



## BGIS Land Use Decision Support (LUDS) Report

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### **Disclaimer:**

The Land-Use Decision Support (LUDS) Tool has been developed to facilitate and support biodiversity planning and land-use decision-making at a national and provincial level. Its primary objective is to serve as a guide for biodiversity planning and should not replace specialist ecological assessments.

While SANBI endeavours to keep the information on BGIS up-to-date and makes reasonable efforts to ensure that the data it publishes are accurate, SANBI makes no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information contained on the website for any purpose. SANBI will not be liable for any loss or damage; including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of, or in connection with, the use of this tool.

**Please note:** that the spatial information incorporated into the LUDS Tool was mapped at various scales, with much of the spatial information mapped at a scale of 1:250 000 (i.e. 1 cm on the map = 2,5 km on the ground) or greater. To ensure maximum accuracy, always check the map against actual conditions on the ground when undertaking planning and decision-making, or contact the relevant conservation authority for additional assistance.

Please forward any queries or concerns to [BGIShelp@SANBI.org.za](mailto:BGIShelp@SANBI.org.za).

## 1. Information extracted from national datasets

The information below is extracted for the analysed area from national datasets available on BGIS. There is a short description of the dataset under each heading and the URLs to the webpage on BGIS with further information.

### 1.1. National terrestrial information

#### 1.1.1. National list of threatened terrestrial ecosystems

**BGIS source:** National list of threatened terrestrial ecosystems for South Africa (2011) – original extents

A list of all threatened ecosystem patches which original extent intersects the analysed area. Note: the data represents the **original extents** of the threatened ecosystems; in other words, natural areas which have been converted to agriculture, mining and urban areas have been **included**. Please view the area using the BGIS online map viewer Bing maps or Google maps tool in order to see whether any natural vegetation may still exist.

BGIS project overview and report: <http://bgis.sanbi.org/ecosystems/project.asp>

BGIS download metadata and layer: <http://bgis.sanbi.org/ecosystems/map.asp>

Ecosystem Name	Code	Status
Swartland Granite Renosterveld	FRg 2	CR
Swartland Shale Renosterveld	FRs 9	CR
# threatened ecosystems: 2		

#### 1.1.2. National vegetation types

**BGIS source:** Vegetation Map of South Africa, Lesotho and Swaziland (Mucina & Rutherford 2006)

A list of all the national vegetation types the corresponding number of patches of each which original extents covered the analysed area. Note that this list is based on the estimated original extents of the vegetation types prior to any transformation. Please view the area using the BGIS online map viewer Bing maps or Google maps tool in order to see whether any natural vegetation may still exist.

BGIS project overview and report: <http://bgis.sanbi.org/vegmap/project.asp>

BGIS download metadata and layer: <http://bgis.sanbi.org/vegmap/map.asp>

Instructions on how to find Mucina & Rutherford (2006) vegetation type descriptions using BGIS online maps:

[http://bgis.sanbi.org/vegmap/Veg\\_Map\\_Instructions.pdf](http://bgis.sanbi.org/vegmap/Veg_Map_Instructions.pdf)

The **map code** below refers to the short code used on the wall map and BGIS interactive maps which helps to accurately identify a vegetation type given the complexity of the map's legend colours.

Vegetation type name	Map code	Biome
Swartland Granite Renosterveld	FRg 2	Fynbos Biome
Swartland Shale Renosterveld	FRs 9	Fynbos Biome

### 1.1.3. Indigenous forest patches (DWAF)

**BGIS source:** DWAF Indigenous Forest Patches (2005)

A list of all the indigenous forest patches found within the analysed area

BGIS project overview and report: <http://bgis.sanbi.org/indigenousforest/project.asp>

BGIS download metadata and layer: <http://bgis.sanbi.org/indigenousforest/map.asp>

Forest name	Forest group	Patch Size
# forest patches: 0		

### 1.1.4. National soil classes

**BGIS source:** General soils and soil classes

A list of all the dominant soil classes the extents of which cover the analysed area. Please note that these soil classes were developed for agricultural use.

BGIS project overview and report: <http://bgis.sanbi.org/Soils/project.asp>

BGIS download metadata: <http://bgis.sanbi.org/Soils/project.asp> (Please contact the data owner, the Agricultural Research Council, to obtain the GIS data)

Soil Class	Soil Class ID
Imperfectly drained soils, often shallow and often with a plinthic horizon	S8

## 1.2. National aquatic information

### 1.2.1. Wetlands (NFEPA Wetlands/National Wetlands Map 4)

**BGIS source:** National Freshwater Ecosystem Priority Areas (NFEPA) Wetland Map/National Wetlands Map 4 and NFEPA wetland clusters

A list of all Wetland units found within the analysed area, should these belong to a wetlands cluster its information is also included. Wetlands and wetland clusters which were selected as freshwater ecosystem priority areas (FEPAs) are indicated. A key to the information codes used is given below.

BGIS project overview and report (National Wetlands 4/Wetland clusters):

<http://bgis.sanbi.org/nfepa/project.asp>

BGIS download metadata and layer (National Wetlands 4/Wetland clusters):

<http://bgis.sanbi.org/nfepa/NFEPAmapping.asp>

#### Wetlands

Wetland type	Description	Condition	NFEPA rank	FEPA status
West Coast Granite	<i>Artificial</i>	Z3	6	No status
West Coast Granite	<i>Natural</i>	Z2	6	No status
<b># wetland units: 2</b>				

#### Wetland clusters

Wetland cluster ID	Vegetation type	Wetland units	FEPA status
<b># wetland clusters: 0</b>			

#### Key for NFEPA wetlands condition information codes

NFEPA condition	Description	% of total wetland area
AB	Percentage natural land cover $\geq$ 75%	47
D	Percentage natural land cover 25-75%	18
DEF	Riverine wetland associated with a D, E, F or Z ecological category river	2
Z1	Wetland overlaps with a 1:50 000 'artificial' inland water body from the Department of Land Affairs: Chief Directorate of Surveys and Mapping (2005-2007)	7
Z2	Majority of the wetland unit is classified as 'artificial' in the wetland locality GIS layer	4
Z3	Percentage natural land cover < 25%	20

\* This percentage excludes unmapped wetlands, which includes those that have been irreversibly lost due to draining, ploughing and concreting

### Key for NFEPA wetlands rank codes 1-6

Rank	Criterion
1	Wetlands that intersect with a Ramsar site
2	Wetlands within 500 m of a IUCN threatened frog point locality
2	Wetlands within 500 m of a threatened waterbird point locality
2	Wetlands (excluding dams) with the majority of its area within a sub-quaternary catchment that has sightings or breeding areas for threatened Wattled Cranes, Grey Crowned Cranes and Blue Cranes
2	Wetlands (excluding dams) within a sub-quaternary catchment identified by experts at the regional review workshops as containing wetlands of exceptional biodiversity importance, with valid reasons documented
2	Wetlands (excluding dams) within a sub-quaternary catchment identified by experts at the regional review workshops as containing wetlands that are good, intact examples from which to choose
3	Wetlands (excluding dams) within a sub-quaternary catchment identified by experts at the regional review workshops as containing wetlands of biodiversity importance, but with no valid reasons documented
4	Wetlands (excluding dams) in A or B condition AND associated with more than three other wetlands (both riverine or non-riverine wetlands were assessed for this criterion)
4	Wetlands in C condition AND associated with more than three other wetlands (both riverine or non-riverine wetlands were assessed for this criterion)
5	Wetlands (excluding dams) within a sub-quaternary catchment identified by experts at the regional review workshops as containing impacted Working for Wetland sites
6	Any other wetland (excluding dams)

### 1.2.2. Sub-quaternary catchments and rivers (NFEPA)

**BGIS source:** National rivers and sub-quaternary catchment FEPA status (NFEPA)

A list of all NFEPA sub-quaternary catchments and their FEPA status followed by the river units they contain with various parameters and indicators. A sub-quaternary catchment and its river indicated as FEPA are fresh water ecosystem priority areas, A blank FEPA status indicates that NFEPA did not give the sub-quaternary catchment or river priority status. A key to the other information codes used is given below.

BGIS project overview and report (NFEPA river FEPAs and NFEPA rivers):

<http://bgis.sanbi.org/nfepa/project.asp>

BGIS download metadata and layer(NFEPA river FEPA and NFEPA rivers ):

<http://bgis.sanbi.org/nfepa/NFEPAmapping.asp>

### Sub-quaternary catchments (river FEPAs)

**NFEPA ID**                      **FEPA status**

9120

# sub-quaternary catchments: 1

### NFEPA river units

**River name**                      **FEPA status**                      **River type**                      **Condition**                      **Mainstem**                      **Flagship**

# river units: 0

#### Key for NFEPA sub-quaternary catchment and river units information codes

FEPA status	River types	River condition
<p>Summarized FEPA status using a text description, where:</p> <p><b>FEPA</b>= freshwater ecosystem priority area  <b>FISHFSA</b>= fish support area  <b>FISHCORRID</b>= corridor critical for movement of threatened Fish between habitats  <b>PHASE2FEPA</b>= phase 2 freshwater ecosystem priority area  <b>UPSTREAM</b>= upstream management area</p> <p>In instances where several of these map categories overlapped, the status took the following order of precedence: "FEPA", "PHASE2FEPA", "FISHFSA" or "FISHCORRID", and then "upstream management area"</p>	<p>Used by NFEPA which comprises:</p> <p>the level 1 ecoregion number                      hyphen (-)</p> <p><i>followed by</i>                      the flow</p> <p><b>N</b>= not,permanent/flashy  <b>P</b>= permanent or seasonal                      hyphen (-)</p> <p><i>followed by</i>                      the geomorphological zone</p> <p><b>M</b>= mountain stream  <b>U</b>= upper foothills  <b>L</b>= lower foothills  <b>F</b>= lowland river</p>	<p>Used by NFEPA, A or B is considered intact and able to contribute towards river ecosystem biodiversity targets.</p> <p><b>A</b>= unmodified, natural  <b>B</b>= largely natural with few modifications  <b>AB</b>= A or B above  <b>C</b>= moderately modified  <b>D</b>= largely modified  <b>E</b>= seriously modified  <b>F</b>= critically extremely modified  <b>EF</b>= E or F above  <b>Z</b>= Tributary condition modeled as not intact, according to natural land cover</p>

## 1.3. National protected area information

**BGIS source:** Protected areas formal and informal (NBA 2011 and NPAES 2010)

A list of all protected areas the extents of which intersect with the analysed area. The formal protected areas were updated by the National Biodiversity Assessment (NBA 2011) whereas the informal protected areas were updated by the National Protected Areas Expansion Strategy (NPAES 2010).

Also included is a list of any NPAES 2010 focus areas that were intersected by the analysed area.

BGIS NBA 2011 project overview and report:

<http://bgis.sanbi.org/NBA/project.asp>

BGIS formal protected areas (NBA 2011) download metadata and layer:

[http://bgis.sanbi.org/NBA/terrestrial\\_formalprotectedareas.asp](http://bgis.sanbi.org/NBA/terrestrial_formalprotectedareas.asp)

BGIS NPAES 2010 project overview and report:

<http://bgis.sanbi.org/protectedareas/NPAESinfo.asp>

BGIS informal protected areas (NPAES 2010) download metadata and layer:

<http://bgis.sanbi.org/protectedareas/ProtectedAreas.asp>

BGIS NPAES 2010 focus areas download metadata and layer:

<http://bgis.sanbi.org/protectedareas/NPAES.asp>

Protected area name	Category	Management agent
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### Formal protected areas

# Formal protected areas: 0

### Informal protected areas

# Informal protected areas: 0

### NPAES focus area name

# NPAES focus areas: 0

## 2. Information from the most relevant biodiversity conservation plan for Drakenstein and Stellenbosch Municipalities

The information below is extracted for the analysed area from the most relevant and up to date biodiversity conservation plan available on BGIS - **The Western Cape Biodiversity Framework (WCBF)**. There is a short description of the dataset under each heading and the URLs of the webpage on BGIS with further information.

### Note on the criteria defining the CBA map categories used by the Western Cape Biodiversity Framework (WCBF)

In order to better understand the WCBF Drakenstein and Stellenbosch CBA Map examine the table below which briefly summarises the CBA categories it uses. Note this CBA map does not differentiate between terrestrial and aquatic CBA map categories. Most of the data was derived from the CAPE Fine Scale Biodiversity Conservation Plan FSP (2008) project. The original FSP CBA map units classified as aquatic CBAs or ESAs were reclassified to CBA or ESA. Please refer to the Western Cape Biodiversity Framework Report for more information.

Table of main CBA map categories – for those areas formally assessed as part of a recognized systematic biodiversity conservation plan

Category	Defining criteria
Protected areas (PAs)	All formal PA that are recognized in terms of the National Environmental Management: Protected Areas Act 57 of 2003, which include: <ul style="list-style-type: none"> <li>• Mountain Catchments are not considered Protected Areas despite their statutory “Formal A” status because of the lack of any actual protection or formal management mandate.</li> </ul>
Critical Biodiversity areas (CBAs)	Any terrestrial or aquatic area required to meet biodiversity pattern and/or process thresholds including: <ul style="list-style-type: none"> <li>• Any area that is required for meeting biodiversity pattern thresholds such as remaining areas of Critically Endangered habitat types, special habitats, listed threatened ecosystems, indigenous forest patches</li> <li>• Any area that is required for meeting ecological process thresholds including: ecological or landscape corridors (comprising upland-lowland, river, coastal and sand-movement corridors),</li> <li>• Hydrological process areas (estuaries, wetlands, important catchment areas).</li> <li>• All ‘best design’ sites (largest, most intact, least disturbed, connected and/or adjacent) in terms of meeting pattern and process thresholds.</li> </ul>
Ecological Support Areas (ESAs) and Critical Ecological Support Areas (CESA)	Supporting zone required to prevent degradation of CBA and formal PAs including: <ul style="list-style-type: none"> <li>• Areas required to prevent degradation of CBAs and formal PAs.</li> <li>• Other catchment and process areas (rivers, wetlands and their buffers) that are required to prevent degradation of Critical Biodiversity Areas and formal Protected Areas.</li> <li>• Areas that are already transformed or degraded, but which are currently or potentially still important for supporting ecological processes.</li> </ul> <p><b>Note:</b> The FSP aquatic CBA map category has been preserved please refer to the Fine Scale Biodiversity Conservation Plans project on <a href="http://BGIS.sanbi.org">BGIS.sanbi.org</a> for more information.</p>
Other Natural Areas (ONAs)	Natural areas not required included in the categories above. These areas include degraded natural areas. It is important to note that in the future, if there is a loss of CBA or ESA, ONA may eventually be reclassified as CBA. Consequently, the precautionary principle needs to be applied in all decision-making.
No Natural Remaining Areas (NNAs)	These areas no longer contain natural areas and their safeguarding would not result in any biodiversity protection including cultivated lands, plantations, mined areas, urban areas, infrastructure, dams and areas under coastal development.



Table of additional CBA map categories – for those areas that have not been formally assessed as part of a recognized Systematic Biodiversity conservation plan

	<b>Category</b>	<b>Notes</b>
	Likely CBA	Regard these CBA map units as CBAs
	Known ESA, unknown CBA	Regard these CBA map units as ESAs
	Unknown	Regard these CBA map units as ONA

## 2.1. Terrestrial and aquatic information from the WCBF

**BGIS source:** Western Cape Biodiversity Framework - Drakenstein & Stellenbosch CBAs layer

A list of Critical Biodiversity Area (CBA) map lookup layer units that intersect with the analysed area. Included are each unit's CBA map category and biodiversity features information which is indicative of its CBA map category classification. Descriptions of the biodiversity features are given below.

Note that the list combines both terrestrial and aquatic biodiversity feature information. All aquatic information is grouped together under the "Aquatic" biodiversity features

BGIS project overview and report: <http://bgis.sanbi.org/WCBF/project.asp>

BGIS download metadata and layer: [http://bgis.sanbi.org/WCBF/DrakensteinStellenbosch\\_CBAs.asp](http://bgis.sanbi.org/WCBF/DrakensteinStellenbosch_CBAs.asp)

### List of CBA map units

#### CBA

**Habitat condition:** Natural

**Biodiversity feature information**

**Unit size (Ha):** 6.8286

CR veg (crit A1)

#### No Natural

**Habitat condition:** Degraded

**Biodiversity feature information**

**Unit size (Ha):** 0.5267

#### No Natural

**Habitat condition:** No Natural Habitat

**Biodiversity feature information**

**Unit size (Ha):** 11430.6764

**# CBA map units:** 3

### Descriptions for the biodiversity feature information included with each CBA or ESA map lookup layer unit

Please note that the categories of the majority of the CBA map units were derived from CAPE Fine Scale Planning (FSP) 2008 data which recognised terrestrial and aquatic CBA map categories. These units are indicated with their original FSP CBA map categories. Unfortunately the biodiversity feature information used for the classification of the FSP CBA map units is not available in the WCBF Drakenstein Stellenbosch

CBA map layer. Some units were classified as CBAs or ESAs during by the WCBF project and their biodiversity features are listed with the map unit and described below.

Biodiversity feature	Description
Category	This gives the CBA category for the polygon. It indicates whether the polygon is a Protected Area (type indicated as well as reserve name), a Critical Biodiversity Area (CBA), a likely CBA, Ecological Support Area (ESA), Other Natural Area (ONA), No Natural Remaining (ONA) and unknown (from analysis)
Habitat condition	Condition of the habitat categorized into Natural, Near Natural, Degraded and No Natural Habitat
WCBF listed features	Only for those CBA map units categorized as CBA or ESA by the WCBF project see note above.
CR veg (crit A1)	South African vegetation type with a threat status of Critically endangered (CBA)
Thr. plant spp	Known location for threatened plant species (CBA)
River buffer	Buffer long rivers river (ESA)

### 3. Municipal and cadastral information

#### 3.1. Province and municipality

The Municipal Demarcation Board's 2009 boundaries are used for the BGIS LUDS tool as these correspond with the municipal biodiversity summaries. The boundaries in the LUDS tool will be updated along with the next municipal biodiversity summaries update.

Municipal biodiversity summary information can be on BGIS by going to the following link

<http://196.21.45.151/devBGIS/municipalities/municipality.asp>.

and following the steps i.e. choose a province and then a municipality on the map or from the dropdown box. These steps also constitute STEP 1: *Find the appropriate BGIS map (LUDS Map) for your municipality*. Please contact [SANBI municipal programme](#) for more information about the Municipal Biodiversity Summaries Project.

Note: the LUDS tool does not allow analyses to cut cross municipal and provincial boundaries i.e. any analysis must fall within a single province and municipality.

**Province (code):** Western Cape(WC)

**Municipality (Cat B): Stellenbosch (WC024)**

#### 3.2. Cadastral information

A list of all cadastral units (parent farm and sub-unit properties only) which intersect the analysis area.

SG 21 code	Parcel number	Size (Ha)
C0550000000072800271	271/728	0.746

# properties: 1

## 4. Envisaged development information

**Development type:** TEST ANALYSIS: Animal farming & dairy

**Additional information:**

A new test pasture investigating the potential of locally developed Lucerne varieties will be developed at Elsenberg at the given coordinates. It will occupy 0.5 hectares below the dam.

## 5. Analysis area information

Below are the size (Ha) and location (centroid and extents) in degrees, minutes and seconds of the analysis area, shown in red on the map.

*Unfortunately a map of the analysis area cannot at this stage be included in these LUDS reports. If you wish to have a map of the analysis area please use the print map button provided on the LUDS toolbar.*

**Analysis area centroid (decimal degrees):** 18.8397170201449,-33.8609769192588

**Analysis area extents (decimal degrees):** 18.8370179150482,-33.8610631236452,18.8400111533926,  
-33.8550717116421

**Analysis area size (Ha):** Cannot be calculated, please use area tool