



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.

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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
# threatened ecosystems: 0		

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
Langebaan Dune Strandveld	FS 5	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 sandy soils	S4

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	FEPAs status
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wetland units: 0

Wetland clusters

Wetland cluster ID	Vegetation type	Wetland units	FEPAs 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/NFEPAmap.asp>

Sub-quaternary catchments (river FEPAs)

NFEPAs ID

FEPA status

8137

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 extracted from the most relevant biodiversity conservation plan for Saldanha Bay Municipality

The information below is extracted for the analysed area from the most relevant and up to date biodiversity conservation plan available on BGIS - **Fine Scale Plan for Saldanha Bay Municipality**. 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 C.A.P.E. Fine Scale Biodiversity Conservation Plans (FSPs)

In order to better understand the Fine Scale Biodiversity Conservation Plan CBA maps examine the table below which explains the CBA categories they use. Further information see the relevant biodiversity sector plan (FSP) handbook.

Category	Defining criteria
Protected areas (PA)	Any formally Protected Area (except for Mountain Catchment Areas) including nature reserves and national parks, forest nature reserves, RAMSAR sites, World Heritage sites, marine protected areas
Critical Biodiversity Areas	Any terrestrial or aquatic area required to meet biodiversity pattern and/or process thresholds including: <ul style="list-style-type: none"> • All ecosystems listed in terms of the National Biodiversity Act • All “best design sites” needed to maintain pattern and process in the landscape.
Terrestrial CBAs	<ul style="list-style-type: none"> • All remaining patches of Critical Endangered vegetation • All known point localities of Species of Special Concerns • Endangered, Vulnerable or Least Threatened vegetation required to meet national thresholds • Landscape corridors required to meet the predefined thresholds for spatially explicit ecological processes (e.g. upland-lowland corridors, coastal-and-sand movement corridors, etc.)
Aquatic CBAs	<ul style="list-style-type: none"> • River reaches required for threshold of each river type • River reaches required to meet threshold for sanctuaries for indigenous fish species • Sub-catchments required for achieving river type b conservation thresholds • Sub-catchments required to meet threshold of sanctuaries for indigenous fish species of two sanctuaries per indigenous fish species • Wetlands required to meet a threshold of each wetland types. These were chosen based on size, amount natural vegetation, red list plant species, important habitat for focal amphibian or good condition.
Ecological Support Areas	<ul style="list-style-type: none"> • Supporting zone required to prevent degradation of Critical Biodiversity Areas and Protected Areas including: <ul style="list-style-type: none"> • All remaining wetlands or river reaches and their terrestrial buffers (riparian habitat) • Sub-catchments containing: a) significant groundwater recharge and discharge sites; b) upstream management zones; or c) connections for fish sanctuaries
Aquatic – Critical Ecological Support Areas (CESAs)	<ul style="list-style-type: none"> • Wetlands: non-significant wetlands or wetland clusters which either a) support a CBA river or CBA wetland or b) are in a good condition and fall within a CBA or CESA sub-catchment • Rivers: a) river reaches which are important for connectivity between CBA river reaches, b) major rivers that support CBA river segments or wetland or c) minor rivers situated within priority sub-catchments • Sub-catchments not containing CBA rivers or wetlands but rather maintaining the integrity of the downstream CBA
Aquatic – Other ecological support Areas (OESAs)	<ul style="list-style-type: none"> • All remaining wetlands • All remaining river reaches • Sub-catchments containing: a) significant groundwater recharge and discharge sites; b) upstream management zones; or c) connections for fish sanctuaries

Other Natural Areas (ONAs)	Natural areas not required to meet national thresholds (on condition that all CBA are protected) <ul style="list-style-type: none"> • Remaining patches of Endangered, Vulnerable or Least Threatened ecosystems not required to meet national thresholds
No Natural Remaining Areas (Transformed)	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.

Note: Protected Areas, terrestrial CBAs and other natural areas are listed under terrestrial information and includes the biodiversity feature information of each map unit. Critical and Other ESAs are listed under Aquatic information and no addition information is available apart from the CBA map category and its management objectives for each map unit.

2.1. Terrestrial information for Saldanha Bay Municipality

BGIS source: Fine Scale Plans for the Saldanha Bay Municipality – Terrestrial CBA layer

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

These plans were created at a scale of 1:10000 therefore the individual CBA map units tend to be small in size and a large analysis area may result in a confusingly long list of units. Zoom further into the map and reduce the size of the analysis area to obtain a shorter, more understandable list of units. Unfortunately the CBA map unit's size is not yet available.

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

BGIS download metadata and layer: <http://bgis.sanbi.org/fsp/Saldanha/CBA.asp>

List of CBA map units

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES

Indigenous forest: NO

Irreplaceable wetland: NO

Vegetation type remnants: NO

Focal animal habitat: NO

Priority subcatchments: NO

Restricted, endemic or threatened plants: NO

Red Data List species: NO

Edaphic interface: YES

Wetland threshold: NO

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants: NO	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: NO	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants: NO	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: YES	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

Other natural area

Management objectives: Sustainable development and management within general rural land-use principles. Favoured areas for development.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: NO	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants: NO	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: NO	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants:	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: NO	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants:	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: NO	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants:	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: NO	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

Critical Biodiversity Area

Management objectives: Maintain natural land. Rehabilitate degraded to natural or near natural and manage for no further degradation.

Habitat condition: Natural

Biodiversity feature information:

Vegetation type threshold: YES	Indigenous forest: NO	Irreplaceable wetland: NO
Vegetation type remnants:	Focal animal habitat: NO	Priority subcatchments: NO
Restricted, endemic or threatened plants: NO	Red Data List species: NO	Edaphic interface: YES
	Wetland threshold: NO	

CBA map units: 8

Description of biodiversity feature information included for each terrestrial CBA map unit

Biodiversity feature	Description
Category	Critical Biodiversity Area (terrestrial, aquatic, or buffer) Protected Areas Other Natural Areas No Natural Areas
Management objectives	Overall management objective of the site; desired state

Habitat condition	Specifies the condition of the unit's habitat.
Protected area name	If the unit's category is protected area its name is specified.
Vegetation type threshold	Unit included to meet quantitative targets that focus on how much of a vegetation type should be protected to maintain ecosystem function.
Vegetation remnant	Unit contains remnants of a vegetation type that are in natural near natural condition.
Indigenous forest	Unit contains indigenous forest.
Red data list species	Unit contains known habitat for a Red Data List (Critically Endangered, Endangered, or Vulnerable) plant species
Restricted, endemic or threatened plants:	Unit contains known habitat for a plant species which is restricted, endemic, or threatened
Wetland thresholds	Unit included to meet quantitative targets that focus on how much of a wetland type should be protected to maintain ecosystem function.
Irreplaceable wetland	Unit supports an irreplaceable wetland (assigned rank of 1, indicating the best remaining examples of the wetland type)
Priority subcatchments	Unit in a subcatchment identified as important through systematic biodiversity planning process.
Edaphic interface	Unit included to meet edaphic interface target

2.2. Aquatic Information for Saldanha Bay Municipality

BGIS source: Fine Scale Plans for the Saldanha Bay Municipality – Aquatic CBA layer

A list of aquatic Critical Biodiversity Area (CBA) map units that intersect with the analysed area. The CBA map category (Aquatic CBA, CESA or OESA), their buffers and the management objectives are listed for each CBA map unit, no biodiversity feature information is available.

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

BGIS download metadata and layer: <http://bgis.sanbi.org/fsp/SaldanhaBay/CBA.asp>

Biodiversity feature	Management objectives	Unit size (Ha)
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CBA map units:

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): Saldanha Bay (WC014)

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: Residential, business & industrial

Additional information:

Description of the envisaged development

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): 17.8800035581792,-32.8125104350734

Analysis area extents (decimal degrees): 17.879386650106,-32.8132678625376,17.8805721864902,
-32.8125104350734

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