Terrestrial Animals Assessment

prepared in accordance with the
"Protocol for the Specialist Assessment and minimum report content requirements for environmental impacts on Terrestrial Animal Species"

Portion 43/191 and 104 of the Farm Ganse Vallei 444 near Plettenberg Bay in the Western Cape Province

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Terrestrial Animal Species Assessment Report for Portion 43/191 and 104 of the Farm Ganse Vallei 444 near Plettenberg Bay in the Western Cape Province.

For: Pierre du Preez

5 June 2022

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SPECIALIST DETAILS & DECLARATION

This report has been prepared in accordance with the "Protocol for the specialist assessment and minimum report content requirements for environmental impacts on **terrestrial animal species**", as promulgated in terms of Section 24 (5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), published in GN. No. 320 dated 20 March 2020. It has been prepared independently of influence or prejudice by any parties.

The details of Specialists are as follows –

Table 1: Details of Specialists

Specialist	Qualifications
Dr David Hoare with Dr Wynand Vlok	PhD Pr.Sci.Nat. 400221/05 (Ecological Science, Botanical Science) & Pr. Sci. Nat. 400109/95 (Zoology, Botany)

Details of Author:
Dr David Hoare

PhD (Botany) – Nelson Mandela Metropolitan University, Port Elizabeth

Main areas of specialisation
- Vegetation and general ecology (grasslands, savanna, Albany thicket, fynbos, coastal systems, wetlands).
- Plant biodiversity and threatened plant species specialist.
- Alien plant identification and control / management plans.
- Remote sensing, analysis and mapping of vegetation.
- Specialist consultant for environmental management projects.

Professional Natural Scientist, South African Council for Natural Scientific Professions, Reg. no. 400221/05 (Ecology, Botany)
Member, International Association of Vegetation Scientists (IAVS)
Member, Ecological Society of America (ESA)
Member, International Association for Impact Assessment (IAIA)
Member, Herpetological Association of Africa (HAA)

Employment history
- 1 December 2004 – present, Director, David Hoare Consulting (Pty) Ltd. Consultant, specialist consultant contracted to various companies and organisations.
- 1January 2009 – 30 June 2009, Lecturer, University of Pretoria, Botany Dept.
- 1January 2013 – 30 June 2013, Lecturer, University of Pretoria, Botany Dept.
- 1 February 1998 – 30 November 2004, Researcher, Agricultural Research Council, Range and Forage Institute, Private Bag X05, Lynn East, 0039. Duties: project management, general vegetation ecology, remote sensing image processing.

Dr Wynand Vlok:

PhD (Zoology) – Rand Afrikaans University (University of Johannesburg)

Areas of specialisation:
- Environmental Impact Assessments (EIA's)
- Environmental Management Plans (EMP's)

- Aquatic environment and its associated biodiversity
- Terrestrial biodiversity

Professional affiliation:
- South African Society of Aquatic Scientists (SASAqS)
- Registered at the "The South African Council for Natural Scientific Professions" (SACNASP – registered as a "Professional Natural Scientist: Registration number - 400109/95)
- SACNASP – as Chairperson for the Professional Advisory Committee (Aquatic)

Employment history:
- BioAssets (owner of Consultancy CC) - 1/01/2007 - current
- University of Limpopo (formerly University of the North)
    - Senior lecturer: Department of Zoology/Biology (1/10/1996 – 31/12/2006)
    - Lecturer: Department of Physiology (1/1/1994 - 30/9/1996)
- Manager of a citrus farm (1992 – 1993)
- Technikon RSA (1989 – 1991) - Lecturer: Nature Conservation

Declaration of independence:

David Hoare Consulting (Pty) Ltd in an independent consultant and hereby declare that it does not have any financial or other vested interest in the undertaking of the proposed activity, other than remuneration for the work performed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998). In addition, remuneration for services provided by David Hoare Consulting (Pty) Ltd is not subjected to or based on approval of the proposed project by the relevant authorities responsible for authorising this proposed project.

Disclosure:

David Hoare Consulting (Pty) Ltd undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and will provide the competent authority with access to all information at its disposal regarding the application, whether such information is favourable to the applicant or not.

Based on information provided to David Hoare Consulting (Pty) Ltd by the client and in addition to information obtained during the course of this study, David Hoare Consulting (Pty) Ltd present the results and conclusion within the associated document to the best of the author's professional judgement and in accordance with best practise.

_____ 5 June 2022

Dr David Hoare Date

5 June 2022

_____ _____

Dr Wynand Vlok Date

TERMS OF REFERENCE

The specialist study is required to follow the published Protocols, provided in full below for the assessment of impacts on Terrestrial Biodiversity. Note that the Protocols require determination of the level of sensitivity, which then determines the level of assessment required, either a full assessment, or a Compliance Statement.

PROTOCOL FOR THE SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR ENVIRONMENTAL IMPACTS ON TERRESTRIAL ANIMAL SPECIES

This site sensitivity assessment follows the requirements of The Environmental Impact Assessment Regulations, as promulgated in terms of Section 24 (5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), published in GN. No. 320 dated 20 March 2020.

General information

1.1 An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of "**very high**" or "**high**" sensitivity for terrestrial animal species, must submit a **Terrestrial Animal Species Specialist Assessment Report**.

1.2 An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of "**medium** sensitivity" for terrestrial animal species, must submit either a **Terrestrial Animal Species Specialist Assessment Report** or a **Terrestrial Animal Species Compliance Statement**, depending on the outcome of a site inspection undertaken in accordance with paragraph 4.

1.3 An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of "**low**" sensitivity for terrestrial animal species, must submit a **Terrestrial Animal Species Compliance Statement**.

1.4 Where the information gathered from the site sensitivity verification differs from the screening tool designation of "very high" or "high" for terrestrial animal species sensitivity on the screening tool, and it is found to be of a "low" sensitivity, then a **Terrestrial Animal Species Compliance Statement** must be submitted.

1.5 Where the information gathered from the site sensitivity verification differs from the screening tool designation of "low" terrestrial animal species sensitivity and it is found to be of a "very high" or "high" terrestrial animal species sensitivity, a **Terrestrial Animal Species Specialist Assessment** must be conducted.

1.6 If any part of the development falls within an area of confirmed "very high" or "high" sensitivity, the assessment and reporting requirements prescribed for the "very high" or "high" sensitivity, apply to the entire development footprint. Development footprint in the context of this protocol, means the area on which the proposed development will take place and includes the area that will be disturbed or impacted.

1.7 The **Terrestrial Animal Species Specialist Assessment** and the **Terrestrial Animal Species Compliance Statement** must be undertaken within the study area.

1.8 Where the nature of the activity is not expected to have an impact on species of conservation concern (SCC) beyond the boundary of the preferred site, the study area means the proposed development footprint within the preferred site.

1.9 Where the nature of the activity is expected to have an impact on SCC beyond boundary of the preferred site, the project areas of influence (PAOI) must be determined by the specialist in accordance with Species Environmental Assessment Guideline, and the study area must include the PAOI, as determined.

Terrestrial Animal Species Specialist Assessment

2.1 The assessment must be undertaken by a specialist registered with the South African Council for Natural Scientific Professions (SACNASP), within a field of practice relevant to the taxonomic groups ("taxa") for which the assessment is being undertaken.

2.2 The assessment must be undertaken in accordance with the Species Environmental Assessment Guideline and must:

2.2.1 Identify the SCC which were found, observed or are likely to occur within the study area;

2.2.2 provide evidence (photographs) of each SCC found or observed within the study area, which must be disseminated by the specialist to a recognized online database facility immediately after the site inspection has been performed (prior to preparing the report contemplated in paragraph 3);

2.2.3 identify the distribution, location, viability and detailed description of population size of the SCC identified within the study area;

2.2.4 identify the nature and the extent of the potential impact of the proposed development to the population of the SCC located within the study area;

2.2.5 determine the importance of the conservation of the population of the SCC identified within the study area, based on information available in national and international databases including the IUCN Red List of Threatened Species, South African Red List of Species, and/or other relevant databases;

2.2.6 determine the potential impact of the proposed development on the habitat of the SCC located within the study area;

2.2.7 include a review of relevant literature on the population size of the SCC, the conservation interventions as well as any national or provincial species management plans for the SCC. This review must provide information on the need to conserve the SCC and indicate whether the development is compliant with the applicable species management plans and if not, a motivation for the deviation;

2.2.8 identify any dynamic ecological processes occurring within the broader landscape, that might be disrupted by the development and result in negative impact on the identified SCC, for example, fires in fire-prone systems;

2.2.9 identify any potential impact on ecological connectivity in relation to the broader landscape, resulting in impacts on the identified SCC and its long term viability;

2.2.10 determine buffer distances as per the Species Environmental Assessment Guidelines used for the population of each SCC; and

2.2.11 discuss the presence or likelihood of additional SCC including threatened species not identified by the screening tool, Data Deficient or Near Threatened Species, as well as any undescribed species, or roosting and breeding or foraging areas used by migratory species where these species show significant congregations, occurring in the vicinity; and

2.2.12 identify any alternative development footprints within the preferred development site which would be of "low" or "medium" sensitivity as identified by the screening tool and verified through the site sensitivity verification.

2.3 The findings of the assessment must be written up in a **Terrestrial Animal Species Specialist Assessment Report**.

Terrestrial Animal Species Specialist Assessment Report

3.1 This report must include as a minimum the following information:

3.1.1 contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the assessment including a curriculum vitae;

3.1.2 a signed statement of independence by the specialist;

3.1.3 a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;

3.1.4 a description of the methodology used to undertake the site sensitivity verification and impact assessment and site inspection, including equipment and modelling used where relevant;

3.1.5 a description of the mean density of observations/number of samples sites per unit area of site inspection observations;

3.1.6 a description of the assumptions made and any uncertainties or gaps in knowledge or data;

3.1.7 details of all SCC found or suspected to occur on site, ensuring sensitive species are appropriately reported;

3.1.8 the online database name, hyperlink and record accession numbers for disseminated evidence of SCC found within the study area;

3.1.9 the location of areas not suitable for development and to be avoided during construction where relevant;

3.1.10 a discussion on the cumulative impacts;

3.1.11 impact management actions and impact management outcomes proposed by the specialist for inclusion in the Environmental Management Programme (EMPr);

3.1.12 a reasoned opinion, based on the findings of the specialist assessment, regarding the acceptability or not, of the development related to the specific theme considered, and if the development should receive approval or not, related to the specific theme being considered, and any conditions to which the opinion is subjected if relevant; and

3.1.13 a motivation must be provided if there were any development footprints identified as per paragraph 2.2.12 above that were identified as having "low" or "medium" terrestrial animal species sensitivity and were not considered appropriate.

3.2 A signed copy of the assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

INTRODUCTION

Site location

The site is Portion 43/191 and 104 of the Farm Ganse Vallei 444 near Plettenberg Bay to the north-east of Plettenberg Bay. Refer to Figure 1 below for the general location. A recent aerial image of the site is provided in Figure 2.

The total area of the site is approximately 30 ha. A full habitat assessment undertaken on site shows that natural habitat includes fynbos, thicket and estuarine wetland vegetation.

The scope of this report is the entire property, although only part will be developed.

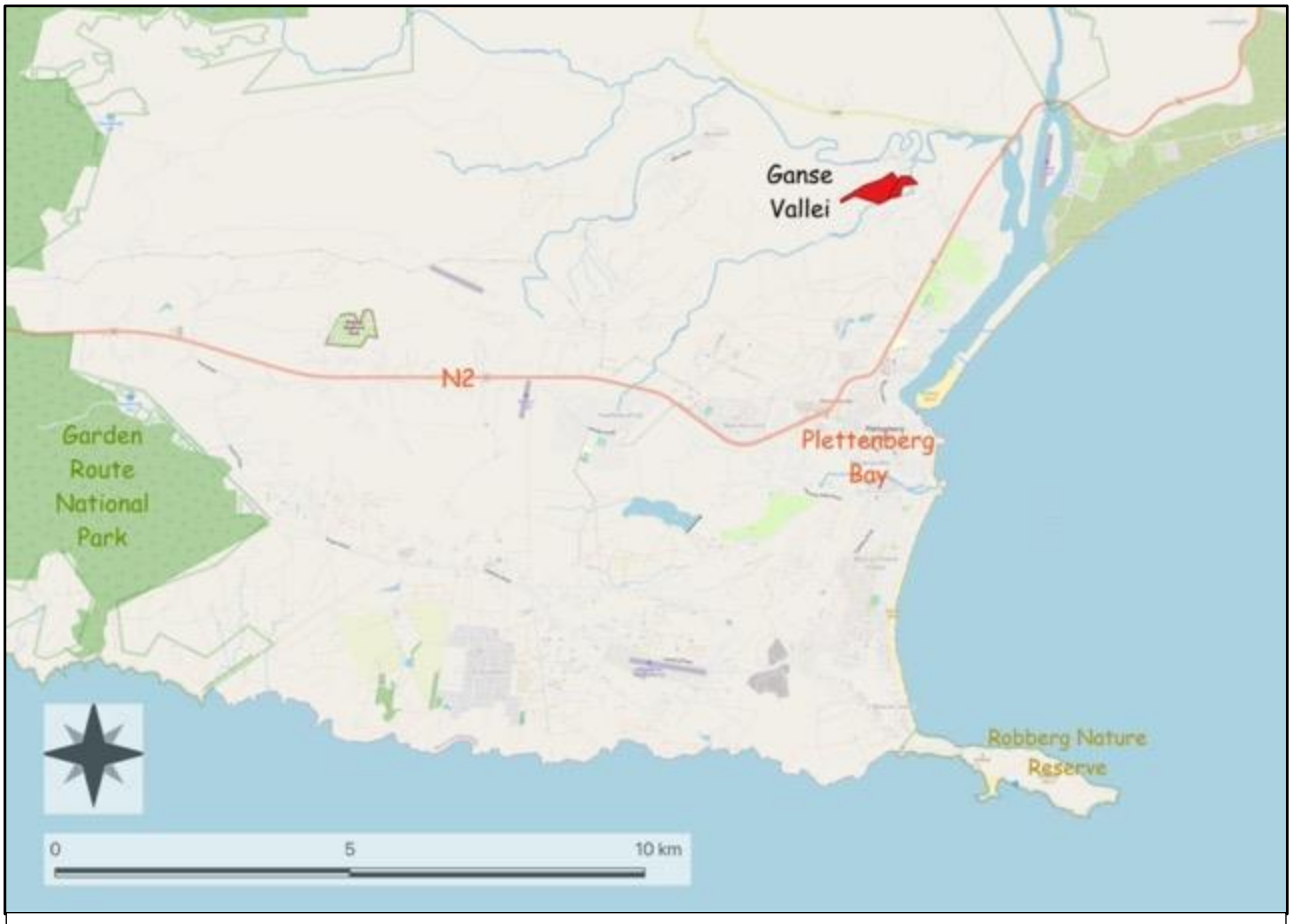

Figure 1: Location of the site north of Plettenberg Bay.

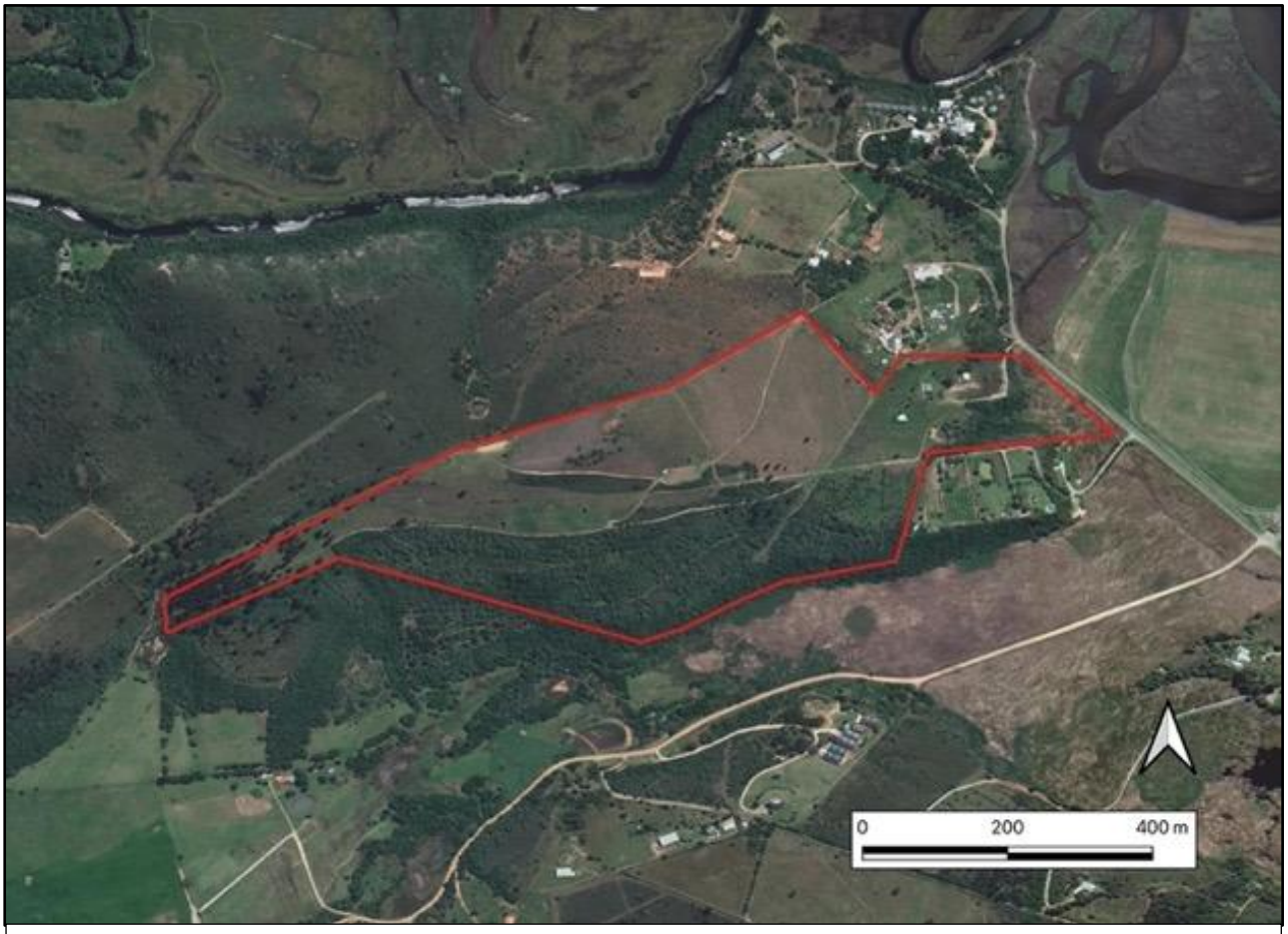

Figure 2: Aerial image of the site and surrounding areas.

Identified Theme Sensitivity

A sensitivity screening report from the DFFE Online Screening Tool was requested in the application category: Transformation of land | Indigenous vegetation. The DFFE Screening Tool report for the area indicates the following sensitivities:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Animal Species Theme		X		

Animal Species theme

Sensitivity features are indicates as follows:

Sensitivity	**Feature(s)**
High	Aves-Circus maurus
High	Aves-Campethera notata
High	Aves-Neotis denhami
High	Aves-Bradypterus sylvaticus
High	Aves-Circus ranivorus
Medium	Invertebrate-Aneuryphymus montanus
Medium	Invertebrate-Sarophorus punctatus
Medium	Mammalia-Chlorotalpa duthieae

Medium	Reptilia-Tetradactylus fitzsimonsi
Medium	Sensitive species 5
Medium	Amphibia-Afrixalus knysnae

The spatial extent of the sensitive features, as extracted from the DFFE Screening Tool report output, is shown in Figure 3.

In accordance with GN 320 and GN 1150 (20 March 2020) of the NEMA EIA Regulations of 2014 (as amended), prior to commencing with a specialist assessment, a site sensitivity verification must be undertaken to confirm the current land use and environmental sensitivity of the proposed project area as identified by the National Web-Based Environmental Screening Tool (i.e., Screening Tool).

The Site Sensitivity Verification concluded that parts of the site have **HIGH** sensitivity for the Animal Species theme on the basis of it being suspected habitat for animal SCC. **None of the animal species flagged in the Online Screening Tool were found on site**, but it was assessed **that habitat was suitable for some of these species** and, therefore, that **SCC are confirmed to likely occur** on site.

Figure 3: Screening Tool map of Animal Species Theme sensitivity.

ASSESSMENT METHODOLOGY

The detailed methodology followed as well as the sources of data and information used as part of this assessment is described below.

Project Area of Influence (PAOI)

The proposal is to develop vineyards on site, along with associated infrastructure. Anticipated impacts will mostly occur during the construction phase, with few discernible effects anticipated during operation. These impacts are not expected to extend beyond the boundaries of the study area. The PAOI is therefore treated here as the development footprint within which **direct impacts will occur (red line** shown in Figure 4).

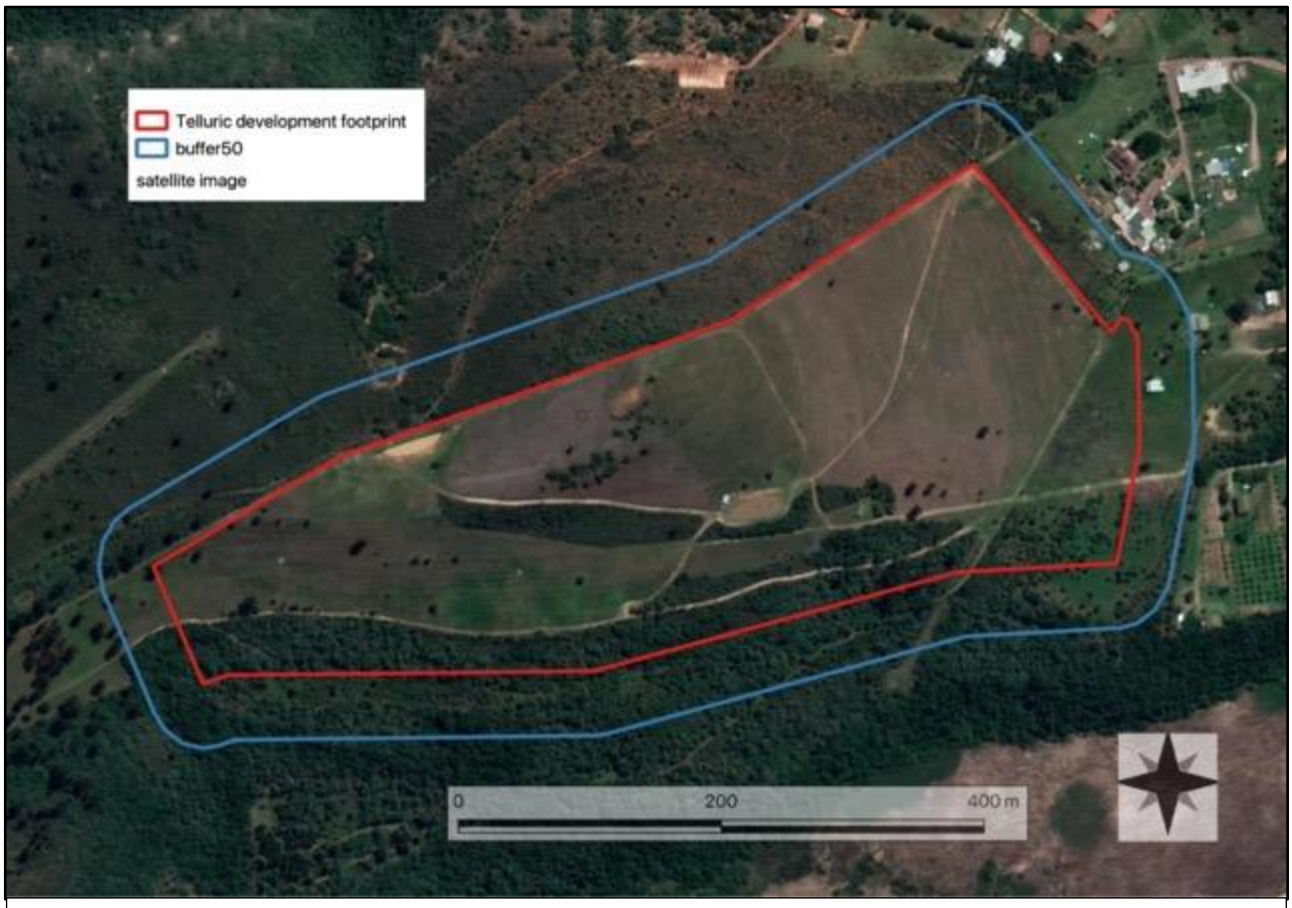

Figure 4: Proposed Project Area of Influence (PAOI).

Survey timing

The study commenced as a **desktop-study** followed by **site-specific field study** on 29 April 2021 and 27 October 2021. A brief follow-up was undertaken on 1 March 2022. The site is within the Garden Route Shale Fynbos Biome with an all-year rainfall season with a slight dip in early winter (Figure 5). A more accurate indication of rainfall seasonality, which drives most ecological processes, is shown in

Figure 6, which shows that Plettenberg Bay has peak rainfall from August to November, with another smaller peak in March to April. The overall condition of the habitat was therefore possible to be determined with a high degree of confidence.

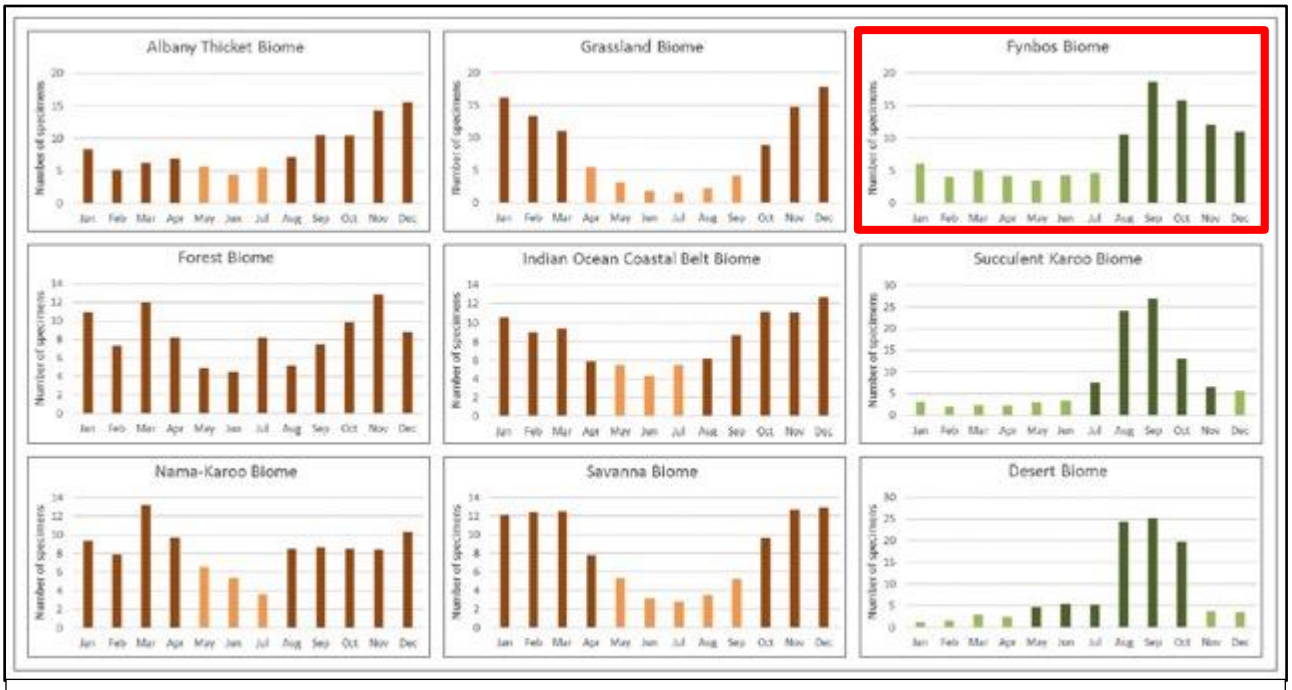

Figure 5: Recommended survey periods for different biomes (Species Environmental Assessment Guidelines). The site is within the Fynbos Biome.

Figure 6: Climate diagrams showing monthly rainfall for Mossel Bay (left), Knysna (centre) and Plettenberg Bay (right).

Field survey approach

During the field survey of habitats on site, the entire site was assessed on foot. A meander approach was adopted with no time restrictions - the objective was to comprehensively examine all natural areas. A hand-held Garmin GPSMap 64s was used to record a track within which observations were made. Digital photographs were taken of features and habitats on site, as well as of all animal species that were seen. All animal species recorded were uploaded to the iNaturalist website and are accessible by viewing the observations located at this site.

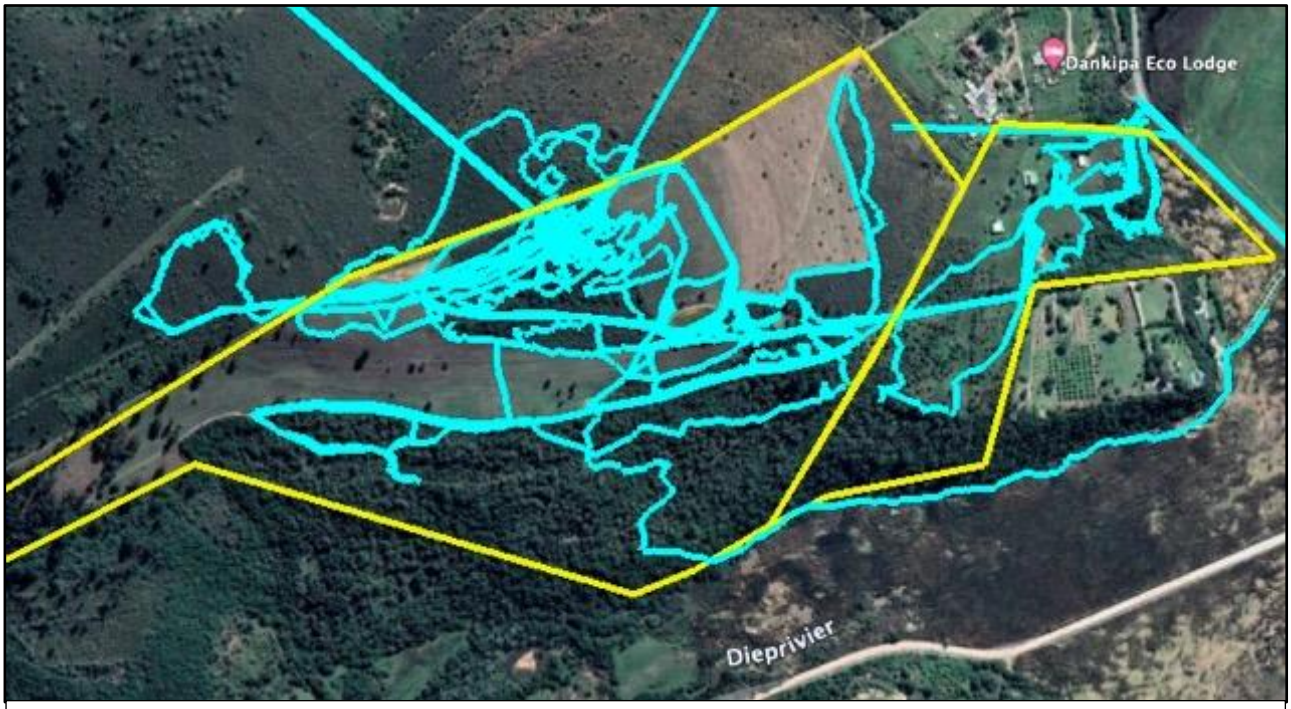

Figure 7: GPS track log of areas walked in the course of undertaking this assessment.

Sources of information

Animals

- Lists of animal species that have a geographical range that includes the study area were obtained from literature sources (Bates et al., 2014 for reptiles, du Preez & Carruthers 2009 for frogs, Mills & Hes 1997 and Friedmann and Daly, 2004 for mammals). This was supplemented with information from the Animal Demography Unit website (adu.uct.ac.za) and literature searches for specific animals, where necessary.

Limitations, Assumptions & Uncertainties

The following assumptions, limitations, uncertainties are listed regarding the assessment of the Hendrina site:

- Inventory surveys of animal species occurring on a site are difficult to achieve within the time-frames associated with an EIA. In order to compile a comprehensive site-specific list of the biota on site, studies would be required that would include different seasons, be undertaken over a number of years and include extensive sampling. It is more important to know of fauna of value, as well as ecological processes. Therefore, the assessment attempts to identify threatened and other significant species, important habitats, and ecological processes.
- Compiling the list of species that could potentially occur on site is limited by the density of collection records for the area. The list of animal species that could potentially occur on site was therefore taken from a wider area and from literature sources that may include species that do not occur on site and may miss species that do occur on site.

- The current study is based on an extensive site visit as well as a desktop study of the available information. The time spent on site was adequate for understanding general patterns across affected areas. The seasons in which the fieldwork was conducted was ideal for assessing habitat condition and suitability for animals.

Impact assessment methodology

The Impact Assessment Methodology assists in evaluating the overall effect of a proposed activity on the environment. Impact assessment must take account of the nature, scale and duration of effects on the environment and whether such effects are positive (beneficial) or negative (detrimental). The rating system is applied to the potential impact on the receptor. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

Table 2: Rating of impact assessment criteria

ENVIRONMENTAL PARAMETER		
A brief description of the environmental aspect likely to be affected by the proposed activity (e.g. Surface Water).		
ISSUE / IMPACT / ENVIRONMENTAL EFFECT / NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity (e.g. oil spill in surface water).		
EXTENT (E)		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site
2	Local/district	Will affect the local area or district
3	Province/region	Will affect the entire province or region
4	International and National	Will affect the entire country
PROBABILITY (P)		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
REVERSIBILITY (R)		
This describes the degree to which an impact on an environmental parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES (L)		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		

1	No loss of resource.	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
DURATION (D)		
This describes the duration of the impacts on the environmental parameter. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
INTENSITY / MAGNITUDE (I / M)		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible, rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE (S)		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula: **Significance = (Extent + probability + reversibility + irreplaceability + duration) x magnitude/intensity.**		

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
5 to 23	Negative Low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
5 to 23	Positive Low impact	The anticipated impact will have minor positive effects.
24 to 42	Negative Medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
24 to 42	Positive Medium impact	The anticipated impact will have moderate positive effects.
43 to 61	Negative High impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
43 to 61	Positive High impact	The anticipated impact will have significant positive effects.
62 to 80	Negative Very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
62 to 80	Positive Very high impact	The anticipated impact will have highly significant positive effects.

OUTCOME OF THE ASSESSMENT

Animal species that are flagged for the site

The following species have been flagged for the site in the Online Screening Report:

Circus maurus (Black harrier)

Endangered
This is a rare endemic raptor with its main distribution centred on the fynbos and karoo inland of that. Black Harriers breed in the montane fynbos, renosterveld and strandveld habitats of the Western Cape and many individuals disperse into the karoo and grassland habitats during the autumn and winter months. This species prefers coastal and mountain fynbos, highland grasslands, Karoo sub-desert scrub and open plains with low shrubs and croplands. Harriers breed close to coastal and upland marshes, damp sites, near vleis or streams with tall shrubs or reeds. South-facing slopes are preferred in mountain areas where temperatures are cooler and vegetation is taller.

There **are estuarine wetlands on site** and in **adjacent areas** that could **potentially be suitable**, but it is **unknown if they occur there or not**. In the event that they did occur in the area, the proposed project would have **no effect on them**. **No nests of any birds** were found within the footprint area and the conversion of clear-cut fynbos to vineyards would have an **insignificant effect on foraging** birds.

Campethera notata (Knysna woodpecker)

Near Threatened (C2a(ii); D1)
Found in woodlands and thickets along the southern coastal region from Cape Agulhas to southern KZN. It is found in a variety of dense arboral habitats, including dry thornveld, wooded valleys and gorges, *Euphorbia* thickets, riparian woodland, coastal bush and milkwood (*Sideroxylon inerme*) thickets, scrub forest, and interior climax and Afromontane forests, as well as tall protea thickets, and stands of alien trees (Taylor et al. 2015).

The Garden Route is a core area of occurrence and there **are suitable habitats on site** (milkwood thicket). It has been previously recorded nearby and there is a **high probability that** they could occur on site. However, the **habitat in which they would occur will not be affected by the proposed project**.

Neotis denhami (Denham's Bustard)

Vulnerable
Has a wide but fragmented Afrotropical range. It occurs widely but sparsely over much of the mesic eastern half of South Africa. In the Western Cape, it can be locally numerous in mosaics of cultivated pastures, agricultural croplands and natural vegetation with seasonal differences in the use of each habitat (Taylor et al. 2015).

It has been recorded several times in the general area around Plettenberg Bay, but mostly in open landscapes with agricultural fields, not in wooded areas. It is **possible but unlikely that it occurs** on site. If it did occur on site, the development of vineyards would **not impact on the species in any significant way.**

Bradypterus sylvaticus (Knysna warbler)

Vulnerable
Has a restricted and fragmented distribution in four areas of Eastern and Western Cape. One sub-population occurs in the Garden Route between Tsitsikamma and Stilbaai. It occurs along the edges of Afrotemperate forests and in thick, tangled vegetation along the banks of watercourses or drainage lines in forest patches in the Fynbos Biome (Taylor et al. 2015). Population decline is

attributed to clearance of habitat for developments, agriculture and silviculture, leading to a decrease in the amount of available habitat, as well as the quality (Taylor et al. 2015).

Suitable habitat occurs on site, although the **margins of forested areas on site are heavily degraded** and **invaded by alien invasive species**. The **core thicket areas** on the downslope parts of the site are the **most suited habitats**. These areas will **not be impacted** by the proposed project. In the event that they did occur in the area, the **proposed project would have no effect on them**.

Circus ranivorus (African marsh harrier)

Endangered
Widespread but sparsely distributed throughout central, eastern and southern Africa, only absent from areas of lower rainfall (<300 mm p.a.). It is dependent on permanent wetlands for breeding, feeding and roosting. The main threat to this species is loss and degradation of wetlands.

There are large estuarine wetlands on site and in nearby areas that are suitable, although the species has been recorded mostly in the lakes area of the Garden Route. The proposed **vineyards is located well away from these habitats.** In the event that they did occur in the area, the **proposed project would have no effect on them.**

Aneuryphymus montanus (Yellow-winged Agile Grasshopper)

Vulnerable B2ab(iii,v)
Only known from six localities in the Cape region (Brown 1960). The species is associated almost strictly with fynbos vegetation, although extending geographically towards East London, where it has been collected "amongst partly burnt stands of evergreen Sclerophyll in rocky foothills" (Brown 1960). It prefers south-facing cool slopes (Kinvig 2005). It is a medium-sized, robust, active geophilous insect which readily flies off when disturbed and is easily distinguished in flight by the pale lemon base of the hind wing (Brown 1960).

Published descriptions suggest that it is not often seen but, when observed, occurs in obvious numbers. **No grasshoppers were seen on site** that matched the description of this species. If it occurred on site it would be found within the fynbos areas. The areas proposed for the vineyards have been **brush-cut and are therefore modified**. The relatively small area of fynbos habitat potentially lost to the vineyards is **negligible relative to the amount of habitat nearby** and across the **entire range of the species.**

Sarophorus punctatus (Tunnelling dung beetle)

Endangered
This is a dung beetle that is one of five species in the Genus Sarophorus. There is little known about its biology, but available information indicates a feeding preference for old dung and carrion remains which imply detritus as preferred food rather than dung (Frolov & Scholtz 2003). The type for the species was collected in Keeurboomstrand in 1976 in natural thicket vegetation (Frolov & Scholtz 2003). More recent observations have been made in Wilderness Heights near George in June 2021 (Mish 2021), inland of Mossel Bay (Koen 2022) and near Herbetsdale (Koen 2022). It is not shown to occur anywhere else in the country (Frolov & Scholtz 2003).

The site has milkwood thickets that are very similar to those that occur at nearby Keeurboomstrand (type locality for the species). All **milkwood thicket and similar woodland on site is therefore suitable** habitat for this species and, based on known information, there is **a high probability of this species occurring** there. However, the proposed **vineyards do not affect this habitat** and are located well away from thicket areas on site. In the event that the species occurs on site, the **proposed project would have no effect on them.**

Chlorotalpa duthieae (Duthie's Golden Mole)

Vulnerable
Found in a narrow coastal band from Wilderness to Storms River mouth, as well as near Port Elizabeth. There is a disjunction in the distribution of this species showing that it does not occur in the Plettenberg

Bay area, probably due to the absence of proper forests in this area. Locally common in coastal and scarp southern Cape Afrotemperate forest habitats, and adjacent pasturelands, cultivated lands and gardens. Restricted to alluvial sands and sandy loams in deeper forest habitats. They construct shallow subsurface foraging tunnels that radiate outwards from under the roots of trees.

There is **milkwood thicket habitat**, parts of which are **similar to forest**, but there is a **lack of sandy or loamy soils** in which the species is likely to occur. Most of the soils on site within the thicket areas is **relatively stony**. There are also **no records of this species in the Plettenberg Bay** area. It is therefore **unlikely that this species occurs on site.**

Tetradactylus fitzsimonsi (Fitzsimon's Long-tailed Seps)

Vulnerable
Previously known from only three locations, Port Elizabeth, near Humansdorp, and from George. There are recent records on iNaturalist from north-east of East London, suggesting that it may be more widely distributed than previously known. There is no known habitat information but it is assumed to inhabit fynbos. The closely related *T. africanus* (of which it was previously a subspecies) is found in grassland and on the edges of forests, often making use of termite mounds.

Suitable habitat possibly occurs on site. Within the footprint area for the project are **no termite mounds, rock piles, or other similar habitats** that would provide shelter. It is therefore **unlikely to occur** within these areas, although it could **potentially occur within nearby untransformed fynbos areas on neighbouring sites to the North**.

Sensitive species 5

Small antelope
Vulnerable
Found in a variety of forested areas, including rain forests, riverine forests, dense thickets, and montane forests, as well as secondary forest and plantations. It is diurnal, but secretive and cautious. Home ranges are about 0.4 - 0.8 ha. Declining due to loss of habitat, as well as hunting / poaching. In Tsitsikamma National Park, animal numbers are lower than in other parts of its range, attributed to low frequency of occurrence of tree species palatable to the animal, which results in low food availability (Hanekom & Wilson 1991).

There are several records of the species in areas near to the current site, all within **forested areas**. **Potentially suitable habitat** in the form of **milkwood thicket** occurs on site and it **may occur there**. However, the proposed **vineyards do not affect this habitat** and are located well away from thicket areas on site. In the event that the species occurs on site, the proposed project **would have no effect on them.**

Tsitana dicksoni (Dickson's Sylph)

Rare (Henning et al. 2009)
It is only known from the Franschhoek Pass and Klein Drakenstein Mountains in the Western Cape, and Garcia's and Robinson Pass. The habitat consists of grassy spots in montane fynbos vegetation. There is **no matching habitat** on site and is therefore unlikely to occur there.

Sarothrura affinis (Striped Flufftail)

Vulnerabler (according to Birdlife International (2022), it is listed as Least Concern)
Has an extensive but fragmented Afrotropical range. In South Africa, it occurs from the Cape Peninsula eastwards along the mountain ranges, at scattered localities in the Eastern Cape to southern KZN and the Drakensberg (Taylor et al. 2015). It mainly occupies habitats with dense cover adjacent to open areas for foraging; in the Western Cape it favours moist mountain fynbos with fountain-bush (Psoralea) and mountain daisies (Osmitopsis) while elsewhere it dry upland grassland with woody vegetation such as Protea, Oldwood (Leucosidea sericea) and sagewoods (Buddleja) and sour grassland dominated by Red grass (Themeda triandra) (Hockey et al. 2005). It may also move into croplands to forage, especially fields of Millet (Setaria anceps) and Lucerne (Medicago sativa).

Habitat on site does not match the known preferences for this species. It is therefore unlikely to occur on site.

Amphibia-Afrixalus knysnae (Knysna Leaf-folding Frog / Spiny Reed Frog)

Endangered

Endemic to the Western Cape Province, occurring from Groenvlei (3422BB) in the west to Covie (3323DC) in the east, and is confined to the coastal region by the Outeniqua and Tsitsikamma mountains (Pickersgill 1996, 2000). Found in the coastal mosaic of Mountain Fynbos and Afromontane Forest. As examples of habitats in which the species is found, FitzSimons (1946) recorded specimens in glades, clearings and roadside pools at Diepwalle (3323CA), while Pickersgill (2000) collected juveniles from "arum blooms on boggy ground near an irrigation dam at Barrington" (3322DD). The species has previously been recorded at Saasveld close to the Garden Route Dam (De Lange 2019, page 26 for locality information). The frogs breed in small dams and shallow semi-permanent water with much emergent vegetation and even in well vegetated ornamental garden ponds; it is suspected that this species requires high water quality for breeding. The species is threatened by habitat loss and degradation as a result of coastal development, forestry and agriculture, often due to draining, impoundment and eutrophication of wetlands near residential areas and agricultural lands, and encroachment of invasive alien vegetation.

It has been recorded several times in the vicinity of Plettenberg Bay, but **no suitable habitat occurs on site.**

Natural habitats on site

A detailed landcover and habitat mapping exercise was undertaken for the site. This is described in more detail in the Terrestrial Biodiversity Assessment for the site. This identified various natural and transformed habitats that occur on site, shown in Figure 8. Of importance is the presence and distribution of **fynbos**, **thicket** and **estuarine wetlands** on site, which constitute the remaining natural habitat. Other habitat classes are **degraded, secondary or transformed** and have lower biodiversity value. The habitat assessment is important for understanding the suitability of habitat on site for various plant and animal species of concern, which usually have very specific habitat requirements.

Fynbos

All the upper-lying areas on site, as well as most of the north-facing slopes, was originally covered by fynbos. This has been impacted to various degrees over time. Most of the western half of this general area is transformed from previous agriculture, mostly due to clearing of vegetation to maintain pasture for domestic animals. This area is shown in the habitat map (Figure 10) as "Transformed".

Of the remaining habitat, the eastern half has been heavily overgrazed and degraded and most of the remainder has been brush-cut to ground level to promote grazing for domestic animals. Only small strips remain intact.

Milkwood Thicket

The entire southern and eastern edge of the ridge upon which the site is located has a band of dense mesic thicket dominated by milkwood trees (*Sideroxylon inerme*). These thickets appear to

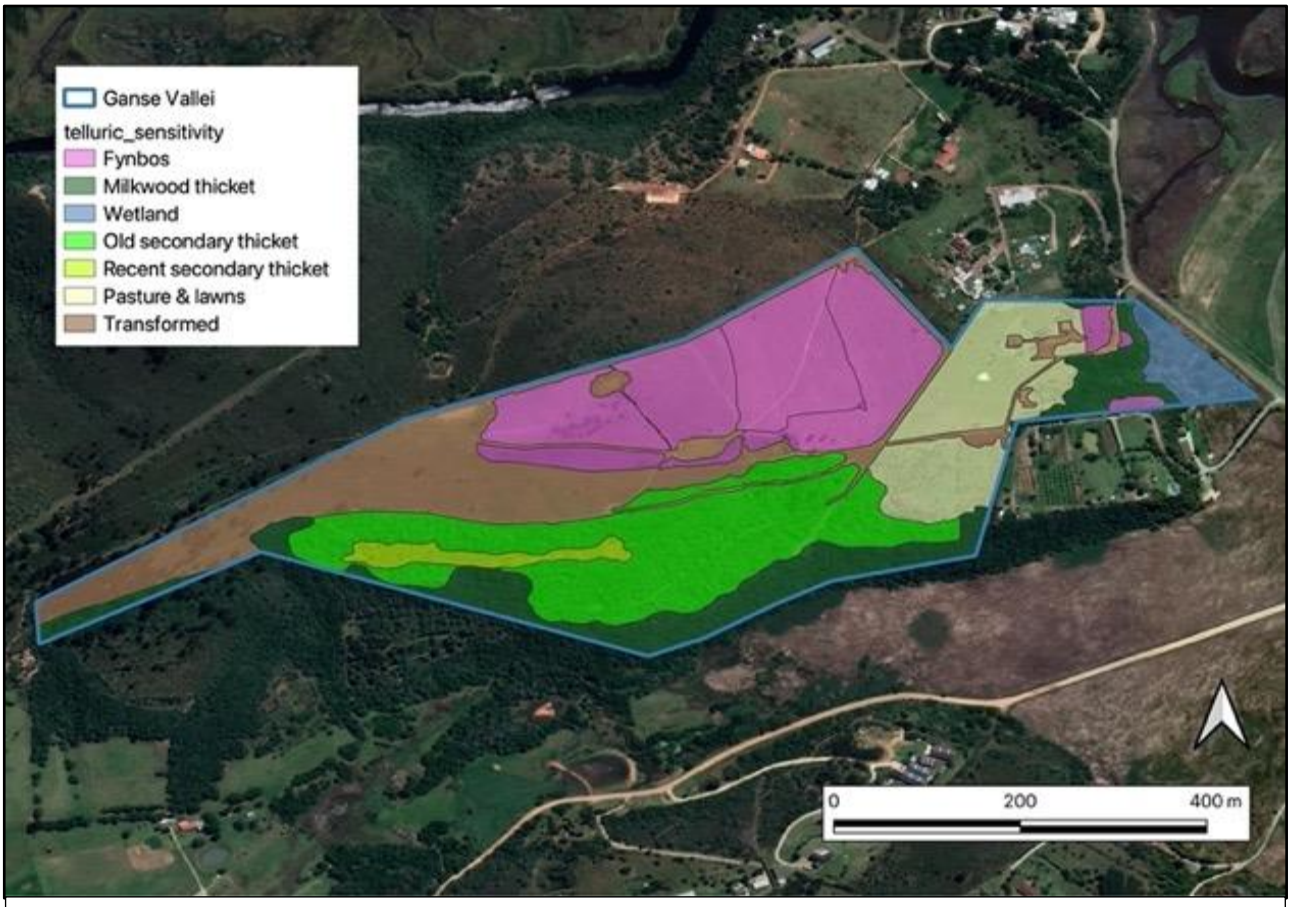

Figure 8: Map of habitats on site.

have been largely untouched by historical transformation from farming, urbanisation and utilities. They now form a continuous band that marks the boundary between the lowland estuarine wetland systems and the upland terrestrial habitats.

Inland of the milkwood thickets, on the southern flanks of the ridge, are areas that were previously cleared for agricultural purposes, but which have developed a secondary thicket. They vary structurally between being relatively open with secondary grassland to being completely closed canopy with a variety of indigenous woody species. In places, especially along access roads, are thin bands of remnant original thicket. The landscape in these areas is moderately steep and, although the vegetation is secondary, it provides important habitat, as well as a buffer for the intact thicket lower down on the slopes.

Estuarine wetlands

The site is on a low ridge that protrudes towards the east, where it is surrounded by estuarine wetland systems. The Bietou River forms an extensive area of wetlands to the north of the site, which runs eastwards into the Keeurbooms River. On the eastern end of the site is an estuarine wetland system that originates along the southern boundary of the site and runs around the eastern edge into the Bietou River. This entire system is dominated by reeds and sedges. The margins of these wetlands are marked by the abrupt slope increase of the low ridge. These lower slopes are covered by milkwood-dominated thickets that mark the edge of the wetland system.

SITE ECOLOGICAL IMPORTANCE

The Species Environmental Assessment Guidelines require that a Site Ecological Importance is calculated for each habitat on site, and provides methodology for making this calculation.

As per the Species Environmental Assessment Guidelines, Site Ecological Importance (SEI) is calculated as a function of the Biodiversity Importance (BI) of the receptor and its resilience to impacts (SEI = BI + RR). The Biodiversity Importance (BI) in turn is a function of Conservation Importance (CI) and Functional Integrity (FI), i.e. BI = CI + FI.
Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality

Table 3: Site ecological importance for habitats found on site.

Habitat	Conservation importance	Functional integrity	Receptor resilience	Site Ecological Importance (BI)
Fynbos	Medium Any area of natural habitat of threatened ecosystem type with status of VU.	Medium (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type or > 20 ha for VU ecosystem types	Low Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality	High (BI = Medium)
Milkwood Thicket	Medium Any area of natural habitat of threatened ecosystem type with status of VU.	High (> 5 ha but < 20 ha) semi-intact area for any conservation status of ecosystem type or > 20 ha for VU ecosystem types. Good habitat connectivity. Only minor current impacts.	Very low Habitat that is unable to recover from major impacts	High (BI = Medium)
Estuarine Wetland	Medium Any area of natural habitat of threatened ecosystem type with status of VU.	Very High Very large (> 100 ha) intact area for any conservation status of ecosystem type or > 5 ha for CR ecosystem types.	Low Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the	Very High (BI = High)

			receptor functionality	
Old Secondary Thicket	Low No threat status.	Low Several minor and major current negative ecological impacts.	Medium Will recover slowly (more than 10 years) to restore >75% to restore the original species composition and functionality	Low (BI = Low)
Recent Secondary Thicket	Low No threat status	Low Several minor and major current negative ecological impacts.	High Habitat that can recover relatively quickly (~ 5–10 years) to restore > 75% of the original species composition and functionality of the receptor functionality	Very low (BI = Low)
Pasture & Lawns	Very low No natural habitat remaining.	Very low Several major current negative ecological impacts.	Very high Habitat that can recover rapidly	Very low (BI = Very low)
Transformed	Very low No natural habitat remaining.	Very low Several major current negative ecological impacts.	Very high Habitat that can recover rapidly	Very low (BI = Very low)

The calculation of Site Ecological Importance matches the sensitivity classification given in the previous section of this report, but includes an explicit recognition of the ability of each ecosystem to tolerate and recover from disturbance. Guidelines for development activities within different importance levels are given in the Table below. This shows that impacts within **Estuarine Wetlands** should be **avoided**, and impacts within **Milkwood Thicket** and **Fynbos** should be **minimized and/or avoided**, if possible.

Table 2: Guidelines for interpreting SEI in the context of the proposed development activities.

Site ecological importance	Interpretation in relation to proposed development activities
Very high	Avoidance mitigation – no destructive development activities should be considered. Offset mitigation not acceptable/ not possible (i.e. last remaining populations of species, last remaining good condition patches of ecosystems/ unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to limit the amount of habitat impacted; limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities
Very low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

IMPACT ASSESSMENT

Proposed development

The proposal is to develop vineyards on site, which have been planned according to the suitability of soils on site. A copy of the site development plan is shown in Figure 10. A comparison with the habitat map shows that the vineyards will be located entirely within areas mapped as "Fynbos" – no other natural habitat types will be affected.

Figure 9: Preferred Site development plan.

There are a number animal species of concern that could possibly occur on site, or make use of habitats on site. These are, however, restricted to very specific habitats, as follows:

Milkwood Thickets: *Camphethera notata* (probable), *Bradypterus sylvaticus* (probable), *Sarophorus punctatus* (probable), Sensitive species 5 (possible).
Estuarine Wetlands: *Circus maurus* (possible), *Circus ranivorus* (possible).
Fynbos: *Neotis denhamii* (unlikely), *Aneuryphymus montanus* (unlikely), *Tetradactylus fitzsimonsi* (unlikely).

In terms of animal species of concern that may occur on site, the most important habitat is the milkwood thicket. The project will not affect these areas and is some distance away from them. In the unlikely event of spillover effects, an assessment is undertaken here to consider possible impacts on these areas. The most likely issues would be increased foot traffic within these areas from visitors to the farm, and degradation due to alien plants, fire, or other.

The only impact assessed here is therefore as follows:

1. POSSIBLE DEGRADATION OF THICKET HABITAT AS THE MOST PROBABLE HABITAT ON SITE FOR ANIMAL SCC.

Degradation of thicket habitat as potential habitat for animal species of conservation concern

Extent of impact
The impact will occur at the local scale.

Probability of occurrence
Based on the proposed development plan and the known location of the thicket habitat found on site, the impact will be UNLIKELY.

Reversibility of impact
Based on the fact that no thicket will be directly impacted by the project, only unlikely secondary impacts are considered here, which are all fully reversible if managed continuously.

Degree to which resources will be irreplaceably lost
No loss of resources is likely to take place.

Duration of impact
Any minor impacts can be managed and are scored as short-term.

Intensity or magnitude of impact
Any minor impacts will be of LOW magnitude.

Significance of impact
The calculation of the significance of an impact uses the following formula:

Significance = (Extent + probability + reversibility + irreplaceability + duration) x magnitude/intensity.

On this basis, the impact is calculated as [(Extent = 1) + (Probability = 1) + (Reversibility = 1) + (Irreplaceability = 1) + (Duration = 1)] x (Intensity = 1)

Score = 5 = LOW significance

Possible thicket enhancement measures
No mitigation is required, but measures that can be applied to enhance thicket status and value are as follows:

1. **Protect areas of milkwood thicket** and, through ecological management, attempt to **enhance the condition of secondary thicket** on site to extend the existing thicket.
2. Implement an **alien management** through the Environmental Management Plan, which highlights control priorities and areas and provides a programme for long-term control.
3. Undertake **regular monitoring** to detect alien invasions early so that they can be controlled.
4. Use **indigenous and site-appropriate plant species** in any rehabilitation and landscaping.
5. **No additional clearing of indigenous vegetation** should take place without a proper assessment of the environmental impacts, unless for maintenance purposes, in which case all reasonable steps should be taken to limit damage to natural areas.
6. **Limit access to thicket** to appropriate **low-impact activities**, for example, walking trails.

Assessment of No-Go option

Historical cultivation has taken place in parts of the site. Some of these previously cultivated areas have developed a secondary growth of thicket. Over the long-term, these areas are likely to densify and consolidate until they more closely resemble original thicket. It is possible that this would occur under the No-Go option, but also equally possible that cultivation would be re-established within these secondary thicket areas. In either case, there is a low rate of invasion by alien plants on site that could potentially become more severe in the absence of control measures. Although there is an obligation on land-owners to control alien invasive species, there is a greater insentive to do so under motivated management.

The best-case scenario for thicket is therefore equivalent to the expected scenario under the current development proposal, wheras the worst-case scenario under the No-Go option is potential loss and degradation of thicket.

DISCUSSION

This Animal Species Assessment was undertaken as a result of the Site Sensitivity Verification confirming the site as having HIGH sensitivity with respect to the Animal Species Theme. This is due to the site having habitat suitable for a number of animal species of conservation concern. None of these species have been recorded on site, but the habitat assessment indicates that habitats on site are confirmed likely habitats for some animal species flagged in the Online Screening Tool.

An assessment was undertaken that evaluated the likelihood of various animal species of concern occurring on site. It was found that Milkwood Thicket was probable habitat for *Camphethera notata* (Knysna Woodpecker), *Bradypterus sylvaticus* (Knysna Warbler), *Sarophorus punctatus* (Tunnelling Dung Beetle) and Sensitive species 5 (a small antelope), and Estuarine Wetlands are possible habitat for *Circus maurus* (Black Harrier) and *Circus ranivorus* (African Marsh Harrier). The Milkwood Thicket on site was therefore assessed as being the most sensitive habitat on site for animal species of conservation concern.

There development of **vineyards on site will not directly affect any thicket habitat**. There are therefore **no direct impacts on thicket habitat**. It is likely that **thicket will not be affected at all by activities** on site, except for possible degrading processes, such as invasion by alien plants, and that any animals within thicket areas will be unaffected, unless there is an increase in human access to thicket areas..

An impact assessment was undertaken to assess possible degradation of thicket habitat and was assessed as having Low significance. Some management measures are proposed that are likely to improve thicket condition and status, which would benefit any animal species of concern that occur there. The proposed project is therefore supported on the basis that no animal species of conservation concern are likely to be negatively affected by the proposed project.

RECOMMENDATIONS

- **Estuarine wetlands should be treated as sensitive**. Adjoining areas along the margins should be maintained to protect the wetlands from direct impacts. Alien invasive species management should be implemented within these areas, as well as within the estuarine wetlands, to protect them from this degrading process.

- Core thicket areas and thicket margins should be treated as **sensitive ecological areas**. A **buffer zone i.e. existing roads/tracks will suffice** along the margins should be maintained to protect the thickets from direct impacts. Alternatively **visible signage along the edges of the thicket** must be placed to inform visitors/workers/employees that the thicket areas are No-Go Areas with the exeption of existin trails/tracks through the thicket. Alien invasive species management should be implemented within these areas.

- An **ongoing alien invasive management** programme should take place on site. This will protect sensitive habitats from degradation and could potentially be the biggest contribution to maintaining and protecting biodiversity on site and in surrounding areas.

CONCLUSION

The following conclusions can be made regarding the outcomes of the Animal Species Assessment on site:

1. Of the various animal species of conservation concern that are flagged for the site, those that are most likely to occur on site would be found within **Milkwood Thicket habitats**. These thicket areas are therefore assessed as having **High sensitivity** for **animal species of concern**.
2. **No thicket areas will be affected** by the proposed project, therefore it is unlikely that the project will have any direct impact on animal species of conservation concern.
3. It is probable that **normal management activities for controlling alien invasive species, and maintaining ecological area**s on site outside the proposed footprint areas, will **enhance the quality and status of thicket on site**, and will therefore have a **net positive impact on animal species of conservation concern.**

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