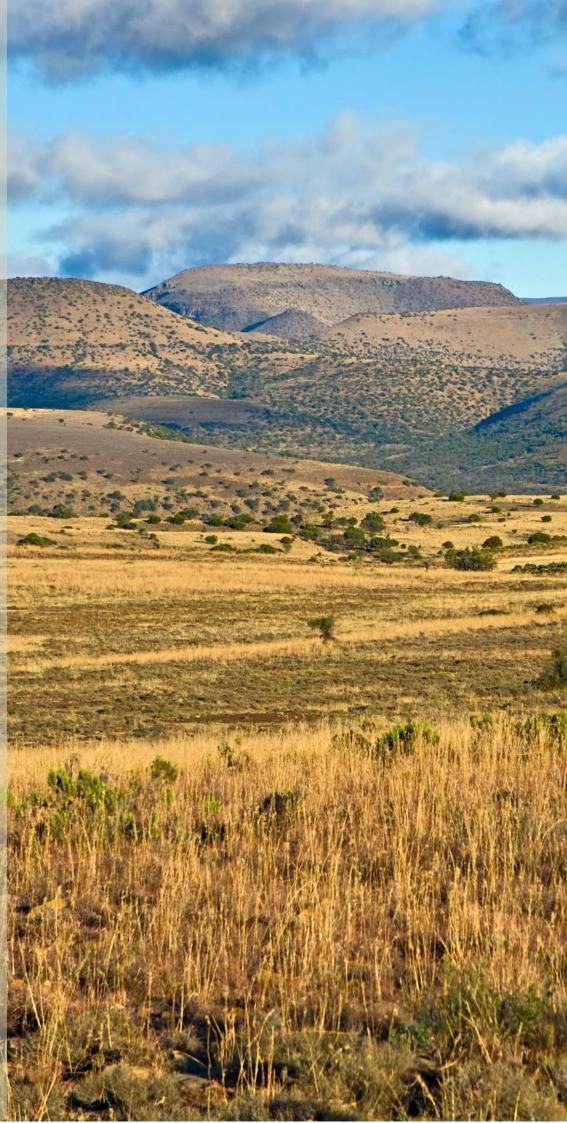


Mountain ZebraCamdeboo
Protected
Environment

Protected
Environment
Management
Plan

For the period 2017-2022





Acknowledgement

This plan was prepared by Bronwyn Botha, with significant input and help from the Mountain Zebra-Camdeboo Landowner's Association, SANParks' Andre Spies, Dr Angela Gaylard, Megan Taplin,
André Riley, Nick De Goede, Russel Smart and various stakeholders.



Section 1: Authorisation

This management plan is hereby internally accepted and authorised as required for managing the Mountain Zebra-Camdeboo Protected Environment (MZCPE) in terms of Sections 39 and 41 of the National Environmental Management: Protected Areas Act No 57 of 2003 (NEM:PAA).

Mr. E. Kingwill	Date:	
Chairman: MZCPE Landowners Association		
	_	
Mr. R. Slater Vice Chairman: MZCPE Landowners Association	Date:	
Approved by the Ministe	r of Environmental Affairs	
		
Dr. B.E.E. Molewa	Date:	

Minister of Environmental Affairs



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Glossary

Aircraft	Means an airborne craft of any type whatsoever, whether self-propelled or not, and includes hovercraft and drones.
Biodiversity	The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable
Biomes	Major regional community extending over a large area
Buffer zones	Buffer zones in this context refer to areas surrounding national parks that could be
Durier zones	potentially significant for biodiversity, view-shed and catchment conservation.
200	Biodiversity Social Projects is the division under EPWP that focuses on
BSP	environmental programmes such as Working on Water, Working on Fire, Working on Land and Working for Ecosystems.
Centre of endemism	This is a localised area which has a high occurrence of endemic species
Critical Biodiversity	Areas required to meet biodiversity to meet biodiversity targets for ecosystems,
Area	species and ecological processes, as identified in a systematic biodiversity plan.
	The Protected Environment's desired state is based on a collectively developed
Desired state	vision and set of objectives of the desired future conditions
Ecotourism	Tourism directed towards natural environments intended to support conservation
	efforts and observe wildlife.
Endemic	Confined to a specific place or area.
EPWP	The Extended Public Works Programme is a key government initiative, which contributes to Governments Policy Priorities in terms of decent work & sustainable livelihoods, education, health; rural development; food security & land reform and the fight against crime & corruption.
	Interpretation is the communication of information about, or the explanation of,
Interpretation	the nature, origin, and purpose of historical, natural, or cultural resources, objects,
	sites and phenomena using personal or non-personal methods.
	A "contain a mulation" and into a financial and a financial an
Metapopulation	A "metapopulation" consists of a group of spatially separated populations of the same species which interact at some level.
	sume species which interdet at some level.
Mission	An articulation of the Vision that describes why the Protected Environment exists and its overall philosophy on how to achieve its Vision.
National Protected	A short-rank asking a set off-sking and a standard and a second asking to a second asking to a second asking to
Areas Expansion	A strategy to achieve cost-effective protected area expansion for ecological sustainability and increased resilience to climate change
Strategy	
Objectives hierarchy	The objectives for a Protected Environment, with the most important, high level objectives at the top, cascading down to objectives at finer levels of detail, and eventually to operational actions at the lowest level.
Red data species	An inventory of the global conservation status of biological species.
	Shale gas mining is a process that applies the technique of high-volume, horizontal, slick-water fracturing ('fracking' or 'hydraulic fracturing'). It involves
Shale gas mining	pumping water, sand and chemicals into horizontally drilled wells under
	hydraulic pressure, to fracture the underground shale layers and release gas.
Stakeholder	A person, an organ of state or a community contemplated in section 82(1) (a); or an indigenous community contemplated in section 82(1) (b) of NEM: BA.
Vision	A word 'picture' of the future, or what the stakeholders see as the future for the Protected Environment.
Vital attributes	Unique or special characteristics of the Protected Environment, the determinants of which management should strive to protect, and the threats towards which management should strive to minimise.



Acronyms and abbreviations

AMSL	Above Mean Sea Level
AIS	Alien Invasive Species
BSP	Biodiversity Social Projects
CARA	Conservation of Agricultural Resources Act (Act no. 43 of 1983)
CPF	Corporate Policy Framework
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
EPWP	Expanded Public Works Programme
FEPA	Freshwater Ecosystem Priority Area
FPA	Fire Protection Agency
GEF	Global Environment Facility
GIS	Global Information System
HIZ	High Impact Zone
IDP	Integrated Development Plan
MoA	Memorandum of Agreement
MZCPE	Mountain Zebra-Camdeboo Protected Environment
LA	Mountain Zebra-Camdeboo Protected Environment Landowner's Association
LIZ	Low Impact Zone
NEMA	National Environmental Management Act (Act no 107 of 1998)
NEM:BA	National Environmental Management: Biodiversity Act (Act no 10 of 2004)
NEM: PAA	National Environmental Management: Protected Areas Act (Act no 57 of 2003)
NFEPA	National Freshwater Ecosystem Priority Area
NHRA	Natural Heritage Resources Act (Act no 25 of 1999)
NPAES	National Protected Areas Expansion Strategy
SAHRA	South African Heritage Resources Agency
SANParks	South African National Parks
SDF	Spatial Development Framework
UNDP	United Nations Development Programme



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Appendix 4: Maps



Executive summary

In compliance with the National Environmental Management: Protected Areas Act No 57 of 2003 (NEM: PAA), the Protected Environment is required to develop a management plan. In developing the management plan for this Protected Environment, an attempt has been made to integrate, implement and review the biodiversity conservation, tourism, agricultural and constituency building components that make up its core business, whilst ensuring continual learning and compliance.

The Protected Environment is situated in the Eastern Cape and falls between four (4) towns namely; Graaff-Reinet, Nieu-Bethesda, Cradock and Pearston. It was declared in 2016 for the purpose of maintaining the landscape in terms of its scenic, biodiversity and landscape value through collective action by the private landowners and to protect the area from detrimental developments. The Protected Environment is located in a transitional area between four biomes: Grassland, Nama Karoo, Albany Thicket and Savanna. All of the major vegetation types are currently very poorly conserved elsewhere in South Africa. Being a transition area between biomes allows for an interesting mix of flora and fauna, as well as important ecological and landscape processes. Climate change, detrimental development, mining, inappropriate historical management of herbivores, and the risk of fire present the biggest threats to the Protected Environment's vital attributes.

The desired state of the Protected Environment is based on a vision, mission, vital attributes and objectives. It is primarily set around the conservation of the unique biodiversity characteristics of the area. A set of appropriate programmes has been set up to achieve the desired state. The emphasis falls on biodiversity and agricultural management. The Mountain Zebra-Camdeboo Protected Environment Landowner's Association (LA) has also identified the great potential of tourism products that can be created under the Protected Environment banner and have created programmes to address tourism. The Protected Environment also recognises the benefit of stakeholder partnerships to both achieve its managerial goals as well as contribute to the area in a local socio-economic role.

This is the first management plan to be submitted for approval. The first management plan cycle aims to create a comprehensive baseline of information under each programme on which future monitoring and evaluation can be measured both within this management plan cycle as well as future management plan reviews. It is envisioned that the first review (earmarked for 2022) will build on the foundation of this first plan and address any inadequacies. The layout of the plan follows the format provided in the guidelines drawn up by the Department of Environmental Affairs (DEA) (Cowen and Mpongoma, 2011) while also incorporating the adaptive planning process adopted by South African National Parks (SANParks). Local and district municipalities and other organs of state, as well as other stakeholders were consulted as required (Appendix 1). Relevant aspects of local authority plans were considered in the compilation of the plan.



Introduction

The plan serves as a reference to the management and development of the Protected Environment in its current and envisaged future form with information on the background, biophysical context, desired state, management and programmes at strategic and operational levels.

This management plan will come into effect following the approval by the Minister in terms of sections 39 and 41 of NEM: PAA. It is intended for a timeframe of five (5) years after commencement unless it is replaced earlier by a newly approved plan. The Mountain Zebra-Camdeboo Protected Environment Landowner Association (LA) will review this plan no later than five years after the commencement date.

The plan contains the following sections:

- Section 1 provides for the required authorisation;
- **Section 2** provides a record of the legal status of the Protected Environment, descriptions of its context as well as relevant local, regional, national and international agreements;
- **Section 3** sets out the framework of legislation, national policies, South African National Park's structures, policies, guidelines, practices regarding management;
- Section 4 describes the consultation process followed in the preparation of this plan;
- Section 5 presents the vision, purpose, values, principles and attributes considered in developing a desired state for the Protected Environment and provides the high level objectives as basis for the management programmes contained in Section 9 of the plan;
- Section 6 outlines the zoning plan;
- Section 7 describes the access and facilities within the Protected Environment;
- Section 8 summarises the expansion and consolidation strategy;
- Section 9 sets out the concept development plan;
- **Section 10** provides a strategic plan with programmes, objectives and activities with cost estimates. Monitoring and evaluation are integrated into the actions;
- Section 11 contains detailed costing of the programmes; and
- Appendices to this plan contain further details such as declarations, stakeholder participation report, conservation development framework, internal rules and maps.



Section 2: Legal Status

2.1 Name of the protected area

The Mountain Zebra-Camdeboo Protected Environment was initially proclaimed in 2016 (Government Gazette No 610 dated 1 April 2016).

2.2 Location

The Protected Environment is centred on the escarpment between Graaff-Reinet, Nieu-Bethesda, Cradock and Pearston. The Protected Environment is divided into six (6) main clusters. The first cluster borders the western section of Camdeboo National Park and extends up the R63 to Murraysburg. The second cluster on the northern section of the Protected Environment crosses the R61 to Cradock and the N9 to Middleburg and borders the recently declared Compassberg Protected Environment. The third cluster borders the second cluster and follows the R61 to Cradock. The fourth cluster borders the western boundary of the Mountain Zebra National Park (MZNP). The fifth cluster borders the south-eastern border of MZNP and runs alongside and in sections crosses the R337 to Pearston. The sixth cluster follows the R337 from the southern border of both cluster four and five and crosses the R75 to Port Elizabeth (Appendix 4, Map 1).

2.3 History of establishment

The National Protected Areas Expansion Strategy (NPAES) identifies the need for significant expansion of the national protected area estate. Further, DEA gazetted a Strategy on Buffer Zones for National Parks (2012) which comprehensively describes the need to protect National Parks through a comprehensive range of buffer zone interventions in the surrounding landscape. One of the key mechanisms for securing buffers zones is the establishment of a protected environment. The original initiative was designed to meet both the protected area expansion objectives of the NPAES and the required buffer zone protection objectives for Mountain Zebra and Camdeboo National Parks.

In 2012, the Mountain Zebra Camdeboo Corridor Project was established by SANParks in partnership with the Wilderness Foundation to investigate the opportunity to declare private land surrounding both the Camdeboo and Mountain Zebra National Parks as a protected environment.

The area between the Mountain Zebra and Camdeboo National Parks in the Maputaland-Pondoland-Albany biodiversity hotspot was identified as a conservation priority in the NPAES. This Protected Environment aims to support the consolidation of the Sneeuberg grasslands linking Mountain Zebra and Camdeboo National Parks through partnerships with private landowners.

At completion of the Mountain Zebra Camdeboo Corridor Project, an "Intent to Declare" was submitted to the Minister of DEA. The proposed Protected Environment totalled 268 343ha. The Protected Environment was officially declared on the 01 April 2016.

Through the process of declaration, the 66 landowners involved created the Mountain Zebra-Camdeboo Protected Environment Landowners Association and requested that this association be made the management authority for the Protected Environment. When declared, this request was granted. This association is governed by a constitution. Please note that a number of landowners own multiple properties and also represent more than one trust and therefore the list of contractual agreements (Table 1) will reflect more than 66 landowners.

2.4. Contractual agreements

Members of the Protected Environment all signed an official "Consent to Declare" agreement as well as acceptance of the MZCPE Landowner's Association Constitution. There has been no time limit set to membership of the Protected Environment. SANParks submitted the "Intent to Declare" on behalf of the landowners as a primary partner to the proposed Protected Environment. Since the declaration of the Protected Environment, a Memorandum of Agreement (MoA) has been signed between the management

authority, (the MZCPE Landowner's Association), and SANParks. The MoA clearly defines the roles of both parties in their attempt to achieve the objectives outlined in this document.

Table 1: List of contractual agreements within the Protected Environment

OWNERS	l agreements within the Prot FARM NAME	TITLE DEED	PORTION	EXTENT (HECTARES)
Jos Smith Family Trust	Garstlands Kloof 384	T24042/1994	0	1824.8729
	Wey Hoek 382	T24042/1994	1	148.8452
				1973.7181
The Blaauwater Trust	Farm 519	T13884/2006	0	1549.0829
	Farm 66	T13884/2006	1	267.3736
	Lucerne 70	T13884/2006	0	1675.7549
	Blaauwater 65	T13884/2006	6	798.6833
	Farm 66	T13884/2006	3	117.1198
	Tweefontein 68	T13884/2006	0	1031.6528
	Wilde Paarde Fontein 71	T13884/2006	1	166.8033
	Blaauwewater 67	T13884/2006	0	1213.8345
	Blaauwewater 67	T13884/2006	1	262.1793
	Loer Poort 224	T13884/2006	3	15.2576
				7097.7420
Jaco Loots	Quachasfontein 84	T25895/2009	4	502.2368
	Blaauwater 81	T25895/2009	0	2199.4742
	Farm 80	T25895/2009	1	58.1157
	Wilde Paarde Fontein 71	T25895/2009	0	497.9963
	Farm 75	T25895/2009	0	83.9287
	Farm 73	T25895/2009	0	253.3507
	Farm 74	T25895/2009	0	401.3224
	Zeekoegat 77	T25895/2009	0	520.9542
				4517.3790
The Ovus Trust	Blaauwewater 67	T73172/1995	2	643.6952
	Kareeleegte 58	T73172/1995	0	2316.6078
	Tromps Kraal 62	T73172/1995	0	891.5956
	Farm 57	T73172/1995	0	176.1601
	Farm 510	T73172/1995	0	12.0842
	Farm 85	T73172/1995	1	227.7690
	Tromps Kraal 62	T73172/1995	2	1124.1587
	Farm 59	T73172/1995	0	196.8496
	Modderfontein 63	T73172/1995	0	2190.4250
	Farm 61	T73172/1995	0	280.2430
	Request 317	T73172/1995	3	858.3396
	Nequest 017	17017272333		8917.9278
The Coloniesplaats Trust	Sevenfontein 142	T12935/1996	0	5101.4604
colomospiado mast	Sevenfontein 142	T12935/1996	1	371.8477
	Farm 85	T12935/1996	0	1737.2439
	Grasshill 157	·	2	
		T12935/1996		168.7668
	Tromps Kraal 62	T12935/1996	1	225.7366

	Quachasfontein 84	T12935/1996	6	389.1640
				7994.2194
Philippus Loock	Farm 82	T10840/1992	2	1013.2169
	Farm 83	T10840/1992	0	908.3507
	Farm 517	T13734/1975	0	780.0280
	Farm 527	T61593/1999	0	1325.9657
	Farm 82	T81662/1999	4	168.5531
	Farm 84	T9500/1972	0	2026.0017
				6222.1161
Jacob Pieter Mulder	Groot Kom 436	T19790/1982	2	1027.8370
				1027.8370
The Buchanan Trust	Upper Groen Kloof 379	T40640/1999	0	422.0590
	Annexure Buffelshoek 370	T40640/1999	1	165.7390
	Annexure Paardefontein 376	T40640/1999	1	114.8909
	Paardefontein 371	T40640/1999	0	986.8155
	Paardefontein 376	T40640/1999	0	259.9246
	Paardefontein 371	T40640/1999	2	986.8373
	Groenekloof 378	T40640/1999	2	342.0704
	Farm 377	T40640/1999	2	216.1587
	Groenekloof 387	T34390/1999	3	2.2599
	Groene Kloof 378	T34390/1999	0	161.5476
	Farm 377	T34390/1999	0	284.7469
	Mooiberg 381	T34390/1999	1	232.1202
	Groene Kloof 378	T34390/1999	6	179.4592
	Spring Grove 348	T54812/1996	0	1671.3109
	Excelsior 255	T54812/1996	1	108.0658
	Bellevue 351	T54812/1996	1	134.6311
	Mount Pleasant 349	T54812/1996	0	2870.5599
	Bellevue 351	T4755/2000	0	1988.9615
	Spring Grove 348	T54812/1996	4	43.4305
	Spring Grove 348	T54812/1996	0	1671.3109
	Farm 533	T28369/2010	0	706.7759
				13549.6757
The Stern Family Trust	Quaggas Valley 30	T76307/1995	0	3685.6572
	Farm 60	T76307/1995	0	138.1501
	Request 317	T76307/1995	4	428.7419
	Platfontein 28	T76307/1995	1	525.6351
				4778.1843
H.G.G. Du Plessis	Wolwe Nest 405	T22460/1998	0	597.0800
	Wolwe Nest 405	T22460/1998	2	597.0795
	Wolwe Nest 402	T22460/1998	1	23.7902
	Hartebeeste Hoek 407	T22460/1998	0	716.3106
	Waterval 410	T22460/1998	2	129.2250
	Hartebeeste Hoek 407	T22460/1998	1	351.9718
	Waterval 410	T22460/1998	6	8.8251

	Farm 414	T22460/1998	1	3.2799
	Farm 605	T40890/2003	0	801.9181
	Waterval 410	T22460/1998	1	37.8302
				3267.3104
Gawie F. Combrink	Farm 603	T40891/2003	0	793.7618
	Garstlands Kloof 384	T1652/2005	6	1130.6222
				1924.3840
H.K. Lombard	Karelskroon 232	T17687/1979	8	495.7622
	Karelskroon 232	T21523/1984	3	1713.0640
				2208.8262
H.K. Lombard family Trust	Waterval 453	T12034/2001	0	831.9981
	Farm 454	T12034/2001	0	1297.6646
	Weyhoek 382	T12034/2001	2	67.7812
	Farm 381	T12034/2001	0	133.5248
				2330.9687
The P.S. Merifield Investment Trust	Rondegat 191	T47131/2008	0	1414.7861
77431	Groote Hoek 192	T47131/2008	0	1653.2888
	De Vreede 286	T47131/2008	1	53.5033
				3121.5782
The Petro Michau Family Trust	Baviaans Krans 238	T1654/2005	0	1231.8215
	Samenkoms 392	T1654/2005	0	963.1464
	Samenkoms 392	T1654/2005	1	963.1438
	De Rietfontein 388	T1654/2005	8	0.0008
				3158.1125
The Karelskroon Trust	Sterkfontein 403	T64194/1995	1	240.3702
	Karelskroon 232	T64194/1995	6	942.6220
	Morgenson 235	T64194/1995	0	942.6106
				2125.6028
Jacob Lourens Jordaan	Caree Bosch 451	T7129/2013	0	389.3552
	Groote Hoek 450	T7129/2013	0	2198.6206
	Groote Vallei 443	T73488/2003	4	247.0766
				2835.0524
The Request Trust	Hotweg Kloof 441	T73488/2003	1	1257.7145
	Groot Kom 436	T102591/2007	7	3914.1092
	Kaalplaats 278	T6313/1997	8	1067.1546
	Garslandskloof 384	T7129/2003	5	254.6355
				6493.6138
Robert Trenly Spence	Vrynsfontein 319	T1164/1997	5	314.0945
	Farm 319	T1164/1997	6	682.6674
	Krugers Kraal 322	T1164/1997	1	34.4383
	Farm 318	T1164/1997	1	1894.5489
	Vrynsfontein 319	T1164/1997	8	366.7499
				3292.4990
I.B. van Heerden	Kaalplaats 278	T15452/1964	0	2641.9259
	Kaalplaats 278	T35126/1971	9	10.0029

				2651.9288
I.B. van Heerden Family Trust	Honeyvale 275	T47899/1999	1	1064.4679
	Farm 272	T47899/1999	3	14.8536
	De Doringrivier 274	T47899/1999	2	14.0785
				1093.4000
The S J Trust	Oudedrift 267	T105244/1998	0	3789.3081
				3789.3081
The Jako Moolman Familie Trust	Farm 608	T102593/2007	0	2912.8507
	Middle Water 415	T27201/1999	5	30.8978
	Nooitgedaght 398	T25841/2012	0	1042.9404
	Annex Nooitgedacht 390	T25841/2012	0	284.6084
	Os Hoek 389	T67991/1998	1	202.9981
	De Rietfonteyn 388	T67991/1998	6	25.2534
	Wonderfontein 399	T67991/1998	0	507.1054
	Mist Kraal 396	T67991/1998	0	25.7117
	Morgen Ster 440	T10241/2012	0	187.6233
	Groote Kom 434	T10241/2012	0	200.3829
	De Paardeplaats 433	T10241/2012	0	23.0178
	Paardeplaats 435	T10241/2012	0	481.7222
	Farm 437	T10241/2012	0	109.7589
				6034.8710
Louis Moolman Trust	Stapelbergskraal 239	T7081/2011	2	171.3064
	Groot Hoek 267	T7081/2011	1	1034.2381
				1205.5445
Geoffrey Kroon	Paarde Kraal 289	T51592/1998	0	656.8672
	Bronkhorstfontein 288	T51592/1998	0	1396.0843
	Farm 290	T62436/2000	0	225.1023
	Onbedacht 294	T75319/1998	13	2033.8660
				4311.9198
Joanne Kroon Will Trust	Onbedacht 294	T75319/1998	5	56.4840
	Onbedacht 294	T75319/1998	8	87.9751
	Onbedacht 294	T75319/1998	9	115.1295
	Onbedacht 294	T75319/1998	10	37.8663
	Onbedacht 106	T75319/1998	0	162.9352
	Annex Klipfontein 107	T62436/2000	0	130.9210
	Quaggas Drift 108	T62436/2000	2	297.0039
				888.3150
Stuttgard Trust	Karelskroon 232	T68696/2002	2	634.4119
	Krom Rivier 234	T68696/2002	0	189.4963
	Farm 237	T68696/2002	0	118.7339
	Sterkfontein 403	T13329/2012	0	861.1300
	Farm 268	T13329/2012	0	162.0658
				1965.8379
Casparus Janse van Rensburg	Stapelbergskraal 239	T61796/2012	0	644.0735
	Stapelbergskraal 239	T61796/2012	1	441.7664

				1085.8399
Goedehoop Trust	Groote Kom 434	T4676/2006	8	396.0133
	Upsal 386	T4676/2006	4	32.2527
	Goede Hoop 438	T4676/2006	0	1463.8789
	Vrede 439	T4676/2006	0	1481.0152
				3373.1601
Vincent Mai	Onverwagt 36	T36905/2010	6	1212.5827
	Welgedagt 37	T25021/2009	3	27.3090
	Welgedagt 37	T25021/2009	1	317.1138
	Donker Hoek 41	T25021/2009	0	292.5057
	Boschmans Kloof 38	T25051/2009	2	29.3219
	Buffels Hoek 40	T25051/2009	1	673.4697
	Buffels Hoek 40	T25051/2009	3	909.2359
	Buffels Hoek 40	T25051/2009	4	539.0029
	Buffels Hoek 40	T25051/2009	6	38.8935
	Farm 131	T25051/2009	0	1526.3168
	Rustenburg 129	T52662/2008	0	2920.0744
				8485.8263
The Greig Rose-Innes Family Trust	Rietvalley 200	T2957/2009	0	707.1994
	Rheboks Berg 202	T2957/2009	0	1031.1018
				1738.3012
The De La Harpe Family Trust	Houd Constant 122	T10790/2007	6	118.5261
	Grassdale 120	T10790/2007	0	705.4191
	Avonleigh 182	T10790/2007	1	9.0637
	Avonleigh 182	T10790/2007	2	13.9017
	Tygerkloof 118	T10790/2007	0	319.7465
				1166.6571
The AC Palmer Trust	Drooge Rivier 34	T75024/1995	0	5518.4282
	Drooge Rivier 34	T75024/1995	3	627.1295
	Drooge Rivier 34	T75024/1995	4	1000.4294
	Drooge Rivier 34	T75024/1995	6	17.1327
				7163.1198
Paul Marriot McCabe	Farm 164	T15610/1953	0	681.6602
	Farm 133	T15610/1953	0	101.0765
	Doornfontein 165	T15610/1953	0	1906.7159
				2689.4526
Brodie Farming CC	Dumd Constant 125	T79125/2003	0	155.2678
	Rust 126	T79125/2003	0	2911.2666
	Farm 127	T79125/2003	1	190.7197
	Farm 534	T10446/2009	0	588.3174
	Farm 535	T10446/2009	0	938.4142
				4783.9857
H and C McNaughton Pty Ltd	Farm 521	T9853/1999	0	448.9150
	Farm 520	T9853/1999	0	1419.6928
	Farm 169	T9853/1999	0	257.8447

	144 L 141 C 4 CO	T0050/4000		4544.0004
	Wolve Kloof 168	T9853/1999	0	1514.2201
	Wolve Kloof 168	T9853/1999	1	123.6261
	Schaapplaats 171	T9853/1999	0	690.8873
				4455.1860
Daniel Petrus Hugo	Zuurplaats 114	T89306/1993	1	996.9504
	Zuurplaats 114	T89306/1993	2	11.9942
	Houd Constant 124	T89306/1993	1	353.1129
	Farm 111	T89306/1993	0	185.2336
	Annex Katbos 121	T89306/1993	0	428.9304
				1976.2215
The Thorncliff Trust	Ruygtevalley 321	T89056/1995	0	824.4506
	Blauwekrans 269	T8874/2008	7	260.9182
	Blauwekrans 269	T8874/2008	3	535.8892
	Farm 275	T89056/1995	0	111.2806
	Wolwefontyn 277	T89056/1995	4	9.9173
	Blauwekrantz 271	T8874/2008	0	1053.3345
	Blaauwkrantz 271	T8874/2008	1	1584.7079
	Blaauwkrantz 271	T8874/2008	2	31.4561
	Klippoort 3	T8874/2008	3	74.9894
				4486.9438
Johannes Jacobus De Lange	Ossen Hoek 10	T14517/1986	0	1156.3068
	Farm 9	T14517/1986	0	348.3230
	Zondags Rivier 11	T14517/1986	3	31.1493
	Thorngrove 53	T53961/1992	0	982.1430
	Thorngrove 53	T53961/1992	3	807.8563
	Thorngrove 53	T53961/1992	4	269.2830
	Thorngrove 53	T53961/1992	5	269.2849
				3864.3463
Reinhold Du Randt Trustees	New Keerom 63	T26399/1981	18	483.3677
	New Keerom 63	T3975/1977	7	5.8801
	New Keerom 63	T16031/1957	1	1068.1036
	New Keerom 63	T16031/1957	9	4.2827
			,	4.2027
	Dassies Krantz 62	T23413/1964	0	1479.9105
	Dassies Krantz 62 Dassies Krantz 62			
		T23413/1964	0	1479.9105
	Dassies Krantz 62	T23413/1964 T21770/1965	0	1479.9105 150.0173 403.9297
J.V.G. Moolman	Dassies Krantz 62 Thorngrove 53	T23413/1964 T21770/1965 T23413/1964	0	1479.9105 150.0173
J.V.G. Moolman	Dassies Krantz 62	T23413/1964 T21770/1965	0 1 6	1479.9105 150.0173 403.9297 3595.4916
J.V.G. Moolman Richard Hobson	Dassies Krantz 62 Thorngrove 53	T23413/1964 T21770/1965 T23413/1964	0 1 6	1479.9105 150.0173 403.9297 3595.4916 1776.4431
	Dassies Krantz 62 Thorngrove 53 Kraan Vogel Kuil 50	T23413/1964 T21770/1965 T23413/1964 T2414/2006	0 1 6	1479.9105 150.0173 403.9297 3595.4916 1776.4431
	Dassies Krantz 62 Thorngrove 53 Kraan Vogel Kuil 50 Weltevreden 35	T23413/1964 T21770/1965 T23413/1964 T2414/2006 T8495/2003	0 1 6 2 0 0	1479.9105 150.0173 403.9297 3595.4916 1776.4431 1776.4431 2728.8567
	Dassies Krantz 62 Thorngrove 53 Kraan Vogel Kuil 50 Weltevreden 35 Wildebeest Kuil 43	T23413/1964 T21770/1965 T23413/1964 T2414/2006 T8495/2003 T8495/2003	0 1 6 2 0 0	1479.9105 150.0173 403.9297 3595.4916 1776.4431 1776.4431 2728.8567 427.1396
	Dassies Krantz 62 Thorngrove 53 Kraan Vogel Kuil 50 Weltevreden 35 Wildebeest Kuil 43 Opgedroogte Fontein 44	T23413/1964 T21770/1965 T23413/1964 T2414/2006 T8495/2003 T8495/2003 T8495/2003	0 1 6 2 0 0	1479.9105 150.0173 403.9297 3595.4916 1776.4431 2728.8567 427.1396 67.9230
	Dassies Krantz 62 Thorngrove 53 Kraan Vogel Kuil 50 Weltevreden 35 Wildebeest Kuil 43 Opgedroogte Fontein 44 Weltevreden 35	T23413/1964 T21770/1965 T23413/1964 T2414/2006 T8495/2003 T8495/2003 T8495/2003 T8495/2003	0 1 6 2 0 0 0 0 4	1479.9105 150.0173 403.9297 3595.4916 1776.4431 1776.4431 2728.8567 427.1396 67.9230 300.7069

	Farm 16	T7614/2006	0	928.7148
	Plat Rivier 30	T92983/2005	7	1329.8231
	Plat Rivier 30	T92983/2005	8	650.3816
				3320.9143
Tertius Du Toit Lotter	Farm 126	T54094/1995	0	3946.4872
				3946.4872
Weltevreden Trust	Pearston Road 137	T39606/2010	0	3136.9666
				3136.9666
Tafelkop Trust	Hoop van Afrika 85	T62163/2008	8	159.8251
	Karee Laagte 84	T62163/2008	0	287.5988
	Karee Laagte 84	T62163/2008	1	1181.8799
				1629.3038
Blair Henderson Du Randt	Strohs Fontein 87	T57763/2002	0	1698.6744
	Coetzees Fontein 104	T57763/2002	6	248.2430
	GGGLGGG F GIRCHII 2G F	.3776372362		1946.9174
Jack Davenport Family Trust	Drooge Kraal 90	T35672/2008	0	1847.7808
Juck Buvenporer uning Trust	Kaffirs Berg 112	T43924/2006	0	1525.3708
	Kaffirs Berg 112	T43924/2006	1	761.7410
	Kaffirs Berg 112	T43924/2006	2	763.6768
	Raillis beig 112	143924/2000	2	
Hartan Characte Danier	Var Da Varianda ad 00	TE 4004 /4000	0	4898.5694
Herbert Chowels Davenport	Van De Venterskraal 99	T54801/1988	0	1883.1327
	Beisjes Fontein 96	T54801/1988	1	147.6663
	Spijoenkop 100	T54801/1988	0	922.4221
				2953.2211
The Wilgenhof Trust	Farm 127	T43936/2006	0	3422.0924
				3422.0924
Stella Loock Family Trust	Farm 307	T16795/1997	0	155.3464
	Olieve Boom 308	T16795/1997	1	795.9823
	Olieve Boom 308	T16795/1997	3	794.6219
	Olieve Boom 308	T16795/1997	4	40.1000
	Farm-300	T16795/1997	0	43.8330
	Tiger Kloof 309	T6059/1907	2	21.5461
				1851.4297
John Evelyn Davenport	Zwartrug 111	T14725/1977	0	688.8259
	Zwartrug 111	T14725/1977	4	11.3717
	Vogelrivier 119	T4489/1980	1	847.1686
				1547.3662
David De Klerk	Farm 236	T29603/1973	0	108.5483
	Groene Fontein 269	T29603/1973	0	1676.2559
	Farm 228	T29603/1973	0	248.5299
				2033.3341
Philippus Loock (Jnr)	Willem Burgers Rivier 317	T32357/1996	1	796.0894
	Willem Burgers Rivier 317	T32357/1996	10	596.6060
	Willem Burgers Rivier 317	T32357/1996	11	957.6171

	Spring Fontein Proper 315	T32357/1996	0	405.5679
	Farm 318	T32357/1996	0	181.8874
	1111111111111111111111111111111111111			3296.2136
Anna Sophia Jordaan	Farm 408	T25601/1983	0	167.3049
	Hartebeeste Hoek 407	T25601/1983	3	95.5890
	Hartebeeste Hoek 407	T25601/1983	4	80.0915
	Hartebeeste Hoek 407	T25601/1983	8	71.5519
		, , , , , ,		414.5373
Jagtpoort Boerdery CC	Newland 306	T59464/1983	0	860.2093
,	Jagt Poort 301	T59464/1983	1	270.3486
	Jagt Poort 301	T59464/1983	3	139.9173
	Jagt Poort 301	T24248/1977	5	7.0079
	Jagt Poort 301	T24248/1977	7	120.8795
	Jagt Poort 301	T24248/1977	8	46.8537
	Jagt Poort 301	T59464/1983	10	327.8761
	Jagt Poort 301	T24248/1977	11	301.2137
	Jagt Poort 301	T7573/1995	12	2.4012
	Farm 305	T59464/1983	0	249.9346
	Farm 304	T24248/1977	0	112.6197
	Esels Hoek 302	T24248/1977	1	1145.2261
	LSEIS FIOEK SOZ	124240/1377	1	3584.4877
Simon Christoffel Jacobus Botha	Wolwefontyn 277	T54074/1984	0	208.1887
Simon Christoffer Jacobas Botha	· ·			
	Wolwefontyn 277 Wolwefontyn 277	T4275/1983 T54074/1984	2	47.9658
				306.1474
	Wolwefontyn 277	T54074/1984	3	1348.3327
	Wolwefontyn 277	T54074/1984	6	199.9603
	De Kuylen 272	T54074/1984	3	132.7625
	Farm 273	T54074/1984	1	11.1949
	Farm 274	T54074/1984	0	67.7616
	De Twis Kuil 278	T54074/1984	3	59.1378
	Ruygtevalley 321	T54074/1984	4	619.1813
				3000.6330
Goudfontein Family Trust	Tiger Kloof 310	T66583/2000	0	3481.3186
	Olieve Boom 308	T66583/2000	0	727.2885
	Farm 312	T66583/2000	0	566.8843
			_	4775.4914
Goudfontein Boerdery Pty Ltd	Springfontein 314	T66583/2000	0	510.4559
	Farm 313	T66583/2000	0	189.3978
	Willem Burgers Rivier 317	T66583/2000	12	151.3963
	Goudfonetin 72	T66583/2000	0	383.2134
				1234.4634
Dievekop Boerdery Pty Ltd	Dieve Kop 396	T66584/2000	1	660.4148
	Farm 299	T66584/2000	0	93.5576
				753.9724
Coert Petrus Vorster	Bul Hoek 285	T66527/2003	0	1112.9063

	Bul Hoek 285	T59218/2005	2	762.2206
	Farm 284	T59218/2005	0	291.8861
	Rietvalley 243	T59218/2005	0	1045.8856
	Rietvelley 243	T66527/2003	3	364.9040
	De Twis Kuil 278	T66527/2003	1	305.1267
				3882.9293
Michael Hubert Vorster	Rietvalley 243	T25085/1986	2	418.5558
				418.5558
Wildehoender Trust	Rietvalley 316	T25084/2012	0	630.5903
	Rietvalley 316	T44962/2012	2	1054.3909
				1684.9812
Tjaart Petrus Johan Vorster	Wilde Hoender Hoek 252	T8768/1982	0	133.7589
	De Kuylen 272	T8768/1982	0	526.1690
	De Kuylen 272	T8768/1982	2	408.5500
	De Twis Kuil 278	T8768/1982	2	140.6032
	Farm 250	T8768/1982	0	86.9537
				1296.0348
Business Project Management CC	De Twis Kuil 278	T40678/2009	0	653.0900
	Wolwefontyn 277	T40678/2009	5	309.6849
	Wolwefontyn 277	T40678/2009	8	21.8473
	Rietvalley 243	T40678/2009	4	408.8085
	Rietvalley 243	T40678/2009	5	32.1417
				1425.5724
Barend Vorster Du Randt	Farm 58	T87277/1996	2	85.6656
	Farm 134	T38390/2008	1	507.2191
	Farm 133	T87278/1996	0	1560.2658
				2153.1505
Johannes Daniel Du Randt	Farm 58	T5292/1958	1	1224.8408
				1224.8408
Oryx Asset Management CC	Upsal 386	T72328/2012	6	219.8082
	Upsal 386	T72328/2012	5	16.0500
	Os-Kom 8	T72328/2012	0	821.6141
	Paarde Kraal 7	T72328/2012	1	447.1087
				1504.5810
Louw De Klerk Family Trust	Welgelegen 20	T72172/2008	0	890.1508
	Middelwater 21	T72172/2008	1	281.3708
				1171.5216
George Troskie Botha	Joubertskraal 83	T23349/1983	2	312.2547
	Hartebeest Laagte 91	T23349/1983	0	3436.0781
				3748.3328
Beletskloof Beleggings BK	Schuil Hoek 242	T67888/2005	0	1196.1827
				1196.1827
Richard Norton Rogers	Dieve Kop 294	T22798/1996	2	838.2822
	Dieve Kop 294	T22798/1996	6	137.6804
	Dieve Kop 294			

	Klip Fonteyn 234	T96015/1997	8	255.2465
	Klip Fonteyn 234	T96015/1997	9	740.9002
	Klip Fonteyn 234	T22798/1996	10	599.5724
	Klip Fonteyn 234	T96015/1997	11	149.8931
	Klip Fonteyn 234	T22798/1996	15	517.8592
	Klip Fonteyn 234	T22798/1996	18	74.5183
	Klip Fonteyn 234	T22798/1996	19	32.5482
	Farm 235	T96015/1997	0	174.6240
	Roode Hoogte 233	T1147/1980	1	2091.3756
	Rheeboks Fontyn 231	T1147/1980	4	651.3654
				6889.2881
CW Erasmus Family Trust	Sneeubergs Kloof 2	T28397/1997	1	196.6783
	Sneeubergs Kloof 2	T28397/1997	2	226.4028
	Schurfte Berg 4	T28397/1997	4	892.0537
	Schurfte Berg 4	T28397/1997	5	602.7818
	Groote Zeekoe Gat 5	T49646/2001	0	1047.2017
	Garstlands Kloof 384	T28397/1997	1	1225.2291
				4190.3474
Willem Petrus Erasmus	Rootvlei 544	T12799/1992	1	404.4069
	Spitz Kop 534	T12799/1992	18	5.3830
	Annex Spits Kop 539	T12799/1992	0	539.8061
				949.5960
Frost Family Trust	Karee Kloof 369	T18616/2009	2	74.0073
				74.0073
Eldorado Trust	Bulletsjes Kraal 533	T12103/2006	5	295.8789
	Bulletsjes Kraal 533	T12103/2006	6	635.5034
	Spitz Kop 534	T12103/2006	8	14.1813
	Spitz Kop 534	T12103/2006	2	89.3220
	Spitz Kop 534	T12103/2006	9	1169.2519
	Spitz Kop 534	T12103/2006	14	180.4359
	Spitz Kop 534	T12103/2006	15	415.7342
	Spitz Kop 534	T12103/2006	16	91.9870
	Annex Spitz Kop No. 539	T12103/2006	1	0.0694
				2892.3640
Toby Michau Trust	Karee Kloof 369	T85199/2000	0	2554.4354
	Karee Kloof 369	T85199/2000	3	15.8245
	Ganna Hoek 476	T85199/2000	0	30.8737
	Farm 478	T85199/2000	0	65.1535
				2666.2871
Leliekop Trust	Bulletjes Kraal 533	T34928/2008	8	177.2947
	Spitz Kop 534	T34928/2008	11	6.3240
	Spitz Kop 534	T34928/2008	17	0.0406
	Annex Spitz Kop 539	T34928/2008	2	487.9672
	Annex Present 543	T34928/2008	0	220.9853
	Hartebeeste Laagte 28	T34928/2008	6	605.8536

	Bothas Kraal 27	T11233/2011	11	232.3629
	Groote Dam 26	T11233/2011	1	2151.8711
				3882.6994
Johannes Christoffel Du Plessis Trustees	Hartebeeste Laagte 28	T28500/1972	0	103.5975
	Hartebeeste Laagte 28	T28500/1972	3	327.7662
	Bothas Kraal 27	T28500/1972	1	523.3039
	Bothas Kraal 27	T28500/1972	3	2.2827
	Bothas Kraal 27	T28500/1972	5	1062.7435
	Bothas Kraal 27	T28500/1972	7	291.9218
	Bothas Kraal 27	T28500/1972	9	140.2243
				2451.8399
W de S Erasmus Family Trust	Groote Zeekoe Gat 5	T49647/2001	1	1052.1582
	Schurfte Berg 4	T28398/1977	3	670.4773
	Schurfte Berg 4	T28398/1977	1	1352.4640
	Farm 3	T28398/1977	0	100.2542
	Cradock Rd 594	T29889/2013	0	2069.7211
	De Roode Wal 367	T29889/2013	3	37.7389
				5282.8137
Willem De Sanders Erasmus	Spitz Kop 534	T28675/1990	0	1226.6045
	Spitz Kop 534	T28675/1990	3	149.4677
	Spitz Kop 534	T28675/1990	4	94.4298
	Spitz Kop 534	T28675/1990	5	79.3159
	Groot Hoek 470	T28675/1990	4	109.6504
	Ganna Hoek 475	T28675/1990	4	85.3565
				1744.8248
J.L. Jordaan Business Trust	Groot Hoek and Spitz Kop 535	T15919/1996	0	1382.1428
	Groot Hoek 470	T15919/1996	0	562.7558
	Groot Hoek 470	T15919/1996	1	592.9457
	Groot Hoek 470	T15919/1996	3	21.4133
	Groot Hoek 470	T15919/1996	6	598.5674
	Cradocks Hoek 472	T15919/1996	0	255.1750
	Cradocks Hoek 472	T15919/1996	1	57.2963
	Fleurville 573	T00022/1999	0	1565.4231
	Brand Hoek 471	T15919/1996	0	629.6595
	Wilde Paarde Nek 464	T15919/1996	0	512.0805
				6177.4594
The Leeukop Trust	Farm 24	T3481/2012	0	281.7933
	Doornbosch 23	T3481/2012	2	0.9910
	Doornbosch 23	T3481/2012	0	1314.8742
	Farm 25	T3481/2012	0	265.3856
	Farm 357	T3481/2012	0	663.4283
	Buffels Hoek 546	T3481/2012	6	734.3996
	Ganna Hoek 475	T3481/2012	1	16.9293
	Farm 474	T3481/2012	0	48.1899
	Brand Kloof 368	T3481/2012	4	1637.9076

				4963.8988
Vaaldraai Trust	Groote Vlakte 536	T12994/2007	4	912.4921
	Groote Vlakte 536	T12994/2007	5	618.0335
	Annex Riet Poort 540	T12994/2007	0	1358.2328
	Groot Hoek 470	T12994/2007	2	928.5664
	Groot Hoek 470	T12994/2007	5	220.8196
				4038.1444

2.5 Total area

The Protected Environment, as of the date of declaration (01 April 2016), is currently 268 343 ha in size (Appendix 4, Map 1).

2.6. Highest point

The highest point in the Protected Environment is Nadou which is 2429 m above mean sea level (AMSL).

2.7 Municipalities within which the Protected Environment falls

The Protected Environment is situated within the following local and district authority boundaries:

- Sarah Baartman District Municipality
 - o Blue Crane Route Local Municipality; and
 - o Dr. Beyers Naude Local Municipality.
- Central Karoo District
 - o Beaufort West Local Municipality.
- Chris Hani District Municipality
 - o Inxuba Yethemba Local Municipality.

2.8 Land claims

There is currently (2017) no land claim registered against any portion of land within the Protected Environment. However, land claims can be submitted until 30 June 2019.

2.9 International, national and provincial listings

There are no relevant international, national or provincial listings.

2.10 Biophysical description

2.10.1 Climate

The climate of the Protected Environmentclusters to the east is best described as cool and arid. Mean monthly minimum and maximum temperatures vary from 6 $^{\circ}$ C – 28 $^{\circ}$ C in summer (September to March) and from 0 $^{\circ}$ C – 20 $^{\circ}$ C in winter (April to August) (Brown and Bezuidenhout, 2000). Rainfall averages about 400 mm, with most (70 %) falling in the summer months. Average annual rainfall for the period 1963 - 2014 was 405 mm with a distinct summer season peak between October to March (75 %). January had the highest average rainfall with 61 mm while June had the lowest with 12 mm. Periodic light snow occurs during the winter months. Frost is common between May and October.

The climate of the Protected Environment clusters to the west is best described as semi-arid with 32 % of the average annual total of 336 mm of rain falling between February and April. Fog occurs frequently over the higher areas, predominantly from February to April, and contributes to moisture availability in these areas. Frost is usually experienced from April to September, and snow occurs sporadically in winter on the high plateaus. Maximum air temperatures during summer may exceed 43 °C, with winter minimal falling below -3 °C. Although there is no evidence of progressive desiccation at Graaff-Reinet, oscillatory variations in the rainfall are apparent.

2.10.2 Topography

The Protected Environment is situated between 740 and 2135 m above sea level. Gradients may vary from moderate to very steep where the landscape is deeply bisected by numerous kloofs or level 'vlaktes' of sedimentary origin.

The northern area of the Protected Environment is located on a relatively undulating section of the plateau inland of the Great Escarpment (which separates the Great Karoo to the south and Upper Karoo to the north), with moderate increases in altitude outwards from the centrally located Wilgerboom River, from 1,000 to 1,300 m AMSL.

2.10.3 Geology and soils

The geological formations in the eastern section of the Protected Environment consist of sandstone, siltstone and mudstone of the Beaufort Group of the Karoo Supergroup, with dolerite plates and dykes. The mountain highlands rugged landscape is strongly associated with rocky outcrops, which cover 60% to 80% of the mountainous area. The steep midslopes are the most prominent topographical position in this mountainous landscape, with the dominant soil-rock complex consisting of rock, while the Glenrosa soil form is subdominant. The geology of this landscape consists of dolerite with mudstone, shale and sandstone of the Balfour Formation, Beaufort Group of the Karoo Supergroup. The middle plateau rolling landscape is strongly associated with a soil pattern where duplex soils, such as Swartland and Valsrivier soil forms, are dominant. These plains are dominated by plateau midslopes but also include the steep midslopes and footslopes topographical positions. The geology of this landscape is mudstone, shale and sandstone of the Balfour Formation, Beaufort Group of the Karoo Supergroup. The valley bottomland undulating plains landscape is strongly associated with pedologically young landscapes, which are predominantly rocky and alluvial. It refers to land where lime occurs regularly in upland and valley-bottom soils. Soil forms that epitomise this land type are Glenrosa and Oakleaf. The geology of this landscape consists of mudstone, shale and sandstone of the Beaufort Group of the Karoo Sequence with rare dolerite intrusions. Two topographical positions are prominent in this terraced landscape, namely the valley bottomlands and drainage lines which include the Wilgerboom River (Land Type Survey Staff, 2004).

The western section of the Protected Environment forms part of the southern portion of the Karoo mountain complex which is in turn, part of the Great Escarpment. The mountains in this area contain dolerites which have been forced through the older Karoo sedimentary rocks. These dolerite intrusions affect the adjacent mudstone, siltstone and sandstone, creating metamorphic rocks such as lidianite from the mudstone. Subsequent erosion of the weaknesses in the dolerite has resulted in the characteristic landscape of buttes and mesas. The rock terraces, mesas, buttes and needles are characteristic profiles of arid landscapes. The geological system consists of very thick layers of near horizontal strata of sedimentary rocks. The largest part of the pediment is covered with alluvium, wash, gravel, sands, mud and wash stone of recent origin, with characteristic superficial calcrete. These tertiary to quaternary deposits are an important feature influencing the vegetation of the Karoo biome, as they represent the growth medium for many dwarf shrubs in the region. The soils are generally calcareous duplex forms of a secondary nature, having been deposited as alluvium on the impermeable sandstone. These duplex soils are subject to sheet and gully erosion, which is aggravated by a reduction in vegetation cover (SANParks, 2013)

2.10.4 Fresh water ecosystem

According to Holness (2013) 93 071 ha of the Protected Environment contains nationally important catchment areas identified in the National Freshwater Ecosystem Priority Areas (NFEPA) project, including 36 000 ha of Freshwater Ecosystem Priority Areas (FEPA) catchment and 57 069 ha of other FEPA catchment types. The Protected Environment has the presence of a number of rivers. These rivers are generally seasonal, although surface water persists year-round in riverbed pools fed by fountains. The greater amount of runoff is via these seasonal rivers and streams and occurs during the sporadic, strong thunderstorms of spring and late summer. Within the Protected Environment, 209 ha of priority wetlands and 945 ha of other wetland systems are present (Appendix 4, Map 2).

Table 2: Rivers found within the Protected Environment

Rivers found in the Mountain Zebra-Camdeboo Protected Environment			
Camdeboo	Davels		
Sands	Willem Burgers		
Swart	Oompies		
Moordenaars	Kareepoort		
Suurbergspruit	Joubert		
Pienaars	Apies		
Sundays	Melk		
Beletskloofspruit	Coetzeeskloofspruit		
Izaks	Kareebos		
Groenvallei	Klein Vis		
Doring	Gannhoek		
Waterkloof	Droe		
Perdekraalskloofspruit	Plat		
Pauls	Voel		
Flip	Buffelshoekspruit		
Brandkloofspruit	Groot Blyde		
Schurwebergkloof	Bok		
Riet	Wilgerboom		

2.10.5 Terrestrial flora

The Karoo is generally arid sub-desert country – vegetation cover and composition is thus generally variable and is primarily influenced by the variation in rainfall. While the system is highly resilient, and recovers rapidly from drought, floods, insect outbreaks and overgrazing, the veld in the Protected Environment is still impacted by prolonged effects of previous veld mismanagement. Overgrazing of the more palatable grasses and Karoo bushes in the past has, in some areas, resulted in their gradual replacement by unpalatable species, dwarf shrubs and poor ground cover. This in turn promotes soil erosion as the cover by such dwarf shrubs is much less effective in preventing surface water run-off than is a mixed cover of karroid plants (SANParks, 2013)

The Protected Environment is located in a transitional area between four biomes: Grassland, Nama Karoo, Albany Thicket and Savanna. Six major vegetation types are present, with the most important types being South Eastern Mountain Grassland (36 % of the planning domain), Eastern Mixed Nama Karoo (32 %), Valley Thicket (16 %) and Central Lower Karoo (13 %). Smaller areas of Spekboom Succulent Thicket and Sub-Arid Bushveld are also found. Importantly, all of the major vegetation types in the reserve are currently very poorly conserved elsewhere in South Africa: South Eastern Mountain Grassland (0.3 % conserved), Eastern Mixed Nama Karoo (1.08 %), Valley Thicket (2.2 %) and Central Lower Karoo (0.05 %) (Appendix 4, Map 5). The Protected Environment contributes to conserving a total of 268 078 ha of high value landscape identified in various systematic conservation planning processes. This includes 60 747 ha of Critical Biodiversity Area One and equivalents, 206 843 ha of Critical Biodiversity Area Two and equivalents and 92 ha of Ecological Support Areas (Holness, 2013).

The Sneeuberg mountain complex comprises one of the most prominent sections of the Great Escarpment in southern Africa but until now has remained one of the botanically least known regions. Recent studies have identified a range of rare, threatened and endemic plants, and the area is now recognised as a botanical Centre of Endemism (Holness, 2013).

2.10.6 Terrestrial fauna

The habitats within the Protected Environment support a variety of mammalian species. Although a distinct Karoo fauna is not recognised by zoogeographers (Werger, 1978), there are endemic species in a number of vertebrate taxa, particularly reptiles (SANParks, 2016). A faunal species survey has not yet been undertaken for the Protected Environment. The presence of naturally occurring animals in the area was determined on

a probability basis assessed in terms of the habitats found within the Protected Environment, the known geographical distribution of each likely species and the species on the checklists of the two National Parks. The area has also been identified as a Globally Important Bird Area.

Table 3: The number of naturally occurring species expected to inhabit the area

Faunal group	Estimated number of species
Lizards and snakes	50
Tortoises	6
Frogs and toads	6
Insectivores	5
Bats	4
Monkeys and baboons	2
Rabbits and hares	3
Rodents	20
Carnivores	18
Aardvark	1
Rock hyrax	1
Even-toed ungulates	11
Birds	272
Fish	8

There is a rich, largely undescribed, invertebrate fauna to be found in the region and some species may have a significant impact on the vegetation, notably the Karoo caterpillar *Loxostege frustalis*, the brown locust *Locustana pardalina* and the harvester termite *Hodotermes mossambicus* (SANParks, 2016). There are a number of endemic species found in the area as well as about 13 Red Data species.

It should be noted that the presence of game for breeding, hunting and ecotourism purposes means that the Protected Environment is home to a number of larger mammals that are not common to the area including buffalo, lion, cheetah, giraffe, sable, bush pig, warthog and white rhino. There is even the presence of species from other countries such as the Arabian Scimitar. These game populations are well confined and managed in terms of the different business requirements.

2.11 Archaeology and cultural heritage

The area was settled upon by a powerful Inqua tribe in the mid-1600's. The Inqua grazed vast herds of cattle and fat-tailed sheep on the apron veld from the Camdeboo River near Aberdeen across the Sundays River to the Agter-Bruintjieshoogte near Somerset-East. The first white farmers settled on the Camdeboo plains and Sneeuberg in 1770 introducing merino sheep and angora goats as well as foreign plants (Coetzee 1990). Although the first 'landdrost' of Graaff-Reinet was appointed in 1785, the area was already settled on by 'trekboers' well before this date. Early accounts of the district make note of the fact that large numbers of Khoikhoi people were settled here but they are not discussed in any of the early 'white' histories of the district. Furthermore, the area to the north of Graaff-Reinet (Sneeuberg) is known to have been a refuge of San groups who periodically raided 'trekboer' farms for livestock (SANParks, 2013).

There are a number of possible cultural heritage sites within the Protected Environment. A full study has not yet been conducted to confirm these sites, but this action forms part of the objectives in this management plan. There are a number of rock art sites and a bushman cave within the Protected Environment. There is also the presence of a 100-year-old Voortrekker monument (Andries Pretorius) and numerous Boer War graves. There is also the presence of a number of historical graves. Also found in the Protected Environment are 'tierhokke' (old predator cages), stone pillar remnants and Kenna temples.

The uniqueness of the Karoo Basin lies partly in the fact that its 50-million-year fossil record, covering a period from 240 to 190 million years ago, is largely unbroken. The intricate evolutionary pathways followed by different animal groups through time can thus be more closely traced than in other fossil-bearing systems

of rock strata. The area is characterised by sedimentary rocks of the Beaufort Series. These rocks, approximately 230 million years old, are rich in the fossils of the two main groups of early Karoo reptiles: the Pareiasaurs were large bulky herbivores of primitive descent while the mammal-like reptiles (Therapsida) are well represented by Dicynodonts, which gave rise to the modern mammals (Cluver, 1987). Exposed along the slopes of the karoo koppies and in the sides of river channels are the fossilised bones of reptiles. These animals lived in the prehistoric Karoo marshlands and in many cases their bones or skeletons were washed into lakes or pools and rapidly covered in mud. The fossils on display in the Reinet Museum in Graaff-Reinet are from an extensive collection made over an 18-year period from localities in the Graaff-Reinet district by Mr Alex T Bremmer (SANParks, 2013). There are a number of fossil beds and sites within the Protected Environment. An inventory of these sites has been actioned within this management plan.

2.12 Socio-economic context

The Protected Environment borders a number of the towns within the area. These towns include: Cradock, Pearston, Graaff-Reinet and Nieu-Bethesda.

According to Statistics South Africa (2016), the poverty rate for the Eastern Cape is currently the second highest at 70.6 %. The population rates for the three main local municipalities are the following;

- Dr Beyers Naude = 50 993;
- Inxuba Yethemba = 65 560; and
- Blue Crane Route = 36 002.

The Protected Environment is bordered on all sides by livestock farmers with mainly sheep, goats and cattle being farmed. There are also a number of game farms, hunting safari operations and private game reserves in the area. All of these farms and reserves contribute to the local social economy of the area through the employment of numerous staff. Full time staff and their direct families often reside on the farms with extended families in the adjacent towns. Some landowners also employ temporary staff to aid in seasonal activities. The Protected Environment may also play a role in employment and skills development of the local community through permanent employment, casual work and the SANParks Biodiversity Social Projects (BSP).

In September 2012, the moratorium on fracking in South Africa was lifted and various companies published their intent to prospect for shale gas in the Karoo, including areas adjacent to the Protected Environment. It has been recognised that this type of industry and other developments such as wind farms, could provide jobs and ultimately contribute to the local, regional and national economy. However, many landowners oppose shale gas mining applications within the Protected Environment on the grounds of this activity being incompatible with biodiversity conservation and a threat to environmental health, agricultural functioning and water conservation.

2.13 Tourism

As the Protected Environment is made up of a number of properties with their own businesses, there are a number of private tourism ventures operating within the area. Tourism is largely focussed on the game industry with game reserves, lodges and hunting safaris being the main tourism drivers. The Protected Environment is also home to a number of accommodation facilities such as bed and breakfast, self-catering and lodge accommodation. With the declaration of the Protected Environment, new tourism potential has been unlocked with opportunities for the landowners to contribute to collective tourism initiatives. The Protected Environment is also centred between the Camdeboo and Mountain Zebra National Parks which both function as tourism drivers for the region.



Section 3: Policy framework

The MZCPE Landowner's Association, like all protected area management authorities, is subject to the constitution, legislation, international agreements, national policies and government priorities of South Africa. Section 41 of the NEMA: PAA requires that management plans be located within the context of a coordinated policy framework (CPF).

In the case of the MZCPE the policy framework is located within the constitution of the Land Owners Association, the designated management authority. The constitution includes mechanisms for addressing issues of collective concern. Given the fragmented nature of the Protected Environment and the number of individual landowners it is not possible to create a comprehensive coordinated policy framework, but instead, relies on the constitution to guide any collective decision making and development of future policies and guiding principles around risk management, tourism, cultural heritage and resource use. The decision making process is further explained in section 3.2.

3.1 Adaptive management system

Protected areas are increasingly viewed as complex social-ecological systems. The social-ecological coupling acknowledges multiple interactions that take place between people and natural landscapes — even fenced-off protected areas are influenced by external social issues. These systems are regarded as complex because the results of interactions between the social and ecological components, as well as between components within each of these sub-systems, are often unpredictable. A further complication in the management of protected areas is that the suite of stakeholders may have widely varying or even conflicting expectations, based on different world views and values. Under these conditions of divergent stakeholder interests and limited predictability, it might be impossible to agree on an optimal solution and similarly unrealistic to expect certainty in terms of management outcomes. Adaptive management has been chosen as the approach of choice to deal with the complexity and multi-stakeholder tensions that characterise protected environment management decisions.

The adaptive management system used for this management plan began with determining the desired future state of the Protected Environment. The aim of this step was to build a sense of common purpose among all relevant stakeholders and to develop a collective roadmap for moving from a current reality to a more desirable social-ecological system. This desired state or vision has been described within the context of associated stakeholders and their respective values, as well as social, environmental, ecological, technological, political and economic influences. Description of the future state was further enriched by internally deliberating the distinctive and special features (called vital attributes) of the Protected Environment though a management planning workshop with SANParks and the LA.

The vision, together with the vital attributes of the system to be managed, informed the setting of objectives. A nested hierarchy of objectives was created and starts with high-level objectives that are deconstructed into a series of lower-level objectives and, ultimately, management options for achieving those objectives. A critical component of adaptive management is to monitor and evaluate the consequences of management decisions. Constant scrutiny of emerging results and evaluation against objectives are essential to allow strategy and methodology to be adjusted as new understanding and knowledge emerges.

3.2 Protected Environment-specific framework

The Protected Environment is managed by a management authority, the Mountain Zebra-Camdeboo Protected Environment Landowner's Association (LA). This association is guided by a formal constitution.

3.2.1. Executive committee

The LA is managed by an executive committee consisting of a chairman, vice chairman, secretary and a treasurer. This executive committee is voted in each year at the annual general meeting and stand for a year. Committee members can be re-elected if willing to stand.

3.2.2. Steering committee

The association also has a steering committee made up of the executive committee and includes a representative from each cluster of the Protected Environment. The steering committee functions as a first port of call for more day to day management decisions of the Protected Environment when matters needing LA involvement arises.

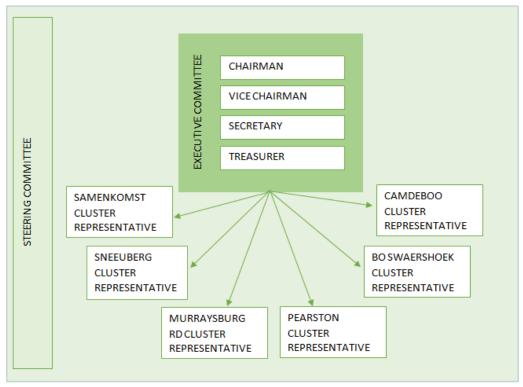


Figure 1: The management structure of the LA

3.2.3. Decision management

To understand the complexity about the different levels of decision making, it is vital to understand the 3 areas of decision focus and how the Protected Environment functions.

Table 4: MZCPE management focus and decision management

FOCUS AREA	RESPONSIBILITY	DESCRIPTION	DECISION MECHANISM
Individual	Individual	The Dretested Environment does not have any	None –
Individual		The Protected Environment does not have any	
property and	landowner,	influence on the private day to day management	Decisions made
its associated	business or	of an individual property apart from the	by individual
business	trust	regulations (Appendix 3). Any decisions in this	owner of each
		focus area belong to the individuals managing the	property
		property.	
Management	All landowners	The strategic plan of the MZCPE Management	Executive
plan –	of the Protected	Plan is designed to be implemented by all	committee,
Strategic plan	Environment	landowners within the Protected Environment as	steering
		a collaborative plan. Decisions here need to be	committee and
		approved under the decision protocols outlined in	all LA members
		the LA constitution.	
Management	All interested	The Concept Development Framework under the	Executive
plan –	landowners of	MZCPE management plan is a list of potential	committee,
Concept		projects collectively implemented within the	steering

Development	the Protected	Protected Environment by relevant and	committee and
Framework	Environment	interested landowners within the management	all sub-
		plan. As these projects may not be relevant to	committee
		every landowner, sub-committees may be	members
		established to involve those landowners who are	
		interested.	

Should the Executive Committee call a meeting, three members of this committee will form a quorum. Any decision that involves the constitution, regulations (Appendix 3) or management plan will require a majority vote of 75% of the LA members. At an annual general meeting, any other decisions (apart from those mentioned above) require a 25% member quorum.

Even if the quorum is represented at a meeting where a decision must be made, all members of the LA must be informed and will have the opportunity to object to a decision. Should there be any conflict arising to a decision made, a negotiation must be conducted to achieve a compromise.

3.3 Protected environment regulations

The activities within the Protected Environment are guided by a set of regulations as gazetted with the declaration notice (Appendix 3). These regulations are linked to the zoning plan of the Protected Environment (Appendix 4, Map 4).

3.4 Support to the Protected Environment

The members of the Protected Environment have partnered with SANParks through a Memorandum of Agreement (MoA) which is currently being finalised. The MoA highlights the responsibilities of both parties in the achievement of the objectives in this management plan. SANParks provides assistance to the landowners of the Protected Environment in order to secure biodiversity conservation and ecosystem function within the Protected Environment (see Section 10). A number of the properties in the Protected Environment fall within the buffer zones of the two national parks and therefore this partnership is vital and strategic to aid the two parks with the implementation of SANParks' Buffer Zone Policy.



Section 4: Consultation

The LA recognises that protected environments must serve societal values and that they need to be part of and interrelate with the broader landscape and socio-economic context within which they are situated. The goal of the Protected Environment is to work directly with stakeholders through a public participation process to ensure that stakeholder concerns and aspirations are consistently understood and considered. Therefore stakeholders, both interested and affected, were included in the revision process of the Protected Environment management plan by notifying them of participation processes through mechanisms suitable for the different stakeholder groups. These processes provided the opportunity for input from all stakeholders within reasonable timeframes, with the emphasis on sharing of information and joint learning.

The objectives of the stakeholder participation process are to:

- Create a channel for the accurate and timely dissemination of information to interested and affected stakeholders;
- Create the opportunity for communication between the Protected Environment and the public;
- Promote opportunities for the building of understanding between parties;
- Provide the opportunity for stakeholders to give meaningful input into the decision-making processes that drive the development of the Protected Environment management plan.

The approach to the stakeholder participation process is based on the principles embodied in the following legal framework, namely:

- The Constitution of the Republic of South Africa Act No. 108 of 1996;
- The National Environmental Management Act No. 107 of 1998 (NEMA); and
- The National Environmental Management: Protected Areas Act No.57 of 2003 as amended.

Details regarding the stakeholder process that was followed are outlined in Appendix 1.



Section 5: Purpose and vision

5.1 Purpose of the Protected Environment

The purpose of the Protected Environment is to:

- enable owners of land to take collective action to conserve their property's biodiversity with legal protection against threats to this biodiversity
- protect the area which is sensitive to development due to its biological diversity; natural characteristics; scientific, cultural, historical, archaeological or geological value; scenic and landscape value; or provision of environmental goods and services; and
- maintain the current landscape of the area which has, through current and past management, retained its biodiversity value.

In addition to the above purpose, the Protected Environment may also contribute to:

- increasing the potential for the further development of nature-based tourism; and
- not only maintaining the current landscape, but, promoting better management of the land in the future.

5.2 Desired state for the Protected Environment

5.2.1 Vision and mission

The vision is an inspirational statement designed to provide a picture of the envisaged future for the Protected Environment. It answers the question of 'where do we want to go?' The Protected Environment's vision statement is as follows:

VISION

"Conservation through collaboration"

The mission defines the fundamental purpose of the Protected Environment, succinctly describing why it exists and what it does to achieve its vision.

MISSION

"To maintain the current landscape in terms of its scenic, biodiversity and landscape value through collective action by the private landowners and to protect the area from detrimental developments."

In an effort to achieve this mission, this management plan provides the framework for what must be accomplished in its timeframe. A fundamental principal of the Protected Environment is that it integrates conservation with livestock production, arable agriculture, hunting and ecotourism.

The focus on biodiversity conservation efforts will be to:

- protect the landscape and its scenic characteristics;
- secure and, where possible, improve key biodiversity features and ecological functioning within the Protected Environment; and
- promote sustainable conservation-minded agriculture/land use.

5.2.2 Operating principles or values

The Protected Environment has adopted ten operating principles which serve as guiding principles around which all landowner behaviour and actions are governed and shaped.

These principles or values are:

- show **leadership** in all we do;
- be guided by environmental ethics in all we do;
- strive for scientific and service excellence at all times;
- act with professionalism at all times;
- adopt, and encourage initiative and innovation by all;

- treat all our stakeholders with equity and justice;
- exercise discipline;
- show respect to all;
- act with honesty and integrity;
- strive for transparency and open communication at all times; and
- accept with humility the **mandate of custodianship** of biodiversity **for future generations** while recognising that both natural and social systems change over time.

5.2.3 Protected Environment context

The context refers to the current circumstances and the conditions that determine these circumstances. The context is therefore important as a set of agreed-upon realities that will influence the setting of management objectives. The context is summarised under sections 2.1 to 2.13.

5.2.4 Vital attributes

The vital attributes of the Protected Environment are the important characteristics and / or properties of the Protected Environment that concisely describe the key features of the Protected Environment. The vital attributes are:

- 1. The Protected Environment's biodiversity assets, primarily the ecological gradients, geology, soil and climate that produce the particular drainage lines, catchments and faunal and floral assemblages typical of the area;
- 2. The Protected Environment as a tourism drawcard in the region, renowned for its Karoo hospitality with well-established and potential tourism products;
- 3. Cultural heritage sites (including San rock paintings and engravings, grave sites, historical buildings etc.);
- 4. Contribution to the agricultural economy and food security as a producer of free-range meat and fibre:
- 5. Conservation of important vegetation types and plant communities;
- 6. The scenic characteristics of the area;
- 7. Possible contribution to metapopulations of Cape mountain zebra, rhino and cheetah;
- 8. Conserving species of special concern; and
- 9. Catchments within the Protected Environment.

5.2.5 Determinants and risks to the vital attributes

A major component of management's responsibility is to ensure the maintenance of the determinants or strengths of the vital attributes and to limit the influence of threats to the system.

The boxes below reflect the vital attributes, determinants and threats.

1. The Protected Environment's biodiversity assets, primarily the ecological gradients,				
geology, soil and climate that produce the particular drainage lines, catchments and faunal				
and floral assemblages typical of the north-eastern Karoo-Grassland-Thicket interface.				
Determinants: Fire, geomorphology, successful management of herbivory				
Threats				
Inappropriate fire management	Invasive alien vegetation			
Climate change	Soil erosion			

^{*} Please note that due to tight timelines and that this is a very large and newly established Protected Environment, no sensitivity map has yet been created for the MZCPE. The intention within the first management plan cycle is conduct all the necessary baseline assessment and inventories and submit this information to a consultant to create the necessary sensitivity map. The sensitivity map will then be added to the management plan within its first review process.

Inappropriate development	Mining and prospecting
---------------------------	------------------------

2. The Protected Environment is a tourism drawcard in the region renowned for its Karoo hospitality with well-established and potential tourism products;

Determinants: Available products and activities, stop-over location, unique landscape features, rich history of cultural aspects, infrastructure and human capital, biodiversity offering, sightings of elusive species.

Threats

Social and political climate	Breakdown in communication
Condition of regional road infrastructure	Detrimental developments (mining and
Land security	prospecting)

3. Cultural heritage sites (including San rock paintings and engravings, grave sites, historical buildings etc.); Determinants: Rich history, diverse collection of different cultural heritage sites Threats Inappropriate fire management Invasive alien vegetation

4. Contribution to the agricultural economy and food security as a producer of free range meat and fibre

Soil erosion

Mining and prospecting

Determinants: Maintain the current land use of the area, diverse product range, diverse land management strategies, unique product values (free-range, Karoo-sourced)

Threats

Climate change

Inappropriate development

Lack of funding – Could be relevant wrt BSP	Change in government funding priorities
Mining and prospecting	Change in labour legislation
Water management	Climate change
Land security	Emotion/Activists
Global and national economics	Disease management
Drought	

5. Conservation of important vegetation types and plant communities. Determinants: Underrepresented and threatened vegetation types, unique plant communities, Protected Environment expansion strategy, climate, geomorphology. Threats Mining and prospecting Climate change Catchment management Soil erosion

6. The scenic characteristics of the area		
Determinants: Limited development in the Protected Environment, low level of human impact,		
topography, wide open spaces, remoteness, no light pollution, clear skies.		
Threats		
Inappropriate fire management	Invasive alien vegetation	
Climate change	Soil erosion	
Inappropriate development	Mining and prospecting	

7. Possible contribution to metapopulations of Cape mountain zebra, rhino and cheetah		
Determinants: Genetic diversity, healthy de	emographics, preserving the vital ecological	
processes for these species, private cooperation, market value of certain species.		
Threats		
Stochastic events	Inbreeding	
Poaching	Disease	

8. Conserving species of special concern.		
Determinants: Preserving the vital ecological processes for these species, genetic diversity, and		
healthy demographics.		
Threats		
Stochastic events	Poor management of habitats crucial to	
Poaching	species	
Disease	Inappropriate fire management	
Inbreeding	Incomplete knowledge of species occurrence	
Excessive management	and management interventions	
Invasive alien plant species		

9. Catchment management within the Protected Environment		
Determinants: Catchment management.		
Threats		
Climate change	Inappropriate development	
Pollution	Ineffective and uninformed freshwater	
Mining and prospecting	management	
Impoundments	Invasive alien plants / animals	

5.2.6 High level objectives

While the Mission sets out the "Where do we want to go", high level objectives act as the roadmap to achieve the Mission. These high level objectives tend to flow naturally from the vital attributes. The desired state is achieved by means of a hierarchy of objectives (Figure 2), starting with an overall objective aligned with the Protected Environment's organisational structure and the Protected Environment's vision and mission statements, then broad, high level objectives (this Section) and then more detailed levels, ending with specific operational or management actions (Section 10). Discussions at stakeholder meetings gave rise to an initial set of high level objectives. These were refined to reflect the following:

MISSION

To maintain the current landscape in terms of its scenic, biodiversity and landscape value through collective action by the private landowners and to protect the area from detrimental developments

Cultural Sustainable **Effective** Social Sustainable Bioregional **Biodiversity** heritage agriculture management **Tourism** To optimise socio-To develop an To ensure co-To maintain the To strive for To ensure the To identify economic awareness of. effective and current land uses operative tourism potential persistence of opportunities, and appreciation efficient management biodiversity by in the Protected of the area and and cooperation for, the historical within the management and promote conserving and **Environment and** within the region. value of the Protected sustainable administrative restoring allow for growth Protected Environment, by of this tourism conservationsupport services ecological Environment, by effectively minded agriculture through good patterns and potential through protecting and or land use. engaging with governance, processes and collaborative maintaining the relevant enabling the populations of key management cultural heritage stakeholders Protected within the region. species assets, for current through representative of Environment to and future collaborative achieve its the area. generations. interventions. objectives.

Figure 2: The Protected Environment's high level objectives

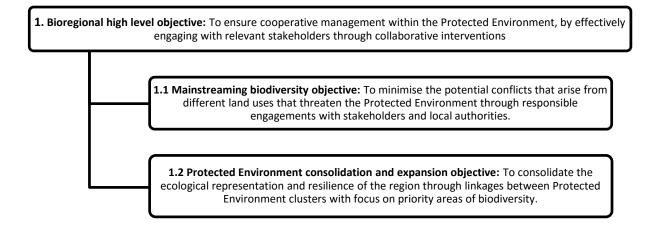


Figure 3: Bioregional high level objective and supporting objectives.

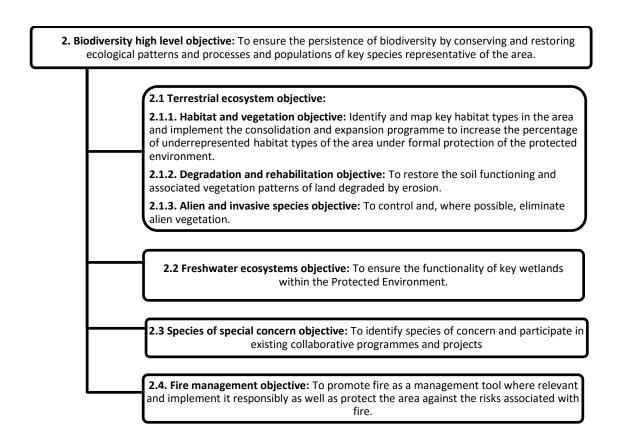


Figure 4: Biodiversity high level objective and supporting objectives.

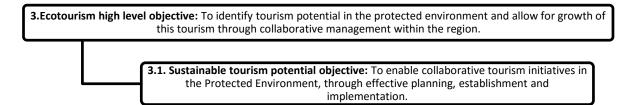


Figure 5: Ecotourism high level objective and supporting objectives.

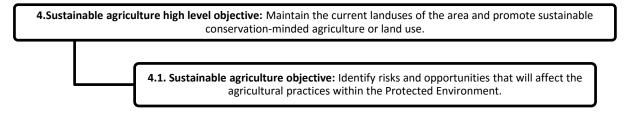


Figure 6: Sustainable agriculture high level objective and supporting objectives.



Figure 7: Social high level objective and supporting objectives.

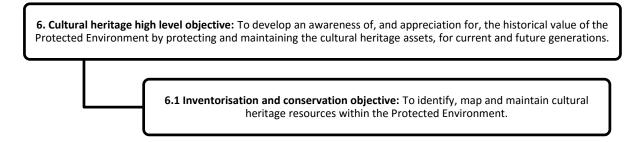


Figure 8: Cultural heritage high level objective and supporting objectives.

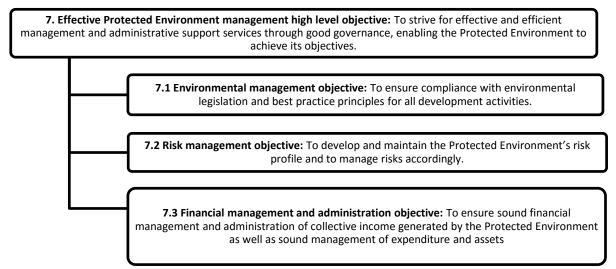


Figure 9: Effective Protected Environment management high level objective and supporting objectives.



Section 6: Zoning

The primary objective of the Protected Environment's zonation plan is to establish a coherent spatial framework in the protected environment to guide and coordinate conservation and tourism and to minimise conflict between these sometimes antagonistic activities. A zoning plan is also a legislated requirement of the NEM: PAA, which stipulates that the management plan must contain "a zoning of the area indicating what activities may take place in different sections of the Protected Environment and the conservation objectives of those sections".

During the preparation of the "Intent to Declare" document, landowners were given a chance to zone their properties. The zonation plan currently includes high and low impact zones (Appendix 4, Map 4) and activities within each zone are guided by the regulations gazetted for the Protected Environment at declaration in April 2016 (Appendix 3).

6.1 The zoning system

The Protected Environment has adopted a multiple zoning system. The system comprises of:

- High Impact Zones; and
- Low Impact Zones.

6.2. The zoning process

When creating the individual management agreements for the landowners within the Protected Environment, an opportunity was granted for each landowner to zone his / her property. Landowners were made aware of the different land uses permitted in each zone and could therefore zone accordingly. Any areas of high impact development, such as homesteads and arable lands, were zoned as high impact zones and those areas used for grazing and basic support infrastructure were zoned as low impact zones. The zones and their associated descriptions and land use objectives are described in Table 5 below.

Table 5: The different zones demarcated in the Protected Environment

Zone	Description	Land use objectives
Low Impact Zone	Grazing camps that are used regularly for commercial livestock production and that are thus grazed at a sustainable commercial stocking rate relative to veld condition. This zone can include minor roads, fencing and ecotourism infrastructure	 Provision of grazing for commercial livestock production Some opportunities for species conservation Habitat integrity and ecosystem functioning
High Impact Zone	This zone includes areas set out for major infrastructure such as buildings and large dams. It also includes any arable land for crop production, and infrastructure for hunting and ecotourism as well as any other areas earmarked for future development.	 Provision of infrastructure space Provides opportunities for the crop market

6.2.1 Low Impact Zone

Objective

The objective of this zone is to provide suitable grazing opportunities to ensure the functioning of a livestock farm business, regardless of species managed.

Characteristics

This zone has been designed for areas that have historically been used for intensive commercial grazing of livestock. These lands are usually located nearby to the homestead or arable lands and have therefore been subject to relatively high intensity grazing over many decades. As a result, it is highly likely that there have been significant changes in species composition over a period of time. The land use objective for this zone is to enable continued grazing of livestock whilst maintaining the integrity and functioning of the ecosystem.

In instances in which the land has been selectively- or over-utilised, and the integrity and functioning of the ecosystem has been compromised, appropriate remedial measures should be implemented where possible. These may include lowering stocking rates, increasing the ratio of cattle:sheep and increasing the periods of rest.

Permissible and non-permissible activities

Permissible activities are:

- Grazing of livestock and game;
- Ecotourism and hunting; and
- Small scale infrastructure to support the above mentioned activities;
- Support infrastructure such as farm tracks, water points, and fencing as long as these activities adhere to existing national, provincial and municipal legislation.

Non-permissible activities are:

- Ploughing of rangeland to convert it to arable land;
- Development of major infrastructure on such a scale as to require an environmental impact assessment in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998);
- Any form of illegal developments according to South African legislation; and
- Any transition away from agriculture or ecotourism land use which includes the use of land for infrastructure installations, settlements and intensive tourism and recreation land uses such as golf courses, polo fields and housing estates.

6.2.2 High Impact Zone

Objective

The objective of this zone is to provide a suitable area for high impact activities vital for the functioning of a commercial farming business such as buildings, stores and arable lands.

Characteristics

This zone has been designated for the current and future development of major infrastructure and arable lands. The zone can include the present arable lands and infrastructure but can also include areas that may be used in the future for the same purpose.

Permissible and non-permissible activities

Permissible activities are:

- High impact agricultural activities including arable lands and irrigation;
- Development of major infrastructure such as homesteads, labour accommodation, support farm buildings such as stores, barns and sheds, intensive working kraals, lodges and dams servicing the farm's main water needs;

- Creation of arable lands, dams and major access roads; and
- Any of the permissible activities allowed in the low impact zones, as long as these activities adhere to the national, provincial and municipal legislation.

Non-permissible activities are:

- Any form of illegal developments according to South African legislation; and
- Any transition away from agriculture or ecotourism land use which includes the use of land for infrastructure installations, settlements and intensive tourism and recreation land uses such as golf courses, polo fields and housing estates.

6.3. Zonation within the context of the municipal Integrated Development Plans and Spatial Development Frameworks

Currently it has been impossible to indicate the above mentioned zonation within the context of the relevant municipal Integrated Development Plans (IDP) as both of the main municipalities in the area are currently undergoing their IDP review process. To compound complexity in this regard, the newly amalgamated Dr. Beyers Naude Municipality has to revise their Spatial Development Framework (SDF) due to the acquisition of formal local municipalities. This has resulted in a lack of spatial data required in the Zonation map (Appendix 4, Map 4).

However, it should be noted that the MZCPE is currently represented in both municipal IDP processes and has committed to assist in aligning itself within the new SDFs. All the local municipalities as well as the two district municipalities were consulted in the public participation process for this management plan. The programmes and projects within this management plan have been submitted to the local municipalities as well as the two district municipalities and have been accepted as programmes within the IDPs. It is envisioned that by the time of review for this management plan, the spatial layer needed in the Zonation map (Appendix 4, Map 4) will be completed. For now it is hoped that the strong relationship being formed between the relevant municipalities and the MZCPELA will move from strength to strength.



Section 7: Access and facilities

7.1 Public access and control

The Protected Environment is made up of private farms, each with their own access points. The Protected Environment is disjointed in terms of area coverage and has no clear communal entry or exit points. The Protected Environment has been divided into clusters for the purposes of management and it is envisioned that, through the expansion and consolidation programme (see Section 8), the Protected Environment will in future be consolidated to a point where clear entry and exit points will be created (which may or may not include access control). The clusters have been created according to existing farmer's associations, conservancy boundaries and general location.

The area suffers a high level of stock theft and therefore many private landowners, farmers associations and conservancies have created access control points. Besides the properties falling within the Camdeboo Conservancy which is controlled with a key padded gate system requiring an access code, most clusters have no restricted access, but do monitor access into their areas through the use of monitored gate and boom systems. Restricted access is limited due the number of public roads that transect the area.

7.2 Airfields

There are a few private airfields within the Protected Environment that are utilised for private use of small aircraft. As the Protected Environment is not governed by any limiting airspace laws, the use of aircraft and the associated airspace is governed by general legislation. The location of these airfields are to be mapped within the first cycle of the management plan. Due to the lack of baseline information regarding this facility, the airfields are not currently indicated on the Physical Features map (Appendix 4, Map 2).

7.3 Visitor facilities

At present, there are no Protected Environment-specific visitor facilities. There is intention to create an inventory of tourism facilities within the Protected Environment in order to develop the tourism potential of the Protected Environment as a whole. Due to the absence of any collective Protected Environment visitor facilities, these facilities will not be present on the Physical Features map (Appendix 4, Map 2).

7.4 Administrative facilities

Administrative facilities on the private farms will include the landowner's homestead and associated agricultural stores. At present there are no dedicated administrative facilities for the Protected Environment as a whole. Due to the absence of any collective Protected Environment administrative facilities, these facilities will not be present on the Physical Features map (Appendix 4, Map 2).

7.5 Mining

Currently there are no mining activities present within the Protected Environment. In September 2012, the moratorium on fracking in South Africa was lifted and various companies published their intent to prospect for shale gas in the Karoo, including areas adjacent to and within the Protected Environment. It has been recognised that this type of industry and other developments such as wind farms, could provide jobs and ultimately contribute to the local, regional and national economy. However, landowners within the Mountain Zebra-Camdeboo Protected Environment oppose shale gas mining applications on the grounds of this activity being incompatible with biodiversity conservation and a threat to environmental health, agricultural functioning and water conservation.

The only mining that could currently be present in the MZCPE is the presence of borrow pits. As part of the initial baseline studies to be conducted within this management plan cycle, the possible presence of borrow pits will be investigated and should they be present, they will be indicated in the Physical Features map to be amended in the management plan revision process.

* Due to the unavailability of shapefile data for the proposed shale gas mining focus area, the shale gas mining focus area is depicted on Appendix 4, map 2 as an image insert. Effort will continue to acquire the needed shapefile by the time of review of this management plan.

7.6 Commercial activities

The Protected Environment is made up of a collection of private properties each operating their own commercial businesses in the form of agriculture, ecotourism and game management. The Protected Environment as a whole however, does not currently have any associated Protected Environment specific commercial activity. Due to nature of the MZCPE, the areas depicted as the Protected Environment on the Physical Features map (Appendix 4, Map 2) all represent private commercial businesses and currently no collective commercial activities exist.

7.7 Community use

As the Protected Environment is comprised of private properties, community use differs from one property to the next. Most agricultural properties have permanent staff who reside on these properties and they are often permitted to use these properties for day-to-day activities including controlled hunting and gathering. The Protected Environment has no specific community use policy but through the sustainable tourism and cultural heritage programmes (Section 10.3 and 10.5) and the activities identified in the Concept Development Framework (Section 9), community use will be investigated. Currently, due to the nature of community use as described above, no community use is depicted on the Physical Features map (Appendix 4, Map 2).

7.8 Servitudes

A number of servitudes exist within the Protected Environment in the form of Eskom power lines criss-crossing the property network (Appendix 4, map 2).



Section 8: Expansion Strategy

The Protected Environment was established through a partnership project between the Wilderness Foundation and SANParks to secure land within the project footprint in an attempt to safeguard highly valuable high altitude grassland. With a limited project duration of two years, it was resolved to work with the willing landowners in the area and provide a cut-off date for membership so that the documents for declaration could be submitted before the project ended in 2014. It was envisioned that additional land would be incorporated after the initial declaration during a second phase. Subsequent to declaration of the Protected Environment, work has begun on expanding and consolidating the Protected Environment.

During the first phase of the original project, landowner willingness was used to drive the creation of the Protected Environment. During the second phase, focus has been placed on securing areas vital for the conservation of high altitude grassland as well as consolidating the existing clusters of the Protected Environment to minimise fragmentation.

The expansion strategy for the Protected Environment will take into account the National Protected Area Expansion Programme (DEAT, 2008) as well as South African National Park's Buffer Zone Policy. A spatial priority plan that includes areas of national, international and global importance will be created to guide the expansion and consolidation process for the Protected Environment.

The Protected Environment is currently made up of 6 clusters. Although some of these clusters border each other, the clusters are predominately disjointed. The consolidation plan aims to secure land between the clusters through membership to the Protected Environment in order to ultimately create one consolidated Protected Environment unit. Currently, there are a number of developments outside of the Protected Environment where large tracts of land are undergoing declaration processes. These declarations will play a part in securing the area further around the Protected Environment and these other declarations will be taken into account within the expansion and consolidation programme.

The expansion and consolidation programme, under this management plan, will be assisted by SANParks under the GEF 5: Improved Management Effectiveness Project. It is envisioned that the expansion and consolidation programme will follow the above mentioned project's timeline with completion by the end of 2019. No land acquisition is planned within the expansion and consolidation programme.

The approach that the programme will follow can be found in section 10.1.2 on page 53.

Section 9: Concept development framework

9.1 Long term development plan

Opportunities need to be identified for possible development. Any development needs to be guided by the zonation plan for the Protected Environment. The Protected Environment needs to be seen as one unit and the development plan will refer to the development of projects that will be implemented for the collective Protected Environment and does not include development of the private commercial businesses operating on each property.

No infrastructure development is envisioned for the first cycle of this management plan. The developmental framework is rather based on activities that could be implemented within the Protected Environment. Activities identified in the developmental framework will be based on meeting the objectives outlined in this management plan, and once created, be embedded in the relevant management plan programmes.

* Please note that due to no collective infrastructure development existing or being planned for this management plan cycle, no map is provided for this Section.

Potential development proposals, including activity development, need to be identified and listed within the first management plan cycle.

9.1.1. Proposed Activities

Table 6: List of potential activities proposed for the Protected Environment

Activity	Current status	Zone	Proposed role by 2027	Probability
Spekboom / Carbon credits project	Not currently implemented	All	To contribute to climate change mitigation effect	Medium
Creation of a Conservation Zone for each property where relevant	Not currently implmented	LIZ	To contribute to the further protection of sensitive patches of habitat on a micro scale	Medium
Voluntourism	Not currently implemented	All	Opportunity to offer conservation volunteer programmes	Medium
Mountain biking trail	Planning	All	Opportunity to offer a mountain biking trail and increase tourism to the area	High
Hiking trail	Not currently implemented	All	Opportunity to offer a hiking trail and increase tourism to the area	Medium
Kommandorit	Not currently implemented	All	Opportunity to offer a horse riding trail event and increase tourism to the area	Low
Tourism route	Not currently implemented	All	Opportunity to offer a tourism route using existing tourism ventures in the Protected Environment and increase tourism to the area	High
Cape Vulture reintroduction	Not currently implemented	All	Opportunity to contribute to the	Low

Game introductions such as Cape Mountain Zebra implemented conservation of this species Fire fighting team Not currently implemented impl					
Cape Mountain Zebra implemented conservation of this species conservation of this species Fire fighting team Not currently implemented i					
Implemented		· · · · · · · · · · · · · · · · · · ·	LIZ	contribute to the conservation of this	High
implemented assistance to deal with land degradation and alien invasive species management Not currently implemented branding and allow for possible increase in or niche market access in or niche market acces in or niche market access in or niche market acces in or	Fire fighting team	•	All	dedicated fire team to assist with management of fire risk within the	Medium
Implemented		implemented		assistance to deal with land degradation and alien invasive species management	·
Implemented HIZ motor biking route and increase tourism to the area	_	implemented	·	recognition to the Protected Environment through product branding and allow for possible increase in or niche market access	
Bird watching Partially implemented Not currently implemented Species monitoring projects Fossil visits Posti watching Partially implemented Not currently implemented All Opportunity to offer bird watching activities and increase tourism to the area as this area is recognised as a globally important bird area LIZ/CZ Opportunity to offer star gazing activities and increase tourism to the area Species monitoring projects Partially implemented conservation of important species found in the area Karoo vegetation ID courses Not currently implemented Not currently implemented All Opportunity to contribute to the conservation of important species found in the area Karoo vegetation ID courses Not currently implemented Not currently implemented individuals/groups Medium	Motor biking routes	· · · · · · · · · · · · · · · · · · ·	-	motor biking route and increase tourism to the	Medium
implemented bird watching activities and increase tourism to the area as this area is recognised as a globally important bird area Star gazing Not currently implemented implemented pieces monitoring projects Partially implemented implemented pieces found in the area Not currently pieces found in the area Not currently pieces found in the area found in the	Rural training facility	•	HIZ	contribute to capacity building of rural	High
implemented star gazing activities and increase tourism to the area Species monitoring projects Partially All Opportunity to the contribute to the conservation of important species found in the area Karoo vegetation ID courses Not currently implemented contribute to capacity building interested individuals/groups Fossil visits Not currently implemented fossil site visits and increase tourism to the	Bird watching	~	All	bird watching activities and increase tourism to the area as this area is recognised as a globally important bird	High
implemented contribute to the conservation of important species found in the area Karoo vegetation ID courses Not currently implemented contribute to capacity building interested individuals/groups Fossil visits Not currently implemented fossil site visits and increase tourism to the	Star gazing	•	LIZ/CZ	star gazing activities and increase tourism	Medium
implemented contribute to capacity building interested individuals/groups Fossil visits Not currently All Opportunity to offer Medium fossil site visits and increase tourism to the		implemented		contribute to the conservation of important species found in the area	
implemented fossil site visits and increase tourism to the	Karoo vegetation ID courses		All	contribute to capacity building interested	Medium
	Fossil visits	· · · · · · · · · · · · · · · · · · ·	All	fossil site visits and increase tourism to the	Medium

Rock climbing	Not currently implemented	All	Opportunity to offer rock climbing activities and increase tourism to the area	Medium
Cultural heritage site visits	Not currently implemented		Opportunity to offer fossil site visits and increase tourism to the area	
Invasive species management	Partially		Opportunity to control unwanted invasive species such as bushpig and warthog	



Section 10: Strategic plan

Sections 3, 4 and 5 of this plan outlined the policy framework, the consultation process and vision, mission and high level objectives for the Protected Environment. In this section the higher level objectives of the Protected Environment are developed into lower level objectives and sub-objectives and finally into operational actions. In this way, decision-making - even at the operational level - can be traced all the way back to the core values and inputs from stakeholders on which they have been based. This approach conforms to the requirements of the NEM: PAA and the National Environmental Management: Biodiversity Act No 10 of 2004 (NEM: BA), SANParks policy and ratified international conventions.

Programmes of implementation, developed as outlined above, form the strategic plan for this planning cycle and are arranged under the following headings:

- Bioregional;
- Biodiversity;
- Tourism;
- Agriculture;
- Cultural heritage; and
- Effective Protected Environment management.

Each programme is presented as follows:

- **Programme name:** A name describing the programme.
- **Background:** Overview of intent, guiding principles, description, outcome, research and monitoring and risk (all where applicable);
- **Tables:** Outline of objectives, initiatives and management actions within the scope of the objective with an indication if the programme is once off, continuing or conditional on the availability of resources. These tables have the following headings:
- **Objectives** The various objectives derived from the hierarchy of higher level objectives, which make up each programme;
- Actions: The actions necessary to achieve the objective;
- Responsibility: The person, section, department, division or unit responsible for implementing the action;
- Indicator: A measure whereby the achievement of the objective can be evaluated;
- **Timeframe**: An indication of when the action is likely to be completed (indicated by year in the planning cycle).

It is important to note that, as this is a newly established Protected Area, the first five (5) year's focus of the management plan will be on identifying current and potential projects that are vital to achieving the overall objectives. At present, no collaborative projects exist and the Protected Environment does not receive any financial contributions.

An MoA between SANParks and the MZCPE Landowner's Association, regulates the relationship between the two entities and sets out responsibilities. In terms of this agreement, the Association will be the management authority for the Protected Environment. SANParks will assist the Association with compiling the management plan and will be responsible to monitor progress of the Protected Environment against its management plan. In addition, SANParks will also provide technical support and advice when required.

10.1 Bioregional

The purpose of the bioregional objective is to conserve systems and processes within and around the Protected Environment to ensure a positive conservation outcome, by influencing developmental processes and by adding sufficient land to protected area real-estate. The Protected Environment recognises that partnerships could be developed with other like-minded organisations to maintain the faunal and floral assemblages and ecological processes representative of the area for the long-term beneficiation of the region and country. It aims to collaborate with relevant international, national, provincial and local government structures, non-governmental organisations (NGOs) and landowner groups.

10.1.1 Mainstreaming biodiversity programme

The purpose of this programme is to ensure that biodiversity considerations are taken into account in all development decisions by engaging and interacting with local and district municipalities, non-governmental organisations, neighbours, farmers associations, surrounding communities *etc.* bordering the Protected Environment.

The achievement of the Protected Environment's objectives relies on understanding the relationships and inter-dependencies between various strategic planning processes and partnerships in the region. The Protected Environment will cooperate with the relevant national, provincial and local government structures insofar as these affect the Protected Environment, and keep track of issues affecting the Protected Environment and region to ensure that functional ecosystems are protected.

This programme links with high level objective 1 and objective 1.1 on page 38. To achieve the purpose of this programme, the actions listed in the table below will be implemented.

MAINSTREAMING BIODIVERSITY PROGRAMME

High level objective: To ensure co-operative management within the Protected Environment, by effectively engaging with relevant stakeholders through collaborative interventions

Objective: To minimise the potential conflicts that arise from different land uses that threaten the Protected Environment through responsible engagements with stakeholders and local authorities.

Sub-objective	Actions	Responsibility	Indicators	Timeframe	Comments
To minimise	Identify possible	LA, SANParks	List of	Ongoing	
potential	external threats		threats		
conflicts that	from development.				
affect the	Participate in IDP	LA, SANParks	Minutes of	Annually	
Protected	and SDF processes to		meetings		
Environment	influence decisions				
through	affecting the				
responsible	Protected				
engagement	Environment.				
with	Respond to EIAs and	LA, SANParks	Input	As required	
stakeholders	scoping reports that		submitted		
and local	affect the Protected				
authorities.	Environment.				
	Engage with	LA, SANParks	Minutes of	Ongoing	
	identified		meetings		
	stakeholders to				
	achieve common				
	conservation and				
	agricultural goals.				

10.1.2 Protected Environment consolidation and expansion programme

The purpose of this programme is to achieve the Protected Environment's goal of conserving ecological patterns and processes typical of the region by acquiring conservation-worthy land through inclusion to the Protected Environment. The rational for this programme can be found in Section 8 on page 47.

The specific expansion plan for the Protected Environment is focussed on creating connectivity of the current Protected Environment clusters as well as securing areas of valuable habitat to support the achievement of the Protected Environment's objectives. The expansion plan has the potential to expand the Protected Environment to an estimated half a million hectares.

This programme links with high level objective 1 and objective 1.2 on page 38. To achieve the purpose of this programme, the actions listed in the table below will be implemented.

PROTECTED ENVIRONMENT CONSOLIDATION AND EXPANSION PROGRAMME

High level objective: To ensure co-operative management within the Protected Environment, by effectively engaging with relevant stakeholders through collaborative interventions.

Objective: To consolidate the ecological representation and resilience of the region through linkages between Protected Environment clusters with focus on priority areas of biodiversity.

Sub-objective	Actions	Responsibility	Indicators	Timeframe	Comments
Identify key	Map the	SANParks	Мар		
properties for	critical areas of			Year 1	
the	biodiversity to				
consolidation	prioritise areas				
and	to be included				
expansion of	into the				
the Protected	Protected				
Environment.	Environment				
	Identify	SANParks	Мар	Year 1	
	possible				
	linkages				
	between				
	Protected				
	Environment				
	clusters to				
	minimise				
	fragmentation				
	Prioritise	LA, SANParks	Мар	Year 1	
	properties for				
	inclusion				
	according to				
	guiding				
	principles				
Negotiations	Liaise with	SANParks, LA	List of	Ongoing	
and	relevant		landowners		
document	landowners to		negotiated		
creation for	discuss joining		with		
the	the Protected				
amendment	Environment				
to the	Complete	SANParks	Register of	Year 2	
Protected	documentation		landowners		
Environment	for all new		and their		

landowi signing o the Prot Environ	up to rected	relevant title deeds		
Submit amendn the Prot Environ to the M for appr	rected ment 1inister	Motivation to amend the Protected Environment	Year 2	

10.2 Biodiversity

The primary biodiversity management objective is to encourage the persistence of biodiversity by conserving and where possible, restoring, ecological patterns and processes and populations of key species representative of the area.

As such, a number of biodiversity management programmes will be developed to allow for effective management of the diversity, patterns and processes of the bioregions and landscapes represented in the Protected Environment.

10.2.1 Terrestrial ecosystem programme

The purpose of this programme is to ensure the persistence of spatial and temporal heterogeneity resulting from linkages between diverse topography, soil and vegetation types, by maintaining, restoring or mimicking key ecological processes. As such, this objective is made up of sub-objectives involving habitat and vegetation, restoration (including soil erosion and invasive alien vegetation) and fire management.

10.2.1.1 Habitat and vegetation programme

The purpose of this programme is to identify and map key habitats types in the area and implement the consolidation and expansion programme in order to increase the percentage of underrepresented habitat types of the area under the formal protection of the Protected Environment.

The Protected Environment focuses on habitat types which are currently not sufficiently represented in the protected area network:

- There are 119 601 ha of vegetation types which are classified as "Not Protected" in the National Biodiversity assessment 2011.
- There are 164 381 ha of vegetation types which are classified as "Poorly Protected" in the National Biodiversity assessment 2011.
- 4 117 ha consist of "Moderately Protected" vegetation types.
- None of the types falling within the Protected Environment are classified as "Well Protected".

Hence, the entire Protected Environment, together with the potential sites to be consolidated under the expansion programme (see 10.1.2 of this plan), substantially contributes to meeting targets for under-represented habitat types and contributes to significantly improving the representivity of the National and Provincial Protected Area network. Table 7 indicates the contribution the Protected Environment would make to meeting national protected area targets. It highlights eight (8) habitat types where the current Protected Environment would contribute at least 10 % to the national target (Holness, 2013).

Table 7: Summary of contribution to National Protected Area targets made by the Protected Environment.

Habitat type	Total extent of the habitat type(km ²)	Protect ed Area target (NPAES) (km²)	Area in Current Protect ed areas (km²)	% Target current ly met	Area of habitat type in the Protected Environme nt (km²)	% Target met by the Protected Environme nt	Combin ed % target met once the PE has been declared
Camdeboo Escarpment Thicket	2002.6	205.8	51	25	316.4	154	179
Eastern Cape Escarpment Thicket	1291.8	134.5	54.4	40	5.9	4	45
Eastern Lower Karoo	8328.4	729.6	0.8	0	216.1	30	30
Eastern Temperate Freshwater Wetlands	556.8	73.2	23.3	32	2.1	3	35
Eastern Upper Karoo	49821.4	5733.4	271.6	5	833.9	15	19
Great Fish Thicket	6763.4	704.2	58.9	8	28.8	4	12
Karoo Escarpment Grassland	8381	1101.9	74.9	7	1011.8	92	99
Lower Karoo Gwarrieveld	1571.9	137.6	0	0	49.1	36	36
Southern Karoo Riviere	5304.2	696.9	10.9	2	171.5	25	26
Sundays Thicket	5235.6	545.1	98.9	18	42.3	8	26
Tarkastad Montane Shrubland	4239.7	650.5	4.8	1	75.8	12	12
Upper Karoo Hardeveld	11735.5	1350.4	115.8	9	131.5	10	18
Grand Total	112973. 8	1504.9	429.9		2885.1		

^{*} Types highlighted in green have more than 10 % of their national target met within the PE.

This programme links with high level objective 2 and objective 2.1.1 on page 38. To achieve the purpose of this programme, the actions listed in the table below will be implemented.

HABITAT AND VEGETATION PROGRAMME

High level Objective: To ensure the persistence of biodiversity by conserving and restoring ecological patterns and processes and populations of key species representative of the area.

Objective: Identify and map key habitats types in the area and implement the consolidation and expansion programme to increase the percentage of underrepresented habitat types of the area under formal protection of the Protected Environment.

Sub-objective	Action	Responsibility	Indicator	Timeframe	Comments
Identify and map the current habitat mosaic of the Protected Environment	Collate all vegetation information for the area	SANParks	Documentation and GIS layers	Year 1	
Through the consolidation and expansion programme, increase the percentage of underrepresented	Implement the consolidation and expansion programme	LA, SANParks	Hectares secured	Year 2	

habitat types of			
the area			

10.2.1.2 Degradation and rehabilitation programme

The purpose of this programme is to assess the habitat degradation status and implement mitigation measures needed to facilitate the improvement of ecological processes and enhancement of ecosystem functioning in affected areas.

The national policy on the conservation and sustainable use of South Africa's biodiversity, produced by DEA calls for the identification of key sites for rehabilitation based upon biological and socioeconomic criteria, and the development and implementation of rehabilitation plans for identified sites. Similarly, the Convention on Biological Diversity lists rehabilitation as an important tool for promoting the conservation of biodiversity.

Soil erosion is dominant in old cultivated lands, along drainage lines and in some wetland systems where erosion head-cuts result in transformation or desiccation of the wetlands. Often degradation is accompanied by loss of ecosystem functioning and the extent of transformation or change in some areas results in these areas being unable to undergo passive rehabilitation without mitigation measures to facilitate recovery. Vegetation degradation includes changes in vegetation community in terms of richness, abundance, diversity and structure. Degradation resulting from various factors, including climate perturbations and extreme events, inappropriate fire or herbivory regimes, alien species invasion, as well as human activities, generally reduces flows of ecosystem goods and services. Although some of these are natural processes, intervention may be required to aid recovery in protected areas where natural recovery processes are retarded or prohibited as a result of fragmented habitat surrounded by alternative land use. Degradation affects the capacity of the habitat to support life, thereby contributing to an unsustainable ecological system.

This programme will be achieved through assistance from the SANParks Biodiversity Social Projects (BSP) unit.

The programme links with high level objective 2 and objective 2.1.2 on page 38. To achieve the purpose of this programme, the actions listed in the table below will be implemented.

DEGRADATION AND REHABILITATION PROGRAMME

High level objective: To ensure the persistence of biodiversity by conserving and restoring ecological patterns and processes and populations of key species representative of the area.

Objective: To restore the soil functioning and associated vegetation patterns of land degraded by erosion.

Sub-objective	Action	Responsibility	Indicator	Timeframe	Comments
Understand	Map soil erosion	SANParks	GIS shape	Year 1	
the scale of	areas and develop a		file		
degradation	broad scale soil				
in the	erosion plan to				
Protected	prioritise areas for				
Environment	rehabilitation				
and prioritise					
areas for					
possible					
rehabilitation					
interventions					
Implement	Rehabilitation of key	SANParks,	Ha of land	Ongoing	
necessary	areas affected by	Landowner	rehabilitated		

rehabilitation	alien clearing and				
interventions	soil erosion.				
to halt and	Rehabilitation of key	SANParks,	Ha of land	Ongoing	
possibly	degraded wetlands.	Landowner	rehabilitated		
reverse the					
effects of this					
degradation					
Track the	Monitoring recovery	SANParks,	Number of	Ongoing	
efficacy of	in areas undergoing	Landowner	monitoring		
rehabilitation	rehabilitation.		sites		
over time			established		

10.2.1.3 Alien and invasive species programme

The purpose of this programme is to control invasive alien species where possible in order to reduce their distribution, abundance and impacts, thereby maintaining the integrity of the indigenous biodiversity of the Protected Environment.

CARA requires the management of listed alien invasive plants. There are three categories of plants, each with its own management and control regulations. In South Africa, the management of alien invasive species (AIS) is mandatory under NEM: BA. CARA provides additional guidance for the management of AIS plants.

Alien and invasive species are accepted to be one of the largest, and fastest growing threats to biodiversity and ecosystem services. These species can transform the structure and species composition of ecosystems by replacing indigenous species, either by directly outcompeting indigenous species for resources or by changing the way nutrients are cycled through the ecosystem. AlS also increase biomass, which in turn changes fire regimes and fire intensity (McNeely *et.al*, 2001). Foxcroft *et.al.* (2013) identified biological invasions as one of the greatest threats to Protected Areas. The likelihood of protecting the Protected Environment from the threat of AlS is dependent on sound management strategies, adequate resources and effective engagement with key stakeholders, effective legislation and policing of legislation. The likelihood of eradication or maintenance control varies considerably with species and terrain invaded. Rapid response is required to remove species before they build up to become large populations.

As part of this programme, an alien species identification and abundance study will be implemented to understand the extent of AIS invasion and with this mind, a priority plan for the control of key areas of concern will be developed.

This programme will be achieved with assistance of the SANParks Biodiversity Social Projects (BSP) unit.

This programme links with high level objective 2 and objective 2.1.3 on page 38. To achieve the purpose of the programme, the actions listed in the table below will be implemented.

ALIEN AND INVASIVE SPECIES PROGRAMME								
High level objective: To ensure the persistence of biodiversity by conserving and restoring								
ecological patter	ecological patterns and processes and populations of key species representative of the area.							
Objective: To cor	ntrol and, where	possible, eliminat	e alien vegetatio	n.				
Sub-objective	Action	Responsibility	Indicator	Timeframe	Comments			
То	Determine	SANParks	GIS shape file	Year 2				
systematically								
map and list	abundance		list					

alien species in the Protected Environment.	and distribution within the Protected Environment and identify keys areas needing intervention				
To ensure the effective implementation of integrated control strategies.	Introduce biological control agents and other novel methods where appropriate and necessary.	SANParks, Landowner	Ha of land cleared	Ongoing	
Track the efficacy of rehabilitation over time	Monitoring recovery in areas undergoing alien clearing.	SANParks, Landowner	Number of monitoring sites established	Ongoing	

10.2.2 Freshwater ecosystem programme

The purpose of the freshwater ecosystem programme is to ensure the functionality of key wetlands and rivers in the Protected Environment.

Although the freshwater ecosystems programme deals primarily with key wetland habitats, it cannot be seen in isolation of groundwater resources. Groundwater feeds many wetlands as well as rivers and is particularly important in arid systems and for seasonal or ephemeral rivers. In the Protected Environment, groundwater is also the main source of drinking water and as such it relates to the objective of effective agricultural management (where agriculture constitutes the major land use type in the Protected Environment). The Protected Environment largely contains modified freshwater ecosystems, for example a dammed rivers, modified wetlands and manmade dams.

This programme links with high level objective 2 and objective 2.2 on page 38. To achieve the purpose of the programme, the actions listed in the table below will be implemented.

	FRESHWATER ECOSYSTEM PROGRAMME							
High level object	High level objective: To ensure the persistence of biodiversity by conserving and restoring							
ecological patte	rns and processe	s and populations	of key species r	epresentative of	the area.			
Objective: To en	ncourage the fund	ctionality of key w	vetlands within t	he Protected Env	ironment.			
Sub-objective	objective Action Responsibility Indicator Timeframe Comments							
To maintain	Identify and	SANParks	Мар	Year 1				
or restore the	map key							
key wetland	wetlands in							
habitats in the	the Protected							
	Environment.							

Protected Environment	Identify and implement rehabilitation projects in key degraded wetland systems.	SANParks, Landowner	State of freshwater ecosystems report	Year 3	
Track the efficacy of rehabilitation over time	Monitoring recovery in areas undergoing rehabilitation.	SANParks, Landowner, BSP	Number of monitoring sites established	Ongoing	

10.2.3 Species of special concern programme

The purpose of this programme is to ensure the persistence and viability of key species by contributing to national initiatives and implementing species-specific management interventions. The Protected Environment will strive to prevent extinction of species on the International Union for the Conservation of Nature (IUCN) global critically endangered or endangered lists, and will work with other conservation initiatives to secure and strengthen the future of such species over their historic distribution ranges.

Due to the wide array of endemic and red data species within the Protected Environment, contribution to existing conservation initiatives aimed at the persistence of these species will be an important objective. A number of species also have emotional and spiritual value to the landowners within the Protected Environment although there may not be conservation programmes in place to ensure the conservation of these species. Where species do not have existing conservation programmes, conservation programmes could be created and implemented within the Protected Environment.

This programme links with high level objective 2 and objective 2.3 on page 38. To achieve the purpose of the programme, the actions listed in the table below will be implemented.

SPECIES OF SPECIAL CONCERN PROGRAMME

High level objective: To ensure the persistence of biodiversity by conserving and restoring ecological patterns and processes and populations of key species representative of the area.

Objective: Identify species of concern and participate in new or existing collaborative programmes/projects

Sub-objective	Action	Responsibility	Indicator	Timeframe	Comments
To align with	To identify	SANParks, LA	List of species	Year 2	
international	species of		of special		
and national	concern		concern		
initiatives for	occurring in				
conserving	the Protected				
key species,	Environment				
by	To participate	Landowners	Database of	Ongoing	
establishing	in		monitoring		
and	conservation		efforts for		
maintaining	and		listed species		
cooperative	monitoring		of special		
relationships	efforts to		concern		
with other	conserve				

established	these listed				
organisations.	species				
	Where	SANParks,	Species	Ongoing	
	necessary,	Landowners	conservation		
	develop		plans and		
	species		programmes		
	programmes				
	to conserve				
	species of				
	concern not				
	currently				
	being				
	conserved				
	under other				
	programmes				

10.2.4 Fire risk management programme

The key terrestrial ecological processes identified within the Protected Environment are herbivory and fire. The management requirements of the Protected Environment are complex, and constrained by limited resources and capacity. Fire needs to be dealt with as a risk to biodiversity, infrastructure and agricultural loss through unnatural and unplanned fires.

Almost all vegetation types within the Protected Environment are potentially fire-prone. As is characteristic of vegetation of the Grassland Biome, lightning fires tend to occur particularly in the Karoo Escarpment Grassland. On private farms in the Karoo and Cape Midlands this vegetation type is regularly burnt to stimulate grazing (Roux and Smart 1979). In the other vegetation units of the Protected Environment, fires are much less frequent, but nevertheless can occur in years when the grass biomass is high. It is noteworthy that Low and Rebelo (1996) regarded the Eastern Mixed Nama Karoo (redefined as Eastern Upper Karoo by Driver *et. al.*, 2005) as being the only vegetation type of the Nama Karoo Biome in which fire can be important in shaping communities. Fire is thus clearly a natural feature of the Karoo Escarpment Grassland and probably occurred fairly regularly in historical times. For other vegetation types of the Protected Environment, fire is likely to have been a rare rather than regular occurence, but could nevertheless have exerted a major influence on plant communities.

According to the National Veld and Forest Fire Act, No 101 of 1998, landowners are obliged to join the local Fire Protection Association (FPA) unless they take other precautions such as creating the necessary fire breaks.. There are four FPAs operating in the area of the Protected Environment, some of which are better capacitated than others. No FPA exists in the clusters on the Pearston side of the Protected Environment.. Some FPAs in the area have not been able to function as they should. It is envisioned that the Landowners Association will investigate options to address the lack of capacity of the FPAs and to ensure that fire risk is properly addressed within the Protected Environment.

This programme links with high level objective 2 and objective 2.4 on page 38. To achieve the purpose of the programme, the actions listed in the table below will be implemented.

FIRE RISK MANAGEMENT PROGRAMME							
High level objective: To ensure the persistence of biodiversity by conserving and restoring							
ecological patte	rns and processe	s and populations	of key species r	epresentative of	the area.		
Objective: To ac	ddress fire as a ris	k to the Protecte	d Environment a	nd develop a risl	c plan to		
address this thr	address this threat.						
Sub-objective	Action	Responsibility	Indicator	Timeframe	Comments		

To manage fire risk in order to minimise	Develop an appropriate fire risk plan.	LA, SANParks	Risk Plan	Year 3	
threats to infrastructure and biodiversity by	Implement the fire risk plan.	Landowners , SANParks, BSP	Annual reports	Year 3 and ongoing	
developing and implementing a fire risk plan.	Establish and maintain spatial records of fires inside the Protected Environment.	Landowners, SANParks	GIS database and map	Ongoing	
	Participate in the relevant Fire Protection Associations.	LA	Meeting minutes	Ongoing	

10.3 Sustainable tourism programme

The Protected Environment already has a number of individual tourism activities on private land. The aim of the responsible tourism programme is provide a platform for these existing tourism ventures to be recognised under the Protected Environment banner. There is also potential for collaborative tourism ventures within the Protected Environment. Collaborative tourism represents an opportunity to create financial support for the Protected Environment by generating revenue which will allow management plan objectives to be met. As the Protected Environment is only newly established, the first management plan cycle will aim to investigate possible ventures and work on establishing these ventures as a viable product through collaborative input and planning.

A detailed lower level plan supports this programme. The programme links with high level objective 3 and objective 3.1 on page 39.

SUSTAINABLE TOURISM PROGRAMME

High Level Objective: To identify tourism potential in the Protected Environment and allow for growth of this tourism potential through collaborative management within the region.

Objective: To enable collaborative tourism initiatives in the Protected Environment, through effective planning, establishment and implementation

Sub-	Action	Responsibility	indicator	Timeframe	Comments
objective					
To identify	Identify current	Landowner,	List of current	Year 1	
both current	tourism	SANParks	tourism		
and potential	ventures within		ventures		
eco- and agri-	the Protected				
tourism	Environment				
ventures	Workshop	LA and	Collaborative	Year 1,	
within the	possible new	relevant	tourism	ongoing	
Protected	collaborative	stakeholders	venture		
Environment	tourism		proposals		
	ventures with				

	stakeholder				
	participation				
	from relevant				
	landowners of				
	the Protected				
	Environment				
То	Develop	LA and	Tourism	Year 1,	
implement	implementation	relevant	initiative	ongoing	
collaborative	plans for the	stakeholders	implementation		
tourism	collaborative		plans and		
initiatives	tourism		reports		
identified	initiatives				

10.4 Sustainable agriculture programme

The purpose of this programme is to keep abreast of both risks and opportunities pertaining to agriculture in the Protected Environment. A number of risks threaten the agriculture of the area such as legislation changes, detrimental developments, land security threats, the global and national economy and external opinions and activists dictating how land should be managed. Apart from these external threats, a number of environmental threats remain a reality, such as climate change and disease. Water management is critical to the survival of the current agricultural practices and is a current management consideration that has become even more pressing due to some of the risks mentioned above.

Many of the landowners in the Protected Environment have agricultural businesses. The main land use practices in the area include stock and game farming, small-scale arable lands and ecotourism. The region is well known for its free-range meat and fibre industry and is known for its Karoo lamb and mutton products. As agriculture in the Protected Environment is already compatible with conservation of the area, the persistence of the current agriculture is paramount to the survival of the area's biodiversity and ecosystem functioning.

As there are diverse agricultural management systems operating within the Protected Environment and it is impossible to prescribe a blanket approach to the management of agriculture. The focus is rather to promote a collective approach in terms of understanding and mitigating risks to the agricultural practices and to create an information sharing and learning opportunity amongst members of the Protected Environment regarding best practice and innovations that may benefit landowners and ultimately the environment the Protected Environment is trying to protect.

Just as there are many threats facing the agricultural practices within the Protected Environment, there are always new and innovative agricultural practices being developed to increase production or to align agriculture to the natural system functioning of the area. The Landowners Association aims to share these practices with its members to create opportunities for collaborative management which will improve system function.

A detailed lower level plan outlining the rationale and operational approach is available. This programme links with high level objective 4 and objective 4.1 on page 39.

SUSTAINBLE AGRICULTURE PROGRAMME

High level objective: Maintain the current land uses of the area and promote sustainable conservation-minded agriculture/land use

Objective: Identify risks and opportunities that will affect the agricultural practices of the Protected Environment

Sub-objective	Action	Responsibility	indicator	Timeframe	Comments
Identify risks to the agricultural practices of	Maintain a register of risks	LA, Landowners	Risk register	Ongoing	
the Protected Environment and mitigate where necessary	Ensure the LA is represented at stakeholder engagements pertaining to these risks where relevant	LA, Landowners	Minutes of meetings	Ongoing	
Identify opportunities for better agricultural practices and share these opportunities with members of the Protected Environment	Maintain a database of relevant papers and articles promoting conservation-minded agricultural innovations	LA, Landowners	Documentation	Ongoing	

10.5 Constituency building and benefit sharing

The Protected Environment aims to build constituencies among people in support of the conservation of the natural and cultural heritage assets within the Protected Environment. This is achieved through strengthening relationships with individual Protected Environment members and regional stakeholders and, where possible, contributing to local socio-economic development through job creation and skills development.

10.5.1 Local socio-economic development programme

The purpose of this programme is to play a role in contributing to local economic development. This will be achieved by partnering with local government, participating in government programmes such as the Expanded Public Works Programme (EPWP) and other state department initiatives.

. The sourcing of goods and services from the local communities will also be promoted. The establishment of viable ecotourism enterprises could contribute to the economic development of the area. As the Protected Environment is made up of numerous landowners all operating individual businesses, the Protected Environment already contributes to the programme through the employment of numerous staff members required to operate these individual farms.

A detailed lower level plan outlining the rationale and operational approach is available. This programme links with high level objective 5 and objective 5.1 on page 39.

LOCAL SOCIO-ECONOMIC DEVELOPMENT PROGRAMME								
High level objective: To optimise socio-economic opportunities, and co-operation within the								
region.								
Objective: To p	lay a role in contri	buting to local ed	conomic developmer	nt though partr	nership with			
local governme	local government and state department initiatives							
Sub-objective	Action	Responsibility	indicator	Timeframe	Comments			

To maintain and strengthen relationships with local government.	Collaborate with local government departments on possible socio- economic programmes	LA, SANParks	Events, minutes of meetings	As needed	
To identify possible employment and capacity building opportunities for local residents, entrepreneurs and business.	Identify opportunities to contribute to local economic benefit through projects or contributions.	LA, BSP and local government	Inventory of employment	Ongoing	
	Identify and implement potential capacity building programmes	LA, BSP and local government	Capacity building plan/programmes	Ongoing	

10.5.2. Stakeholder relationship programme

The purpose of this programme is to establish and maintain meaningful and beneficial relationships with a wide range of stakeholders supporting the MZCPE's objectives of biodiversity conservation, agricultural production and tourism. The stakeholder programme is a key strategy to achieve the overall desired state of the Protected Environment.

Cooperative, collaborative and mutually beneficial relationships are essential to reach the Protected Environment's objectives and to ensure the sustainability of the Protected Environment. Both formal and informal partnerships will be initiated, maintained and nurtured with Government, conservation entities, business partners, communities, various non-governmental organisations (NGOs), community based organisations (CBOs) and the media.

A detailed lower level plan outlining the rationale and operational approach is available. This programme links with high level objective 5 and objective 5.2 on page 39.

STAKEHOLDER RELATIONSHIP PROGRAMME						
High level objective: To optimise socio-economic opportunities, and cooperation within the						
region.	region.					
Objective: To pr	Objective: To promote and nurture stakeholder relationships, through formal and informal					
engagement						
Sub-objective	Action	Responsibility	indicator	Timeframe	Comments	

To improve cooperation and build sound stakeholder relationships.	Engage with government structures on issues of mutual interest.	SANParks, LA	Meeting minutes	Ongoing	
	Collaborate and engage with conservation entities (such as EWT, SANBI, and Universities).	SANParks, LA	Research, report, meeting minutes and workshops	Ongoing	
	Promote and engage in mutually-beneficial relations with local communities.	SANParks, LA	Minutes of meetings, joint events	Ongoing	
	Maintain good media relations through media releases	SANParks, LA	Media releases	Ongoing	

10.5.3 Cultural heritage programme

The purpose of this programme is to identify, map and maintain cultural heritage resources within the Protected Environment.

The National Heritage Resources Act (NHRA) No 25 of 1999 provides the framework for the maintenance and conservation of heritage resources in accordance with the standards and procedures set out by the South African Heritage Resources Agency (SAHRA).

The Protected Environment aims to create an inventory of the cultural and heritage sites of the Protected Environment and identify which sites need active management. The results of this work should be entered into a geographic information system (GIS) database to facilitate monitoring and management.

This programme links with high level objective 6 and objective 6.1 on page 39. To achieve the purpose of this programme, the actions listed in the table below will be implemented.

CULTURAL HERITAGE PROGRAMME

High level objective: To develop an awareness of, and appreciation for, the historical value of the protected environment, by protecting and maintaining the cultural heritage assets, for current and future generations.

Objective: To identify, map and maintain cultural heritage resources within the Protected Environment

Sub-objective	Action	Responsibility	indicator	Timeframe	Comments
Identify the	Create and	SANParks with	Inventory and	Year 3	
Protected	update a full	Landowners	map		
Environment's	inventory of				
cultural	cultural				
heritage value,	resources.				
by compiling					
and					
maintaining a					
comprehensive					
inventory and					
record of all					
cultural					
heritage					
assets.					
To 100000010	Maintain sites	Landowners	Cultural	Year 5,	
To preserve cultural	through	Landowners	Heritage	ongoing	
heritage assets	effective		Management	Origoring	
through	management		Plan		
effective	management		i idii		
management.					
management.					
To enable the	Identify and	LA and	Inventory list	Year 3	
interpretation	develop sites	relevant	,		
of cultural	that are	landowners			
heritage	suitable for				
through	tourism.				
possible					
tourism					
opportunities					

10.6 Effective Protected Environment management

Effective Protected Environment management programmes are geared to ensure that the values and objectives of the Protected Environment are maintained. These programmes put systems and processes in place that enable proactive management of the Protected Environment's objectives. This section outlines the management programmes, objectives and actions that assist in effective Protected Environment management, such as environmental management, risk management and financial management.

10.6.1 Environmental management programme

The purpose of this program is to minimise negative impacts of development on the Protected Environment and set clear guidelines for the management of these impacts.

The Minister of the Department Environmental Affairs has, in terms of section 24(2) of the National Environmental Management Act, 107 of 1998 (NEMA), identified activities that may not commence without authorisation from the competent authority. NEMA is of general application throughout South Africa and relevant provisions therefore apply to the Protected Environment.

Proper management of new developments and operational activities within the Protected Environment can only be achieved through appropriate planning and effective controls.

This programme links with high level objective 7 and objective 7.1 on page 40. To achieve the purpose of the programme, the actions listed in the table below will be implemented.

ENVIRONMENTAL MANAGEMENT PROGRAMME

High level objective: To strive for effective and efficient management and administrative support services through good governance enabling the Protected Environment to achieve its objectives.

Objective: To ensure compliance with environmental legislation and best practise principles for all development activities.

Sub-	Action	Responsibility	indicator	Timeframe	Comments
objective					
To manage and reduce the impacts of Protected Environment activities on the vital attributes.	Conduct internal scoping for all activities and developments that may potentially impact the Protected Environment.	LA, developer, responsible landowners	Documents and reports	As needed	
	Provide an environmental management plan (EMP) to contractors and service providers who operate in the Protected Environment.	LA, developer, responsible landowners	Environmental Management Plan	As needed	
	Ensure compliance to the obligations set out in the EMP.	Landowner	Inspections	As needed	

10.6.2 Risk management programme

The purpose of the programme is to develop and maintain the Protected Environment's risk profile and to manage risks accordingly. The management of business risks is regarded as an integral part of management across all operations.

All programmes and projects occurring within the Protected Environment are exposed to various types of risks. The Protected Environment aims to create a risk profile for all collaborative programmes and

projects. The risk profile reflects the risks identified as well as how each risk is addressed and monitored.

This programme links with high level objective 7 and objective 7.2 on page 39. To achieve the purpose of the programme, the actions listed in the table below will be implemented.

RISK MANAGEMENT PROGRAMME

High level objective: To strive for effective and efficient management and administrative support services through good governance enabling the Protected Environment to achieve its objectives.

Objective: To develop and maintain the Protected Environment's risk profile and to manage risks accordingly.

Sub-objective	Action	Responsibility	Indicator	Timeframe	Comments
To establish	To identify	LA, SANParks	Risk register	Annually	
and maintain	and assess				
effective,	risks for all				
efficient and	collaborative				
transparent	operations in				
systems of	the Protected				
risk	Environment.				
management					
pertaining to	To develop	LA, SANParks	Risk response	Annually	
collaborative	responses to		plan		
programmes	address and				
and	prevent or				
projects	mitigate				
within the	issues of risk.				
Protected					
Environment					

10.6.3 Financial management and administration programme

The purpose of the programme is to ensure sound financial management and administration for any income generated by the Protected Environment as a collective. At present, the Protected Environment does not generate any funds but with the potential for numerous projects and possible tourism ventures, revenue could be generated by the Protected Environment as a collective in the future.

The financial management and administration programme aims to address the management of this revenue should the opportunity present itself during the first management cycle. The Protected Environment will need to ensure that suitable financial and administrative systems are put in place to deal with possible revenue and expenditure as programmes and projects are implemented. The Protected Environment aims to ensure that all projects and programmes are cost-effective and financially sound.

This programme links with high level objective 7 and objective 7.3 on page 40. To achieve the purpose of this programme, the actions listed in the table below will be implemented.

FINANCIAL MANAGEMENT AND ADMINISTRATION PROGRAMME

High level objective: To strive for effective and efficient management and administrative support services through good governance, enabling the Protected Environment to achieve its objectives.

Objective: To ensure sound financial management and administration of collective income generated by the Protected Environment as well as sound management of expenditure and assets **Sub-objective** Responsibility Indicator **Timeframe** Comments **Action** To identify Identify LA Opportunities Year 1, identified possible possible ongoing revenue business streams opportunities Identify LA, SANParks Funding As needed possible proposals external submitted funding to supplement current income streams. LA Annual To ensure Prepare Annually effective accurate and budgets once needed management realistic annual prepared of financial budgets. resources. LA Provide Financial Quarterly reports once needed quarterly financial reports LA To ensure Verify and Asset register Annually

once needed

manage assets

registers.

proper asset management

10.7 Monitoring and evaluation

SANParks will be responsible for the coordination of the monitoring and evaluation processes within the protected environment. Monitoring and evaluation of the Protected Environment's efficacy of achieving the objectives set out in this management plan will include a review of each programme in terms of the achievement of indicators within the set timelines and a comparison of specific programme monitoring results.

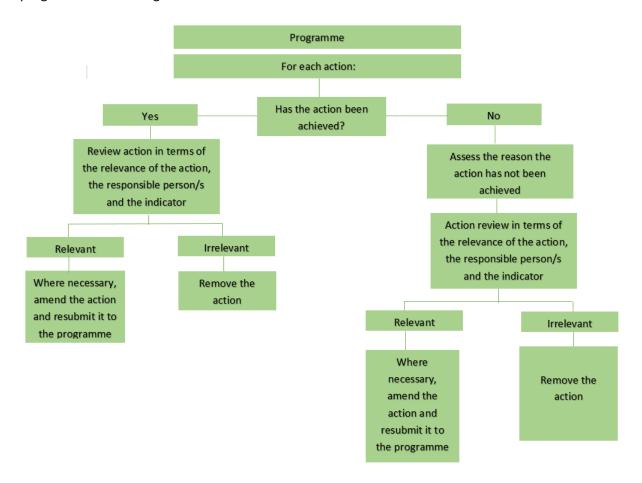


Figure 10: The proposed monitoring and evaluation process for the management plan



Section 11: Costing

Currently the Protected Environment does not generate any funds. With this said, funds have been made available through the UNDP:GEF 5 project bring implemented by SANParks and two BSP projects. The first cycle of the management plan will need to create detailed business/implementation plans to identify the actual costs to implement the different programmes and the possible financial shortfalls and remedies required.

11.1 Income

As the Protected Environment is only newly declared, the aim of the first management plan cycle is to identify the financial needs of the Protected Environment in order to implement the management plan programmes and the development framework activities. It has been difficult to predict costs as all of the programmes in the strategic plan (Section 10) are only now being implemented and are not clear cut enough to identify the total costs needed to run these programmes. It is envisioned that a host of funding mechanisms will be used. Tourism opportunities have been identified that could possibly generate income for the Protected Environment, but for most of the development framework activities, application for donor funding may be the best route to follow to initiate these activities.

11.2 Current financial status quo

At the time of this management plan submission, two funding streams have been made available to the Protected Environment. One is through the UNDP:GEF5 Improved Management Effectiveness Project which is implemented by SANParks. Another financial stream that has been made available is through BSP to implement two restoration projects in terms of alien invasive species clearing and degraded habitat rehabilitation.

11.2.1. UNDP:GEF 5 Improved Management Effectiveness Project

This project started in 2016 and will run to the end of December 2019. The project has three areas of focus being; Improved management effectiveness of Protected Areas, establishment of new Protected Areas and the improved financial sustainability of established Protected Areas. Under this project, SANParks has a dedicated buffer zone coordinator that is dedicated to assisting the landowners of the Protected Environment compile and implement the management plan. SANParks is also in the process of procuring an ecologist to assist the buffer zone coordinator.

Although the project is not aimed at directly financially supporting management programmes, the buffer zone co-ordinator has been able to motivate for the use of savings made through the project to be used for projects that are aligned to meeting the 3 focus areas of the UNDP:GEF 5 project and the Management Effectiveness Tracking Tool. For the duration of the project, assistance will be given to the LA to conduct all the necessary baseline assessments and the creation of implementation plans that will ultimately aid in the creation of a realistic budget and an overall way forward.

Table 8: A summary of the total income for the UNDP:GEF 5 project over the next five years

		2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	TOTAL
I	Income	2,110,064.00	2,177,523.00	1,557,117.00	0	0	5,858,703.00

^{*} Please note that the project comes to an end in December 2019 and therefore no money is earmarked for the 2021 and 2022.

It has been decided that before the completion of this project, that the management plan be reviewed and that a realistic costing excluding this project's financial aid be submitted.

11.2.2. Biodiversity Social Projects

When compiling the management plan, negotiations with BSP began to look at the possible contribution to land rehabilitation efforts within the Protected Environment. As most of the properties within the Protected Environment also lie within the buffer zones of Mountain Zebra, Camdeboo and Addo Elephant National Parks, BSP felt confident that they could assist these landowners with land rehabilitation efforts that could pose direct threats to the associated parks. It was decided that a priority survey would be conducted to identify alien invasive species abundance and distribution within the Protected Environment which will guide the funding and assistance that BSP could provide in clearing attempts going forward. The same would be done for land degradation and wetland rehabilitation. To pilot the agreed way forward, two smaller contracts were implemented on two properties within the Protected Environment. The properties are currently being cleared in terms of Nassella Grass (a growing threat to the parks) and a soil erosion site on one of the properties.

Table 9: Total income currently provided for by BSP

Programme		Amount
Alien and invasive species progr	amme	R 1,536, 966.00

11.3 Expenditure

11.3.1 Recurring costs

Due to the uncertainty of how programmes are to be implemented and therefore their associated costs, it is difficult to work on a recurring costs breakdown. By the time of this management plan's first review, a more realistic projection of recurring costs should be included and will also give a clear indication of any shortfalls with implementation.

11.3.2 Once off costs

For the period of 2017/2018, a number of once off costs have been dedicated to the implementation of certain strategic plan programmes under the UNDP:GEF5 project. Table 10 shows a breakdown of specific activity costs planned for the 2017/2018 financial year.

Table 10: The once-off specific activity costs funded by the UNDP:GEF 5 project

Programme	Estimated Budget	Description
Sustainable tourism programme	R1,120,164.00	These funds have been
		allocated to the procurement
		of equipment and services to
		implement some of the
		concept development
		framework projects that will
		contribute to the associated
		programme.
Cultural heritage programme	R 500, 000.00	These funds are in place to
		procure a consultant to
		conduct a baseline study of all
		the cultural heritage sites and
		to create management plans
		for relevant sites.
Alien and invasive species programme and	R462,000.00	These funds are in place to
degradation and rehabilitation programme		procure a consultant to
		conduct a baseline study of
		alien invasive species and land
		degradation sites and to
		prioritise these sites in order to

		guide BSP contribution in the future.
TOTAL	R2,082,164.00	

Even though the above breakdown looks at specific activity costs, it is important to understand that each programme within the strategic plan is being implemented with some of them needing more funds than others. Each programme will be assisted and supported by the buffer zone coordinator and the ecologist under the UNDP:GEF5 project. The main budget costs associated with each programme will consist of the SANParks team's time and the travel needed. The main focus under the project is conduct the necessary baseline assessments and inventories and use this information to create implementation plans for each programme. The buffer zone co-ordinator will also keep looking at using savings from the project to aid the implementation of the management plan over the projects lifespan.

11.4 Summary

In summary the funding needs of the management plan implementation is being met through contributions from the UNDP:GEF5 project and BSP. Although the 2017/2018 financial year only highlights a few of the strategic plan's programmes, indirect costs are being used to create baseline studies and inventories that will aid in the creation of implementation plans that will ultimately give more realistic projections of budgetary requirements.

Due to the budget being calculated on available funds, there is currently no shortfall. The first cycle of the management plan will need to create detailed business/implementation plans to identify the actual costs to implement the different programmes and the possible shortfalls and remedies required.



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Appendix 1: Stakeholder consultation process

Registration as an interested and affected party

Stakeholders had the following opportunities to register as interested and affected parties.

Mechanism to register	Description
Media advertisements	Advertisements to inform interested and affected parties of the public days and request to register to participate was placed in the following national newspapers on the 9 th of February 2017: • Sunday Times • Rapport Advertisements to inform interested and affected parties of the public days and request to register to participate was placed in the following provincial newspapers on the 9 th of February 2017: • The Herald • Die Burger Advertisements to inform interested and affected parties of the public days and request to register to participate was placed in the following local newspapers on the 9 th of February 2017: • Midland news • Graaff-Reinet Advertiser
Posters	Posters advertising the public participation process where placed in key areas in Graaff-Reinet, Pearston, Cradock and Middleburg.
Registration at meetings	Participants were also able to register at the following meetings: • Public meeting on 28 th of February 2017 in Cradock • Public meeting on 1 st of March 2017 in Graaff-Reinet • Public meeting on 2 nd of March 2017 in Pearston

Public days to allow comment on the draft management plan

Three public day meetings were held.

Venue	Date	Number of stakeholders present
Vuzubuntu Cultural Center	28 February 2017	10
Trinity Methodist Church Hall	01 March 2017	7
Pearston Hotel	02 March 2017	4

Dissemination of documentation and feedback to stakeholders

Item	Action
Dissemination of comment and response document	This document has been emailed to all registered stakeholders and is also available on the MZCPE website.
Dissemination of approved MZCPE management plan	This plan will be available on the MZCPE website once approved by the Minister.

Stakeholders engaged to participate in the MZCPE Management Plan public participation process

LOCAL MUNICIPALITIES	
Inxuba Yethemba	Different stakeholders were individually invited
	to participate in the public participation
Dr. Beyers Naude Blue Crane Route	process. The Protected Environment has been
Blue Craffe Noute	represented in the current IDP process and the
	management plan programmes have been
	included into the new IDPs
DISTRICT MUNICIPALITIES	
Chirs Hani	The processes of the local municipalities have
Sarah Baartman	addressed the Protected Environment in the
PROVINCIAL CONSERVATION	overarching district IDP plans
DEAET	These individuals were personally invited and
DEDEA	some were also addressed at the Biodiversity
ECPTA	Stewardship Forum in East London in February
	2017.
NATIONAL DEPARTMENTS	
Education	These departments were all invited
SAHRA (E Cape)	electronically and some had been part of the
SAPS	process through the Park Forum meetings held
Labour	over 2016 and 2017.
Social Development	
Water Affairs and sanitation	
Rural Dev and Agrarian Reform	
SOUTH AFRICAN NATIONAL PARKS	
MZNP Park Forum	The Protected Environment has a running
CNP Park Forum	feedback slot on both Park Forums. The
Honorary Rangers	management plan had been assisted and reviewed with the other SANParks departments
Honorary Rangers	where relevant.
Mountain Zebra National Park	Where relevant.
Camdeboo National Park	
Scientific Services	
Park Planning	
FARMERS UNIONS	
Nieu Bethesda District Union	These individuals were sent electronic invites.
Pearston District Union	
Cradock District Union	
Graaff Reinet District Union	
LAND CLAIMANTS	
No land claims registered	N/A
COMMUNITY FORUMS AND TOURISM	Those individuals were sent alestronic in the
Graaff Reinet Tourism	These individuals were sent electronic invites. Some of these representatives are members of
Graaff Reinet Community Tourism	the Park Forum and received updates on the
Graaff-Reinet Local tourism office	progress and the public participation process
0 00 0 1 11 11 10 00	progress and the public barticipation brocess
Graaff-Reinet Local tourism office	through the Park Forum meetings held over
Graaff-Reinet Local tourism office Cramtour Karoo Heartlands Marketing Association	

Great Fish River Museum	
Karoo Park	
Karoo Connections	
Business Forums	
NON GOVERNMENTAL ORGANISATIONS	
Wilderness Foundation	Wilderness Foundation, as an implementing
Biodiversity Stewardship Forum	agent for the first phase of the Mountain Zebra-Camdeboo Protected Environment, were contacted directly. The draft management plan programmes were presented at the Biodiversity Stewardship Forum in February 2017 and the host of NGOs and provincial organisations were openly invited to participate in the public participation process.
UNIVERSITIES	
Rhodes University	These individuals were sent electronic invites.
NMMU	Other tertiary education representatives were
North West University	present at the Biodiversity Stewardship Forum
	in February 2017.



Appendix 2: Declarations of the Protected Environment

SCHEDULE

CRADOCK DIVISION

- 1. Reminder of the farm Garstlands Kloof No.384, in extent 1824.8729 hectares, held under Title Deed No. T24042/1994;
- 2. The remainder of portion 1 of the farm Wey Hoek No.382, in extent 148.8452 hectares, held under Title Deed No.T24042/1994.
- 3. Portion 2 (Helderfontein) (a portion of portion 1) of the farm Groot Kom No.436, in extent 1027,8370 hectares held under Title Deed No.T19790/1982.
- 4. Reminder of the farm Wolwe Nest No.405, in extent 597.0800 hectares, held under Title Deed No.T22460/1998;
- 5. Portion 2 of the farm Wolwe Nest No.405, in extent 597.0795 hectares held under Title Deed No. T22460/1998
- 6. Portion 1 of the farm Wolwe Nest No.402, in extent 23.7902 hectares held under Title Deed No. T22460/1998.
- 7. Reminder of the farm Hartebeeste Hoek No.407, in extent 716.3106 hectares, held under Title Deed No. T22460/1998.
- 8. Portion 2 of the farm Waterval No.410, in extent 129.2250 hectares held under Title Deed No. T22460/1998.
- 9. Portion 1 of the remainder of the farm Hartebeeste Hoek No.407, in extent 351.9718 hectares held under Title Deed No. T22460/1998.
- 10. Portion 6 (Het Schurfte) a portion of portion 1 of the remainder of the farm Hartebeeste Hoek No.407, in extent 351.9718 hectares held under Title Deed No. T22460/1998.
- 11. Portion 1 (Heuningshoek School) of farm No.414, in extent 3.2799 hectares held under Title Deed No. T22460/1998.
- 12. The farm No.605, in extent 801.9181 hectares held under Title Deed No.T40890/2003.
- 13. Portion 1 of the remainder of the farm Waterval No.410, in extent 37.8302 hectares held under Title Deed No. T22460/1998.
- 14. Remainder of the farm No. 603, in extent 793.7618 hectares held under Title Deed No.T40891/2003.
- 15. Portion 6 (a portion of portion 1) of the farm Garstlands Kloof No.384, in extent 1130.6222, hectares held under Title Deed No.T1652/2005.
- 16. Portion 8 (Fonteinsleegte) of the farm Karelskroon No.232, in extent 495.7622 hectares held under Title Deed No. T17687/1979.
- 17. Portion 3 (a portion of portion 1) of the farm Karelskroon No.232, in extent 1713.0640, hectares held under Title Deed No.T21523/1984.
- 18. The farm Waterval No.453, in extent 831.9981 hectares held under Title Deed No.T12034/2001.
- 19. The farm No.454, in extent 1297.6646 hectares held under Title Deed No.T12034/2001.
- 20. Portion 2 of the farm Weyhoek No.382, in extent 67.78116 hectares held under Title Deed No.T12034/2001.
- 21. The farm No.381, in extent 133.5248 hectares held under Title Deed No.T12034/2001.
- 22. The remainder of the farm Baviaans Krans No.238, in extent 1231.8215 hectares held under Title Deed No.T1654/2005.
- 23. The remainder of the farm Samenkoms No.392, in extent 963.1464 hectares held under Title Deed No.T1654/2005.
- 24. Portion 1 of farm Samenkoms No.392, in extent 963.1438 hectares held under Title Deed No. T1654/2005.
- 25. Portion 8 of farm De Rietfontein No.388, in extent 8.275meter square in extent and held under Title Deed No. T1654/2005.

- 26. Portion 1 (Boesmansgrot) of the farm Sterk Fontein No.403, in extent 240.3701 hectares held under Title Deed No. T64194/1995.
- 27. Portion 6 (a portion of portion 2) of the farm Karelskroon No.232, in extent 942.6220, hectares held under Title Deed No.T64194/1995.
- 28. The farm Morgenson No.235, in extent 942.6106 hectares held under Title Deed No.T64194/1995
- 29. The farm Caree Bosch No.451, in extent 389.3552 hectares held under Title Deed No.T7129/2013.
- 30. The farm Groote Hoek No.450, in extent 2198.6206 hectares held under Title Deed No.T7129/2013.
- 31. Portion 4 of farm Groote Vallei No.443, in extent 247.0766 hectares held under Title Deed No. T73488/2003.
- 32. The remainder of portion 1 of the farm Hotweg Kloof No.441, in extent 1257.7145 hectares held under Title Deed No.T73488/2003.
- 33. Portion 7 of farm Groot Kom No.436, in extent 3914.1092 hectares held under Title Deed No. T102591/2007.
- 34. Portion 8 of farm Kaalplaats No.278, in extent 1067.1546 hectares held under Title Deed No. T6313/1997.
- 35. Portion 5 of farm Garslandskloof No.384, in extent 254.6355 hectares held under Title Deed No. T7129/2013.
- 36. Portion 1 of farm Honeyvale No.275, in extent 1064.4679 hectares held under Title Deed No.T47899/1999.
- 37. Portion 3(Annex Honeyvale) of farm No.272, in extent 14.8536 hectares held under Title Deed No. T47899/1999.
- 38. The remainder of portion 2 of the farm De Doringrivier No.274, in extent 14.0785 hectares held under Title Deed No.T47899/1999.
- 39. Remainder of the farm Kaalplaats No.278, in extent 2641.9259 hectares held under Title Deed No.T15452/1964.
- 40. Portion 9 (Annex School) of the farm Kaalplaats No.278, in extent 10.0029 hectares held under Title Deed No.T35126/1971.
- 41. The farm No.608, in extent 2912.8507, hectares held under Title Deed No. T102593/2007.
- 42. Portion 5 (a portion of portion 1) of the farm Middle Water No.415, in extent 30.8978, hectares held under Title Deed No.T27201/1999.
- 43. The farm Nooitgedaght No.398, in extent 1042.9404, hectares held under Title Deed No. T25841/2012.
- 44. The farm Annex Nooitgedacht No.390, in extent 284.6084, hectares held under Title Deed No. T25841/2012.
- 45. Portion 1 (Annex Wonderfontein) of the farm Os Hoek No.389, in extent 202.9981 hectares held under Title Deed No.T13884/1998.
- 46. The farm Wonderfontein No.399, in extent 507.1054, hectares held under Title Deed No. T67991/1998.
- 47. The farm annex Mist Kraal No.396, in extent 25.7117, hectares held under Title Deed No. T67991/1998.
- 48. The farm Morgen Ster No.440, in extent 187.6233, hectares held under Title Deed No. T10241/2012.
- 49. The remainder of the farm Groote Kom No.434, in extent 200.3829 hectares held under Title Deed No.T10241/2012.
- 50. The remainder of the farm De Plaardeplaats No.433, in extent 23.0178 hectares held under Title Deed No.T10241/2012.
- 51. The farm Plaardeplaats No.435, in extent 481.7222hectares held under Title Deed No.T10241/2012.
- 52. The farm No.437, in extent 109.7589 hectares held under Title Deed No.T10241/2012.
- 53. Farm Groothoek 620, in extent 1489. 0630 hectares held under Title Deed No. 7081/2011.

- 54. The remainder of portion 2 (Doornrivier) of the farm Karelskroon No.232, in extent 634.4119 hectares, held under Title Deed No.T68696/2002.
- 55. Remainder of the farm Krom Rivier No.234, in extent 189.4963 hectares held under Title Deed No.T68696/2002.
- 56. The farm No.237, in extent 118.7339 hectares held under Title Deed No.T68696/2002.
- 57. The remainder of the farm Sterkfontein No.403, in extent 861.1300 hectares held under Title Deed No.T13329/2012.
- 58. The farm No.268, in extent 162.0658 hectares held under Title Deed No.T13329/2012.
- 59. Remainder of the farm Stapelbergskraal No.239, in extent 644.0735 hectares held under Title Deed No. T68696/2002.
- 60. Remainder of portion 1 of the farm Stapelbergskraal No.239, in extent 441.7664.hectares held under Title Deed No. T61796/2012.
- 61. Portion 8 (Morgen Ster) of the farm Groot e Kom No.434, in extent 396.0133 hectares held under Title Deed No.T4676/2006.
- 62. The farm Goede Hoop No.438, in extent 1463.8789 hectares held under Title Deed No.T4676/2006.
- 63. The farm Vrede No.439, in extent 1481.0152 hectares held under Title Deed No.T4676/2006.
- 64. Portion 3 of the farm Klippoort No.3, in extent 74.9894 hectares held under Title Deed No.T8874/2008.
- 65. The farm No.236, in extent 108.5483 hectares held under Title Deed No.T29603/1973.
- 66. The remainder of the farm Groene Fontein No.269, in extent 1676.2559 hectares held under Title Deed No.T29603/1973.
- 67. The farm No.228, in extent 248.5299 hectares held under Title Deed No.T29603/1973.
- 68. The remainder of the farm No.408, in extent 167.3049 hectares held under Title Deed No.T25601/1983.
- 69. Portion 3 (a portion of portion 1) of the farm Hartebeeste Hoek No.407, in extent 95.5890, hectares held under Title Deed No.T25601/1983.
- 70. The remainder of the Portion 4 (a portion of portion 1) of the farm Hartebeeste Hoek No.407, in extent 80.0915 hectares held under Title Deed No.T25601/1983.
- 71. Portion 8 of the farm Hartebeeste Hoek No.407, in extent 71.5519 hectares held under Title Deed No.T25601/1983.
- 72. The remainder of the farm Schull Hoek No.242, in extent 1196.1827 hectares held under Title Deed No.T67888/2005.
- 73. The remainder of portion 1 of the farm Garstlands Kloof No.384, in extent 1225.2559 hectares held under Title Deed No.T28397/1997.
- 74. Portion 1 (a portion of portion 544) of the farm Rootvlei No.544, in extent 404.4069, hectares held under Title Deed No.T12799/1992.
- 75. Portion 18 (a portion of portion 7, The Wedge) of the farm Spitz Kop No.534, in extent 5.3830, hectares held under Title Deed No.T12799/1992.
- 76. The remainder of the farm Annex Spits No.539, in extent 539.8061 hectares held under Title Deed No.T12799/1992.
- 77. Portion 2 (a portion of portion 1, Orange Grove) of the farm Karee Kloof No.369, in extent 74.0073, hectares held under Title Deed No.T18616/2009.
- 78. Portion 5 (a portion of portion 2), of the farm Bulletsjes Kraal No.533, in extent 295.8789, hectares held under Title Deed No.T12103/2006.
- 79. The remainder of the farm Bulletsjes Kraal No.533, in extent 635.5034 hectares held under Title Deed No. T12103/2006.
- 80. Portion 8 (a portion of portion 8), of the farm Spitz Kop No.534, in extent 14.1813, hectares held under Title Deed No.T12103/2006.
- 81. Portion 2 of the farm Spitz Kop No.534, in extent 89.3220, hectares held under Title Deed No.T12103/2006.

- 82. The remainder of the Portion 9 (a portion of portion 1) of the farm Spitz Kop No.534, in extent 80.0915 hectares held under Title Deed No. T12103/2006.
- 83. Portion 14 (Eldorado) (a portion of portion 5) of the farm Spitz Kop No.534, in extent 180.4359, hectares held under Title Deed No. T12103/2006.
- 84. Portion 15 (Eldorado) (a portion of portion 3) of the farm Spitz Kop No.534, in extent 415.7342, hectares held under Title Deed No. T12103/2006.
- 85. Portion 16 (Eldorado) (a portion of portion 7) of the farm Spitz Kop No.534, in extent 91.9870, hectares held under Title Deed No. T12103/2006.
- 86. Portion 1 (Eldorado) of the farm Annex Spitz Kop No.539, measuring 694 meters in extent held under Title Deed No. T12103/2006.
- 87. The remainder of the farm Karee Kloof No.369, in extent 2554.4354 hectares held under Title Deed No.T85199/2000.
- 88. Portion 3 (a portion of portion 1, Orange Grove) of the farm Karee Kloof No.369, in extent 74.0073, hectares held under Title Deed No.T85199/2000.
- 89. The farm Ganna Hoek No.476, in extent 30.8737 hectares held under Title Deed No.T85199/2000.
- 90. The farm No.478, in extent 65.1535 hectares held under Title Deed No.T85199/2000.
- 91. Portion 8 (a portion of portion 7) of the farm Bulletjes No.533, in extent 177.2947, hectares held under Title Deed No.T34928/2008.
- 92. Portion 11 (Present) (a portion of portion 9) of the farm Spitz Kop No.534, in extent 6.3240, hectares held under Title Deed No.T34928/2008.
- 93. Portion 17 (Enkel Doring Annex) (a portion of portion 7) of the farm Spitz Kop No.534, in extent 406.000, meters squares in extent and held under Title Deed No.T34928/2008.
- 94. The farm Annex Present No.543, in extent 220.9853 hectares held under Title Deed No.T34928/2008.
- 95. The farm Cradock Rd No.594, in extent 2069.7211 hectares held under Title Deed No.T29889/2013.
- 96. Portion 3 of the farm De Roode Wal No.367, in extent 37.7839, hectares held under Title Deed No. T29889/2013.
- 97. Remainder of the farm Spitz Kop No.534, in extent 1226.6045 hectares held under Title Deed No.T28675/1990.
- 98. Remainder of the portion 3 of the farm Spitz Kop No.534, in extent 149.6045 hectares held under Title Deed No.T28675/1990.
- 99. Portion 4 of the farm Spitz Kop No.534,in extent 94.4298 hectares held under Title Deed No.T28675/1990.
- 100. Remainder of the portion 5 of the farm Spitz Kop No.534, in extent 79.3159 hectares held under Title Deed No.T28675/1990.
- 101. Remainder of the portion 4 (a portion of portion 1) of the farm Groot Hoek No.470, in extent 109.6504 hectares held under Title Deed No.T28675/1990.
- 102. Portion 4 of the farm Ganna Hoek No.475, in extent 85.3565 hectares held under Title Deed No.T28675/1990.
- 103. The farm Groot Hoek and Spitz Kop No.535, in extent 1382.1428 hectares held under Title Deed No.T15919/1996.
- 104. The remainder of the farm Groot Hoek No.470, in extent 562.7558 hectares held under Title Deed No.T15919/1996.
- 105. The remainder of portion 1 of the farm Groot Hoek No.470, in extent 592.9457 hectares held under Title Deed No. T15919/1996.
- 106. Portion 3 of the farm Groot Hoek No.470, in extent 21.4133 hectares held under Title Deed No.T15919/1996.
- 107. Portion 6 of the farm Groot Hoek No.470, in extent 598.5674 hectares held under Title Deed No.T15919/1996.
- 108. The remainder of the farm Gradocks No.472, in extent 255.1750 hectares held under Title Deed No.T15919/1996.

- 109. Portion 1 of the farm Gradocks No.472, in extent 57.2963 hectares held under Title Deed No.T15919/1996.
- 110. The remainder of the farm Fleurville No.573, in extent 1565.4231 hectares held under Title Deed No.T100022/1999.
- 111. The farm Brand Hoek No.471, in extent 629.6595 hectares held under Title Deed No.T15919/1996.
- 112. The remainder of the farm Wilde Paarde Nek No.464, in extent 512.0805 hectares held under Title Deed No.T15919/1996.
- 113. Portion 6 of the farm Buffels Hoek No.546, in extent 734.3996 hectares held under Title Deed No.T3481/2012.
- 114. Portion 1 (Annex Leeu Kloof) of the farm Ganna Hoek No.475, in extent 16.9293 hectares held under Title Deed No.T3481/2012.
- 115. The farm No.474, in extent 48.1899 hectares held under Title Deed No.T3481/2012.
- 116. Remainder of the farm Brand Kloof No.368, in extent 1637.9076 hectares held under Title Deed No.T3481/2012.
- 117. Portion 4 of the farm Groote Vlakte No.536, in extent 912.4921 hectares held under Title Deed No.T12994/2007.
- 118. Portion 5 (Vaal Draai) (a portion of portion 2) of the farm Groot Vlakte No.536, in extent 618.0335 hectares held under Title Deed No.T12994/2007.
- 119. The farm Annex Riet Poort No.540, in extent 1358.2328 hectares held under Title Deed No.T12994/2007.
- 120. Portion 2 of the farm Groot Hoek No.470, in extent 928.5664 hectares held under Title Deed No.T12994/2007.
- 121. Portion 5 of the farm Groot Hoek No.470, in extent 220.8196 hectares held under Title Deed No.T12994/2007.

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- 122. The farm No.519, in extent 1549.0829 hectares held under Title Deed No.T13884/2006
- 123. Portion 1 of the farm No.66,in extent 267.3736 hectares held under Title Deed No.T13884/2006
- 124. The farm Lucerne No.70, in extent 1675.7549 hectares held under Title Deed No.T13884/2006
- 125. Portion 6 of the farm Blaauwater No.65,in extent 798.6833 hectares held under Title Deed No.T13884/2006
- 126. Portion 3 of the farm No. 66, in extent 117.1198 hectares held under Title Deed No.T13884/2006
- 127. Remainder of the farm Tweefontein No. 68, in extent 1031.6528 hectares held under Title Deed No.T13884/2006
- 128. Remainder of portion 1 of the farm Wilde Paarde Fontein No.71, in extent 166.8033.hectares held under Title Deed No. T13884/2006
- 129. Remainder of the farm Blaauwater No.67, in extent 1213.8345 hectares held under Title Deed No.T13884/2006
- 130. Portion 1 of the farm Blaauwater No.67, in extent 262.1793, hectares held under Title Deed No.T13884/2006.
- 131. Portion 4 of the farm Quachasfontein No.84,in extent 502.2368 hectares held under Title Deed No.T25835/2009
- 132. The farm Blaauwater No.81, in extent 2199.4742, hectares held under Title Deed No.T25835/2009
- 133. Portion 1 of the farm No.80, in extent 58.1157 hectares under Title Deed No.T25895/2009.
- 134. Remainder of the farm Wilde Paarde Fontein No.71, in extent 497.9963 hectares held under Title Deed No.T25895/2009.
- 135. Remainder of the farm No.75, in extent 83.9287 hectares held under Title Deed No.T25895/2009.
- 136. Farm No.73, in extent 253.3507 hectares held under Title Deed No.T25895/2009
- 137. Farm No.74, in extent 401.3224 hectares held under Title Deed No.T25895/2009

- 138. Remainder of the farm Zeekoegat No.77, in extent 520.9542 hectares held under Title Deed No.T25895/2009.
- 139. Portion 2 of the farm Blaauwater No.67, in extent 643.6952 hectares held under Title Deed No.T73172/1995.
- 140. The farm Kareeleegte No.58, in extent 2316.6078, hectares held under Title Deed No. T73172/1995.
- 141. Remainder of the farm Tromps Kraal No.62, in extent 891.5956 hectares held under Title Deed No.T73172/1995.
- 142. The farm No.57, in extent 176.1601, hectares held under Title Deed No.T73172/1995
- 143. The farm No.510, in extent 12.0842, hectares held under Title Deed No.T73172/1995.
- 144. Portion 1 of the farm No.85, in extent 227.7690 hectares under Title Deed No.T73172/1995.
- 145. Remainder of portion 2 of the farm Tromps Kraal No.62, in extent 1124.1587 hectares held under Title Deed No.T73172/1995.
- 146. The farm No.59, in extent 196.8496, hectares held under Title Deed No.T73172/1995
- 147. The farm Modderfontein No.63, in extent 2190.4250, hectares held under Title Deed No.T73172/1995.
- 148. The farm No.61, in extent 280.2430, hectares held under Title Deed No.T73172/1995
- 149. Portion 3 of the farm Request No.317, in extent 858.3396 hectares held under Title Deed No.T73172/1995.
- 150. Remainder of the farm Sevenfontein No.142, in extent 5101.4604 hectares held under Title Deed No.T12935/1996.
- 151. Portion 1 of the farm Sevenfontein No.142, in extent 371.8477 hectares under Title Deed No.T12935/1996.
- 152. Remainder of the farm No.85, in extent 1737.2439 hectares held under Title Deed No.T12935/1996.
- 153. Portion 2 (a portion of portion 1) of the farm Grasshill No.157, in extent 168.7668, hectares held under Title Deed No.T12935/1996.
- 154. Portion 1 of the farm Tromps Kraal No.62, in extent 225.7366 hectares under Title Deed No.T12935/1996.
- 155. Portion 6 (a portion of portion 1) (Dwars Vallei) of the farm Quachasfontein No.84, in extent 389.1640, hectares held under Title Deed No.T12935/1996.
- 156. Portion 2 of the farm No.82, in extent 1013.2169 hectares under Title Deed No.T10840/1992.
- 157. The farm No.83, in extent 908.3507, hectares held under Title Deed No. T10840/1992
- 158. The farm No.517, in extent 780.0280, hectares held under Title Deed No. T13734/1975.
- 159. The farm No.527, in extent 1325.9657, hectares held under Title Deed No. T61593/1999.
- 160. Portion 4 of the farm No.82, in extent 168.5531 hectares under Title Deed No.T81662/1999.
- 161. The farm No.84, in extent 2026.0017, hectares held under Title Deed No. T9500/1972.
- 162. The farm Upper Groen Kloof No.379, in extent 422.059, hectares held under Title Deed No.T40640/1999.
- 163. Portion 1 of Annexure Buffelshoek No.370, in extent 165.7390 hectares under Title Deed No.T40640/1999.
- 164. Portion 1 of Annexure Paardefontein No.376, in extent 114.8909 hectares under Title Deed No.T40640/1999.
- 165. Remainder Paardefontein No.371, in extent 1001.5792, hectares held under Title Deed No.T40640/1999.
- 166. The farm Annexure Paardefontein No.376, in extent 259.9246, hectares held under Title Deed No.T40640/1999.
- 167. Portion 2 of the farm Paardefontein No.371, in extent 986.8373 hectares under Title Deed No.T40640/1999.
- 168. Portion 2 of the farm Groenekloof No.378, in extent 342.0704 hectares under Title Deed No.T40640/1999.
- 169. Portion 2 of the farm No.377, in extent 216.1587 hectares under Title Deed No.T40640/1999.

- 170. Remainder of portion 3 of the farm Groenekloof No.378, in extent 2.2599 hectares held under Title Deed No.T34390/1999.
- 171. Remainder of the farm Groenekloof No.378, in extent 161.5476 hectares held under Title Deed No.T34390/1999.
- 172. Remainder of the farm No.377, in extent 284.7469 hectares held under Title Deed No. T34390/1999.
- 173. Portion 1 (Bosch Berg) of the farm Mooiberg No.381, in extent 232.1202 hectares under Title Deed No. T34390/1999.
- 174. Portion 6 (Voorspoed) (a portion of portion 1) of the farm Groenekloof No.378, in extent 179.4592 hectares under Title Deed No. T34390/1999.
- 175. Remainder of the farm Spring Grove No.348, in extent 1671.3109 hectares held under Title Deed No. T54812/1996.
- 176. Portion 1 (annex Spring Grove No.2) of the farm Excelsior No.255, in extent 108.0658 hectares under Title Deed No. T54812/1996.
- 177. Portion 1 (annex Spring Grove No.2) of the farm Bellevue No.351, in extent 134.6311 hectares under Title Deed No. T54812/1996.
- 178. The farm Mount Pleasant No.349, in extent 2870.5599, hectares held under Title Deed No.T54535/1996.
- 179. Remainder of the farm Bellevue No.351, in extent 1988.9615 hectares held under Title Deed No. T4755/2000.
- 180. Portion 4 of the farm Spring Grove No.348, in extent 43.4305 hectares under Title Deed No.T54812/1996.
- 181. Remainder Spring Grove No.348, in extent 1671.3109, hectares held under Title Deed No. T54812/1996.
- 182. The farm No.533, in extent 706.7759, hectares held under Title Deed No.T28369/2010.
- 183. The farm Quaggas Valley No.30, in extent 3685.6572, hectares held under Title Deed No.T76307/1995.
- 184. The farm No.60, in extent 1388.1501, hectares held under Title Deed No.T76307/1995.
- 185. Portion 4 of the farm Request No.317, in extent 428.7419 hectares held under Title Deed No. T76307/1995.
- 186. Portion 1 of the farm Platfontein No.28, in extent 525.6351 hectares held under Title Deed No. T76307/1995.
- 187. The farm Rondegat No.191, in extent 1414.7861, hectares held under Title Deed No.T47131/2008.
- 188. The farm Groote Hoek No.192, in extent 1653.2888, hectares held under Title Deed No.T47131/2008.
- 189. Portion 1 of the farm De Vreede No.286, in extent 53.5033 hectares held under Title Deed No. T47131/2008.
- 190. The remainder of portion 5 (Nooitgedaght) of the farm Vrynsfontein No.319, in extent 314.0945 hectares held under Title Deed No.T1164/1997.
- 191. Portion 6 (Vaalkop) (a portion of portion 1) of the farm No.319, in extent 682.6674, hectares held under Title Deed No.T1164/1997.
- 192. Portion 1 of the farm Kruger Kraal No.322, in extent 34.4383 hectares held under Title Deed No. T1164/1997.
- 193. The remainder of portion 1 of the farm No.318, in extent 1894.5489 hectares held under Title Deed No.T1164/1997.
- 194. Portion 8 (Annex Nooitgedacht) of the farm Vrynsfontein No.319, in extent 366.7499 hectares held under Title Deed No.T1164/1997.
- 195. The remainder of the farm Paarde Kraal No.289, in extent 656.8672 hectares held under Title Deed No.T51592/1998.
- 196. The farm Bronkhorsfontein No.288, in extent 1396.0843, hectares held under Title Deed No.T51592/1998.

- 197. The farm No.290, in extent 225.1023, hectares held under Title Deed No.T51592/1998.
- 198. Portion 13 of the farm Onbedacht No.294, in extent 2033.8660, hectares held under Title Deed No.T62436/2000.
- 199. The remainder of portion 5 (Onbedacht No.2) of the farm Onbedacht No.294, in extent 56.4840 hectares held under Title Deed No.T75319/1998.
- 200. Portion 8 (a portion of portion 7) of the farm Onbedacht No.294, in extent 87.9751, hectares held under Title Deed No.T75319/1998.
- 201. Portion 9 of the farm Onbedacht No.294, in extent 115.1295, hectares held under Title Deed No.T75319/1998.
- 202. Portion 10 of the farm Onbedacht No.294, in extent 37.8663, hectares held under Title Deed No.T75319/1998.
- 203. The remainder of the farm Rietvalley No.200, in extent 700.1994 hectares held under Title Deed No.T2957/2009.
- 204. The remainder of the farm Rheboks No.202, in extent 1013.1018 hectares held under Title Deed No.T2957/2009.
- 205. Portion 6 (Annex Grassdale) (a portion of portion 2) of the farm Houd Constant No.122 in extent 118.5261 hectares held under Title Deed No.10790/2007.
- 206. Portion 1 of the farm Avonleigh No.182, in extent 9.0637, hectares held under Title Deed No.T10790/2007.
- 207. Portion 2 of the farm Avonleigh No.182, in extent 13.9017, hectares held under Title Deed No.T10790/2007.
- 208. The remainder of the farm Tygerkloof No.118, in extent 319.7465 hectares held under Title Deed No.T10790/2007.
- 209. The remainder extent of the farm No.164, in extent 681.6602 hectares held under Title Deed No.T15610/1953.
- 210. The farm No.133, in extent 101.0765, hectares held under Title Deed No.T15610/1953.
- 211. The farm Doornfontein No.165, in extent 1906.7159, hectares held under Title Deed No.T15610/1953.
- 212. The remainder of the farm Dumd Constant No.125, in extent 155.2678 hectares held under Title

No.T79125/2003.

- 213. The remainder of the farm Rust No.126, in extent 2911.2666 hectares held under Title Deed No.T79125/2003.
- 214. Portion 1 of the farm No.127, in extent 190.7197, hectares held under Title Deed No.T79125/2003.
- 215. The farm No.534, in extent 588.3174, hectares held under Title Deed No.T10446/2009.
- 216. The farm No.535, in extent 938.4142, hectares held under Title Deed No.T10446/2009.
- 217. The farm No.521, in extent 448.9150, hectares held under Title Deed No.T9853/1999.
- 218. The farm No.520, in extent 1419.6928, hectares held under Title Deed No.T9853/1999.
- 219. The farm No.169, in extent 257.8447, hectares held under Title Deed No.T9853/1999.
- 220. The remainder of the farm Wolve Kloof No.168, in extent 1514.2201 hectares held under Title Deed No.T9853/1999.
- 221. Portion 1 of the farm Wolve Kloof No.168, in extent 123.6261, hectares held under Title Deed No. T9853/1999.
- 222. The remainder of the farm Schaapplaats No.171, in extent 690.8873 hectares held under Title Deed No.T9853/1999.
- 223. Portion 1 of the farm Zuurplaats No.114, in extent 996.9504, hectares held under Title Deed No.T89306/1993.
- 224. Portion 2 of the farm Zuurplaats No.114, in extent 11.9942, hectares held under Title Deed No.T89306/1993.
- 225. Portion 1 of the farm Houd Constant No.124, in extent 353.1129, hectares held under Title Deed No.T89306/1993.

- 226. The remainder of the farm No.111, in extent 185.2336 hectares held under Title Deed No.T89306/1993.
- 227. The farm Annex Katbos No.121, in extent 428.9304, hectares held under Title Deed No.T89306/1993.
- 228. The farm Goudfontein No.72, in extent 383.2134, hectares held under Title Deed No.T66583/2000.

MIDDLEBURG DIVISION

- 229. Portion 3 (a portion of portion 1) of the farm Loer Poort No.224, in extent 15.2576, hectares held under Title Deed No.T13384/2006.
- 230. The remainder of the farm Ruygtevalley No.321, in extent 824.4506 hectares held under Title Deed No.T89056/1995.
- 231. Portion 7 of the farm Blauwekrans No.269, in extent 260.9182, hectares held under Title Deed No.T8874/2008.
- 232. Portion 3 of the farm Blauwekrans No.269, in extent 535.8892, hectares held under Title Deed No.T8874/2008.
- 233. The farm No.275, in extent 111.2806, hectares held under Title Deed No.T89056/1995.
- 234. Portion 4 of the farm Wolwefontyn No.277, in extent 9.9173, hectares held under Title Deed No.T89056/1995.
- 235. The remainder of portion 1 of the farm Blaaukrantz No.271, in extent 1053.3345 hectares held under Title Deed No.T8874/2008.
- 236. The remainder of portion 2 of the farm Blaaukrantz No.271, in extent 31.4561 hectares held under Title Deed No.T8874/2008.
- 237. The farm No.307, in extent 155.3464, hectares held under Title Deed No.T16795/1997.
- 238. The remainder of portion 1 of the farm Olieve Boom No.308, in extent 795.6219 hectares held under Title Deed No.T16795/1997.
- 239. Portion 4 of the farm Olieve Boom No.308, in extent 40.1000, hectares held under Title Deed No.T16795/1997.
- 240. The farm No.300, in extent 43.8330, hectares held under Title Deed No.T16795/1997.
- 241. Portion 2 (a portion of portion 1) of the farm Tiger Kloof No.309, in extent 21.5461, hectares held under Title Deed No.T6059/1907.
- 242. The remainder of portion 1 of the farm Willem Burgers Rivier No.317, in extent 796.0894 hectares held under Title Deed No.T32357/1996.
- 243. Portion 10 of the farm Willem Burgers Rivier No.317, in extent 596.6060, hectares held under Title Deed No.T32357/1996.
- 244. Portion 11 of the farm Willem Burgers Rivier No.317, in extent 957.6167, hectares held under Title Deed No.T32357/1996.
- 245. Portion 13 of the farm Willem Burgers Rivier No.317, in extent 358.4458, hectares held under Title Deed No.T87593/1997.
- 246. The farm Spring Fontein Proper No.315, in extent 405.5679, hectares held under Title Deed No.T32357/1996.
- 247. The farm No.318, in extent 181.8874, hectares held under Title Deed No.T32357/1996.
- 248. The farm Newland No.306, in extent 860.2093, hectares held under Title Deed No.T59464/1983.
- 249. The remainder of portion 1 of the farm Jagt Poort No.301, in extent 270.3486 hectares held under Title Deed No.T59464/1983.
- 250. Portion 3 of the farm Jagt Poort No.301, in extent 139.9173, hectares held under Title Deed No.T59464/1983.
- 251. The remainder of portion 5 of the farm Jagt Poort No.301, in extent 7.0079 hectares held under Title Deed No.T24248/1977.
- 252. Portion 7 of the farm Jagt Poort No.301, in extent 120.8795, hectares held under Title Deed No.T24248/1977.

- 253. Portion 8 of the farm Jagt Poort No.301, in extent 46.8537, hectares held under Title Deed No.T24248/1977.
- 254. The remainder of portion 10 of the farm Jagt Poort No.301, in extent 327.8761 hectares held under Title Deed No.T59464/1983.
- 255. Portion 11 of the farm Jagt Poort No.301, in extent 301.2137, hectares held under Title Deed No.T24248/1977.
- 256. Portion 12 of the farm Jagt Poort No.301, in extent 2.4012, hectares held under Title Deed No.T7573/1995.
- 257. The farm No.305, in extent 249.9346, hectares held under Title Deed No.T59464/1983.
- 258. The farm No.304, in extent 112.6197, hectares held under Title Deed No.T24248/1977.
- 259. The remainder of portion 1 of the farm Esels Hoek No.302, in extent 1145.2261 hectares held under Title Deed No.T24248/1977.
- 260. The remainder of the farm Wolwefontyn No.277, in extent 208.1887 hectares held under Title Deed No.T54074/1984.
- 261. Portion 1 of the farm Wolwefontyn No.277, in extent 47.9658, hectares held under Title Deed No.T4275/1983.
- 262. The remainder of the portion 2 of the farm Wolwefontyn No.277, in extent 306.1474 hectares held under Title Deed No.T54074/1984.
- 263. The remainder of the portion 3 of the farm Wolwefontyn No.277, in extent 1348.3327 hectares held under Title Deed No.T54074/1984.
- 264. Portion 6 of the farm Wolwefontyn No.277, in extent 199.9603, hectares held under Title Deed No.T54074/1984.
- 265. Portion 3 of the farm De Kuylen No.272, in extent 132.9603, hectares held under Title Deed No.T54074/1984.
- 266. Portion 1 of the farm No.273, in extent 11.1949, hectares held under Title Deed No.T54074/1984.
- 267. The farm No.274, in extent 67.7616, hectares held under Title Deed No.T54074/1984.
- 268. Portion 3 of the farm De Twis Kuil No.278, in extent 59.1378, hectares held under Title Deed No.T54074/1984.
- 269. Portion 4 of the farm Ruygtevalley No.321, in extent 619.1813, hectares held under Title Deed No.T54074/1984
- 270. The farm Tiger Kloof No.310, in extent 3481.3186, hectares held under Title Deed No.T54074/2000.

271.

- 272. The remainder of the farm Olieve Boom No.308, in extent 727.2885 hectares held under Title Deed No.T54074/2000.
- 273. The farm No.312, in extent 566.8843, hectares held under Title Deed No. T54074/2000.
- 274. The remainder of the farm Springfontein No.314, in extent 510.4559 hectares held under Title Deed No.T66583/2000.
- 275. The remainder of the farm No.313, in extent 189.3978 hectares held under Title Deed No.T66583/2000.
- 276. Portion 12 of the farm Willem Burgers Rivier No.317, in extent 515.3963, hectares held under Title Deed No.T66583/2000.
- 277. Portion 1 of the farm Dieve Kop No.296, in extent 660.4148, hectares held under Title Deed No.T66584/2000.
- 278. The farm No.299, in extent 93.5576, hectares held under Title Deed No. T66584/2000.
- 279. The remainder of the farm Bul Hoek No.285, in extent 1112.9063 hectares held under Title Deed No.T66527/2003.
- 280. Portion 2 of the farm Bul Hoek No.285, in extent 762.2206, hectares held under Title Deed No.T59218/2005.
- 281. The farm No.284, in extent 291.8861, hectares held under Title Deed No. T59218/2005.
- 282. The remainder of the farm Rietvalley No.243, in extent 1045.8856 hectares held under Title Deed No.T59128/2005.

- 283. The remainder of portion 3 of the farm Rietvalley No.243, in extent 346.9040 hectares held under Title Deed No.T66527/2003.
- 284. Portion 1 of the farm De Twis Kull No.278, in extent 305.1267, hectares held under Title Deed No.T66527/2003.
- 285. The remainder of portion 2 of the farm Rietvalley No.243, in extent 418.5558 hectares held under Title Deed No.T25085/1986.
- 286. The remainder of the farm Rietvalley No.316, in extent 630.5903 hectares held under Title Deed No.T59128/2012.
- 287. Portion 2 of the farm Rietvalley No.316, in extent 1054.3909, hectares held under Title Deed No.T49962/2012.
- 288. The farm Wilde Hoender Hoek No.252, in extent 133.7589, hectares held under Title Deed No.T8768/1982.
- 289. The remainder of the farm De Kuylen No.272, in extent 526.1690 hectares held under Title Deed No.T8768/1982.
- 290. The remainder of portion 2 of the farm De Kuylen No.272, measuring unknown (408.5550) hectares held under Title Deed No.T8768/1982.
- 291. Portion 2 of the farm De Twis Kuil No.278, in extent 140.6032, hectares held under Title Deed No.T8768/1982.
- 292. The farm No.250, in extent 86.9537, hectares held under Title Deed No.T8768/1982.
- 293. The remainder of the farm De Twis Kuil No.278, in extent 653.0900 hectares held under Title Deed No.T40678/2009.
- 294. Portion 5 of the farm Wolwefontyn No.277, in extent 309.6849, hectares held under Title Deed No.T40678/2009.
- 295. Portion 8 (a portion of portion 3) (Annex Twis Kuil) of the farm Wolwefontyn No.277, in extent 21.8473, hectares held under Title Deed No.T40678/2009.
- 296. Portion 4 of the farm Rietvalley No.243, in extent 408.8085, hectares held under Title Deed No.T40678/2009.
- 297. Portion 5 of the farm Rietvalley No.243, in extent 32.1417, hectares held under Title Deed No.T40678/2009.
- 298. The remainder of portion 2 of the farm Dieve Kop No.294, in extent 838.2822, hectares held under Title Deed No.T22798/1996.
- 299. Portion 6 (a portion of portion 2) of the farm Dieve Kop No.294, in extent 137.6804, hectares held under Title Deed No.T22798/1996.
- 300. Portion 10 (Haartlem) (a portion of portion 2) of the farm Dieve Kop No.294, in extent 625.4226, hectares held under Title Deed No.T22798/1996.
- 301. Portion 8 of the farm Klip Fonteyn No.234, in extent 255.2465, hectares held under Title Deed No.T96015/1997.
- 302. Portion 9 of the farm Klip Fonteyn No.234, in extent 740.9002, hectares held under Title Deed No.T96015/1997.
- 303. The remainder of portion 10 of the farm Klip Fonteyn No.234, in extent 599.5724, hectares held under Title Deed No.T22798/1996.
- 304. Portion 11 of the farm Klip Fonteyn No.234, in extent 149.8931, hectares held under Title Deed No.T96015/1997.
- 305. The remainder of portion 15 of the farm Klip Fonteyn No.234, in extent 517.8592, hectares held under Title Deed No.T22798/1996.
- 306. Portion 18 (Haarlem) (a portion of portion 10) of the farm Klip Fonteyn No.234, in extent 625.4226, hectares held under Title Deed No.T22798/1996.
- 307. Portion 19 (Haarlem) (a portion of portion 10) of the farm Klip Fonteyn No.234, in extent 32.5482, hectares held under Title Deed No.T22798/1996.
- 308. The farm No.235, in extent 174.6240, hectares held under Title Deed No. T96015/1997.
- 309. The remainder of portion 1 of the farm Roode Hoogte No.233, in extent 2091.3756, hectares held under Title Deed No.T1147/1980.

310. Portion 4 (a portion of portion 2) of the farm Rheeboks Fontyn No.231, in extent 651.3654, hectares held under Title Deed No.T1147/1980.

ABERDEDEEN DIVISION

311. The farm Oudedrift No.267, in extent 3789.3081, hectares held under Title Deed No.T105244/1998.

MURRAYSBURG DIVISION

- 312. The farm Annexure Onbedacht No.106, in extent 162.9352 hectares under Title Deed No.T75319/1998.
- 313. The farm Annexure Klipfontein No.107, in extent 130.9210 hectares under Title Deed No.T62436/2000.
- 314. Portion 1 (Annex Onbedacht No.2) of the farm Quaggas Drift No.108, in extent 297.0039, hectares held under Title Deed No.T62436/2000.

PEARSTON DIVISION

- 315. Portion 6 of the remainder of the farm Onverwagt No.36, in extent 1212.5827, hectares held under Title Deed No.T39605/2010.
- 316. Portion 3 of the farm Welgedagt No.37, in extent 27.3090, hectares held under Title Deed No.T25021/2009.
- 317. Portion 1 of the remainder of the farm Welgedagt No.37, in extent 317.1138, hectares held under Title Deed No.T25021/2009.
- 318. The farm Donker Hoek No.41, in extent 292.5057, hectares held under Title Deed No. T25021/2009.
- 319. Portion 2 of the farm Boschmans Kloof No.38, in extent 29.3219, hectares held under Title Deed No. T25021/2009.
- 320. Portion 1 of the remainder of the farm Buffels Hoek No.40, in extent 673.4697, hectares held under Title Deed No. T25021/2009.
- 321. Portion 2 of the remainder of the farm Buffels Hoek No.40, in extent 909.2359, hectares held under Title Deed No. T25021/2009.
- 322. Portion 4 of the remainder of the farm Buffels Hoek No.40, in extent 539.0029, hectares held under Title Deed No. T25021/2009.
- 323. Portion 6 of the farm Buffels Hoek No.40, in extent 38.8935, hectares held under Title Deed No. T25021/2009.
- 324. The farm No.131, in extent 1526.3168, hectares held under Title Deed No. T25021/2009.
- 325. The remainder of the farm Rusternburg No.129, in extent 2920.0744 hectares held under Title Deed No.T52662/2008.
- 326. The remainder of the farm Droogte Rivier No.34, in extent 5518.4282 hectares held under Title Deed No.T75024/2009.
- 327. Portion 3 of the farm Droogte Rivier No.34, in extent 627.1295, hectares held under Title Deed No. T75024/1995.
- 328. Portion 4 of the farm Droogte Rivier No.34, in extent 1000.4294, hectares held under Title Deed No. T75024/1995.
- 329. Portion 6 of the farm Droogte Rivier No.34, in extent 17.1327, hectares held under Title Deed No. T75024/1995.
- 330. The remainder of the farm Ossen Hoek No.10, in extent 1156.3068 hectares held under Title Deed No.T14517/1986.
- 331. The remainder of the farm No.9, in extent 348.3230 hectares held under Title Deed No.T14517/1986.

- 332. The remainder of portion 3 of the farm Zondags Rivier No.11, in extent 31.1493 hectares held under Title Deed No.T14517/1986.
- 333. The remainder of Thorngrove No.53, in extent 982.1430 hectares held under Title Deed No.T53961/1992.
- 334. Portion 3 of the farm Thorngrove No.53, in extent 807.8563, hectares held under Title Deed No. T53961/1992.
- 335. Portion 4 of the farm Thorngrove No.53, in extent 269.2830, hectares held under Title Deed No. T53961/1992.
- 336. Portion 5 of the farm Thorngrove No.53, in extent 269.2849, hectares held under Title Deed No. T53961/1992.
- 337. Portion 18 of the farm New Keerom No.63, in extent 483.3677, hectares held under Title Deed No. T26399/1981.
- 338. Portion 7 of the farm New Keerom No.63, in extent 5.8801, hectares held under Title Deed No. T3975/1977.
- 339. The remainder of portion 1 of the farm New Keerom No.63, in extent 1068.1036 hectares held under Title Deed No.T16031/1957.
- 340. Portion 9 of the farm New Keerom No.63, in extent 4.2827, hectares held under Title Deed No. T16031/1957.
- 341. The remainder of the farm Dassies Krantz No.62, in extent 1479.9105 hectares held under Title Deed No.T23413/1964.
- 342. The remainder of portion 1 of the farm Dassies Krantz No.62, in extent 150.0173 hectares held under Title Deed No.T21770/1965.
- 343. Portion 6 of the farm Thorngrove No.53, in extent 403.9297, hectares held under Title Deed No. T23413/1964.
- 344. Portion 2 of the farm Kraan Kull No.50, in extent 1776.4431, hectares held under Title Deed No. T2414/2006.
- 345. The remainder of the farm Weltevreden No.35, in extent 2728.8567 hectares held under Title Deed No.T8495/2003.
- 346. The remainder of the farm Wildebeest Kull No.43, in extent 427.1396 hectares held under Title Deed No.T8495/2003.
- 347. The remainder of the farm Opgedroogte Fontein No.44, in extent 67.9230 hectares held under Title Deed No.T8495/2003.
- 348. Portion 4 (Eastleigh) of the farm Weltevreden No.35, in extent 300.7069, hectares held under Title Deed No. T8495/2003.
- 349. Portion 2 (Westleigh) of the farm Wildebeest Kull No.43, in extent 315.7191, hectares held under Title Deed No. T8495/2003.
- 350. The remainder of the farm No.15, in extent 411.9948 hectares held under Title Deed No.T7614/2006.
- 351. The remainder of the farm No.16, in extent 928.7148 hectares held under Title Deed No.T7614/2006.
- 352. Portion 7 of the farm Plat Rivier No.30, in extent 1329.8231, hectares held under Title Deed No. T92983/2005.
- 353. Portion 8 of the farm Plat Rivier No.30, in extent 650.3816, hectares held under Title Deed No. T92983/2005.
- 354. The farm No.126, in extent 3946.4872, hectares held under Title Deed No.T54094/1995.
- 355. The farm Pearston Road No.137, in extent 3136.9666, hectares held under Title Deed No.T39606/2010.
- 356. Portion 8 Tafelkop (a portion of portion 7) of the farm Hoop Van Afrika No.85, in extent 159.8251, hectares held under Title Deed No.T62163/2008.
- 357. The remainder of the farm Karee Laagte No.84, in extent 287.5988 hectares held under Title Deed No.T62163/2008.

- 358. Portion 1 of the farm Karee Laagte No.84, in extent 1181.8799, hectares held under Title Deed No. T62163/2008.
- 359. The remainder of the Stok's Fontein No.87, in extent 1698.6744 hectares held under Title Deed No.T57763/2002.
- 360. The remainder of the farm Drooge Kraal No.90, in extent 1847.7808 hectares held under Title Deed No.T35672/2008.
- 361. The remainder of the farm Kaffirs Berg No.112, in extent 1525.3708 hectares held under Title Deed No.T43924/2006.
- 362. Portion 1 of the farm Kaffirs Berg No.112, in extent 761.7410, hectares held under Title Deed No. T43924/2006.
- 363. Portion 2 of the farm Kaffirs Berg No.112, in extent 763.6768, hectares held under Title Deed No. T43924/2006.
- 364. The farm Van De Venterskraal No.99, in extent 1883.1327, hectares held under Title Deed No.T54801/1988.
- 365. Portion 1 of the farm Beisjes Fontein No.96, in extent 147.6663, hectares held under Title Deed No. T54801/1988.
- 366. The farm Spijoenkop No.100, in extent 922.4221, hectares held under Title Deed No.T54801/1988.
- 367. The farm No.127, in extent 3422.0924, hectares held under Title Deed No.T43936/2006.
- 368. The remainder of the farm Zwartug No.111, in extent 688.8259 hectares held under Title Deed No.T14725/1977.
- 369. Portion 4 of the farm Zwartug No.111, in extent 11.3717, hectares held under Title Deed No. T14725/1977.
- 370. Portion 1 of the farm Vogelrivier No.119, in extent 847.1686, hectares held under Title Deed No. T4489/1980.
- 371. Portion 2 of the farm No.58, in extent 85.6656, hectares held under Title Deed No.T87277/1996.
- 372. Portion 1 of the farm No.134, in extent 507.2191, hectares held under Title Deed No.T38390/2008.
- 373. The farm No.133, in extent 1560.2658, hectares held under Title Deed No.T87278/1996.
- 374. Portion 1 of the farm No.58, in extent 1224.8408, hectares held under Title Deed No.T5292/1958.
- 375. The farm Os-kom No.8, in extent 821.6141, hectares held under Title Deed No.T72328/2012.
- 376. Portion 1 of the farm Paarde Kraal No.7, in extent 447.1087, hectares held under Title Deed No.T72328/2012.
- 377. The remainder of the farm Welgelegen No.20, in extent 890.1508 hectares held under Title Deed No.T72172/2008.
- 378. The remainder of portion 1 of the farm Middlewater No.21, in extent 281.3708 hectares held under Title Deed No.T72172/2008.
- 379. Portion 2 (Vaaldam) (a portion of portion 1) of the farm Joubertskraal No.83, in extent 321.2547, hectares held under Title Deed No.T23349/1983.
- 380. The farm Hartebeest Laagte No.91, in extent 3436.0781, hectares held under Title Deed No.T23349/1983.

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- 381. Portion 6 of the farm Coetzees Fontein No.104, in extent 248.2430, hectares held under Title Deed No. T57763/2002.
- 382. Remainder extent of portion 4 (a portion of portion 3) of the farm Upsal No.386, in extent 32.2527 hectares held under Title Deed No.T4676/2006.
- 383. Portion 6 (a portion of portion 3) of the farm Upsal No.386, in extent 219.8082, hectares held under Title Deed No.T72328/2012.
- 384. Portion 5 (a portion of portion 4) of the farm Upsal No.386, in extent 16.0500, hectares held under Title Deed No.T72328/2012.

- 385. The remainder of portion 1 of the farm Sneeubergs Kloof No.2, in extent 196.6783 hectares held under Title Deed No.T28397/1997.
- 386. The remainder of portion 2 (a portion of portion 1) of the farm Sneeubergs Kloof No.2, in extent 226.4028, hectares held under Title Deed No.T28397/1997.
- 387. Portion 4 (Koude Hoek) (a portion of portion 3) of the farm Schurfte Berg No.4, in extent 892.0537, hectares held under Title Deed No.T28397/1997.
- 388. Portion 5 (a portion of portion 3) of the farm Schurfte Berg No.4, in extent 602.7818, hectares held under Title Deed No.T28397/1997
- 389. The remainder of the farm Groote Zeekoe Gat No.5, in extent 1047.2017 hectares held under Title Deed No.T49646/2001.
- 390. The remainder of portion 6 (Mountain Slope) (a portion of portion 1) of the farm Hartebeeste Laagte
- No.28, in extent 605.8536 hectares held under Title Deed No.T34928/2008.
- 391. The remainder of portion 11 (Eendracht) (a portion of portion 10) of the farm Bothas Kraal No.27, in extent 232.3629 hectares held under Title Deed No.T11233/2011.
- 392. Portion 1 (Lelie Kop) of the farm Groote Dam No.26, in extent 2151.8711, hectares held under Title Deed No.T11233/2011.
- 393. The remainder of the farm Hartebeest Laagte No.28, in extent 103.5975, hectares held under Title Deed No.T28500/1972.
- 394. Portion 3 (Groen Laagte) of the farm Hartebeest Laagte No.28, in extent 327.7662, hectares held under Title Deed No.T28500/1972.
- 395. The remainder of portion 1 (Eendracht) of the farm Bothas Kraal No.27, in extent 523.3629 hectares held under Title Deed No.T28500/1972.
- 396. Portion 3 of the farm Bothas Kraal No.27, in extent 2.2827, hectares held under Title Deed No.T28500/1972.
- 397. The remainder of portion 5 of the farm Bothas Kraal No.27, in extent 1065.7435 hectares held under Title Deed No. T28500/1972.
- 398. Portion 7 (Annex Groen Laagte) (a portion of portion 1) of the farm Bothas Kraal No.27, in extent 892.0537, hectares held under Title Deed No. T28500/1972.
- 399. Portion 9 (Groen Laagte Annex B) of the farm Bothas Kraal No.27, in extent 140.2243, hectares held under Title Deed No.T28500/1972.
- 400. Portion 1 (PoplarGrove East) of the farm Groote Zeekoe Gat No.5, in extent 1052.1582, hectares held under Title Deed No.T49647/2001.
- 401. The remainder of portion 3 of the farm Schurfte Berg No.4, in extent 670.4773 hectares held under Title Deed No. T28398/1997.
- 402. Portion 1 of the farm Schurfte Berg No.4, in extent 1352.4640 hectares held under Title Deed No.T28398/1997.
- 403. The farm No.3, in extent 100.2542, hectares held under Title Deed No. T28398/1997.
- 404. The farm No.24, in extent 281.7933, hectares held under Title Deed No. T3481/2012.
- 405. Portion 2 of the farm Doornbosch No.23, in extent 0.9910 hectares held under Title Deed No.T3481/2012.
- 406. The remainder of the farm Doornbosch No.23, in extent 1314.8742 hectares held under Title Deed No. T3481/2012.
- 407. The farm No.25, in extent 265.3856, hectares held under Title Deed No. T3481/2012.
- 408. The remainder of the farm No.357, in extent 663.4283 hectares held under Title Deed No. T3481/2012.



Appendix 3: Regulations of the Protected Environment

Definitions

In these Regulations any word or expression to which a meaning has been assigned in the Act has that meaning and, unless the context otherwise indicates—

"activity" has the meaning assigned to it in section 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);

"authorised official" means an employee of the Association, or any other person acting as such on authorisation in writing of the Association, and includes an environmental management inspector;

"development" means any physical intervention, excavation or action, other than that caused by natural forces, which may result in a change in the appearance or physical nature of a site in the core conservation area or influence its stability and future well-being, including—

- (a) the construction, alteration, demolition, removal or change of use of a site or a structure on the site;
- (b) the carrying out of any works on, over or under the site;
- (c) the construction or putting up for display of signs or notice boards;
- (d) any change to the natural or existing condition or topography of land; or
- (e) any removal, physical disturbance, clearing or destruction of trees or vegetation or the removal of topsoil;

"environment" has the meaning assigned to it in section 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);

"environmental management inspector" has the meaning assigned to it in section 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);

"environmental impact assessment" means any process of collecting, organizing, analysing, interpreting, and communicating information that is relevant to assess the impacts of activities on the environment of the protected environment;

"high impact zone" refers to a demarcated zone designated for used high impact agricultural or ecotourism activities including homesteads, arable lands, farm stores, labour accommodation and lodges;

"low impact zone" refers to a demarcated zone designated for areas used for grazing, stock production, hunting or ecotourism, including support infrastructure such as roads, fences and water points.

"major infrastructure" refers to any support infrastructure that requires an environmental impact assessment in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998);

"management authority" has the meaning assigned to it in section1 of the Act;

"management plan" means the management plan for the protected environment approved from time to time by the Minister of Environmental Affairs in terms of the Act;

"member" means a person belonging to the Association;

"owner" means the registered owner of a property situated in the protected environment;

"person" includes a juristic person;

"property" means the full extent of an immovable property or properties situated in the protected environment and declared as a protected environment under the Act;

"small scale infrastructure" refers to any support infrastructure that does not require an environmental impact assessment in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998);

"the Act" means the National Environmental Management: Protected Areas Act 2003, (Act No, 57 of 2003);

"the Association" means the Mountain Zebra Camdeboo Land Owners' Association;

"the National Water Act" means the National Water Act, 1998 (Act No. 36 of 1998); and

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"water resource" has the meaning assigned to it in section 1 of the National Water Act, 1998 (Act No. 36 of 1998).

Purpose of Regulations

- 2. The purpose of these Regulations is to—
 - (a) provide for the management of the Mountain Zebra-Camdeboo Protected Environment in accordance with the Act;
 - (b) conserve and restore biodiversity in the Mountain Zebra-Camdeboo Protected Environment;
 - (c) conduct integrated environmental management;
 - (d) ensure the protected environment is managed and developed in a manner which is ecologically sound, economically viable, financially profitable and satisfying to the owners of the properties in the Mountain Zebra-Camdeboo Protected Environment;
 - (e) ensure that the use of natural and biological resources in the Mountain Zebra-Camdeboo Protected Environment is undertaken in a sustainable manner;
 - (f) control change in the use of land situated within the Mountain Zebra-Camdeboo Protected Environment;
 - (g) ensure that the supply of environmental goods and services within the Mountain Zebra-Camdeboo Protected Environment is undertaken in an equitable and sustainable manner and is consistent with the Act and the purposes for which the Mountain Zebra-Camdeboo Protected Environment has been declared as such; and
 - (h) ensure that all developments as well as any other activities carried out and to be carried out in the Mountain Zebra-Camdeboo Protected Environment are appropriate for the area and consistent with the Act, given the purpose for which the protected environment has been declared as such.

Application of Regulations

3. These Regulations are applicable to the Mountain Zebra-Camdeboo Protected Environment, declared as a protected environment under section 28 of the Act.

Mandate of the Association

- **4.** The Association in managing the protected environment—
 - (a) must , within 12 months of the assignment, submit a management plan for the Mountain Zebra-Camdeboo Protected Environment to the Minister for approval;

- (b) manage the area exclusively for the purpose for which it was declared and in accordance with the management plan for the area and applicable national and provincial legislation and municipal by-laws;
- (c) may amend the management plan by agreement with the Minister;
- (d) must monitor the area against indicators set by the Minister for monitoring performance with regard to the management of national protected areas and the conservation of biodiversity in those areas and, annually report its findings to the Minister or a person designated by the Minister,
- (e) may enter into an agreement with another organ of state, local community, an individual or other party for the co-management of the area by the parties.

Protected Environment Notice

- 5. The Association may from time to time
 - (a) amend the management and zoning plan by agreement with the Minister, and
 - (b) set aside any land according to the approved zoning in the management plan.

Zonation

- **6.** (1) Land use in the Mountain Zebra-Camdeboo Protected Environment is regulated by the management plan and in particular the zoning plan.
 - (2) Within the zoning plan two zones have been identified and used being the High Impact Zone and the Low Impact Zone.

Management of developments within the high impact zone

- **7.**(1) Permissible activities within the high impact zone are as follows:
 - (a) high impact agricultural activities including arable lands and irrigation;
 - (b) the development of major infrastructure including homesteads, labor accommodation, support farm buildings such as stores, barns and sheds, intensive working kraals, lodges and dams servicing the farm's main water needs;
 - (c) the creation of arable lands, dams and major access roads; and
 - (d) any of the permissible activities allowed in the low impact zones, as long as these activities adhere to existing national, provincial and municipal legislation.
- (2) The permissible activities in the high impact zone do not require authorization from the management authority.

- (3) Non-permissible activities within the high impact zone are as follows:
 - (a) any form of illegal developments according to South African legislation; and
 - (b) any transition away from agriculture or ecotourism land use which includes the use of the land for infrastructure installations, settlements and intensive tourism and recreation land uses such as golf-courses, polo fields and housing estates.

Management of developments in the low impact zone

- **8.** (1) Permissible activities within the low impact zone are as follows:
 - (a) the grazing of livestock and game;
 - (b) ecotourism and hunting;
 - (c) small scale infrastructure to support the activities listed in subregulations (1)(a) and (1)(b); and
 - (d) the creation of support infrastructure such as farm tracks, water points and fencing.
 - (2) The permissible activities in the low impact zone do not require authorization from the management authority.
 - (3) Non-permissible activities in the low impact zone are as follows:
 - (a) the ploughing of virgin rangeland to convert it to arable land;
 - (b) the development of major infrastructure on such a scale as to require an environmental impact assessment in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998);
 - (c) any form of illegal developments according to South African legislation; (d) any transition away from agriculture or ecotourism land use which includes the use of the land for infrastructure installations, settlements and intensive tourism and recreation land uses such as golf-courses, polo fields and housing estates.
- (4) The Association may, in accordance with the voting rules set out in its Constitution and on the conditions that it deems expedient, provide for exemption where it deems fit in accordance with the management plan and objectives of the Protected Environment.

General management of the Protected Environment

9. Where a proposed activity requires authorization under the National Environmental Management Act, 1998 (Act No.107 of 1998) or National Water Act, appropriate authorizations needs to be obtained before the activity commences and copies of such an application and authorization needs to be submitted to the management authority.

Dispute resolution

10. Chapter 4 of the National Environmental Management Act, 1998 (Act No.107 of 1998) (as amended) applies to the resolution of conflicts arising from the implementation of these Regulations.

Offences

11. A person who contravenes or fails to comply with regulation 7(3); 8(3) or 9 of these Regulations is guilty of an offence.

Penalties

A person convicted of an offence in terms of regulation 11 of these Regulations is liable in the case of a first conviction to a fine not exceeding R5 million or to imprisonment for a period not exceeding five years and in the case of a second or subsequent conviction to a fine not exceeding R10 million or imprisonment for a period not exceeding 10 years or in both instances to both a fine and such imprisonment.

Short title and commencement

12. These Regulations are called the Mountain Zebra-Camdeboo Protected Environment Regulations, 2016.



Appendix 4: Maps

Map 1: Regional Context

Map 2: Physical features

Map 3: MZCPE consolidation and expansion focus area

Map 4: Zoning

Map 5: Vegetation

