

CHAPTER THREE: DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section of the report provides baseline information regarding the affected environment, as well as an overview of the surrounding land use activities. An overview of the associated environmental attributes of the site has been included to aid in the process of identifying project activities that may have potential impacts on the environment, and which have been assessed in the Environmental Impact Assessment (EIA) phase. Additionally, this information highlights potential constraints which the affected environment may place on the proposed development. The following environmental attributes of the approved site, as contemplated in the accepted Scoping Report, have been considered:

- Geographical Context: Site Locality and Surrounding Land-use
- Biological
- Physical
- Heritage and Cultural
- Socio-economic: Social and Economic

The baseline information presented in this chapter was sourced from the following available desktop resources:

- Plans
- Guidelines
- Spatial Tools and Mapping Resources
- Municipal Development Planning Frameworks and Instruments
- Relevant literature and Web-based Information

The respective environmental attributes have, amongst others, informed the identification of alternatives for the proposed development. The assessment of alternatives are contained in Chapter Five of this report. To further inform the description of the affected environment and refine the scope of the assessment, site visits took place on the 11 April 2017 and 30 August 2017. The information gathered from site observations was supplemented by preliminary specialist input. In addition, the description of the affected environment has been informed by the Environmental Assessment Practitioner's (EAPs) knowledge of the local area based on several previous environmental assessments of a similar nature, which have been undertaken in the Nelson Mandela Bay Municipality (NMBM) and Sundays River Valley Municipality (SRVM), namely:

- Agricultural developments for Habata Boerdery on the following farms:
 - Landdrost Veeplaats, SRVM
 - Oliphantskop, NMBM
 - Portion 18 and 19 Logan Braes, NMBM
 - Portion 16 and 17 Logan Braes, NMBM
 - Portion 15 Logan Braes, NMBM
 - Falcon Ridge, SRVM
- Agricultural developments for San Miguel Fruits SA (Pty) Ltd:
 - Riverbend Citrus, SRVM
 - Intsomi Citrus, SRVM
 - Sylvania, SRVM
- Agricultural expansion for Unifrutti South Africa (Pty) Ltd on Portion 14 of Farm 89, SRVM
- Agricultural development for Venter Boerdery on Hopefield Farm, SRVM
- Agricultural development for Kududu Trust on Portion 5 of Nooitgedacht, SRVM
- Agricultural development for Hermanus Potgieter Familie Trust on Swanepoels Kraal, SRVM
- Agricultural development for Luthando Farm on Portion 320 of Strathsomers Estate, SRVM

Based on the outcome of the assessment process, specialist studies, technical input and consultation process, the applicant, Scheepersvlakte Farms (Pty) Ltd, proposes to clear ~516ha of indigenous vegetation on the Remainder of Portion 7 of Farm 98 (~852.12ha), referred to as Scheepers Vlakte Farm, SRVM, for the cultivation of annual crops (e.g. maize) and establishment of a variety of citrus, as well as the installation of associated infrastructure. The Farm is currently zoned Agriculture I and the preferred development footprint, including associated infrastructure, has been determined by the outcome of the various specialist assessments forming part of this Scoping and EIA Process. Located within the boundary of the same property, is Portion 10 of Farm 98 (~31ha), within which a dam, owned by the Department of Water and Sanitation (DWS) for water supply to the NMBM, is situated. Portion 10 of Farm 98 **does not** form part of this assessment process.

3.2 GEOGRAPHICAL CONTEXT

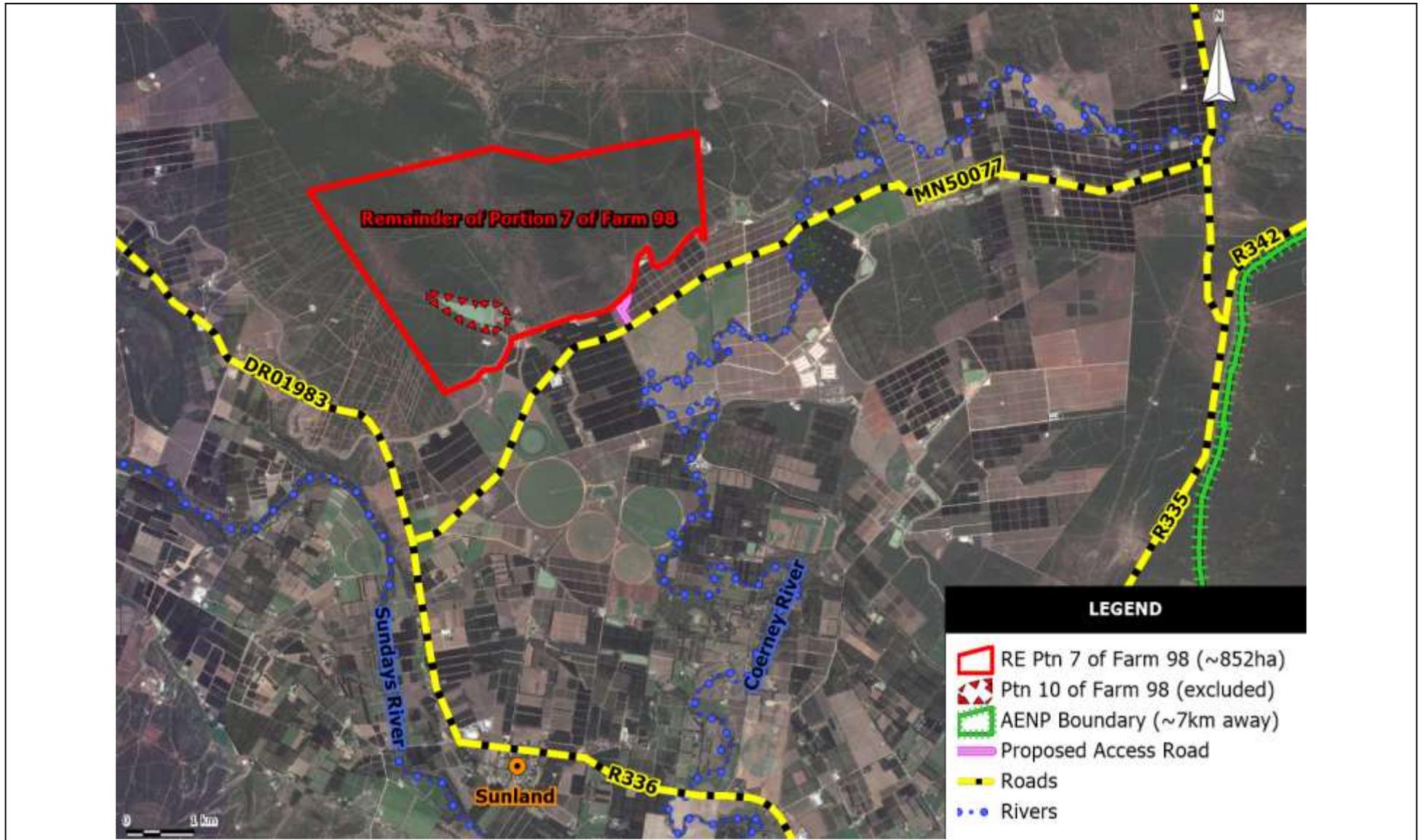
3.2.1 Site Locality and Overview

Scheepers Vlakte Farm is located ~6km north of Sunland, in the SRVM. The nearest boundary of the Addo Elephant National Park is located ~7km east of the Farm (Map 3.1).

Access to the Farm is proposed via a private road ~6m wide onto the MN50077 road, ~4km east of the DR01983 road (see Map 3.1). Associated infrastructure required by the proposed development includes internal roads (width of 4m), internal water reticulation (varying capacities \varnothing 10mm (dripper lines) to \varnothing 200mm (main lines); pivots for annual crops, covering 25ha) and canal offtake pipelines (2 x \varnothing 450mm; ~700m length), new irrigation water storage dam (~7ha; ~140 000m³). It is further proposed that a new logistical services area (~6ha footprint), comprising of a pre-sort packhouse, a new access road (width of 8m), turning circles (36m diameter), receiving and dispatch off-loading/loading areas, workshop and storage area, fuel storage tank (14 000L/ 14m³), chemical store (~30m²), office/ administration area, staff housing (5 x 60m²), onsite domestic effluent reticulation and treatment system (e.g. Clearedge system), stormwater detention facilities, as well as domestic water reticulation, storage and treatment facilities.

The applicant has obtained a Water Use Licence from DWS for the taking of water from a water resource in terms of Section 21 (a) of the National Water Act which entitles them to utilise 650ha (5 850 000m³ per annum) of water from the LSRWUA canal system.

A detailed project description is provided in Chapter Two of this report.



Map 3.1: Locality map of the Remainder of Portion 7 of Farm 98.

3.2.2 Surrounding Land-use

Scheepers Vlake Farm is adjacent to 12 properties (See Map 3.2), while one property, Portion 10 of Farm 98, is located within the boundaries of Scheepers Vlake Farm. These properties, with their associated activities, are listed in Table 3.1 below.

Scheepers Vlake Farm is situated in a predominantly agricultural area, as indicated by the adjacent surrounding land uses. Although the vegetation is largely untransformed on the property under assessment, directly adjacent to the northern, eastern and western boundaries, surrounding properties are currently engaged in commercial agricultural activities including citrus orchards, commercial chicken production and livestock/ game grazing. A portion of Farm 713, adjacent to the eastern boundary of the property under assessment, has been zoned to Open Space III. The southern boundary of the property under assessment abuts existing agricultural lands including citrus orchards and cultivated fields (e.g. lucerne). The northern boundary of the property under assessment is adjacent to the Enon Mission Station communal land, showing signs of livestock grazing.

Based on the surrounding land uses mentioned above, the proposed agricultural development on Scheepers Vlake Farm is not likely to cause a significant change in character within the surrounding landscape, as the surrounding area is currently predominantly agricultural in nature. The focus of this environmental assessment process will be on the potential of the farm for the cultivation of annual crops (e.g. maize) and the establishment of a variety of citrus. Additionally, this assessment will focus on areas for conservation, guided by technical and biophysical constraints as to be informed through relevant specialist studies. Finally, the assessment has considered the proximity of the agricultural development to the Addo Elephant National Park (See Map 3.1 and 3.4) and potential impacts thereon, due to the triggering of related listed activities in the NEMA EIA Regulations, 2014 (as amended), as well as other areas set aside for conservation purposes. See Chapter Four for the full list of activities triggered.

Table 3.1: Activities on the land adjacent to the area under assessment.

Farm Number	Activities	Boundary
RE/40	Enon Mission Station communal grazing land.	North
713	Game and livestock grazing, as well as citrus orchards and Open Space III.	North and East
RE/690	Livestock grazing, commercial chicken production and citrus orchards.	East
13/98	Citrus orchards	South
21/98	Livestock grazing and citrus orchards.	South
17/98	Citrus orchards	South
11/98	Livestock grazing and citrus orchards.	South
9/98	Rangeland.	South
714	Citrus orchards and rangeland.	West
14/92	Citrus orchards and rangeland.	West
10/92	Citrus orchards and rangeland.	West
12/92	Citrus orchards and rangeland.	West
10/98	Dept. of Water and Sanitation water supply dam.	Within boundary of the RE 7/ 98



Map 3.2: Properties (red outline) adjacent to the Remainder of Portion 7 of Farm 98. Portion 10 of Farm 98 (yellow outline), owned by DWS, is located within the property under assessment.

3.2.3 National Protected Areas Expansion Strategy

Focus areas for expansion of the Protected Area network in South Africa were identified through a systematic biodiversity planning process undertaken as part of the development of the 2008 National Protected Area Expansion Strategy (NPAES), as well as the 2012 Provincial Protected Area Expansion Strategy.

In terms of the NPAES Map, Scheepers Vlakte Farm does not fall within a focus area. The northern boundary of the farm is located ~2km south of the nearest NPAES focus area (see Map 3.3).



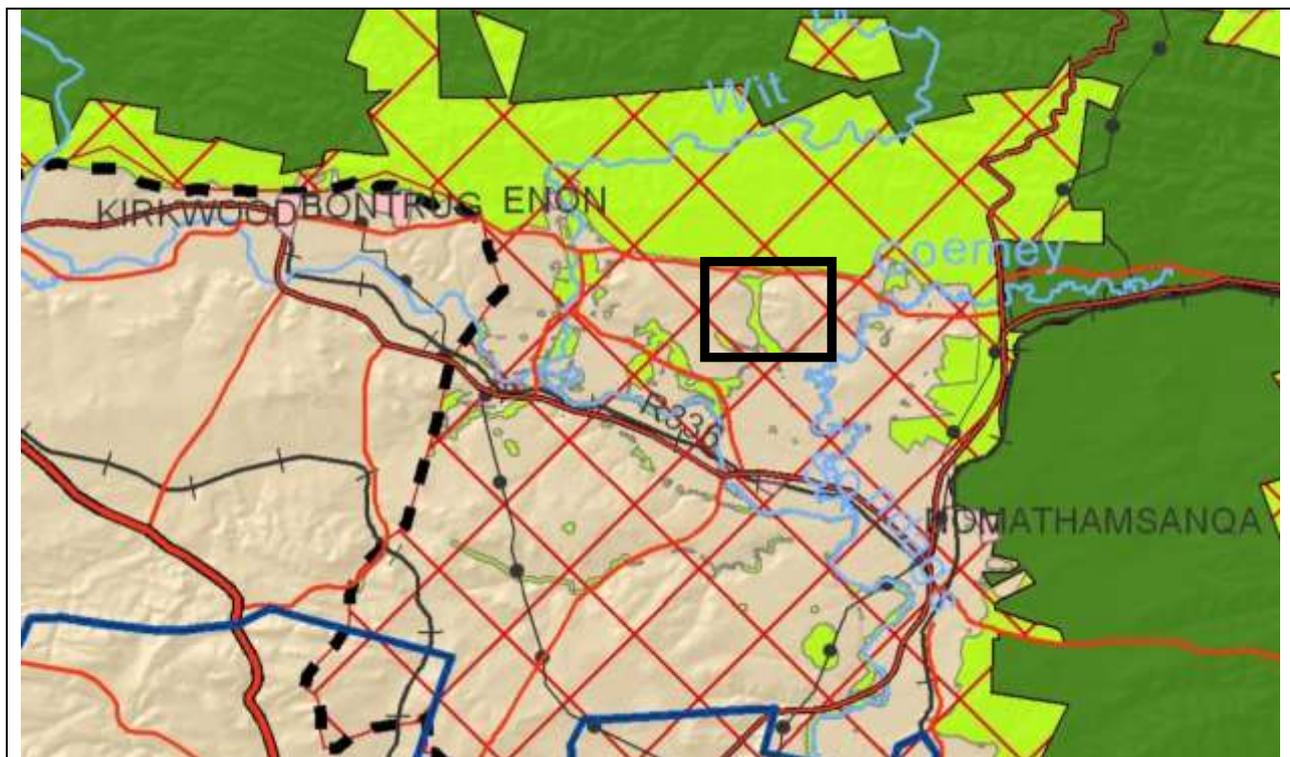
Map 3.3: The Remainder of Portion 7 of Farm 98 does not fall within the NPAES Focus Areas, which are located ~2km north of the nearest boundary of the Farm.

3.2.4 National Strategy on Buffer Zones for National Parks

The Strategy on Buffer Zones for National Parks sets out the South African Government's national strategy on the establishment and management of buffer zones around national parks, in order for the national parks to better meet their objectives. The Addo Elephant National Park (AENP) Management Plan has identified a buffer zone around the park boundary consisting of three categories, namely, Priority Natural Area, Catchment Protection Area and Viewshed Protection Area.

Scheepers Vlakte Farm falls within the AENP Viewshed Protection Area. Also, a portion in the middle of the Farm, which appears to correlate with the mapping of Albany Alluvial Vegetation, in terms of the South African Vegetation Map (Mucina et al, 2006), has been mapped as a Priority Natural Area (see Map 3.4).

However, as far as can be ascertained, the AENP Buffer Zones have not been established by publication in the Gazette, are not integrated into the SRVM SDF as a Special Control/ Natural Area, nor have they been declared as a Protected Environment in terms of the Act. Thus, the AENP buffer zones are not legislated in terms of the strategy.



Map 3.4: The Addo Elephant National Park Buffer Zone relative to the Remainder of Portion 7 of Farm 98.

3.3 ENVIRONMENTAL ATTRIBUTES

3.3.1 Biological

The vegetation expected to occur at the site is noted in a number of conservation planning frameworks relevant to the area. The resolution of the planning framework mapping is limited to a landscape level and the vegetation types and distribution on individual farms are subject to confirmation by a vegetation specialist. The section below outlines the findings of the **desktop** review of the relevant National and Regional conservation planning frameworks and mapping resources applicable to the area.

3.3.1.1 Aquatic Vegetation

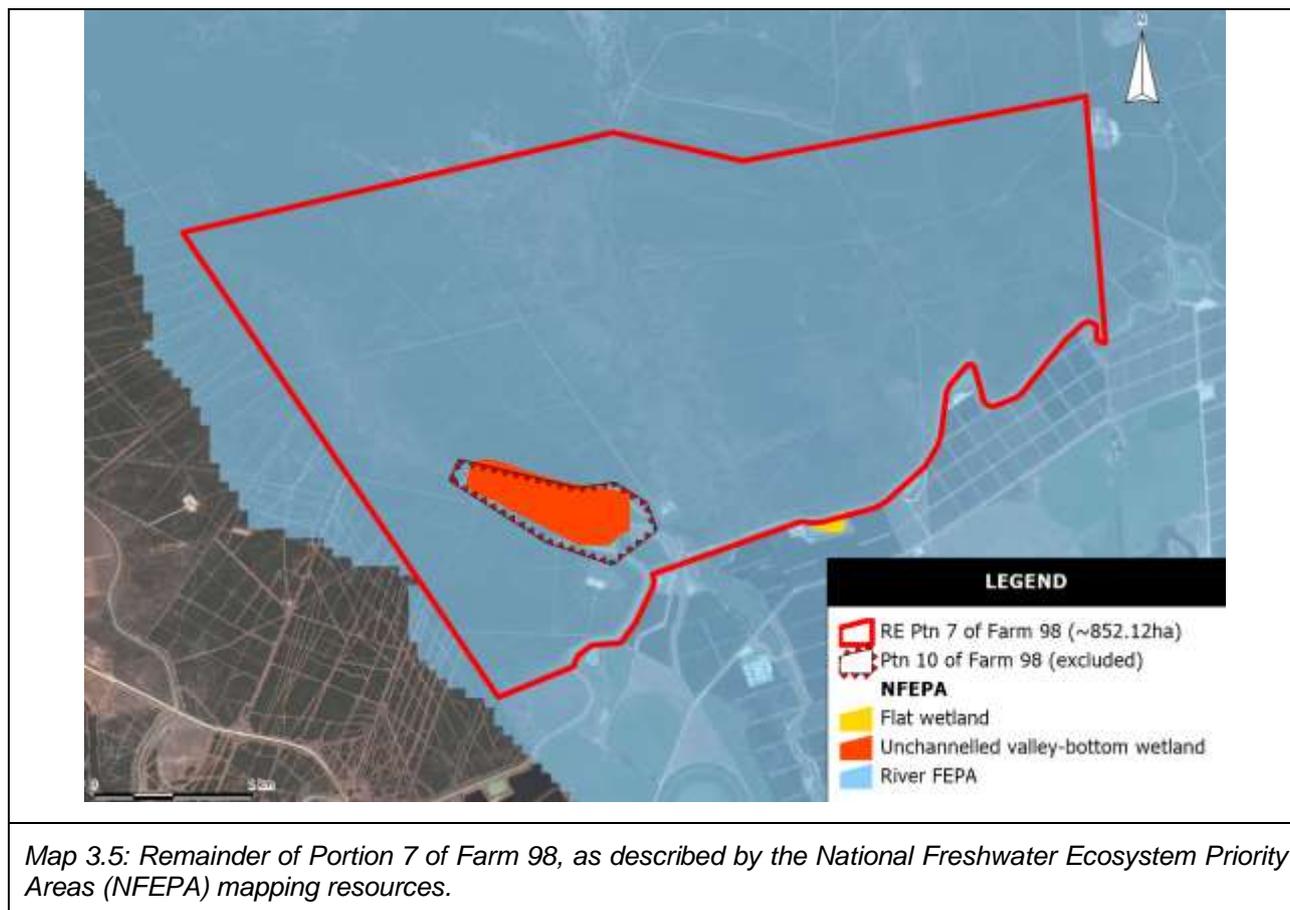
National Context

- National Freshwater Ecosystem Priority Areas (NFEPA; Net et al. 2011):

The NFEPA project is a systematic biodiversity planning framework which aims to identify FEPAs to meet national biodiversity goals for freshwater ecosystems, within the context of equitable socio-economic development. Additionally, the project aims to enable the effective implementation measures to ensure the protection of FEPAs, which includes free-flowing rivers.

In terms of the NFEPA map, the majority of Scheepers Vlakte Farm falls within a River FEPA. Regarding River FEPAs, the whole sub-quaternary catchment is included, although FEPA status only applies to the actual river. In this instance, it applies to the Coerney River and its associated sub-quaternary catchment. For River FEPAs, the surrounding land and smaller stream network needs to be managed in a way that maintains the good condition of the river reach. A flat wetland, along the southern boundary of the Farm, as well as an unchannelled valley bottom wetland, located on Portion 10 of Farm 98 (excluded from this assessment, DWS dam), has been identified in terms of the NFEPA Wetlands map (Map 3.5).

The presence of potential and existing wetlands, rivers and drainage lines on the farm has been assessed by an aquatic specialist as part of EIA Phase of this assessment. See Chapter Seven for the results of the Aquatic Specialist Assessment.



Regional Context

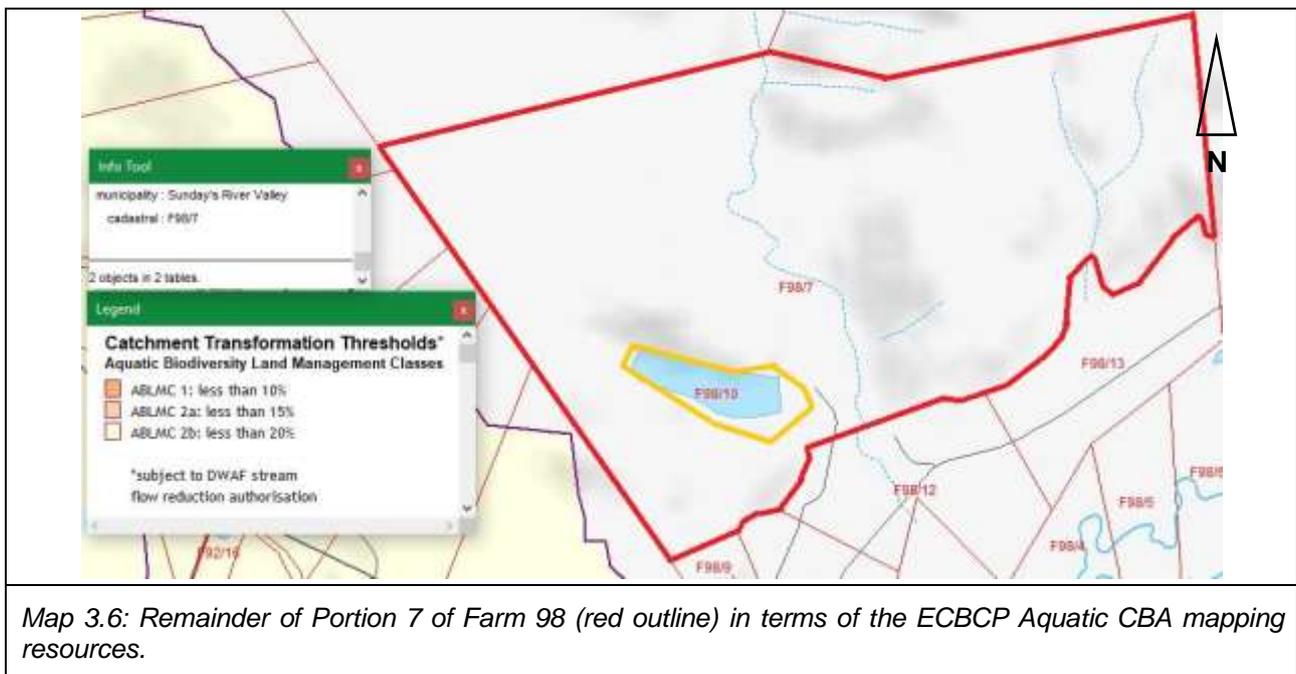
- Eastern Cape Biodiversity Conservation Plan (ECBCP; Berliner & Desmet 2007):

The ECBCP is a broad scale biodiversity plan, utilized to map particular Terrestrial or Aquatic Critical Biodiversity Areas (CBAs) for conservation in the Eastern Cape, as well as to assign appropriate land use categories and guidelines to the existing land.

It is important to note that, although the *Sundays River Valley Municipality Biodiversity Sector Plan* is a more recent document and has been mapped at a finer scale, when determining the listed activities applicable to the proposed development, the ECBCP, rather than the SRVM BSP is consulted, as stipulated by the competent authority.

Scheepers Vlakte Farm does not fall within an Aquatic CBA, in terms of the ECBCP mapping resources (Map 3.6).

The importance of the aquatic resources on the farm, as well as the CBA status of the farm, has been assessed by an aquatic specialist as part of the EIA Phase of this assessment. See Chapter Seven for the results of the Aquatic Specialist Assessment.



3.3.1.2 Terrestrial Vegetation

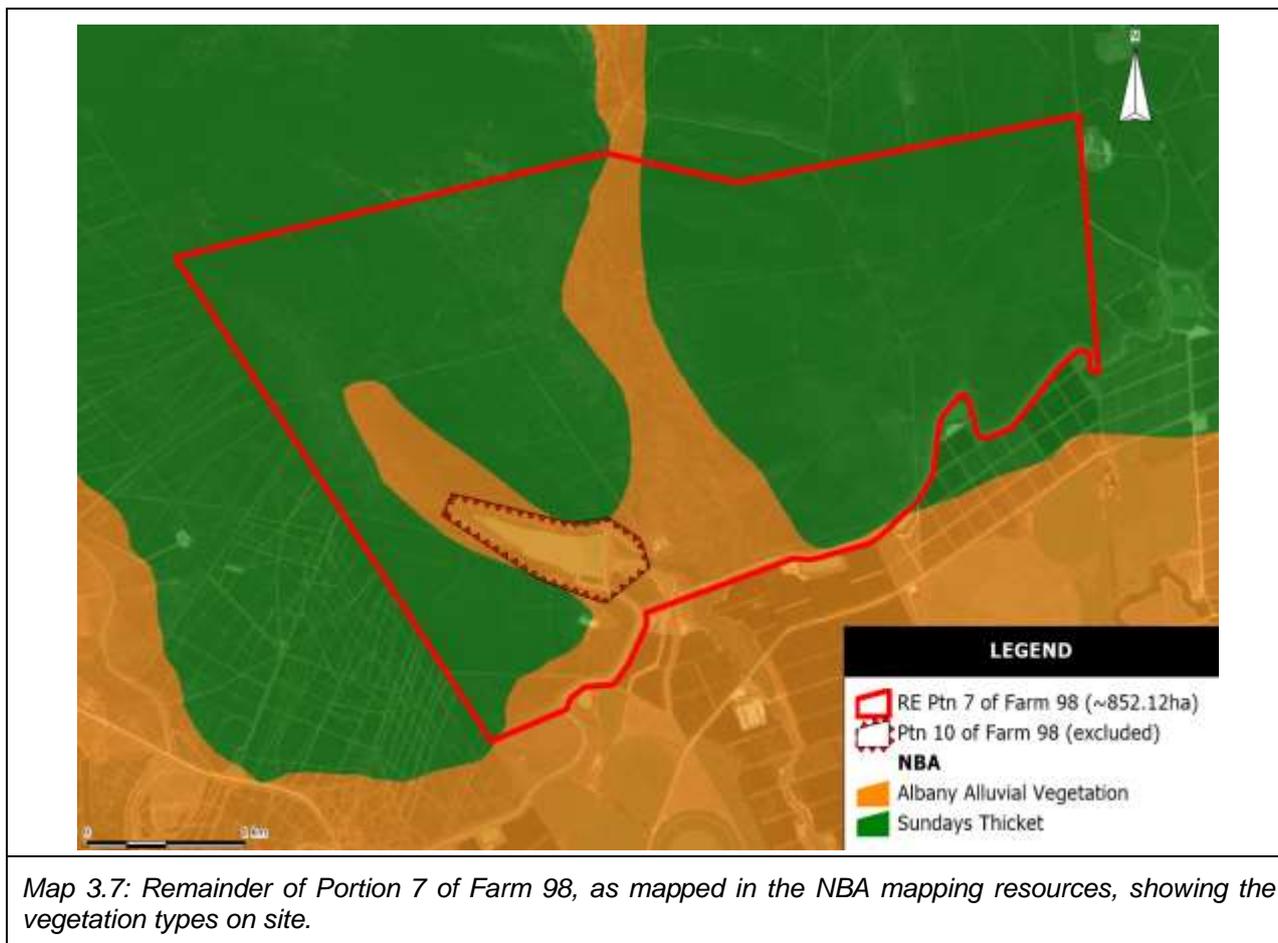
National Context

- National Biodiversity Assessment (NBA 2011):

The NBA aims to identify the threat status and protection levels for ecosystems, in order to map and classify various ecosystem types in South Africa.

The NBA shows the predominant vegetation types on the Farm as Albany Alluvial Vegetation and Sundays Thicket. Albany Alluvial Vegetation is largely restricted to the watercourse/ drainage line which bisects the Farm in a north-south direction, as well as a south and southwestern portion, including Portion 10 of Farm 98 (excluded from this assessment). Sundays Thicket has an Ecosystem Status of *Least Concern* and is listed as *Poorly Protected*. Albany Alluvial Vegetation has an Ecosystem Status of *Endangered* and is similarly listed as *Poorly Protected*. The respective conservation targets proposed for Sundays Thicket and Albany Alluvial Vegetation, in the NBA mapping resources, is 19% and 31% of the historical extent (Map 3.7).

The presence and extent of the vegetation types on the farm have been assessed and determined by a vegetation specialist as part of the EIA Phase of this assessment. Based on input from the vegetation specialist, the majority of the Albany Alluvial Vegetation identified on the farm has been excluded from the proposed development footprint. However, some internal vehicle tracks, as well as the installation of some irrigation pipelines will be required to cross this vegetation type at certain points along the identified drainage lines on the farm. See Chapter Six for the results of the Ecological Specialist Assessment.



Regional Context

- Subtropical Thicket Ecosystem Programme (STEP; Pierce & Mader 2006):

The STEP mapping resources indicate that the vegetation on Scheepers Vlakte Farm is predominantly Sundays Spekboom Thicket and Sundays Doringveld. Sundays Doringveld is largely restricted to the watercourse/ drainage line which bisects the Farm in a north-south direction, as well as a south and southwestern portion, including Portion 10 of Farm 98 (excluded from this assessment). Sundays Spekboom Thicket, as well as Sundays Doringveld, are both listed as *Vulnerable*. The conservation target of the historical extent assigned in terms of STEP for Sundays Spekboom Thicket is 18% and 17% for Sundays Doringveld (Map 3.8).

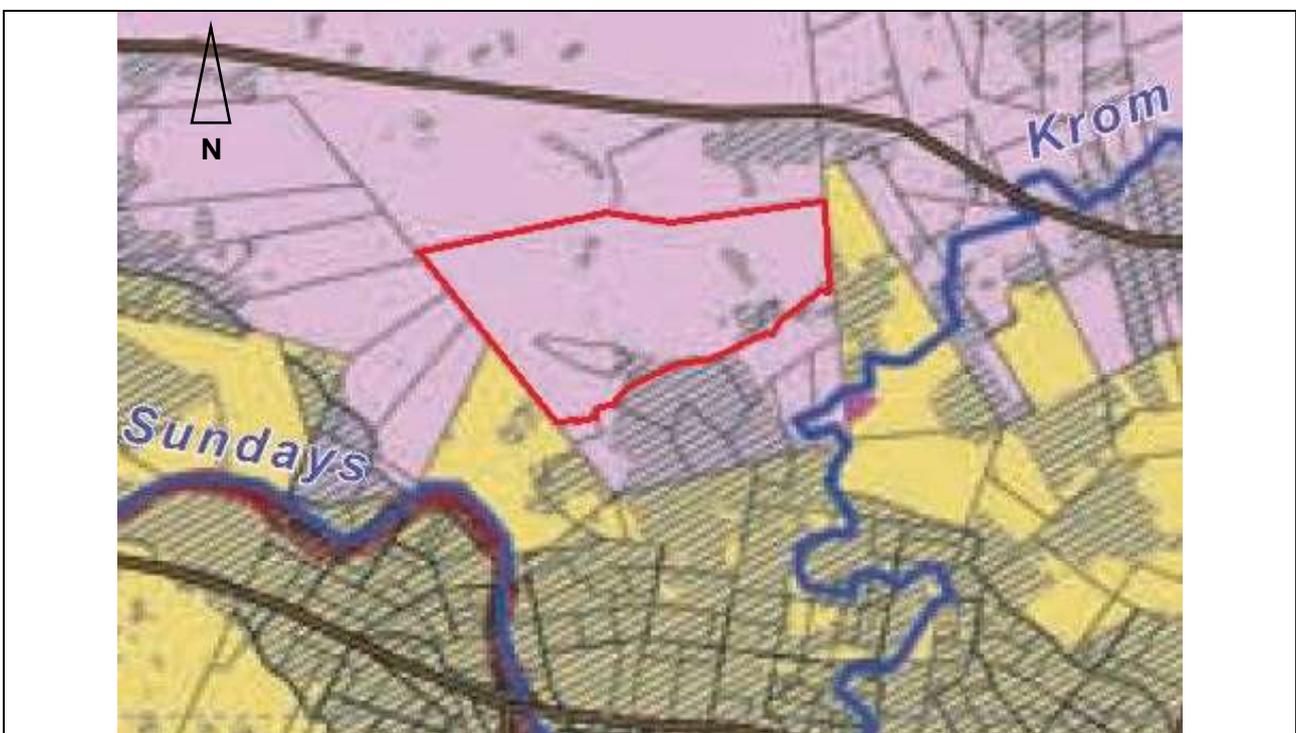
According to the STEP mapping resources, Scheepers Vlakte Farm is situated within a Biodiversity Corridor (purple on Map 3.9). In terms of the STEP, it is advised that land in Biodiversity Corridors can only withstand minimal loss of natural area through disturbance and developments. It is worth noting that the STEP is superseded by the SRVM Biodiversity Sector Plan as it is more a more recent document and at a finer scale.

The presence and extent of the vegetation types on the farm have been assessed and determined by a vegetation specialist as part of the EIA Phase of this assessment. Based on input from the vegetation specialist, the majority of the Sundays Doringveld (mapped as Albany Alluvial Vegetation by the NBA mapping resources above) identified on the farm has been excluded from the proposed development footprint. However, some internal vehicle tracks, as well as the installation of some irrigation pipelines will be required to cross this vegetation type at certain

points along the identified drainage lines on the farm. See Chapter Six for the results of the Ecological Specialist Assessment.



Map 3.8: Remainder of Portion 7 of Farm 98, as mapped in the STEP mapping resources, showing the vegetation types on site.



Map 3.9: Remainder of Portion 7 of Farm 98 (red outline) falls within a Biodiversity Corridor (purple) and is situated adjacent to Vulnerable (yellow), as well as Impacted Areas (hatching), as identified in the STEP mapping resources.

- Eastern Cape Biodiversity Conservation Plan (ECBCP; Berliner & Desmet 2007):

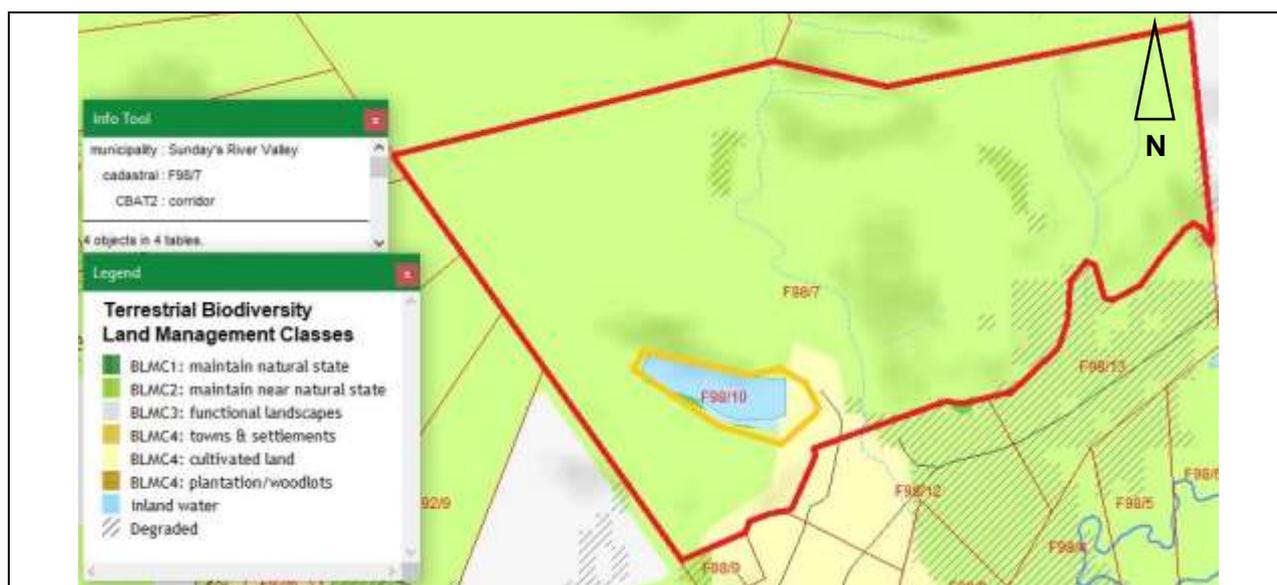
The ECBCP is a broad scale biodiversity plan, utilized to map particular Terrestrial or Aquatic Critical Biodiversity Areas (CBAs) for conservation in the Eastern Cape, as well as to assign appropriate land use categories and provide management guidelines to the existing land.

It is important to note that, although the *Sundays River Valley Municipality Biodiversity Sector Plan* is a more recent document and has been mapped at a finer scale, when determining the listed activities applicable to the proposed development, the ECBCP, rather than the SRVM BSP is consulted, as stipulated by the competent authority.

The ECBCP mapping resources indicates Scheepers Vlakte Farm as predominantly a Terrestrial Biodiversity Land Management Class 2 (BLMC2). A BLMC2 refers to a Critical Biodiversity Area (CBA) that must be maintained in a near natural state. The recommended land use objective for a BLMC2 would be to manage sustainable development practices, with minimum loss in ecosystem integrity and functioning. The acceptable transformation threshold for a BLMC2 is 0%-10%, per land parcel considered. The land uses recommended by the ECBCP for a BLMC2 includes conservation, game farming and communal livestock.

A southern section of the site is mapped as a Terrestrial Land Management Class 4 (BLMC4), which refers to cultivated land. The recommended land use objectives for a BLMC4 are to optimise sustainable agricultural production. The acceptable transformation threshold for a BLMC4 is 70%-100%, per land parcel considered. The land uses recommended by the ECBCP for a BLMC4 includes all land uses, without conditions. Scattered sections on the Farm are also shown as degraded/ transformed. The land use objective for degraded land is to manage sustainable development (Map 3.10).

The importance of the vegetation on the farm in maintaining CBAs and Ecological Processes has been assessed by a vegetation specialist as part of the EIA phase of this assessment. See Chapter Six for the results of the Ecological Specialist Assessment.



Map 3.10: Remainder of Portion 7 of Farm 98 (red outline) in terms of the ECBCP Terrestrial CBA mapping resources.

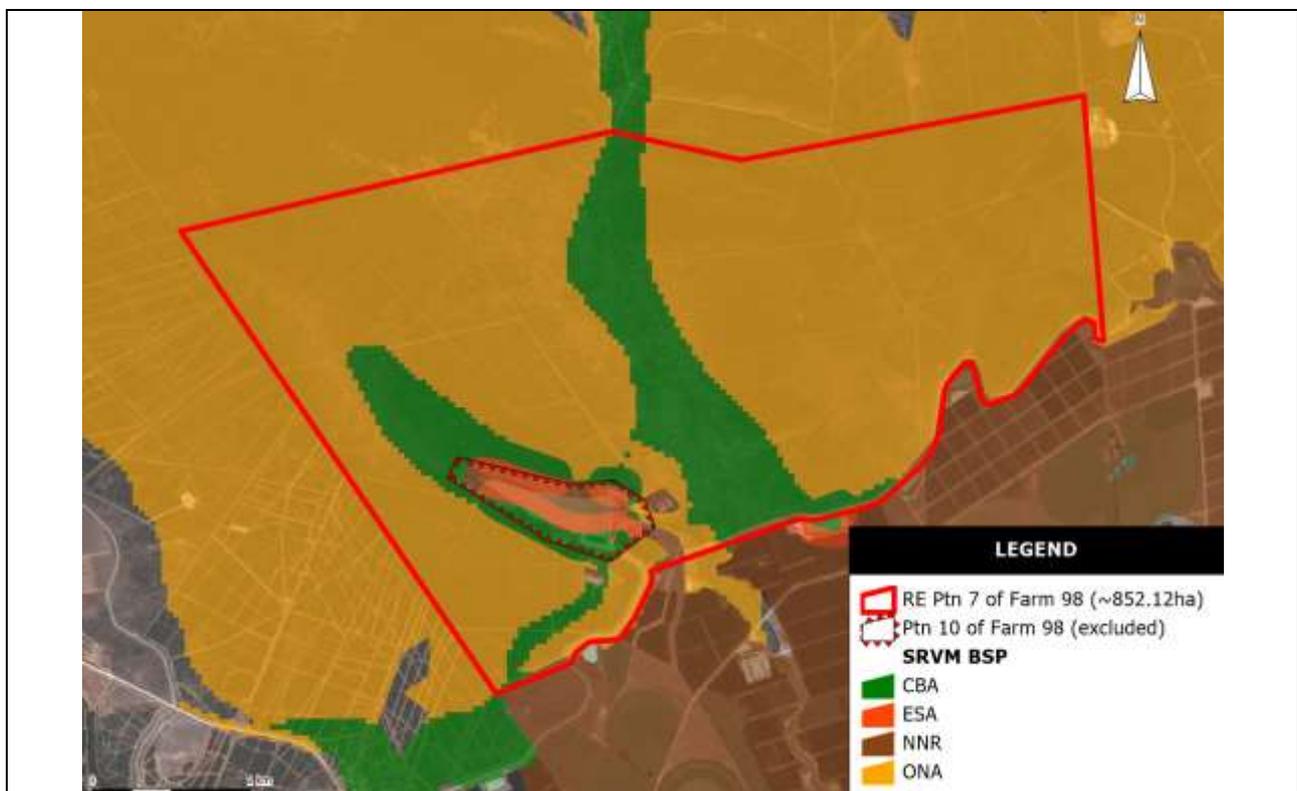
- Sundays River Valley Municipality Biodiversity Sector Plan (SRVM BSP; Vromans et al. 2012):

Of the nine local municipalities in the Sarah Baartman district Municipality, the Sundays River Valley Local Municipality is one of the four local municipalities for which Biodiversity Sector Plans have been developed. From a biodiversity perspective, these municipalities comprise 44.7% of South Africa's Albany Thicket Biome. Furthermore, approximately half of the Sundays River Valley Local Municipality occurs in the southwestern Albany-Pondoland-Maputoland Hotspot, a globally recognized hotspot (Mittermeier et al., 2004).

It is important to note that, although the *Sundays River Valley Municipality Biodiversity Sector Plan* is a more recent document and has been mapped at a finer scale, when determining the listed activities applicable to the proposed development, the ECBCP, rather than the SRVM BSP is consulted, as stipulated by the competent authority.

In terms of the SRVM BSP, the majority of the Farm is mapped as Other Natural Area (ONA), while portions of the Farm are mapped as Critical Biodiversity Area (CBA). CBA areas are largely restricted to the watercourse/ drainage line which bisects the Farm in a north-south direction, as well as a south and southwestern portion, including Portion 10 of Farm 98 (excluded from this assessment). A portion along the southern boundary of the Farm is mapped as No Natural Area Remaining (NNR; Map 3.11).

The importance of the vegetation and aquatic features on the farm in maintaining CBAs, has been assessed by a vegetation, as well as an aquatic specialist as part of the EIA Phase of this assessment. See Chapter Six for the results of the Ecological Specialist Assessment, and Chapter Seven for the results of the Aquatic Specialist Assessment.



Map 3.11: Remainder of Portion 7 of Farm 98, as mapped in the SRVM Biodiversity Sector Plan mapping resources.

3.3.1.3 Site Observations

Site visits were undertaken by the EAP on the 11 April 2017 and the 30 August 2017.

Vegetation on Site and Levels of Degradation

The site visits indicated that the dominant vegetation type on Scheepers Vlakte Farm is a combination of natural to moderately degraded Sundays Thicket. The NBA and STEP mapping resources have mapped a section of the Farm as Albany Alluvial Vegetation/ Sundays Doringveld, respectively (although the two are synonymous). On inspection of one of the drainage lines present on the farm, vegetation of a riparian nature was identified, while the surrounding soils were notably wetter compared to other areas on the Farm (Photo 3.1). Mapping by the various biodiversity planning frameworks will have been assessed by a vegetation, as well as an aquatic specialist during the EIA phase of the assessment. The vegetation specialist has confirmed that the vegetation types present on the farm are a combination of Sundays Spekboom Thicket and Sundays Doringveld. Based on input from the vegetation specialist, the majority of the Sundays Doringveld identified on the farm has been excluded from the proposed development footprint. However, some internal vehicle tracks, as well as the installation of some irrigation pipelines will be required to cross this vegetation type at certain points along the identified drainage lines on the farm. See Chapter Six for the results of the Ecological Specialist Assessment.

Modified/ transformed areas are notable across the farm. Towards the southern boundary, modified areas are represented by existing farm structures (Photo 3.2), the DWS dam on Portion 10 of Farm 98 (excluded from this assessment; Photo 3.3), as well as several internal vehicle tracks. Further, portions of the Farm are encroached by *Opuntia ficus indica*, possibly due to previous livestock grazing and browsing (Photo 3.4). Several grassy, open patches, devoid of Thicket vegetation are also visible across the Farm (Photo 3.5).

A wetland area was observed along the southern boundary of the Farm (Photo 3.6). The Scheepersvlakte Dam located within the boundaries of Scheepers Vlakte Farm, on Portion 10 of Farm 98 (owned by the DWS, not part of this assessment), receives water from the LSRWUA canal and supplies water to Port Elizabeth. The overflow dam (Photo 3.6B), just south of the southern boundary of the Farm, receives overflow from the Scheepersvlakte Dam. This has resulted in a stand of *Phragmites australis* (Photo 3.6A), which has expanded over time, since the discharge commenced. Historical aerial imagery (1957) shows the absence of this reed bed (Photo 3.6C); and thus, the artificial nature of the wetland area. These findings have been assessed by an aquatic specialist as part of the EIA Phase of this assessment. See Chapter Seven for the results of the Aquatic Specialist Assessment.

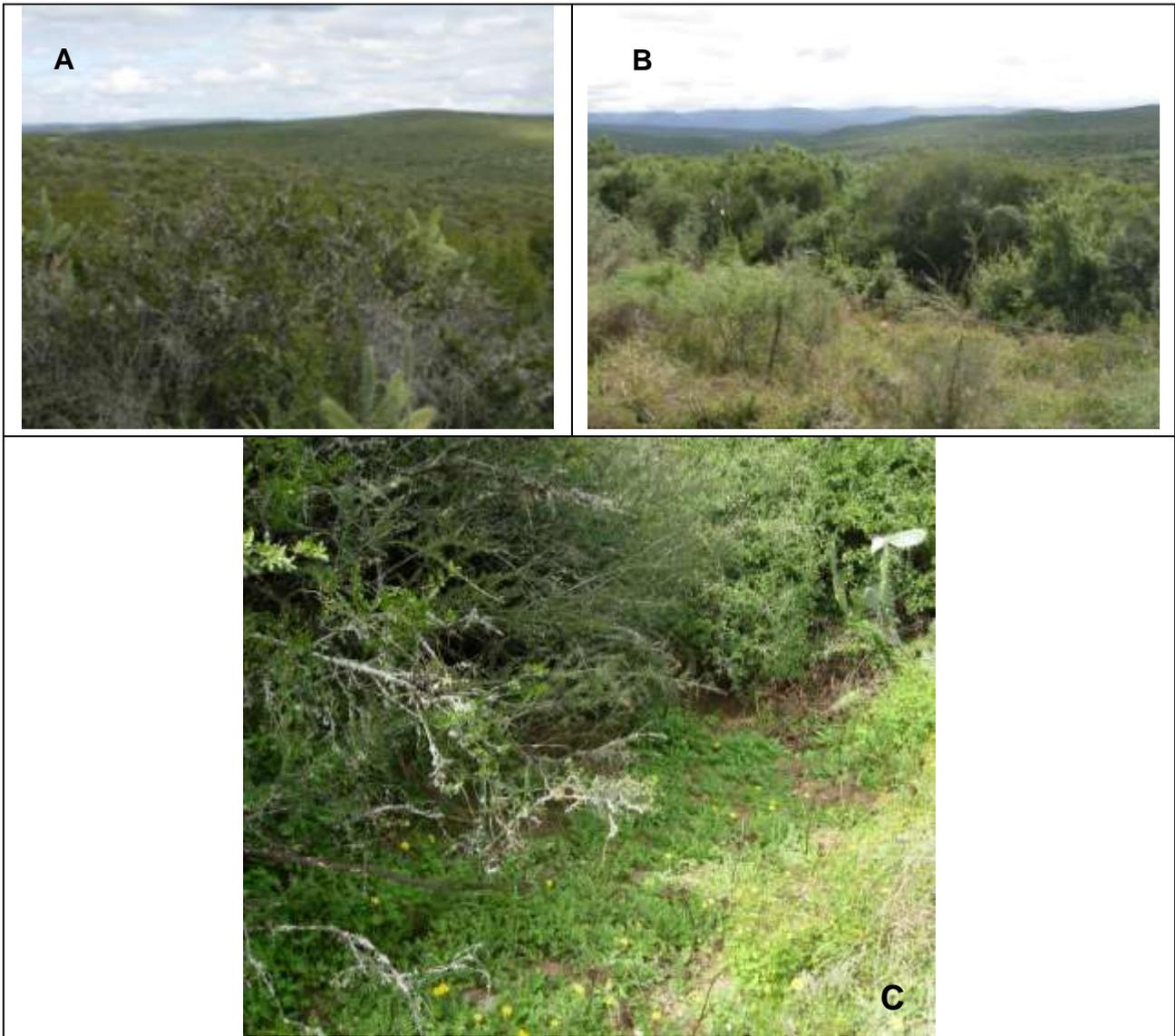


Photo 3.1: The dominant vegetation on the Remainder of Portion 7 of Farm 98 is a combination of natural to moderately degraded Sundays Thicket (A and B above). Some riparian vegetation was also identified within one of the drainage lines on the Farm (C).





Photo 3.2: Existing structures on the Remainder of Portion 7 of Farm 98.



Photo 3.3: DWS dam on Portion 10 of Farm 98 (excluded from this assessment), located within the boundary of the Remainder of Portion 7 of Farm 98.



*Photo 3.4: Sections of the vegetation on the Remainder of Portion 7 of Farm 98 are encroached by *Opuntia ficus indica* (Prickly Pear), which is an indicator of a degraded vegetation state, possibly due to previous livestock grazing and browsing, as suggested by the water trough.*

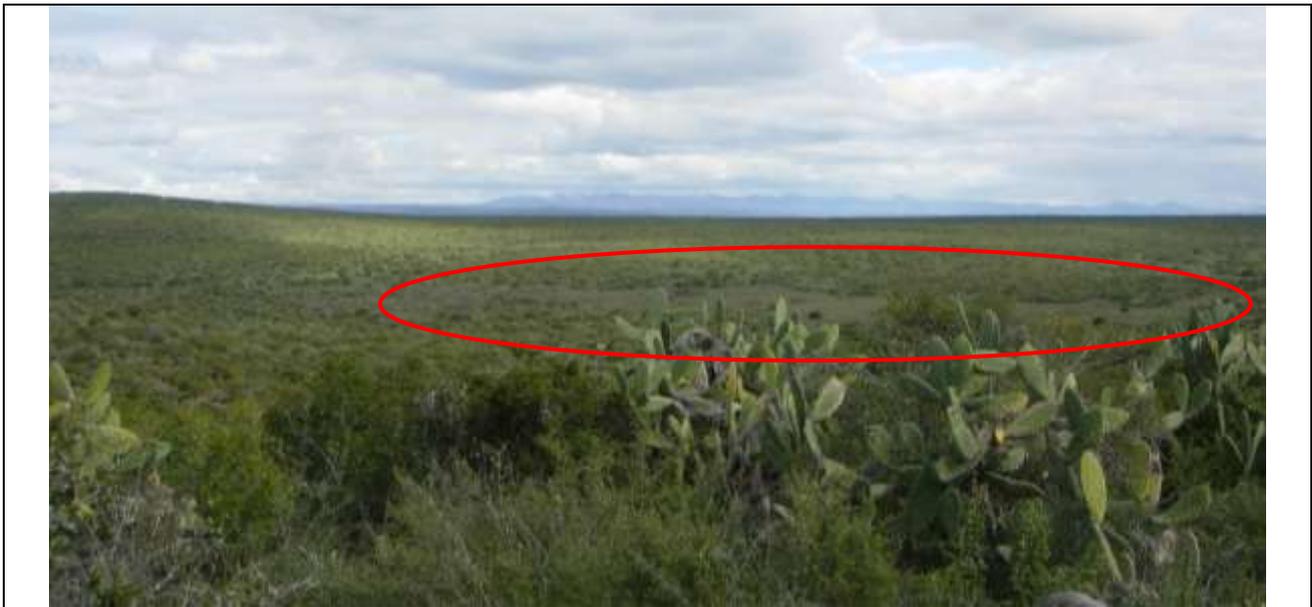
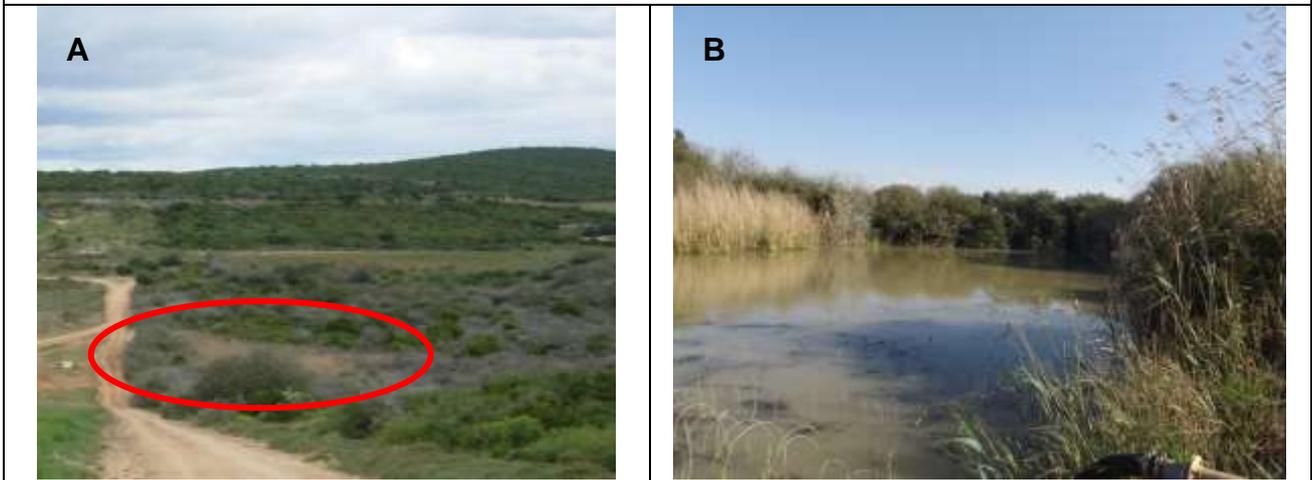


Photo 3.5: Grassy, open patches on the Remainder of Portion 7 of Farm 98.



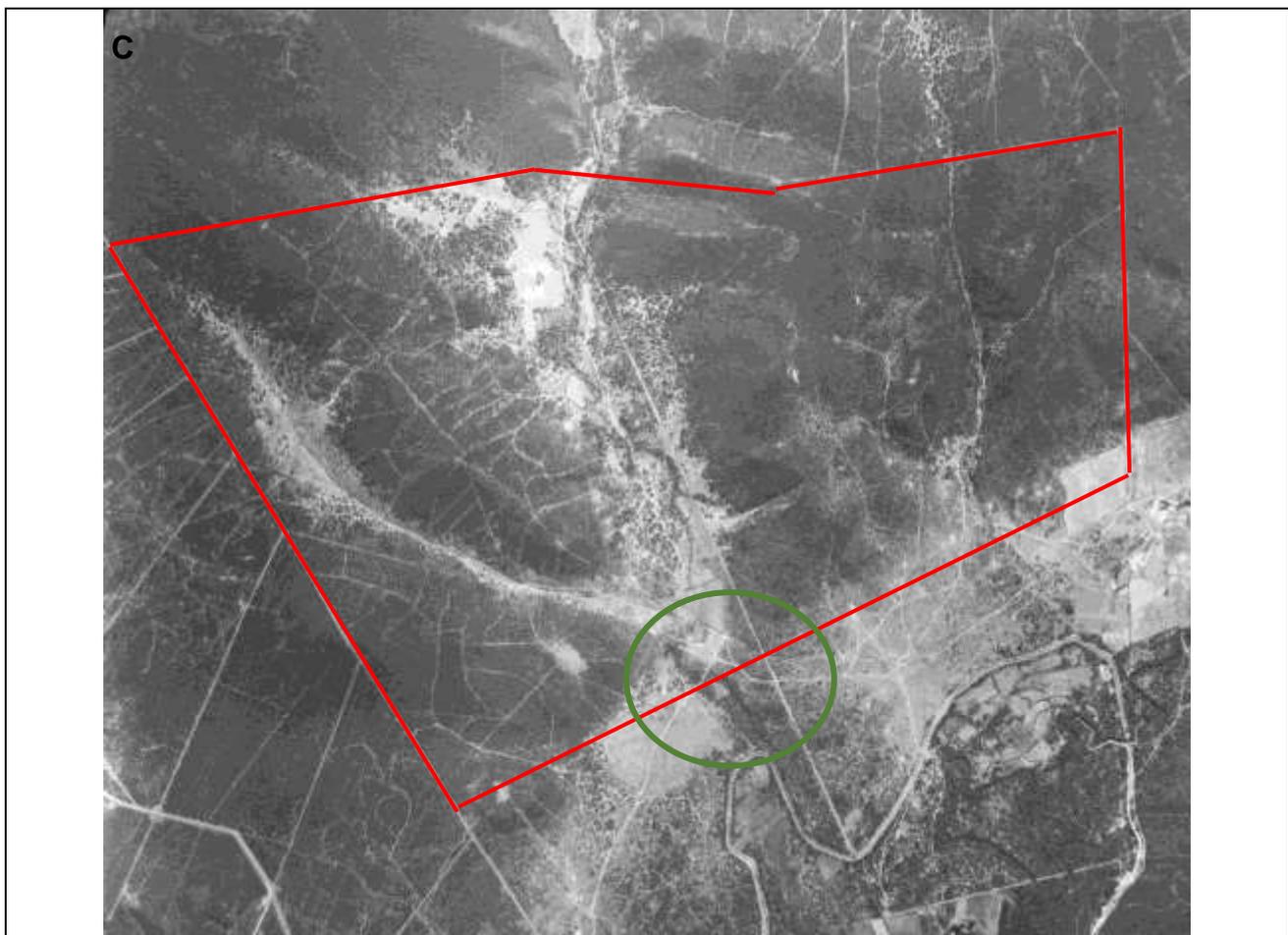


Photo 3.6: Wetland area within and adjacent to the southern boundary of the Remainder of Portion 7 of Farm 98 (A). The wetland possibly results from overflow from the Scheepersvlakte Dam (owned by the DWS, not part of this assessment) on Portion 10 of Farm 98 flowing into the Scheepersvlakte overflow dam (B), located south of the boundary of the Farm. Historical imagery (1957; C), shows an absence of this reed bed (circled in green).

Concluding Remarks

These on-site findings supplement the information obtained from the various conservation and planning frameworks consulted above, and have been assessed by a vegetation, as well as an aquatic specialist as part of the EIA Phase of this assessment. Where necessary, suitable recommendations (e.g. aquatic buffers and biodiversity target areas) have been made for incorporation of the requirements of the relevant conservation planning frameworks in the development. See Chapter Six for the results of the Ecological Specialist Assessment, and Chapter Seven for the results of the Aquatic Specialist Assessment.

3.3.1.4 Fauna

A formal faunal investigation did not take place during the site visits on the 11 April 2017 and the 30 August 2017. In addition, no large fauna were observed on the farm during the site visit. However, it is anticipated that the vegetation on the site provides habitat to several small to medium mammal, reptilian and amphibian species. The site is likely also frequented by a variety of avifaunal species, due to the presence of the Scheepersvlakte Dam (owned by the DWS, not part of this assessment) located within the boundary of the Farm on Portion 10 of Farm 98. The Addo Flightless Dung Beetle (*Circellium bacchus*) which is endemic to the region is anticipated to occur on the site.

The Ecological Specialist Assessment undertaken as part of the EIA Phase of this assessment has considered the potential occurrence of Rare and Endangered fauna on the site, within the context of the type and extent of faunal habitat on the site.

3.3.2 Physical

3.3.2.1 Climate

The Sundays River Valley is characterised by harsh climate conditions, with summer temperatures rising in excess of 40°C. The monthly distribution of average daily maximum temperatures ranges from 21.9°C (July) to 29.2°C during summer (February). The region is the coldest during July, with average night time temperatures of 5.2°C.

Rainfall for the area is overall low, between 250 - 500mm annually, and spread throughout the year. Sunland, the closest town to the Scheepers Vlakte Farm, receives ~315mm of rain per year. Lowest rainfall occurs during the winter, specifically in July (13mm), and the highest rainfall during autumn, particularly in March (44mm).

3.3.2.2 Geohydrology and Surface Water

The preliminary site visit and review of the relevant aerial imagery, as well as the NFEPA planning framework for the area under assessment, have assisted in the identification of aquatic resources on Scheepers Vlakte Farm.

A single flat wetland (possibly artificial in nature), located outside the southern boundary of the farm, as well as an unchannelled valley-bottom wetland, located within the boundary of the farm, on Portion 10 of Farm 98 (owned by the DWS, not part of this assessment), was identified using the NFEPA mapping resources (Map 3.5). In addition, a number of 1: 50 000 undefined drainage lines (mapped by the 1:50 0000 topographical data) were identified on the farm, one of which dissects the Farm in a north-south direction (Map 3.6). However, no water was observed in the north-south drainage line during the site visit. A wetland area was observed adjacent to the southern boundary of the farm (Photo 3.6). However, the wetland appears to be artificial and as a result of overflow from the Scheepersvlakte Dam (owned by the DWS, not part of this assessment), on Portion 10 of Farm 98, flowing into the Scheepersvlakte overflow dam (Photo 3.6), located south of the boundary of the farm.

The nature of these wetlands and watercourses (ie. natural or artificial) have been assessed by an aquatic specialist as part of the EIA Phase of this assessment. See Chapter Seven for the results of the Aquatic Specialist Assessment.

3.3.2.3 Geology and Topography

Geology

In terms of the Fossil Sensitivity Map compiled by the South African Heritage Resources Agency (<http://www.sahra.org.za/map/palaeo> Accessed August 2017), Scheepers Vlakte Farm is mapped as having a 'very high' palaeontological significance (red in Map 3.12).

A Phase 1 Palaeontological Impact Assessment was undertaken as part of the EIA Phase of this assessment. The palaeontological specialist has indicated that the Sundays River Formation on the farm is largely mantled by Neogene (Late Tertiary) river gravels of the Kudus Kloof Formation, as well as by calcrete hardpans and thick alluvial soils that may be up to several meters thick and

are, at most, very sparsely fossiliferous. Significant impacts on fossil heritage resources are, therefore, not anticipated here. No fossil remains were recorded during the site visit by the specialist within the Cretaceous bedrocks, which are minimally exposed in this region, or from the Late Caenozoic superficial sediments. See Chapter Ten for the results of the Phase 1 Palaeontological Impact Assessment.

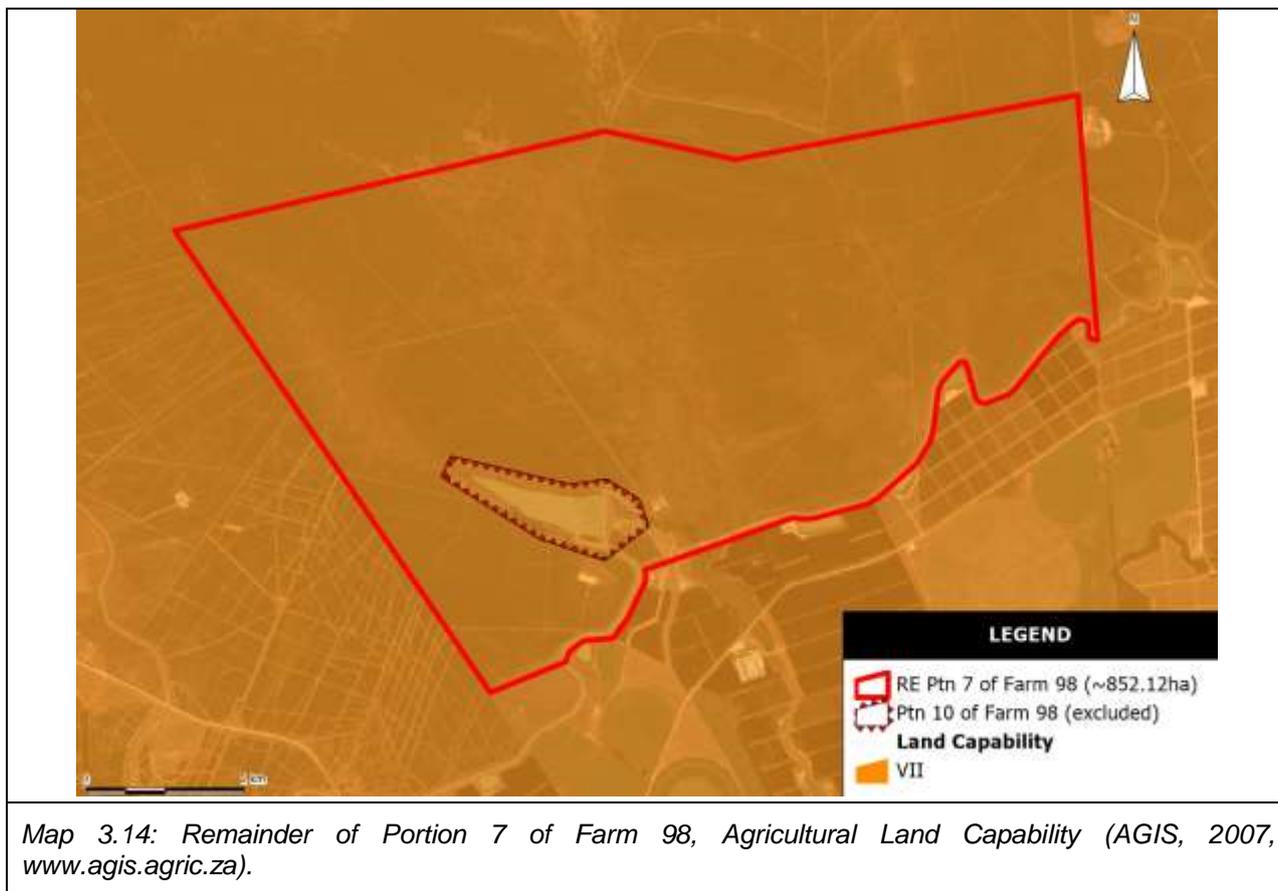


Map 3.12: Fossil Sensitivity of the Remainder of Portion 7 of Farm 98, as given by the SAHRA mapping software.

Colour	Sensitivity	Required Action
RED/PINK	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Topography

The farm is incised by two low lying valleys that gently slope up towards the higher lying areas. The highest points are 174m whereas the lowest elevation is 83m above mean sea level. The most prominent valley area is situated approximately in the centre of the property, which is indicated as a 1: 50 000 undefined drainage line (by the 1:50 000 topographical data), with the land gently sloping southwards towards the Coerney River (Map 3.13).



3.3.3 Heritage and Cultural

Certain cultural and heritage resources are protected under the National Heritage Resources Act, No 25 of 1999. These may include structures older than 60 years; archaeological and palaeontological sites and materials, and meteorites; certain burial grounds and graves; declared heritage objects; and declared heritage sites.

No graves, burial sites, or structures older than 60 years were noted on the farm during the site visit. A Phase 1 Archaeological Impact Assessment was undertaken as part of the EIA Phase of this assessment. Specialist input suggests that the farm is expected to be of low archaeological sensitivity and low cultural significance. However, should the proposed development receive a positive Environmental Authorisation, an archaeologist should conduct a walkthrough of the area after the vegetation has been cleared, to check if any significant sites/ materials have been exposed. Further recommendations will follow after the investigation. See Chapter Eleven for the results of the Phase 1 Archaeological Impact Assessment.

3.3.4 Socio-economic (Social and Economic)

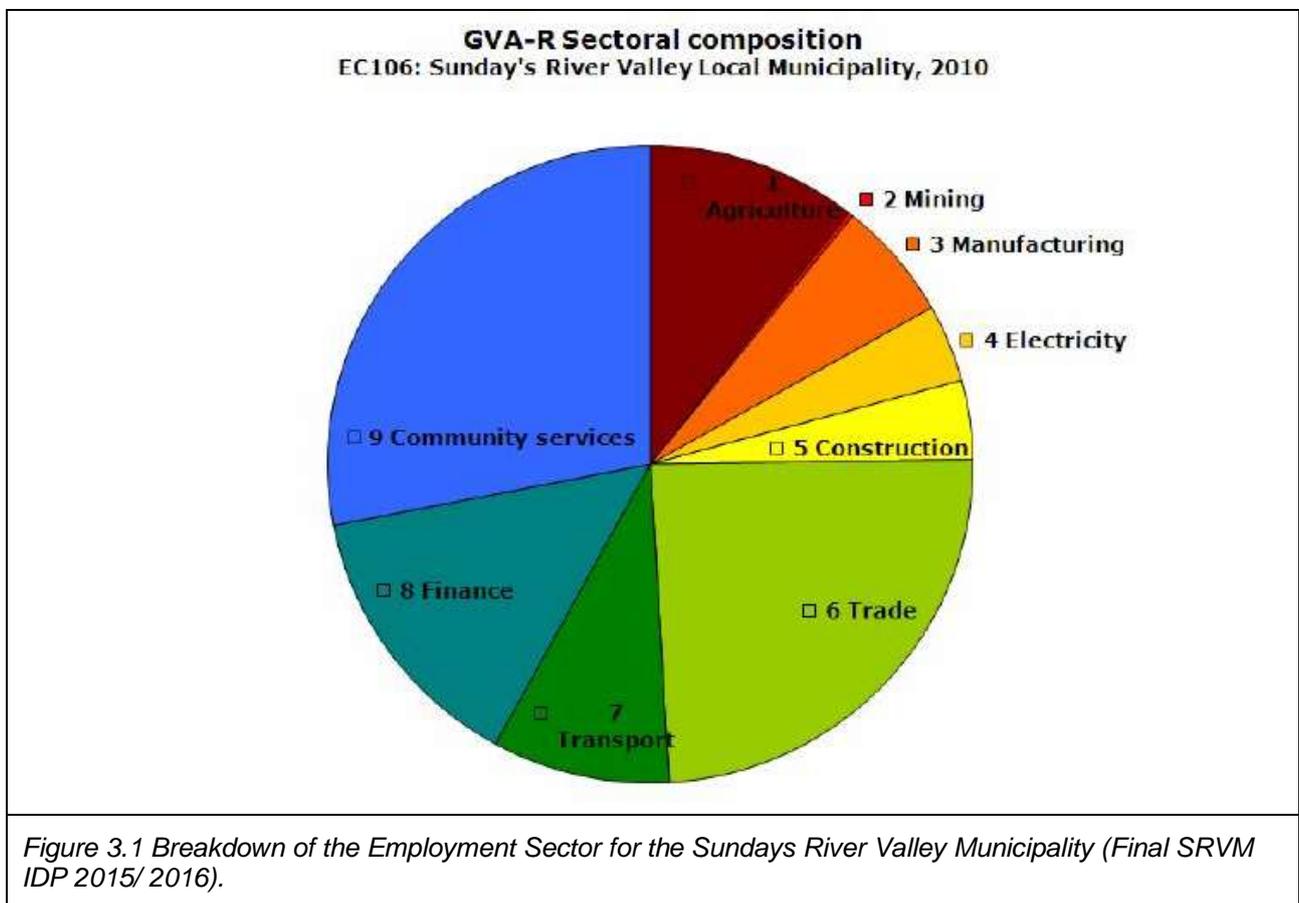
The nearest town to Scheepers Vlakte Farm is Sunland, in the SRVM. However, local labour is sourced from both the SRVM, as well as the Nelson Mandela Bay Municipality (NMBM), therefore, socio-economic data for both municipalities have been considered here.

The Final Integrated Development Plan (IDP 2015/ 2016) for the SRVM indicates that the current unemployment rate in the municipal area is as high as 38.54%. The Agricultural Sector, being one of the top five employment sectors in the SRVM, provides room for growth in terms of employment opportunities, as it currently represents ~11% of the employment for the SRVM area (Final SRVM IDP 2015/2016; See Figure 3.1).

The NMBM Integrated Development Plan 2011-2016 (14th Edition, 2015/2016 Financial Year) highlights some of the key socio-economic challenges in the NMBM and lists unemployment and poverty among them. Some of the reasons cited in the NMBM IDP (2015/2016) for the low economic growth experienced in the NMBM (3% per annum) are the high unemployment and dependency ratios (unemployment rate 36.3%). However, as with the rest of South Africa, the NMBM is undergoing a youth bulge, with ~35% of the population between the ages of 10-29 years. A positive outcome of such a youth bulge is demographic dividends, which, given gainful employment, can be used for poverty reduction and economic growth.

The nearby communities associated with the town Sunland in the SRVM, as well as the greater NMBM area, represent an important labour force in close proximity to the proposed agricultural development. It is anticipated that the proposed agricultural development will result in a number of new permanent and seasonal employment opportunities for the local community.

No specialist socio-economic assessment is proposed for the EIA phase of the assessment.



3.4 CONCLUDING REMARKS

The specialist studies forming part of the EIA Phase of this assessment, including potential impacts associated with the proposed agricultural development and associated infrastructure, which have informed the preferred development footprint within the site, are included in Chapters Six to Thirteen of this report. Alternatives and the assessment thereof, are outlined in Chapter Five of this report.