



BGIS Land Use Decision Support (LUDS) Report

Generated on the BGIS website: 10/9/2014

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.

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
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# threatened ecosystems: 0		
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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

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
Sundays Thicket	AT 6	Albany Thicket 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
Association of Classes 1 to 4: Undifferentiated structureless soils	S17

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/NFEPAmap.asp>

Wetlands

Wetland type	Description	Condition	NFEPA rank	FEPA status
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wetland units: 0

Wetland clusters

Wetland cluster ID	Vegetation type	Wetland units	FEPA status
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wetland clusters: 0

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 (NFEPAs)

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

A list of all NFEPAs 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 NFEPAs 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 (NFEPAs river FEPAs and NFEPAs rivers):

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

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

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

Sub-quaternary catchments (river FEPAs)

NFEPAs ID

FEPA status

8707

sub-quaternary catchments: 1

NFEPA river units

River name	FEPA status	River type	Condition	Mainstem	Flagship
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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>FEPA= freshwater ecosystem priority area FISHFSA= fish support area FISHCORRID= corridor critical for movement of threatened Fish between habitats PHASE2FEPA= phase 2 freshwater ecosystem priority area UPSTREAM= 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>N= not,permanent/flashy P= permanent or seasonal hyphen (-)</p> <p><i>followed by</i> the geomorphological zone</p> <p>M= mountain stream U= upper foothills L= lower foothills F= lowland river</p>	<p>Used by NFEPA, A or B is considered intact and able to contribute towards river ecosystem biodiversity targets.</p> <p>A= unmodified, natural B= largely natural with few modifications AB= A or B above C= moderately modified D= largely modified E= seriously modified F= critically extremely modified EF= E or F above Z= 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

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

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 the Addo region

The information below is extracted for the analysed area from the most relevant and up to date biodiversity conservation plan available on BGIS - **The Addo Biodiversity Sector Plan**. 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 Addo Biodiversity Sector Plan (Addo BSP)

In order to better understand the Addo Biodiversity Sector Plan CBA Map examine the table below which briefly summarises the CBA categories it uses. Note the CBA map does not differentiate between terrestrial and aquatic CBA map categories. Please refer to the Addo Biodiversity Sector Plan Report for more information.

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"> • A Local Authority Nature Reserve (Bosberg) and the Addo Elephant National Park.
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"> · 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 · Any area that is required for meeting ecological process thresholds including: ecological or landscape corridors (comprising upland-lowland, river, coastal and sand-movement corridors), · Hydrological process areas (estuaries, wetlands, important catchment areas). · All 'best design' sites (largest, most intact, least disturbed, connected and/or adjacent) in terms of meeting pattern and process thresholds.
Ecological Support Areas (ESAs)	Supporting zone required to prevent degradation of CBA and formal PAs including: <ul style="list-style-type: none"> · Areas required to prevent degradation of CBAs and formal PAs. · Other catchment and process areas (rivers, wetlands and their buffers) that are required to prevent degradation of Critical Biodiversity Areas and formal Protected Areas. · Areas that are already transformed or degraded, but which are currently or potentially still important for supporting ecological processes.
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.

2.1. Terrestrial and aquatic information for the Addo region

BGIS source: Addo Biodiversity Sector Plan – CBA map lookup 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/Addo/project.asp>

BGIS download metadata and layer: <http://bgis.sanbi.org/Addo/CBAs.asp>

List of CBA map units

CBA	
Biodiversity feature information	Unit size (Ha): 387196310.614
Land cover level 1: Natural	Land cover level 3: Degraded
Selection criteria:	
AENP Priority Natural Areas	
CBA	
Biodiversity feature information	Unit size (Ha): 372472933.84
Land cover level 1: Natural	Land cover level 3: Degraded
Selection criteria:	
AENP Priority Natural Areas	
CBA	
Biodiversity feature information	Unit size (Ha): 200109795712.477
Land cover level 1: Natural	Land cover level 3: Natural
Selection criteria:	
AENP Priority Natural Areas	
# CBA map units: 3	

Description of the biodiversity feature information included for each CBA or ESA lookup table unit

FEPA - Fresh Water Priority Area status designated by NFEPA National Freshwater Priority Areas project 2011
 NPAES - National Protected Area Expansion Strategy (NPAES) 2010
 NBA - National Biodiversity Assessment 2011

Biodiversity features for CBA lookup table units - category CBA

Biodiversity feature code (CBAs)	Description
SA Vegetation type threat status	National vegetation types (ecosystems) threat status
Albany Alluvial Vegetation - EN	Only Albany Alluvial Vegetation – EN occurs in the Addo BSP planning domain
Alignment with other biodiversity plans	Information from the following biodiversity conservation plans were included:
AENP Priority Natural Areas	Addo Elephant National Park interface zone priority natural areas designated as CBAs
Baviaanskloof CBA	Baviaanskloof Mega Reserve Conservation Assessment CBAs
ECBCP CBA	Eastern Cape Biodiversity Conservation Plan (2007) CBAs if not transformed
Selected ECBCP CBA2 and PA focus	ECBCP CBA 2 with a high proportion of NPAES focal areas if not transformed
Coastal EMF CBA areas	Conservation areas identified in the Coastal Environmental Management Framework
Aquatic information	
Wetlands	
FEPA wetland	Wetlands classed as FEPA priority wetlands
Additional Wetland, Other wetland	All wetlands not classed as FEPAs
Wetland Buffer, Wetland Buffer ESA	Natural areas within a 100m buffer around all wetlands
Wetland Buffer 500m	Natural areas within a 500m buffer around Wetlands classed as FEPA - Priority Wetlands
Rivers	
Other River buf 100m - ESA	Natural areas within a 100m buffers along rivers classed as FEPA 2 - Other FEPA
Other FEPA river buffer 250m	Natural areas within a 250m buffers along rivers classed as FEPA 2 - Other FEPA
FEPA river buffer 500m	Natural areas within a 500m buffers along rivers classed as FEPA 1 -Priority FEPA
Estuaries	
Estuarine Functional Zone	Natural areas within the estuarine functional zone as described by the Estuarine component of the NBA 2011
Estuary buffer 100m, Estuary buffer 100m - ESA	Natural areas within a 100m buffers around estuaries
Estuary Buffer 1km	Natural areas within a 1km buffer around estuaries

Biodiversity features for CBA lookup table units - category ESA

Biodiversity feature code (ESA)	Description
Alignment with other biodiversity plans	
Coastal EMF ESA	Ecologically sustainable management areas identified in the Coastal Environmental Management Framework designated ESA
Climate change corridors	
Climate Resilience	High Priority Climate Change Resilience Areas designed for the NBA 2011 were designated as ESA if not transformed.
Aquatic information	
Wetlands	
(Transformed)Wetland Buffer ESA	Transformed areas with a 100m buffer around all wetlands

(Transformed)Wetland Buffer ESA, Wetland Buffer ESA	Transformed areas with a 100m buffer around all wetlands
Wetland buffer 1km	Natural areas within a 1km buffer around Wetlands classed by NFEPa 2011 as FEPA - Priority Wetlands
non CBA/ESA wetland buf 500m	
Rivers	
River Buffer 100m, Major River 100m buffer, Other River buf 100m - ESA	Transformed areas with 100m along all major rivers
River Buffer 500m	Transformed areas with 500m along all major rivers
Estuaries	
Estuary Buffer 1km	Natural areas within a 1km buffer around estuaries
Catchments	
Catchment - FEPA-	All catchments identified as FEPA if not transformed
Catchment - MPAH Priority	Additional catchments selected with high proportion of Maputaland-Pondoland-and-Albany (Biodiversity) Hotspot (MPAH) priority areas
Catchment –Upstream	Additional selected catchments classed by NFEPa 2011 as Phase2FEPA with a high proportion NPAES 2010 focal areas within it.
Catchment –Phase2FEPA	Additional selected catchment classed by NFEPa 2011 as Upstream with a high proportion NPAES focal areas within it.

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): Eastern Cape(EC)

Municipality (Cat B): Sundays River Valley (EC106)

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)
C05500000000072800271	271/728	0.746

properties: 1

4. Envisaged development information

Development type: TEST ANALYSIS: Dry land & irrigated agriculture & forestry

Additional information:

The new orchards will be a square area of 12 Ha around the point given and grow organic oranges. The demand for locally grown organic oranges has sky rocketed due to the number for environmentally conscientious German tourism visiting the Addo National Park. Unfortunately the oranges are not allowed in the park as the elephants will to at nothing to have one too.

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): 25.7058967820084,-33.5652008193998

Analysis area extents (decimal degrees): 25.7058538666641,-33.5836150078723,25.7147802582629,
-33.565165059873

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