Class 11. Structured shallow soils.
12. Class 12. Structured medium deep soils.

Vegetation and Veld Condition

The vegetation at the study area is classified as Eastern Upper Karoo (Vegetation unit NKu 4, Mucina and Rutherford (2006). This is described as flat and gently sloping plains, interspersed with hills and rocky areas, with grasses such as *Aristida* and *Eragrostis* species that dominate.

Five easily recognisable veld condition states (Trollope et al, 1990) are described in the Karoo – severely degraded, poor, intermediate, good and excellent (Esler *et al*, 2010).

2. METHODS

A total of 20 fixed points have been stratified within the study area for evaluation where the grass composition and grass basal cover (as reflected from point to tuft distance).

AREA A: DISTRIBUTION OF SURVEY SITES 14-20



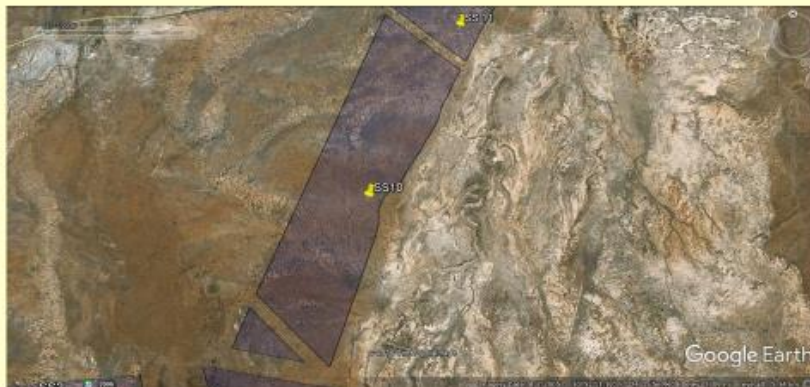
AREA B: DISTRIBUTION OF SURVEY SITES 12 & 13



AREA C : DISTRIBUTION OF SITES 1-9



AREA C: POSITION OF SURVEY SITE 10



AREA C: POSITION OF SURVEY SITE 11



Soil classification at the 20 points (plus approximately 100 more for the purpose of a soil map) was done by Hennie van den Berg (IRIS International) according to the Taxonomic Classification System to soil form level, for each grazing assessment (MacVicar CN (ed.) (1991)). Point sampling was done by the method of Du Toit (1997) of all plant species along 50-meter lines. The following have been recorded at intervals of one meter: list of forage plants, relative cover and plant canopy cover (%). The grazing index value and veld condition index was determined. Grazing capacity was calculated using the information from the veld condition index method. Grass tuft distances were recorded at each meter interval (nearest tuft distance to monitoring rod).

Vegetation crown cover recorded by Van den Berg (2017), including records of cover from dominant vegetation species would be used with detailed observations in the grazing report to model potential grazing capacity, based on ecological zones that would be delineated for the study area..

Due to very low grass abundance and presence due to recent drought conditions the grass phytomass was not determined.

A photo of the veld at each assessment point is available representing the condition at each assessment. It illustrates the condition at the monitoring point at the time when the survey was conducted for each of the 20 survey points.

The results are available in the appended tables, showing proportions of grass species in the survey within Decreasers and Increaser categories (Tainton, 1988 and Tainton, 1999), as well as on a degradation axis of the Integrated System of Plant Dynamics (Bosch and Booysen, 1992). The grazing gradient on the ISPD axis will be valuable for longer term monitoring purposes, to reflect future trends.

Management and veld condition will over time therefore be linked by following the trends on an ISPD grazing gradient (or degradation axis) (Bosch (1989) and Bosch and Gaugh (1991)).

3. RESULTS AND DISCUSSION

3.1. Grazing Potential

Rainfall is not only the only factor affecting vegetation quantity and composition (Esler et al, 2010). Large fluctuations in veld condition and therefore also in grazing capacity can be expected over years. A difference in grazing capacity have been observed also on a spatial level within the study area. Even within similar topography and soil conditions the veld condition differed within the same veld condition assessment of January 2017.

Results from Van den Berg (2017) were studied and applied to obtain ecological and grazing units (see appended map).

Geology and land terrain position, together with soil depth and texture affect grazing potential. The following follows directly from the soil map which is now available for the study area (Van den Berg, 2017):

For grazing potential purposes the landscape can be divided into four main ecological zones, i.e.:

- GRAZING UNIT I = Classes 7 to 10 and Class 12. **Medium deep soils at lower parts of the catena, including soils with lime present** (i.e., Hutton, Oakleaf, Gamoep, Addo, Augrabies soils. It also includes Valsrivier soils).
- GRAZING UNIT II = Class 11. **Shallow to slightly deeper structured soils** (i.e., unit dominated by Swartland soils).
- GRAZING UNIT III = Classes 3 to 6: **Shallow soils** (i.e., Mispah and Glenrosa soils).
- GRAZING UNIT IV = Classes 1 and 2: **Koppies of sandstone and dolerite**. (i.e., outcrops and Mispah soils).

Colour	No	Ecological zone	Grazing Capacity Range	Median Grazing capacity
	1	GRAZING UNIT I = Classes 7 to 10 and class 12: Medium deep soils at lower parts of the catena, including soils with lime present (i.e., Hutton, Oakleaf, Gamoep, Addo, Augrabies soils. It also includes Valsrivier soils)	5-25 ha/LSU	15 ha/LSU
	2	GRAZING UNIT II = Class 11: Shallow to slightly deeper structured soils (unit dominated by Swartland soils)	10-30 ha/LSU	20 ha/LSU
	3	GRAZING UNIT III = Classes 3 to 6: Shallow soils (i.e., Mispah and Glenrosa soils)	15-55 ha/LSU	35 ha/LSU
	4	GRAZING UNIT IV = Classes 1 and 2: Koppies of sandstone and dolerite (i.e., outcrops and Mispah soils)	20-90 ha/LSU	55 ha/LSU
	5	Permanent wetland		Not assessed

Grazing Unit I with medium deep soil at lower parts of the catena has a median grazing capacity of 15 ha/LAU.

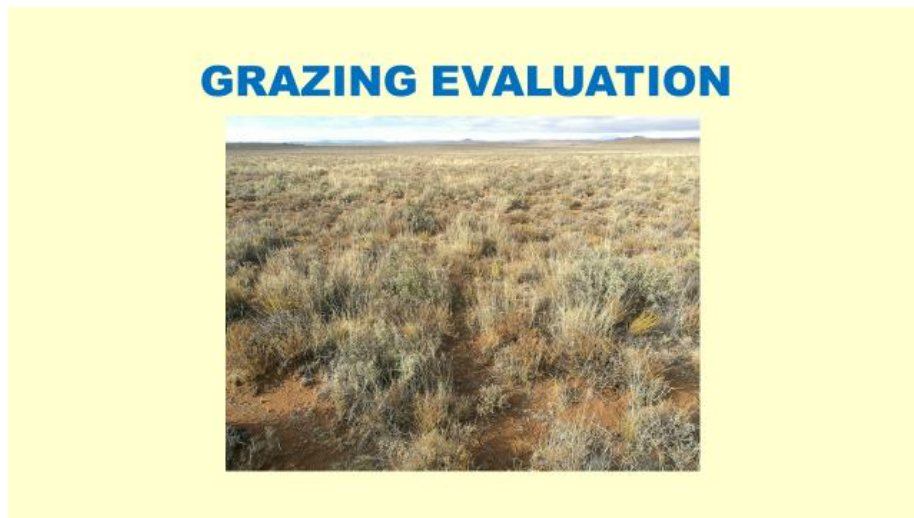
Grazing Unit II with shallow to slightly deeper structured soils has a median grazing capacity of 20 ha/LAU.

Grazing Unit III with shallow soils has a median grazing capacity of 35 ha/LAU.

Grazing Unit IV of the koppies of sandstone and dolerite has a median grazing capacity of 55 ha/LAU.

Permanent wetlands were not assessed with the grazing evaluation, as these are present mostly outside the study area.

3.2. Grazing Evaluation



The results of the findings for specific points or sites are available in the appended site reports, which have photos taken from the assessment point and Google Earth images. The detailed info of the vegetation (grass and bossies) are available on appended tables, reflecting grass and Karoo plant composition and cover. Grazing capacity and management recommendations are included.

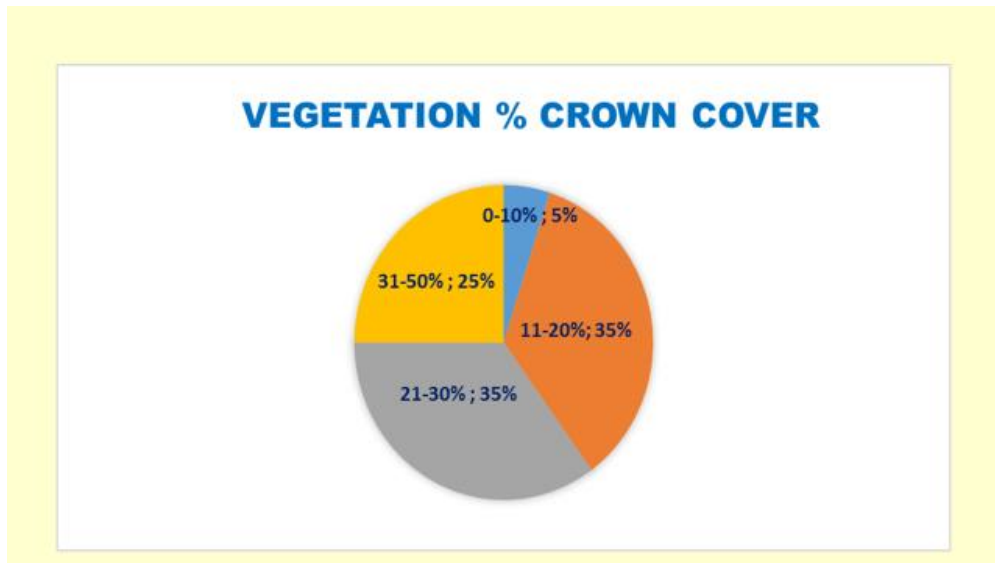
See appended map of Veld Condition Index Values (Van den Berg, 2017). The veld condition index values obtained from the results were overlain on Landsat images for the study area. The grazing index zones are illustrated on the appended map and below into three classes, i.e. “Good” (median range 185-238), “intermediate” (median range 105-187) and “poor” (median range 66-147), with a classification reflecting good, intermediate and poor values relative to the results of the 2017 assessment, not relative to the potential. It must be born in mind that veld condition is a reflection of both rainfall and current management (and other factors discussed above).

Colour	No	Veld Condition Index Zone	Veld Condition Index Range	Median Veld Condition Index
Green	1	GOOD	185-238	211.5
Brown	2	INTERMEDIATE	105-187	146.5
Yellow	3	POOR	66-147	106.9

The last few years the rainfall was below the long term average for the region. Besides that, the condition reflected by the results of this report is also strongly affected by the seasonal presence of plants, especially annuals (e.g., “opslag”).

At the time when the survey was undertaken (early January 2017) the vegetation was still mostly dormant due to little rain received. Bare ground was common and grass species richness low. Grass abundance could therefore potentially be very different (better) under good rainfall conditions in relation to what is reflected in the 2017 results.

95% of the vegetation crown cover recorded over the 20 survey sites were below 50% cover, with 5% of the survey sites that had less than 10% crown cover. This was mostly representing the non-grass component (Karoo-bossies). See illustrated below.



Veld condition index values reflect therefore largely the dormant status of vegetation at the time when the assessments were done, i.e., the non-grass perennial Karoo-bossie component, without 'opslag' and other Karoo plants that are common after good rains.

Domimant Plant Species – Bosies & Grasses:

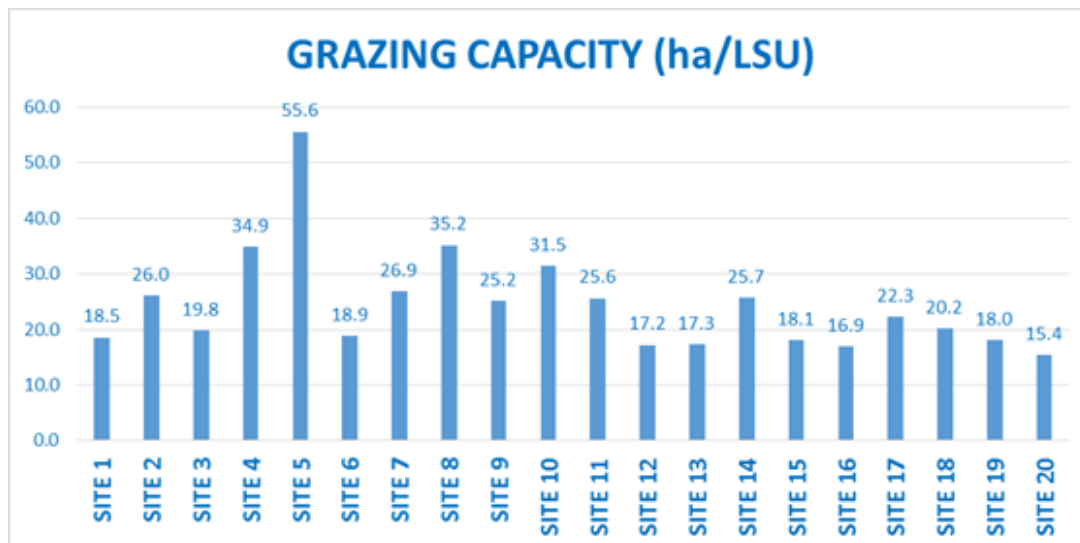
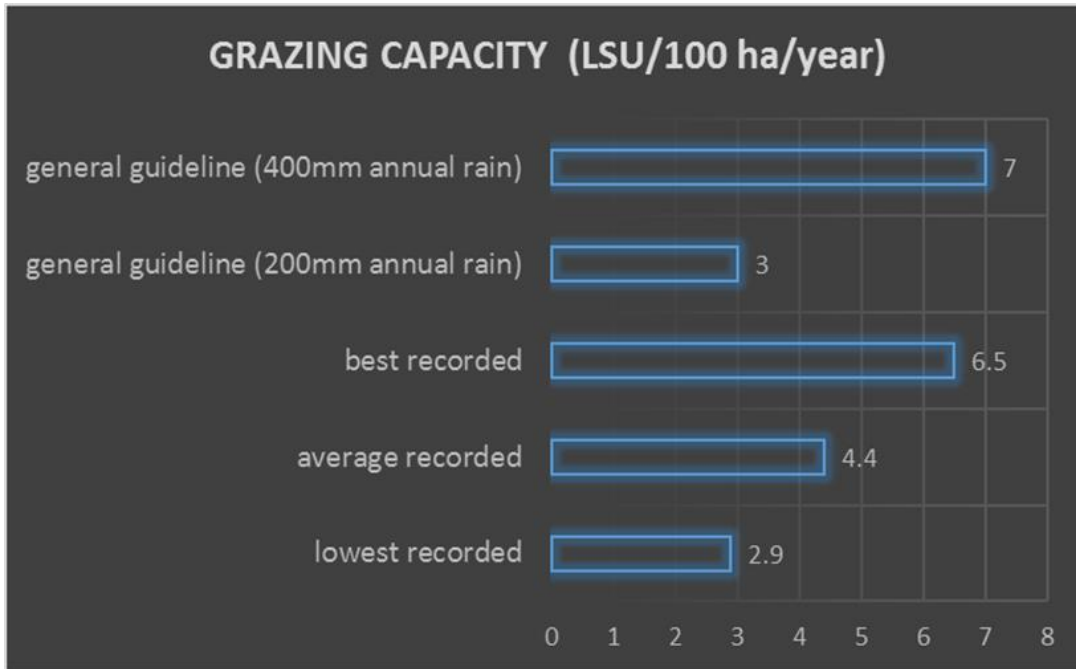
- Doringkapok
- Haasgras
- Ankerkaroo
- Doringvygie
- Wortelsaadgras
- Kapokbossie
- Douvatgras

Veld condition is mostly poor to intermediate due to low grass cover and current grass composition reflected in veld condition assessment for January 2017 represent the abundance of a few species that have relative poor grazing value (Dwarf Grass/Haasgras, *Oropetium capense* and Creeping Carrotseed Grass, *Tragus koelerioides*).

A few other grasses are listed in the appended tables that are present but none of those were sufficiently abundant to contribute significantly to improved grazing capacity. One small grass species, *Pentameris montana*, has been identified is a first collection record for its distribution for the National Herbarium (SANBI).

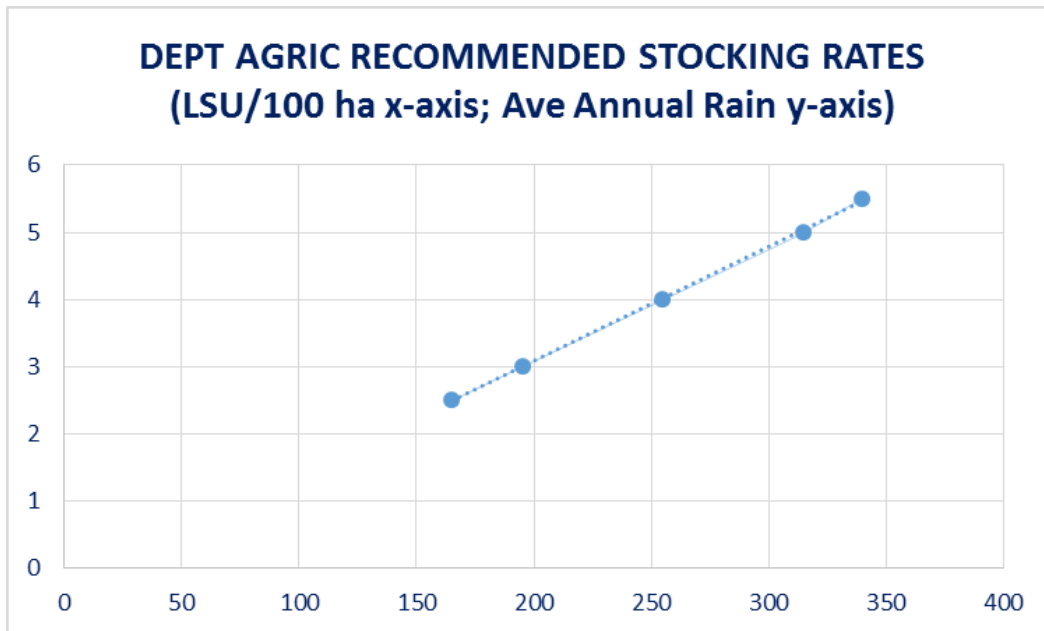
3.3. Grazing Management Recommendations

Current grazing capacity based on the results from the evaluation in January 2017 are illustrated below.



A grazing capacity of between 15 and 17 ha/LAU at better veld conditions, or an average of just less than 23 ha/LAU over all veld conditions in the study area would therefore be applicable for current rainfall conditions (excluding info from Site 5, where extreme poor conditions were observed). If only sheep were accommodated, it would translate into less than 1760 sheep on 8000 ha under current rainfall conditions. Please note: This is applicable if only sheep graze within an area of 8000 ha, but other grazers also utilise the veld, such as horses, cattle and game, and the necessary adaption should be made to have the total number of grazers and stocking rate that correspond with the current grazing capacity.

Current stocking rates the last few years for sheep therefore correspond well with the guidelines (from Esler et al, 2010) recommended by the Department of Agriculture. See figure below.



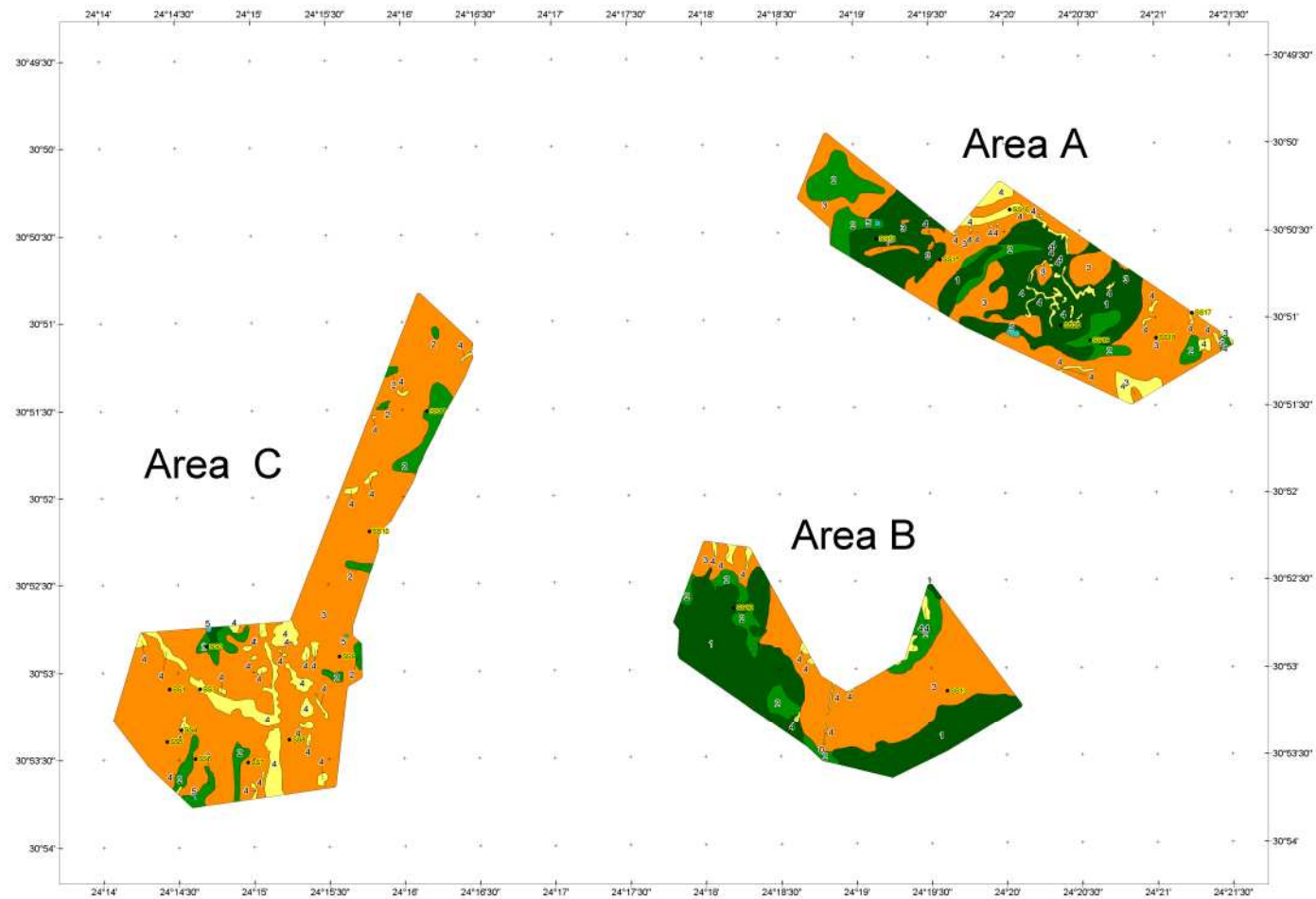
However, all grazers present on the De Bad farm should be included when the current grazing capacity is applied and rotational resting per camp is recommended for periods up to 12 months at a frequency of once every four years. This will assist to improve grass seeding and an improvement in grass production potential of palatable and will improve the grass component with important forage species. This recommendation applies to all the camps. Follow-up grazing assessments and annual monitoring of veld condition is recommended to record veld condition and grazing capacity under different rainfall conditions.

4. REFERENCES

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APPENDIX A
Maps

Ecological zones and Grazing Capacity at De Bad for areas A, B and C (January 2017)



0 1 2 3 4 5 kilometers

Coordinate Reference System:

Name: Hartebeesthoek 94 / Lo25 (North oriented)
Projection: Lo25 (North oriented)

Legend

Colour	No	Ecological zone	Grazing Capacity Range	Median Grazing capacity
Dark Green	1	GRAZING UNIT I = Classes 7 to 10 and class 12: Medium deep soils at lower parts of the catena, including soils with lime present (i.e., Hutton, Oakleaf, Gemoep, Addo, Augrabies soils. It also includes Valsrivier soils)	5-25 ha/LSU	15 ha/LSU
Light Green	2	GRAZING UNIT II = Class 11: Shallow to slightly deeper structured soils (unit dominated by Swartland soils)	10-30 ha/LSU	20 ha/LSU
Orange	3	GRAZING UNIT III = Classes 3 to 6: Shallow soils (i.e., Mispah and Glenrosa soils)	15-55 ha/LSU	35 ha/LSU
Yellow	4	GRAZING UNIT IV = Classes 1 and 2: Koppies of sandstone and dolerite (i.e., outcrops and mispah soils)	20-80 ha/LSU	55 ha/LSU
Light Blue	5	Permanent wetland		Not assessed

• Vegetation survey sites

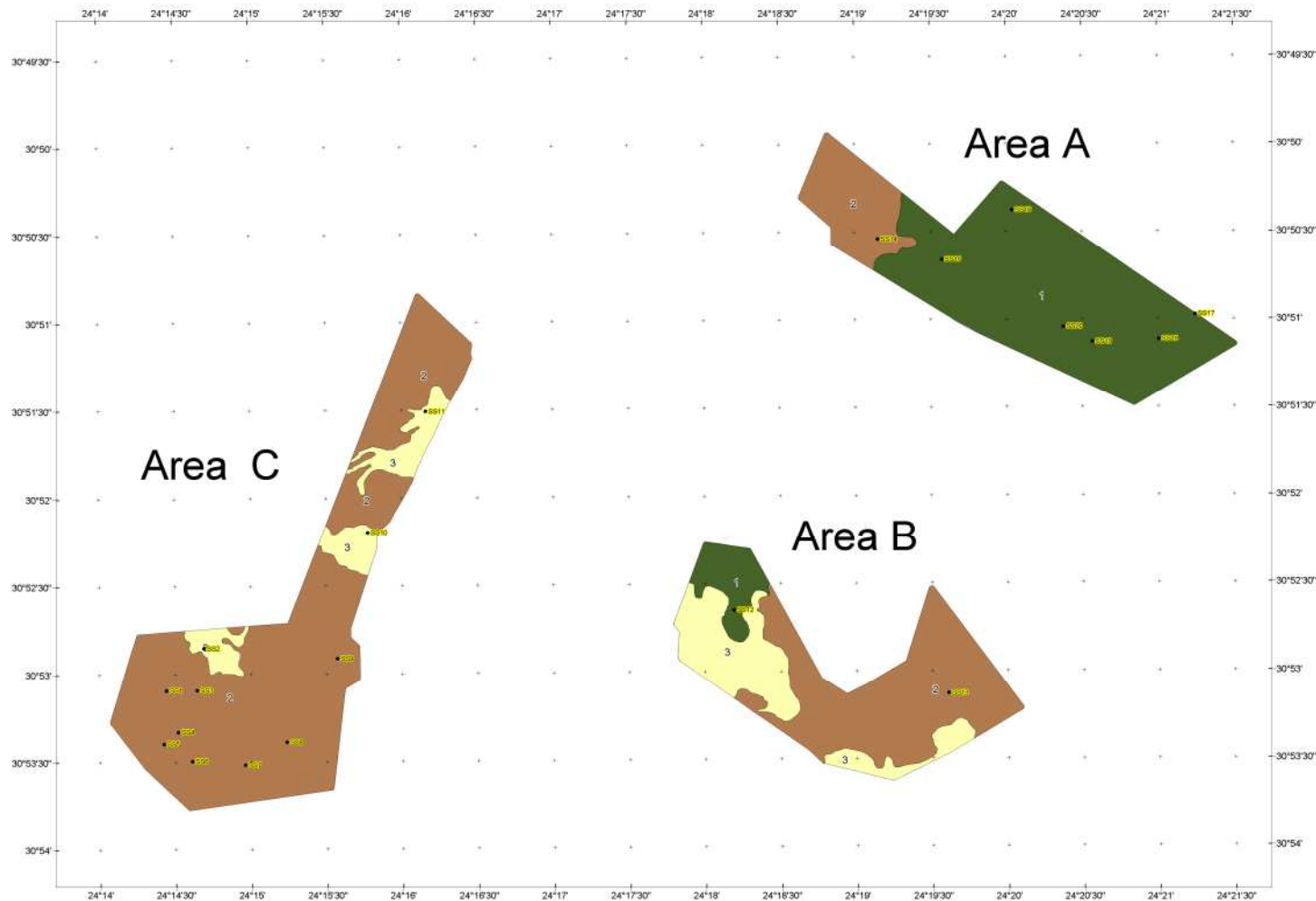


IRIS International
Integrated Resource Information Systems



Map composition: 30 Jan 2017

Veld Condition Index zones at De Bad for areas A, B and C (January 2017)



Legend

Colour	No	Veld Condition Index Zone	Veld Condition Index Range	Median Veld Condition Index
Green	1	GOOD	185-238	211.5
Brown	2	INTERMEDIATE	105-187	146.5
Yellow	3	POOR	66-147	106.9

• Vegetation survey sites



0 1 2 3 4 5 kilometers

Coordinate Reference System:

Name: Hartebeesthoek 94 / Lo25 (North oriented)
Projection: Lo25 (North oriented)



IRIS International
Biological Resource Information System



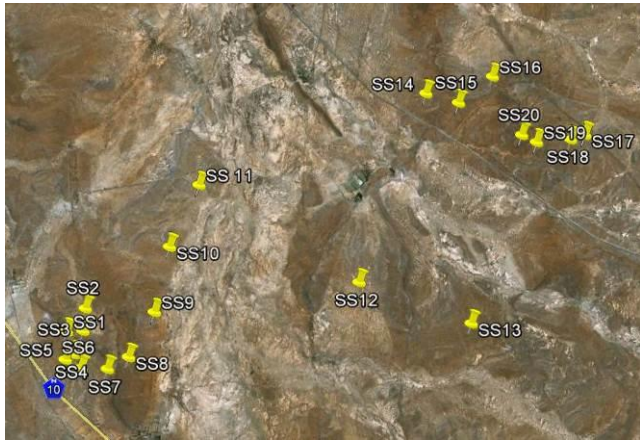
Map composition: 30 Jan 2017

APPENDIX B
Site Reports



Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA



GOOGLE IMAGE OF THE SITE
30° 53' 05.3"
24° 14' 26.9"

AREA	De Bad - Soentix
AREA NUMBER	H107
SITE NUMBER	Site 1
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo
GEOLOGY AND SOIL FORM	Siltstone / Shale - Mispah
DATE VISITED	07/01/2017

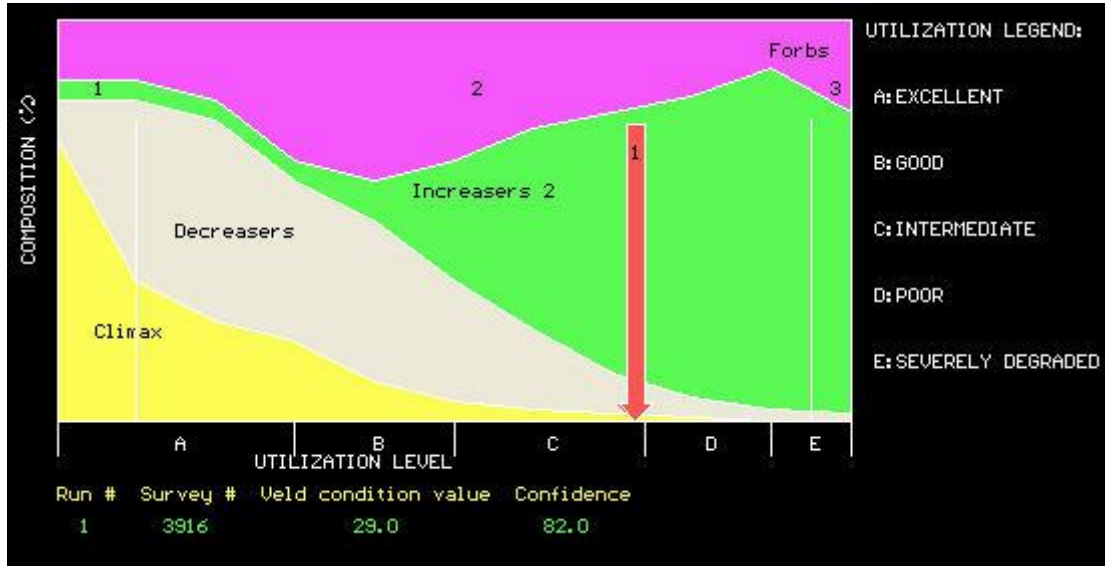


07/01/2017

GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	5 species = Low
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 24% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 23% • <i>Eragrostis obtusa</i> (Dew Grass) – 17%
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	4.9 cm = Low
VEGETATION CROWN COVER (% Soil covered)	21 - 30%
DOMINANT BOSSIE SPECIES (contributing to above)	Ankerkaroo (60%) & Doringkapok (30%)
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	10 species (11 incl. <1% species) = Low
VELD CONDITION (according to Tainton, 1988)	Intermediate
VELD CONDITION TREND	This is baseline data, no trend can be established yet.
VELD CONDITION INDEX TOTAL	186.31
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	19.16 ha/LSU

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

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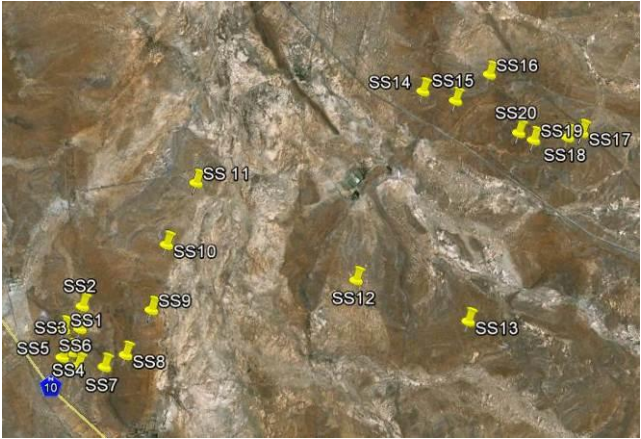


MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

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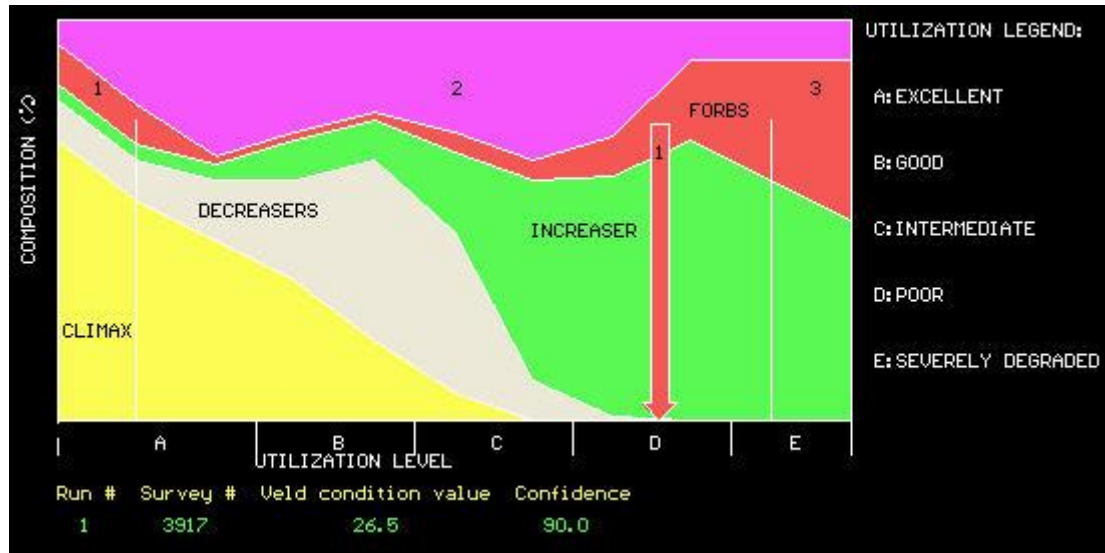
Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)

 <p style="text-align: center;">GOOGLE IMAGE OF THE FOCUS AREA</p>	 <p style="text-align: center;">GOOGLE IMAGE OF THE SITE 30° 52' 50.8" 24° 14' 41.5"</p>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">AREA</td> <td>De Bad - Soventix</td> </tr> <tr> <td>AREA NUMBER</td> <td>H112</td> </tr> <tr> <td>SITE NUMBER</td> <td>Site 2</td> </tr> <tr> <td>VELD TYPE – MUCINA & RUTHERFORD</td> <td>Nku 4 - Eastern Upper Karoo</td> </tr> <tr> <td>GEOLOGY AND SOIL FORM</td> <td>Siltstone / Shale - Swartland</td> </tr> <tr> <td>DATE VISITED</td> <td>07/01/2017</td> </tr> </table>	AREA	De Bad - Soventix	AREA NUMBER	H112	SITE NUMBER	Site 2	VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	GEOLOGY AND SOIL FORM	Siltstone / Shale - Swartland	DATE VISITED	07/01/2017	 <p style="text-align: center;">07/01/2017</p>
AREA	De Bad - Soventix												
AREA NUMBER	H112												
SITE NUMBER	Site 2												
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo												
GEOLOGY AND SOIL FORM	Siltstone / Shale - Swartland												
DATE VISITED	07/01/2017												
GRASS SPECIES RICHNESS ((Number of grass species per 100 m ²): High is = >15 spp, Low < 10 species)	5 species = Low												
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Cynodon hirsutus</i> – 2% • <i>Eragrostis chloromelas</i> (Narrow Curly Leaf) – 2% • <i>Eragrostis obtusa</i> (Dew Grass) – 1% • (Bare Ground – 52%) 												
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	28.2 cm = High												
VEGETATION CROWN COVER (% Soil covered)	11 - 20%												
DOMINANT BOSSIE SPECIES (contributing to above)	Ankerkaro (95%)												
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m ²) High is = >60 spp, Low < 20 species)	9 species (13 incl. <1% species) = Low												
VELD CONDITION (according to Tainton, 1988)	Poor												
VELD CONDITION TREND	This is baseline data, no trend can be established yet.												
VELD CONDITION INDEX TOTAL	136.50												
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	26.15 ha/LSU												

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



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LITERATURE

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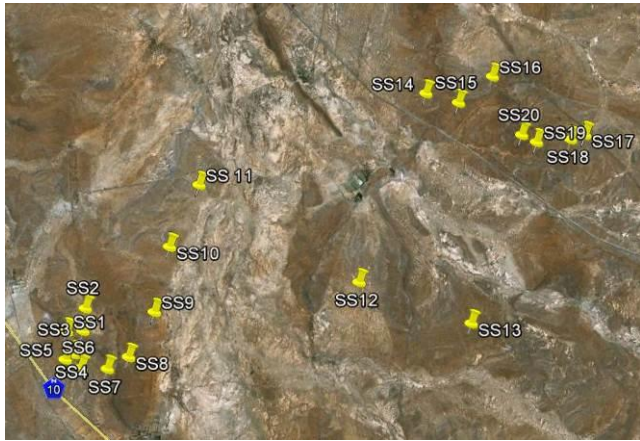
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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)


Reg. nr: CK98/46100/23
Sole member: S.F. de Wet



GOOGLE IMAGE OF THE FOCUS AREA

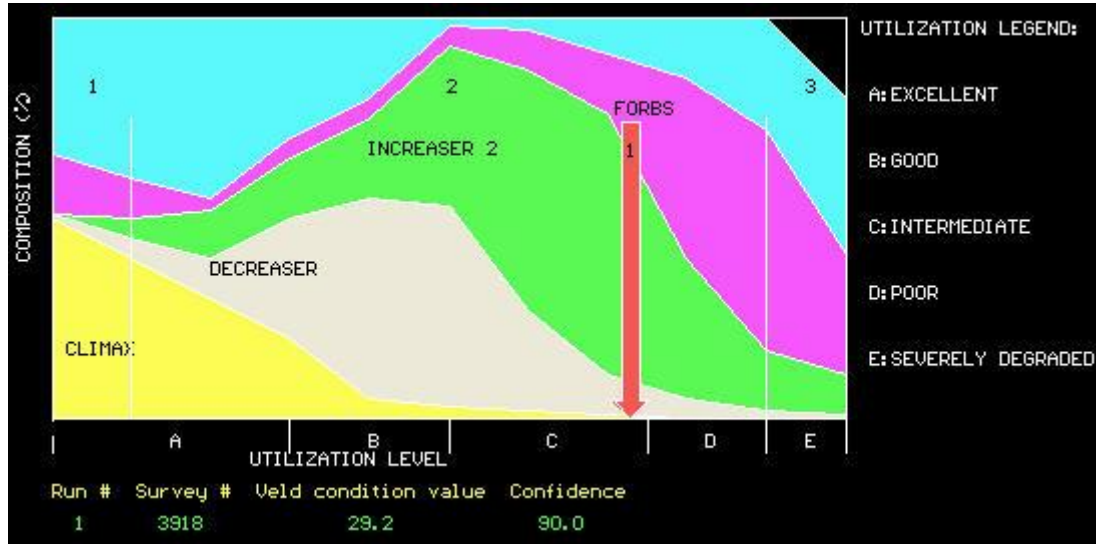


GOOGLE IMAGE OF THE SITE
30° 53' 06.7"
24° 14' 36.4"

AREA	De Bad - Soventix	 07/01/2017
AREA NUMBER	H110	
SITE NUMBER	Site 3	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Dolerite - Mispah	
DATE VISITED	07/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	8 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Aristida diffusa</i> (Iron Grass) – 17% • <i>Oropetium capense</i> (Dwarf Grass) – 14% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 12% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	12.9 cm = High	
VEGETATION CROWN COVER (% Soil covered)	11 - 20%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringvygie (60%) & Kapokbossie (40%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	14 species (15 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	174.32	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	20.48 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

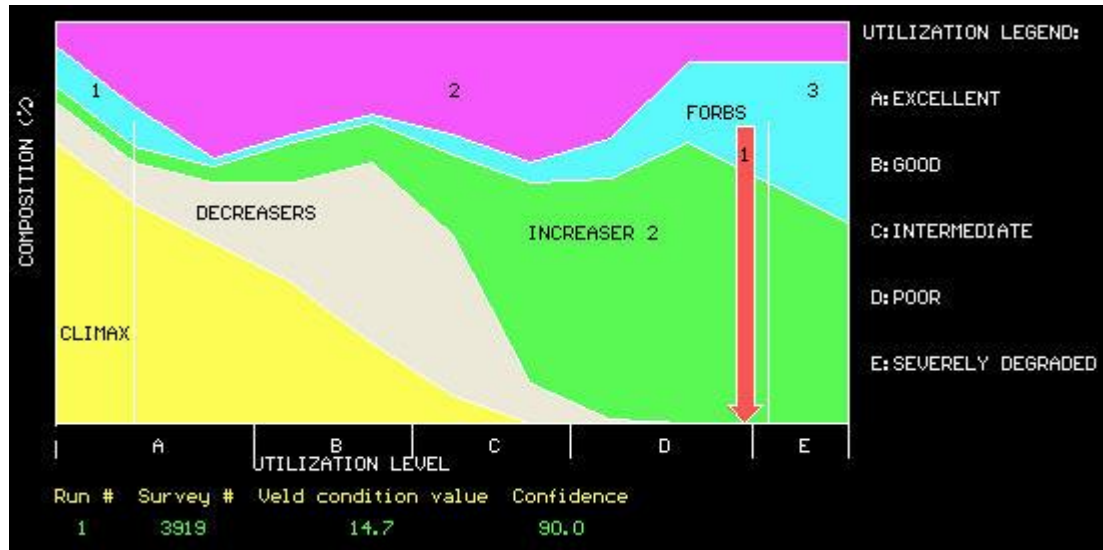


GOOGLE IMAGE OF THE SITE
30° 53' 20.1"
24° 14' 30.5"

AREA	De Bad - Soventix	 <p>07/01/2017</p>
AREA NUMBER	H106	
SITE NUMBER	Site 4	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Sandstone - Mispah	
DATE VISITED	07/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	5 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 54% • <i>Eragrostis obtusa</i> (Dew Grass) – 3% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 2% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	14.4 cm = High	
VEGETATION CROWN COVER (% Soil covered)	0 - 10%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringkapok (50%) & Kapokbossie (50%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	12 species= Low	
VELD CONDITION (according to Tainton, 1988)	Poor	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	105.60	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	33.81 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

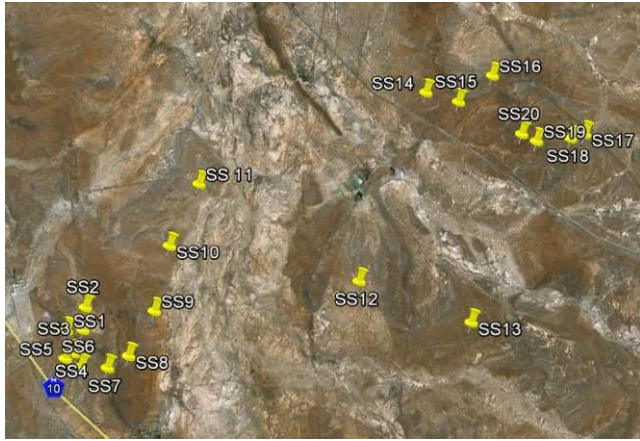
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA



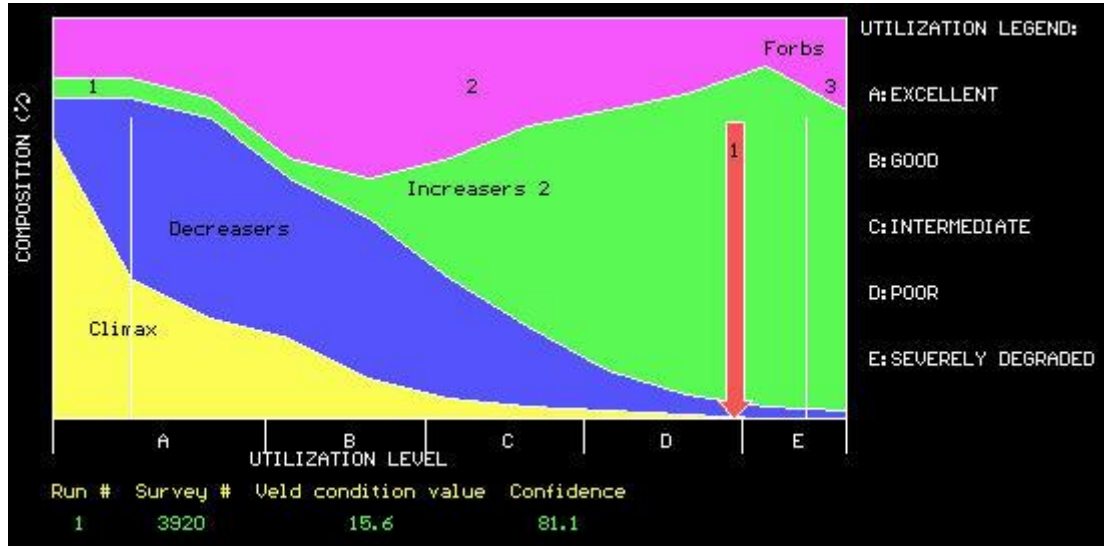
GOOGLE IMAGE OF THE SITE

30° 53' 23.9"
24° 14' 25.4"

AREA	De Bad - Soventix	
AREA NUMBER	H105	
SITE NUMBER	Site 5	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone/Shale - Mispah	
DATE VISITED	07/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	2 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 18% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 2% • (Bare Ground – 54%) 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	24.3 cm = High	
VEGETATION CROWN COVER (% Soil covered)	11 - 20%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringkapok (90%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	8 species (9 incl. <1% species)= Low	
VELD CONDITION (according to Tainton, 1988)	Poor	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	66.38	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	53.78 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

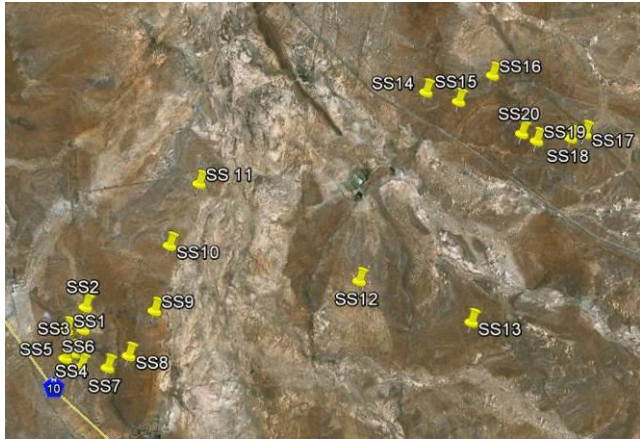
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)




GOOGLE IMAGE OF THE FOCUS AREA



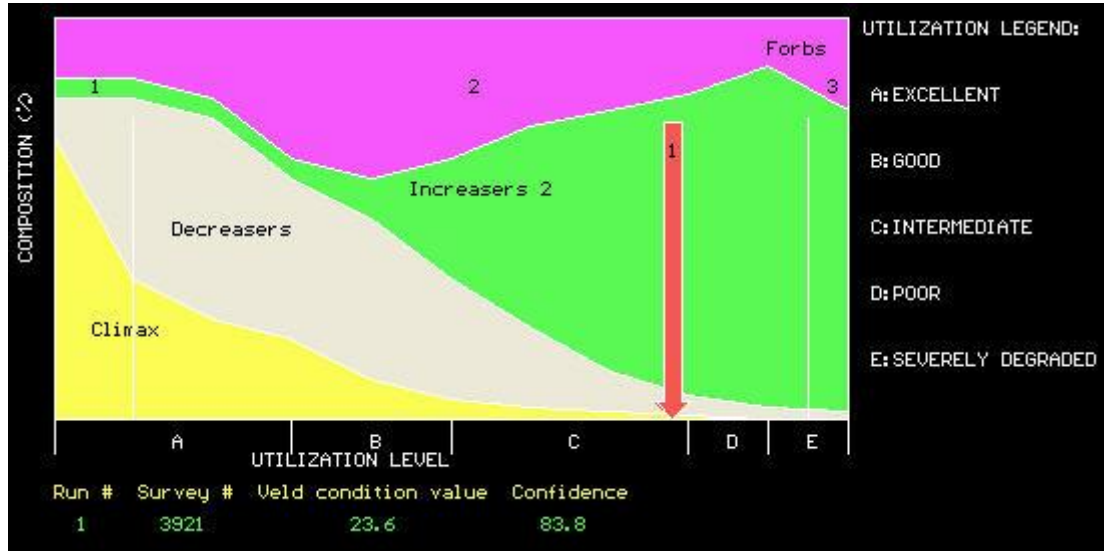
GOOGLE IMAGE OF THE SITE

30° 53' 29.2"
24° 14' 37.3"

AREA	De Bad - Soventix	 <p>07/01/2017</p>
AREA NUMBER	H104	
SITE NUMBER	Site 6	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone/Shale - Mispah	
DATE VISITED	07/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	6 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 40% • <i>Eragrostis obtusa</i> (Dew Grass) – 10% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 3% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	11.2 cm = High	
VEGETATION CROWN COVER (% Soil covered)	31 - 50%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringkapok (50%) & Doringvygie (50%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	12 species = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	153.21	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	23.30 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

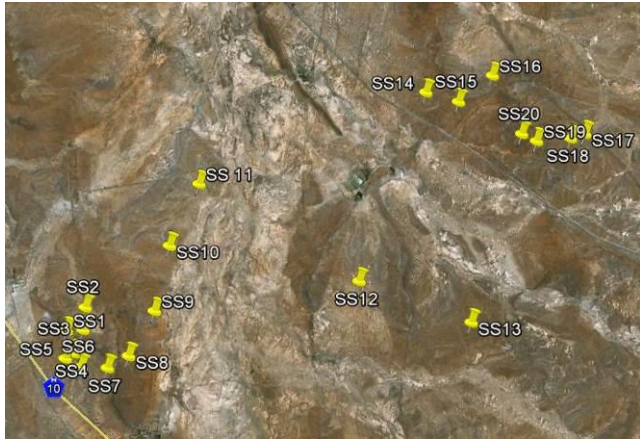
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

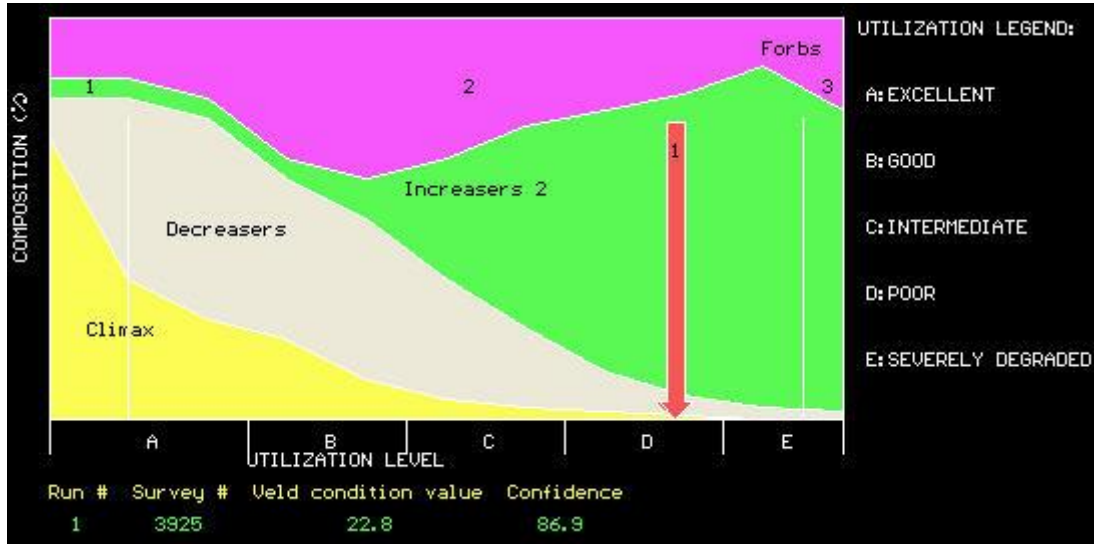


GOOGLE IMAGE OF THE SITE
30° 52' 11.5"
24° 15' 46.1"

AREA	De Bad - Soventix	 <p>08/01/2017</p>
AREA NUMBER	H086	
SITE NUMBER	Site 10	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Mispah	
DATE VISITED	08/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	4 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 15% • <i>Oropetium capense</i> (Dwarf Grass) – 12% • <i>Eragrostis obtusa</i> (Dew Grass) – 2% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	20.9 cm = High	
VEGETATION CROWN COVER (% Soil covered)	11- 20%	
DOMINANT BOSSIE SPECIES (contributing to above)	Ankerkaroo (50%) & Doringkapok (50%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	12 species (14 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Poor	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	107.15	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	33.32 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

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MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

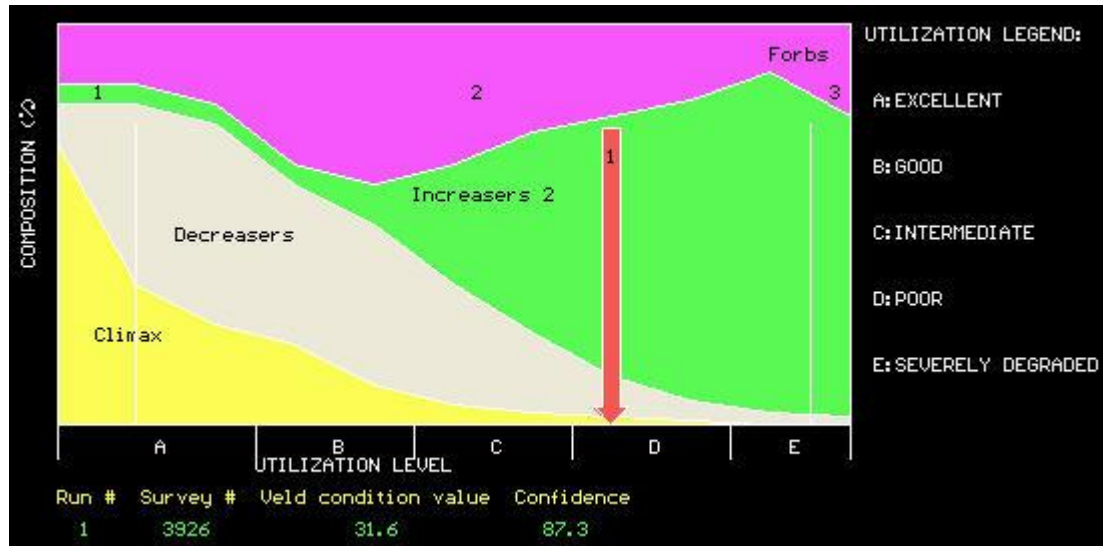


GOOGLE IMAGE OF THE SITE
30° 51' 30.6"
24° 16' 09.9"

AREA	De Bad - Soventix	 06/01/2017
AREA NUMBER	H080	
SITE NUMBER	Site 11	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Swartland	
DATE VISITED	06/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	4 species (5 incl. <1% species)= Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Eragrostis obtusa</i> (Dew Grass) – 17% • <i>Cynodon sp.</i> – 6% • <i>Oropetium capense</i> (Dwarf Grass) – 1% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	21.2 cm = High	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	'Honderdpootbossie' (50%), Katdoring (30%), Doringvygie (10%) & Blomkool Ganna (10%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	15 species (17 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Poor	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	168.67	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	21.17 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

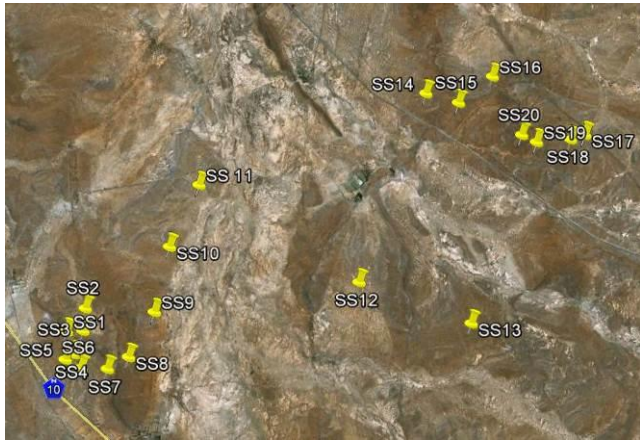
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

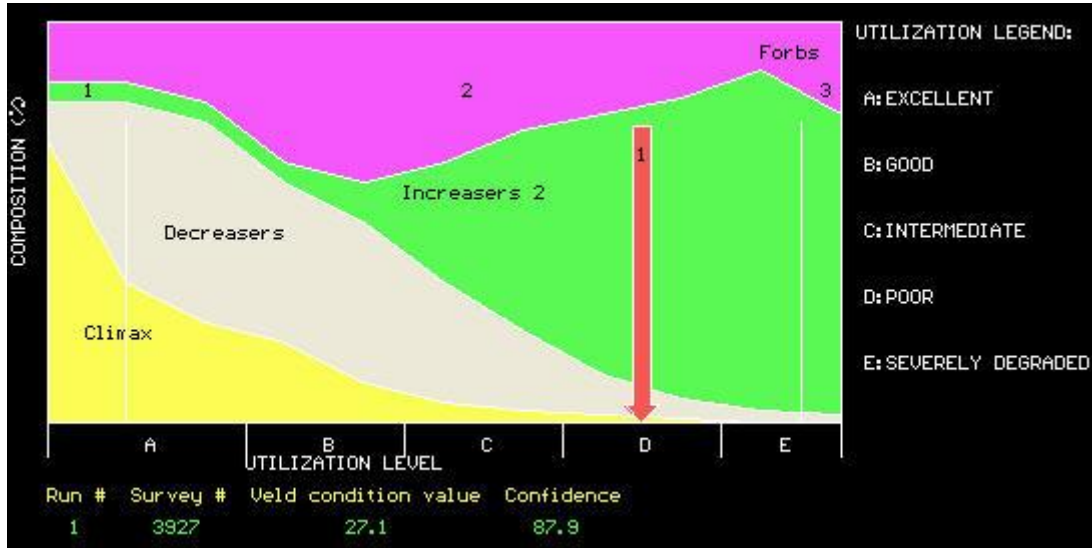


GOOGLE IMAGE OF THE SITE
30° 52' 39.1"
24° 18' 11.9"

AREA	De Bad - Soventix	<p style="text-align: center;">04/01/2017</p>
AREA NUMBER	H049	
SITE NUMBER	Site 12	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Gamoep	
DATE VISITED	04/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	6 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Melica decumbens</i> (Dronkgras) – 27% • <i>Stipagrostis cf. obtusa</i> (Small Bushman Grass) – 6% • <i>cf.Eragrostis rigidior</i> (Curly Leaf) – 3% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	18.2 cm = High	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	Ankerkaroo (50%), Doringkapok (30%) & Doringvygie (10%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	18 species = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate - Poor	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	217.29	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	16.43 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

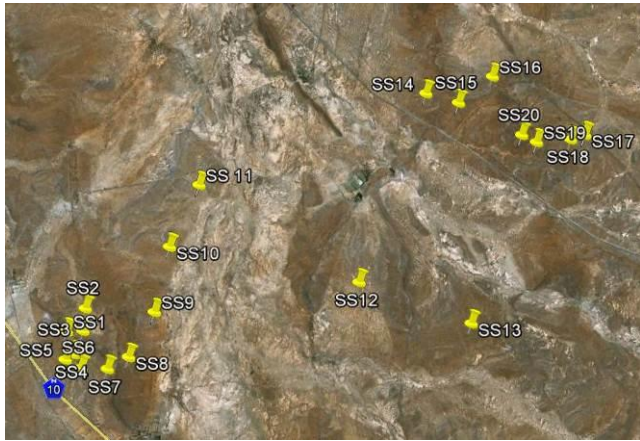
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



Reg. nr: CK98/46100/23
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VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

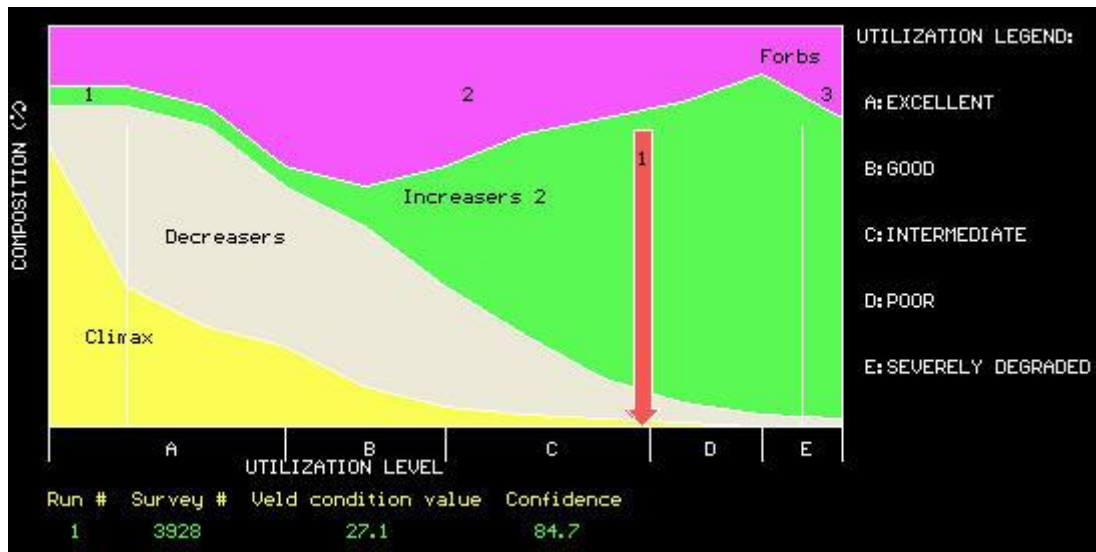


GOOGLE IMAGE OF THE SITE
30° 53' 07.6"
24° 19' 36.3"

AREA	De Bad - Soventix	 <p>05/01/2017</p>
AREA NUMBER	H070	
SITE NUMBER	Site 13	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Mispah	
DATE VISITED	05/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	4 species (7 incl. <1% species) = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 32% • <i>Eragrostis obtusa</i> (Dew Grass) – 12% • <i>Melica decumbens</i> (Dronkgras) – 6% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	10.2 cm = High	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	'Doringkapok (80%) & Doringvygie (20%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	14 species (20 incl. <1% species) = Low (Medium)	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	187.36	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	19.05 ha/LSU	

MANAGEMENT RECOMMENDATION

- APPLY ROTATIONAL REST ONCE EVERY FOUR YEARS AND APPLY STOCKING RATES THAT CORRESPOND WITH CURRENT GRAZING CAPACITY.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science*. Pp 337-340.

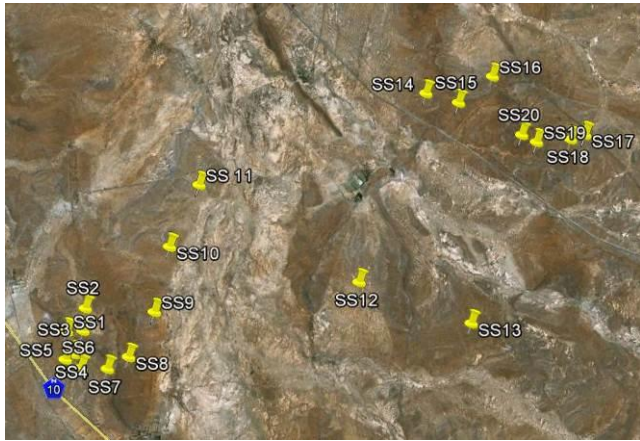
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

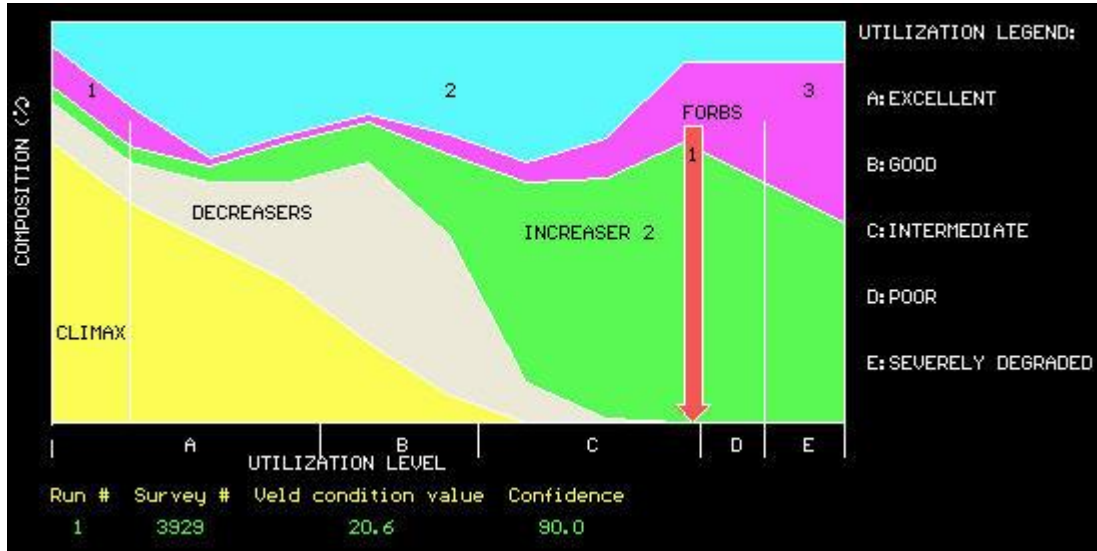


GOOGLE IMAGE OF THE SITE
30° 50' 32.4"
24° 19' 09.9"

AREA	De Bad - Soventix	<p style="text-align: center;">07/01/2017</p>
AREA NUMBER	H032	
SITE NUMBER	Site 14	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Dolerite - Glenrosa	
DATE VISITED	07/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	4 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 49% • <i>Eragrostis obtusa</i> (Dew Grass) – 7% • <i>Stipagrostis cf. obtusa</i> (Small Bushman Grass) – 3% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	7.9 cm = Medium	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	Kapokbos (70%), Brosdoring (15%) & Doringvygie (13%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	15 species (16 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	150.65	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	23.70 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

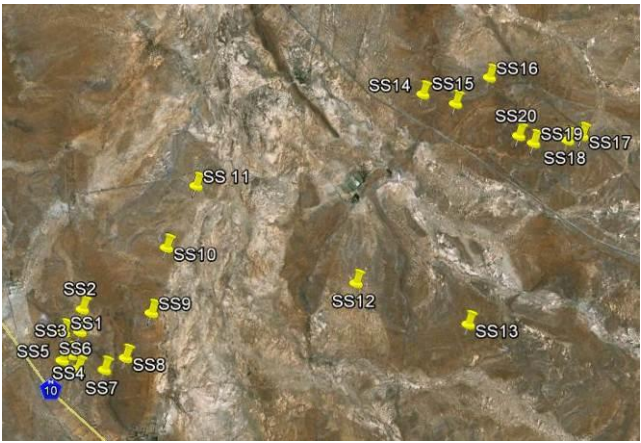


MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



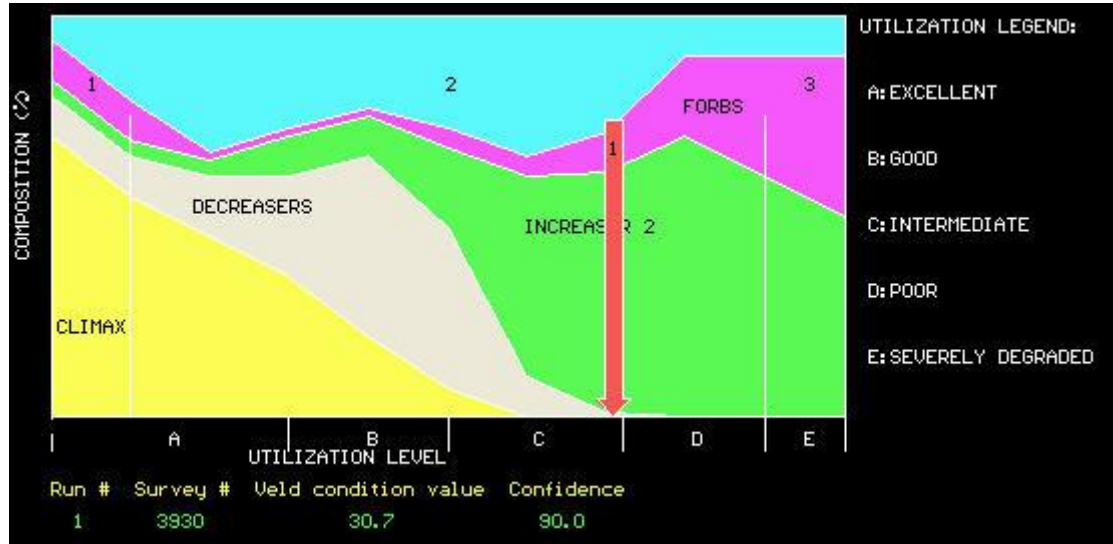
VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)

Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

 <p>GOOGLE IMAGE OF THE FOCUS AREA</p>	 <p>GOOGLE IMAGE OF THE SITE 30° 50' 39.6" 24° 19' 34.4"</p>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">AREA</td> <td>De Bad - Soventix</td> </tr> <tr> <td>AREA NUMBER</td> <td>H043</td> </tr> <tr> <td>SITE NUMBER</td> <td>Site 15</td> </tr> <tr> <td>VELD TYPE – MUCINA & RUTHERFORD</td> <td>Nku 4 - Eastern Upper Karoo</td> </tr> <tr> <td>GEOLOGY AND SOIL FORM</td> <td>Dolerite - Mispah</td> </tr> <tr> <td>DATE VISITED</td> <td>05/01/2017</td> </tr> </table>	AREA	De Bad - Soventix	AREA NUMBER	H043	SITE NUMBER	Site 15	VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	GEOLOGY AND SOIL FORM	Dolerite - Mispah	DATE VISITED	05/01/2017	 <p style="text-align: center;">05/01/2017</p>
AREA	De Bad - Soventix												
AREA NUMBER	H043												
SITE NUMBER	Site 15												
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo												
GEOLOGY AND SOIL FORM	Dolerite - Mispah												
DATE VISITED	05/01/2017												
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	8 species = Low												
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Microchloa caffra</i> (Pincushion Grass) – 18% • <i>Oropetium capense</i> (Dwarf Grass) – 17% • <i>Melica decumbens</i> (Dronkgras) – 15% 												
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	6.7 cm = Medium												
VEGETATION CROWN COVER (% Soil covered)	21- 30%												
DOMINANT BOSSIE SPECIES (contributing to above)	Doringvygie (90%) & 10% Doringkapok												
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	14 species = Low												
VELD CONDITION (according to Tainton, 1988)	Intermediate												
VELD CONDITION TREND	This is baseline data, no trend can be established yet.												
VELD CONDITION INDEX TOTAL	212.34												
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	16.81 ha/LSU												

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. Tydskrif Weidingsveren. S. Afr. (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science*. Pp 337-340.

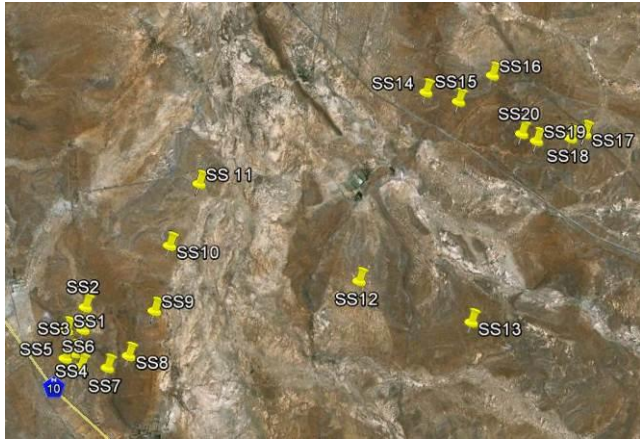
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



Reg. nr: CK98/46100/23
Sole member: S.F. de Wet


VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

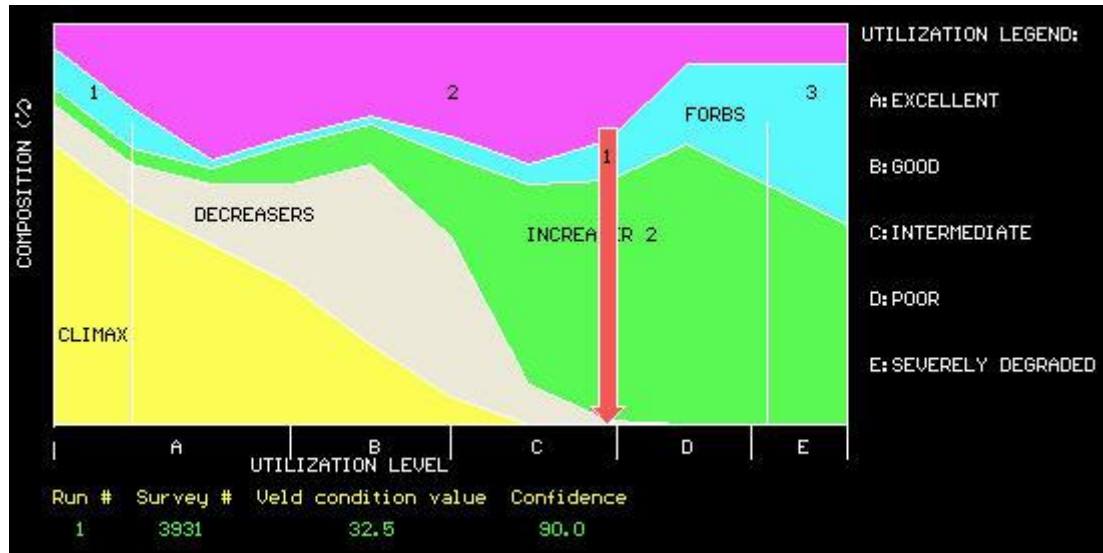


GOOGLE IMAGE OF THE SITE
30° 50' 22.3"
24° 20' 02.0"

AREA	De Bad - Soventix	 06/01/2017
AREA NUMBER	H020	
SITE NUMBER	Site 16	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Sandstone - Mispah	
DATE VISITED	06/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	4 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Aristida diffusa</i> (Iron Grass) – 27% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 24% • <i>Oropetium capense</i> (Dwarf Grass) – 8% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	8.7 cm = Medium	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	Kapokbos (50%) & Doringvygie (50%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	11 species = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	204.97	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	17.42 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



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LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science.* Pp 337-340.

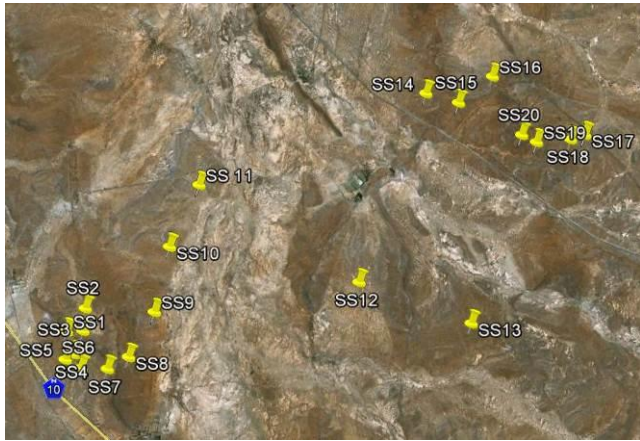
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



Reg. nr: CK98/46100/23
Sole member: S.F. de Wet


VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

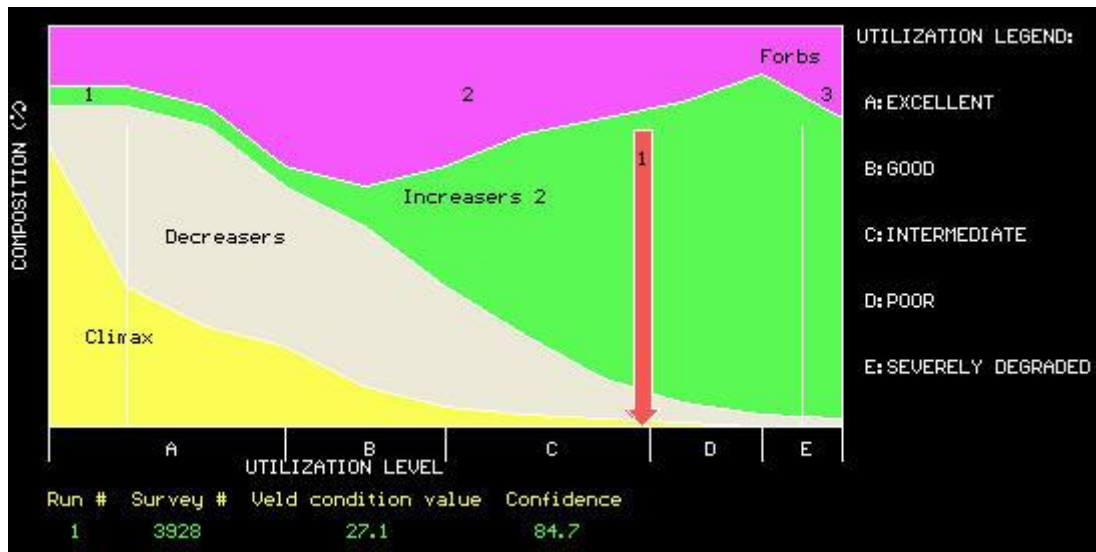


GOOGLE IMAGE OF THE SITE
30° 53' 07.6"
24° 19' 36.3"

AREA	De Bad - Soventix	 05/01/2017
AREA NUMBER	H070	
SITE NUMBER	Site 13	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Mispah	
DATE VISITED	05/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	4 species (7 incl. <1% species) = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 32% • <i>Eragrostis obtusa</i> (Dew Grass) – 12% • <i>Melica decumbens</i> (Dronkgras) – 6% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	10.2 cm = High	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	'Doringkapok (80%) & Doringvygie (20%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	14 species (20 incl. <1% species) = Low (Medium)	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	187.36	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	19.05 ha/LSU	

MANAGEMENT RECOMMENDATION

- APPLY ROTATIONAL REST ONCE EVERY FOUR YEARS AND APPLY STOCKING RATES THAT CORRESPOND WITH CURRENT GRAZING CAPACITY.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

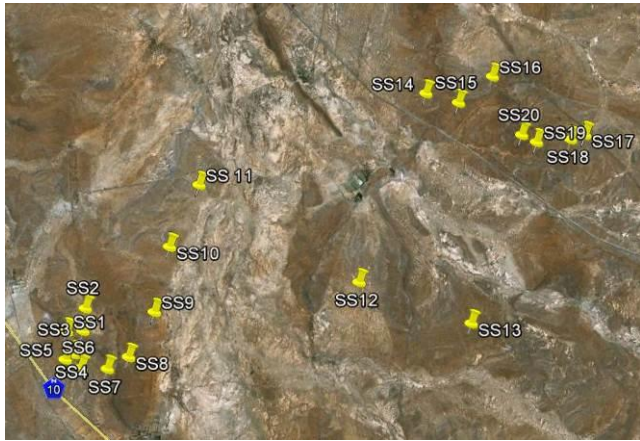
LITERATURE

- BOSCH, O. J. H. and GAUGH, H. 1991.** The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.
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Reg. nr: CK98/46100/23
Sole member: S.F. de Wet


VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

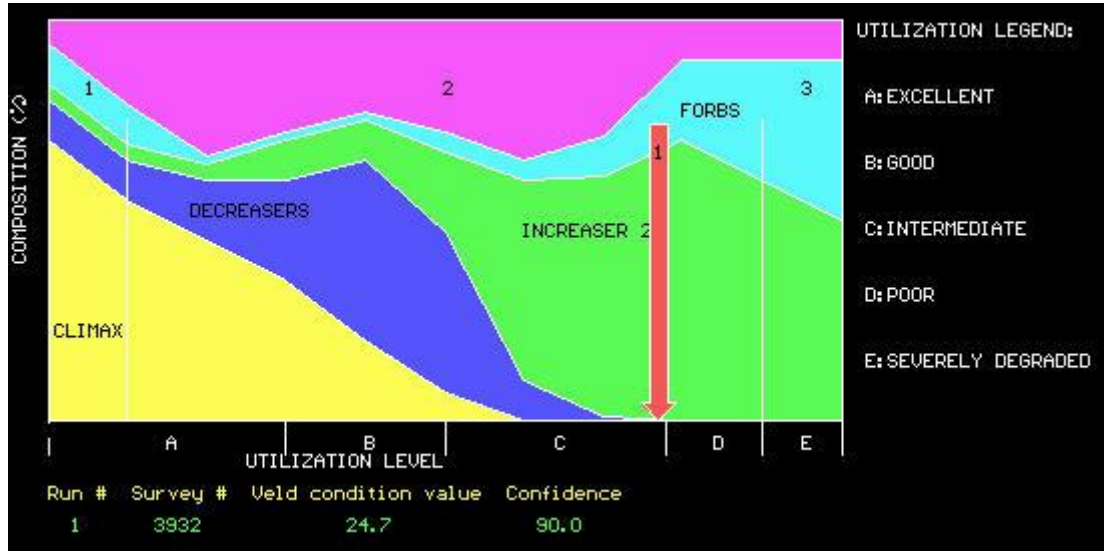


GOOGLE IMAGE OF THE SITE
30° 51' 03.8"
24° 21' 11.6"

AREA	De Bad - Soentix	 <p>06/01/2017</p>
AREA NUMBER	H013	
SITE NUMBER	Site 17	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Sandstone - Mispah	
DATE VISITED	06/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	6 species (8 incl. <1% species) = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Oropetium capense</i> (Dwarf Grass) – 28% • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 25% • <i>Eragrostis obtusa</i> (Dew Grass) – 7% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	6.3 cm = Medium	
VEGETATION CROWN COVER (% Soil covered)	11- 20%	
DOMINANT BOSSIE SPECIES (contributing to above)	Kapokbos (90%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	13 species (18 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	155.46	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	22.96 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



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LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

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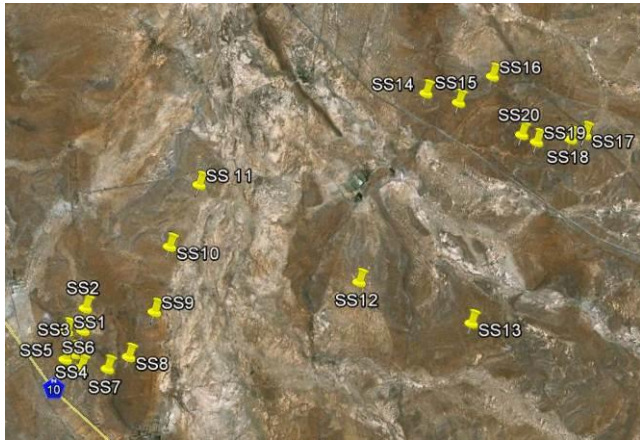
MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

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Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

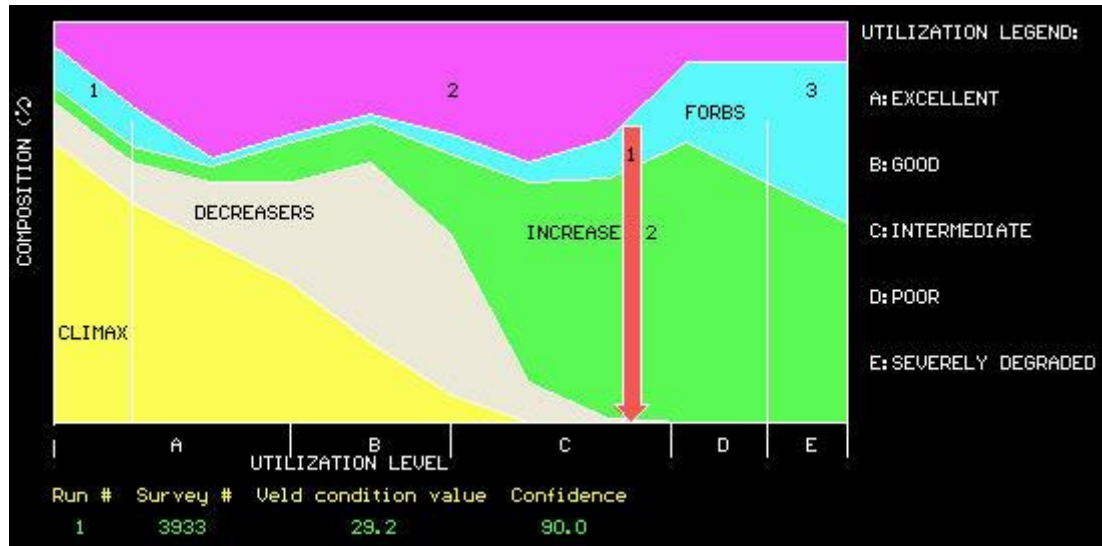


GOOGLE IMAGE OF THE SITE
30° 51' 07.0"
24° 21' 00.8"

AREA	De Bad - Soventix	<p style="text-align: center;">06/01/2017</p>
AREA NUMBER	H011	
SITE NUMBER	Site 18	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Sandstone - Mispah	
DATE VISITED	06/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	7 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 39% • <i>Eragrostis obtusa</i> (Dew Grass) – 17% • <i>Stipagrostis cf. obtusa</i> (Small Bushman Grass) – 5% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	6.1 cm = Medium	
VEGETATION CROWN COVER (% Soil covered)	21- 30%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringkapok (80%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	14 species (16 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	184.97	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	19.30 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



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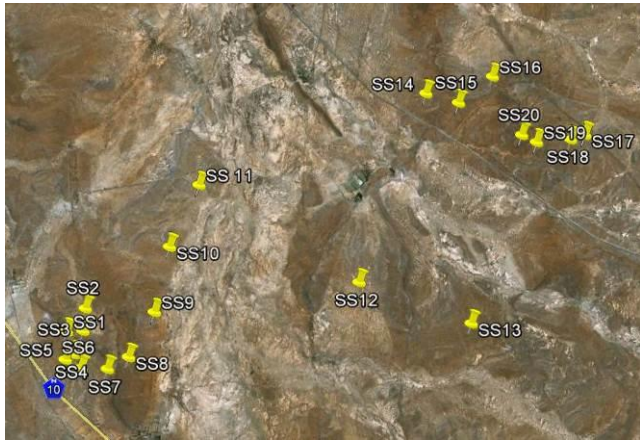
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Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)



GOOGLE IMAGE OF THE FOCUS AREA

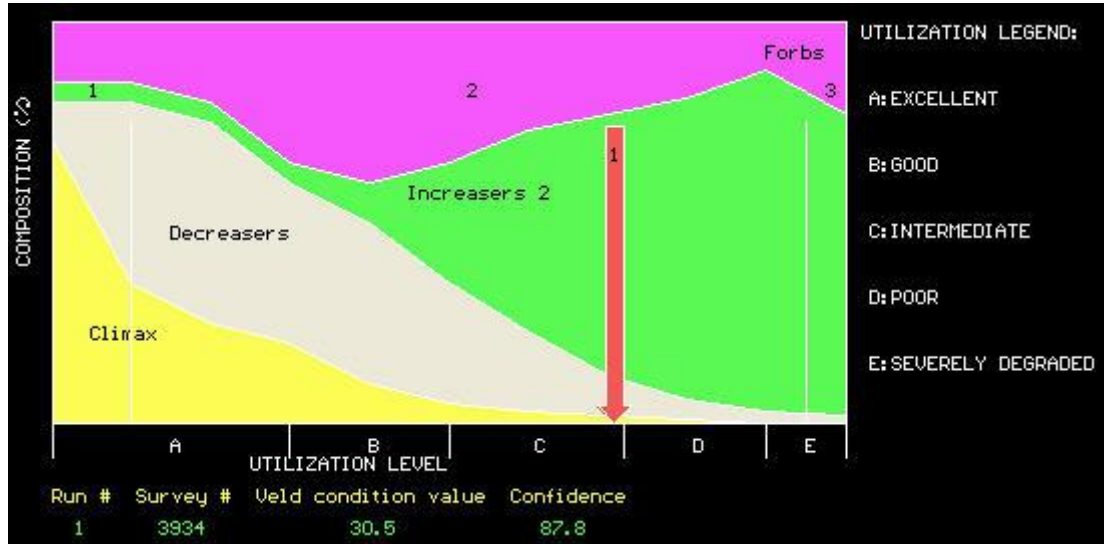


GOOGLE IMAGE OF THE SITE
30° 51' 07.8"
24° 20' 33.5"

AREA	De Bad - Soventix	<p style="text-align: center;">06/01/2017</p>
AREA NUMBER	H007	
SITE NUMBER	Site 19	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Swartland	
DATE VISITED	06/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	9 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Tragus koelerioides</i> (Creeping Carrot-seed Grass) – 18% • <i>Oropetium capense</i> (Dwarf Grass) – 13% • <i>Stipagrostis cf. obtusa</i> (Small Bushman Grass) – 11% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	10.0 cm = Medium	
VEGETATION CROWN COVER (% Soil covered)	31 - 50%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringkapok (50%) & Kapokbos (50%)	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	17 species (18 incl. <1% species) = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	199.61	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	17.88 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. *Tydskrif Weidingsveren. S. Afr.* (1991), 8. (4). Pp 138-146.

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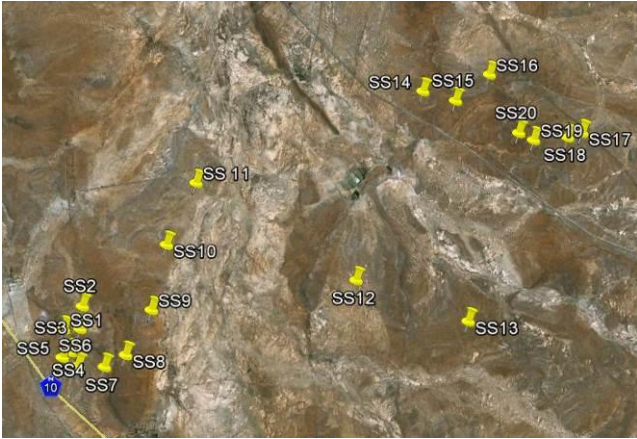


MUCINA, L. & RUTHERFORD, M.C., 2006. The Vegetation of South Africa, Lesotho and Swaziland. Tien Wah Press, Singapore. 807 pp.

TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.



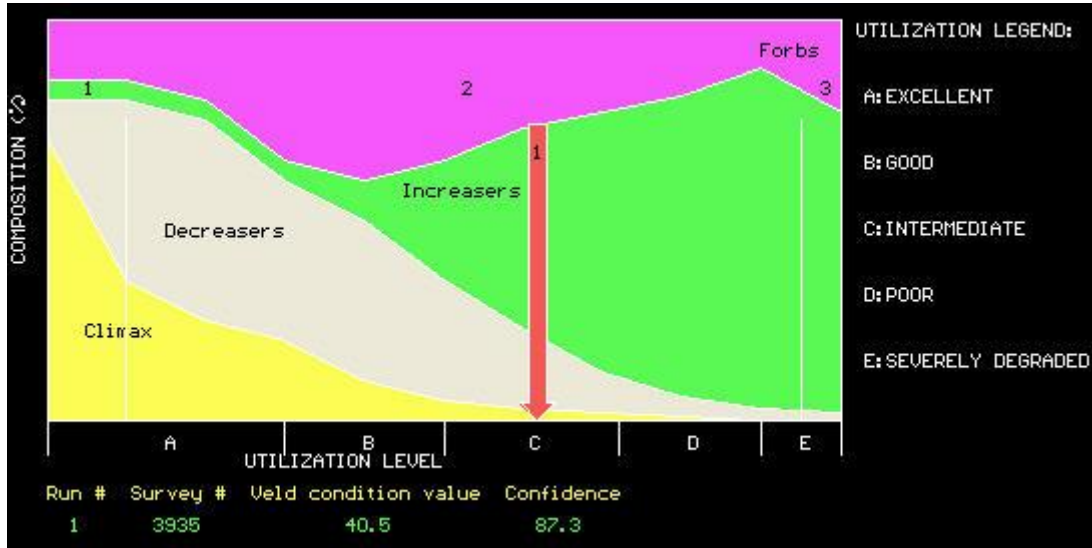
Reg. nr: CK98/46100/23
Sole member: S.F. de Wet

VELD CONDITION ASSESSMENT SITE REPORT – 2017 (SEE ATTACHED TABLE)

 <p>GOOGLE IMAGE OF THE FOCUS AREA</p>	 <p>GOOGLE IMAGE OF THE SITE 30° 51' 02.7" 24° 20' 22.7"</p>	
AREA	De Bad - Soventix	 <p>06/01/2017</p>
AREA NUMBER	H006	
SITE NUMBER	Site 20	
VELD TYPE – MUCINA & RUTHERFORD	Nku 4 - Eastern Upper Karoo	
GEOLOGY AND SOIL FORM	Siltstone / Shale - Valsrivier	
DATE VISITED	06/01/2017	
GRASS SPECIES RICHNESS ((Number of grass species per 100 m²): High is = >15 spp, Low < 10 species)	7 species = Low	
DOMINANT GRASS SPECIES (FREQUENCY ABUNDANCE)	<ul style="list-style-type: none"> • <i>Eragrostis lehmanniana</i> (Lehmann's Love Grass) – 14% • <i>Stipagrostis cf. obtusa</i> (Small Bushman Grass) – 11% • <i>Oropetium capense</i> (Dwarf Grass) – 10% 	
AVERAGE GRASS TUFT DISTANCE (Soil erosion potential: Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	12.3 cm = High	
VEGETATION CROWN COVER (% Soil covered)	31- 50%	
DOMINANT BOSSIE SPECIES (contributing to above)	Doringvygie	
PLANT SPECIES RICHNESS ((Number of bossies and grass species per 100 m²) High is = >60 spp, Low < 20 species)	15 species = Low	
VELD CONDITION (according to Tainton, 1988)	Intermediate	
VELD CONDITION TREND	This is baseline data, no trend can be established yet.	
VELD CONDITION INDEX TOTAL	238.01	
GRAZING CAPACITY in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14)	15.00 ha/LSU	

MANAGEMENT RECOMMENDATION

- STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.



ISPD FIGURE – POSITION OF RED VERTICAL ARROW ILLUSTRATES THE CONDITION ON A DEGRADATION AXIS AND THE DIRECTION OF THE TREND CAN BE OBSERVED FROM FOLLOWING THE ORDER OF THE ASSESSMENTS (i.e. Run 1 = Year 1, Run 2 = Year 2 etc.). THIS IS BASELINE DATA, NOT TREND CAN BE ESTABLISHED YET.

LITERATURE

BOSCH, O. J. H. and GAUGH, H. 1991. The use of degradation gradients for the assessment and ecological interpretation of range condition. Tydskrif Weidingsveren. S. Afr. (1991), 8. (4). Pp 138-146.

DU TOIT, P. C. V. 1993. A model to estimate grazing index values for Karoo plants. *South African Journal of Science*. Pp 337-340.

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TAINTON, N.M. 1988. Veld and Pasture Management in South Africa. Shuter & Shooter, Pietermaritzburg. 481 pp.

APPENDIX C
Tables

Table 1.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (Convex)
							Siltstone / Shale
H107 - SITE 1							SITE 1
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							4.9
CO-ORDINATES: South							30° 53' 05.3"
East							24° 14' 26.9"
DIRECTION OF TRANSECT							120°
HEIGHT ABOVE SEA LEVEL (m)							1335m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					17
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				24
<i>Pentameris montana</i>	1.5				*		1
<i>Stipagrostis obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					4
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			23
Bare Ground							0
TOTAL (Increaser II category):							69
SHRUBS (BOSSIES)							
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				**
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				3
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					3
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				8
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		1
<i>Pentzia incana</i> Ankerkaroo	2.88	***					16
TOTAL (Shrubs / Bossies):							31
TOTAL							100

** Less than 1% of species recorded at site

Table 1.2: Trends in grass and shrub species composition, from Table 1.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (Convex)
		SITE 1
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		69
Unidentified species (%)		0
Bare Ground (%)		0
Shrubs /Bossies (%)		31
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently

Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies

Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 1.3: Summary.

SUMMARY		MIDSLOPE (Convex)
		SITE 1
		ISPD 3916
		January 2017
Tuft distance (cm)		4.9
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		Low
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		5
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		10 (11)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		21 - 30%
Dominant species contributing to crown cover (%)		Ankerkaroo (60%) & Doringkapok (20%)
Veld Condition Index Total		186.31
[Benchmark (=500)]/ (Veld Condition Index Total)		2.68
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.05 LSU/ha or 19.16 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		29.0
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		New distribution record at SANBI for <i>Pentameris montana</i> .
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 2.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							PAN ECOTONE
							Siltstone / Shale
H112 - SITE 2							SITE 2
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							28.2
CO-ORDINATES: South							30° 52' 50.8"
East							24° 14' 41.5"
DIRECTION OF TRANSECT							110°
HEIGHT ABOVE SEA LEVEL (m)							1333m
SOIL FORM (Macvicar, 1991)							Swartland
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Cynodon hirsutus</i>	1.5				**		2
<i>Eragrostis chloromelas</i> Narrow Curly Leaf	3.26	***					2
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					1
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				1
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					1
Bare Ground							52
TOTAL (Increaser II category):							59
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				**
<i>Berkheya spinosa</i> Vlakedissel	0.68	***					**
<i>Lycium cinereum</i> Kriedoring	1.63		**				1
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		**
<i>Pentzia incana</i> Ankerkaro	2.88	***					35
<i>Phymaspermum parvifolium</i> Wittheuningkaro	3.38	****					1
<i>Rosenia humilis</i> Perdekaroo	1.77		**				**
<i>Salsola tuberculata</i> Blomkoolganna	3.5	***					4
TOTAL (Shrubs / Bossies):							41
TOTAL							100

** Less than 1% of species recorded at site

Table 2.2: Trends in grass and shrub species composition, from Table 2.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		PAN ECOTONE
		SITE 2
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		7
Unidentified species (%)		0
Bare Ground (%)		52
Shrubs /Bossies (%)		41
Total (%)		100
Veld Condition (Tainton's Method)		POOR

Legend: **Decreaser species** - Grass and herbaceous species which **decrease** when veld is **over-utilized or burned too frequently**
Increaser I species - Grass and herbaceous species which **increase** when veld is **under-utilized or not burned in high enough frequencies**
Increaser II species - Grass and herbaceous species which **increase** when veld is **over-utilized or burned in too high frequencies**

Table 2.3: Summary.

SUMMARY		PAN ECOTONE
		SITE 2
		ISPD 3917
		January 2017
Tuft distance (cm)		28.2
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		5
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		9 (13)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		11 - 20%
Dominant species contributing to crown cover (%)		Ankerkaro (95%)
Veld Condition Index Total		136.50
[Benchmark (=500)]/ (Veld Condition Index Total)		3.66
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.04 LSU/ha or 26.15 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		26.5
ISPD Veld Condition Assessment		POOR
Notes		Bare Ground dominant - grass almost absent.
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 3.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							CREST
H110 - SITE 3							Dolerite
							SITE 3
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							12.9
CO-ORDINATES: South							30° 53' 06.7"
East							24° 14' 36.4"
DIRECTION OF TRANSECT							110°
HEIGHT ABOVE SEA LEVEL (m)							1340m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
<i>Eragrostis curvula</i> Weeping Love Grass / Oulandsgras	3.47	****					1
TOTAL (Increaser I category):							1
INCREASERS II							
<i>Aristida adscensionis</i> Eenjarige Steekgras	1.08	***		*			2
<i>Aristida diffusa</i> Iron Grass	3.18	***					17
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					2
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					4
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				14
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					1
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			12
Bare Ground							13
TOTAL (Increaser II category):							65
SHRUBS (BOSSIES)							
<i>Aloe sp.</i> Aloe	1.5			**			**
Unidentified species (Bossie 3)	1.5		**				1
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				16
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					12
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				2
<i>Pentzia incana</i> Ankerkaro	2.88	***					1
<i>Phymaspermum parvifolium</i> Witheuningkaro	3.38	****					2
TOTAL (Shrubs / Bossies):							34
TOTAL							100

** Less than 1% of species recorded at site

Table 3.2: Trends in grass and shrub species composition, from Table 3.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		CREST
		SITE 3
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		1
Increaser II species (%)		52
Unidentified species (%)		0
Bare Ground (%)		13
Shrubs / Bossies (%)		34
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: **Decreaser species** - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 3.3: Summary.

SUMMARY		CREST
		SITE 3
		ISPD 3918
		January 2017
Tuft distance (cm)		12.9
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		8
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		14 (15)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		11 - 20%
Dominant species contributing to crown cover (%)		Doringvygie (60%) & Kapokbossie (40%)
Veld Condition Index Total		174.32
[Benchmark (=500)] / (Veld Condition Index Total)		2.87
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.05 LSU/ha or 20.48 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		29.2
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 4.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MID-SLOPE (CONCAVE)
H106 - SITE 4							Sandstone
							SITE 4
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							14.4
CO-ORDINATES: South							30° 53' 20.1"
East							24° 14' 30.5"
DIRECTION OF TRANSECT							100°
HEIGHT ABOVE SEA LEVEL (m)							1331m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					3
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				54
<i>Pentameris montana</i>	1.5				*		1
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					2
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			2
Bare Ground							24
TOTAL (Increaser II category):							86
SHRUBS (BOSSIES)							
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				1
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					3
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				3
Unidentified species ("Impala Lelie")	1.5			**			3
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		1
<i>Pentzia incana</i> Ankerkaro	2.88	***					2
<i>Phymaspermum parvifolium</i> Witheuningkaro	3.38	****					1
TOTAL (Shrubs / Bossies):							14
TOTAL							100

* Less than 1% of species recorded at site

Table 4.2: Trends in grass and shrub species composition, from Table 4.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MID-SLOPE (CONCAVE)
		SITE 4
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		62
Unidentified species (%)		0
Bare Ground (%)		24
Shrubs /Bossies (%)		14
Total (%)		100
Veld Condition (Tainton's Method)		POOR

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently

Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies

Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 4.3: Summary.

SUMMARY		MID-SLOPE (CONCAVE)
		SITE 4
		ISPD 3919
		January 2017
Tuft distance (cm)		14.4
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		5
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		12
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		0 - 10%
Dominant species contributing to crown cover (%)		Doringkapok (50%) & Kapokbosse (50%)
Veld Condition Index Total		105.60
[Benchmark (=500)] / (Veld Condition Index Total)		4.73
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.03 LSU/ha or 33.81 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		14.7
ISPD Veld Condition Assessment		POOR
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES

Table 5.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONCAVE)
							Siltstone / Shale
H105 - SITE 5							SITE 5
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							24.3
CO-ORDINATES: South							30° 53' 23.9"
East							24° 14' 25.4"
DIRECTION OF TRANSECT							335°
HEIGHT ABOVE SEA LEVEL (m)							1333m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				18
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			2
Bare Ground							54
TOTAL (Increaser II category):							74
SHRUBS (BOSSIES)							
<i>Berkheya spinosa</i> Viaktedissel	0.68	***					**
Unidentified species (Bossie 3)	1.5		**				1
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				4
<i>Erioccephalus spinescens</i> Doringkapok	2.12		**				13
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		5
<i>Pentzia incana</i> Ankerkaroo	2.88	***					2
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****					1
TOTAL (Shrubs / Bossies):							26
TOTAL							100

* Less than 1% of species recorded at site

Table 5.2: Trends in grass and shrub species composition, from Table 5.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONCAVE)
		SITE 5
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		20
Unidentified species (%)		0
Bare Ground (%)		54
Shrubs /Bossies (%)		26
Total (%)		100
Veld Condition (Tainton's Method)		POOR

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently

Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies

Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 5.3: Summary.

SUMMARY		MIDSLOPE (CONCAVE)
		SITE 5
		ISPD 3920
		January 2017
Tuft distance (cm)		24.3
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		2
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		8 (9)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		11 - 20%
Dominant species contributing to crown cover (%)		Doringkapok (90%)
Veld Condition Index Total		66.38
[Benchmark (=500)]/ (Veld Condition Index Total)		7.53
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.02 LSU/ha or 53.78 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		15.6
ISPD Veld Condition Assessment		POOR
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 6.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONCAVE)
							Siltstone / Shale
H104 - SITE 6							SITE 6
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							11.2
CO-ORDINATES: South							30° 53' 29.2"
East							24° 14' 37.3"
DIRECTION OF TRANSECT							315°
HEIGHT ABOVE SEA LEVEL (m)							1334m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					2
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					10
<i>Eragrostis</i> sp. <i>Eragrostis</i>	1.5		**				1
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				40
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					1
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			3
Bare Ground							10
TOTAL (Increaser II category):							67
SHRUBS (BOSSIES)							
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				12
<i>Erioccephalus ericoides</i> Kapokbos	2.43	***					1
<i>Erioccephalus spinescens</i> Doringkapok	2.12		**				11
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		1
<i>Pentzia incana</i> Ankerkaroo	2.88	***					7
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					1
TOTAL (Shrubs / Bossies):							33
TOTAL							100

* Less than 1% of species recorded at site

Table 6.2: Trends in grass and shrub species composition, from Table 6.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONCAVE)
		SITE 6
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		57
Unidentified species (%)		0
Bare Ground (%)		10
Shrubs /Bossies (%)		33
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: *Decreaser species* - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently

Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies

Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 6.3: Summary.

SUMMARY		MIDSLOPE (CONCAVE)
		SITE 6
		ISPD 3921
		January 2017
Tuft distance (cm)		11.2
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		6
Grass Species Richness (High is =>15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		12
Plant Species Richness (High is =>60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		31 - 50%
Dominant species contributing to crown cover (%)		Doringkapok (50%) & Doringvygie (50%)
Veld Condition Index Total		153.21
[Benchmark (=500)]/ (Veld Condition Index Total)		3.26
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.04 LSU/ha or 23.30 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		23.6
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES

Table 7.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H099 - SITE 7							MIDSLOPE (CONVEX)
							Siltstone / Shale
							SITE 7
							Excl. Sedges & Forbs
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							4.6
CO-ORDINATES: South							30° 53' 30.6"
East							24° 14' 57.7"
DIRECTION OF TRANSECT							280°
HEIGHT ABOVE SEA LEVEL (m)							1331m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASES I							
No Increase I species recorded							0
TOTAL (Increase I category):							0
INCREASES II							
<i>Aristida diffusa</i> Iron Grass	3.18	***					1
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					20
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				48
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					1
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			2
Bare Ground							1
TOTAL (Increase II category):							73
SHRUBS (BOSSIES)							
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				**
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				**
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					1
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				4
<i>Lycium cinereum</i> Kriedoring	1.63		**				1
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		**
<i>Pentzia incana</i> Ankerkaroo	2.88	***					19
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					2
<i>Berkheya spinosa</i> Vlakterdissel	0.68	***					**
TOTAL (Shrubs / Bossies):							27
TOTAL							100

** Less than 1% of species recorded at site

Table 7.2: Trends in grass and shrub species composition, from Table 7.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 7
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increase I species (%)		0
Increase II species (%)		72
Unidentified species (%)		0
Bare Ground (%)		1
Shrubs / Bossies (%)		27
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: **Decreaser species** - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
Increase I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
Increase II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 7.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 7
		ISPD 3922
		January 2017
Tuft distance (cm)		4.6
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		Low
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		5
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		10 (14)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		11 - 20%
Dominant species contributing to crown cover (%)		Ankerkaroo (30%) & Doringkapok (40%)
Veld Condition Index Total		195.66
[Benchmark (=500)]/ (Veld Condition Index Total)		2.56
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.05 LSU/ha or 18.25 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		32.7
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 8.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H121 - SITE 8							MIDSLOPE (CONVEX)
							Dolerite
							SITE 8
							Excl. Sedges & Forbs January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							2.8
CO-ORDINATES: South							30° 53' 23.3"
East							24° 15' 13.8"
DIRECTION OF TRANSECT							70°
HEIGHT ABOVE SEA LEVEL (m)							1321m
SOIL FORM (Macvicar, 1991)							Hutton
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Aristida diffusa</i> Iron Grass	3.18	***					6
<i>Eragrostis</i> sp. Eragrostis	1.5		**				1
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				75
<i>Pentameris montana</i>	1.5				*		4
Bare Ground							0
TOTAL (Increaser II category):							86
SHRUBS (BOSSIES)							
Unidentified species (Bossie 4)							1
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				1
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					1
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				3
<i>Lycium cinereum</i> Kriedoring	1.63		**				**
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		**
<i>Pentzia incana</i> Ankerkaroo	2.88	***					5
<i>Pterothrix spinescens</i> Voeltjie-kan-nie-sit-nie	1.31		**				3
TOTAL (Shrubs / Bossies):							14
TOTAL							100

** Less than 1% of species recorded at site

Table 8.2: Trends in grass and shrub species composition, from Table 8.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 8
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)	0	
Increaser I species (%)	0	
Increaser II species (%)	86	
Unidentified species (%)	0	
Bare Ground (%)	0	
Shrubs / Bossies (%)	14	
Total (%)	100	
Veld Condition (Tainton's Method)	INTERMEDIATE	

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
 Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
 Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 8.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 8
		ISPD 3923
		January 2017
Tuft distance (cm)	2.8	
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	Low	
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)	4	
Grass Species Richness (High is = >15 spp, Low< 10 species)	Low	
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)	10 (12)	
Plant Species Richness (High is = >60 spp, Low< 20 species)	Low	
Vegetation cover (% soil covered)	11 - 20%	
Dominant species contributing to crown cover (%)	Ankerkaroo, Voeltjie-kan-nie-sit-nie, Doringkapok and Doringvygie (each 25%) & Doringkapok (10%)	
Veld Condition Index Total	135.24	
[Benchmark (=500)]/ (Veld Condition Index Total)	3.70	
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)	0.03 LSU/hectare/ year	
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/NCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha	0.04 LSU/ha or 26.40 ha/LSU	
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%	16.3	
ISPD Veld Condition Assessment	POOR	
Notes		
Management Recommendation	STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.	

Table 9.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONCAVE)
H119 - SITE 9							Sandstone
							SITE 9
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							20.5
CO-ORDINATES: South							30° 52' 54.2"
East							24° 15' 33.6"
DIRECTION OF TRANSECT							250°
HEIGHT ABOVE SEA LEVEL (m)							1310m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASES I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASES II							
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					1
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					13
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				7
<i>Pentameris montana</i>	1.5				*		1
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					2
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			2
Bare Ground							28
TOTAL (Increaser II category):							54
SHRUBS (BOSSIES)							
<i>Berkheya spinosa</i> Vlaktedissel	0.68	***					2
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				1
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				11
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					5
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				9
<i>Lycium cinereum</i> Kriedoring	1.63		**				1
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		5
<i>Pentzia incana</i> Ankerkaroo	2.88	***					11
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					1
TOTAL (Shrubs / Bossies):							46
TOTAL							100

** Less than 1% of species recorded at site

Table 9.2: Trends in grass and shrub species composition, from Table 9.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONCAVE)
		SITE 9
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		26
Unidentified species (%)		0
Bare Ground (%)		28
Shrubs /Bossies (%)		46
Total (%)		100
Veld Condition (Tainton's Method)		POOR

Legend: **Decreaser species** - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 9.3: Summary.

SUMMARY		MIDSLOPE (CONCAVE)
		SITE 9
		ISPD 3924
		January 2017
Tuft distance (cm)		20.5
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		6
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		15
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		31- 50%
Dominant species contributing to crown cover (%)		Ankerkaroo (10%), Doringvygie (60%) & Doringkapok (30%)
Veld Condition Index Total		147.43
[Benchmark (=500)]/ (Veld Condition Index Total)		3.39
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.04 LSU/ha or 24.22 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		25.8
ISPD Veld Condition Assessment		POOR
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 10.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H086 - SITE 10							MIDSLOPE (CONCAVE)
							Siltstone / Shale
							SITE 10
							Excl. Sedges & Forbs January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							20.9
CO-ORDINATES: South							30° 52' 11.5"
East							24° 15' 46.1"
DIRECTION OF TRANSECT							230°
HEIGHT ABOVE SEA LEVEL (m)							1306m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded						0	
TOTAL (Decreaser category):						0	
INCREASES I							
No Increase I species recorded						0	
TOTAL (Increase I category):						0	
INCREASES II							
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***				2	
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**			12	
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****				2	
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**		15	
Bare Ground						41	
TOTAL (Increase II category):						72	
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**			**	
<i>Berkheya spinosa</i> Vlakedissel	0.68	***				3	
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**			1	
<i>Erioccephalus ericoides</i> Kapokbos	2.43	***				2	
<i>Erioccephalus spinescens</i> Doringkapok	2.12		**			6	
<i>Lycium cinereum</i> Kriedoring	1.63		**			1	
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*	**	
<i>Pentzia incana</i> Ankerkaroo	2.88	***				11	
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****				2	
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****				2	
TOTAL (Shrubs / Bossies):						28	
TOTAL						100	

** Less than 1% of species recorded at site

Table 10.2: Trends in grass and shrub species composition, from Table 10.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONCAVE)
		SITE 10
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)	0	
Increase I species (%)	0	
Increase II species (%)	31	
Unidentified species (%)	0	
Bare Ground (%)	41	
Shrubs / Bossies (%)	28	
Total (%)	100	
Veld Condition (Tainton's Method)		POOR

Legend: **Decreaser species** - Grass and herbaceous species which **decrease** when veld is **over-utilized or burned too frequently**
Increase I species - Grass and herbaceous species which **increase** when veld is **under-utilized or not burned in high enough frequencies**
Increase II species - Grass and herbaceous species which **increase** when veld is **over-utilized or burned in too high frequencies**

Table 10.3: Summary.

SUMMARY		MIDSLOPE (CONCAVE)
		SITE 10
		ISPD 3925
		January 2017
Tuft distance (cm)	20.9	
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	High	
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)	4	
Grass Species Richness (High is = >15 spp, Low< 10 species)	Low	
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)	12 (14)	
Plant Species Richness (High is = >60 spp, Low< 20 species)	Low	
Vegetation cover (% soil covered)	11- 20%	
Dominant species contributing to crown cover (%)	Ankerkaroo (30%) & Doringkapok (60%)	
Veld Condition Index Total	107.15	
[Benchmark (=500)]/ (Veld Condition Index Total)	4.67	
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)	0.03 LSU/hectare/ year	
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha	0.03 LSU/ha or 33.32 ha/LSU	
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%	22.8	
ISPD Veld Condition Assessment	POOR	
Notes		
Management Recommendation	STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.	

Table 11.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONVEX)
H080 - SITE 11							Siltstone / Shale
							SITE 11
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							21.2
CO-ORDINATES: South							30° 51' 30.6"
East							24° 16' 09.9"
DIRECTION OF TRANSECT							160°
HEIGHT ABOVE SEA LEVEL (m)							1303m
SOIL FORM (Macvicar, 1991)							Swartland
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
<i>Sporobolus limbratus</i> Bushveld Dropseed / Bosveldfynsaadgras	7.03	****					**
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Cynodon sp.</i>	1.5				***		6
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					17
<i>Melica decumbens</i> Dronkgras	3.1					*	1
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				1
Bare Ground							29
TOTAL (Increaser II category):							54
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				4
<i>Berkheya spinosa</i> Vlaktedissel	0.68	***					**
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				1
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				5
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				1
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					1
<i>Pentzia incana</i> Ankerkaro	2.88	****					14
<i>Phymaspermum parvifolium</i> Witheuningkaro	3.38	****					2
<i>Rosenia humilis</i> Perdekaro	1.77		**				1
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					7
Unidentified (Honderdpoortbossie)	1.5		**				8
Unidentified (Vygie species)	1.5			*			2
TOTAL (Shrubs / Bossies):							46
TOTAL							100

** Less than 1% of species recorded at site

Table 11.2: Trends in grass and shrub species composition, from Table 11.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 11
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		25
Unidentified species (%)		0
Bare Ground (%)		29
Shrubs /Bossies (%)		46
Total (%)		100
Veld Condition (Tainton's Method)		POOR

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
 Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
 Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 11.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 11
		ISPD 3926
		January 2017
Tuft distance (cm)		21.2
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		4 (5)
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		15 (17)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		21- 30%
Dominant species contributing to crown cover (%)		Honderdpoortbossie' (50%), Katdoring (30%), Doringvygie (10%) & Blomkool Ganna (10%)
Veld Condition Index Total		168.67
[Benchmark (=500)]/ (Veld Condition Index Total)		2.96
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.05 LSU/ha or 21.17 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		31.6
ISPD Veld Condition Assessment		POOR
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 12.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONCAVE)
							Siltstone / Shale
H049 - SITE 12							SITE 12
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							18.2
CO-ORDINATES: South							30° 52' 39.1"
East							24° 18' 11.9"
DIRECTION OF TRANSECT							213°
HEIGHT ABOVE SEA LEVEL (m)							1321m
SOIL FORM (Macvicar, 1991)							Gamoep
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Eragrostis bicolor</i> Speckled Vlei Grass	2				**		1
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					1
<i>cf. Eragrostis rigidior</i> Curly Leaf / Krulblaar	2	***					3
<i>Melica decumbens</i> Dronkgras	3.1					*	27
<i>Melinis repens</i> Natal Red Top / Natal-rooipuum	1.92	***					2
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					7
Bare Ground							17
TOTAL (Increaser II category):							58
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				4
<i>Berkheya spinosa</i> Vlakedissel	0.68	***					1
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				3
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				3
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					6
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				3
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					1
<i>Pentzia incana</i> Ankerkaroo	2.88	***					7
<i>Phaeoptilum spinosum</i> Brosdoring	1.5	***					2
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****					5
<i>Rosenia humilis</i> Perdekaroo	1.77		**				3
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					4
TOTAL (Shrubs / Bossies):							42
TOTAL							100

** Less than 1% of species recorded at site

Table 12.2: Trends in grass and shrub species composition, from Table 12.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONCAVE)
		SITE 12
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		41
Unidentified species (%)		0
Bare Ground (%)		17
Shrubs /Bossies (%)		42
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE-POOR

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
 Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
 Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 12.3: Summary.

SUMMARY		MIDSLOPE (CONCAVE)
		SITE 12
		ISPD 3927
		January 2017
Tuft distance (cm)		18.2
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		6
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		18
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		21-30%
Dominant species contributing to crown cover (%)		Ankerkaroo (50%), Doringkapok (30%) & Doringvygie (10%)
Veld Condition Index Total		217.29
[Benchmark (=500)]/ (Veld Condition Index Total)		2.30
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.06 LSU/ha or 16.43 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		27.1
ISPD Veld Condition Assessment		INTERMEDIATE-POOR
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 13.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MID-SLOPE (CONVEX)
H070 - SITE 13							Siltstone / Shale
							SITE 13
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							10.2
CO-ORDINATES: South							30° 53' 07.6"
East							24° 19' 36.3"
DIRECTION OF TRANSECT							265°
HEIGHT ABOVE SEA LEVEL (m)							1336m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)							
Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic		
DECREASERS							
<i>Sporobolus fimbriatus</i> Bushveld Dropseed / Bosveldfynsaadgras							7.03 ****
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass							3.24 ***
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras							2.94 ***
<i>Melica decumbens</i> Dronkgras							3.1
<i>Oropetium capense</i> Dwarf Grass / Haasgras							1.04 **
<i>Pentameris montana</i>							1.5 *
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass							0.84 **
Bare Ground							9
TOTAL (Increaser II category):							61
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring							0.9 **
<i>Chrysocoma ciliata</i> Bitterbos							1.12 **
<i>Eberlanzia ferox</i> Doringvygie							1.54 **
<i>Eriocephalus ericoides</i> Kapokbos							2.43 ***
<i>Euryops asparagoides</i> Buldraibos							1.51 *
<i>Hirpicium alienatum</i> Haarbossie							3.16 ****
<i>Lycium cinereum</i> Kriedoring							1.63 **
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp							0.5 *
<i>Pentzia incana</i> Ankerkaro							2.88 ***
<i>Phymaspermum parvifolium</i> Witheuningkaro							3.38 ****
<i>Pterothrix spinescens</i> Voeltjie-kan-nie-sit-nie							1.31 **
<i>Salsola tuberculata</i> Blomkool Ganna							3.5 ****
Unidentified Bossie							1.5 **
TOTAL (Shrubs / Bossies):							39
TOTAL							100

** Less than 1% of species recorded at site

Table 13.2: Trends in grass and shrub species composition, from Table 13.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MID-SLOPE (CONVEX)
		SITE 13
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		52
Unidentified species (%)		0
Bare Ground (%)		9
Shrubs/Bossies (%)		39
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: *Decreaser species* - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 13.3: Summary.

SUMMARY		MID-SLOPE (CONVEX)
		SITE 13
		ISPD 3928
		January 2017
Tuft distance (cm)		10.2
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		4 (7)
Grass Species Richness (High is = >15 spp, Low < 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		14 (20)
Plant Species Richness (High is = >60 spp, Low < 20 species)		Low (Medium)
Vegetation cover (% soil covered)		21-30%
Dominant species contributing to crown cover (%)		Doringkapok (80%) & Doringvygie (20%)
Veld Condition Index Total		187.36
[Benchmark (=500)]/ (Veld Condition Index Total)		2.67
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.05 LSU/ha or 19.05 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		27.1
ISPD Veld Condition Assessment		INTERMEDIATE
Notes	This camp was previously used as a donkey camp (overgrazed).	
Management Recommendation	STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.	

Table 14.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H032 - SITE 14							MIDSLOPE (CONVEX)
							Dolerite
							SITE 14
							Excl. Sedges & Forbs January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							7.9
CO-ORDINATES: South							30° 50' 32.4"
East							24° 19' 09.9"
DIRECTION OF TRANSECT							240°
HEIGHT ABOVE SEA LEVEL (m)							1318m
SOIL FORM (Macvicar, 1991)							Glenrosa
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					7
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				49
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					3
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			1
Bare Ground							4
TOTAL (Increaser II category):							64
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				1
<i>Berkheya spinosa</i> Vlakedissel	0.68	***					**
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				4
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				6
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					14
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					1
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		1
<i>Pentzia incana</i> Ankerkaro	2.88	***					1
<i>Phaeoptilum spinosum</i> Brosdoring	1.5	***					5
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					1
Unidentified Bossie (1)	1.5		**				1
Unidentified Bossie (2)	1.5		**				1
TOTAL (Shrubs / Bossies):							36
TOTAL							100

** Less than 1% of species recorded at site

Table 14.2: Trends in grass and shrub species composition, from Table 14.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 14
		Excl. Sedges & Forbs January 2017
Decreaser species (%)	0	
Increaser I species (%)	0	
Increaser II species (%)	60	
Unidentified species (%)	0	
Bare Ground (%)	4	
Shrubs /Bossies (%)	36	
Total (%)	100	
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
 Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
 Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 14.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 14
		ISPD 3929
		January 2017
Tuft distance (cm)	7.9	
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	Medium	
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)	4	
Grass Species Richness (High is = >15 spp, Low< 10 species)	Low	
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)	15 (16)	
Plant Species Richness (High is = >60 spp, Low< 20 species)	Low	
Vegetation cover (% soil covered)	21- 30%	
Dominant species contributing to crown cover (%)	Kapokbos (70%), Brosdoring (15%) & Doringvygie (13%)	
Veld Condition Index Total	150.65	
[Benchmark (=500)]/ (Veld Condition Index Total)	3.32	
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)	0.03 LSU/hectare/ year	
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha	0.04 LSU/ha or 23.70 ha/LSU	
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%	20.6	
ISPD Veld Condition Assessment	INTERMEDIATE	
Notes		
Management Recommendation	STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES	

Table 15.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H043 - SITE 15							MIDSLLOPE (CONVEX)
							Dolerite
							SITE 15
							Excl. Sedges & Forbs January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							6.7
CO-ORDINATES: South							30° 50' 39.6"
East							24° 19' 34.4"
DIRECTION OF TRANSECT							250°
HEIGHT ABOVE SEA LEVEL (m)							1329m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASES I							
No Increase I species recorded							0
TOTAL (Increase I category):							0
INCREASES II							
<i>Aristida diffusa</i> Iron Grass	3.18	***					11
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					1
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					1
<i>Melica decumbens</i> Dronkgras	3.1					*	15
<i>Microchloa calfra</i> Pincushion Grass	1.24				**		18
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				17
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					1
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			3
Bare Ground							2
TOTAL (Increase II category):							69
SHRUBS (BOSSIES)							
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				3
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				1
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					12
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				7
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****					7
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					1
TOTAL (Shrubs / Bossies):							31
TOTAL							100

** Less than 1% of species recorded at site

Table 15.2: Trends in grass and shrub species composition, from Table 15.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLLOPE (CONVEX)
		SITE 15
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increase I species (%)		0
Increase II species (%)		67
Unidentified species (%)		0
Bare Ground (%)		2
Shrubs /Bossies (%)		31
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
 Increase I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
 Increase II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 15.3: Summary.

SUMMARY		MIDSLLOPE (CONVEX)
		SITE 15
		ISPD 3930
		January 2017
Tuft distance (cm)		6.7
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		Medium
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		8
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		14
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		21-30%
Dominant species contributing to crown cover (%)		Doringvygie (90%) & 10% Doringkapok
Veld Condition Index Total		212.34
[Benchmark (=500)]/ (Veld Condition Index Total)		2.35
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.06 LSU/ha or 16.81 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		30.7
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 16.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H020 - SITE 16							MIDSLOPE (CONVEX)
							Sandstone
							SITE 16
							Excl. Sedges & Forbs
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							8.7
CO-ORDINATES: South							30° 50' 22.3"
East							24° 20' 02.0"
DIRECTION OF TRANSECT							105°
HEIGHT ABOVE SEA LEVEL (m)							1329m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Aristida diffusa</i> Iron Grass	3.18	***					27
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					2
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				8
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			24
Bare Ground							3
TOTAL (Increaser II category):							64
SHRUBS (BOSSIES)							
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				3
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				12
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					9
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					1
<i>Pentzia incana</i> Ankerkaroo	2.88	***					3
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****					5
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					3
TOTAL (Shrubs / Bossies):							36
TOTAL							100

** Less than 1% of species recorded at site

Table 16.2: Trends in grass and shrub species composition, from Table 16.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 16
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)	0	
Increaser I species (%)	0	
Increaser II species (%)	61	
Unidentified species (%)	0	
Bare Ground (%)	3	
Shrubs /Bossies (%)	36	
Total (%)	100	
Veld Condition (Tainton's Method)	INTERMEDIATE	

Legend: *Decreaser species* - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently

Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies

Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 16.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 16
		ISPD 3931
		January 2017
Tuft distance (cm)	8.7	
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)	Medium	
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)	4	
Grass Species Richness (High is = >15 spp, Low< 10 species)	Low	
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)	11	
Plant Species Richness (High is = >60 spp, Low< 20 species)	Low	
Vegetation cover (% soil covered)	21- 30%	
Dominant species contributing to crown cover (%)	Kapokbos (50%) & Doringvygie (50%)	
Veld Condition Index Total	204.97	
[Benchmark (=500)]/ (Veld Condition Index Total)	2.44	
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)	0.03 LSU/hectare/ year	
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha	0.06 LSU/ha or 17.42 ha/LSU	
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%	32.5	
ISPD Veld Condition Assessment	INTERMEDIATE	
Notes		
Management Recommendation	STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES	

Table 17.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONVEX)
							Sandstone
							SITE 17
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							6.3
CO-ORDINATES: South							30° 51' 03.8"
East							24° 21' 11.6"
DIRECTION OF TRANSECT							160°
HEIGHT ABOVE SEA LEVEL (m)							1346m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASERS I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASERS II							
<i>Aristida congesta</i> subsp. <i>barbicollis</i> Spreading Three-awn	1.04		**				**
<i>Aristida diffusa</i> Iron Grass	3.18	***					**
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					7
<i>Melica decumbens</i> Dronkgras	3.1					*	1
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				28
<i>Pentameris montana</i>	1.5				*		1
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					1
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			25
Bare Ground							4
TOTAL (Increaser II category):							67
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				**
<i>Berkheya spinosa</i> Vlaktedissel	0.68	***					1
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				2
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				3
<i>Erioccephalus ericoides</i> Kapokbos	2.43	***					24
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					**
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		1
<i>Pentzia incana</i> Ankerkaroo	2.88	***					1
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****					1
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					**
TOTAL (Shrubs / Bossies):							33
TOTAL							100

** Less than 1% of species recorded at site

Table 17.2: Trends in grass and shrub species composition, from Table 17.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 17
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		63
Unidentified species (%)		0
Bare Ground (%)		4
Shrubs /Bossies (%)		33
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: **Decreaser species** - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 17.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 17
		ISPD 3932
		January 2017
Tuft distance (cm)		6.3
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		Medium
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		6 (8)
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		13 (18)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		11- 20%
Dominant species contributing to crown cover (%)		Kapokbos (90%)
Veld Condition Index Total		155.46
[Benchmark (=500)]/ (Veld Condition Index Total)		3.22
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.04 LSU/ha or 22.96 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		24.7
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 18.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H011 - SITE 18							MIDSLOPE (CONVEX)
							Sandstone
							SITE 18
							Excl. Sedges & Forbs January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							6.1
CO-ORDINATES: South							30° 51' 07.0"
East							24° 21' 00.8"
DIRECTION OF TRANSECT							265°
HEIGHT ABOVE SEA LEVEL (m)							1343m
SOIL FORM (Macvicar, 1991)							Mispah
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASES I							
No Increase I species recorded							0
TOTAL (Increase I category):							0
INCREASES II							
<i>Aristida diffusa</i> Iron Grass	3.18	***					1
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					17
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				1
<i>Pentameris montana</i>	1.5				*		1
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					5
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			39
Bare Ground							1
TOTAL (Increase II category):							65
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				**
<i>Berkheya spinosa</i> Vlaktedissel	0.68	***					1
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				2
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					2
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				17
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					2
<i>Lycium cinereum</i> Kriedoring	1.63		**				1
<i>Moraea pallida</i> Yellow Tulp / Geel Tulp	0.5				*		3
<i>Pentzia incana</i> Ankerkaroo	2.88	***					7
<i>Salsola tuberculata</i> Blomkool Ganna	3.5	****					**
TOTAL (Shrubs / Bossies):							35
TOTAL							100

** Less than 1% of species recorded at site

Table 18.2: Trends in grass and shrub species composition, from Table 18.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 18
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increase I species (%)		0
Increase II species (%)		64
Unidentified species (%)		0
Bare Ground (%)		1
Shrubs /Bossies (%)		35
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: **Decreaser species** - Grass and herbaceous species which **decrease** when veld is **over-utilized or burned too frequently**
Increase I species - Grass and herbaceous species which **increase** when veld is **under-utilized or not burned in high enough frequencies**
Increase II species - Grass and herbaceous species which **increase** when veld is **over-utilized or burned in too high frequencies**

Table 18.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 18
		ISPD 3933
		January 2017
Tuft distance (cm)		6.1
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		Medium
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		7
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		14 (16)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		21- 30%
Dominant species contributing to crown cover (%)		Doringkapok (80%)
Veld Condition Index Total		184.97
[Benchmark (=500)]/ (Veld Condition Index Total)		2.70
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/NCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.05 LSU/ha or 19.30 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		29.2
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 19.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX H007 - SITE 19							MIDSLOPE (CONVEX)
							Siltstone / Shale
							SITE 19
							Excl. Sedges & Forbs January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							10.0
CO-ORDINATES: South							30° 51' 07.8"
East							24° 20' 33.5"
DIRECTION OF TRANSECT							260°
HEIGHT ABOVE SEA LEVEL (m)							1333m
SOIL FORM (Macvicar, 1991)							Swartland
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
<i>Sporobolus fimbriatus</i> Bushveld Dropseed / Bosveldfynsaadgras	7.03	****					3
TOTAL (Decreaser category):							3
INCREASES I							
No increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASES II							
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					1
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					2
<i>Eragrostis racemosa</i> Narrow Heart Love Grass / Smalhartiesgras	1.5				**		1
<i>Melica decumbens</i> Dronkgras	3.1					*	2
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				13
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					11
<i>Tragus koelerioides</i> Creeping Carrot-seed Grass	0.84			**			18
Unidentified species	1.5				**		2
Bare Ground							6
TOTAL (Increaser II category):							56
SHRUBS (BOSSIES)							
<i>Asparagus cf. africanus</i> Katdoring	0.9		**				2
<i>Berkheya spinosa</i> Vlaktedissel	0.68	***					**
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				6
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				1
<i>Erioccephalus ericoides</i> Kapokbos	2.43	***					13
<i>Erioccephalus spinescens</i> Doringkapok	2.12		**				15
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					1
<i>Pentzia incana</i> Ankerkaro	2.88	***					2
<i>Psilocaulon absimile</i> Asbos	1.5			*			1
TOTAL (Shrubs / Bossies):							41
TOTAL							100

** Less than 1% of species recorded at site

Table 19.2: Trends in grass and shrub species composition, from Table 19.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 19
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		3
Increaser I species (%)		0
Increaser II species (%)		50
Unidentified species (%)		0
Bare Ground (%)		6
Shrubs /Bossies (%)		41
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: **Decreaser species** - Grass and herbaceous species which **decrease** when veld is **over-utilized or burned too frequently**
Increaser I species - Grass and herbaceous species which **increase** when veld is **under-utilized or not burned in high enough frequencies**
Increaser II species - Grass and herbaceous species which **increase** when veld is **over-utilized or burned in too high frequencies**

Table 19.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 19
		ISPD 3934
		January 2017
Tuft distance (cm)		10.0
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		Medium
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		9
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		17 (18)
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		31- 50%
Dominant species contributing to crown cover (%)		Doringkapok (50%) & Kapokbos (50%)
Veld Condition Index Total		199.61
[Benchmark (=500)]/ (Veld Condition Index Total)		2.50
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCI Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.06 LSU/ha or 17.88 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		30.5
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.

Table 20.1: Veld condition assessment table: Grass and shrub species cover and composition at De Bad - Soventix (2017).

DE BAD - SOVENTIX							MIDSLOPE (CONVEX)
H006 - SITE 20							Siltstone / Shale
							SITE 20
							Excl. Sedges & Forbs
							January 2017
TUFT DISTANCES (in cm): Low is ≤5 cm, Medium >5-10 cm & High > 10 cm							12.3
CO-ORDINATES: South							30° 51' 02.7"
East							24° 20' 22.7"
DIRECTION OF TRANSECT							255°
HEIGHT ABOVE SEA LEVEL (m)							1335m
SOIL FORM (Macvicar, 1991)							Valsrivier
VELD TYPE (Mucina & Rutherford, 2006)							Nku 4 - Eastern Upper Karoo
GRASS SPECIES IN CATEGORIES (Palatability indicated by *****)	Grazing Index Value	Palatable	Less Palatable	Unpalatable	Low production Grass	Toxic	
DECREASERS							
No Decreaser species recorded							0
TOTAL (Decreaser category):							0
INCREASES I							
No Increaser I species recorded							0
TOTAL (Increaser I category):							0
INCREASES II							
<i>Aristida diffusa</i> Iron Grass	3.18	***					4
<i>Eragrostis curvula</i> Weeping Love Grass / Oulandsgras	3.47	****					1
<i>Eragrostis lehmanniana</i> Lehmann's Love Grass	3.24	***					14
<i>Eragrostis obtusa</i> Dew Grass / Douvatgras	2.94	***					1
<i>Oropetium capense</i> Dwarf Grass / Haasgras	1.04		**				10
<i>Stipagrostis cf. obtusa</i> Small Bushman Grass / Kortbeenboesmangras	4.07	****					11
<i>Tricholaena monachne</i> Blousaadgras	1.5		**				1
Bare Ground							3
TOTAL (Increaser II category):							45
SHRUBS (BOSSIES)							
<i>Chrysocoma ciliata</i> Bitterbos	1.12		**				14
<i>Eberlanzia ferox</i> Doringvygie	1.54		**				8
<i>Eriocephalus ericoides</i> Kapokbos	2.43	***					8
<i>Eriocephalus spinescens</i> Doringkapok	2.12		**				7
<i>Hirpicium alienatum</i> Haarbossie	3.16	****					4
<i>Pentzia incana</i> Ankerkaroo	2.88	***					8
<i>Phymaspermum parvifolium</i> Witheuningkaroo	3.38	****					5
Stinkkruid	0.5		**				1
TOTAL (Shrubs / Bossies):							55
TOTAL							100

** Less than 1% of species recorded at site

Table 20.2: Trends in grass and shrub species composition, from Table 20.1.

VELD CONDITION SUMMARY OF TREND (TAINTON'S METHOD)		MIDSLOPE (CONVEX)
		SITE 20
		Excl. Sedges & Forbs
		January 2017
Decreaser species (%)		0
Increaser I species (%)		0
Increaser II species (%)		42
Unidentified species (%)		0
Bare Ground (%)		3
Shrubs/Bossies (%)		55
Total (%)		100
Veld Condition (Tainton's Method)		INTERMEDIATE

Legend: Decreaser species - Grass and herbaceous species which decrease when veld is over-utilized or burned too frequently
 Increaser I species - Grass and herbaceous species which increase when veld is under-utilized or not burned in high enough frequencies
 Increaser II species - Grass and herbaceous species which increase when veld is over-utilized or burned in too high frequencies

Table 20.3: Summary.

SUMMARY		MIDSLOPE (CONVEX)
		SITE 20
		ISPD 3935
		January 2017
Tuft distance (cm)		12.3
Soil erosion potential (Low is ≤5 cm, Medium >5-10 cm & High > 10cm)		High
Number of Grass species present per 100 m ² (excl. and incl. <1% of species)		7
Grass Species Richness (High is = >15 spp, Low< 10 species)		Low
Number of bossies and grass species per 100 m ² (excl. and incl. <1% of species)		15
Plant Species Richness (High is = >60 spp, Low< 20 species)		Low
Vegetation cover (% soil covered)		31- 50%
Dominant species contributing to crown cover (%)		Doringvygie & Stipagrostis
Veld Condition Index Total		238.01
[Benchmark (=500)] / (Veld Condition Index Total)		2.10
Potential grazing capacity of the area (for an average annual rainfall of 300 mm = 3 LSU/100 ha/year)		0.03 LSU/hectare/ year
Current Grazing Capacity in ha/LSU (Du Toit Method) = 500/VCi Total x Regression value (7.14) in ha/LSU or 1/ Current Grazing Capacity in LSU/ha		0.07 LSU/ha or 15.00 ha/LSU
Condition on ISPD Degradation Axis (%) - Norm between 60% and 80%		40.5
ISPD Veld Condition Assessment		INTERMEDIATE
Notes		
Management Recommendation		STOCKING RATES SHOULD CORRELATE WITH CURRENT GRAZING CAPACITY. REST CAMP IN FREQUENCY OF ONCE EVERY FOUR YEARS TO ALLOW SEEDING AND REESTABLISHMENT OF PRODUCTIVE AND PALATABLE GRASSES.