

Terrestrial Biodiversity Assessment

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

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



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

For: Pierre du Preez

November 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 biodiversity**", 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	PhD Pr.Sci.Nat. 400221/05 (Ecological Science, Botanical Science)

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.
- 1 January 2009 – 30 June 2009, Lecturer, University of Pretoria, Botany Dept.
- 1 January 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.

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.



Dr David Hoare

November 2022
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 BIODIVERSITY

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 on the screening tool as being of “**very high sensitivity**” for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment.

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 “**low sensitivity**” for terrestrial biodiversity, must submit a Terrestrial Biodiversity Compliance Statement.

1.3. However, where the information gathered from the site sensitivity verification differs from the designation of “very high” terrestrial biodiversity sensitivity on the screening tool and it is found to be of a “low” sensitivity, then a Terrestrial Biodiversity Compliance Statement must be submitted.

1.4. Similarly, where the information gathered from the site sensitivity verification differs from that identified as having a “low” terrestrial biodiversity sensitivity on the screening tool, a Terrestrial Biodiversity Specialist Assessment must be conducted.

1.5. If any part of the proposed development footprint falls within an area of “very high” sensitivity, the assessment and reporting requirements prescribed for the “very high” sensitivity apply to the entire footprint, **excluding linear activities** for which impacts on terrestrial biodiversity are temporary and the land in the opinion of the terrestrial biodiversity specialist, based on the mitigation and remedial measures, can be returned to the current state within two years of the completion of the construction phase, in which case a compliance statement applies. Development footprint in the context of this protocol means the area on which the proposed development will take place and includes any area that will be disturbed.

Terrestrial Biodiversity Specialist Assessment

2.1. The assessment must be prepared by a specialist registered with the South African Council for Natural Scientific Professionals (SACNASP) with expertise in the field of terrestrial biodiversity.

2.2. The assessment must be undertaken on the preferred site and within the proposed development footprint.

2.3. The assessment must provide a baseline description of the site which includes, as a minimum, the following aspects:

2.3.1. a description of the ecological drivers or processes of the system and how the proposed development will impact these;

2.3.2. ecological functioning and ecological processes (e.g. fire, migration, pollination, etc.) that operate within the preferred site;

2.3.3. the ecological corridors that the proposed development would impede including migration and movement of flora and fauna;

2.3.4. the description of any significant terrestrial landscape features (including rare or important flora-faunal associations, presence of strategic water source areas (SWSAs) or freshwater ecosystem priority area (FEPA) sub catchments;

2.3.5. a description of terrestrial biodiversity and ecosystems on the preferred site, including:
(a) main vegetation types;
(b) threatened ecosystems, including listed ecosystems as well as locally important habitat types identified;
(c) ecological connectivity, habitat fragmentation, ecological processes and fine-scale habitats; and
(d) species, distribution, important habitats (e.g. feeding grounds, nesting sites, etc.) and movement patterns identified;

2.3.6. the assessment must identify any alternative development footprints within the preferred site which would be of a "low" sensitivity as identified by the screening tool and verified through the site sensitivity verification; and

2.3.7. the assessment must be based on the results of a site inspection undertaken on the preferred site and must identify:

2.3.7.1. terrestrial critical biodiversity areas (CBAs), including:
(a) the reasons why an area has been identified as a CBA;
(b) an indication of whether or not the proposed development is consistent with maintaining the CBA in a natural or near natural state or in achieving the goal of rehabilitation;
(c) the impact on species composition and structure of vegetation with an indication of the extent of clearing activities in proportion to the remaining extent of the ecosystem type(s);
(d) the impact on ecosystem threat status;
(e) the impact on explicit subtypes in the vegetation;
(f) the impact on overall species and ecosystem diversity of the site; and
(g) the impact on any changes to threat status of populations of species of conservation concern in the CBA;

2.3.7.2. terrestrial ecological support areas (ESAs), including:
(a) the impact on the ecological processes that operate within or across the site;
(b) the extent the proposed development will impact on the functionality of the ESA; and
(c) loss of ecological connectivity (on site, and in relation to the broader landscape) due to the degradation and severing of ecological corridors or introducing barriers that impede migration and movement of flora and fauna;

2.3.7.3. protected areas as defined by the National Environmental Management: Protected Areas Act, 2004 including-
(a) an opinion on whether the proposed development aligns with the objectives or purpose of the protected area and the zoning as per the protected area management plan;

2.3.7.4. priority areas for protected area expansion, including-

- (a) the way in which in which the proposed development will compromise or contribute to the expansion of the protected area network;
- 2.3.7.5. SWSA including:
 - (a) the impact(s) on the terrestrial habitat of a SWSA; and
 - (b) the impacts of the proposed development on the SWSA water quality and quantity (e.g. describing potential increased runoff leading to increased sediment load in water courses);
- 2.3.7.6. FEPA subcatchments, including-
 - (a) the impact of the proposed development on habitat condition and species in the FEPA sub catchment;
- 2.3.7.7 indigenous forests, including:
 - (a) impact on the ecological integrity of the forest; and
 - (b) percentage of natural or near natural indigenous forest area lost and a statement on the implications in relation to the remaining areas.

2.4. The findings of the assessment must be written up in a Terrestrial Biodiversity Specialist Assessment Report.

Terrestrial Biodiversity Specialist Assessment Report

3.1. The Terrestrial Biodiversity Specialist Assessment Report must contain, as a minimum, the following information:

- 3.1.1. contact details of the specialist, their SACNASP registration number, their field of expertise and 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 verification and impact assessment and site inspection, including equipment and modelling used, where relevant;
- 3.1.5. a description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations;
- 3.1.6. a location of the areas not suitable for development, which are to be avoided during construction and operation (where relevant);
- 3.1.7. additional environmental impacts expected from the proposed development;
- 3.1.8. any direct, indirect and cumulative impacts of the proposed development;
- 3.1.9. the degree to which impacts and risks can be mitigated;
- 3.1.10. the degree to which the impacts and risks can be reversed;
- 3.1.11. the degree to which the impacts and risks can cause loss of irreplaceable resources;
- 3.1.12. proposed impact management actions and impact management outcomes proposed by the specialist for inclusion in the Environmental Management Programme (EMPr);
- 3.1.13. a motivation must be provided if there were development footprints identified as per paragraph 2.3.6 above that were identified as having a "low" terrestrial biodiversity sensitivity and that were not considered appropriate;
- 3.1.14. a substantiated statement, based on the findings of the specialist assessment, regarding the acceptability, or not, of the proposed development, if it should receive approval or not; and
- 3.1.15. any conditions to which this statement is subjected.

3.2. The findings of the Terrestrial Biodiversity Specialist Assessment must be incorporated into the Basic Assessment Report or the Environmental Impact Assessment Report, including the mitigation and monitoring measures as identified, which must be incorporated into the EMPr where relevant.

3.3. 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 Valleï 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.

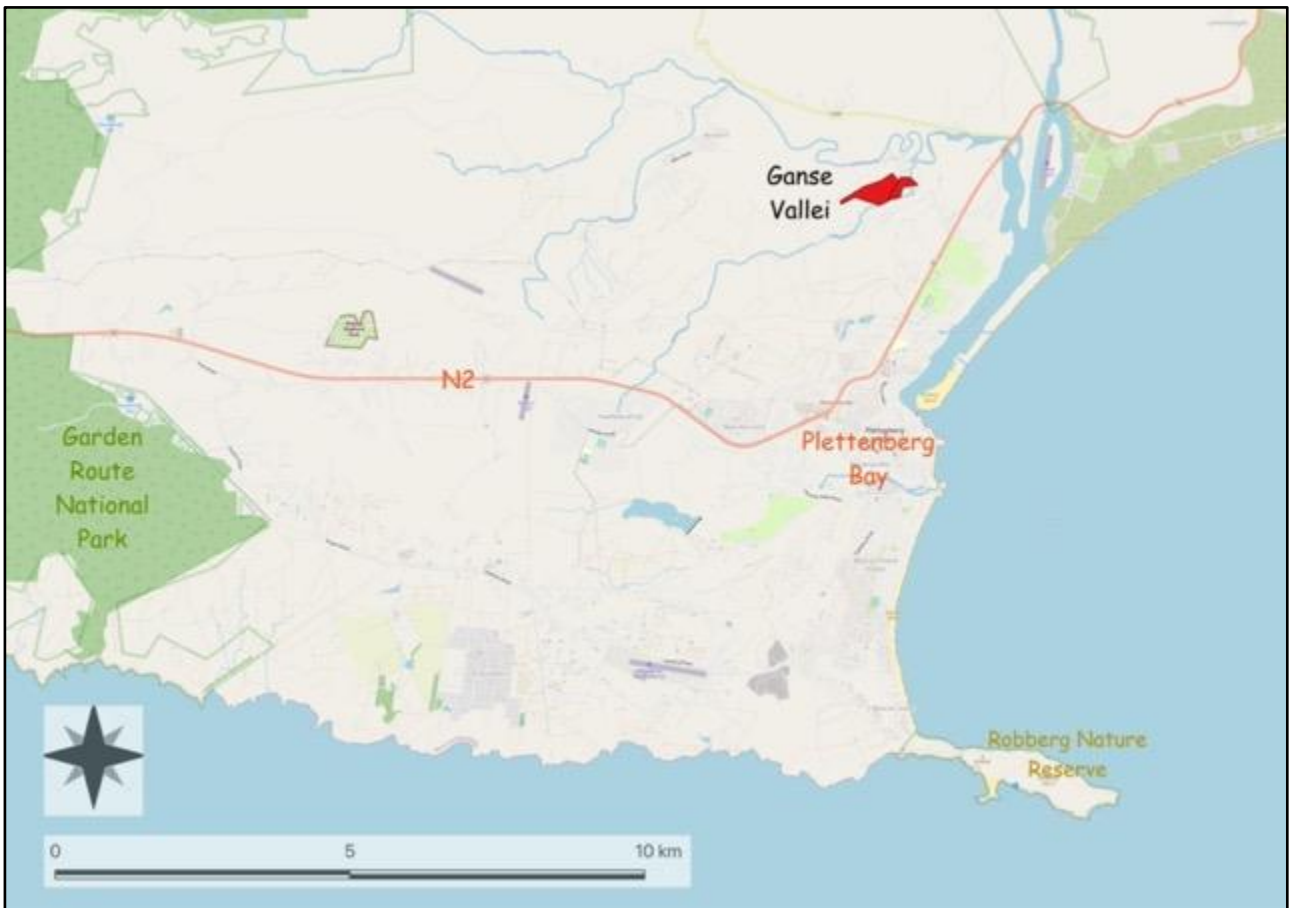


Figure 1: Location of the site north of Plettenberg Bay.

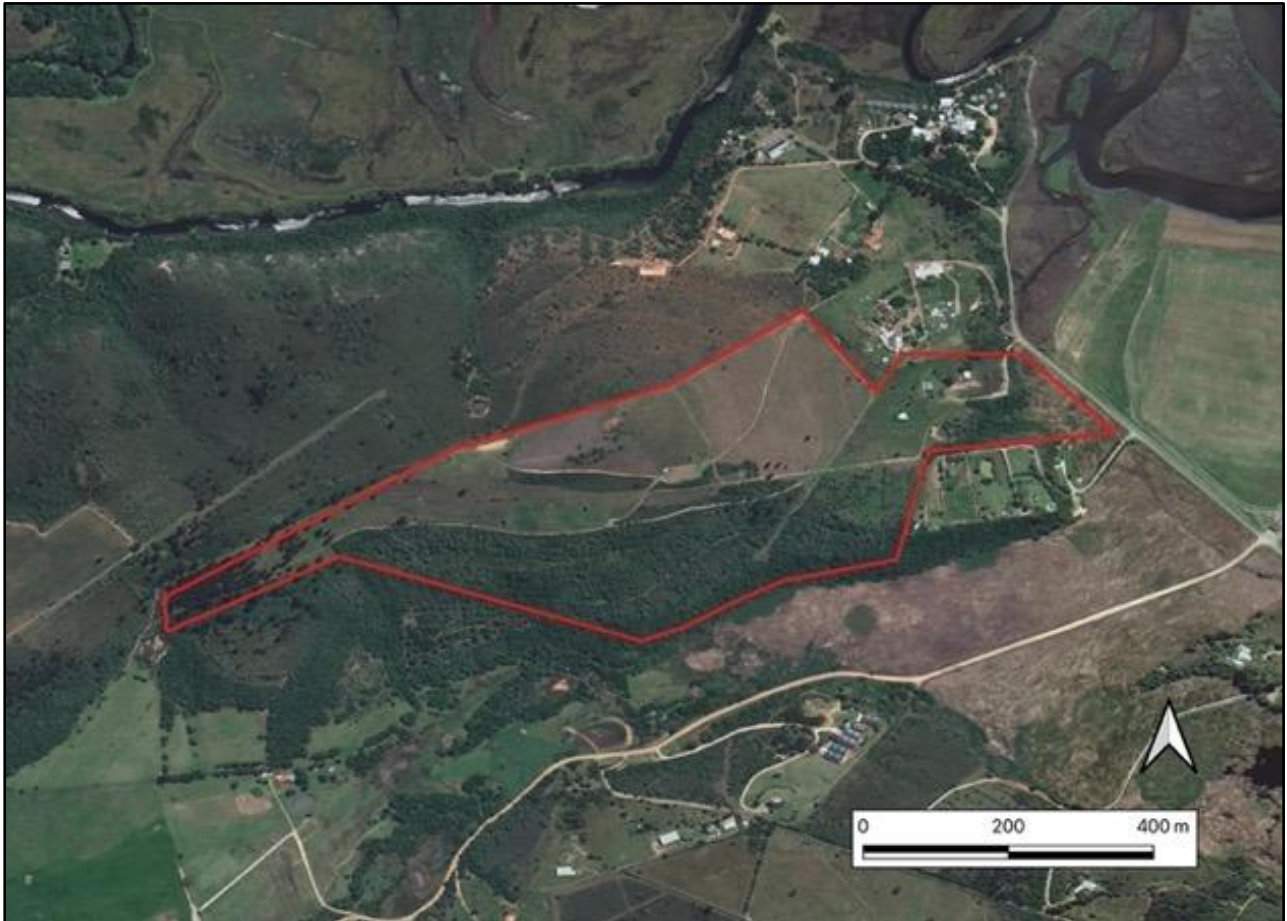


Figure 2: Aerial image of the site and surrounding areas.

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
Terrestrial Biodiversity Theme	X			

Terrestrial Biodiversity theme

Sensitivity features are indicated as follows:

Sensitivity	Feature(s)
Very High	Critical biodiversity area 1
Very High	Vulnerable Ecosystem
Very High	Freshwater ecosystem priority area quinary catchments

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

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 timing of the survey in Autumn and then in early summer is therefore optimal in terms of assessing the ecosystem and vegetation of the site. The overall condition of the vegetation diversity was therefore possible to be determined with a high degree of confidence.

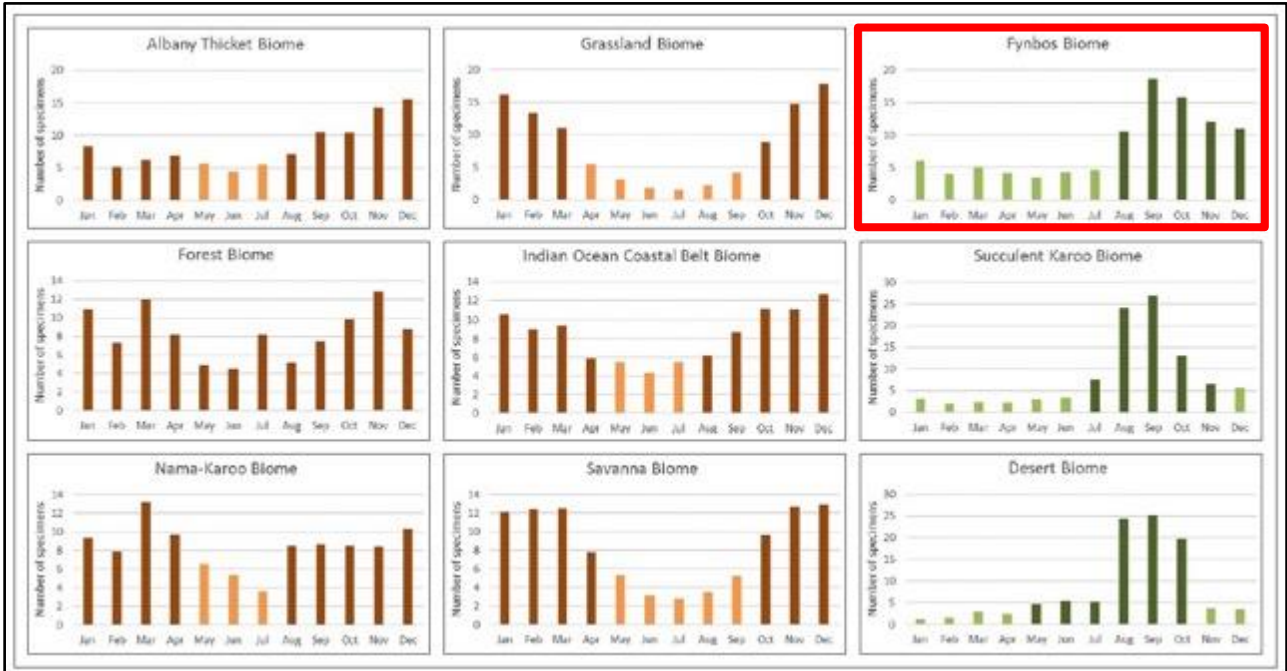


Figure 5: Recommended survey periods for different biomes (Species Environmental Assessment Guidelines). The site is within the Fynbos Biome.

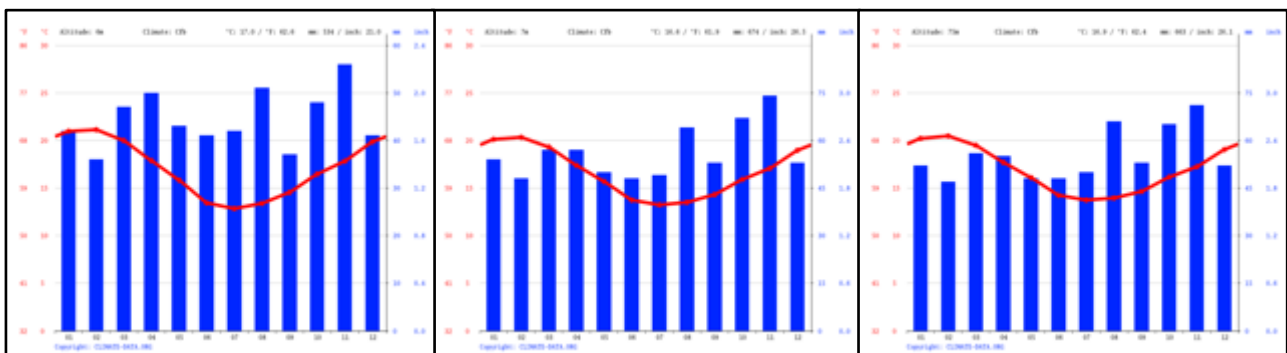


Figure 6: Climate diagrams showing monthly rainfall for Mossel Bay (left), Knysna (centre) and Plettenberg Bay (right).

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 plant species

that were seen. All plant species recorded were uploaded to the iNaturalist website and are accessible by viewing the observations located at this site. Consideration from the faunal inspections and aquatic findings (Dabrowski 2022) were considered.

Aerial imagery from Google Earth was used to identify and assess habitats on site. This included historical imagery that may show information not visible in any single dated image. Patterns identified from satellite imagery were verified on the ground.

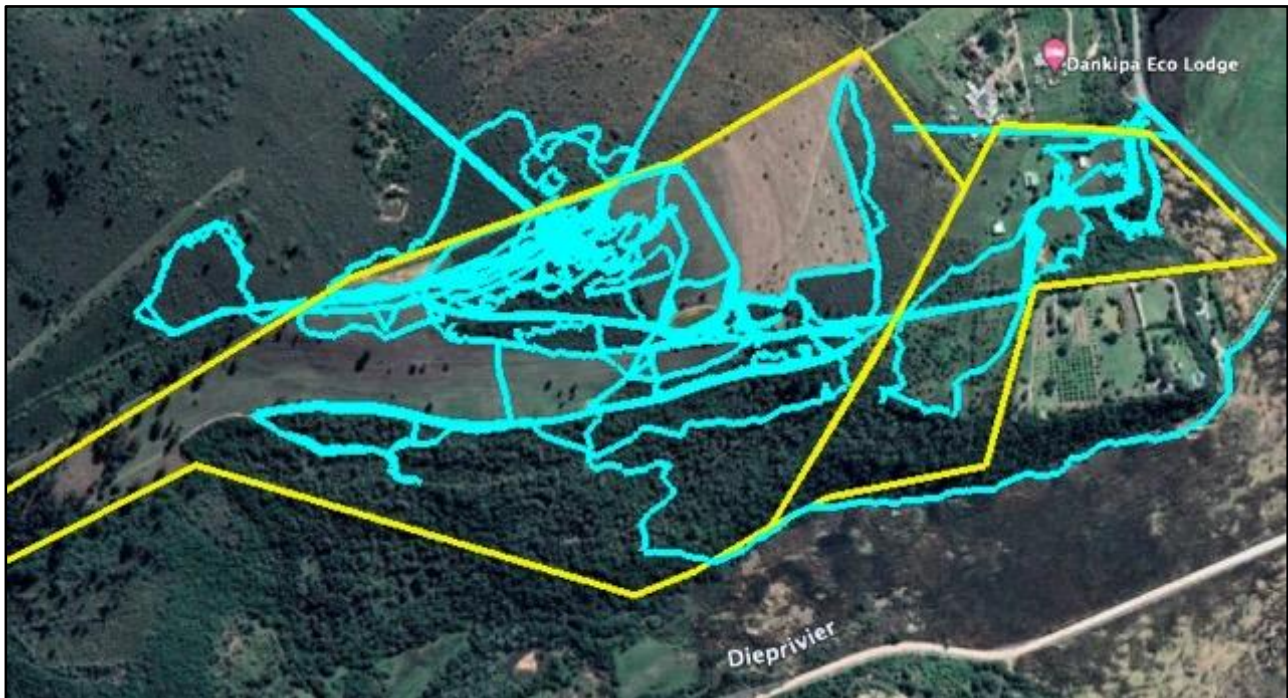


Figure 7: GPS track log of areas walked in the course of undertaking this assessment.

Sources of information

Regional Vegetation

- Broad vegetation types occurring on site were obtained from Mucina and Rutherford (2006), with updates according to the SANBI BGIS website (<http://bgis.sanbi.org>), as follows:
 - Mucina, L. and Rutherford, M.C. (editors) 2006. Vegetation map of South Africa, Lesotho and Swaziland: an illustrated guide. Strelitzia 19, South African National Biodiversity Institute, Pretoria.
 - South African National Biodiversity Institute 2018 Final Vegetation Map of South Africa, Lesotho and Swaziland [Vector] 2018. Available from the Biodiversity GIS website, downloaded on 23 September 2021.

Threatened Ecosystems

- The conservation status of the vegetation types were obtained from Mucina and Rutherford (2006) and the National List of Ecosystems that are Threatened and in need of protection (GN1002 of 2011), published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004). Updates from the National Biodiversity Assessment 2018 were taken into consideration, although these have not yet been gazetted.

- The plant species checklist of species that could potentially occur on site was compiled from a plant species checklist extracted from the NewPosa database of the South African National biodiversity Institute (SANBI) for the quarter degree grid 2821CA.
- The IUCN Red List Category for plant species, as well as supplementary information on habitats and distribution, was obtained from the SANBI Threatened Species Programme (Red List of South African Plants, <http://redlist.sanbi.org>).

Regional plans

- Information from the National Protected Areas Expansion Strategy (NPAES) was consulted for possible inclusion of the site into a protected area in future (available on <http://bgis.sanbi.org>).
- The 2017 Western Cape Biodiversity Spatial Plan (WCBSBP) Maps were consulted for inclusion of any parts of the site into any Critical Biodiversity Areas or Ecological Support Areas (CapeNature. 2017 WCBSBP Bitou [Vector] 2017. Available from the Biodiversity GIS website (biodiversityadvisor.sanbi.org)).

RELEVANT LEGISLATIVE AND PERMIT REQUIREMENTS

Relevant legislation is provided in this section to provide a description of the key legal considerations of importance to the proposed project. The applicable legislation is listed below.

Convention on Biodiversity (CBD)

South Africa became a signatory to the United Nations Convention on Biological Diversity (CBD) in 1993, which was ratified in 1995. The CBD requires signatory states to implement objectives of the Convention, which are the conservation of biodiversity; the sustainable use of biological resources and the fair and equitable sharing of benefits arising from the use of genetic resources. According to Article 14 (a) of the CBD, each Contracting Party, as far as possible and as appropriate, must introduce appropriate procedures, such as environmental impact assessments of its proposed projects that are likely to have significant adverse effects on biological diversity, to avoid or minimize these effects and, where appropriate, to allow for public participation in such procedures.

National Environmental Management Act, Act No. 107 of 1998 (NEMA)

NEMA is the framework environmental management legislation, enacted as part of the government's mandate to ensure every person's constitutional right to an environment that is not harmful to his or her health or wellbeing. It is administered by DEA but several functions have been delegated to the provincial environment departments. One of the purposes of NEMA is to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment. The Act further aims to provide for institutions that will promote cooperative governance and procedures for coordinating environmental functions exercised by organs of state and to provide for the administration and enforcement of other environmental management laws.

NEMA requires, inter alia, that:

- “development must be socially, environmentally, and economically sustainable”,
- “disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.” ,
- “a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions”.

NEMA states that “the environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.”

This report considers the Environmental Impact Assessment (EIA) Regulations of 2014 (NEMA, 2014) as amended in 2017 (NEMA, 2017), under the National Environmental Management Act, (Act No. 107 of 1998). According to these Regulations under Listing Notice 1 (GRN No. 327), Listing Notice 2 (GRN No 325) and Listing Notice 3 (GRN No 324), the activities listed are identified as activities that may require Environmental Authorisation prior to commencement of that activity and to identify competent authorities in terms of sections 24(2) and 24D of the Act.

National Environmental Management: Biodiversity Act (Act No 10 of 2004)

As the principal national act regulating biodiversity protection, NEM:BA, which is administered by DEA, is concerned with the management and conservation of biological diversity, as well as the use of indigenous biological resources in a sustainable manner. The term biodiversity according to the Convention on Biodiversity (CBD) refers to the variability among living organisms from all sources including, inter alia terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity in genes, species and ecosystems.

In terms of the Biodiversity Act, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).
- Promote the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area are in line with ecological sustainable development and protection of biodiversity.
- Limit further loss of biodiversity and conserve endangered ecosystems.

Chapter 4 of the Act relates to threatened or protected ecosystems or species. According to Section 57 of the Act, "Restricted activities involving listed threatened or protected species":

- (1) A person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7.

Such activities include any that are "of a nature that may negatively impact on the survival of a listed threatened or protected species".

Alien and Invasive Species

Chapter 5 of NEM:BA relates to species and organisms posing a potential threat to biodiversity. The Act defines alien species and provides lists of invasive species in regulations. The Alien and Invasive Species (AIS) Regulations, in terms of Section 97(1) of NEM:BA, was published in Government Notice R598 in Government Gazette 37885 in 2014 (NEM:BA, 2014). The Alien and Invasive Species (AIS) lists were subsequently published in Government Notice R 864 of 29 July 2016 (NEM:BA, 2016).

According to Section 75 of the Act, "Control and eradication of listed invasive species":

- (1) Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs.
- (2) Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.
- (3) The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.

The National Environmental Management: Biodiversity Act (NEMBA) regulates all invasive organisms in South Africa, including a wide range of fauna and flora. Chapter 5 of the Act relates to species and organisms posing a potential threat to biodiversity. The purpose of Chapter 5 is:

- a) to prevent the unauthorized introduction and spread of alien species and invasive species to ecosystems and habitats where they do not naturally occur;
- b) to manage and control alien species and invasive species to prevent or minimize harm to the environment and to biodiversity in particular;
- c) to eradicate alien species and invasive species from ecosystems and habitats where they may harm such ecosystems or habitats;

According to Section 65 of the Act, "Restricted activities involving alien species":

- 1) A person may not carry out a restricted activity involving a specimen of an alien species without a permit issued in terms of Chapter 7. Restricted activities include the following:
 - a. Importing into the Republic, including introducing from the sea, any specimen of a listed invasive species.
 - b. Having in possession or exercising physical control over any specimen of a listed invasive species.
 - c. Growing, breeding or in any other way propagating any specimen of a listed invasive species, or causing it to multiply.
 - d. Conveying, moving or otherwise translocating any specimen of a listed invasive species.
 - e. Selling or otherwise trading in, buying, receiving, giving, donating or accepting as a gift, or in any other way acquiring or disposing of any specimen of a listed invasive species.
 - f. Spreading or allowing the spread of any specimen of a listed invasive species.
 - g. Releasing any specimen of a listed invasive species.
 - h. Additional activities that apply to aquatic species.
- 2) A permit referred to in subsection (1) may be issued only after a prescribed assessment of risks and potential impacts on biodiversity is carried out.
- 3)

An "**alien species**" is defined in the Act as:

- a) a species that is not an indigenous species; or
- b) an indigenous species translocated or intended to be translocated to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by means of migration or dispersal without human intervention.

According to Section 71 of the Act, "Restricted activities involving listed invasive species":

- 1) A person may not carry out a restricted activity involving a specimen of a listed invasive species without a permit issued in terms of Chapter 7.
- 2) A permit referred to in subsection (1) may be issued only after a prescribed assessment of risks and potential impacts on biodiversity is carried out.

An "**invasive species**" is defined in the Act as any species whose establishment and spread outside of its natural distribution range:

- a) threaten ecosystems, habitats or other species or have demonstrable potential to threaten ecosystems, habitats or other species; and
- b) may result in economic or environmental harm or harm to human health.

A "**listed invasive species**" is defined in the Act as any invasive species listed in terms of section 70(1).

According to Section 73 of the Act, "Duty of care relating to listed invasive species":

- 2) A person who is the owner of land on which a listed invasive species occurs must-
 - a) notify any relevant competent authority, in writing, of the listed invasive species occurring on that land;
 - b) take steps to control and eradicate the listed invasive species and to prevent it from spreading; and
 - c) take all the required steps to prevent or minimize harm to biodiversity.

According to Section 75 of the Act, "Control and eradication of listed invasive species":

- (1) Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs.
- (2) Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment.
- (3) The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner.

Government Notice No. 1002 of 2011: National List of Ecosystems that are Threatened and in need of protection

Published under Section 52(1)(a) of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). This Act provides for the listing of threatened or protected ecosystems based on national criteria. The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the National Spatial Biodiversity Assessment (2004).

The EIA Regulations (2014, as amended) include three lists of activities that require environmental authorisation:

- Listing Notice 1: activities that require a basic assessment (GNR. 327 of 2014, as amended),
- Listing Notice 2: activities that require a full environmental impact assessment report (EIR) (GNR. 325 of 2014, as amended),
- Listing Notice 3: activities that require a basic assessment in specific identified geographical areas only (GNR. 324 of 2014, as amended).

GNR 151: Critically Endangered, Endangered, Vulnerable and Protected Species List

Published under Section 56(1) of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

GNR 1187: Amendment of Critically Endangered, Endangered, Vulnerable and Protected Species List

Published under Section 56(1) of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

Government Notice No. 40733 of 2017: Draft National Biodiversity Offset Policy

Published under the National Environmental Management Act (Act No. 107 of 1998). The aim of the Policy is to ensure that significant residual impacts of developments are remedied as required by NEMA, thereby ensuring sustainable development as required by section 24 of the Constitution of the Republic of South Africa, 1996. This policy should be taken into consideration with every development application that still has significant residual impact after the Mitigation Sequence has been followed. The mitigation sequence entails the consecutive application of avoiding or preventing loss, then at minimizing or mitigating what cannot be avoided, rehabilitating where possible and, as a last resort, offsetting the residual impact. The Policy specifies that one impact that has come across consistently as unmitigatable is the rapid and consistent transformation of certain ecosystems and vegetation types, leading to the loss of ecosystems and extinction of species. The Policy specifically targets ecosystems where the ability to reach protected area targets is lost or close to being lost. However, the Policy states that “[w]here ecosystems remain largely untransformed, intact and functional, an offset would not be required for developments that lead to transformation, provided they have not been identified as a biodiversity priority”. Biodiversity offsets should be considered to remedy residual negative impacts on biodiversity of ‘medium’ to ‘high’ significance. Residual impacts of ‘very high’ significance are a fatal flaw for development and residual biodiversity impacts of ‘low’ significance would usually not require offsets. The Policy indicates that impacts should preferably be avoided in protected areas, CBAs, verified wetland and river features and areas earmarked for protected area expansion.

National Forests Act (Act no 84 of 1998)

Protected trees

According to this act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any *protected tree*, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister'.

Forests

Prohibits the destruction of indigenous trees in any natural forest without a licence.

National Water Act (Act 36 of 1998)

Wetlands, riparian zones and watercourses are defined in the Water Act as a water resource and any activities that are contemplated that could affect the wetlands requires authorisation (Section 21 of the National Water Act of 1998). A "watercourse" in terms of the National Water Act (Act 36 of 1998) means:

- River or spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland, lake or dam into which, or from which, water flows; and

Any collection of water which the Minister may, by notice in the gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

Conservation of Agricultural Resources (Act No. 43 of 1983) as amended in 2001

Declared Weeds and Invaders in South Africa are categorised according to one of the following categories:

- Category 1 plants: are prohibited and must be controlled.
- Category 2 plants: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread.
- Category 3 plants: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the floodline of watercourses and wetlands.

National Veld and Forest Fire Act (Act No. 101 of 1998)

Provides requirements for veldfire prevention through firebreaks and required measures for fire-fighting. Chapter 4 of the Act places a duty on landowners to prepare and maintain firebreaks. Chapter 5 of the Act places a duty on all landowners to acquire equipment and have available personnel to fight fires.

Nature and Environmental Conservation Ordinance, No. 19 of 1974

This Ordinance provides for the protection of nature and matters relating to environmental conservation. It originally covered the geographical areas of the Western Cape Province, Eastern Cape Province (excluding the former Ciskei and Transkei) and parts of North West Province (excluding the former Boputhatswana) but is being repealed by Provincial Acts. It is proposed in the Western Cape Biodiversity Draft Bill, 2019, that the Ordinance is repealed in so far as it relates to the Western Cape Province. It is currently still in force and includes a list of protected species.

Draft Western Cape Biodiversity Bill and White Paper on Biodiversity, 2019 & 2021

The stated purpose of the Draft Western Cape Biodiversity Bill, 2019 is to provide for the framework and institutions for nature conservation and the protection, management and sustainable use of biodiversity and ecosystems in the Province; and for matters incidental thereto. If passed, the Bill will repeal various pieces of legislation to the extent set out in the below:

- Sea Shore Act, 1935 (21 of 1935): the whole
 - Mountain Catchment Areas Act, 1970 (63 of 1970): The whole in so far as it has been assigned to the Province by Proclamation R28 of 1995
 - Nature Conservation Ordinance, 1974 (19 of 1974): The whole
 - Nature Reserves Validation Ordinance, 1982 (23 of 1982): The whole
 - Western Cape Nature Conservation Board Act, 1998 (15 of 1998): The whole
 - Western Cape Nature and Environmental Conservation Ordinance Amendment Act, 1999 (8 of 1999): The whole
 - Western Cape Conservation Laws Amendment Act, 2000 (3 of 2000): The whole
- Western Cape Biosphere Reserves Act, 2011 (6 of 2011): The whole

OUTCOME OF THE ASSESSMENT

Broad vegetation patterns

There is one regional vegetation type in the study area, namely **Garden Route Shale Fynbos** (distribution relative to the site shown in Figure 8). The national vegetation map is, however, **not mapped at a fine scale** and it is probable that local topography could support other habitat types, such as thicket or low forest. The vegetation type that occurs on site and nearby areas, according to the national map, is briefly described below (as taken from Rebelo et al. 2006, Mucina et al. 2006).

Garden Route Shale Fynbos

Distribution

Western and Eastern Cape Provinces: Patches along the coastal foothills of the Langeberg at Grootberg (northeast of Heidelberg), the Outeniqua Mountains from Cloete's Pass via the Groot Brak River Valley, Hoekwil, Karatara, Barrington and Knysna to Plettenberg Bay. Patches from the Bloukrans Pass along coastal platform shale bands south of the Tsitsikamma Mountains via Kleinbos and Fynboshoek to south of both Clarkson and the Kareedouw Mountains. Altitude 0–500 m.

Vegetation & Landscape Features

Undulating hills and moderately undulating plains on the coastal forelands. Structurally this is tall, dense proteoid and ericaceous fynbos in wetter areas, and graminoid fynbos (or shrubby grassland)

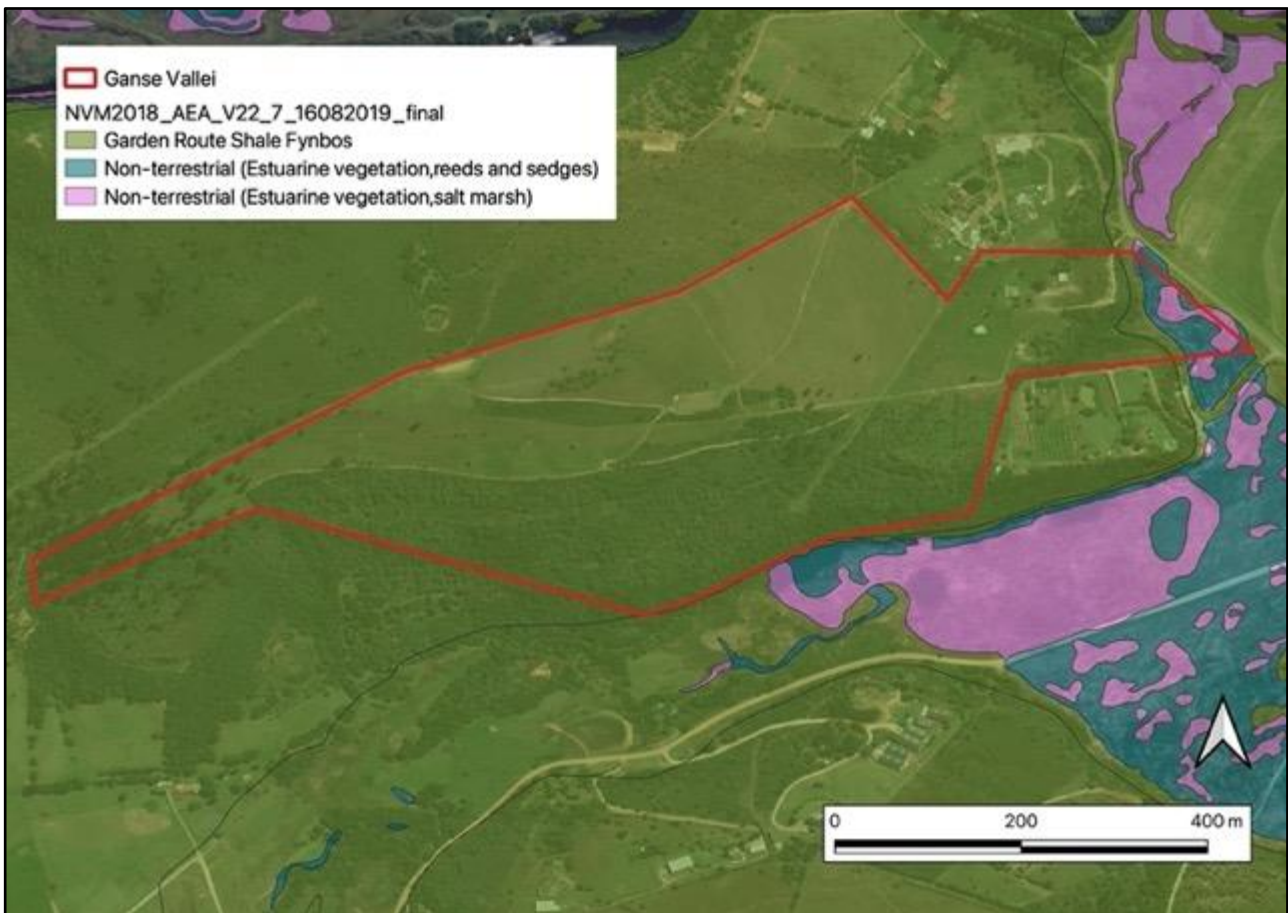


Figure 8: Regional vegetation types of the site and surrounding areas.

in drier areas. Fynbos appears confined to flatter more extensive landscapes that are exposed to frequent fires—most of the shales are covered with afrotemperate forest. Fairly wide belts of *Virgilia oroboides* occur on the interface between fynbos and forest. Fire-safe habitats nearer the coast have small clumps of thicket, and valley floors have scrub forest (Vlok & Euston-Brown 2002).

Geology & Soils

Acidic, moist clay-loam, prisma-cutanic and pedocutanic soils derived from Caimans Group and Ecca (in the east) shales. Land types mainly Db and Fa.

Climate

MAP 310–1 120 mm (mean: 700 mm), relatively even throughout the year, but with a slight low in winter. Mean daily maximum and minimum temperatures 27.6°C and 6.5°C for January and July, respectively. Frost incidence 2 or 3 days per year.

Important Taxa

(TCape thickets)

Tall Shrubs: *Leucadendron eucalyptifolium* (d), *Protea aurea* subsp. *aurea* (d), *P. coronata* (d), *Leucospermum formosum*, *Metalasia densa*, *Passerina corymbosa*, *Protea neriifolia*, *Rhus lucida*^T.

Low Shrubs: *Acmadenia alternifolia*, *A. tetragona*, *Anthospermum aethiopicum*, *Cliffortia ruscifolia*, *Elytropappus rhinocerotis*, *Erica hispidula*, *Helichrysum cymosum*, *Leucadendron salignum*, *Pelargonium cordifolium*, *Phyllica axillaris*, *P. pinea*, *Psoralea monophylla*, *Selago corymbosa*.

Herb: *Helichrysum felinum*.

Geophytic Herbs: *Pteridium aquilinum* (d), *Eriospermum vermiforme*.

Succulent Herb: *Crassula orbicularis*.

Herbaceous Succulent Climber: *Crassula roggeveldii*.

Graminoids: *Ischyrolepis sieberi* (d), *Aristida junciformis* subsp. *galpinii*, *Brachiaria serrata*, *Cymbopogon marginatus*, *Elegia juncea*, *Eragrostis capensis*, *Ischyrolepis gaudichaudiana*, *Restio triticeus*, *Themeda triandra*, *Tristachya leucothrix*.

Endemic Taxon

Geophytic Herbs: *Cyphia georgica*, *Disa newdigateae*, *Gladiolus roseovenosus*.

Conservation status of broad vegetation types

According to scientific literature (Driver *et al.*, 2005; Mucina *et al.*, 2006), as shown in Table 3, the vegetation type is listed as **Endangered**.

The National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011), published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004), as well as the updated Remnant Ecosystem List (2022) lists national vegetation types that are afforded protection on the basis of rates of transformation. The vegetation type is listed as Vulnerable in the National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011).

Table 2: Conservation status of different vegetation types occurring in the study area.

Vegetation Type	Conservation status		
	Driver <i>et al.</i> 2005; Mucina <i>et al.</i> , 2006 Updated Ecosystem Threat Status (2022)	National Ecosystem List (NEMBA) (GN1002 of 2011)	NSBA 2018
Garden Route Shale Fynbos	Endangered	Vulnerable	Vulnerable

It is therefore verified that the site occurs within a Listed Ecosystem, as listed in The National List of Ecosystems that are Threatened and need of protection (GN1002 of 2011, 2022) and therefore has **VERY HIGH** sensitivity with respect to this attribute.

Biodiversity Conservation Plans

The Western Cape Biodiversity Spatial Plan (WCBSP) classifies the habitats of the province according to conservation value in decreasing value, as follows:

1. Protected Areas (PA);
2. Critical Biodiversity Areas 1 (CBA1);
3. Critical Biodiversity Areas 2 (CBA2);
4. Ecological Support Area 1 (ESA1);
5. Ecological Support Area 2 (ESA2);

The WCBSP map for Bitou (Cape Nature 2017) shows that significant parts of the site (all untransformed area) are within a CBA1 area with small sections of CBA2 and ESA2 areas to the east side of the property (Figure 9). The CBA1 area continues beyond the boundaries of the site. This indicates that the remaining vegetation on site is considered to be highly important for the conservation of biodiversity in the Province as well as for maintaining ecological patterns in the landscape.



Figure 9: Western Cape Biodiversity Spatial Plan of the site and surrounding areas.

This verifies the output from the Online Screening Tool in concept and spatial placement and confirms that the majority of the site has VERY HIGH sensitivity from a Terrestrial Biodiversity perspective.

Natural habitats on site

A detailed landcover and habitat mapping exercise was undertaken for the site. This identified various natural and transformed habitats that occur on site, shown in Figure 10. Of importance is the presence and distribution of **fynbos**, **thicket** and **estuarine wetlands** on site, which constitute the **remaining natural habitat**.

The 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.

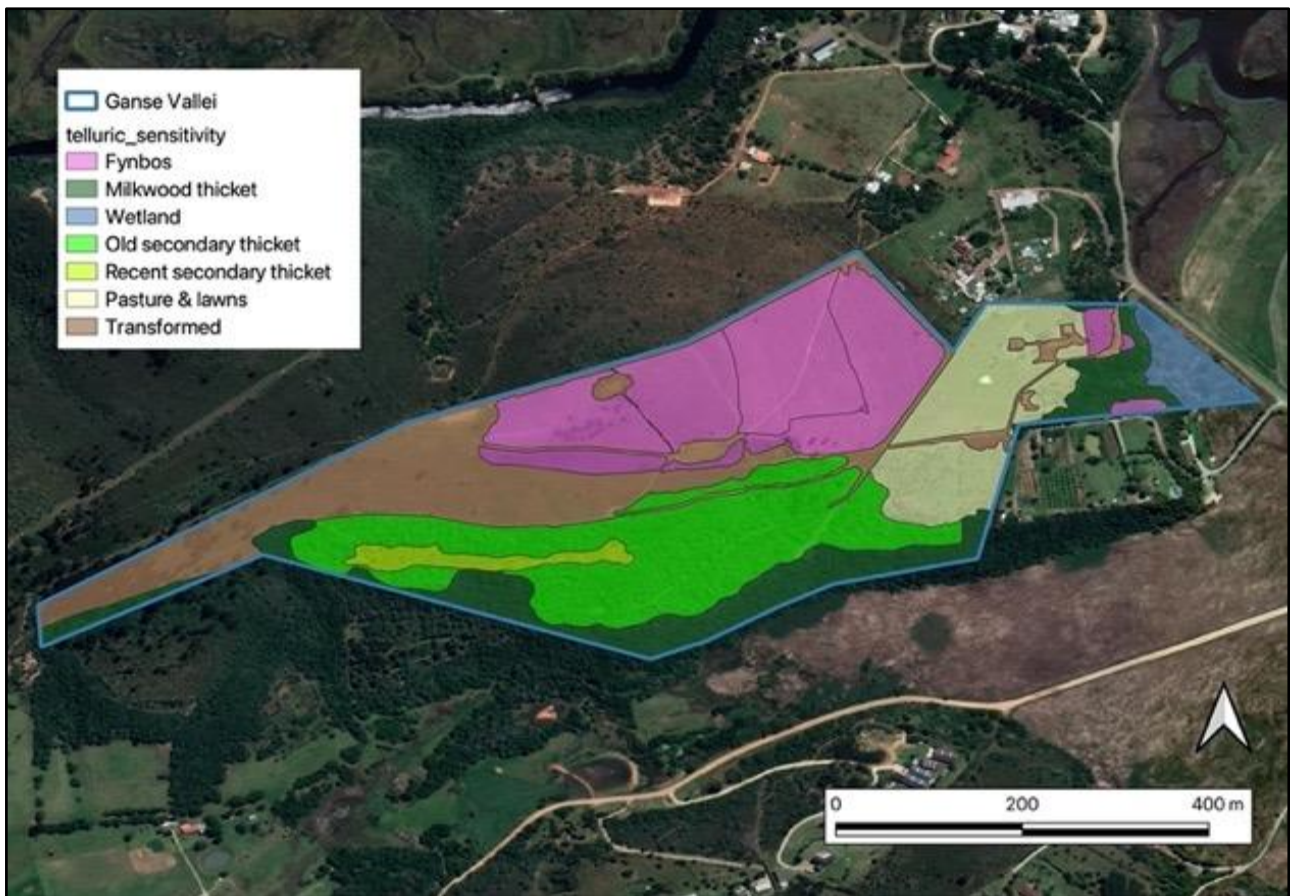


Figure 10: Map of habitats on site.

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/cutting of vegetation to **maintain pasture** for domestic animals. This area is shown in the habitat map (Figure 10) as "Transformed" and does not resemble Garden Route Shale Fynbos any longer (+/-7ha).

Of the remaining natural 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. This area does still resemble Garden Route Shale Fynbos albeit not in a pristine condition. Only **small**

strips remain intact. This historical disturbance is analysed in more detail in the following section of this report ("Historical disturbance on site").

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 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**. These thickets are **ecologically important habitats** that should be **treated as sensitive**.

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** (see Figure 13). 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**.



Figure 12: Existing house surrounded by pastures.



Figure 12: Milkwood thickets on site.



Figure 14: Estuarine wetlands on eastern end of site.



Figure 14: Small dam near top of slope on site.



Figure 16: Horses grazing on site.



Figure 16: Historically cleared/cut areas on (western) site maintained as pasture



Figure 18: Structure of remnant fynbos patch on site.



Figure 18: View from top of site towards the west showing extensively brush-cut areas.

Historical disturbance on site

There are a number of historical aerial photographs available for the site and surrounding areas, dating back to the early 1900s. Some of these are not very clear but, overall, they show a consistent pattern of the site being largely natural, with the exception of a small area of cultivation on the western end (excluded from the current study area), some settlement on the eastern end, and a patchiness in the southern slope that suggests that the thicket was cleared at some stage. Note that from the 2006 aerial photograph (Figure 19) the fynbos on site is mostly intact, with the exception of two small patches near to the centre, one a bare patch at the top of the hill, and the other a small farm dam. This condition is also shown in an image on Google Earth from 2004 (a similar date) (Figure 20). The 2004 image (Figure 20) also shows the sparse nature of the thicket. Also note in both images (Figure 19 and Figure 20) the small patch of thicket in the north-central part of the site. By 2009 (image not shown) this small patch of thicket has been cleared, but all other patterns are stable as at 2009.



Figure 19: Aerial photograph of the site dated 26 August 2006.

From August 2014 to October 2017, there is a large amount of clearing/cutting of the fynbos that takes place. There is no aerial photographic evidence to show that this is related to any form of cultivation, only that the **vegetation is cleared and kept cleared**. The amount of cleared habitat is shown in an image from April 2021. An image from 2021 shows that some of these cleared areas may have been ploughed to keep the vegetation clear however brush-cutting as the primary means is not excluded.

From April 2021 (Figure 21) there is a lot of clearing that has taken place, some of which occurred close to the period of this assessment. This clearing was in the form of brush-cutting to ground level to promote grazing for domestic animals. In terms of legislation, this does not constitute illegal clearing, since the **soil is not being disturbed**. However, it implies that **legally, some of the affected**

areas are still fynbos, even though limited to no above-ground Fynbos vegetation currently exists. Nevertheless, the condition of the remnant "fynbos" after brush-cutting is negatively affected.

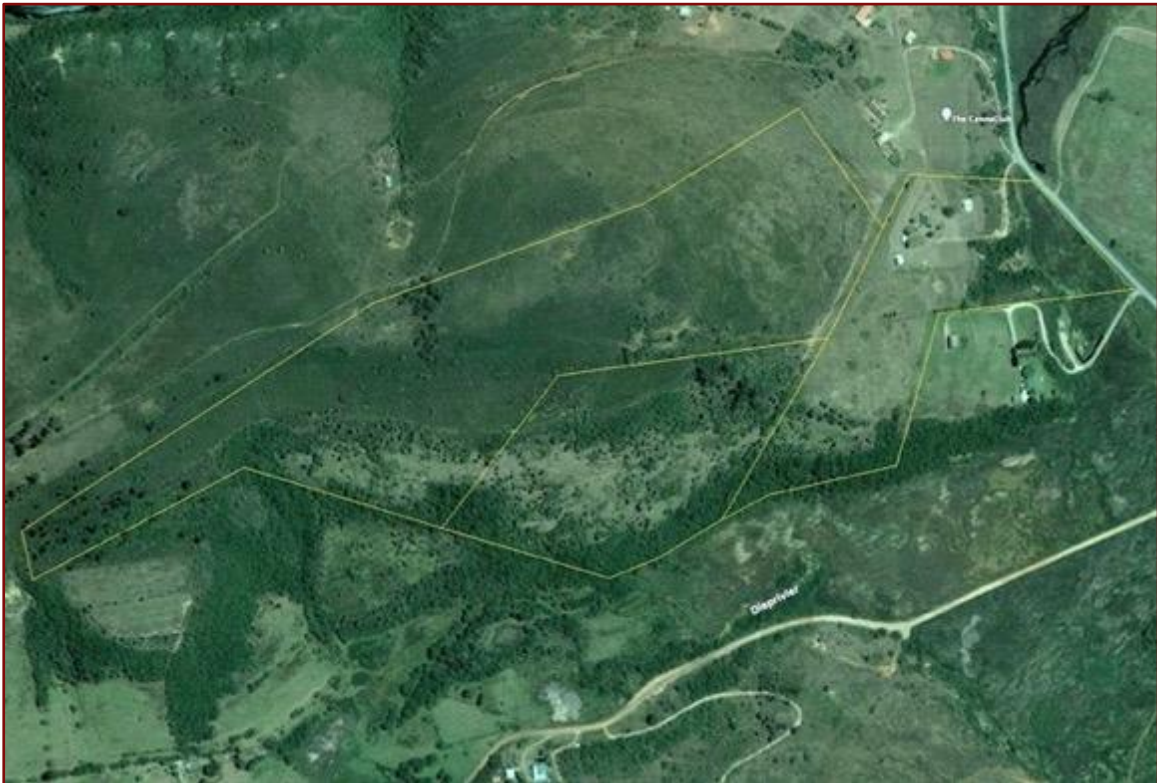


Figure 20: Aerial photograph of the site dated January 2004 (from Google Earth).



Figure 22: Aerial photograph of the site dated October 2021 (from Google Earth).



Figure 21: Aerial photograph of the site dated April 2021 (from Google Earth).

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 natural **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 24. 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 23: Preferred development proposal for Telluric Wine Farm.

The most significant impact assessed here is therefore as follows:

1. LOSS OF DEGRADED FYNBOS HABITAT AS A RESULT OF CLEARING FOR AGRICULTURAL ACTIVITIES.

Loss of fynbos habitat

Extent of impact

The impact will occur at the **local scale**. It is estimated, based on the development plan and the habitat mapping, that a total of less than 8.5 hectares of mostly degraded fynbos in the Eastern half of the development footprint area, will be impacted within the proposed development footprint. The transformed (historical) fynbos (western half of the footprint area) is approximately 4.5ha.

The total area of the vegetation type Garden Route Shale Fynbos is 56 471 hectares.

Probability of occurrence

Based on the proposed development plan and the known location of the habitats found on site, the impact will be DEFINITE.

Reversibility of impact

Loss of habitat on site is probably IRREVERSIBLE – **secondary/degraded fynbos seldom recovers** to its original species composition. The **affected habitat has already been impacted and is not in good condition**.

Degree to which resources will be irreplaceably lost

The resource assessed here is **Garden Route Shale Fynbos**, listed as Endangered (previously Vulnerable, 2011). In terms of the known extent of this habitat type, the loss of 8.5 ha degraded fynbos is a MARGINAL loss of resources at a global scale.

Duration of impact

Loss of the habitat on site is assessed as being permanent.

Intensity or magnitude of impact

At a global scale, the impact is of **LOW magnitude**, since it would affect the global extent of the vegetation type imperceptibly.

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 = 5) + (Reversibility = 2) + (Irreplaceability = 2) + (Duration = 5)] x (Intensity = 2)

Score = 30 = **MEDIUM significance**

Possible mitigation measures

According to the Species Environmental Assessment Guidelines, the guideline for interpreting Site Ecological Importance (SEI) in the context of proposed development activities depends on the SEI. For areas with a High SEI, the following is recommended:

“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.”

Avoidance mitigation has already been applied in the sense that the project design has followed the habitat sensitivity, and **retained areas with the highest biodiversity value**.

Additional measures that can be applied are as follows:

1. **Retain natural belts adjacent to proposed vineyards**, as far as possible (already accommodated).
2. **Protect areas of milkwood thicket** and, through ecological management, attempt to **enhance the condition of secondary thicket** on site to benefit the existing thicket.
3. Ensure all possible steps are taken to **limit erosion of surfaces**, including proper management of storm-water runoff, so that downslope areas are protected from runoff and erosion.
4. Implement a **rehabilitation** of secondary thicket areas.
5. Use indigenous and site-appropriate plant species in any **rehabilitation and landscaping**.
6. **No additional clearing of 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.
7. Implement **alien management**, which highlights control priorities and areas and provides a programme for long-term control.
8. Undertake **regular monitoring** to detect alien invasions early so that they can be controlled, as per the environmental management plan.

Due to the **relatively small area of fynbos** proposed to be **affected**, and the **poor condition** of that fynbos, **no further measures are proposed** here, with the overall biodiversity value of the site

expected to improve under the proposed project (protection of the remaining intact thicket corridor), in contrast to the continuing degradation of fynbos and encroachment into thicket, as well as the threat of invasive alien vegetation, under the existing regime.

Assessment of No-Go option

Historical aerial imagery shows that the site has been managed for grazing by progressively bush-cutting fynbos, and then maintaining the cut status by annual cutting. This promotes growth of grazeable material at the **expense of natural fynbos** habitat, which has low grazing value. Under this regime, **fynbos is unlikely to survive**.

Currently, almost the entire northern half of the site (historical fynbos area) has been bush-cut. Initially, this provided circumstances that favour the growth and flowering of various species, but under this regime continuously, it is likely that **many plant species will be lost**, and the **vegetation structure** is likely to **alter significantly** towards a growth-form composition consistent with this driving ecological force.

Therefore, under the current management regime, the impact on the vegetation diversity and biodiversity of the remnant Fynbos would be **long-term degradation**. Creating a viable economic activity on site would favour survival of the remaining natural areas not developed, since these would be income generated that will contribute to active managed for biodiversity preservation of remaining intact natural (mostly thicket) areas, rather than for grazing.

DISCUSSION

This Terrestrial Biodiversity Assessment was undertaken as a result of the Site Sensitivity Verification confirming the site as having HIGH sensitivity with respect to Terrestrial Biodiversity. This is due to the presence on site of areas legally defined as natural vegetation, and occurring both within a Listed Ecosystem (Garden Route Shale Fynbos – Endangered) and a Critical Biodiversity Area (CBA1).

An assessment was undertaken that confirmed the **presence of natural habitat on site**, but there are also **transformed areas (no natural habitat i.e.** no longer representative of Garden Route Shale Fynbos), **degraded areas** (loss of species diversity within remnant Garden Route Shale Fynbos ongoing) and areas of **secondary vegetation on site** (previously disturbed thicket).

There are three different natural habitat types on site, **namely Estuarine Wetlands** (assessed as having **Very High Site Ecological Importance**), **Milkwood Thicket** (assessed as having **High Site Ecological Importance**) and remnant degraded **Fynbos** (assessed as having **High Site Ecological Importance**). The first two habitat types (Estuarine Wetlands and Milkwood Thickets) will not be affected by the proposed project – impacts within these areas are entirely avoided.

The original Fynbos on site has been **heavily impacted** over time and is **not in pristine condition**. The areas on the **eastern side** have been **heavily grazed** to the point where the **structure and species composition have been modified**. Other areas of transformed fynbos on site have been continuously brush-cut to promote grazing value, an activity that was assessed under the “No-Go” option as likely to continue. The proposed preferred activities on site will **be within the transformed and degraded fynbos** areas only – small remnant pockets of fynbos on site is to be **retained** as **natural areas**, in addition to the 8.5 ha **degraded area** that are being **retained** for the conservation of an SCC (assessed in a separate Plant Species Assessment) through establishment of a Botanical Reserve.

An impact assessment was undertaken for the **loss of remnant natural fynbos habitat** and was assessed as having **Moderate significance**.

The proposed project is **supported** on the basis that **degradation of the site is already occurring under the No-Go scenario**, that the **amount of remnant natural fynbos habitat** that will be irreversibly **lost to the proposed project** is **relatively limited in extent**, as well as being **within areas of poorer condition**. Furthermore, there is value in maintaining and enhancing the remaining intact biodiversity on site most notably the thicket along the southern slopes as well as remnant Fynbos patches at the time of implementation.

CONCLUSION

The following conclusions can be made regarding the outcomes of the Terrestrial Biodiversity Assessment on site:

1. Parts of the site are in a **natural state** and therefore have **Very High sensitivity**, according to the DFFE Screening Tool criteria. However, remnant **natural habitat on site is in various conditions**, and those parts that are **proposed to be developed have already been impacted** by ongoing agricultural activities on site that **continue to cause degradation**. This land use is unlikely to change under the current ownership.
2. The amount of remnant natural fynbos habitat that falls within the 'degraded' Fynbos footprint is approximately 8.5 ha with roughly 4.5ha transformed and no longer resembles Garden Route Shale Fynbos. Most of which is degraded from grazing over time, as well bush-cutting to promote grazing value. The extent and value of remnant natural fynbos within the footprint area is therefore considered to be **relatively limited in conservation value**.
3. **Avoidance mitigation** that has **already been applied** during design of the project (Preferred Alternative), as well as **planned long-term ecosystem management measures** for those areas that fall **outside the development footprint**, as well as the identified conservation area (0.5ha botanical reserve), are likely to **enhance the overall biodiversity value** of the site relative to the No-Go option.
4. The loss of a **low-quality fynbos** (disturbed) was assessed as being of **moderate significance**.

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