

SITE SENSITIVITY VERIFICATION REPORT

**THE PROPOSED CONSTRUCTION OF A DAM AND THE
CLEARANCE OF INDIGENOUS VEGETATION FOR CULTIVATION
ON PORTION 3 OF FARM AAN DE VALSCH RIVIER 186 & FARM
HOREB 149, RIVERSDALE, WESTERN CAPE.**

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1. INTRODUCTION:

Portion 3 of Farm Aan De Valsch Rivier 186 & Farm Horeb 149 (“the site”) is situated approximately 20 km northeast of Riversdale, Western Cape. The site is zoned *Agriculture Zone 1* and the two farms total around 264 ha in extent. The One Environmental System will be used to obtain authorization required in terms of NEMA and the NWA.

The proposed agricultural development is to include the expansion of the cultivation areas and the construction of a new dam for agricultural purposes. The proposed cultivation areas will be expanded with ±52.5 hectares and a new dam with a maximum storage capacity of ±34 235m³ is proposed (±1.7ha footprint). The cultivation areas will include a combination of irrigated and non-irrigated areas ranging from Avo/ Fruit Orchards, Cover or Cash Crops to Grazing.

The Department of Environmental Affairs’ web-based National Environmental Screening Tool allows for the generation of a Screening Tool Report which is required, in terms of Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended, to accompany any application for Environmental Authorisation. The Screening Tool identifies potential environmental sensitivities on the site in terms of ‘Environmental Themes’ (categorized as low, medium, high and very high) and makes Specialist Impact Assessment recommendations. The outcome of the Screening Tool is to be verified by the EAP in the form of a Site Sensitivity Report.

The *“Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation [EA]”* as published in Government Notice (GN) No. 320 of 20 March 2020 should be applied when considering various specialist input as part of the EA application for a proposed development. GN No. 320, sets out the requirements for a Site Sensitivity Verification Report particularly where a specific specialist assessment has not been prescribed an individual protocol. The current use of the land and the environmental sensitivity of the site identified by the Screening Tool must be confirmed by undertaking a site sensitivity verification, to be carried out by an environmental assessment practitioner or specialist. Furthermore, Government Notice No. 1150 was published on the 30 October 2020 which added two additional themes to the environmental themes list in Government Notice 320.

2. FINDINGS:

The Screening Tool Report (**Appendix A**) identified the following for consideration:

- Possible incentive, restriction, or prohibition
 - Strategic Gas Pipeline Corridors-Phase 1a & 1b: Saldanha to Ankerlig and Saldanha to Mossel Bay;
 - South African Conservation Areas; and
 - South African Protected Areas.
- Environmental attributes/features on the site which will be sensitive to development:
 - Agriculture Theme (Very- High Sensitivity)
 - Animal Species Theme (High Sensitivity)
 - Aquatic Biodiversity Theme (Very High Sensitivity)
 - Archaeological and Cultural Heritage Theme (Low Sensitivity)
 - Civil Aviation Theme (Low Sensitivity)
 - Defense Theme (Low Sensitivity)
 - Paleontology Theme (Very High Sensitivity)
 - Plant Species Theme (Medium Sensitivity)
 - Terrestrial Biodiversity Theme (Very High Sensitivity)
- Possible specialist studies identified:
 - Landscape/Visual Impact Assessment
 - Archaeological and Cultural Heritage Impact Assessment
 - Paleontology Impact Assessment
 - Terrestrial Biodiversity Impact Assessment
 - Aquatic Biodiversity Impact Assessment
 - Socio-Economic Assessment
 - Plant Species Assessment
 - Animal Species Assessment

3. CONTENTS & METHODOLOGY:

The applicable protocols or minimum information requirements, which were published in Government Notice No. 320 of 20 March 2020 (Government Gazette No. 43110 of 20 March 2020 refers), which came into effect on 9 May 2020, must be applied to the impact assessment process that must be followed.

“The site sensitivity verification must be undertaken through the use of:

- a) A desk top analysis, using satellite imagery;*
- b) A preliminary on-site inspection; and*
- c) Any other available and relevant information.”*

Furthermore, *“the outcome of the site sensitivity verification must be recorded in the form of a report that –*

- a) Confirms or disputes the current use of land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.*
- b) Contains motivation and evidence (e.g. photographs) of either verified or different use of either the verified or different use of the land and environmental sensitivity; and*
- c) Is submitted together with the relevant assessment report prepared in accordance with the requirements of the EIA Regulations.”*

The EAP has undertaken a site visit on Portion 3 of Farm Aan De Valsch Rivier 186 & Farm Horeb 149 and is familiar with the environmental sensitivities of the site. The EAP has consulted various spatial planning documents (regional and local) as well as available GIS information (i.e. Cape Farm Mapper). Furthermore, the following Specialists and their respective baseline reports were consulted:

- Aquatic Biodiversity (or Freshwater) Baseline Report by *Confluent Environmental*.
- Botanical (or Terrestrial Biodiversity) Baseline Report (Including Plant Species Assessment) by *Capensis Ecological Consulting*.
- Faunal (or Animal Species) Baseline Report by Jonathan Colville and Callan Cohen.
- Hydrology Study by *Creo Design* (Geological and GIS Consulting).
- Heritage Screener & NID by *CTS Heritage* (Jenna Lavin).

These specialist studies will be included in the Scoping/ EIA Reports going forward.

4. INCENTIVES, RESTRICTIONS, EXCLUSIONS OR PROHIBITIONS

The site is located within a Strategic Gas Pipeline Corridor (Phase 1a & 1b) between Saldanha to Ankerlig and Saldanha to Mossel Bay. However, the site falls along the edge of the Langeberg-East Mountain Catchment Area and does not entail activities involving dangerous goods etc. The proposed activities involve the cultivation of virgin soil and the construction of a new dam.

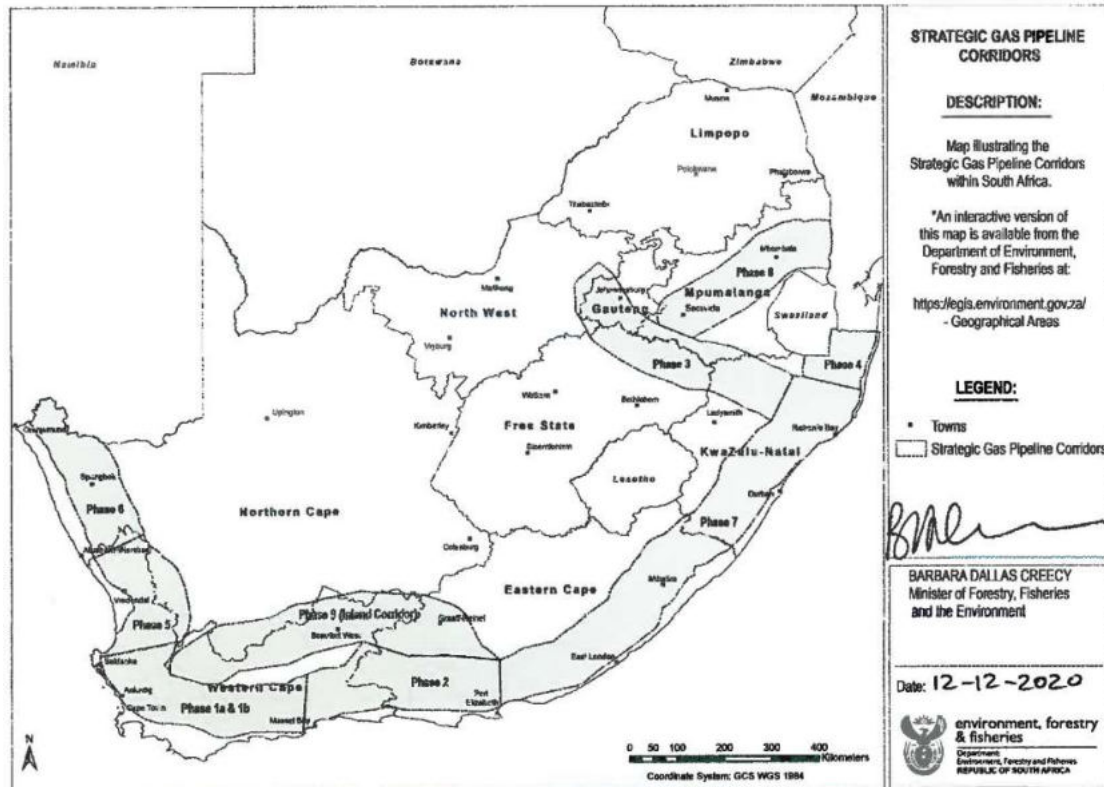


Figure 1: Strategic Gas Pipeline Corridors within South Africa. The site falls within Phase 1a and 1b.

The site is located inside of the Gouritz Cluster Biosphere Reserve (**Figure 2**) which is considered a Conservation Area according to the South Africa Conservation Areas Database (SACAD). Please refer to Figure 2 below.

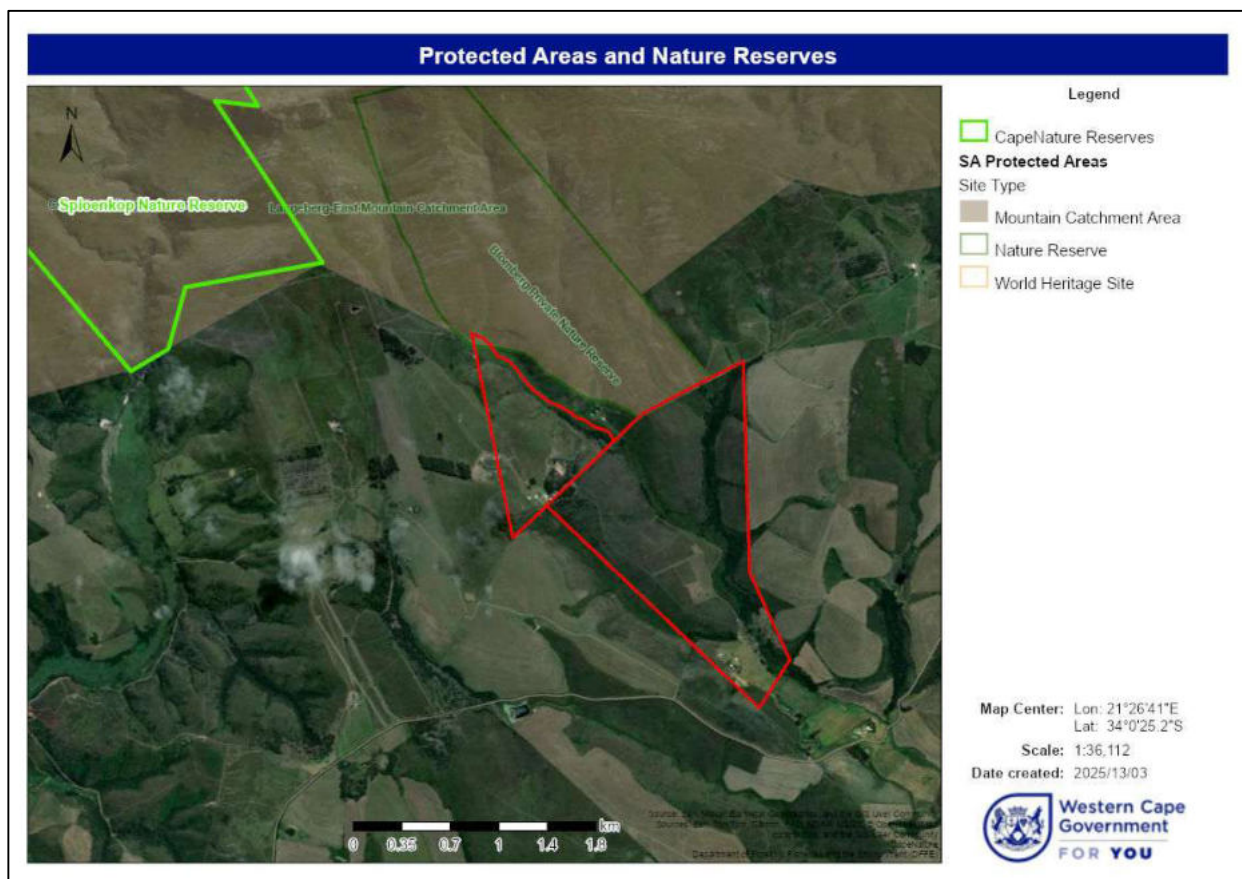


Figure 3: The site (red) in relation to the Protected Areas/Nature Reserves.

5. ENVIRONMENTAL THEMES:

The following environmental themes and associated sensitivities have been identified by the screening tool and will be confirmed or disputed below (**Appendix A**):

5.1 Agriculture – Very High Sensitivity

It must be understood that the proposed activities are in keeping with the agricultural zoning and practices of the property as well as the surrounding area. The proposed activity relates to the overall enhancement of the agricultural potential of the property as it is an agricultural supportive project. The activities would therefore not compromise the agricultural resource value of the property but rather ensure the sustainability of agriculture within the property.

The proposed property is zoned Agriculture and the proposed activities (a new dam and the expansion of the cultivation areas) are all agricultural activities in keeping with the existing agricultural activities on the property and permitted in terms of the land use rights of the property. The proposed activity could be seen, simply, as an expansion of the existing activities being undertaken on the farm in accordance

with optimising the productivity of a working agricultural farm. It is the Applicants intention to ensure that the farm remains sustainable in the long term. The Applicant therefore launched an investigation to find a feasible agricultural project that can be implemented on the property while considering existing infrastructure on site.

As part of the Public Participation Process, I&APs will have the opportunity to comment on the Draft (pre-application phase) and Final (application phase) Basic Assessment Reports. It is our opinion that the Department of Agriculture (DoA) would be the Competent Authority to comment regarding the agricultural sensitivity of the site and the nature of the project. Comment from the DoA will be sort during the pre-application phase.

The overall Very high sensitivity rating in terms of this particular project is therefore refuted. A LOW sensitivity rating would be much more appropriate given the overall agricultural nature of the project and the positive agricultural elements. The Western Cape Department of Agriculture will be notified of the Application as a registered I&AP and will be requested to provide comment.

However, an Agricultural Specialist has also be appointed to provide their opinion. Agri Informatics confirmed that: *“The agricultural sensitivity as per the Screening Tool, relates to the capacity of the receiving environment to accommodate the proposed development, where the development necessitates a change in land use away from agriculture (or forestry). This application however, proposes expansion and intensification of agricultural land use and thus the Screening Tool and Reporting Protocol is rather irrelevant. For that reason, the reporting protocol below, loosely follows the protocol as prescribed for a Site Sensitivity Verification and Agricultural Compliance Statement, rather than an Agricultural Agro-Ecosystem Assessment which would have been required for a development which results in a reduction in agricultural activity or resources.”* **Agri Informatics will provide an Agricultural Compliance Statement.**

5.2 Animal Species - High Sensitivity

In addition to Government Notice No. 320 (published on the 20 March 2020) an additional notice, Government Notice No. 1150 was published on the 30 October 2020 identifying two additional themes: Terrestrial animal species and Terrestrial plant species. If an applicant intends “to undertake an activity on a site identified by the screening tool as being of “high sensitivity” for terrestrial animal species the EAP must submit a Terrestrial Animal Species Specialist Assessment Report. The DEA Screening Tool automatically selects the highest rating identified on site as being applicable to the project as a whole. It must be noted that the site (and it appears ALL Rural areas in general) only consists of High or Medium ratings for the Animal Species Theme. Regardless, considering the sites location and the High Sensitivity rating a Faunal Species Impact Assessment will be undertaken to assess the presence or likely presence Faunal and Avifaunal Species of Conservation Concern (SCC) (as well as other possible SCC) within the study area.

The site was surveyed 17/18 December 2024 to assess habitat quality, in terms of the type and amount of natural vegetation remaining. The extent of disturbance that the project area has experienced, in terms of changes to its vegetation and physical properties (e.g. soil) was also considered. The site visit took place in summer which is mostly an ideal time to detect the animal SCC flagged. The results of the site visit and desktop study are as follows:

The main vegetation types found at the project site is Swellendam Silcrete Fynbos (Endangered; 48% natural extent remaining). Based on landcover models, the project area is classed as mostly natural vegetation. The project area falls across a modelled ecosystem type with a South African Red List of Ecosystems Status of Endangered. However, ground-truthing during the site visit indicated that several large areas of the project site have been disturbed (agricultural activities, and dense alien invasive plants), and they have lost aspects of their original natural vegetation. The project site falls close to Important Bird Areas (IBA) (e.g. Overberg Wheatbelt IBA) or marginally within (Langeberg Mountains IBA) (Figure 4).

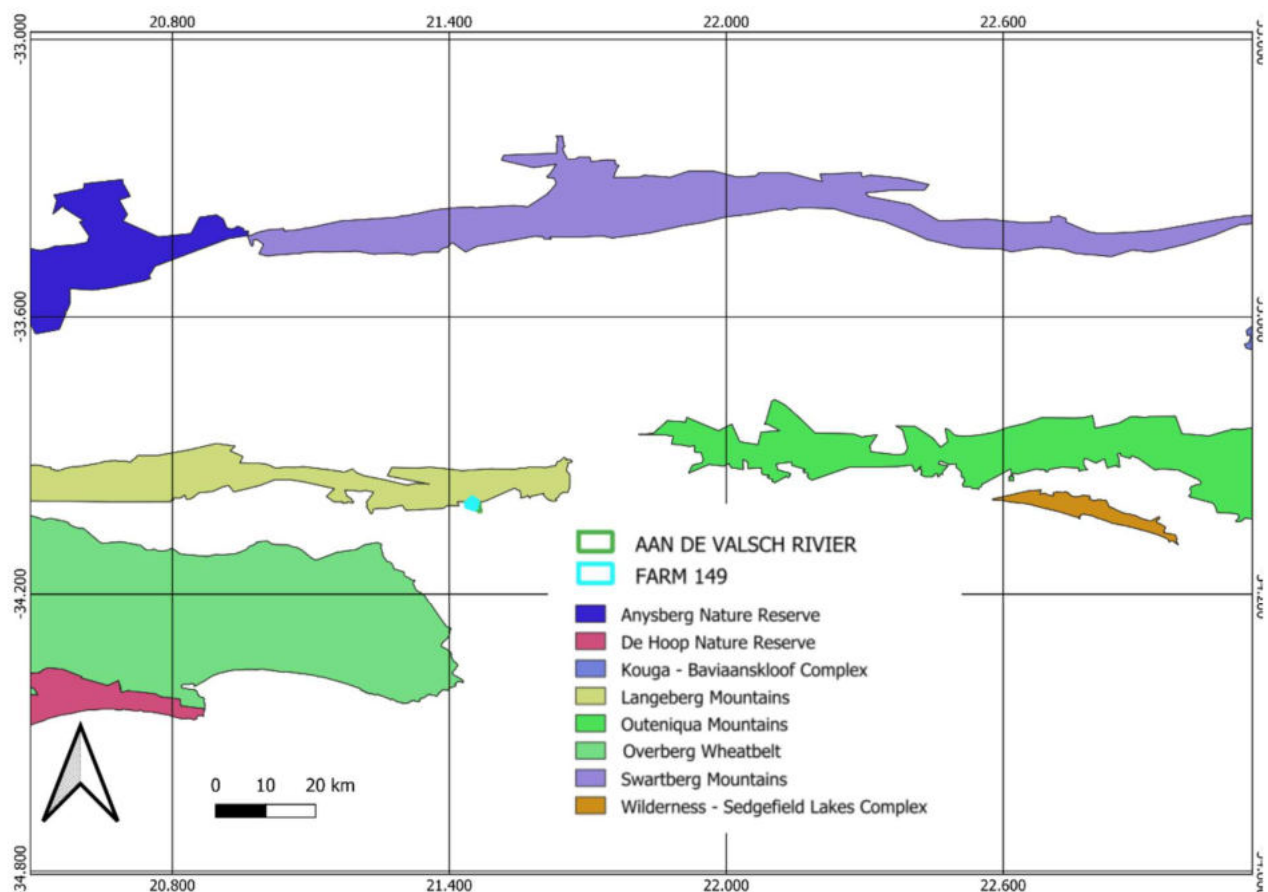


Figure 4: The project area (blue dot) in relation to Important Bird Area identified for South Africa (Marnewick et al., 2015).

BIRDS SCC

Circus maurus (Temminck 1828) Black Harrier

- This species of harrier is endemic to southern Africa and has an IUCN Red List Category and Criteria of Endangered C2a(ii).
- This species occurs widely in South Africa, but fewer than 1000 birds are thought to occur, and habitat transformation is a major threat.
- This species breeds on the ground in low, shrubby vegetation in spring, mainly in the Western Cape, before undertaking complex and variable post breeding movements that can take birds to the Drakensberg.
- Prey is mainly rodents and birds.
- Even though no Black Harriers were seen on the site visit, the open, relatively undisturbed habitat at the site is suitable for this species for foraging and potentially breeding, although the wetland edge areas that might be most suitable for breeding are heavily disturbed by alien invasive vegetation.

Circus ranivorus (Daudin 1800) African Marsh Harrier

- This species of harrier is endemic to Africa and has an IUCN Red List Category and Criteria of Least Concern.
- This species is associated with aquatic habitats and often nests in extensive marshes. Prey included rodents, as well as birds and amphibians.
- Although this species occurs in the general region, the small amount of wetland habitats associated with this site mean that it is not an important site for this species

Neotis denhami (Children & Vigors, 1826) Denham's bustard

- This species of bustard is endemic to Africa and has a Regional Red List Status of Vulnerable however in the global context an IUCN Red List Category and Criteria of Near-Threatened.
- This species inhabits and breeds in open vegetation types in this area of the South Coast. It can also occur in recovering vegetation that has been previously disturbed. Denham's Bustard shows local movements and are more common as breeders after fires have made the vegetation more open.
- The upper ridge area of open habitat offers ideal habitat for this bird SCC, both in terms of foraging and breeding. This species was seen flying over the project site and foraging in adjacent open areas.

Polemaetus bellicosus (Heine, 1890) Martial Eagle

- This species of eagle is endemic to Africa and has an Regional Red List Status of Vulnerable, however in the global context an IUCN Red List Category and Criteria of Endangered.

- The species is wide-ranging and likely hunts over the site from time to time, but there are no known nesting sites at the project site and the site is not considered of significance for the species.

Stephanoaetus coronatus (Linnaeus, 1766) *Crowned eagle*

- This species of raptor is widely distributed in Africa and Eurasia has an IUCN Red List Category of Near Threatened, but in South Africa its regional Red List Status is Vulnerable.
- This species is localised in the forests of the eastern and southern parts of South Africa (mostly the eastern coastal forests) and 800 adults are thought to occur.
- Natural prey is mainly mammals such as antelope, monkeys, and hyraxes, but birds such as Hadedas can also be taken.
- This species was not seen at the site and is not known to breed at the site, although it might occasionally pass through the area and use the forested parts of the site.

Bradypterus sylvaticus (Sundevall, 1860) *Knysna Warbler*

- This species of warbler is endemic to South Africa occurring patchily along the southern coast from Cape Town to Mbumbazi Nature Reserve, KwaZulu-Natal, and even being recorded more recently near Durban.
- It has an IUCN Red List Category and Criteria of Vulnerable.
- It creeps around in thick undergrowth and tangles in forest, forest edges, and coastal thickets
- When a forest becomes overshadowed by too many trees, this species will vacate the habitat as it prefers dense bush, which cannot grow in low light conditions. In recent years it has resorted to living in woodlands invaded by alien plants.
- This species was not recorded and is very localised in this area. It might occur dense forest edge tangles but the amount of habitat is not considered significant for this species on the site.

INVERTEBRATE SCC

GRASSHOPPER SCC

Aneuryphymus montanus (Brown 1960) *Yellow-winged Agile Grasshopper*

- This species of grasshopper is endemic to South Africa and has an IUCN Red List Category and Criteria of Vulnerable B2ab.
- Within South Africa, the species has a broad distribution occurring across mountainous habitats of the “Cape Region” from the north-western winter-rainfall areas near Clanwilliam, eastwards until just before East London. The species appears to be associated with several fynbos vegetation types (e.g., Leipoldtville Sand Fynbos, Kogelberg Sandstone Fynbos) and “south-facing cool slopes” .
- It has a large, estimated extent of occurrence of 172463km² and its estimated geographic range overlaps the project area.

- The species has not been historically recorded from near the project area; the closest known record is approximately 91 kms north-east for a collection record from South Swartberg Sandstone Fynbos.

BUTTERFLY SCC

Tsitana dicksoni (Evans, 1956) *Dickson's Sylph*

- This species of butterfly is endemic to South Africa and has an IUCN Red List Category and Criteria of Least Concern (Rare).
- The species is relatively widespread and is known from the Eastern Cape and Western Cape Provinces, from Franschhoek in the west to Baviaanskloof near Patensie in the east, widespread on the Langeberg and its foothills.
- It has an estimated extent of occurrence of 50 000 km², and although widespread, it is considered generally rare.
- It favours habitat associated with grassy spots in montane fynbos vegetation.
- A species of grass is known as a larval host plant: *Pseudopentameris macrantha* (Schrad.) Conert (*Poaceae*).
- The species has been historically recorded relatively close to the project area; a known record is approximately 15 km south-westwards of the project site from Eastern Ruens Shale Renosterveld.

The site appears in poor to good ecological condition and some areas of the site offer habitat suitable for bird and insect SCC. The sensitivity themes are considered mostly inaccurate for the animal theme assessed, with most areas considered a low sensitivity, except for three areas that are considered as higher sensitivity, owing to river and associated wetland habitat, and mostly intact fynbos habitat (Figure 5) and sighting of Denham's bustard on the western ridge above the project area.



Figure 5: Constraints map for the project area: The upper western ridge is considered as higher sensitivity owing to the sighting of Denham's Bustard. The northern parts are considered higher sensitivity owing to the intact fynbos vegetation and the area falling within an IBA.

CONCLUSION

Based on the available species-level information for the animal, their known habitat preferences, it is considered that there is a medium to high probability of all SCC utilising some of the areas at the project site. The project area falls within the geographic distributions of the Yellow-winged Agile Grasshopper SCC and the project site offers suitable habitat in parts. However, considering the wide distributional range of the species, occurring across several different vegetation types, the project impact on the Yellow-winged Agile Grasshopper is considered low. Similarly, the Dickson's Sylph butterfly is a wide-spread species, and although is likely to occur on areas of grassy fynbos at the project area, the project impact on this butterfly SCC is considered low, especially if areas of intact fynbos habitat are excluded from the proposed agricultural development.

The Black Harrier (*Circus maurus*) does occur in the general area and vegetation type of the project site. The project area represents high-quality foraging habitat and possibly breeding habitat. However, given the wide range of the species in that area, the small size of the site, that and that their preferred wetland breeding habitat is degraded, it means the site is likely of low significance for this species.

The African Marsh Harrier (*Circus ranivorus*) is largely restricted to wetland habitats; such habitat is seen at the project site and associated with the Valsrivier. The Marsh Harrier might only briefly visit on passage to other more suitable areas, and the site does not represent a viable habitat for the species. The Knysna

Warbler might occur in the dense tangles of alien Black Wattle trees growing in the ravines; however, this is unlikely a significant area for this species. The two large raptors species may occasionally visit the project site, considering the large eucalyptus and Black Wattle trees that have become established in parts. However, the project area is not considered as important for them and they are not known to breed in the area.

According to the faunal survey undertaken, the Animal Species Sensitivity of the site is classed as mostly Low, with two areas classed as higher faunal sensitivity, mostly based on the sighting of the Denham's Bustard, intact fynbos habitat, and falling within an IBA. **A Faunal Species Impact Assessment on the site will be undertaken by Jonathan Colville and Callan Cohen.**

5.3 Aquatic Biodiversity – Very High Sensitivity

An applicant intending to undertake an activity identified a site identified on the screening tool as being of "very high sensitivity" for aquatic biodiversity, must submit an Aquatic Biodiversity Specialist Assessment. A site visit was undertaken on the 8th of November 2024, with the objective of identifying and classifying watercourses affected by the cultivate area, determining their Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS), and assessing the impacts of the establishment of cultivated fields on watercourses.

Confluent Environmental was appointed to complete an Aquatic Biodiversity Impact Assessment for the proposed development of Portion 3 of Farm Aan de Valsch Rivier 186 and Farm Horeb 149. The establishment of the cultivated fields and a new dam is planned to occur within close proximity to freshwater resources, prompting the need to conduct an aquatic specialist assessment that meets the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and the National Water Act (Act 36 of 1998) (NWA).

STUDY SITE

Watercourses mapped within the property boundaries include the Vals River and its tributaries which run along confined, low gradient valleys and are mapped as channelled valley-bottom wetlands. A hillslope seep wetland and non-perennial drainage lines are mapped along the east facing slopes of Farm 149 and several non-perennial streams drain the west facing slopes of Portion 3 of Farm 186. An extensive seep wetland network drains the mountains to the north and meets the Vals River in the north-eastern corner of Portion 3 of Farm 186.

The property falls within sub-quaternary catchment (SQC) 9185, which, according to the National Freshwater Ecosystem Priority Atlas (NFEPA, Nel et al., 2011), has not been classified as a FEPA. The SQC is therefore not considered important from a freshwater conservation perspective and is not located upstream of any SQCs that have been designated as FEPAs.

Strategic Water Source Areas (SWSAs) are defined as areas of land that either: a) Supply a disproportionate (i.e. relatively large) quantity of mean annual surface water runoff in relation to their size and so are considered nationally important; or b) Have high groundwater recharge and where the groundwater forms a nationally important resource; or c) Areas that meet both criteria (a) and (b).

The property that forms the focus of this study occurs within the Langeberg SWSA which is considered to be of national importance. The SWSAs are vital for water and food security in South Africa and also provide the water used to sustain the economy. Given this context, management and implementation guidelines have been developed with the objective of facilitating and supporting well-informed and proactive land management, land-use and development planning in these nationally important and critical areas (Le Maitre, et al., 2018). The primary principle behind this objective is to protect the quantity and quality of the water they produce by maintaining or improving their condition.

With respect to agriculture, the main impacts that affect watercourses are inputs of fertilisers and agro-chemicals, soil erosion and associated sediment input and destabilisation of the bed and banks of watercourses because of the failure to maintain uncultivated buffer strips along the banks of watercourse. It is therefore important that the establishment and production of new cultivated fields is done in a sensitive manner to prevent degradation of water resources through the impacts described above. This can primarily be achieved by implementing adequately sized buffers in between watercourses and agricultural fields.

The main purpose of a biodiversity spatial plan is to ensure that the most recent and best quality spatial biodiversity information can be accessed and used to inform land use and development planning, environmental assessments and authorisations, natural resource management and other multi-sectoral planning processes. The WCBSP plan achieves this by providing a map of terrestrial and freshwater areas that are important for conserving biodiversity pattern and ecological processes – these areas are called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs).

All wetlands indicated to occur within each of the property boundaries have been mapped as aquatic CBA1 (Figure 6). These are wetlands that are considered to be in a relatively natural condition and are important for meeting provincial biodiversity targets. Management objectives require minimal, low impact development so that the natural state of the watercourses are maintained. Adjacent terrestrial areas have been largely mapped as terrestrial CBA1.



Figure 6: Map of the property boundaries (yellow) in relation to the Western Cape Biodiversity Spatial Plan (WCBSP).

SITE ASSESSMENT

WATERCOURSE CLASSIFICATION

The properties were visited on the 8th of November 2024, during which time the presence of watercourses was verified and mapped. The watercourses were classified according to discrete hydro geomorphic units (HGMs) (see Figure 7) and are described in more detail in the sections below.



Figure 7: Map showing wetlands delineated and classified on Portion 3 of Farm Aan de Valsch Rivier 186 and Farm Horeb 149.

Valley-Bottom Wetlands

As the name implies, these wetlands are located along the valley bottoms of both properties. VB3 follows the Vals River and is the most prominent HGM (Figure 7). It is an unchannelled valley-bottom wetland located along a low gradient valley, which favours diffuse (as opposed to channelled) streamflow, ultimately resulting in prolonged saturation levels and deposition of high levels of organic matter and sediment. VB3, is broad and well vegetated by a variety of wetland plant species that include *Cyperus glomeratus*, *Watsonia angusta* and *Eragrostis capensis*. While the wetland is heavily invaded by Black Wattle (*Acacia mearnsii*) in some sections, most of the wetland remains free of invasion.

The western tributary of the Vals River (VB5) also has low levels of invasion. This tributary has a distinct channel and is associated with a channelled valley bottom wetland, which is fed by lateral surface and subsurface flows and periodic flooding of the main river channel. The eastern tributary of the Vals River (VB4 - an unchannelled valley bottom wetland) is heavily invaded along most of its length, which has caused higher levels of invasion in the lower reaches of the Vals River.

Immediately downstream of the boundary of Portion 3 of Farm 186, the condition of VB3 wetland deteriorates rapidly and has become severely eroded, leading to the formation of a deep, heavily incised channel with banks actively collapsing into the river. This headcut erosion has moved upstream into the lower reaches of the Vals River on Portion 3 of Farm 186, leading to loss of wetland habitat. This erosion has potentially serious consequences for the wetland. Channelisation of the wetland will result in the localised drawdown of water levels leading to a drop in the water table and gradual loss of wetland habitat adjacent to the channel.

Hillslope Seep Wetlands

A large hillslope seep wetland was confirmed along the eastern slopes of Farm 149. Water was actively seeping down the slope, feeding the unchannelled valley bottom wetland (VB3) below. For ease of reference discrete sections of the wetland have been labelled from A to C (Figure 7 above). Section C is a prominent section of the wetland characterised by higher levels of saturation and a diverse assemblage of fynbos species on the upper slopes. Steeper small valleys within the larger seep, where saturation is more pronounced, comprised a number of typical obligate wetland species that included *Utricularia bisquamata*, *Elegia capensis*, *Cliffortia strobilifera* and *Berzelia galpinii* (which frequently occurs in extensive stands in high altitude wetlands along the Langeberg mountains). *Erica cubica* and *Penaecia cneorum* were common around the margins of these areas. Soil auger samples from these areas indicated saturated soil conditions. The lower section of this seep is less saturated and mores seasonal in nature. It is also actively mowed but included species such as *Fuirena hirsuta* and *Caryx sp.* Section B lies further to the south and was characterised by a prominent saturated zone dominated by *Eligia cf. fistulosa*. The broader extent of this section of the seep is more seasonal in nature and was dominated by species that included *Fuirena hirsuta* and *Erica cf. quadrangularis*. Further downslope of seepage areas A and B, a cut off channel runs along a contour along the entire length of the slope presumably to capture water from the slopes and convey it to a small dam in between Section B and C. This channel was dominated by species that included *Berzelia galpinii*, *Eligia capensis* and *P. cneorum*. While *P. cneorum* is not a typical wetland indicator it does favour moist, damp areas and its noticeable presence along the margins of the channel suggests that this species appears to be a prominent indicator of more saturated soil conditions within this seep area.

Section C lies furthest to the south and is confined to a shallow valley. While this area is also actively mowed, obligate wetland species (e.g. *Cliffortia strobilifera*) were observed resprouting as well as other species including. At its lowest elevation the valley narrows and the wetland becomes more confined, passing through an old Eucalyptus plantation, whereafter it meets the unchannelled valley bottom wetland and was characterised by species that included *Juncus capensis* and *Isolepis prolifera*.

Another three smaller wetland seeps were delineated within Portion 3 of Farm 186:

- HS2 was identified and delineated by Day (2020) and forms the source zone of VB5.

- HS3 is a narrow seep wetland that extends down the east facing slope of the property. This seep occurs adjacent to an area that was actively farmed. Water was actively seeping from the top of the seep during the site visit. Vegetation along the seep was not as dense as observed elsewhere on the property and soil is more exposed (and thus vulnerable to erosion). The seep would benefit from the establishment of a protective buffer that would allow typical wetland species to re-establish
- HS4 is located along the western boundary of the property and originates from a shallow bowl at the top of the hill and extends down the slope to the channelled wetland at the bottom of the valley. The upper reaches of the wetland have also been actively mowed, however obligate wetland species including *Carpha glomerata* and *Berzelia galpinii* characterised this wetland as well as other moisture loving species such as *Helichrysum cymosum*.

THREAT AND PROTECTION STATUS

The threat and protection status of different wetland types within broad vegetation bioregions has been classified as part of the 2018 National Biodiversity Assessment. Based on vegetation characteristics, the wetland types can be categorised as follows:

- Southern Fynbos hillslope seeps (HS1, HS2, HS3 and HS4) – Least Concern.
- Southern Fynbos unchanneled valley bottom wetlands – Critically Endangered (VB3 and VB4).
- Southern Fynbos channelled valley bottom wetlands – Critically Endangered (VB5).

PRESENT ECOLOGICAL STATE (PES)

Present Ecological State (PES) is a measure of aquatic ecosystem condition, compared to that of the system in its natural or “reference” condition. The PES of each wetland was assessed and is described in the sections below:

Seep Wetlands

- HS1 is a relatively large wetland and provides significant surface and sub-surface flows into the wetland in the valley bottom. Impacts to the wetland are currently relatively limited. Vegetation in the less saturated areas is periodically cut (presumably for supplemental feed). Vegetation in the more saturated areas (mainly Section A) is not cut and supports a wide diversity of fynbos species. The road running along higher slopes of the seep (along the western boundary of Farm 149) intercepts shallow sub-surface flows to an extent, leading to daylighting of sub-surface flows and more concentrated flows down the slopes from discrete low points down the road. The impact of the road is, however, relatively minor and has not resulted in any noticeable erosion on the down slope. The channel running along the mid-slope of the seep intercepts shallow sub-surface and surface flows, leading to noticeably drier conditions further downslope. Grazing of animals within these seep areas does occur but does not appear to have caused major disturbance to the larger portion of the wetland and there is no visible erosion. Only the more

southern extent of HS1 (Section C) is invaded by *Eucalyptus sp.* Based on these impacts the PES of the wetland is B (Largely Natural).

- HS2, as described by Day (2020) has been closely edged and possibly reduced in extent by a surrounding access road as well as by upslope impacts such as the new dam which potentially reduce throughflows that would naturally feed the wetland. Day (2020) assessed the PES as B (Largely Natural) with localised disturbance as a result of road fragmentation and possible impacts to seepage inflows.
- The wetland has been impacted by adjacent agricultural activities, the lack of a protective buffer and minor invasion by *A. mearnsii*. The PES of the wetland is C (Moderately Modified).
- Apart from mowing vegetation in the uppermost reaches HS4 is relatively unimpacted. Minor modifications due to roads and cutting of vegetation have occurred. The PES is B (Largely Natural).

Unchannelled Valley Bottom Wetlands

- Main impacts to VB3 are associated with roads and road crossings and invasion by *A. mearnsii*. Road crossings are currently unprotected low-level crossings along the riverbed. While these cause a localised disturbance across the wetland, the main diffuse flow characteristics of the wetland are maintained and no erosion or channelisation of the wetland has occurred as a result of these crossings. Invasion by *A. mearnsii*, is relatively limited to isolated patches and much of the natural extent of the wetland remains uninvaded. As described above, the lower most reach of the wetland is eroding in the neighbouring Portion 2 of Farm 186 and in more recent times, this erosion has extended into the wetland within Portion 3 of Farm 186. This erosion presents a serious threat to the remaining extent of the wetland and rehabilitation of the seep with a view to limiting further headcut erosion is highly recommended. The PES is B (Largely Natural).
- VB4 is heavily invaded by *A. mearnsii*, which dominates almost the entire extent of the wetland. Natural wetland vegetation has therefore been replaced and the comparatively high-water use by invasive plant species affects base flows and increases erosion in the wetland. The PES is D (Largely Modified).
- VB5 is relatively unimpacted apart from the lower most reaches, just upstream of its confluence with VB3. Here, the road crossing causes a small area of inundation upstream of the road. Below the crossing, extensive clearing of *A. mearnsii* has occurred and there are indications of recovering wetland habitat in this area. A channel has however been excavated to divert flows from upstream of the road directly into VB3 which essentially diverts diffuse flows out of the lower most section of the wetland. The PES is B (Largely Natural).

CONCLUSION

Several wetlands have been identified within the property boundaries, most of which are in a largely natural ecological condition. The wetlands are therefore of high biodiversity and ecological importance,

particularly considering that they are mapped as CBAs and occur within a SWSA. Development planning should therefore avoid delineated wetlands and associated buffers as far as possible.

For the purposes of this assessment, the watercourse and its associated buffer was considered to be of Very High Aquatic sensitivity. If any construction or operational activities fall within the delineated watercourse OR buffer zone, the sensitivity of the site is confirmed as Very High. If all construction and operational activities fall outside of the buffer, the aquatic sensitivity is considered as LOW. **An Aquatic/Freshwater Impact Assessment will be undertaken by Confluent Environmental.**

5.4 Archaeological and Cultural Heritage – Low Sensitivity

The Archaeological and Cultural Heritage Sensitivity in terms of the Screening Tool is indicated as LOW. Jenna Lavin from CTS Heritage was appointed to compile a NID and Heritage Screener. Jenna Lavin stated that: “Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources and as such, it is recommended that no further heritage studies are required.”

As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. The Archaeological and Cultural Heritage Sensitivity in terms of the site and the proposed addition is therefore considered negligible. The Heritage NID and Screener was supported by HWC. Please refer to the Heritage Screener and Final Comment from HWC included in **Appendix B**.

5.5 Civil Aviation – Low Sensitivity

An applicant intending to undertake an activity for which a specialist assessment has been identified on the screening tool as being of "low" sensitivity for civil aviation, no further assessment requirements are identified. The Civil Aviation Sensitivity in terms of the site and in relation to the proposed activity is therefore considered negligible.

5.6 Defence – Low Sensitivity

In accordance with the “*Protocol for the specialist assessment and minimum report content requirements for environmental impacts on defence installations*” an applicant intending to undertake an activity for which a specialist assessment has been identified on the screening tool, on a site identified as being of “low” sensitivity for defence, no further assessment requirements are identified. As no negative impacts on any defence installations are expected, this theme does not apply further to the application and is considered negligible.

5.7 Paleontology Theme – Very High Sensitivity

Jenna Lavin from CTS Heritage was appointed to compile a NID and Heritage Screener.

The area proposed for development is underlain by geological units of very high palaeontological sensitivity as per the SAHRIS Palaeosensitivity Map (Figure 8). According to the extract from the Council of Geoscience Map for 3320 Ladysmith and 3420 Riversdale (Figure 9), the underlying geology forms part of the Dbo: Bokkeveld Group (shale and siltstone with occasional thin sandstone beds), and River-terrace gravel.

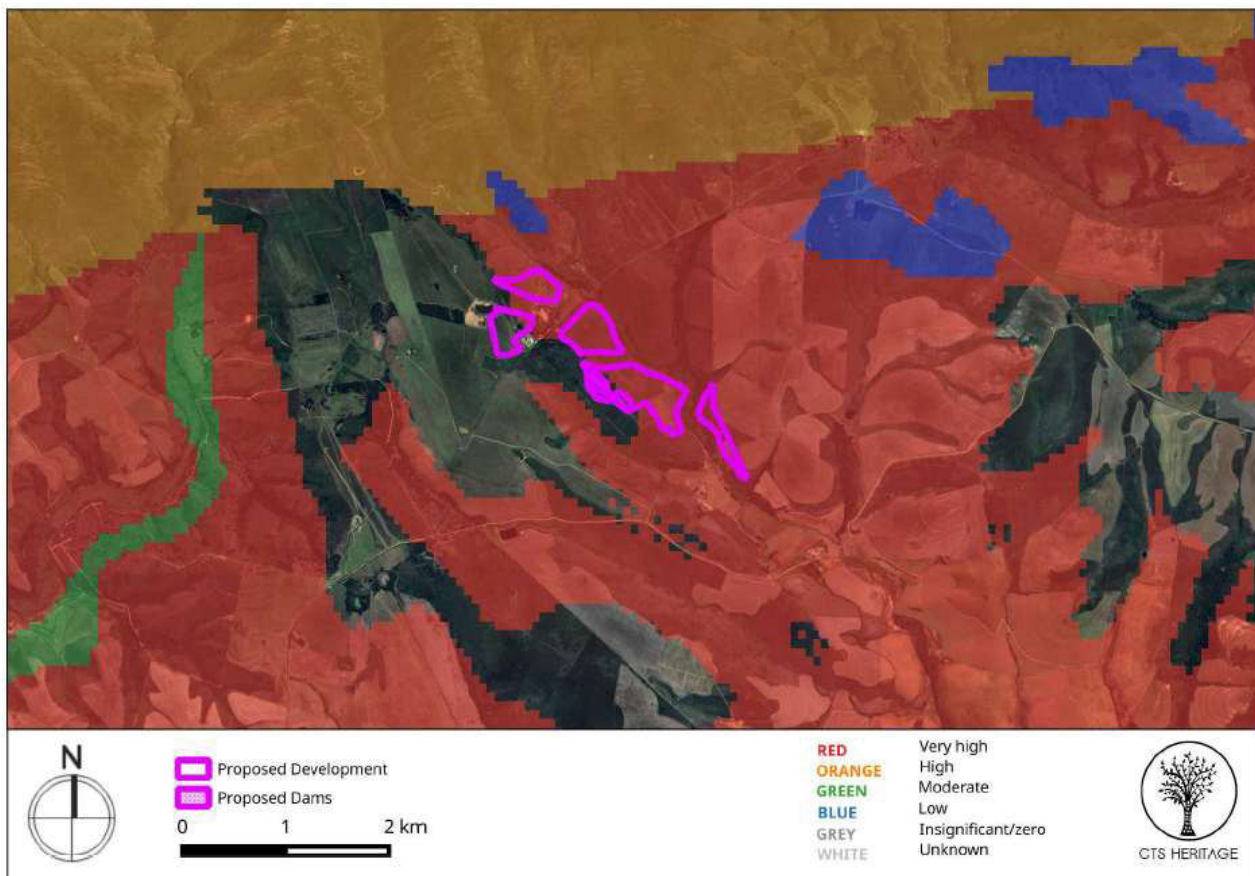


Figure 8: Palaeosensitivity Map. Indicating Low to Very High fossil sensitivity underlying the study area.

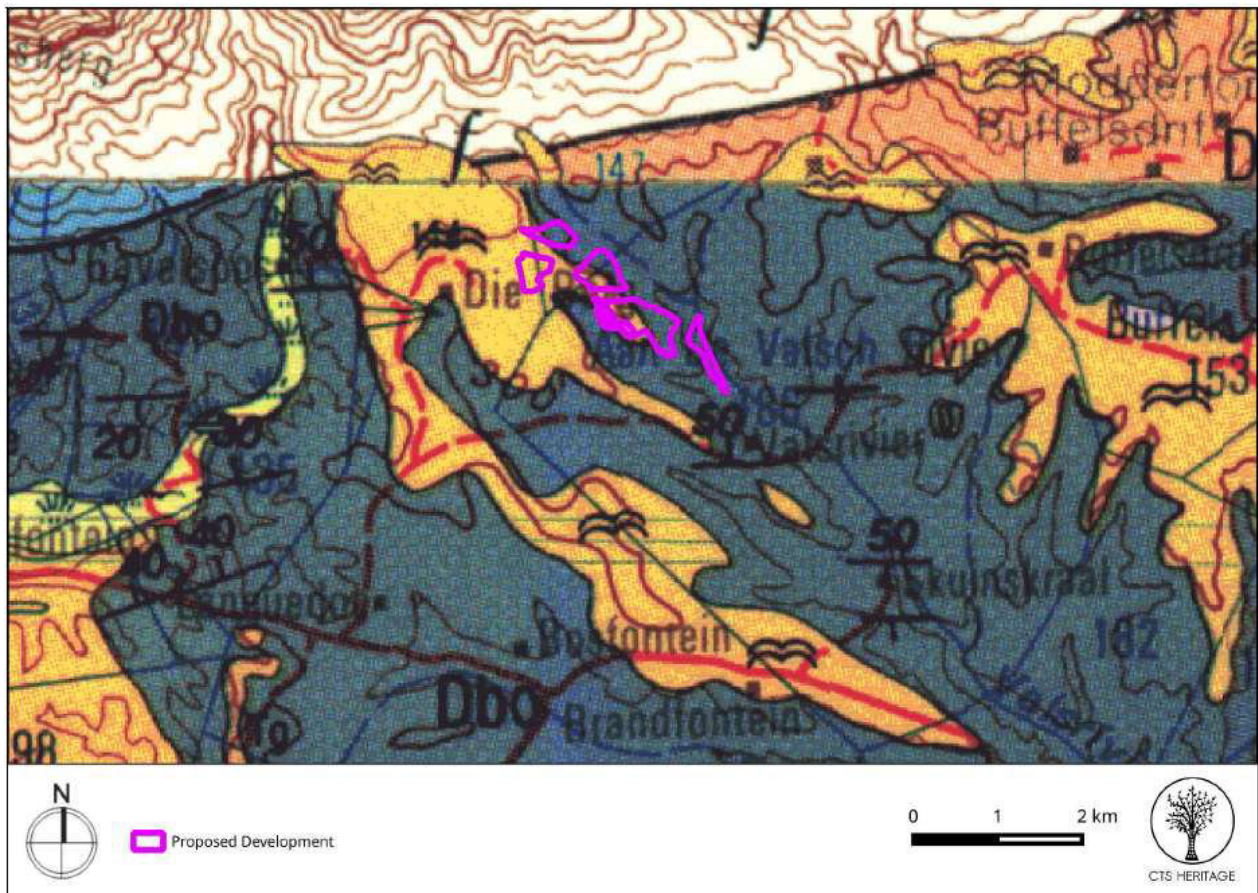


Figure 9: Geology Map. Extract from the CGS 3320 Lady Smith and 3420 Riversdale Geology Map indicating that the development area is underlain by Dbo: Bokkeveld Group (shale and siltstone with occasional thin sandstone beds), and River-terrace gravel.

In a PIA located approximately 20km southwest of the proposed development, Almond (2011, SAHRIS NID 8915) noted the following regarding the Bokkeveld Group in the area: *“Although in many cases these Devonian marine and near-coastal rocks were originally highly fossiliferous, there are very few fossil sites recorded within them in the Riversdale region. A number of recent palaeontological impact studies by the author show that deep chemical (lateritic) weathering, folding and pervasive cleavage, especially of the Finer-grained mudrocks, has destroyed most near-surface fossils here. Low diversity trace fossil assemblages such as Spirophyton communities are among the few exceptions. In practice, the Bokkeveld Group outcrop area is therefore generally of low palaeontological sensitivity in this sheet area.”*

Almond (2012) completed a PIA located 30km to the south for the proposed Lunskip Wind Farm to be established on several properties situated near Still Bay in the WesternCape. He states the following regarding the Bokkeveld Group in the area *“The lower part of the Ceres Subgroup in the Western Cape is known for its rich fossil assemblages of shallow marine invertebrates of the Malvinokaffric Faunal Province of Gondwana (Cooper 1982, Oosthuizen 1984, Hiller & Theron 1988, Theron & Johnson 1991, MacRae 1999, Almond in De Beer et. al. 2002, Thamm & Johnson 2006, Almond 2008). Key fossil groups*

here include trilobites, brachiopods, various subgroups of molluscs (bivalves, gastropods, nautiloids etc), and echinoderms (starfish, brittle stars, crinoids, carapoids etc), with several minor taxa including corals, conulariids, tentaculitids and rare fish remains, among others. These shelly fossil assemblages – generally preserved as impressions or moulds – are especially abundant within the finer-grained, mudrock-dominated units such as the Gydo and Voorstehoek Formations in their more distal (offshore) outcrop areas. Remarkably diverse and well-preserved assemblages of marine trace fossils (burrows, trackways etc) occur in heterolithic (i.e. interbedded sandstone and mudrock) facies of the northern, more proximal outcrop area of the Bokkeveld Group (Swart 1950, Theron 1972, Oosthuizen 1984, Almond 1998a, 1998b, De Beer et al. 2002, Almond 2008). However, these have not been extensively recorded from the more distal, southern outcrop area. Apart from sparse shelly fossil remains (e.g. crinoid stem moulds), bioturbation and occasional transported fragments of land plants, very few fossils have been recorded from the Lower Bokkeveld Group in the Riversdale sheet area (Malan et al. 1994).

He further states that during a recent palaeontological field study by the author of Ceres Subgroup rocks exposed close to the coast in the Gouritz River valley, some 35 km to the east of the Still Bay study area, no shelly invertebrate, vascular plant or fish fossils at all were observed. There are no fossil records from these rocks mentioned in the geological sheet explanations by Haughton et al. (1937), Malan et al. (1994) and Viljoen and Malan (1993). The striking rarity of Bokkeveld fossil records here may be attributed to several factors, notably: deep chemical weathering of sediments beneath the “African Surface” which has obliterated fossil moulds; intensive Cape age (Permo-Triassic) tectonic deformation of the Bokkeveld succession, with pervasive cleavage formation within the normally fossiliferous mudrocks (N.B. Most fossils are preserved and seen on bedding planes, which are rarely exposed here, rather than secondary cleavage planes which cut across fossil-rich layers); the extensive mantle of superficial deposits (including lag gravels, soil and pedocretes) covering the Bokkeveld bedrock. For the same reasons the palaeontological sensitivity of the Lower Bokkeveld Group sediments near Still Bay is probably low, but this needs to be confirmed by fieldwork since isolated pockets of well-preserved fossil remains may persist here and would be of considerable scientific interest.”

Based on the available literature, the nature of the proposed development, and the already highly altered condition of the landscape, the likelihood of uncovering well-preserved and scientifically significant fossils is considered low. As a result, no further palaeontological studies are recommended. The very high Paleontology Sensitivity in terms of the site is therefore refuted and should be of Low sensitivity as the impact of the proposed development is considered **LOW**. Heritage NID and Screener was supported by HWC. Please refer to the Heritage Screener & Final Comment from HWC included in **Appendix B**.

5.8 Plant Species – Medium Sensitivity

In addition to Government Notice No. 320 (published on the 20 March 2020) an additional notice, Government Notice No. 1150 was published on the 30 October 2020 identifying two additional themes: Terrestrial animal species and Terrestrial plant species. 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 plant species, must submit either a Terrestrial Plant Species Specialist Assessment Report or a Terrestrial Plant Species Compliance Statement, depending on the outcome of a site inspection undertaken. Greg Nicolson from CAPENSIS has been appointed and will undertake a Botanical Impact Assessment (to include plant species) of the site. A site visit was conducted on the 28th and 29th of September 2023.

Please refer to Section ‘5.9 Terrestrial Biodiversity’ below describing the ‘vegetation of the study area’. At least four different plant **Species of Conservation Concern (SoCC)** were recorded on site (**Figure 12 below**). These include *Phyllica velutina*, *Pittosporum viridiflorum*, *Protea coronata* and *Protea decurrens*.

The Plant Species Sensitivity in terms of the site was mapped on Figure 12 below and **Greg Nicolson from CAPENSIS has been appointed and will undertake a Botanical Impact Assessment (including plant species)**.

5.9 Terrestrial Biodiversity – Very High Sensitivity

An applicant intending to undertake an activity on a site identified on the screening tool as being of "very high sensitivity" for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment. Greg Nicolson from CAPENSIS has been appointed and will undertake a Botanical Impact Assessment.

NATIONAL VEGETATION TYPE

According to the Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2024) (VEGMAP), the main vegetation type occurring in the study area is Swellendam Silcrete Fynbos. South Langeberg Sandstone Fynbos is mapped in the far north part of the site (Figure 7). However, elements, specifically the substrates, associated with the adjacent Garden Route Shale Fynbos were found on the site, and this vegetation type is also described below as per Mucina and Rutherford, 2006:

Swellendam Silcrete Fynbos

“Mainly undulating hills on the coastal forelands, the remains of the old African surface. Structurally it is a medium tall evergreen shrubland or grass- land. Predominantly asteraceous fynbos, but graminoid fynbos on summits and northern slopes where disturbed. Proteoid fynbos occurs on southern slopes and ericaceous fynbos is found in wetter habitats. Afrotemperate forest occurs in fire- safe alluvial areas,

such as along perennial rivers. It is uncertain whether proteoid fynbos, renosterveld or thicket was the dominant type in some of the eastern plateaus—it has all been converted to pasture”.

South Langeberg Sandstone Fynbos

“Complex of gentle to very steep, south-facing slopes, not much dissected over most of the range, but deeply dissected in parts. The Cedarberg Shale Band is prominent in the east, in an almost vertical orientation, as a narrow, smooth-sided valley along which the hiking trails are orientated. Ericaceous and restioid fynbos predominate at higher altitudes, with moderately tall to tall proteoid fynbos on middle and lower slopes. Scrub and restioid fynbos are found in habitats with much groundwater.”

Garden Route Shale Fynbos

“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) 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).”

According to Cadman et al. (2016) the key ecological drivers in midland fynbos ecosystems include (1) the natural fire regimes and the interplay of fire and grazing, (2) edaphic conditions and underlying lithology, and (3) drainage and soil gradients. Please refer to **Figure 10**.

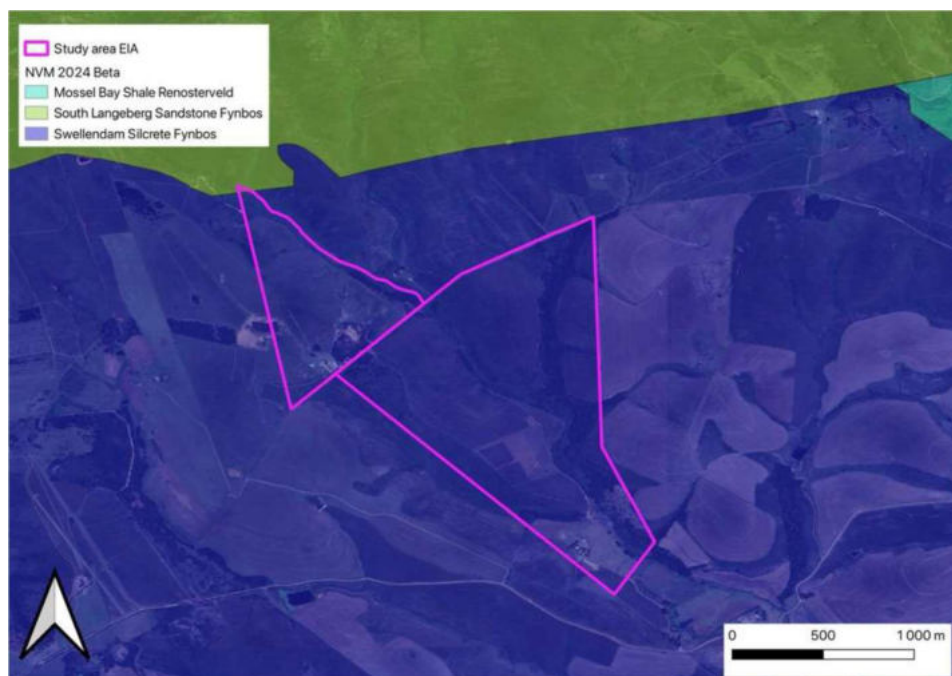


Figure 10: VEGETATION MAP: The study area superimposed on a portion of The Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2018), overlaid on a Google Earth [™] aerial image.

VEGETATION OF THE STUDY AREA

The vegetation on the site varies in condition from Transformed to Intact condition. However, the greater part of the site has been previously farmed. It appears that the study area has undergone periodic bush cutting, and has likely been grazed extensively. The current condition of the vegetation on the site is difficult to determine in areas that have been recently bush-cut. However, in a number of places, adjacent vegetation appears to have been previously cut and provides a point of reference. There are some intact areas that have not been bush-cut and these suggest that the current farming practice has a slightly detrimental effect on the species diversity, and therefore also ecological integrity of the site. The greater part of the site supports Fynbos, and only the most southerly part of the site supports more typically renosterveld vegetation. A number of habitats have been mapped on the site (Figure 11), these are as follows:

1. Transformed
2. Highly degraded (Fynbos)
3. Degraded to Highly degraded Fynbos
4. Degraded Fynbos
5. Semi-intact to Degraded Fynbos
6. Semi-intact Fynbos
7. Semi-intact Renosterveld
8. Intact Fynbos
9. Wetland
10. Drainage line
11. Dam

Note that due to the highly variable condition of vegetation on the site, it was necessary to combine some habitat condition classes to represent a relatively homogenous area. For example, Degraded to Highly degraded Fynbos has been mapped for areas that are mostly highly degraded but contain some smaller patches of Degraded vegetation within this. These smaller patches cannot be mapped accurately as they are so patchy.

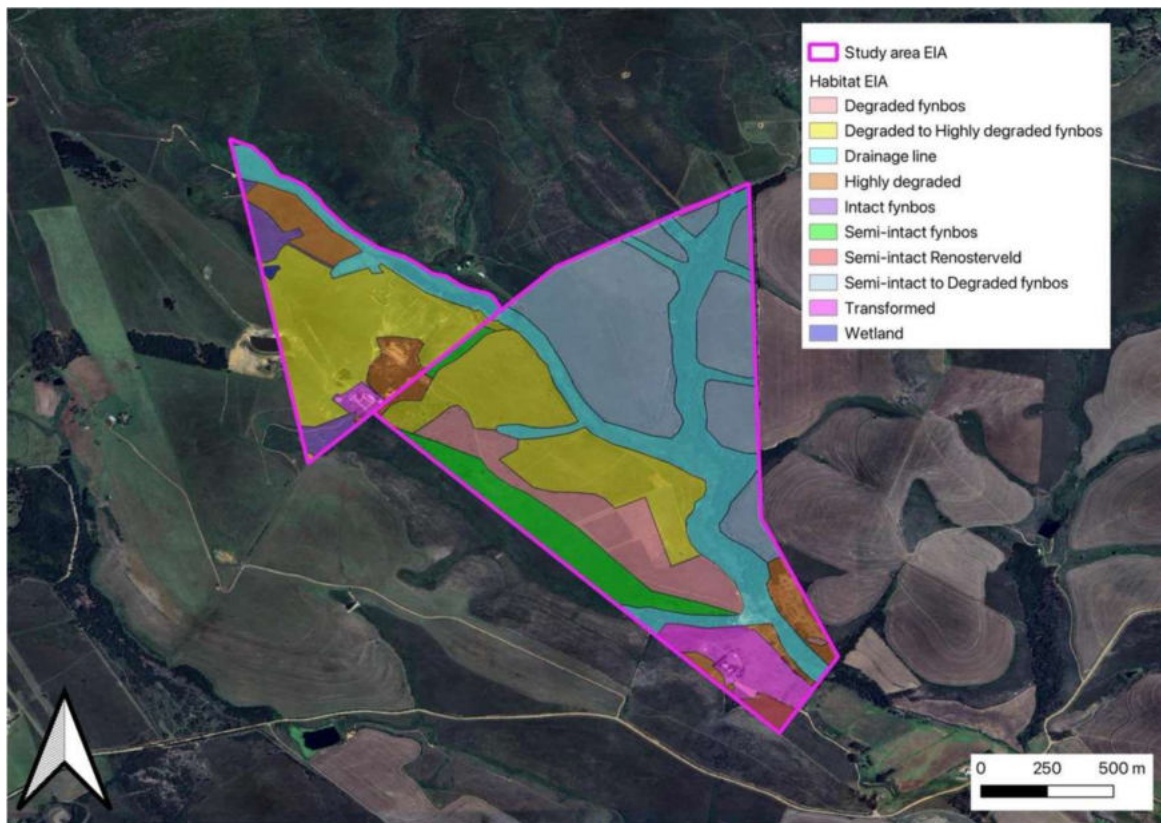


Figure 11: HABITAT MAP: The study area with ground-truthed habitat categories represented on a Google Earth™ aerial image.

TRANSFORMED (includes DAMS) AND HIGHLY DEGRADED VEGETATION

These two habitats have been modified to such a degree that they no longer represent indigenous vegetation. Transformed areas are those that have already been developed for buildings, farm infrastructure or orchards. The Highly degraded habitat is dominated by a dense stand of gum trees *Eucalyptus sp.* where some earth moving has taken place.

DEGRADED TO HIGHLY DEGRADED FYNBOS

This habitat occupies extensive portions of the north-west part of the site. There is a long history of agricultural activities here, mostly bush cutting and grazing of livestock. The vegetation is comprised of mostly indigenous species, however, species diversity is low, and dominated by a few hardy disturbance tolerant species. Typical species noted in this habitat include common coppice kolkol *Berzelia intermedia* which is typically an indicator of wet soils some heath *Erica quadrangularis*, cube heath *Erica cubica*, golden yellowwort *Sebaea aurea*, finestem Caperose *Cliffortia filicaulis*, *Helichrysum sp.*, Slangbos *Stoebe plumosa* and katstert *Anthospermum aethiopicum*. Grasses (such kikuyu *Cenchrus clandestinus*, kweek *Cynodon dactylon*, weeping lovegrass *Eragrostis curvula*), sedges and restios such as wheat Capereed *Restio triticeus*, all occur in this habitat, with sedges more dominant in the slightly wetter areas.

Other Fynbos species recorded for this habitat include the common sunshine cone-bush *Leucadendron salignum*, eastern blombush *Metalasia trivialis*, eastern kalossie *Ixia orientalis*, two-tone heath *Erica versicolor* and white satin *Geissorhiza inflexa*. A number of listed invasive alien plants species (IAPs) occurs either in concentrated areas or scattered in the site. Those identified include black wattle *Acacia mearnsii*, gum trees *Eucalyptus sp.*, pines *Pinus sp.*

DEGRADED FYNBOS

The Degraded Fynbos habitat is similar to the Degraded to Highly degraded Fynbos habitat as described above, however, the species diversity is slightly higher and the impact of bush cutting is slightly less severe. Additional species noted include: wartstem pincushion *Leucospermum cuneiforme*, seeroo-blom *Boophone disticha*, needle everlasting *Helichrysum teretifolium*, gwarrie *Euclea sp.*

SEMI-INTACT TO DEGRADED FYNBOS

This habitat occurs predominantly on the central ridge and eastern side of the study area. It consists of historically brush cut areas. Species diversity is moderate and includes typical Fynbos elements of emergent tall proteas with a dominant low asteraceous shrub layer. Some bulbs are present, suggesting that the land has not been ploughed. The dominant species in this habitat are: *Metalasia trivialis*, lambstail *Lanaria lanata*, *Cliffortia filicaulis*, spiderweb purple-georse *Muraltia ciliaris*, *Erica sp.* *Helichrysum sp.* *Anthospermum aethiopicum*, *Restio triticeus*, *Berzelia intermedia*, noughts and crosses *Penaea mucronata*, and *Leucadendron salignum*.

Bulbs include large brown Afrikaner *Gladiolus liliaceus*, coastal watsonia *Watsonia laccata*, *Geissorhiza inflexa*, *Eriospermum capense* and *Chinkerinchee Ornithogalum thyrsoides*.

Three species of conservation concern (SCC) or importance include the Near Threatened green sugarbush *Protea coronata*, The Near Threatened fluffy hardleaf *Phyllica velutina* and the Endangered linearleaf sugarbush *Protea decurrens*. Another noteworthy find here is a range extension for the Fynbos sorrel *Oxalis truncatula*.

The lower slopes of this habitat close to the rivers contain scattered individuals of black wattle, and the higher elevations contain silky hakea *Hakea sericea*.

SEMI-INTACT FYNBOS

This habitat occurs on the south-western part of the study area on a west-facing slope that contains some exposed silcrete. The area with exposed silcrete has not been brush-cut and contains some good condition vegetation. It is similar in composition to the habitat described above. There are high numbers of *Protea coronata* and *Protea decurrens* in this habitat. The Langeberg bobbejaantjie *Babiana fourcadei* also occurs here in large numbers. Part of this area has been recently bush-cut, however, the historical imagery suggests the historical extent of this habitat.

SEMI-INTACT RENOSTERVELD

This habitat occurs only in the small patch of vegetation close to the farm entrance in the far south-west part of the site. The vegetation has more renosterveld and thicket elements than the rest of the site and is likely to be more representative of Mossel Bay Shale Renosterveld (SANBI Vegmap) or Valsrivier Thicket-Renosterveld (Vlok Vegmap). Typical renosterveld species include renosterbos *Elytropappus rhinocerotis*, *Oedera* sp., *Helichrysum* sp., common gona *Passerina corymbosa*, and thatching grass *Hyparrhenia hirta*. One SCC was found here, the NT *Phylla velutina*.

Thicket elements include dune curranthrus *Searsia laevigata*, glossy curranthrus *Searsia lucida*, poison starapple *Diospyros dichrophylla*, common spikethorn *Gymnosporia buxifolia*, crossberry *Grewia occidentalis* and bitter aloe *Aloe ferox*. A protected tree species, the cheesewood *Pittosporum viridiflorum* was found in the site and is associated with the thicket elements. IAPs found here include prickly pear *Opuntia ficus indica*, black wattle and rooikrans *Acacia cyclops*.

INTACT FYNBOS

The only parts of the Study area that appear to be previously undisturbed are two areas on the western side of the site. These areas contain higher species diversity than the other parts of the site, and especially the northern patch which appears to be seasonally wet and occurring on a relatively steep slope. This is likely the reason that it has not been previously cultivated. Additional species noted here include the common pagoda *Mimetes cucullatus*, blackbeard sugarbush *Protea neriifolia*, hairy Cape sweetpea *Podalyria burchelli*, *Elegia fistulosa* (in wetter areas), bracken fern *Pteridium aquilinum*, broom thatchreed, *Thamnochortus fruticosus*, foxy purplegorse *Muraltia alopecuroides* and a *Moraea* sp.

WETLAND and DRAINAGE LINES

The major drainage line that runs through the site is the Vals Rivier. Another perennial stream joins the Vals Rivier, and both of these have a number of non-perennial tributaries that flow into them. The tributaries are mostly cleared of vegetation, but some still contain indigenous species. The major drainage lines contain a high density of invasive black wattle, especially in the lower reaches.

Wet areas occur throughout the site, and the only wetland that has been mapped is a wet area that is surrounded by cultivated lands. However, there are a number of wet indicator species such as *Berzelia intermedia* that occurs throughout the site. There are likely to be wetlands within the Intact Fynbos habitat. The mapped wetland is dominated by two restios, broom anglereed *Restio paniculatus* and pipe goldreed *Elegia fistulosa*, along with the sedge hairy hippo sedge *Fuirena hirsuta*.

SENSITIVITY AND ECOLOGICAL CONSTRAINTS

A sensitivity map (Figure 12) was produced by taking into consideration the ecological condition and conservation value of the habitat types. The ecosystem status of the vegetation types is factored into

the sensitivity along with presence (known records or absence) of SCC and spatial ecological connectivity. Restoration potential is also considered, or the condition that the vegetation would be if left uncut. The location of the SCC are presented in Figure 12. However, the constraints on the site are not only determined by the sensitivity, but also the spatial distribution of features on the site. Existing roads have been used as boundaries for the constraints.

In general, High, High-Medium are not supported for development, Medium sensitivity areas are partially considered as developable, whereas Medium-Low, Low and Very low sensitivity areas are generally potentially developable, except for where connectivity is required between the more sensitive areas. Major drainage lines and wetlands are important ecological features and these have all been mapped as No-Go areas.

The Terrestrial Biodiversity Sensitivity in terms of the site was not refuted and Greg Nicolson from CAPENSIS has been appointed and will undertake a Terrestrial Biodiversity Impact Assessment.

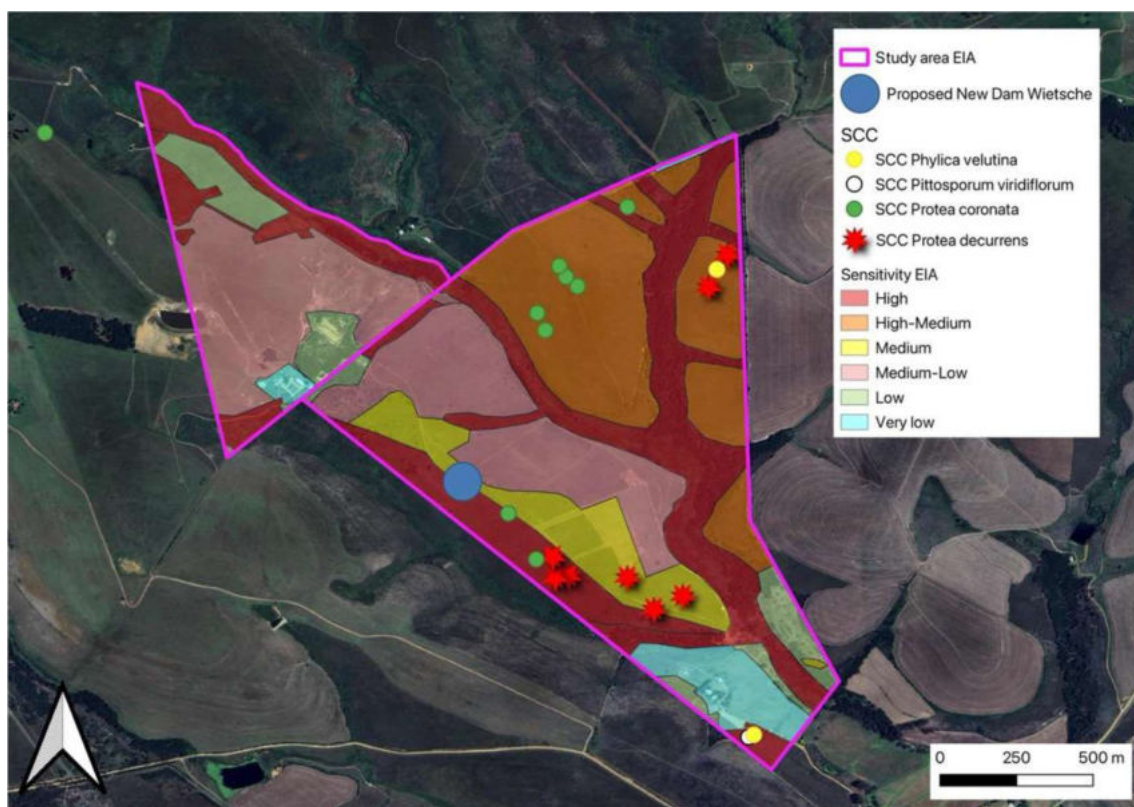


Figure 12: SENSITIVITY MAP: Google Earth™ image showing the sensitivities and SCC mapped within the Study area.

6. SPECIALIST STUDIES:

The specialist studies below are recommended by the screening tool. This section also includes motivation for complying/ not complying with the recommendations. This section is to be read in conjunction with the 'Environmental Themes' section above.

6.1 Landscape/Visual Impact Assessment ✕

Due to the scale and nature of the project a Visual Impact Assessment is not required. The proposed project scope relates to activities that are in keeping with the activities of a working farm and the surrounding area. The construction of a new dam and the proposed cultivation areas are in keeping with the agricultural zoning of the property and the surrounding farming community. The proposed activities will have limited visual impact as these activities already exist to an extent within the property and the surrounding area. Furthermore, landscape/ visual elements are dealt with as part of the Heritage Studies and further studies in this regard would be raised as part of the Heritage process. The Archaeological and Cultural Heritage Sensitivity in terms of the Screening Tool is indicated as LOW and Jenna Lavin from CTS Heritage stated that: *"Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources and as such, it is recommended that no further heritage studies are required."* HWC (competent to rule over visual and cultural aspects) has supported the findings of the NID and Heritage Screener. Visual aspects will be addressed further in the BAR and PPP with no specialist appointment envisaged. During the initial round of PPP I&APs will have the opportunity to raise any issues which will be addressed accordingly.

6.2 Archaeological and Cultural Heritage Impact Assessment & Paleontology Impact Assessment ✕

A NID and Heritage Screener has been compiled by Jenna Lavin from CTS Heritage and submitted to Heritage Western Cape (HWC). Jenna Lavin from CTS Heritage stated that: *"Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources and as such, it is recommended that no further heritage studies are required."* HWC supported the findings of the NID and Heritage Screener. The Heritage Screener and Final Comment from HWC has been included as **Appendix B. No further studies to be undertaken.**

6.3 Terrestrial Biodiversity Impact Assessment ✓

Most of study area is characterized by vegetation that has been or is currently used for agriculture. The typical agricultural activities are bush-cutting the Fynbos and livestock grazing. This type of land management favours species that respond well to cutting, including shrubs, graminoids and bulbs. Species that would not persist under these conditions are those that regrow from seeds only (i.e. non-resprouters) and require a few years to mature enough to produce seeds (e.g. re-seeding proteas). This management regime therefore allows the indigenous vegetation to persist but reduces the species diversity.

Terrestrial areas with Intact, Semi-intact and Semi-intact to degraded condition, especially where SCC are present, have been classified as No-Go areas. Some small sites of poorer quality vegetation have also been included in the No-Go area as corridors that connect better quality vegetation, or where a natural boundary such as a road exists and has been used. The remainder of the site has been mapped as potentially developable, in areas where agricultural activities have already had a moderate to severe impact on the indigenous vegetation.

The subject properties are large, and if the suggest No-Go areas are observed, indigenous vegetation and ecological processes can persist on the site. **Greg Nicolson from CAPENSIS has been appointed and will undertake a Terrestrial Botanical Impact Assessment of the site.**

6.4 Aquatic Biodiversity Impact Assessment ✓

Several wetlands have been identified within the property boundaries, most of which are in a largely natural ecological condition. The wetlands are therefore of high biodiversity and ecological importance, particularly considering that they are mapped as CBAs and occur within a SWSA. Development planning should therefore avoid delineated wetlands and associated buffers as far as possible. For the purposes of this assessment, the watercourse and its associated buffer was considered to be of Very High Aquatic sensitivity. If any construction or operational activities fall within the delineated watercourse OR buffer zone, the sensitivity of the site is confirmed as Very High. If all construction and operational activities fall outside of the buffer, the aquatic sensitivity is considered as Low.

An Aquatic/ Freshwater Impact Assessment will be undertaken by *Confluent Environmental* the site.

6.5 Socio-Economic Impact Assessment ✗

The collective financial investment in infrastructure for the proposed activity is approximately R6 million. Furthermore, the ongoing annual investment in operating costs, which will be injected into the local economy through suppliers of products and employment of labour will be ongoing. The needs and upliftment of the community will be achieved through job creation and the stimulation of the local economy, during the construction phase (short term) as well as the operational phase (long term). Job creation, albeit limited during the operational phase, within a small community such as Riverdale would have far reaching benefits for the local labour force. Through increased and diversified agricultural production the long-term sustainability of the farm and as well as its existing (and future) employees can be ensured.

Due to the scale and nature of the project a socio-economic impact assessment is not required. The proposal involves the expansion of existing small scale agricultural related or supportive infrastructure on a farm zoned for Agriculture and which is situated within an agricultural context. The socio-economic

impacts will be assessed further in the BAR. No negative socio-economic impacts are envisioned at this stage. Lastly, as part of the Public Participation Process I&APs will have the right to comment on the Draft (pre-application phase) and Final (application phase) Basic Assessment Report raising any concerns they might have in this regard. **A socio-economic impact assessment is not required considering the scale and nature of the project.**

6.6 Plant Species Impact Assessment ✓

At least four different plant Species of Conservation Concern (SoCC) were recorded on site. These include *Phylica velutina*, *Pittosporum viridiflorum*, *Protea coronata* and *Protea decurrens*. The Plant Species Sensitivity in terms of the site was mapped on Figure 12 above and **Greg Nicolson from CAPENSIS has been appointed and will undertake a Terrestrial Botanical Impact Assessment (to include plant species) of the site.**

6.7 Animal Species Impact Assessment ✓

Based on the available species-level information for the animal, their known habitat preferences, it is considered that there is a medium to high probability of all animal SCC utilising some of the areas at the project site. The project area falls within the geographic distributions of the Yellow-winged Agile Grasshopper SCC and the project site offers suitable habitat in parts. However, considering the wide distributional range of the species, occurring across several different vegetation types, the project impact on the Yellow-winged Agile Grasshopper is considered low.

Similarly, the Dickson's Sylph butterfly is a wide-spread species, and although is likely to occur on areas of grassy fynbos at the project area, the project impact on this butterfly SCC is considered low, especially if areas of intact fynbos habitat are excluded from the proposed agricultural development.

The Black Harrier (*Circus maurus*) does occur in the general area and vegetation type of the project site. The project area represents high-quality foraging habitat and possibly breeding habitat. However, given the wide range of the species in that area, the small size of the site, that and that their preferred wetland breeding habitat is degraded, it means the site is likely of low significance for this species. The African Marsh Harrier (*Circus ranivorus*) is largely restricted to wetland habitats; such habitat is seen at the project site and associated with the Valsrivier. The Marsh Harrier might only briefly visit on passage to other more suitable areas, and the site does not represent a viable habitat for the species.

The Knysna Warbler might occur in the dense tangles of alien Black Wattle trees growing in the ravines; however, this is unlikely a significant area for this species. The two large raptors species may occasionally visit the project site, considering the large eucalyptus and Black Wattle trees that have become established in parts. However, the project area is not considered as important for them and they are not known to breed in the area.

The vegetation of semi-intact fynbos on the western ridge appears to be utilised by Denham's Bustard and this area should be excluded from the proposed development. The northern areas of good quality fynbos habitat should also be excluded from the proposed development. Dense Black Wattle growth has become established along the river and associated wetland habitat, and within several deep ravines on the project area. These invaded areas should be cleared of alien plants. Areas of sensitivity include the river and associated wetland habitats – these areas need to be cleared of alien plants and restored. Good quality fynbos habitat on the western ridge is considered as high sensitivity and should be excluded from the development. Northern and eastern areas on Farm 149 are also considered as high faunal sensitivity.

Low sensitivity areas are associated with the low-lying disturbed areas and most eastern areas of the farm Aan De Valsch Rivier. It is suggested that any agricultural expansion be undertaken here considering the already high agricultural disturbance in this area associated with the neighbouring farm (ploughed fields). One concern to note, if the entire area of the two farms is developed then cumulative impacts may become high. It is recommended that development is concentrated in low sensitive areas.

Overall, the proposed development is unlikely to generate significant negative impacts on any of the faunal SCC flagged. It is the specialists' opinion that the proposed development will have an overall low significance on the faunal SCC flagged: on the condition that the sensitive areas (river and associated wetland habitat, western ridge and fynbos habitat, and northern fynbos areas of farm 149) are excluded and that an alien plant clearing plan be implemented.

A Faunal Species Impact Assessment on the site will be undertaken by Jonathan Colville and Callan Cohen.

7 CONCLUSION:

Environmental attributes/features on the site which will be sensitive to development:

➤ Agriculture Theme:

The overall High - Medium sensitivity rating in terms of this particular project is refuted. A **LOW** sensitivity rating would be much more appropriate given the overall agricultural nature of the project and the positive agricultural elements. The Western Cape Department of Agriculture will be notified of the Application as a registered I&AP and will be requested to provide comment.

➤ Animal Species Theme:

Overall, the proposed development is unlikely to generate significant negative impacts on any of the faunal SCC flagged. It is the specialists' opinion that the proposed development will have an overall LOW significance on the faunal SCC flagged: on the condition that the sensitive areas (river and associated wetland habitat, western ridge and fynbos habitat, and northern fynbos areas of farm 149) are excluded and that an alien plant clearing plan be implemented. **However, a Faunal Impact Assessment (addressing animal species) will be undertaken.**

➤ Aquatic Biodiversity Theme

Several wetlands have been identified within the property boundaries, most of which are in a largely natural ecological condition. The wetlands are therefore of high biodiversity and ecological importance, particularly considering that they are mapped as CBAs and occur within a SWSA. Development planning should therefore avoid delineated wetlands and associated buffers as far as possible. For the purposes of this assessment, the watercourse and its associated buffer was considered to be of Very High Aquatic sensitivity. If any construction or operational activities fall within the delineated watercourse OR buffer zone, the sensitivity of the site is confirmed as Very High. If all construction and operational activities fall outside of the buffer, the aquatic sensitivity is considered as Low. **However, an Aquatic Impact Assessment will be undertaken.**

➤ Archaeological and Cultural Heritage Theme

As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. The Archaeological and Cultural Heritage Sensitivity in terms of the site is not refuted and is considered negligible. **No further studies are required as confirmed by HWC.**

➤ Civil Aviation Theme

The low sensitivity rating is confirmed and this theme is considered **negligible**.

➤ Defense Theme

The low sensitivity rating is confirmed and this theme is considered **negligible**.

➤ Paleontology Theme

Based on the available literature, the nature of the proposed development, and the already highly altered condition of the landscape, the likelihood of uncovering well-preserved and scientifically significant fossils is considered low. As a result, no further palaeontological studies are recommended. The very high Paleontology Sensitivity in terms of the site is therefore refuted and should be of Low sensitivity as the impact of the proposed development is considered **LOW**. **Please refer to the Heritage Screener and final comment from HWC included in Appendix B.**

➤ Plant Species Theme

At least four different plant Species of Conservation Concern (SoCC) were recorded on site. These include *Phylica velutina*, *Pittosporum viridiflorum*, *Protea coronata* and *Protea decurrens*. **A Terrestrial Botanical Impact Assessment (addressing plant species) will be undertaken.**

➤ Terrestrial Biodiversity Theme

Terrestrial areas with Intact, Semi-intact and Semi-intact to degraded condition, especially where SCC are present, have been classified as No-Go areas. Some small sites of poorer quality vegetation have also been included in the No-Go area as corridors that connect better quality vegetation, or where a natural boundary such as a road exists and has been used. The remainder of the site has been mapped as potentially developable, in areas where agricultural activities have already had a moderate to severe impact on the indigenous vegetation. The subject properties are large, and if the suggest No-Go areas are observed, indigenous vegetation and ecological processes can persist on the site. **A Terrestrial Botanical Impact Assessment (addressing plant species) will be undertaken.**

The following Specialist Assessments/ Studies will be undertaken as part of the Scoping/ EIA Process:

- Faunal Impact Assessment (addressing animal species) - Jonathan Colville from *Terrestrial Ecologist & Faunal Surveys* and Callan Cohen from *Birding Africa*.
- Aquatic/ Freshwater Impact Assessment - James Dabrowski from *Confluent Environmental*.
- Heritage Screener - Jenna Lavin from *CTS Heritage (Appendix B)*.
- Hydrology Study - Creo Design (Geological and GIS Consulting).
- Agricultural Compliance Statement
- Botanical Impact Assessment - Greg Nicolson from *CAPENSIS* (addressing plant species).

APPENDICES:

APPENDIX A: SCREENING TOOL REPORT (**Appendix G1b of the Scoping Report**)

APPENDIX B: HERITAGE SCREENER & FINAL COMMENT HWC (**Appendix B & E1 of the Scoping Report**)