

S24G – Part 2 – Section B

Appendix 2: Retrospective Impact assessment

**Activities carried out on portions 10 and 14 of Farm Tregaron No 92,
Sunland, Ward 8 of the Sundays River Local Municipality, Sarah Baartman District Municipality,
Eastern Cape**

Contents

1. Introduction	1
2. Legal requirements	3
3. Description and verification of baseline environment	5
3.1. Palaeontology	5
3.2. Archaeological and Cultural Heritage	8
3.3. Agricultural potential	11
3.4. Terrestrial Biodiversity and flora and fauna	14
3.5. Aquatic features and biodiversity	24
3.6. Socio-economic conditions	30
4. Summary of environmental sensitivity verification	31
5. Impact Assessment	35
6. Conclusion	67
Appendix 1: Impact Identification and Assessment Methodology	69

1. Introduction

This impact assessment has been carried out in terms of the National Environmental Management act (Act 107 of 1998) in support of a Section 24 application for environmental authorisation for activities carried out on Portions 10 and 14 of Farm Tregaron No 92, Sunland, Ward 8 of the Sundays River Local Municipality, Sarah Baartman District Municipality, Eastern Cape.

The following specialist studies have been carried out:

- Agricultural assessment, G.N. Schafer, June 2025 (Refer to Appendix 3-1)
- Aquatic Biodiversity Assessment, B. Colloty, May 2026 (Refer to Appendix 3-2)
- Terrestrial biodiversity, flora and fauna, J. Pote, August 2026 (Refer to Appendix 3-3)
- Heritage assessment, C. Booth, January 2026 (Refer to Appendix 3-4)
- Palaeontological Specialist Study, D. Wilken, August 2025 (Refer to Appendix 3-5)

Agricultural activities are in place on Portions 10 (189 ha) and 14 (128 ha) of Farm Tregaron No 92 located approximately 6.5 km north of the town of Sunland in ward 8 of the Sundays River Local Municipality, Eastern Cape. The combined size is an estimated 317 ha, of which approximately 129 ha of agricultural activities is currently in place. Approximate central coordinates: 33° 27.102'S; 25° 35.758'E

Water is currently sourced directly from the Lower SRLM canal. Electricity reticulation is in place. Access to the site is in place from the R336.

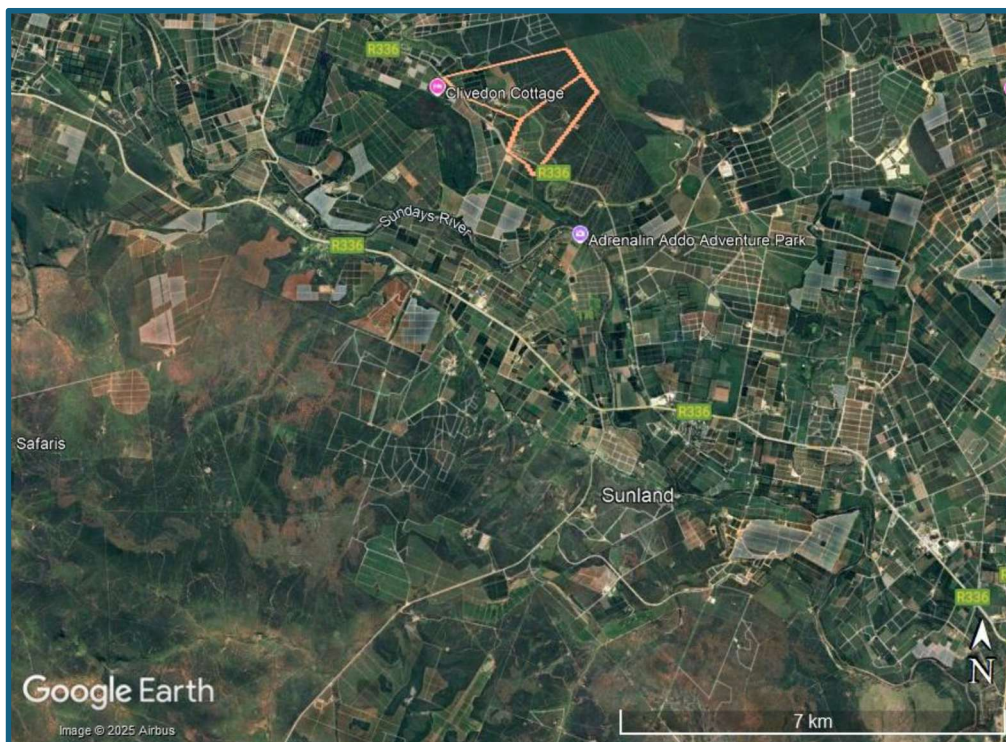


Figure 1: Location of Portions 10 and 14 of Farm Tregaron 92, Sundays River Valley Municipality

Existing and expanded footprints

1999 – 2006

Dwellings, dam and roads (7 ha) and approximately 38 ha of cultivated farming (mostly citrus) were in place at the time of purchase. Water rights were in place; water is sourced directly from the SRVM canal. Electricity reticulation was in place; access to the site was in place from the R336. No expansion took place between 1999 – 2006.

2006 – 2010

Cultivated land was expanded by approximately 9 ha

2010 - 2014

Additional Infrastructure was put in place

Cultivated land was expanded by approximately 32 ha

2014 - 2017

Cultivated land was expanded by approximately 9 ha

2017 - 2025

Cultivated land was expanded by approximately 34 ha

- Cultivated land was expanded by approximately 32 ha (2017 – 2022)
- Cultivated land was expanded by approximately 2 ha (2022- current)

Existing at time of purchase: 45 ha

Total expansion area: 84 ha

Total current agricultural use area (including dwellings, structures, roads, dam): 129 ha

Remaining natural area: 188 ha

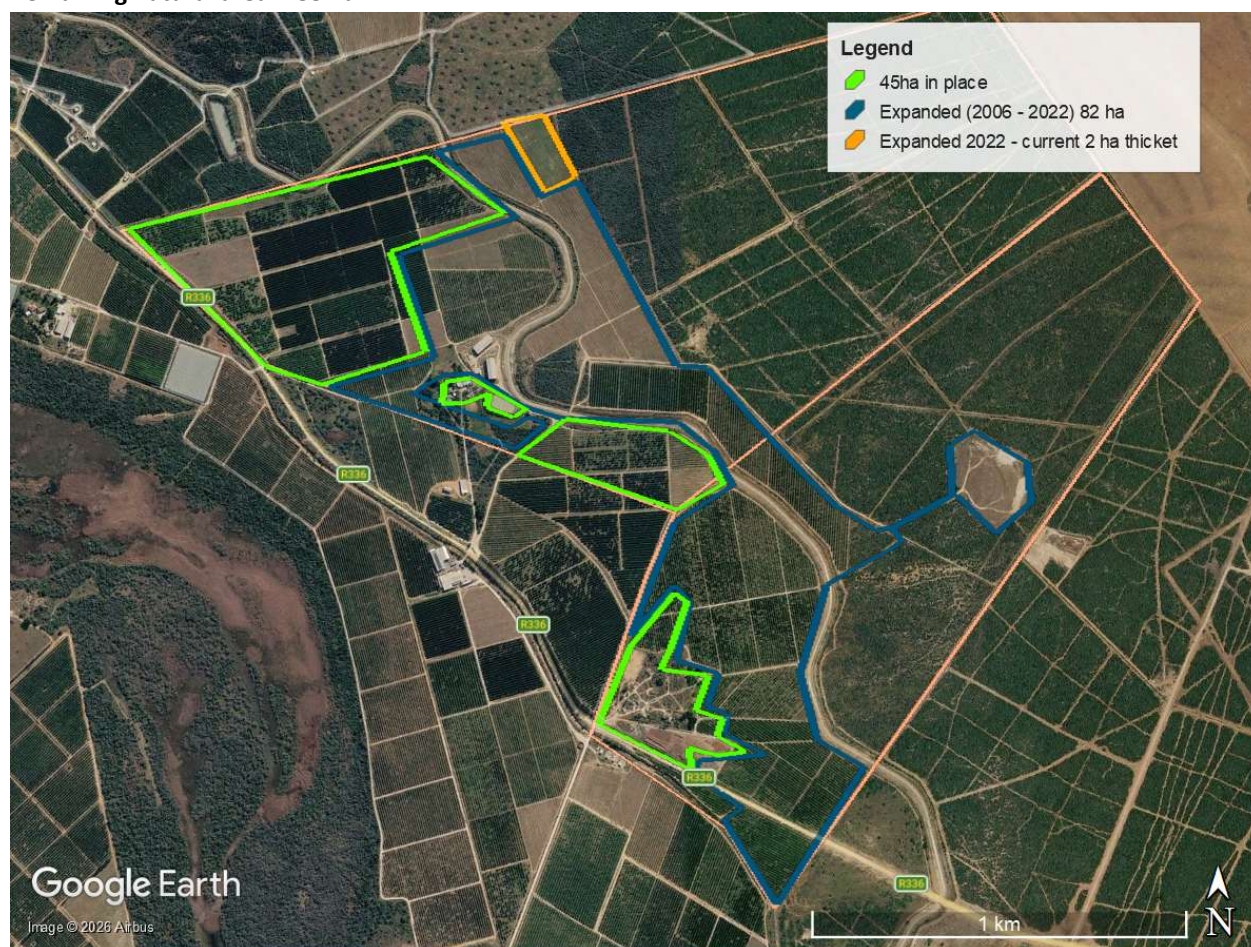


Figure 2: Existing (45 ha) and expanded (84 ha) agricultural areas

2. Legal requirements

In terms of National Environmental Management Act (Act 107 of 1998) (NEMA) an environmental authorisation is required for the expansion of the agricultural area on the farm portions. Environmental authorisation for relevant activities has not yet been applied for or authorised.

Listed activities which are required to be applied for:

- **ECA EIA Contraventions : Between 08 September 1997 end of day 09 May 2002**
Activities unlawfully commenced with on or after 08 September 1997 and before end 09 May 2002: EIA Regulations promulgated in terms of the ECA, Act No 73 of 1989, as amended
 - No expansion of agricultural areas took place between the year the farm was purchased (1999) and 2002
- **ECA EIA Contraventions : Between 10 May 2002 and before end of day 02 July 2006**
Activities unlawfully commenced with on or after 10 May 2002 and before end 02 July 2006: EIA Regulations promulgated in terms of the ECA, Act No 73 of 1989, as amended
 - No expansion of agricultural areas took place between the year the farm was purchased (1999) and June 2006
- **NEMA EIA Contraventions : Between 03 July 2006 and before end of day 01 August 2010**
Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 03 July 2006 and before end of day 01 August 2010
 Activity 12 of GNR 386 The transformation / removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered / endangered ecosystem listed in terms of Section 52 of the NEM: Biodiversity Act (Act 10 of 2004)
 - Cultivated land was expanded by approximately 9 ha
 - The vegetation on the farm portions includes Albany Alluvial vegetation and Sundays Valley Thicket mapped in terms of the National Vegetation Map, 2024 (NVM, 2024). In terms of section 52 of NEMBA (Activity (a)(i)), Albany Alluvial Vegetation has an Endangered status, and Sunday's Valley Thicket has a least concern status as per National Biodiversity Assessment (2025).
- **NEMA EIA Contraventions : On or after 02 August 2010 until 7 December 2014**
Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 02 August 2010 until 7 December 2014
 Activity 8 of GNR 544 The construction of agri-industrial infrastructure outside industrial complexes where the development footprint covers an area of 2000 square meters or more
 Activity 12 of GNR 546 The clearance of an area of 300 square metres / 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes of indigenous vegetation within any a critically endangered / endangered ecosystem / critical biodiversity area...
 Activity 13 of GNR 546 The clearance of an area of 300 square metres / 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes of indigenous vegetation within any a critically endangered / endangered ecosystem / critical biodiversity area...
 Activity 14 of GNR 546 Listing Notice 3 (GNR 546, 2010) Activity 14: : The clearance of an area of 5 hectare or more of vegetation where 75% or more of the vegetative cover constitutes of indigenous vegetation
 - Additional Infrastructure was put in place
 - Cultivated land was expanded by approximately 32 ha
 - The vegetation on the farm portions includes Albany Alluvial vegetation and Sundays Valley Thicket mapped in terms of the National Vegetation Map, 2024 (NVM, 2024). In terms of section 52 of NEMBA (Activity (a)(i)), Albany Alluvial Vegetation has an Endangered status, and Sunday's Valley Thicket has a least concern status as per National Biodiversity Assessment (2025).

- **NEMA EIA Contraventions: EIA regulations 2014 (as amended, 2017)**

Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 8 December 2014

Activity 15 of GNR 984, The clearance of an area of 20 hectares or more of indigenous vegetation...

Activity 12 of GNR 985 The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

- Cultivated land was expanded by approximately 9 ha (2014 – 2017)
- Cultivated land was expanded by approximately 34 ha (2017 – 2025)
- The vegetation on the farm portions includes Albany Alluvial vegetation and Sundays Valley Thicket mapped in terms of the National Vegetation Map, 2024 (NVM, 2024). In terms of section 52 of NEMBA (Activity (a)(i)), Albany Alluvial Vegetation has an Endangered status, and Sunday's Valley Thicket has a least concern status as per National Biodiversity Assessment (2025).

The landowner would like to submit an application in terms of Section 24G of the NEMA to authorise the existing agricultural worked areas and supporting structures.

The description and verification of the baseline environment is provided in Section 3.

A summary of verification of environmental sensitivities is provided in Section 4.

The impact assessment and proposed mitigation measures is provided in Section 5

The impact assessment methodology is provided in Appendix 1: Impact Identification and Assessment Methodology.

The draft Section 24G NEMA application and accompanying annexures will be distributed and made available to all registered and affected parties for a 30-day comment and review period. Thereafter the application and accompanying annexures will be updated as required as submitted to the competent authority for consideration.

3. Description and verification of baseline environment

3.1. Palaeontology

The STR indicates that the site is situated within an area of very high palaeontological sensitivity.

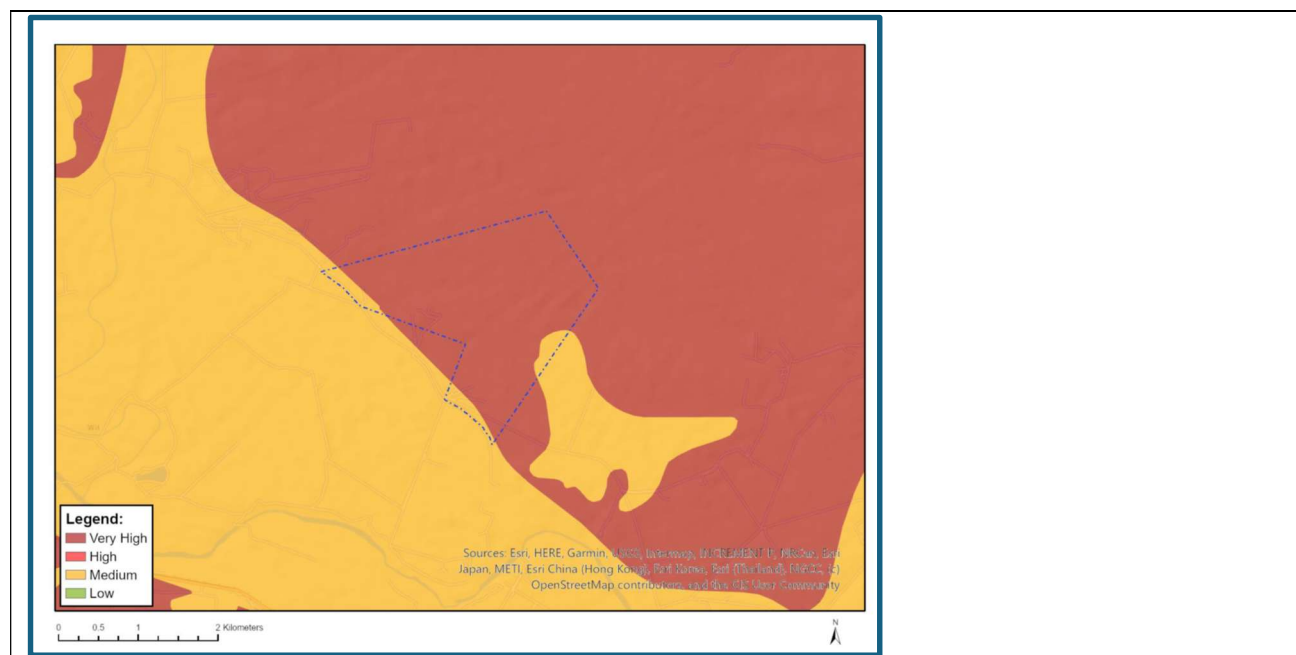


Figure 3: Palaeontological sensitivity of the site according to the Screening Tool Report (low and very high sensitivity)

Sensitivity	Feature(s)
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

The site is underlain predominantly by the Sundays River Formation and the Kirkwood Formation of the Uitenhage Group. Small areas are overlain by Quaternary alluvium and T-Qg deposits, which are of Quaternary age and are unlikely to be fossil-bearing.

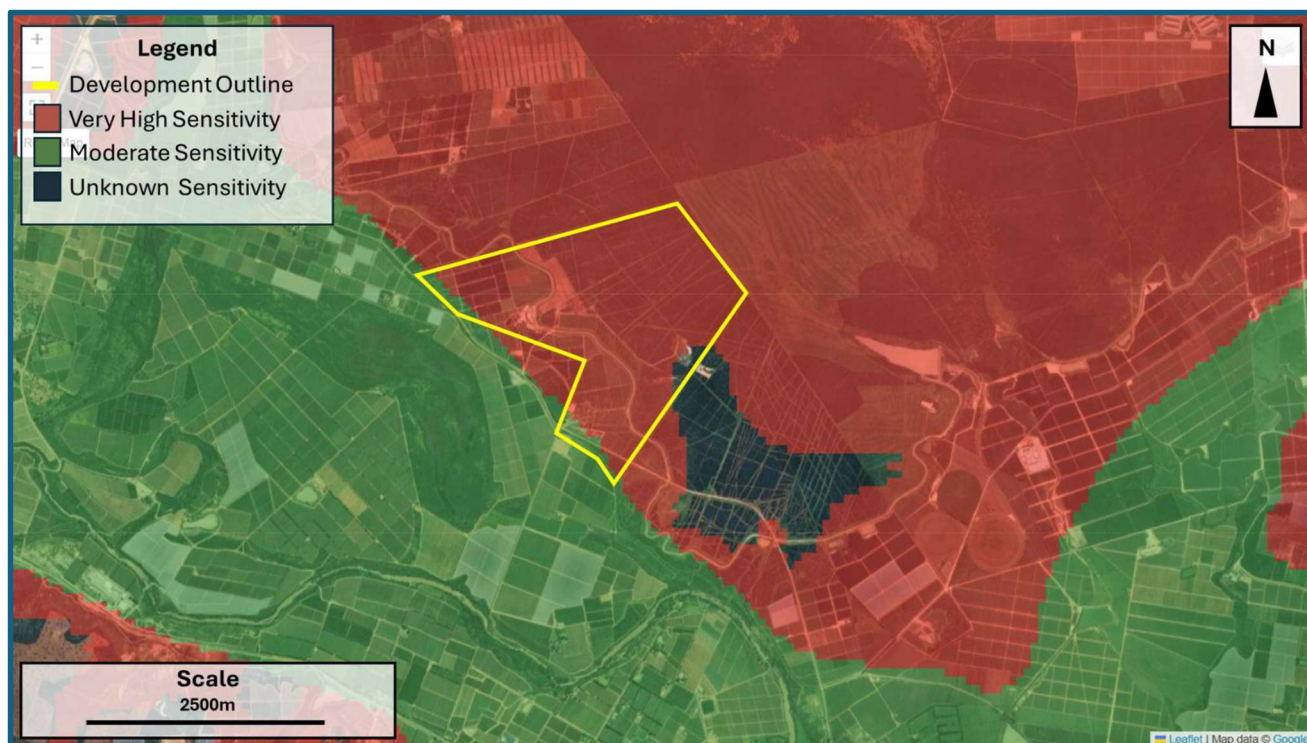


Figure 4: Palaeo-sensitivity Map. Indicating Very High Fossil sensitivity underlying the study area in the Eastern Cape (Wilken, 2025)

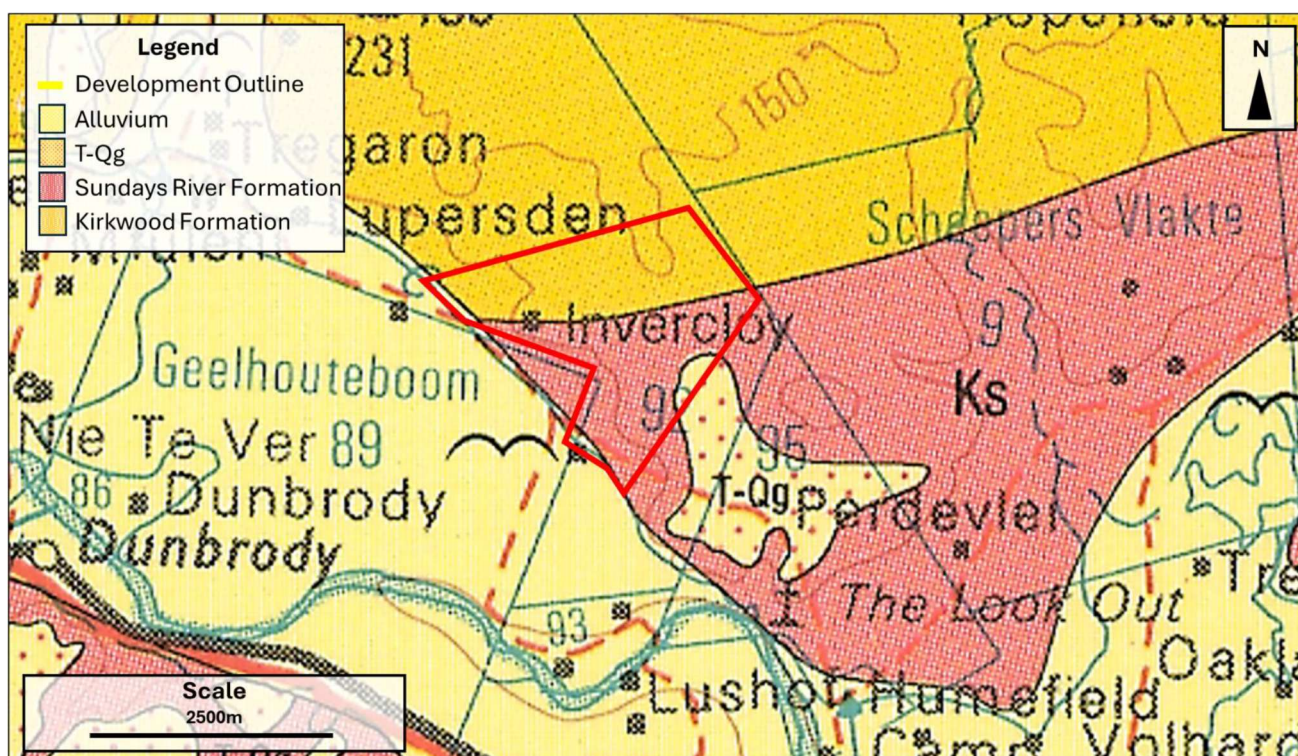


Figure 5: Geologic map of Farm Tregaron no 92, Portion 10 and 14, where agricultural expansion has occurred. The area is mostly underlain by the Sundays River Formation and the Kirkwood Formation, the area also overlay small areas of alluvium and T-Qg. ((Extracted from Toerien, (1984) – 3324 Port Elizabeth; cited by Wilken, 2025)

The Sundays River Formation is estimated to be approximately 135 million years old (Early Cretaceous) and is well known for its rich marine fossil assemblages. The formation reaches a thickness of approximately 2 000 m within the Algoa Basin and consists predominantly of thin grey sandstones, siltstones and mudrocks. The sandstones commonly contain shell

fragments with carbonate cement, while interbedded sandstone and mudrock units display sedimentary structures including cross-bedding, wave bedding, flaser and lenticular bedding. The formation contains an exceptionally diverse fossil assemblage, including gastropods, bivalves, plant remains, vertebrate fragments, trace fossils, microfossils (including ostracods and foraminifera) and marine vertebrates such as plesiosaurs. Ammonite fossils have been used to date the formation to the Valanginian Stage of the Early Cretaceous. Consequently, the formation is classified as being of very high palaeontological sensitivity.

The Kirkwood Formation reaches a thickness of approximately 2 000 m and consists predominantly of coarse- to medium-grained buff to olive-coloured lithic sandstone interbedded with thick grey-green siltstones and mudrocks. These sandstones contain trough and planar cross-bedding, while the colour-mottled siltstones indicate subaerial exposure and/or root zone bioturbation. Although the mudrocks are generally barren, plant and vertebrate remains have been recorded.

The formation is of high palaeontological importance as it represents one of the few fossil-bearing deposits of the Early Cretaceous and may help fill a gap in the terrestrial Mesozoic fossil record. It is well known for its fossilised wood, including silicified tree trunks, as well as ferns, cycads, conifers, Bennettitales and mosses. Freshwater bivalves and vertebrate remains have also been recorded, including dinosaur fossils such as *Nqwebasaurus thwazi*. The formation has also yielded theropods, ornithopods, frogs, turtles, sphenodontids, crocodiles and mammalian remains, and has provided evidence of four taxonomically distinct groups of sauropods.

Consequently, the formation is classified as being of very high palaeontological sensitivity.

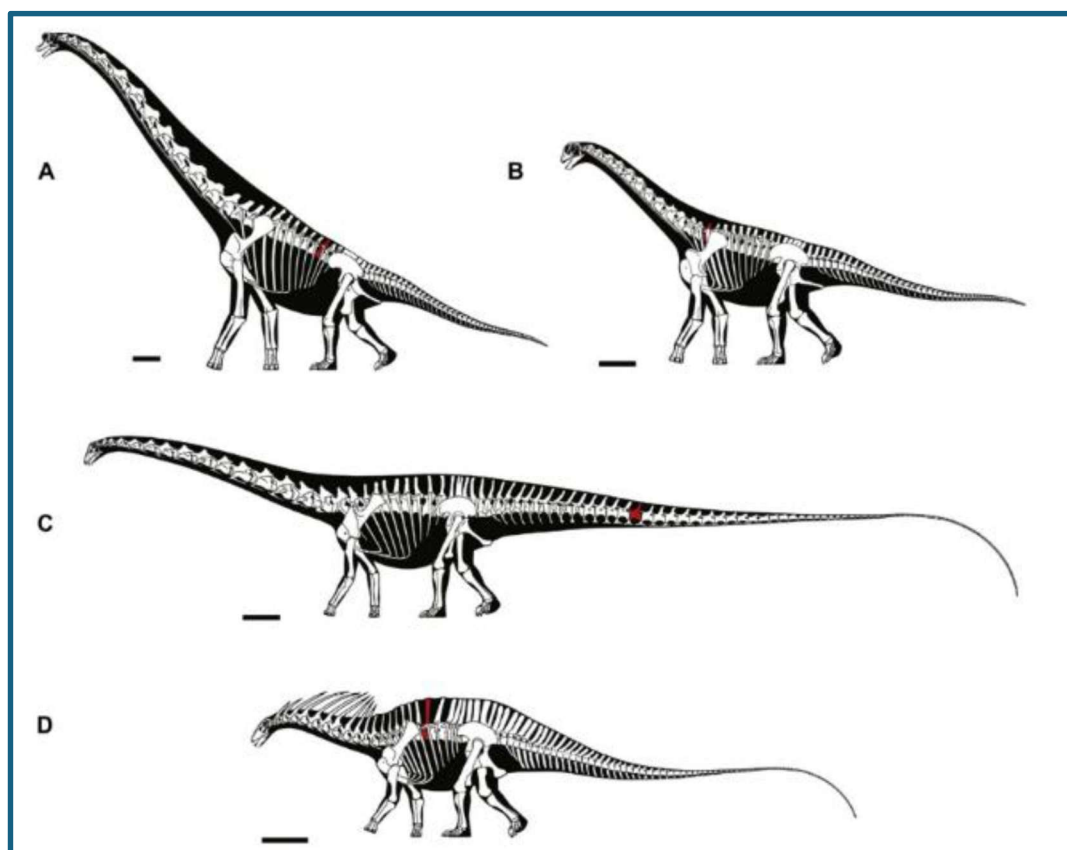


Figure 6: Sauropod diversity present within the Kirkwood Formation. A - after *Giraffatitan*; B - after *Camarasaurus*, C - after *Diplodocus*; and D – after *Amargasaurus* (Wilken, 2025)

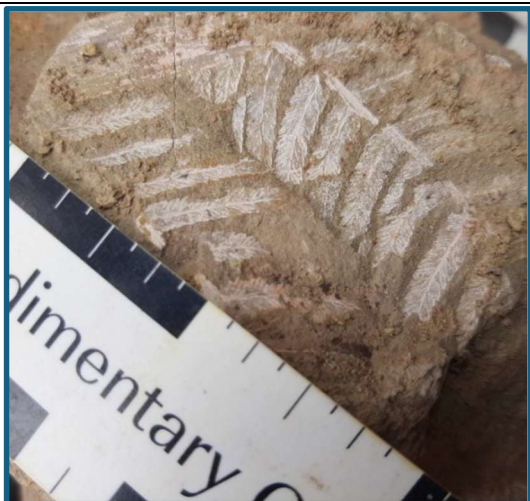


Figure 7: Fossil fern specimen recorded on site.



Figure 8: Additional fossil fern specimen collected on site.

The specialist concluded that although the site is underlain by the Sundays River and Kirkwood Formations, both of which are of very high palaeontological sensitivity, the agricultural expansion has not resulted in the exposure or destruction of significant fossil material. Agricultural activities typically require soil disturbance of less than 1 m depth, which would not normally penetrate the underlying fossil-bearing bedrock due to the thick weathered soil profile.

3.2. Archaeological and Cultural Heritage

The STR indicates that the site is situated within an area of low and very high archaeological and cultural heritage sensitivity.

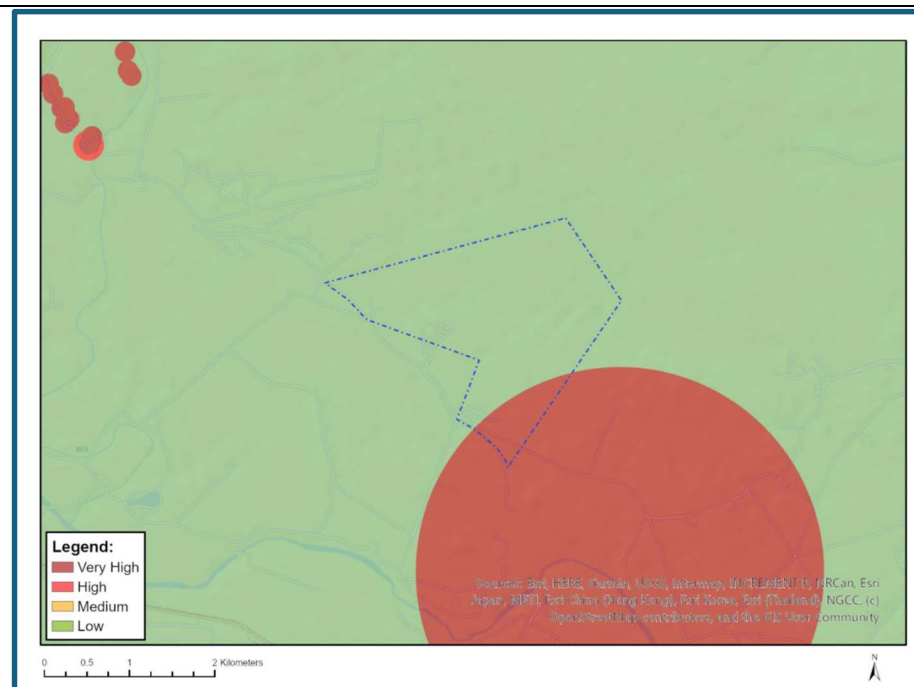


Figure 9: Site is situated within an archaeological and Cultural Heritage area of low and very high sensitivity (Screening Tool Report)

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Within 2km of a Grade II Heritage site

A study was carried out in accordance with the requirements of the ECPHRA (Eastern Cape Provincial Heritage Authority) and National Heritage Resources Act 25 of 1999, Section 38(1):

(c) any development or other activity which will change the character of the site –

(i) exceeding 5 000 m² in extent

Middle Stone Age (MSA) (approximately 250 000–30 000 years ago) stone artefacts were recorded across the site, including within the disturbed areas. The assemblage consists predominantly of quartzite cores, chunks, flakes and blades manufactured from locally sourced quartzite cobbles, many of which display secondary retouch and evidence of utilisation. Smoothed and pitted cobbles interpreted as hammerstones, rubbers or upper grinding stones were also identified. Other artefacts recorded from Middle Stone Age archaeological sites in the wider region include tick shell (*Nassarius kraussianus*) beads, rim fragments of ostrich eggshell (OES) water flasks, ochre-stained ostrich eggshell fragments and engraved ochre pieces.

The identified artefacts are characteristic of the Middle Stone Age and are consistent with the well-documented archaeological record of the Sundays River Valley, which is well known for its abundance of Middle Stone Age and Early Stone Age (approximately 1.5 million–250 000 years ago) archaeological material. They are distinguished from Earlier Stone Age assemblages by their smaller size, the use of prepared core technology, and the production of unifacial and bifacial flakes, blades and points.

Although the undisturbed portions of the site are covered by dense and largely impenetrable Sundays Valley Thicket vegetation, it is reasonable to expect that stone artefacts will occur between the surface and 50 cm – 80 cm below ground level. The exposed stone artefacts are considered to occur predominantly in secondary context owing to natural processes over millennia, together with historical disturbance associated with roads, cut lines, test pits and footpaths. However, it is possible that in situ artefacts may occur between the surface and 50 cm and 80 cm below ground.

Only one built environment structure was identified on the site. The structure is considered to be less than 60 years old, has no heritage significance and does not fall within the ambit of the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

The change to the cultural landscape is considered to be of low significance. The Sundays River Valley has, over the past 150 years, developed into a major citrus-producing area and this agricultural character is expected to continue.

No sites of living heritage significance were identified and the impact on living heritage is therefore considered to be low.



Figure 10: View of the existing citrus orchards situated west of the proposed citrus extension area.(separate application)

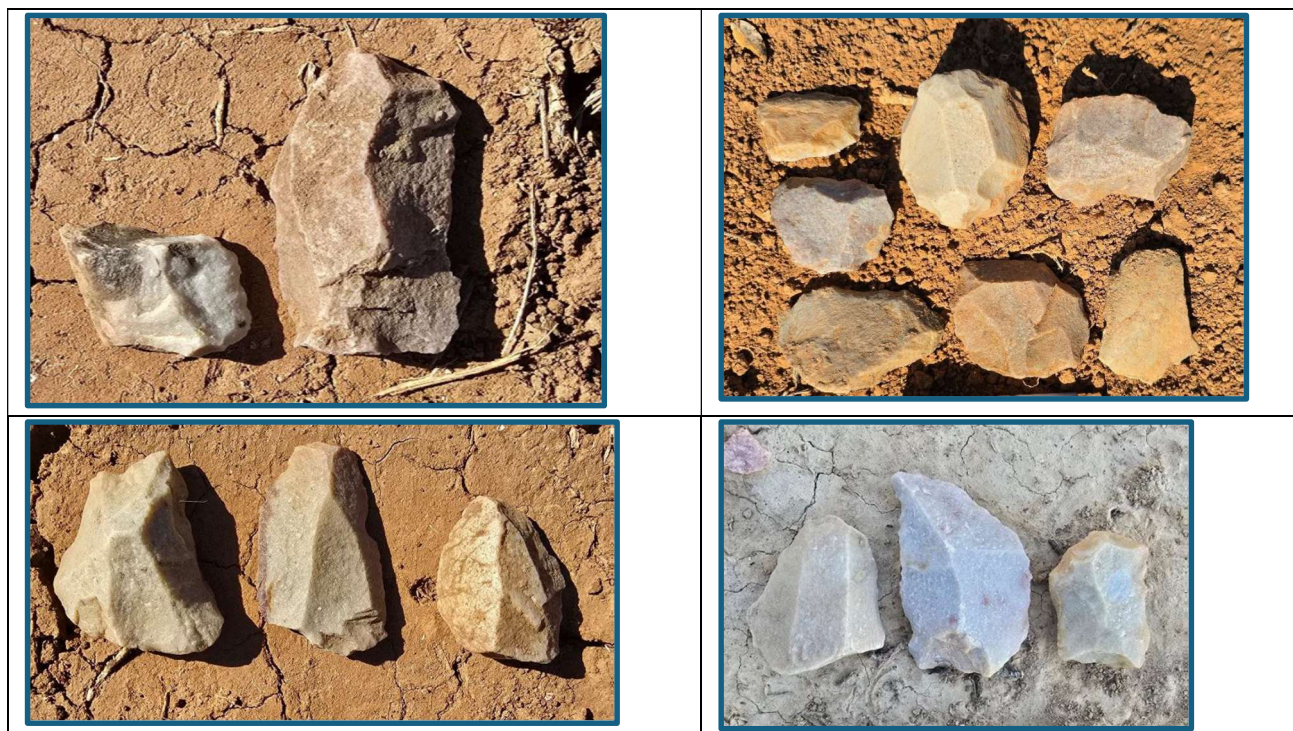


Figure 11: Examples of Middle Stone Age stone artefacts identified on the farm portions adjacent to the existing farmed area

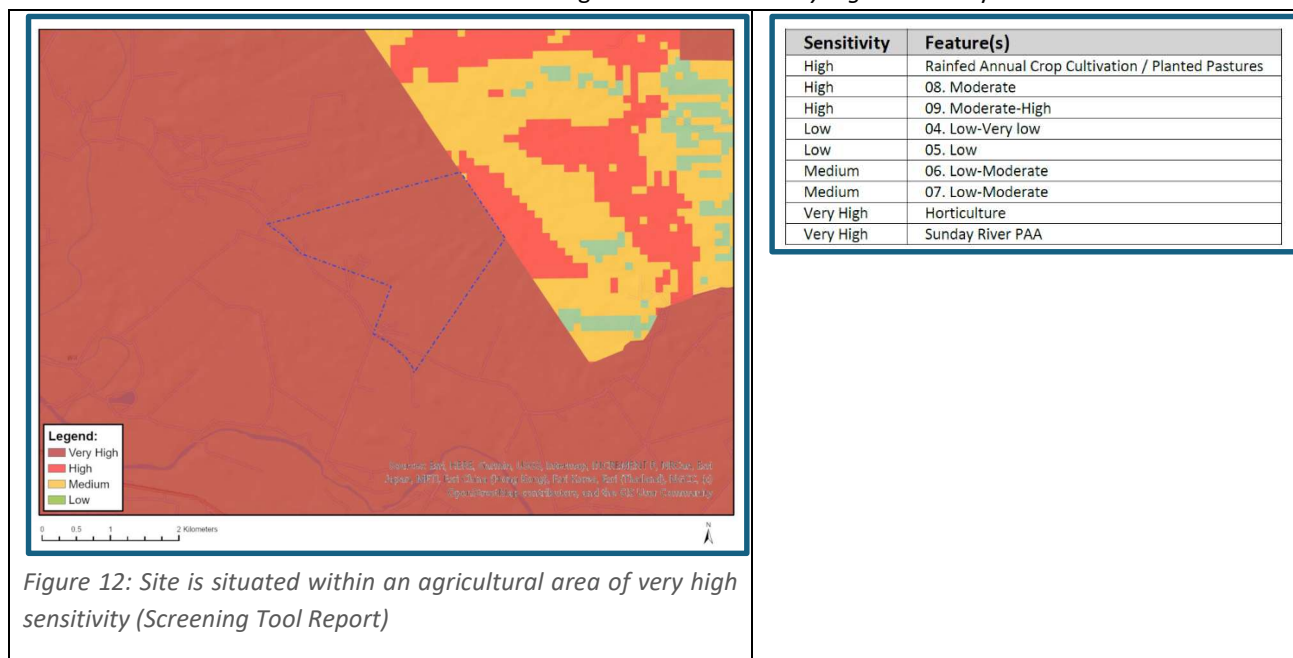
The recorded stone artefact occurrences are considered to be of low archaeological significance and have been assigned a heritage grading of General Protection C (Field Rating IV C). This indicates that the site has been sufficiently recorded during the Phase 1 Heritage Impact Assessment, and that no further archaeological recording is required prior to disturbance.

Although the archaeological significance of the site is considered to be low, the specialist recommends that any future bush clearing activities be monitored by a professional archaeologist to determine whether any in situ concentrations of stone artefacts or other archaeological material occur beneath the existing vegetation. The exposed artefacts are considered to occur predominantly in secondary context and are not associated with other archaeological or cultural heritage remains.

ECPHRA has reviewed the application and confirmed that it has no objection to the proposed development, provided that the specialist recommendations, together with any conditions imposed by ECPHRA, are implemented.

3.3. Agricultural potential

The STR indicates that the site is situated within an agricultural area of *very high* sensitivity.



The site is located on gently sloping lower foothills at elevations ranging from approximately 75–115 m amsl and falls within the Sundays River Protected Agricultural Area (PAA). Protected Agricultural Areas are designated in terms of the Preservation and Development of Agricultural Land Act, 2024 (Act No. 39 of 2024) to safeguard high-value agricultural land for long-term agricultural production and food security.

A detailed soil survey was undertaken across approximately **117.2 ha** of the agricultural worked areas of Portions 10 and 14 of Farm Tregaron No. 92 to assess the suitability of the soils for citrus production. The survey focused on areas proposed for agricultural expansion and excluded existing infrastructure such as roads, canals and buildings.

The site is underlain predominantly by the **Kirkwood Formation** (Geological Survey, 1991; Wilken, 2026), comprising mudstone and sandstone with localised carbonate layers. The soils are generally moderately deep to deep, clay-rich, stone-free and well suited to irrigated citrus production. Nine soil forms were identified across the site, namely **Hutton, Kimberley, Valsrivier, Burgersfort, Makgoba, Augrabies, Katspruit, Coega and Grabouw**, with agricultural suitability varying according to soil depth, texture, structure, drainage and water-holding capacity.

Soil Form	Horizon	General characteristics	Agricultural considerations
Hutton (Hu)	Orthic A / Red Apedal B	Deep, dark reddish-brown sandy clay soils with friable structure and good drainage.	Optimal water-holding capacity (WHC); highly suitable for irrigated citrus

Kimberley (Ky)	Orthic A / Red Apedal B / Soft Carbonate	Dark brown to reddish-brown sandy clay overlying soft carbonate at 50–75 cm depth.	Restricted soil depth reduces effective rooting depth and WHC.
Valsrivier (Va)	Orthic A / Pedocutanic B	Well-developed blocky sandy clay soils, locally overlying saprolite.	Reduced internal drainage and difficult management due to strong structure.
Burgersfort (Bg)	Orthic A / Neocarbonate B / Lithic	Friable sandy clay soils overlying saprolite at approximately 80 cm depth.	Moderate WHC and generally suitable for citrus production.
Makgoba (Mb)	Orthic A / Neocutanic B / Neocarbonate B	Sandy clay loam overlying neocutanic and carbonate-rich subsoils.	Suitable for irrigated citrus with moderate soil limitations.
Augrabies (Ag)	Orthic A / Neocarbonate B	Sandy clay loam overlying structured sandy clay and soft saprolite	Good agricultural potential for citrus production.
Katspruit (Ka)	Orthic A / Gley	Clay-rich soils with gleyed subsoils.	Wetness limitations may reduce agricultural suitability.
	Orthic A / Hard Carbonate	Sandy clay loam abruptly overlying hard carbonate.	Restricted rooting depth and moderate agricultural potential.
Grabouw (Gr)	Orthic A / Disturbed Subsoils	Sandy clay topsoil overlying disturbed stony infill.	Lower agricultural potential due to disturbance.

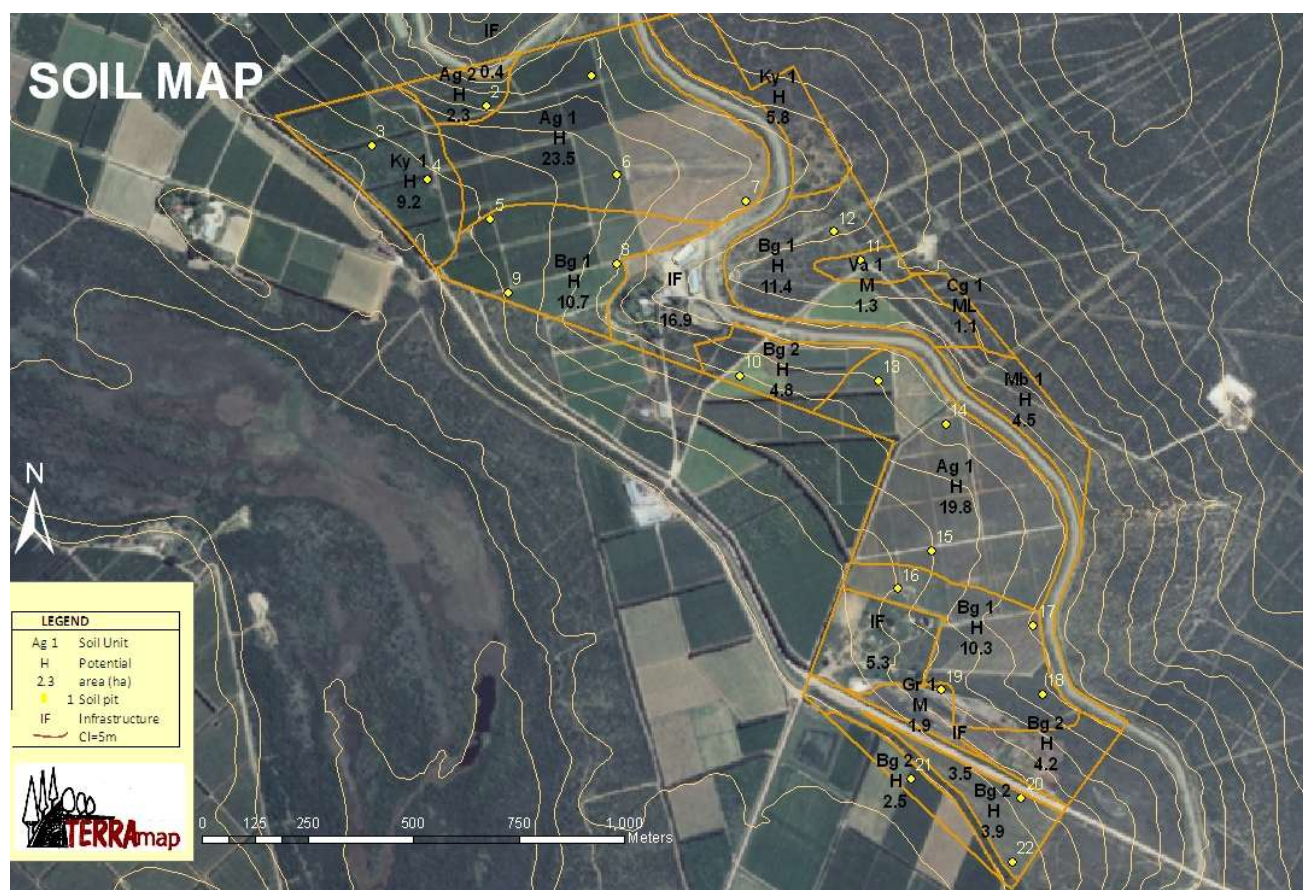


Figure 13: Distribution of soil forms indicating that the majority of the site consists of high potential agricultural soils

Soil potential was assessed for the establishment of citrus orchards using the Land Capability Classification (LCC) system, which classifies land according to its capability for sustained agricultural use (McRae & Burnham, 1981). Classes I to IV are considered suitable for cultivation. All identified soil units were classified between Classes I and IV, with approximately 112.9 ha classified as high irrigation suitability (LCC I). The remaining soils were rated as having moderate to moderately low irrigation suitability (Table 1). The specialist concluded that the majority of the surveyed area is well suited to irrigated citrus production.

Table 1: Soil Potential and Hazards

SOIL UNIT	LCC	Irrigation suitability for Citrus	Erosion hazard	Compaction hazard	Soil preparation	Area (ha)
Ag 1	I	HIGH	ML	H	Deep rip & Ridge	43.3
Ag 2	I	HIGH	ML	H	Deep rip & Ridge	2.3
Bg 1	I	HIGH	ML	H	Deep rip & Ridge	32.4
Bg 2	I	HIGH	ML	MH	Deep rip & Ridge	15.4
Mb 1	I	HIGH	ML	MH	Deep rip & Ridge	4.5
Ky 1	I	HIGH	ML	MH	Deep rip & Ridge	15.0
Va 1	IV	MOD	MH	H	Deep rip & Ridge	1.3
Gr 1	IV	MOD LOW	MH	MH	Deep rip & Ridge	1.9
Cg 1	IV	MOD LOW	ML	M	Ridge only	1.1

The majority of the surveyed area (approximately 112.9 ha) comprises soils of high agricultural potential with high irrigation suitability for citrus production. Most of the subsoils are friable under moist conditions but become hard when dry. The specialist recommends deep ripping to approximately 1 m, followed by ridging using only the upper 30 cm of topsoil to provide effective rooting depths exceeding 80 cm in most areas.

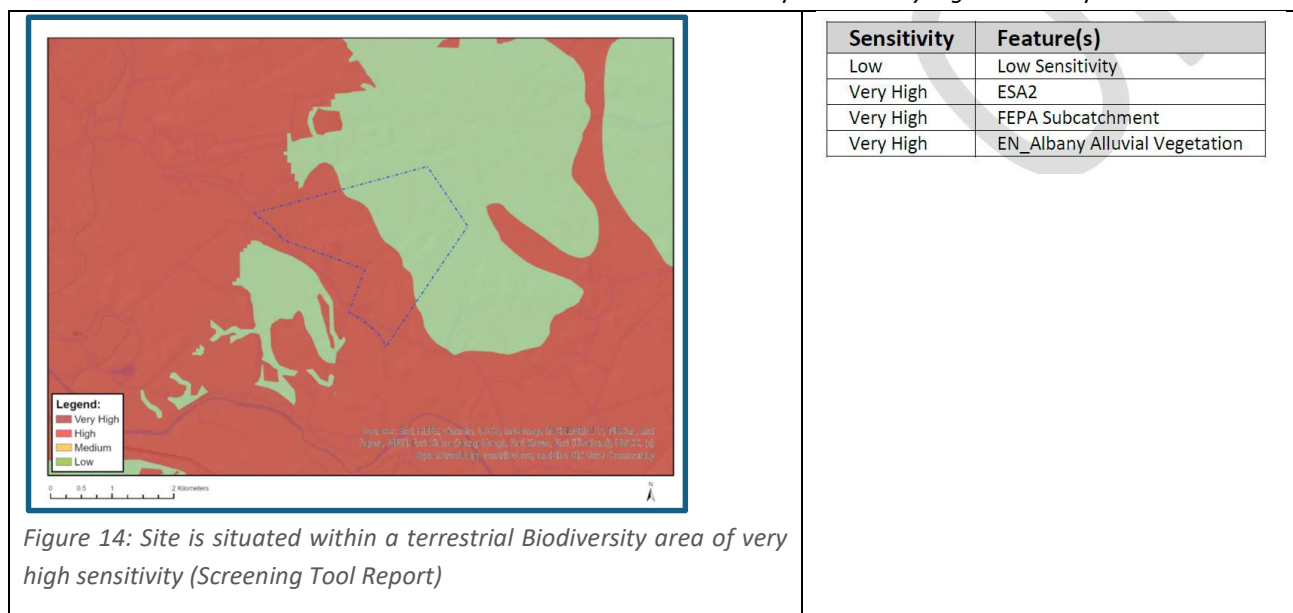
The site is suitable for citrus production, with irrigation water readily available on the property. Existing orchards are irrigated using a drip irrigation system, which improves water-use efficiency and reduces disturbance to soil structure. In addition, vegetated strips retained between orchard rows provide ground cover and contribute to maintaining biodiversity within the agricultural landscape.

Based on the findings of the agricultural assessment, the agricultural sensitivity of the site was verified as very high.

3.4. Terrestrial Biodiversity and flora and fauna

Terrestrial Biodiversity Theme

The STR indicates that the site is situated within a terrestrial biodiversity area of *very high* sensitivity.



In terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP, 2019), the following are mapped on the site:

- Terrestrial Ecological Support Area (ESA) 1
- Terrestrial Ecological Support Area (ESA) 2
- Fields and settlement areas.

Ecological Support Areas (ESAs)

Ecological Support Areas (ESAs) are landscape features that support the functioning and connectivity of biodiversity priority areas. Although they are not required to meet biodiversity targets directly, they contribute to ecosystem processes, ecological connectivity and climate resilience. Typical ESAs include riparian corridors, ridgelines and other landscape features that facilitate ecological movement and ecosystem functioning. ESAs need to be maintained in a semi-natural, if not natural, state. The ESA designations are primarily related to maintaining landscape level connectivity.

The entire site falls within designated ESA 1 and ESA 2. The existing land uses are not considered compatible with the recommended land uses of the ECBCP. It is probable that the historical agricultural expansion resulted in some disruption to ecological connectivity and ecological corridors, however, the site is associated with a lower-order corridor linked to a minor watercourse, rather than the floodplain of a major watercourse such as the Sundays River. Furthermore,

considering the extensive agricultural development throughout the surrounding Sundays River Valley, the cumulative impact associated with the historical clearing on this site is considered to be low. It is noted that, while the broader floodplain area (Albany Alluvial Vegetation) has largely been transformed for agricultural production, a narrow, more or less contiguous band of indigenous vegetation remains along the banks of the Sundays River and other watercourses.

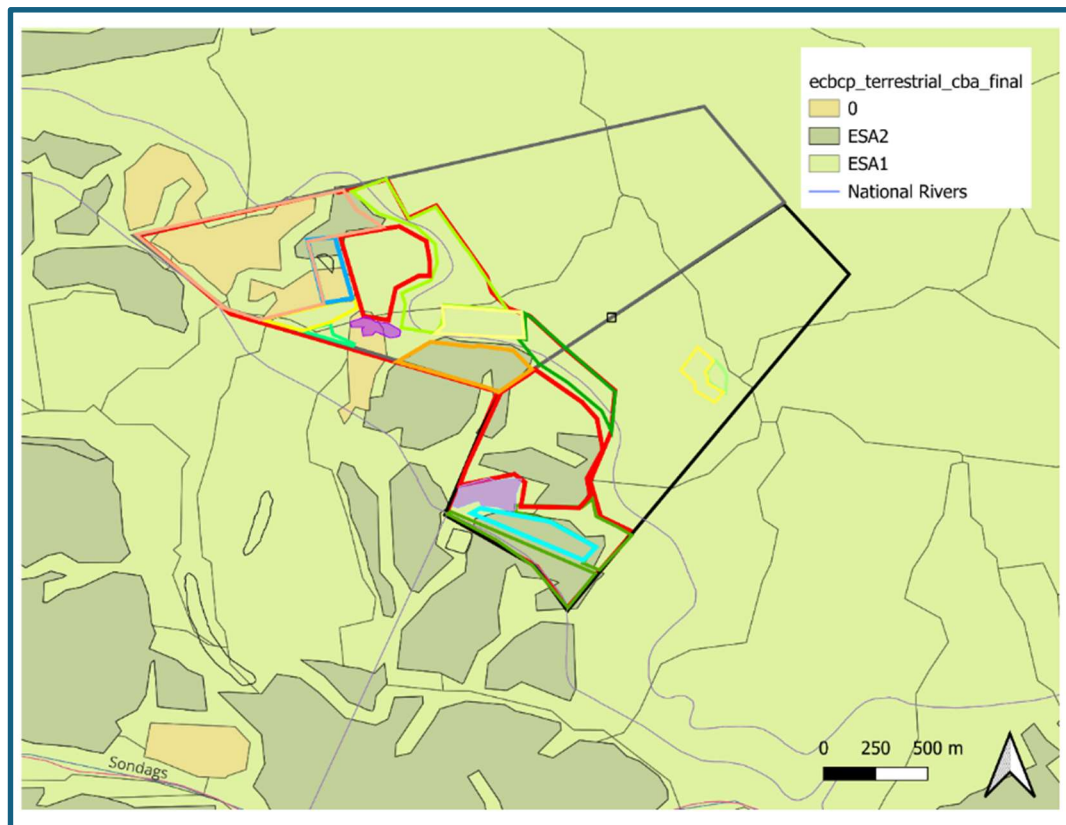


Figure 15: ESA 1 and ESA 2 areas mapped on site (ECBCP, 2019)

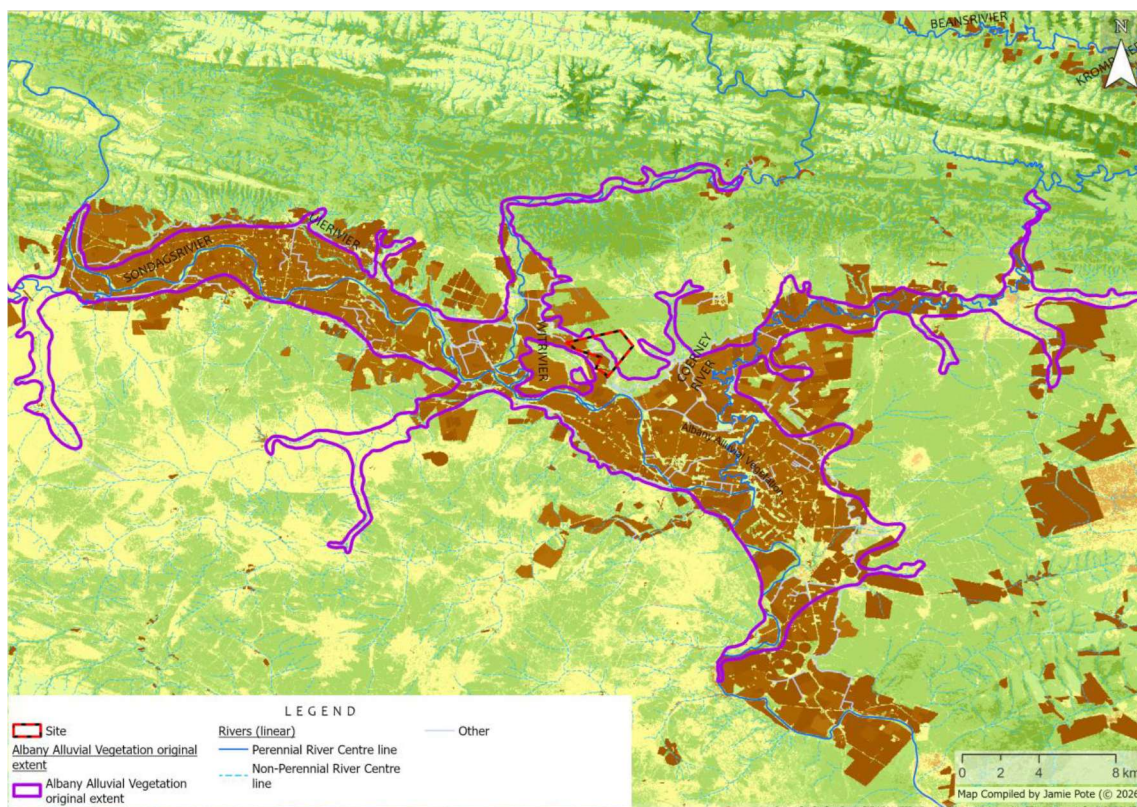


Figure 16: Landsat imagery of agricultural clearing in the broader Sundays River Valley. Brown indicative of extensive cleared agricultural lands/orchards within Albany Alluvial Vegetation extent (purple boundary).

The current land use is consistent with the SPLUMA zoning of the property for agricultural purposes. Although agricultural activities are generally not compatible with the biodiversity conservation objectives of Ecological Support Areas, the extent of their impact depends on the degree of habitat transformation and the management of the agricultural landscape. Poorly managed agricultural activities may result in habitat loss, soil erosion, hydrological alteration and reduced ecosystem functioning. Conversely, agricultural landscapes can continue to support ecological processes where natural vegetation is retained, including maintaining habitat connectivity and providing refuge for fauna.

The original Eastern Cape Biodiversity Conservation Plan (ECBCP, 2007) identified the majority of the site as Critical Biodiversity Area (CBA) 2, with a narrow strip mapped as CBA 3. No areas mapped as CBA 1 were affected by the historical agricultural expansion.

The Sundays River Valley Municipality Biodiversity Sector Plan (Addo BSP, 2012) forms the basis of subsequent biodiversity planning within the municipality and is included for historical context. The Addo BSP mapped the north-eastern portion of the site, comprising predominantly Sundays Valley Thicket, as Other Natural Area (ONA). A narrow band aligned with the canal corridor was identified as a Critical Biodiversity Area (CBA), incorporating portions of Sundays Valley Thicket to the north and what would likely have comprised remnant Albany Alluvial Vegetation to the south. Areas that had already been transformed for agricultural production at that time were mapped as No Natural Area Remaining (NNAR).

The Addo Elephant National Park is situated 9.7 km to the north and 10.3 km to the east. Neither these protected areas nor any ecological processes directly associated with them are likely to have been significantly affected by the clearing of vegetation, above baseline levels when considering the extensive clearing in the broader Sundays River Valley area, the cumulative impact of which would be significant as a whole.

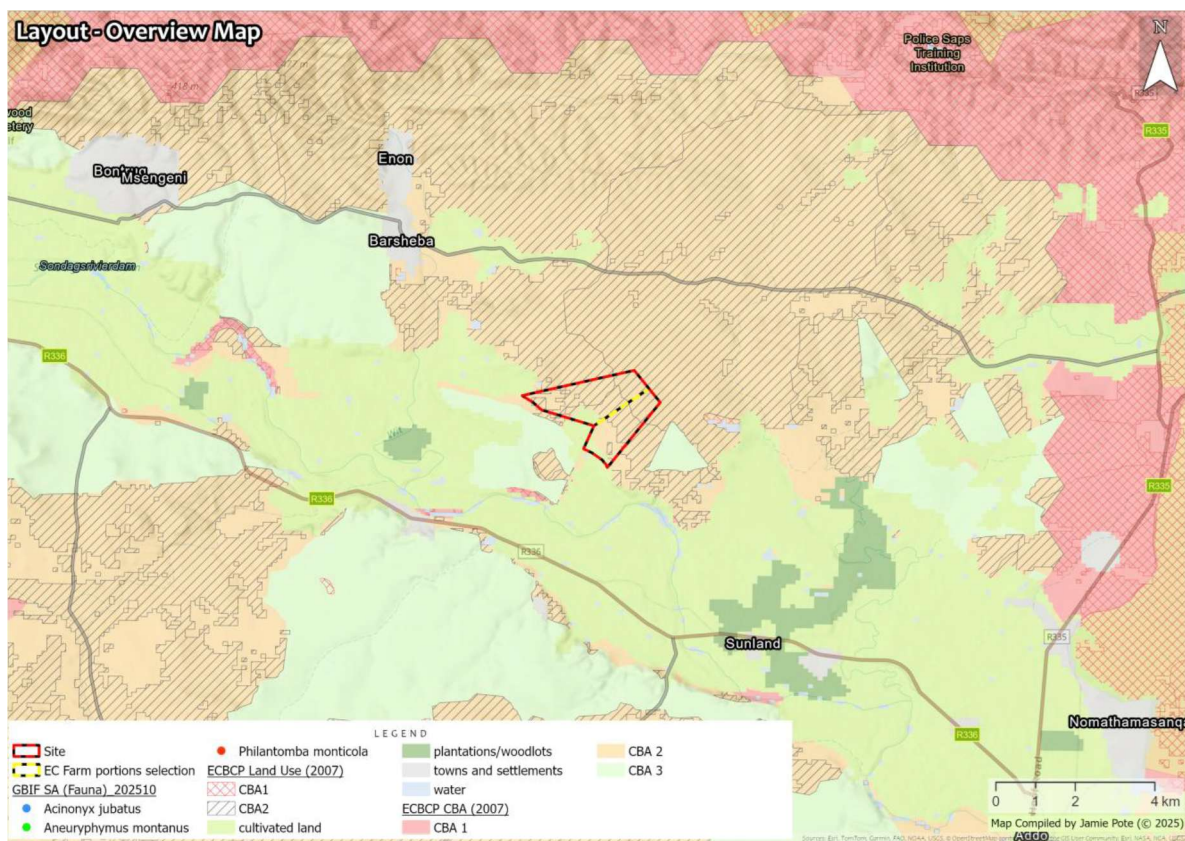


Figure 17: Eastern Cape Biodiversity Conservation Plan (2007) designation.

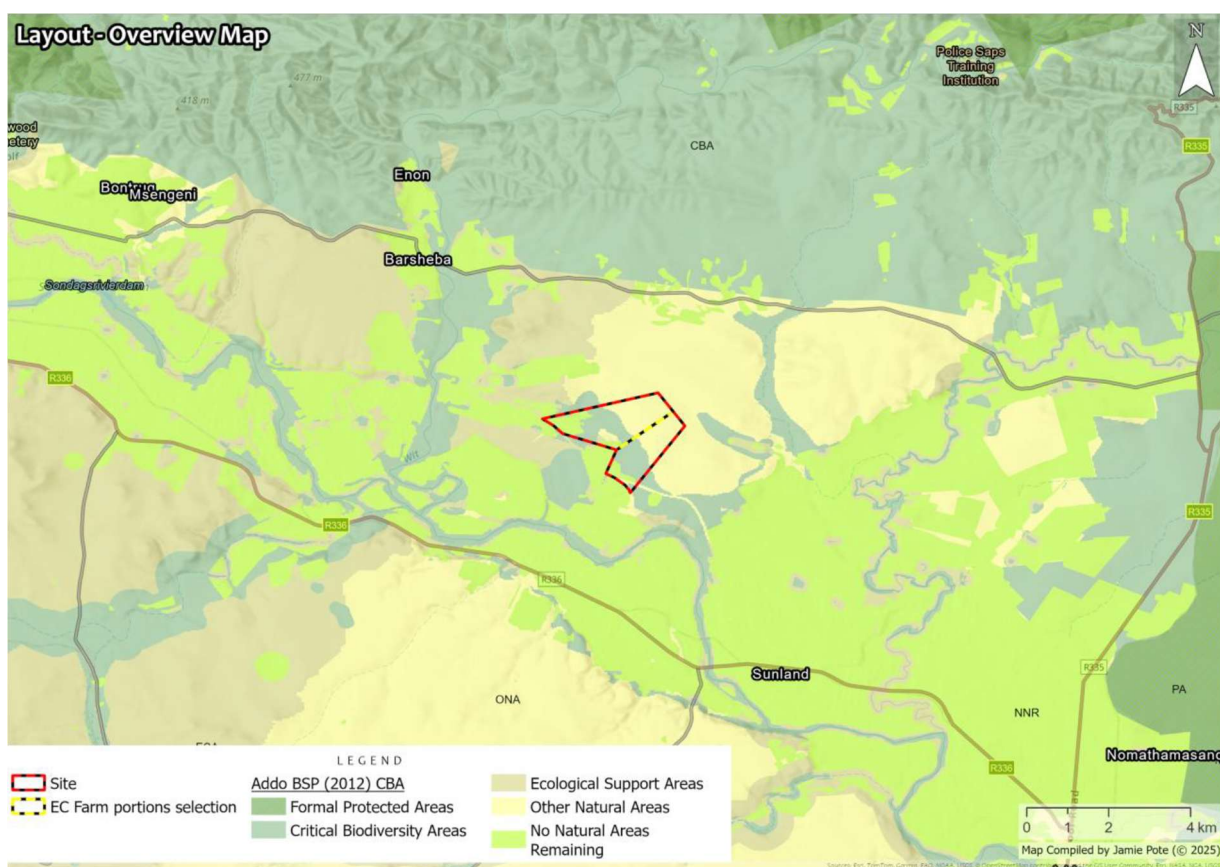
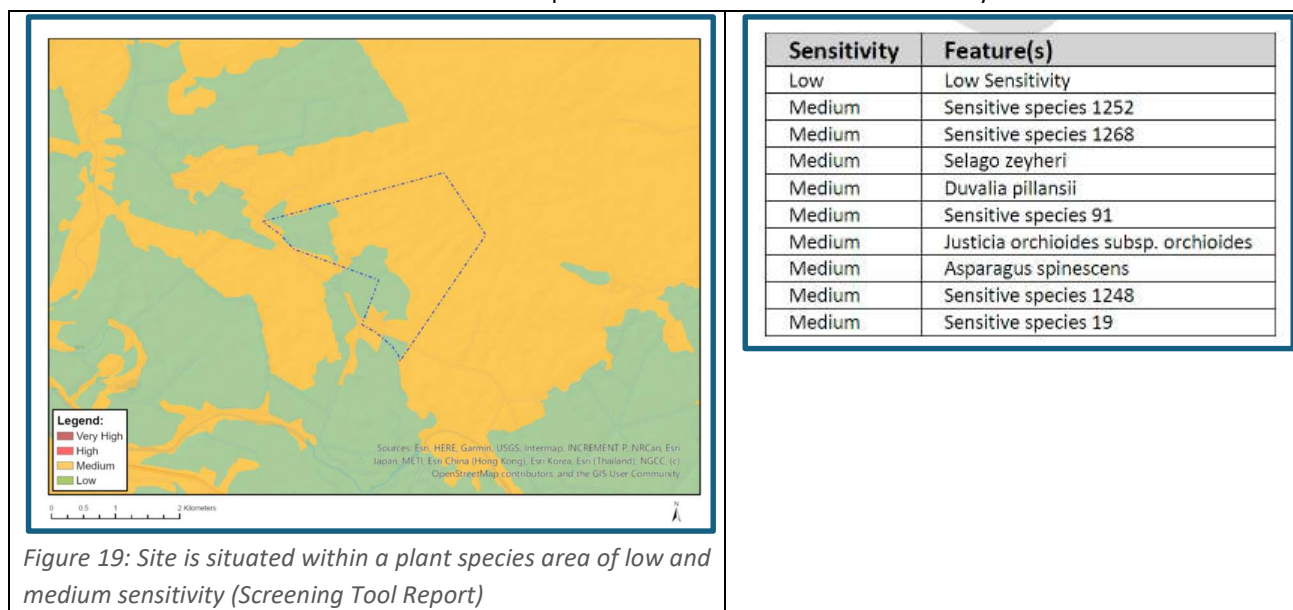


Figure 18: Addo Biodiversity Sector Plan: Sundays River Valley (2012) designation.

No designated Critical Biodiversity Areas (CBAs) were affected by the historical agricultural expansion and, as such, the activity is not considered to have resulted in a significant impact on biodiversity conservation targets. The primary ecological impact relates to the loss of landscape connectivity associated with Ecological Support Areas (ESAs). The site occurs within a heavily fragmented agricultural landscape where extensive historical clearing on surrounding properties has substantially reduced connectivity within similarly designated ESA habitat. Furthermore, the site is associated with a minor tributary of the Sundays River rather than the main river corridor and therefore does not form part of the primary landscape connectivity corridor within the wider landscape. Regeneration of thicket vegetation along the canal provides a narrow east-west linkage; however, this corridor remains fragmented and should be retained, with no further clearing along the canal permitted.

Plant Species Theme

The STR indicates that the site is situated within a plant area of low and *medium* sensitivity.



The site is located within Albany Alluvial Vegetation and Sundays Valley Thicket as mapped in the National Vegetation Map (NVM, 2024). According to the National Biodiversity Assessment (NBA, 2025), Albany Alluvial Vegetation is classified as Endangered, while Sundays Valley Thicket is classified as Least Concern.

Albany Alluvial Vegetation is a river-associated vegetation unit within the Albany Thicket Biome, occurring on fertile alluvial soils along Eastern Cape river systems including the Fish, Sundays and Gamtoos Rivers. Owing to the fertility of these soils, the vegetation type has been extensively transformed for agriculture and grazing and now represents one of the most threatened thicket subtypes.

Changes in the conservation status of the two vegetation units since the publication of the Vegetation Map of South Africa (2006), including subsequent revisions, are summarised in Table 2.

Table 2: Conservation status changes (2006 – current)

Period	ALBANY ALLUVIAL VEGETATION (HA)	SUNDAYS VALLEY THICKET (AT 51)3
2006 – 2009	Endangered	Least Threatened (AT 6)4
2009 – 2012	Endangered	Least Concern (AT 6)
2012 – 2018	Endangered	Least Concern (AT 6)
2018 – 2024	Endangered	Least Concern (AT 51)

2024 - present	Endangered	Least Concern (AT51)
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The Subtropical Thicket Ecosystem Planning (STEP) programme (2006), which was applicable during the earlier phases of agricultural expansion, identified the affected vegetation as Sundays Spekboom Thicket (now Sundays Valley Thicket) and Sundays Doringveld (now Albany Alluvial Vegetation). At the time, both vegetation units were classified as Vulnerable.

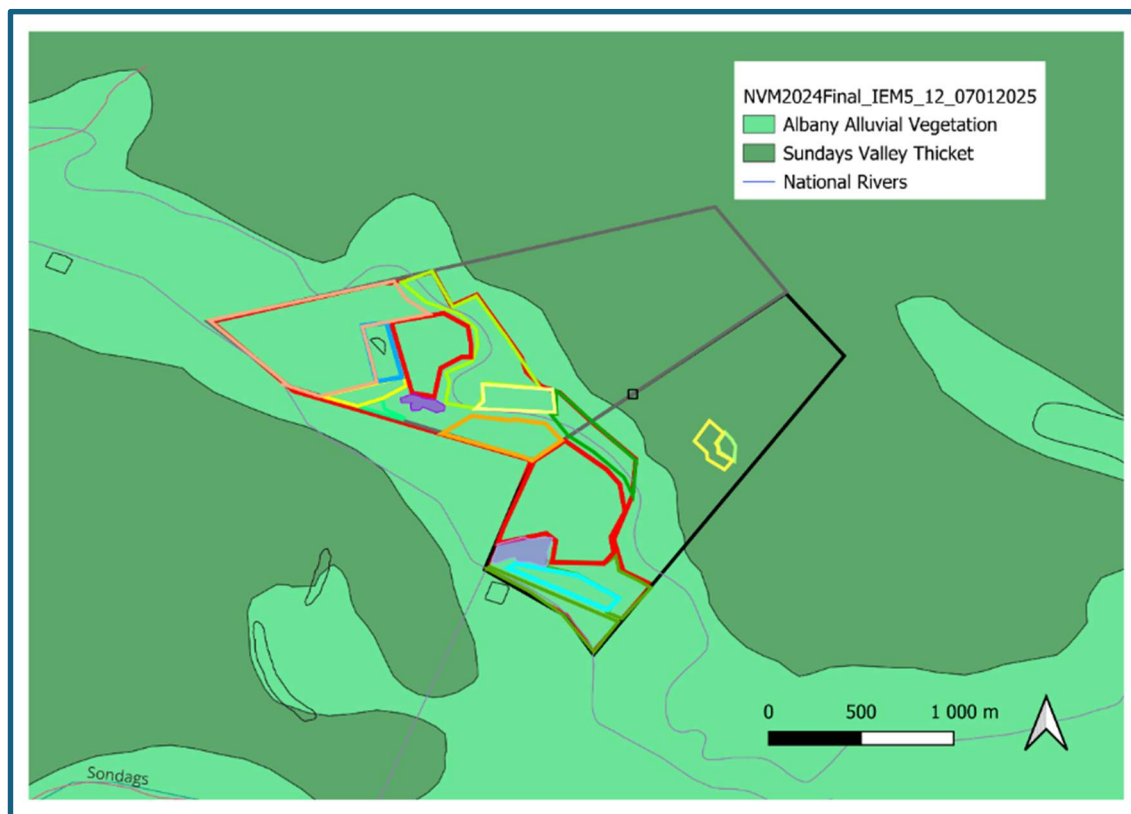


Figure 20: Albany Alluvial Vegetation (Endangered) and Sundays Valley Thicket (least concern) is mapped on the site

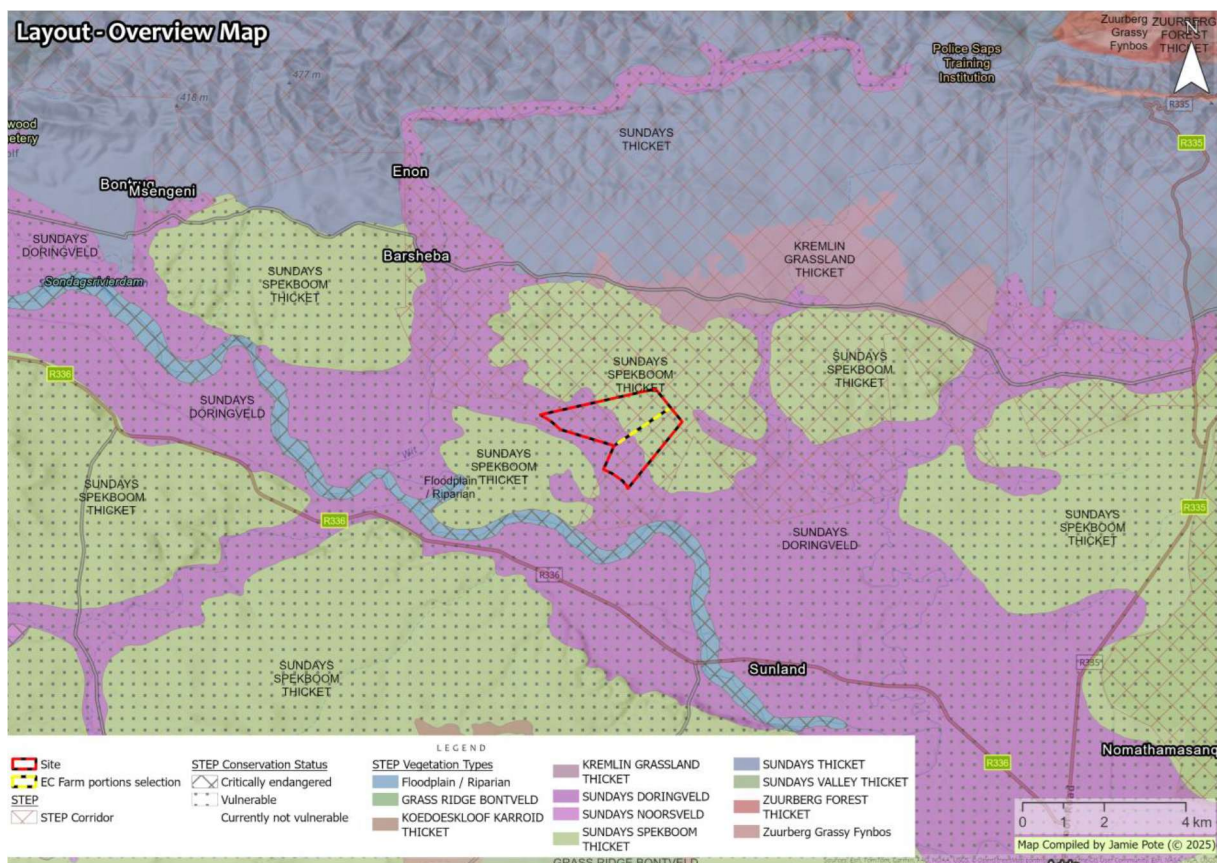


Figure 21: Sub-Tropical Ecosystem Planning vegetation units and status (STEP, 2007).

The specialist confirmed that the northern portion of the site comprises intact and degraded Sundays Valley Thicket, while the southern portion historically supported Albany Alluvial Vegetation. Remnant Acacia karroo elements remain along the southern road reserve; however, no intact Albany Alluvial Vegetation remains within the transformed agricultural areas. The specialist further concluded that the mapped extent of Albany Alluvial Vegetation shown in the National Vegetation Map overestimates its historical occurrence on the site, as this vegetation type is naturally confined to narrow floodplain areas and would not historically have extended upslope.

The approximate extent of historical clearing within each vegetation unit is summarised in Table 3. The delineations and area calculations are based on the interpretation of available historical aerial photography together with Landsat and Sentinel satellite imagery.

Table 3: Approximate area cleared

DATE	ALLUVIAL VEGETATION (HA)	THICKET (HA)	TOTAL (HA)
1989 (existing)	5.03	1.58	6.61
1989 - 2006 (existing)	32.28	6.95	39.23
2006 - 2010 (expansion)	8.87	-	8.87
2010 - 2014 (expansion)	21.93	10.13	32.06
2014 - 2017 (expansion)	2.71	6.39	9.10
2017 - 2025 (expansion)	11.37	22.20	33.57
TOTAL	82.19	47.25	129.44

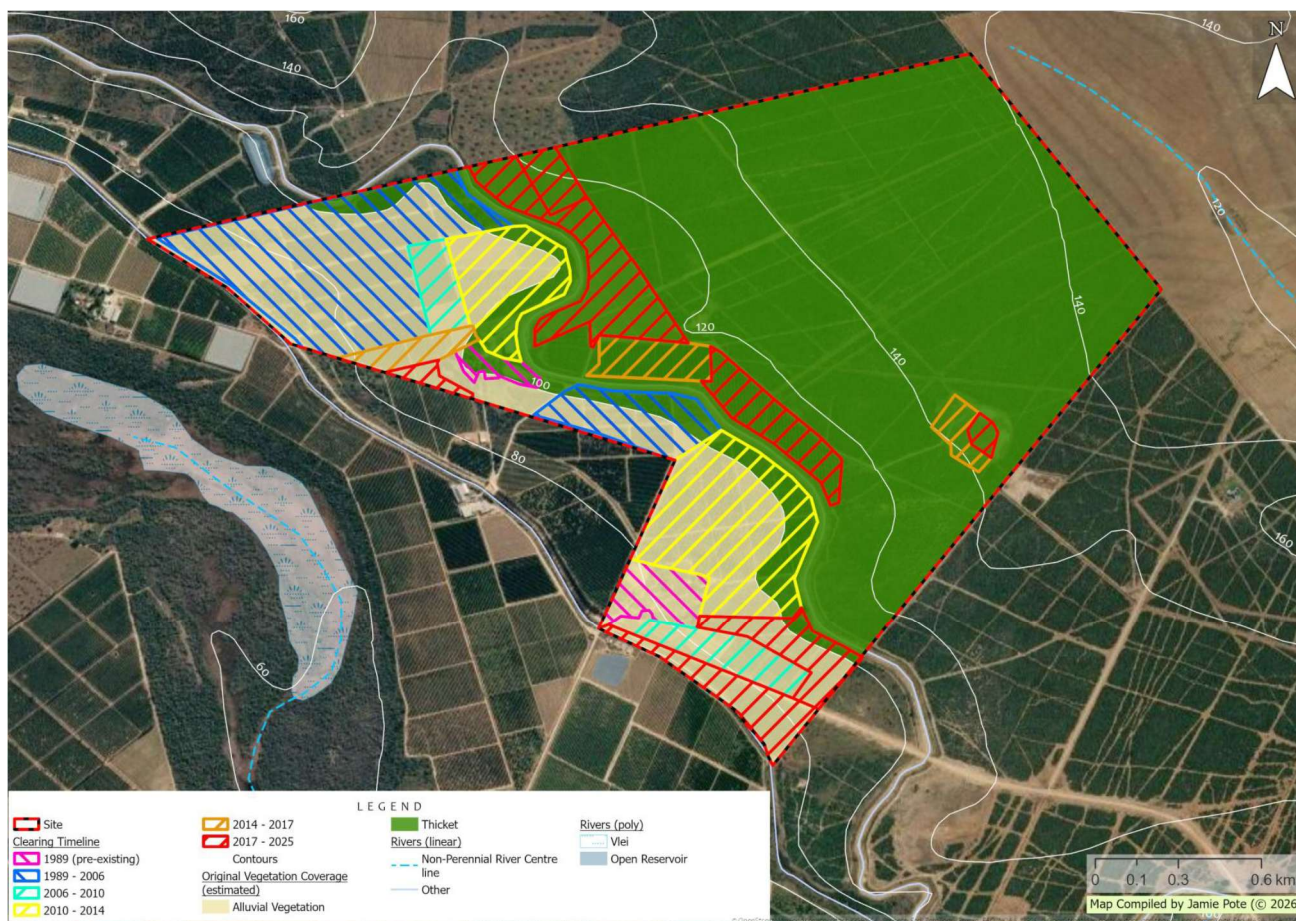


Figure 22: Revised vegetation coverage of Albany Alluvial Vegetation on affected farm portions with historical clearing timeline (Pote, 2026)

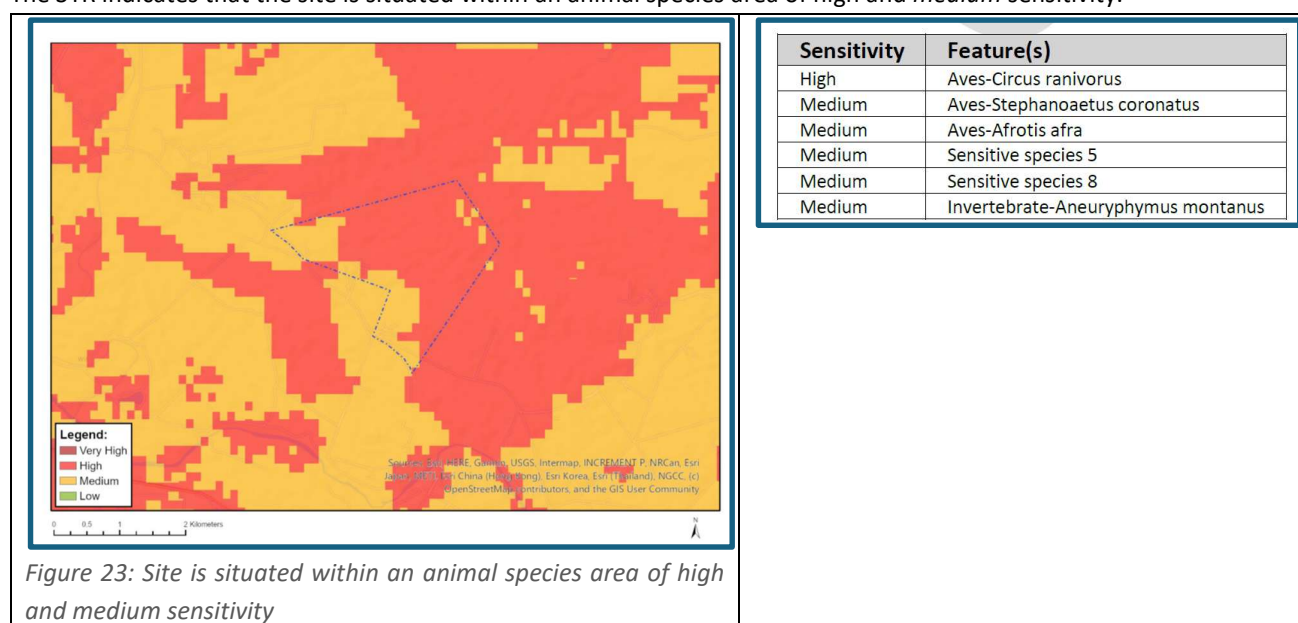
Several plant Species of Conservation Concern (SCC) are known from the broader area surrounding the site. The specialist concluded that only Sensitive Species 1268 and Sensitive Species 19 have a reasonable likelihood of occurring within the remaining Sundays Valley Thicket. No SCC are considered likely to occur within Albany Alluvial Vegetation, while the remaining screened species fall outside their expected habitat and distribution ranges or were not recorded during the surveys.

Species	Family	Status
<i>Asparagus spinescens</i>	Asparagaceae	National Environmental Screening Tool (NEST) (M), Rare. Outside of expected range and habitat.
<i>Drimia elata</i>	Hyacinthaceae	DDT, not present
<i>Duvalia pillansii</i>	Apocynaceae	NEST (M), Rare. Outside of expected range and habitat
<i>Justicia orchiooides</i> <i>subsp. orchiooides</i>	Acanthaceae	NEST (M), vulnerable (VU) [B1ab(i,ii,iii,iv,v)]. Outside of expected range and habitat.
<i>Selago zeyheri</i>	Scrophulariaceae	NEST (M), Vu, B1ab(i,ii,iii,iv,v) +2ab(i,ii,iii,iv,v)
<i>Sensitive species 1248</i>		NEST (M), VU [A2ad]. Fairly widespread species. Outside of expected range.
<i>Sensitive species 1252</i>		NEST (M), VU [A2cd]. Fairly widespread species. Outside of expected range.
<i>Sensitive species 1268</i>		NEST (M), endangered (EN) [A2cd]. Within broader expected range, however being a sought-after species in the wild plants

		trade, remaining individuals are usually found in isolated hard to reach places and would thus not be expected to have been lost as a result of the clearing activities being investigated.
<i>Sensitive species 19</i>		NEST (M), VU [A2cd+4cd]. In proximity to known range. None observed during initial surveys of the site. Species tends to occur in sporadic clusters across the range, fairly widespread coverage. Risk factor is primarily the medicinal plants trade, being a sought-after species.
<i>Sensitive species 91</i>		NEST (M), EN [B1ab(iii)]. Usually found in Bontveld area and transitional thicket adjacent to Bontveld. Outside of expected range.

Animal Species Theme

The STR indicates that the site is situated within an animal species area of high and *medium* sensitivity.



The site is not located within an Important Bird and Biodiversity Area (IBA), although it falls within the potential foraging range of species associated with the Alexandria Coastal Belt IBA, located approximately 17 km to the south-east. In terms of Key Biodiversity Areas (KBAs), the northern portion of the site falls within the Sundays River Valley Thicket KBA, while the southern portion falls within the Nelson Mandela Bay Metro North KBA. Agricultural operations on the site is unlikely to pose any significant risk to bird species known from the nearby IBA due to extensive suitable habitat in surrounding area.

Given the proximity of the Addo Elephant National Park, the site may also fall within the foraging range of highly mobile bird and mammal species associated with the Park. However, faunal movement within the surrounding landscape is substantially constrained by extensive agricultural transformation, game fencing and the established road network.

The specialist concluded that the majority of flagged avifaunal species are likely to occur only as transient visitors to the area. Although historical vegetation clearing may have resulted in some localised habitat loss and displacement of fauna, extensive suitable habitat remains available within the broader landscape, including the Addo Elephant National Park and surrounding natural vegetation. Consequently, the contribution of the historical agricultural expansion to regional habitat loss for faunal species is considered to be low. The Addo Dung Beetle (*Circellium bacchus*) is considered potentially present on the site, while suitable habitat for the Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*) is absent.

Species	Family	Specialist findings
<i>Afrodis afra</i> (Southern Black Korhaan)	Otididae	NEST (H, M), SA: VU; Intl: VU. Activities within the site are unlikely to have had significant impacts on the species as it generally has an extensive range.
<i>Aneuryphymus montanus</i> (Yellow-winged Agile Grasshopper)	Acrididae	NEST (M), VU [B2ab(iii,v)]. Not likely to occur as preferred habitat is absent.
<i>Circellium bacchus</i> (Cape Flightless or Addo Dung Beetle)	Scarabidae	Present in the broader Addo area. Potentially present.
<i>Circus maurus</i> (Black Harrier)	Accipitridae	NEST (H, M), SA: EN; Intl: EN. Activities within the site are unlikely to have had significant impacts on the species as it generally has an extensive range.
Sensitive species 5		NEST (M), SA: VU [C2a(i); D1]; Intl: VU [A2acd+C1]. Area is not considered preferred habitat for the species. Not present.
Sensitive species 8		NEST (M), SA: VU [B2ab(ii,iii,v); C2a(i)]; Intl: LC. Present in the surrounding area. Known to have been introduced onto surrounding game farms & was briefly present in Addo in 2014 and are present in the [REDACTED] Project located towards Jansenville, north of the site, but not part of any natural, self-sustaining population.
<i>Stephanoaetus coronatus</i> (Crowned Eagle)	Accipitridae	NEST (M), SA: VU; Intl: NT, Present in the broader Addo area. Activities within the site are unlikely to have had significant impacts on the species as it generally has an extensive range.

Terrestrial Biodiversity verification

The specialist verified the terrestrial biodiversity sensitivity of the site based on the current condition of the affected areas.

- Low sensitivity areas comprise transformed agricultural lands, orchards, old lands, degraded thicket and areas surrounding existing infrastructure. These areas are considered to have limited biodiversity value, and their loss has not significantly affected the conservation status of the vegetation units or ecological functioning at a regional scale.
- Moderate sensitivity areas comprise intact Sundays Valley Thicket, which remains relatively widespread within the region and supports ecological connectivity and biodiversity values.
- High sensitivity areas would comprise remnant Albany Alluvial Vegetation or other areas of elevated biodiversity importance. No high sensitivity areas were identified within the existing agricultural footprint.

The existing agricultural areas have been transformed for citrus production and are therefore verified as having low terrestrial biodiversity sensitivity. Accordingly, the terrestrial biodiversity, plant species and animal species themes are all verified as low sensitivity for the existing farmed areas.

Approximately 2 ha was cleared after 2022, and this clearing took place in the area mapped as Sundays Valley thicket by the specialist. As the historical clearing of Albany Alluvial vegetation occurred predominantly prior to the publication of the National Biodiversity Offset Guideline (2023), and the existing agricultural footprint has been verified as being of low terrestrial biodiversity sensitivity, no biodiversity offset is recommended.

Table 4: Approximate area expanded in each vegetation type

DATE	ALLUVIAL VEGETATION (HA)	THICKET (HA)	TOTAL (HA)
2006 - 2010 (expansion)	8.87	-	8.87
2010 - 2014 (expansion)	21.93	10.13	32.06
2014 - 2017 (expansion)	2.71	6.39	9.10
2017 - 2022 (expansion)	11.37	20.20	33.57
2022 – current (expansion)	-	2	
TOTAL expansion	44.88	38.72	83.6

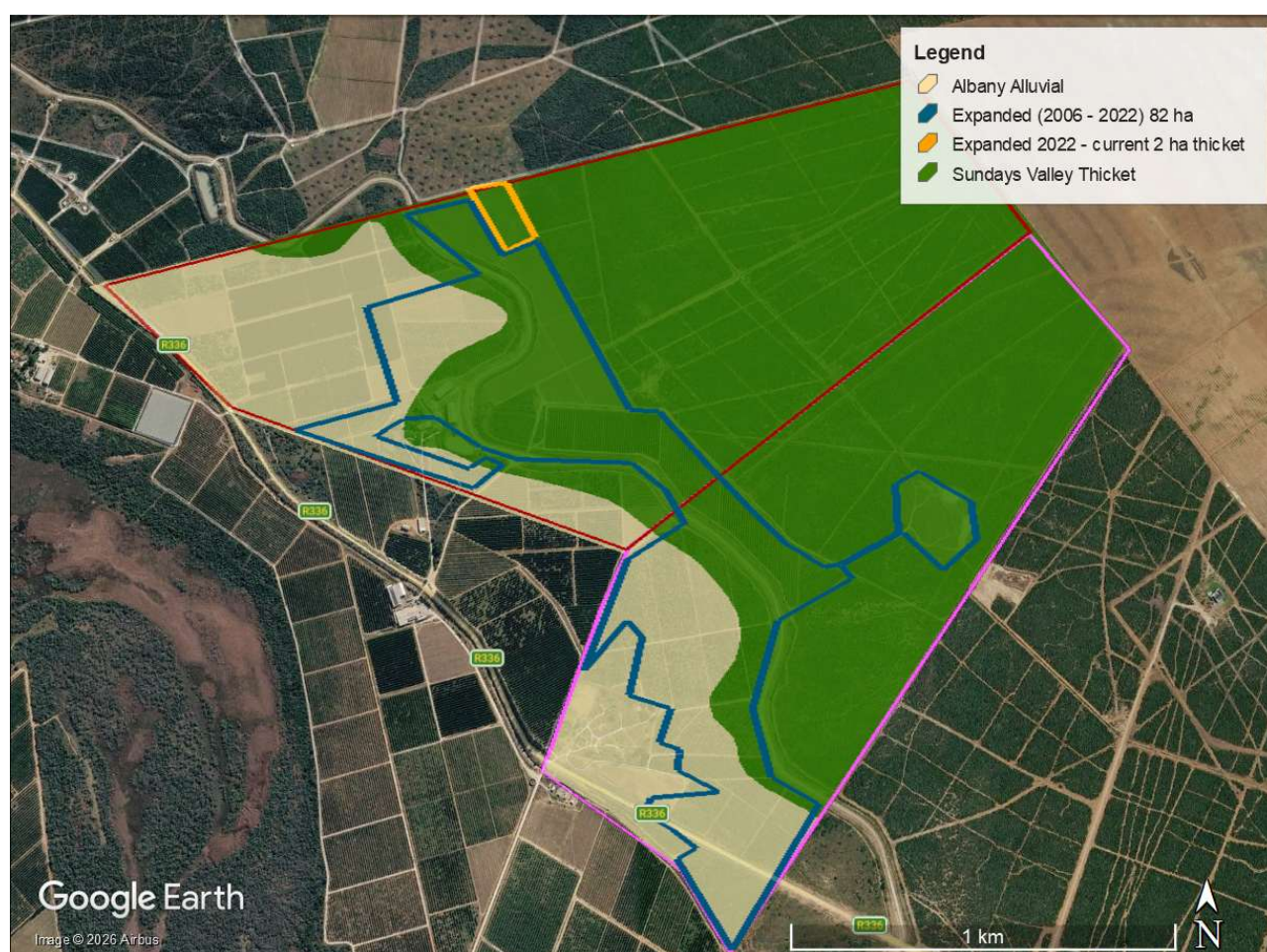
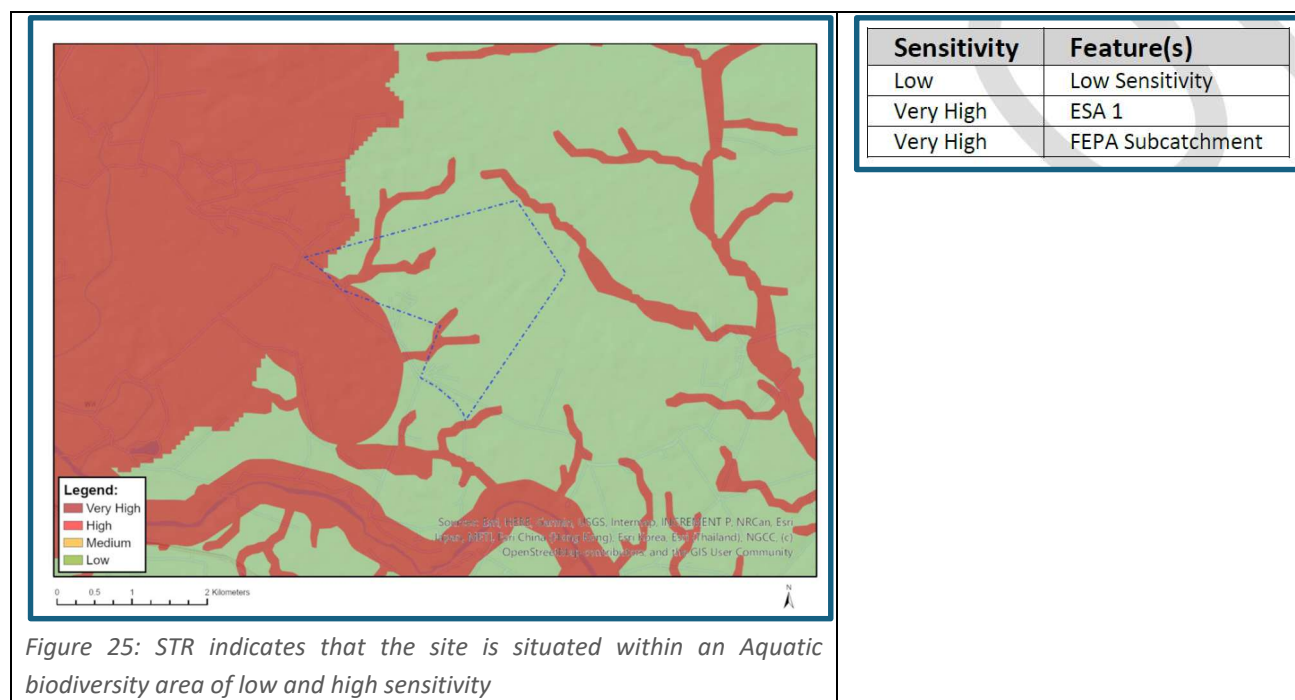


Figure 24: Expansion area overlaid over Sundays Valley thicket and Albany Alluvial vegetation types mapped by specialist

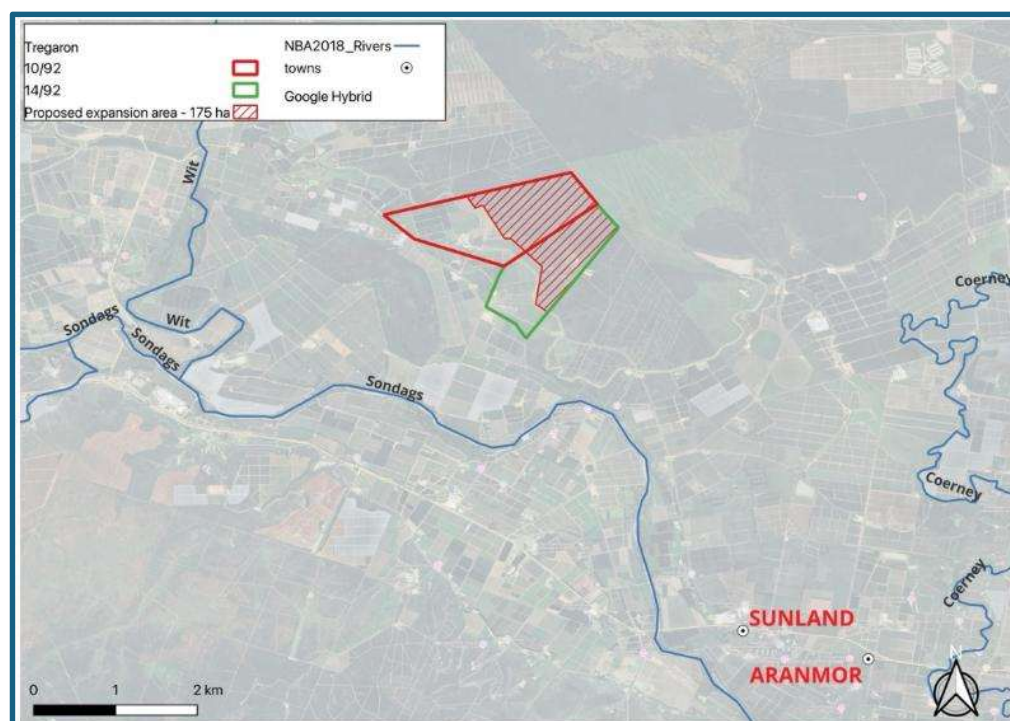
3.5. Aquatic features and biodiversity

The STR indicates that the site is situated within an aquatic biodiversity area of low and very high sensitivity.



The site is located within the undifferentiated rainfall region of South Africa, with rainfall peaks occurring in March and November. Mean Annual Precipitation (MAP) in the region is approximately 350 mm per annum. The annual average temperature is approximately 18°C, with frost being a rare occurrence (Mucina & Rutherford, 2007).

The farm portions are situated on higher-lying terrain typically associated with thicket vegetation on the plateaux adjoining the Sundays River.



The farm portions fall within the lower catchment areas of the Sundays River (N40E) and Coernay River (N40D). No other drainage features are located within 100 m of the farm portions.

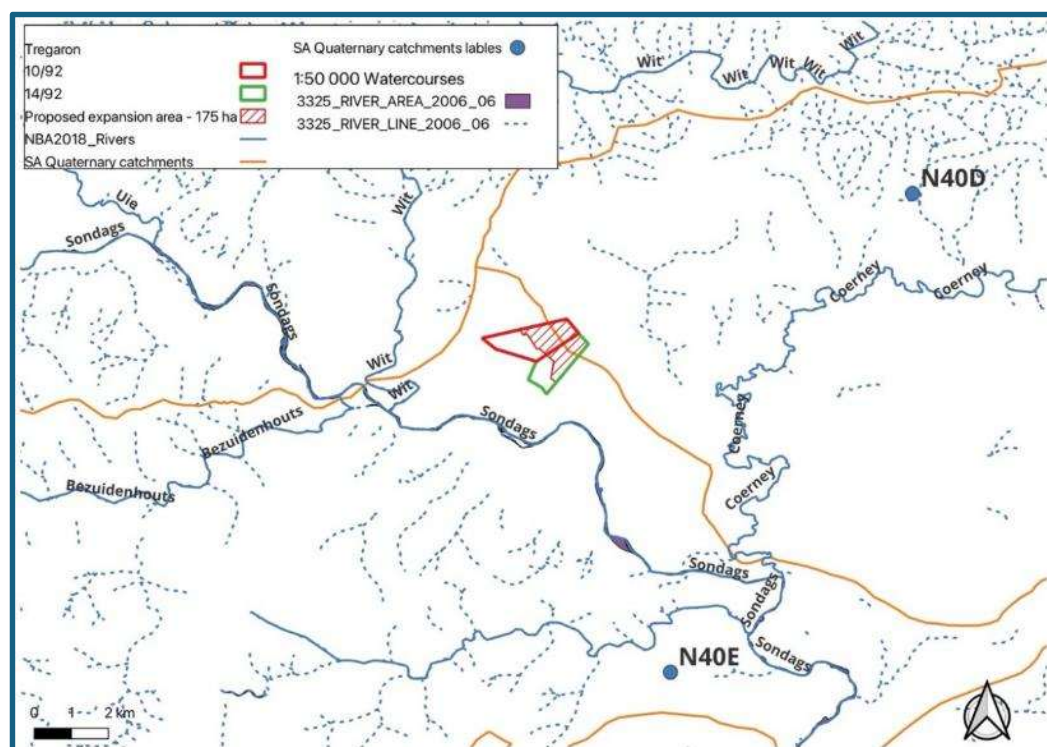


Figure 27: Watercourses and mainstem rivers known within the greater catchments (Colloty, 2026)

According to the National Wetland Map 5 (Van Deventer et al., 2020), the absence of watercourses and wetlands within 500 m of the site is supported by the National Wetland Inventory (SAIIE v2) spatial data.

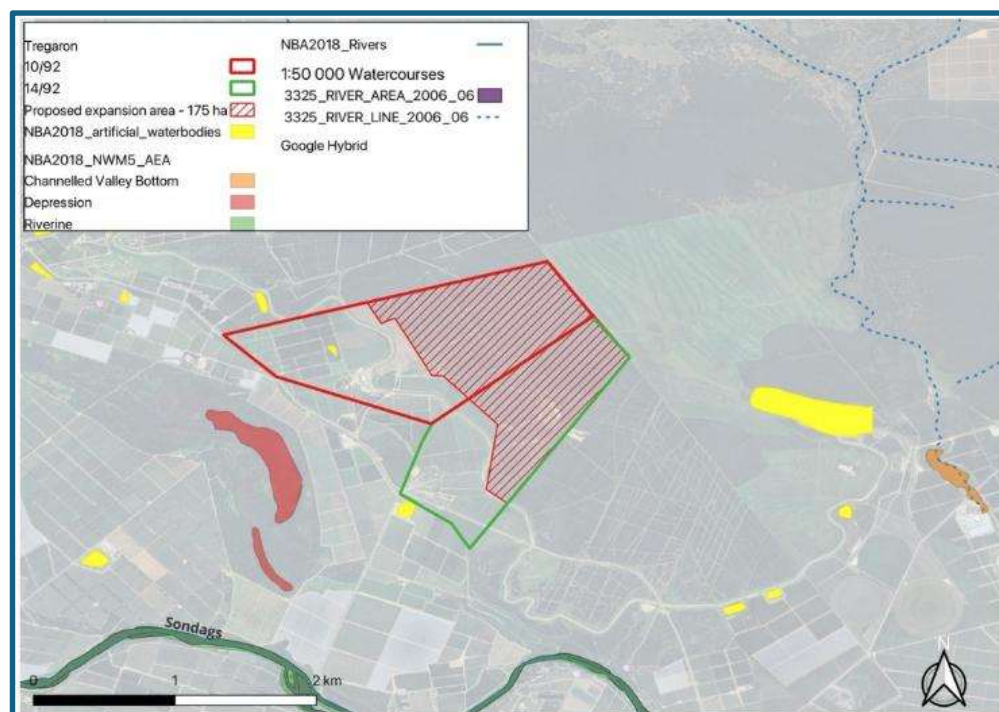


Figure 28: Potential wetland as identified in the National Wetland Inventory (v5) van Deventer et al. 2020) (Colloty, 2026)

The site is not located within a Strategic Water Resource Area or an NFEPA Wetland Cluster. The study site is also excluded from areas identified in the National Freshwater Ecosystem Priority Areas (NFEPA) (Nel et al., 2011).

The site is not considered a Fish Support Area.

Any potential impacts on surface runoff are expected to be limited, and the site is separated from the downstream river system by the existing road and canal networks, limiting its contribution to downstream hydrological processes.

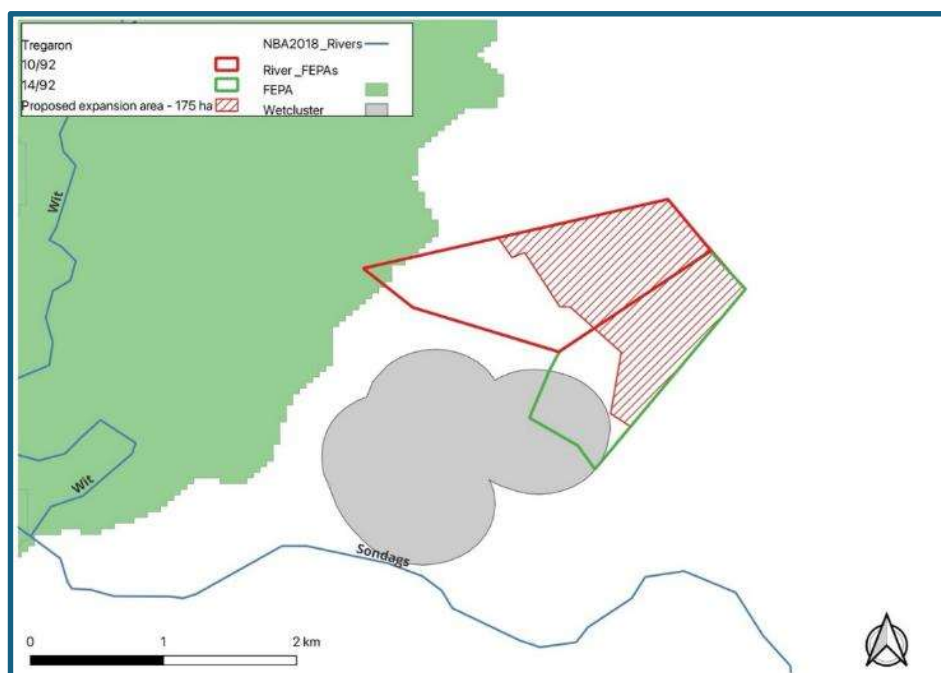


Figure 29: The study area (red arrow) in relation to NFEPA catchments, potential wetlands and Strategic Water Resources Areas of South Africa

With regard to the potential aquatic Ecological Support Area (ESA), the mapped ESA areas are based on modelled drainage features derived from relatively coarse-scale contour data. In terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP, 2019), portions of the site are mapped as Aquatic ESA 1. Ecological Support Areas are not essential for meeting biodiversity targets but support the maintenance of ecological processes and, in the aquatic landscape, extend into catchments that are important for maintaining Critical Biodiversity Area rivers and wetlands.



Figure 30: Some areas on the existing farm portions are designated as aquatic ESA1

Site visits were undertaken on 12 December 2025 and 10 January 2026 to ground-truth the mapped aquatic features and confirm the applicable 500m and 100m regulated areas. The field assessment included the characterisation of freshwater hydrogeomorphic (HGM) units in accordance with Kotze et al. (2009) and Ollis et al. (2013). regulated areas as required.

Field verification did not identify corresponding drainage features or watercourses on the affected farm portions. The freshwater features identified within the broader study area comprise **Wetland 1 and the Sundays River**. Water inputs to these systems are naturally dominated by surface-water flow. Groundwater contribution is expected to be limited due to the local geology, which comprises semi-permeable rock with limited soil and subsoil development, as well as the local topography.

With regard to the watercourses and drainage lines, no clear aquatic features or instream aquatic vegetation units were observed within the sites. Similarly, no impacts are expected within or near any of the wetland areas due to the lack of connectivity within the respective catchments of these systems. The wetland and drainage line units were screened according to their proximity to the disturbance and their landscape setting.

Table 5: Summary of screening assessment

Unit	Type	Impacted by the project and/or requires further assessment?	Reason
Wetland 1	Oxbow feature	No	No direct impact, and the proposed development is well outside the 500m regulated zone of the system
Sundays Rivers	Riverine	No	No direct impact due to being more than 1km away and catchment fragmentation

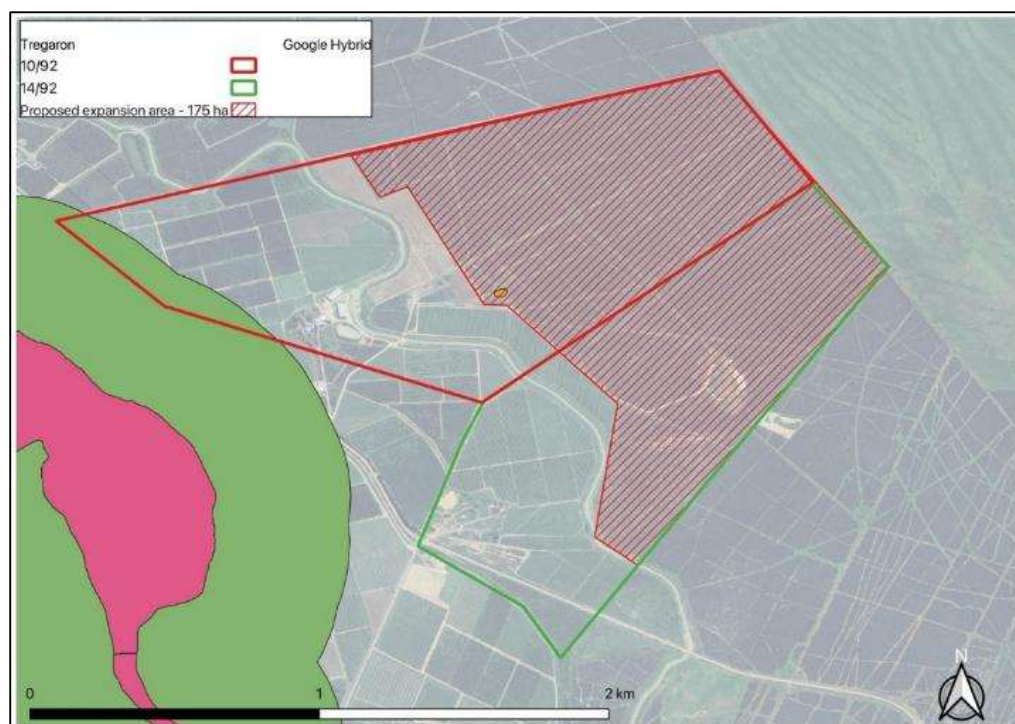


Figure 31: The aquatic features present within the study area

The riparian zones associated with the Sundays River comprise mostly thicket, with narrow bands (approximately 2–5 m) associated with the riverbanks considered to constitute riparian habitat. Species associated with the river edge include *Cynodon dactylon* and *Cyperus textilis*, while trees on the steep banks include *Searsia lancea* and *Combretum caffrum*. Thicket trees and shrubs on the upper slopes of the banks include *Azima tetraacantha*, *Buddleja saligna*, *Ehretia rigida*, *Gymnosporia heterophylla*, *Lycium* spp., *Olea europaea* subsp. *africana*, *Vachellia karroo* and *Ziziphus mucronata*.

However, these areas are more than 1 km from the site and are disconnected from any potential flows generated by the site. This includes the floodplain-associated Oxbow wetland, which is further isolated from the site by developed orchards.

The following summary represents the Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) scores of the natural wetlands found within or adjacent to the development area.

Table 6: PES / EIS summary of the respective units

Feature number	Hydrogeomorphic Type	Present Ecological State	Ecological Importance and Sensitivity	Overall Sensitivity	Buffer as per Macfarlane & Bredin (2017) Model (m)
1	Oxbow wetland – Riverine Floodplain	D	Moderate	Moderate	NA
Sundays River	Riverine	D	Moderate	Moderate	NA

Aquatic Biodiversity verification

No Aquatic Critical Biodiversity Areas would be affected. Furthermore, no listed or protected aquatic plant species occur due to the general lack of aquatic habitat. No endemic or conservation-worthy species (listed or protected) were observed or have been recorded within the wetlands on site. This also applies to the dams on site, which contained no aquatic habitat or species at the time of the survey. No drainage features or watercourses were observed on site.

Any activities within the observed aquatic systems, the 100 m regulated zone of rivers and drainage lines, or within 500 m of the boundary of wetlands would require a Section 21(c) and (i) Water Use Licence. However, **no natural systems within these respective regulated areas are affected by the proposed development.**

Although there is some overlap between the findings of the site assessment and the Screening Tool's outcome, the development footprint is well removed from the Sundays River, drainage lines and any catchments that function in support of these systems.

3.6. Socio-economic conditions

The farm portions fall within the Sundays River Valley Local Municipality (SRVM), which is a rural municipality in the Sarah Baartman District Municipality of the Eastern Cape. The municipality covers approximately 5,995 km² and is characterised by significant agricultural and ecotourism potential. The Addo Elephant National Park and the established citrus farming industry are identified as key economic drivers within the municipal area.

Agriculture plays a significant role in the local economy and is supported by the region's fertile soils, favourable climate and availability of irrigation water from the Sundays River canal system. In 2023, agriculture contributed approximately 16.4% of the Gross Value Added (GVA) of the local municipality, making it the third-largest contributor after community services (33.5%) and trade (16.7%). The municipality identifies agricultural productivity, particularly citrus production, as a comparative advantage and notes the established agricultural sector, experienced farmers and agricultural businesses as important competitive advantages.

Employment in the municipality is also strongly linked to the agricultural sector and associated value chains. In 2023, approximately 19,000 people were employed in the Sundays River Valley, representing 12.59% of employment in the Sarah Baartman District Municipality. Total employment increased at an average annual rate of 1.10% between 2013 and 2023. The municipality recorded an official unemployment rate of 17.52% in 2023, which was lower than the corresponding rates for the Eastern Cape (41.04%) and South Africa (32.70%) (SRVM IDP, 2025–2026).

The Sundays River Valley is recognised as a leading citrus-producing region in South Africa. The availability of a reliable irrigation water supply through the canal network provides an important comparative advantage for irrigated agriculture, while the established agricultural and tourism sectors, road and rail infrastructure and proximity to the Nelson Mandela Bay Metropolitan Municipality and Coega Harbour support access to markets and export facilities.

The farm portions are suitably located for agricultural production and are situated within an established citrus-producing landscape with existing agricultural infrastructure and associated value chains. Existing infrastructure on the property includes electricity, pipeline infrastructure, machinery and equipment, and road access. The proposed agricultural expansion is expected to provide approximately 45 permanent and 200 seasonal employment opportunities, together with associated opportunities for local skills development and transfer.

The municipality's spatial and economic planning framework recognises the importance of protecting high-potential agricultural land while supporting agricultural and agro-processing activities and associated employment opportunities. The continued agricultural use of the site is therefore consistent with the established economic character of the Sundays River Valley and its identified comparative advantages.

4. Summary of environmental sensitivity verification

Theme	Environmental sensitivity as per screening tool report	Verification of environmental sensitivity	Description
Agricultural theme	Very High sensitivity	Very High sensitivity	The site is situated within the Sunday River PAA. Protected Agricultural Areas (PAAs) are designated zones in South Africa designed to protect high-value agricultural land from non-agricultural development, ensuring long-term food security and sustainable production. These areas are established under the Preservation and Development of Agricultural Land Act (PDALA), 2024 (Act 39 of 2024) The majority of soils (112.6 ha) within the farmed area is considered to be of high agricultural potential. The soil on the site is suitable for citrus production, and water is readily available on the property. Areas exist between the orchard rows which are not disturbed and remain covered and allow for biodiversity between the rows. Drip irrigation is used which reduces water use and is less damaging to soil structure. The sensitivity of the agricultural potential of the land portions is verified as very high.
Animal Species	High sensitivity	Low sensitivity	This area has been transformed into agricultural land. The Addo Elephant National Park is situated 9.7 km to the north and 10.3 km to the east. Since the habitat on site is comparative with the Addo Elephant National Park, it is feasible that certain faunal species (birds and mammals), from the park may be transient to the site. However, it should be noted that the Sundays River and associated agricultural development along the river, as well as surfaced roads and a lot of fencing (both stock and game fencing) is likely to pose an ecological barrier. The site may be within foraging range of species that are known from the Alexandria Coastal Belt IBA 17 km to the south-east. The site falls across both the Sundays River Valley Thicket key biodiversity area (KBA) on the north side and the Nelson Mandela Bay Metro North KBA on the south side. Development of the site is unlikely to have posed any significant risk to bird species known from the nearby IBA due to extensive suitable habitat in surrounding area. Several Species of Conservation Concern are indicated as potentially being present within the site and broader area using several online databases. The activity is not expected to have resulted in

Theme	Environmental sensitivity as per screening tool report	Verification of environmental sensitivity	Description
			impacts of animal species of conservational concern (SCC), either due to lack of preferred habitat or due to extensive range of the species. The habitats and microhabitats present on the project site are not unique and are widespread in the general area; Some displacement may have occurred, but the remaining intact and available habitat is still fairly extensive in the broader area, including the extensive Addo Elephant National Park. The loss of fauna species due to clearing are assessed to be of low significance. The fragmentation of natural habitat due to clearing is assessed to be of medium significance.
Aquatic Biodiversity	Low / Very High sensitivity	Low sensitivity	Although there is some overlap with the findings on site and the Screening Tool's outcome, the development footprint is well removed from the Sundays River, drainage lines and any catchments that function in support of these systems.
Archaeological and Cultural Heritage	Very High Sensitivity	Low sensitivity	The area is considered as having a low archaeological heritage significance despite the occurrence of stone artefacts. The exposed stone artefacts are highly likely to be in in secondary context and are not associated with other material or cultural heritage remains. Only one built environment structure was identified which seems to be younger than 60 years. This structure does not have any heritage value and does not fall under the ambit of the NHRA 25 of 1999.
Paleontological	Very High Sensitivity	Very High sensitivity	The area is underlain by the Sundays River Formation and the Kirkwood Formation of the Uitenhage Group. The Sundays River Formation is estimated to be about 135 million years old. This Formation is well known for its marine fossils. These fossils range from a variety of invertebrate fossils like gastropods, bivalves, micro fossils like foraminifera, ostracods, and almost complete marine vertebrates like plesiosaurs. The Kirkwood Formation is well known for its silicified tree trunks as well as ferns, cycads, conifers amongst others. It is also known for its dinosaur fossils, like Nqwebasaurus thwazi. This had led to these two formations being ranked as very highly sensitive. After assessing the site, it has been concluded that the expansion of agriculture in this area did not lead to the uncovering or destruction of significant fossil material. Agriculture typically does not need excavation deeper than 1 meter, and this should not penetrate solid bedrock due to the thick weathered soil layer.
Plant Species Assessment	Medium sensitivity	Low sensitivity	Two vegetation units are primarily affected by the proposed project (National Vegetation Map, 2025). The site is located entirely within Sundays Valley Thicket (Conservation Status: Least

Theme	Environmental sensitivity as per screening tool report	Verification of environmental sensitivity	Description
			Concern) and Albany Alluvial Vegetation (Conservation Status: Endangered) (National Vegetation Map, 2025; National Biodiversity Assessment Red Listed Ecosystems, 2025). The Sub-Tropical Ecosystem Plan (STEP, 2006) is relevant to vegetation clearing that was undertaken during the earlier time period. STEP (2006) identified two vegetation units as being affected by the proposed activity, Sundays Spekboom Thicket (now Sundays Valley Thicket) and Sundays Doringveld (now Albany Alluvial Vegetation). At the time of STEP (2006), both Sundays Spekboom Thicket and Sundays Doringveld were designated a Vulnerable status. The Albany Alluvial vegetation on the site is less than that indicated in terms of the NatVEG Map, 2024, with the coverage of Sundays Valley Thicket considered to be more than what is reflected in the National Vegetation Map. Several Species of Conservation Concern are indicated as potentially being present within the site and broader area using several online databases. The site is considered to be outside of the expected range of the SCC with exception of SCC 1268 and SCC 19. SCC 1268 is not expected to have been impacted on by the activity as the individuals are found in isolated patches. SCC 19 is in proximity to the known range, however none were observed on site and the species generally has a widespread coverage occurring in sporadic clusters across the range. Alien invasion for the site is generally <i>Low</i>, with some Prickly Pear. The loss of natural vegetation due to clearing is assessed to be of medium significance.
Terrestrial Biodiversity Impact	Very High Sensitivity	Low / Medium sensitivity	In terms of the Eastern Cape Biodiversity conservation (ECBCP, 2019) all undeveloped areas are designated Ecological Support Area (ESA) 1, with transformed areas including orchards designated as ESA 2. The ESA designations are primarily related to maintaining landscape level connectivity. No critical biodiversity areas (CBA) are present or affected. The land uses are not deemed compatible with the recommended land uses of the EC BCP. It is probable the activity will have resulted in some disruptions to ecological connectivity and/or corridors; however, it is noted that the site is within a lower order corridor, being associated with a minor watercourse rather than floodplains around a major watercourse. The Addo Biodiversity Spatial Plan, 2012 (Addo BSP) designates the north-eastern half of the site (~Sundays Valley Thicket) as Other Natural Area (ONA) with a band of Critical Biodiversity area

Theme	Environmental sensitivity as per screening tool report	Verification of environmental sensitivity	Description
			generally aligned with the canal corridor through the site. Remnant Albany Alluvial Vegetation potentially occurred on the south side. The patches of transformed areas at that time were designated No Natural Area Remaining (NNAR). No Protected areas (AENP) nor any ecological processes directly associated with them are likely to have been significantly affected by the clearing of vegetation, above baseline levels when considering the extensive clearing in the broader Sundays River Valley area. Intactness for the site is generally High for intact Sundays Valley vegetation and Low for transformed and degraded areas. Degradation for the site is High for transformed vegetation and Moderate for intact thicket, as there is existing clearing along cutlines, fencelines and roads. The orchards and lands that were historically cleared were largely within intact/natural, to somewhat degraded habitat. While Albany Alluvial vegetation does have an elevated conservation status, the unit is generally not a biodiversity rich habitat. Sundays Valley Thicket is a widespread unit with a generally low occurrence of Species of Conservation Concern. The loss ESA due to clearing and Fragmentation of natural habitat due to clearing are assessed to be of medium significance. Clearing of Endangered Albany Alluvial Vegetation was undertaken before publication of the gazetted Biodiversity Offset Guidelines (23 June 2023) and it is not anticipated that the activity will have resulted in residual impacts that would require consideration of a biodiversity offset.
Socio-Economic	NA	NA	Aspects related to socio-economic impacts have been addressed in the assessment, however no specific specialist study is deemed to be required for the existing agricultural activity.
Civil Aviation Assessment	Medium sensitivity	NA	A civil aviation assessment / compliance statement is excluded as the proposed development will not have an impact on civil aviation aerodrome.
Defense theme	Low sensitivity	NA	A defense them compliance statement is excluded as the proposed development will not have an impact on the defense theme.

5. Impact Assessment

The impact assessment methodology is provided as Appendix 1 of this retrospective assessment.

NEMA LN Activity	Removal vegetation; change from indigenous vegetation to agricultural worked areas
PNCO, NEMBA, NFA	Permits required - species of conservation concern included in NEMBA and PNCO (flora and fauna) and NFA (trees); AIS to be removed by landowner;
CARA	Soil Permit
NEMWA	Waste management hierarchy – avoid, reduce, reuse, recycle, dispose
HRA Section 38	Permit required for any archaeological, palaeontological, heritage as required
Aspect	Historical clearing of indigenous vegetation and ongoing agricultural farming activities.

Impact:	Economic impact – Expansion without required approval in place						
Nature of impact:	Direct and indirect						
Description	The historical expansion of agricultural activities and associated vegetation clearing occurred without the required environmental authorisation in place. This creates potential economic and regulatory consequences for the landowner, including costs associated with retrospective authorisation and environmental compliance, potential enforcement action and penalties, and delays or restrictions on future expansion or land-use activities. The absence of appropriate environmental planning at the time of expansion may also have resulted in environmental impacts that require management or rehabilitation. For future agricultural expansion, development, rezoning or changes in land use, the applicable environmental legislation and approval requirements must be identified and addressed prior to commencement. Appropriate environmental planning and allocation of a suitable budget for environmental management will reduce the risk of further unauthorised impacts and associated economic consequences.						
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go -(farming in place in 1989)		Without mitigation		With mitigation	
	Spatial			Site	2	Site	2
	Duration			Very short	1	Very short	1
	Frequency			rare	1	rare	1

	Intensity			Medium	3	Medium	3
	Severity			Low	5	Low	5
	Consequence			Low	7	Low	7
	Probability			Plausible	3	Plausible	3
	Impact Significance			Low	10	Low	10
	Mitigation	The impact can be partially rectified through retrospective authorisation and implementation of the recommendations and conditions arising from the relevant environmental process. Future expansion or land-use changes must be subject to the required environmental and planning approvals before commencement.					
	Confidence	High					
Mitigation Measures	Planning and operations • Ensure that all conditions of any Environmental Authorisation (EA) (if attained), together with the applicable specialist recommendations and environmental management measures, are implemented. • Establish and maintain an Environmental Management File containing all relevant environmental documentation, including the EA, EMPr, permits, specialist reports, audit reports and other records relating to environmental compliance. • Undertake a review of applicable environmental legislation and approval requirements before any future development, agricultural expansion, rezoning or land-use change is undertaken. • Ensure that no expansion of the agricultural footprint or other development occurs outside the currently assessed footprint until the required environmental authorisation and other applicable approvals have been obtained. • Allocate an appropriate budget for environmental management, monitoring, compliance and any rehabilitation requirements arising from the retrospective process. • Undertake periodic environmental compliance audits, with a two-yearly audit period recommended, to verify ongoing compliance with applicable environmental approvals and management requirements.						

Terrestrial Biodiversity impacts	
Impact	Loss of indigenous vegetation
Nature of impact:	Direct
Description Incorrect land planning without an environmental authorisation in place can result in the removal of sensitive vegetation. The vegetation on the land portions is mapped as Albany Alluvial vegetation and Sundays Valley thicket in terms of the National Vegetation Map, 2024 (NVM, 2024). In terms of section 52 of NEMBA (Activity (a)(i)), Albany Alluvial Vegetation has an Endangered status, as per National Biodiversity Assessment, 2025. The Albany Alluvial vegetation on the site is less than that indicated	

in terms of the NatVEG Map, 2024, with only a narrow band on floodplain being Albany Alluvial vegetation. The southern portion would have been Endangered Albany Alluvial Vegetation. The northern portion of the existing farming area would have been Sundays Valley Thicket (intact and degraded). Remnant Acacia karoo elements visible along road at southern boundary but none remaining on farm. Intactness of indigenous for the broader site outside of the footprint is Moderate. Alien invasion for the site and footprint is Low. Invasion for the broader site outside of the footprint is Low to moderate (localised dense clumps and scattered trees).

Expansion without the necessary EA in place likely led to clearing of this vegetation and would have included Albany Alluvial Vegetation.

The approximate cleared area of each unit is indicated in the table below. Approximately 44.88 ha Albany Alluvial vegetation and 38,72 ha Sundays River thicket was modified to agricultural land as a result of expansion between 2006 to current. No clearing of Albany Alluvial Vegetation took place post 2023 and therefore a biodiversity offset is to deemed to be triggered by the expansion. Approximately 2 ha was cleared after 2022, and this clearing took place in the area mapped as Sundays Valley thicket by the specialist. As the historical clearing of Albany Alluvial vegetation occurred predominantly prior to the publication of the National Biodiversity Offset Guideline (2023), and the existing agricultural footprint has been verified as being of low terrestrial biodiversity sensitivity, no biodiversity offset is recommended.

DATE	ALLUVIAL VEGETATION (HA)	THICKET (HA)	TOTAL (HA)
2006 - 2010 (expansion)	8.87	-	8.87
2010 - 2014 (expansion)	21.93	10.13	32.06
2014 - 2017 (expansion)	2.71	6.39	9.10
2017 - 2022 (expansion)	11.37	20.20	33.57
2022 – current (expansion)	-	2	
TOTAL expansion	44.88	38.72	83.6

Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go-(Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Site	2	Site	2	Site	2
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low to medium	2	Low to medium	2
	Severity	Medium	8	Medium	9	Medium	9
	Consequence	Medium	10	Medium	11	Medium	11
	Probability	Probable	4	Probable	4	Probable	4
	Impact Significance	Medium	14	Medium	15	Medium	15
	Mitigation	Not possible – clearing of vegetation for agricultural production is a permanent impact					
	Confidence	High					

Nature of impact		Cumulative – contribution of the activity in combination with existing impacts associated with the ongoing agricultural transformation and loss of Albany Alluvial Vegetation within the broader Sundays River Valley.					
Albany Alluvial Vegetation is associated with the floodplains of the Sundays River Valley, where extensive areas have been transformed to agricultural land over an extended period. This ongoing transformation has contributed cumulatively to the loss and fragmentation of this Endangered vegetation type. The clearing undertaken on the subject site contributes incrementally to this broader cumulative loss. However, the contribution of the subject site should be considered in the context of the extensive historical agricultural transformation that has already occurred within the valley.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Local	3	Local	3	Local	3
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Medium	3	Medium	3
	Severity	Medium	8	Medium	9	Medium	9
	Consequence	Medium	11	Medium	12	Medium	12
	Probability	Plausible	3	Expected	5	Expected	5
	Impact Significance	Medium	14	Medium High	17	Medium High	17
	Mitigation	Possible – a consequence of medium indicates the identified Impact requires in situ mitigation and receptor mitigation					
	Confidence	High					
Impact:	Loss of Ecological support areas						
Nature of impact:	Direct						
Description							
The entire site overlaps with designed ESA 1 and ESA 2. The land uses are not deemed compatible with the recommended land uses of the EC BCP. It is probable the activity will have resulted in some disruptions to ecological connectivity and/or corridors; however, it is noted that the site is within a lower order corridor, being associated with a minor watercourse rather than floodplains around a major watercourse (i.e. the Sundays River). Furthermore, considering the significant agricultural development in the broader surrounding Sundays River Valley, the cumulative impact associated with this specific site is negligible. It is noted that while the broader floodplain area (~Albany Alluvial Vegetation) has largely been lost to agriculture, a narrow more or less contiguous band of vegetation still remains along the banks of the Sundays and other rivers.							
The current land use corresponds to the SPLUMA scheduled ‘agricultural’ land use purpose. Many agricultural activities may impact on, and are largely incompatible with, biodiversity conservation objectives. If poorly managed, they may accelerate degradation by causing habitat loss, soil erosion and hydrological changes. Associated impacts							

vary from moderate to severe depletion of natural biota and disturbance of ecosystem function. However, agriculture may also contribute to the overall functionality of a landscape by maintaining connectivity necessary for the movement and foraging of animals.

No designated CBA was affected and therefore clearing of lands will not have had a significant negative impact on conservation targets, but rather landscape connectivity (i.e. ESA). The site is within a heavily fragmented area with adjacent farms having extensive clearing limiting connectivity options within similar ESA designated habitat. It is also noted that the site and associated Albany Alluvial Vegetation fall along a minor tributary of the Sundays River, so would not be considered a primary landscape connectivity corridor, which is present in the wider landscape.

Regeneration of thicket around the canal does provide some east-west connectivity but is narrow and fragmented. No further clearing along this corridor should be permitted.

Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Medium - long	5	Medium - long	5	Medium - long	5
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low to medium	2	Low to medium	2
	Severity	Medium	7	Medium	8	Medium	8
	Consequence	Medium	8	Medium	9	Medium	9
	Probability	Plausible	3	Plausible	3	Plausible	3
	Impact Significance	Medium	11	Medium	12	Medium	12
	Mitigation	Possible					
	Confidence	High					
Nature of impact	Cumulative – contribution of the activity to existing cumulative impacts associated with agricultural development in the broader Sundays River Valley.						
Although the broader Sundays River Valley area has experienced extensive agricultural transformation and associated loss and fragmentation of natural vegetation, the contribution of the subject site to these cumulative impacts is limited in the context of the already highly transformed landscape. The site is located within a lower-order ecological corridor associated with a minor watercourse, while more significant landscape connectivity is associated with the wider Sundays River system. It is noted that while the broader floodplain area (~Albany Alluvial Vegetation) has largely been lost to agriculture, a narrow more or less contiguous band of vegetation still remains along the banks of the Sundays and other rivers. The incremental contribution of the activity to cumulative impacts on landscape connectivity is therefore considered low.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	

	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low	1	Low	1
	Severity	Medium	8	Medium	8	Medium	8
	Consequence	Medium	9	Medium	9	Medium	9
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low	10	Low	10	Low	10
	Mitigation	Possible					
	Confidence	High					
Impact:	Loss of fauna SCC						
Nature of impact:	Direct						
Description							
The clearing and transformation of vegetation associated with the agricultural activities would have resulted in some loss of fauna habitat and potential displacement of fauna from the affected areas. The Screening Tool identifies the site as having high and medium animal species sensitivity; however, specialist assessment indicates that the potential impact on fauna is limited by the highly transformed and fragmented nature of the surrounding agricultural landscape and the availability of extensive remaining suitable habitat in the broader area, including the Addo Elephant National Park. Most flagged species are unlikely to be significantly affected by the activity due to their mobility, extensive ranges, or the absence of suitable habitat on the site. The overall impact is therefore considered negative of low significance .							
Impact Rating	Nature of impact	Direct impact on SCC					
	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low	1	Low	1
	Severity	Medium	8	Medium	8	Medium	8
	Consequence	Medium	9	Medium	9	Medium	9
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low	10	Low	10	Low	10

	Mitigation	Not possible						
	Confidence	High						
Impact:	Loss of flora SCC							
Nature of impact:	Direct							
Several flora Species of Conservation Concern (SCC) are known from the broader area; however, specialist assessment concluded that only two SCC (<i>Sensitive species 1268</i> and <i>Sensitive species 19</i>) are likely to occur, or to have historically occurred, within the Sundays Valley Thicket on or adjacent to the site. No flora SCC are considered likely to occur within Albany Alluvial Vegetation. <i>Sensitive species 1268</i> , although occurring within the broader range, is considered unlikely to have been affected by the historical clearing activities, as remaining individuals are typically restricted to isolated and inaccessible locations due to collection pressure. <i>Sensitive species 19</i> was not recorded during the specialist survey. The remaining listed flora SCC occur outside the expected range and/or suitable habitat. Accordingly, no evidence was found that the historical agricultural activities resulted in the direct loss of confirmed threatened flora populations. It must be noted that it is impossible to determine with certainty what species of conservation concern were present retroactively, but inferences can be made from surrounding natural vegetation. Furthermore, Albany Alluvial Vegetation, which comprises the bulk of cleared vegetation generally does not contain significant populations of species of conservation concern. The impact on flora Species of Conservation Concern is considered to be of low significance.								
Impact Rating	Impact Status	Negative Impact			Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)			Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1	
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6	
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	
	Intensity	Low	1	Low	1	Low	1	
	Severity	Medium	8	Medium	8	Medium	8	
	Consequence	Medium	9	Medium	9	Medium	9	
	Probability	Slim	1	Slim	1	Slim	1	
	Impact Significance	Low	10	Low	10	Low	10	
	Mitigation	Not possible						
	Confidence	High						
Nature of impact	Cumulative impact on flora SCC							
Historical agricultural transformation throughout the Sundays River Valley has contributed to the cumulative reduction and fragmentation of habitat capable of supporting flora Species of Conservation Concern. The historical clearing on the site forms part of this broader pattern of transformation. However, given that no threatened flora populations were confirmed to have been affected by the activity, and only <i>Drimia elata</i> (DDT) was recorded on the property, the contribution of the activity to cumulative impacts on flora Species of Conservation Concern is considered to be low.								

Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative / positive Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low	1	Low	1
	Severity	Medium	8	Medium	8	Medium	8
	Consequence	Medium	9	Medium	9	Medium	9
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low	10	Low	10	Low	10
	Mitigation	Not possible					
	Confidence	High					
Impact:	Fragmentation of natural habitat						
Nature of impact:	Direct						
Historical agricultural development has transformed approximately 125 ha of the property from indigenous vegetation to cultivated orchards, resulting in the permanent loss and fragmentation of natural habitat within the affected area. The cultivated portions provide substantially lower habitat value than the original indigenous vegetation and support reduced species diversity. Despite the historical transformation, remnant areas of Sundays Valley Thicket remain on the western portion of the property, with fragmented indigenous vegetation also occurring along the canal corridor. These retained areas continue to provide habitat and refuge for birds, reptiles, small mammals and other fauna. In addition, the current farming practice of retaining vegetated strips between orchard blocks provides forage and refuge opportunities for birds and small animals and contributes to maintaining habitat heterogeneity within the agricultural landscape. The historical clearing would have resulted in the displacement of fauna to adjacent undisturbed habitat and a permanent reduction in available habitat within the cultivated footprint. However, suitable habitat remains on the property and within the surrounding landscape. The direct impact on habitat loss is therefore considered to be negative of medium significance.							
Impact Rating	Nature of impact	Direct impact on SCC					
	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Site	2	Site	2	Site	2

	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low	1	Low	1
	Severity	Medium	8	Medium	8	Medium	8
	Consequence	Medium	10	Medium	10	Medium	10
	Probability	Plausible	3	Plausible	3	Plausible	3
	Impact Significance	Medium	13	Medium	13	Medium	13
	Mitigation	Not possible – clearing of vegetation for agricultural production is a long-term permanent impact					
	Confidence	High					
Impact Rating	Nature of impact	Cumulative - contribution of the activity to existing cumulative habitat loss and fragmentation associated with agricultural development in the broader Sundays River Valley.					
	Historical agricultural transformation throughout the Sundays River Valley has resulted in extensive habitat loss and fragmentation. The historical clearing on the site contributed to this cumulative pattern through the permanent conversion of indigenous vegetation to agricultural land. The impact is considered negative of medium significance.						
	Impact Status	Negative Impact		Negative Impact		Negative / positive Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Long term (permanent impact)	6	Long term (permanent impact)	6	Long term (permanent impact)	6
	Frequency	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1	Rare (clearing occurs once)	1
	Intensity	Low	1	Low to medium	2	Low to medium	2
	Severity	Medium	8	Medium	9	Medium	9
	Consequence	Medium	9	Medium	10	Medium	10
	Probability	Plausible	3	Plausible	3	Plausible	3
	Impact Significance	Medium	12	Medium	13	Medium	13
	Mitigation	Possible – a consequence of medium indicates the identified Impact requires in situ mitigation and receptor mitigation					
	Confidence	High					
Mitigation Measures	- No further clearing of indigenous vegetation or natural habitat may occur without the required environmental authorisation - No further clearing along the canal corridor should be permitted. - Existing vegetated areas retained between citrus orchards should, where practicable, be maintained as part of the ongoing agricultural management of the property, as these areas provide forage and refuge for birds and small animals.						

	- Where vegetated areas between orchard blocks are rotated or brought into agricultural production, vegetated areas should, where practicable, be retained elsewhere within the orchard matrix to continue providing forage and refuge opportunities for fauna. - Farming methods that promote biodiversity within the agricultural landscape should be implemented, including the retention of vegetated areas where practicable. - An Alien Invasive Species (AIS) Management Plan should be implemented, with ongoing control of invasive species in accordance with accepted best practice (e.g. Working for Water guidelines). - Any rehabilitation that may be required should make use of indigenous species occurring naturally within the area. Large succulent species such as <i>Aloe ferox</i>, <i>Aloe striata</i> and <i>Aloe africana</i> are encouraged where appropriate as windbreaks along fence lines. - No disturbance, collection or removal of indigenous flora or fauna may take place without the necessary permits, where applicable. - Gathering of firewood or indigenous vegetation on or adjacent to the property should not be permitted. - No dumping of soil, rubble or other materials on surrounding indigenous vegetation is permitted. - Workers may not intentionally harm, capture, snare or kill indigenous fauna. Environmental awareness training should include the protection of fauna, and contractual penalties should apply where appropriate. - Injured, trapped or potentially dangerous fauna encountered on site should be reported to the appropriate authority or environmental representative. Photographs should be taken where practicable to assist with identification. - Vehicle speeds on farm roads should be kept to a minimum to reduce the likelihood of fauna collisions. - Where new fencing is installed, consideration should be given to fence designs that allow the movement of small terrestrial fauna where practicable. - In accordance with the National Biodiversity Offset Guideline, biodiversity offset requirements for impacts to Endangered Albany Alluvial Vegetation should be considered by the Competent Authority during determination of the application.
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Impact:	Loss / disturbance of / to palaeontological resources.
Nature of impact:	Direct (loss of resource / damage to resource / collection of resource)
The site is underlain by the Sundays River and Kirkwood Formations of the Uitenhage Group. The Sundays River Formation, estimated at approximately 135 million years old, is known to contain marine fossils, including invertebrate and vertebrate material. The Kirkwood Formation is known for fossilised wood, plant material and dinosaur fossils. The geological formations therefore have a high palaeontological sensitivity. Notwithstanding this sensitivity, the palaeontological assessment concluded that the historical expansion of agriculture did not result in the uncovering or destruction of significant fossil material. Agricultural activities generally involve soil disturbance to depths of approximately 1 m and are not expected to penetrate the underlying solid	

Impact:		Loss / disturbance of / to palaeontological resources.					
bedrock where significant fossil resources may occur. The likelihood that the historical agricultural activities resulted in significant palaeontological impacts is therefore considered low.							
Impact Rating	Impact Status	Negligible Impact		Negligible Impact		Negligible / positive Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation (chance find procedure and find occurs)	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Very short	1	Very short	1	Very short	1
	Frequency	rare	1	rare	1	rare	1
	Intensity	Low	1	Low	1	Low	1
	Severity	Negligible / Low positive	3	Negligible / Low negative	3	Negligible / Low positive	3
	Consequence	Negligible	4	Negligible	4	Negligible	4
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low / Negligible	5	Low/ Negligible	5	Low / Negligible	5
	Mitigation	Possible					
	Confidence	High					
Mitigation Measures	SAHRIS CASE ID: 26776 ECPHRA requirements: - The EA and Record of Decision (RoD), once issued, should be submitted to ECPHRA. - A Heritage Chance Finds Procedure should be submitted to ECPHRA for approval, where required, and the applicable Fossil Chance Finds Procedure must be implemented for future ground-disturbing activities. - Heritage induction and awareness training should be provided to personnel undertaking ground-disturbing activities, including the ECO where applicable. - Upon completion of the project, a final heritage compliance report to be submitted to ECPHRA. PIA Recommendations - Notice sent to Eastern Cape Provincial Heritage Resources Authority (Completed) - Carry out required assessments (completed) - Should important new fossil remains be found the finder should alert ECPHRA (i.e. The Eastern Cape Provincial Heritage Resources Authority. Contact details: Ms. Ayanda Ma Mncwabe Mama 74 Alexander Road, King Williams Town 5600; amncwabe@gmail.com) as soon as possible.						

Impact:	Loss / disturbance of / to palaeontological resources.
	• A professional palaeontologist to carry out appropriate action, as required, at the developer's expense. • Palaeontological mitigation would normally involve the scientific recording and judicious sampling or collection of fossil material as well as associated geological data (e.g. stratigraphy, sedimentology, taphonomy). • The palaeontologist concerned with mitigation work will need a valid fossil collection permit from ECPHRA and any material collected would have to be curated in an approved depository (e.g. museum or university collection). • All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g. data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies recently developed by SAHRA (2013). • These recommendations are summarised in tabular form in Appendix 1 of the palaeontological study - Chance Fossil Finds Procedure and is incorporated into the Environmental Management Programme (EMPr) for the proposed development (Refer to EMPr for Chance Fossil Finds Procedure (Adopted from the HWC Chance Fossils Finds Procedure: June 2016) • Include the above in Training of contractors and include any such findings to be reported to landowner in recommended Rules of conduct Chance Finds Procedure • The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found; • The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates; • The ECO or site agent must compile a Preliminary Report and fill in the attached Fossil Discoveries: Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including: ○ the date; ○ a description of the discovery; ○ a description of the fossil and its context (e.g. position and depth of the find); ○ where and how the find has been stored; and ○ photographs of the find, including sufficient photographs to document the discovery and its context. A scale must be used, and photographs should include the location from several angles, vertical sections, the hole showing the vertical section, and the fossil or fossils. • Upon receipt of this Preliminary Report, SAHRA will inform the ECO or site agent whether a rescue excavation or rescue collection by a palaeontologist is necessary. • Exposed finds must be stabilised where they are unstable and the site capped, e.g., with a plastic sheet or sandbags. This protection should allow for the later excavation of the finds with due scientific care and diligence.

Impact:	Loss / disturbance of / to palaeontological resources.
	- SAHRA can advise on the most appropriate method for stabilisation. - If the find cannot be stabilised, the fossil may be collected with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove all the fossil material and any breakage of fossil material must be avoided at all costs.

Impact:	Loss / disturbance of heritage and archaeological resources
Nature of impact:	Direct (loss of resource / damage to resource / collection of resource) Incorrect planning can result in unnecessary impacts on heritage resources.
Stone Artefact Occurrences (TRE_SA1 – TRE_SA15) The negative impact on the archaeological landscape is considered to be low, despite the occurrence of Middle Stone Age stone artefacts within the proposed agricultural extension area. The artefacts occur ex situ and are not associated with other cultural material. The recording of these stone artefacts nevertheless contributes to the archaeological database of recorded sites in the Eastern Cape Province. Unseen archaeological heritage resources, such as unmarked human burials, may be negatively impacted if uncovered during future ground-disturbing activities and the recommended mitigation measures are not implemented. Built Environment (TRE_BE1) Only one built environment structure was identified, which appears to be younger than 60 years. The structure has no identified heritage value and does not fall under the protection afforded to structures older than 60 years in terms of Section 34 of the NHRA, 1999. Negative impact on the built environment is therefore considered to be low, as no structures over the age of 60 years, which are protected under Section 34 of the NHRA 25 of 1999, were identified. Cultural Landscape The impact on the current cultural landscape is considered to be low. Although remnants of past cultural landscape still occur on the landscape within the proposed agricultural extension area and surrounds, the Sundays River Valley has, over the past 150 years, developed into a major citrus production area and is expected to continue to grow. Living Heritage The impact on living heritage is considered to be low, as no living heritage sites were identified.	

Impact:		Loss / disturbance of heritage and archaeological resources					
The area is considered to have low archaeological heritage significance despite the occurrence of stone artefacts. The exposed stone artefacts are highly likely to be in secondary context and are not associated with other material or cultural heritage remains. The Heritage Impact Assessment (Appendix 3-4) concluded that development may proceed, subject to implementation of the recommended mitigation measures and chance-find procedures for future ground-disturbing activities							
Impact Rating	Impact Status	Negligible		Negligible Impact		Negligible Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Very short	1	Very short	1	Very short	1
	Frequency	Rare	1	Rare	1	Rare	1
	Intensity	Low	1	Low	1	Low	1
	Severity	Negligible / Low negative	3	Negligible / Low negative	3	Negligible / Low negative	3
	Consequence	Negligible	4	Negligible	4	Negligible	4
	Probability	Slim	1	Slim	1	Slim	1
	Impact Significance	Low/ Negligible	5	Low/ Negligible	5	Low/ Negligible	5
	Mitigation	Not required					
	Confidence	High					
Mitigation Measures	SAHRIS CASE ID: 26776						
	ECPHRA requirements: Submit the Record of Decision (RoD) to ECPHRA once issued.						
	- A Heritage Chance Finds Procedure must be submitted to ECPHRA for approval, where required, prior to future ground-disturbing activities, and the applicable Fossil Chance Finds Protocol must be adhered to - Heritage induction and training for all ground staff including the ECO must be conducted. Proof thereof to be submitted to ECPHRA. - Upon completion of the project, a final heritage compliance report to be submitted to ECPHRA.						
AIA Recommendations Portions of the proposed area for development are covered in dense vegetation and sites/features may be covered by soil and vegetation and will only be located once this has been removed. It would be preferred that a professional archaeologist be appointed to monitor the vegetation clearing to identify the extent of the occurrence of possible in situ stone artefacts. The responsibility of the archaeologist will							

Impact:	Loss / disturbance of heritage and archaeological resources
	be to monitor the vegetation clearing and record any archaeological scatters and sites that may be uncovered. The decision for collection and possible test-pitting and phase 2 mitigation will be the decision of the appointed archaeologist after assessment of significance during the archaeological monitoring. The cost of appointment and associated activities will be the responsibility of the developer. • If concentrations of pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the author of the report and the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) (043 492 1370) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue. • Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. • In addition, construction managers/foremen and/or the ECO and/or anyone who may be permanently on-site during pre-construction and construction phases of the project must undergo training before the bush clearing activities starts on the possible types of heritage sites and cultural material that they may encounter and the procedures to follow when they find sites. • A Chance Finds Protocol (included in this report) for archaeological and cultural heritage finds must be compiled and be readily available for the Environmental Control Officer (ECO) and/or construction manager/s and/or anyone who may be permanently on-site during the relevant pre-construction and construction phases of the project to follow the correct procedures when accidentally uncovering archaeological sites and possible unmarked burials CHANCE FINDS PROTOCOL - The Chance Finds Protocol may include but not be limited to the following: • A heritage practitioner should be appointed to develop a heritage induction program and conduct training for the ECO, as well as team leaders, in the identification of heritage resources and artefacts; • An appropriately qualified heritage consultant should be identified to be called upon if any possible heritage resources or artefacts are identified; • Should an archaeological site or cultural material be discovered during construction (or operation), the area should be demarcated, and construction activities be halted; • The qualified archaeologist will then need to come out to the site and evaluate the extent and importance of the heritage resources and make the necessary recommendations for mitigating the find and impact on the heritage resource; • The contractor therefore should have some sort of contingency plan so that operations could move elsewhere temporarily while the material and data are recovered;

Impact:	Loss / disturbance of heritage and archaeological resources
	- Should the heritage consultant conclude that the find is a heritage resource protected in terms of the NHRA (1999) Sections 34, 35, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), he or she should notify SAHRA and/or the relevant PHRA; - Based on the comments received from SAHRA and/or the PHRA, the heritage consultant would present the relevant terms of reference to the client for implementation; - Construction/Operational activities can commence as soon as the site has been cleared and signed off by the archaeologist.

Impact:	Changes to hydrological regimes of the local watercourses							
Nature of impact:	Indirect							
The agricultural expansion areas avoided the identified aquatic features and are located outside the applicable 500 m and 100 m regulated areas. The aquatic assessment confirmed that no drainage features or watercourses were observed within the affected agricultural areas and that the site is largely disconnected from the downstream aquatic systems by the existing road, canal and agricultural networks. Some alteration of the local surface runoff regime would be expected to have occurred as a result of vegetation clearing and conversion to agricultural land. However, the limited runoff generated from the affected areas is not considered to have materially altered downstream flow patterns, given the absence of aquatic features within the affected areas and the limited hydrological connectivity between the agricultural areas and the downstream aquatic systems. Potential water quality impacts associated with sediment mobilisation and runoff from disturbed areas would have been most relevant during the historical clearing and establishment of the agricultural areas. Given the existing agricultural land use and the findings of the aquatic assessment, no significant alteration of downstream aquatic systems is considered likely to have resulted from the clearing activities.								
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation		
	Spatial	Site	2	Site	2	Site	2	
	Duration	Very short	1	Very short	1	Very short	1	
	Frequency	Seldom	3	Seldom	3	Seldom	3	
	Intensity	Low	1	Low	1	Low	1	
	Severity	Low	5	Low	5	Low	5	
	Consequence	Low	7	Low	7	Low	7	
	Probability	Slight	2	Slight	2	Slight	2	
	Impact Significance	Low	7	Low	7	Low	7	
Mitigation	Possible							

	Confidence	High	
Mitigation Measures	- Clearing activities should not take place during, or immediately before or after, rainfall events - Clearing work within these areas should be short-term with disturbed areas rehabilitated / planted as soon as clearing is complete to reduce the possibility of water and wind erosion of the farmed areas and resultant sedimentation. - Any debris/solid waste accumulated as a result of clearing activities must be removed.		

Impact:	Hazardous substances - Potential pollution of all water resources within and surrounding the development footprint							
Nature of impact:	Direct							
There is a potential for pollution of surface water resources from accidental spillages associated with the storage, handling and disposal of hazardous substances, including fuels, pesticides, herbicides and fertilisers. During agricultural operations, inappropriate application or handling of these substances could result in localised soil contamination or mobilisation in surface runoff. The aquatic assessment confirmed that no drainage features or watercourses were observed within the affected agricultural areas and that the agricultural expansion areas are located outside the applicable regulated areas. The affected areas are also separated from the identified downstream aquatic systems by existing roads, canal infrastructure and extensive agricultural areas. Consequently, the potential for contaminants originating within the affected agricultural areas to reach and materially affect the identified downstream aquatic systems is considered limited. The use and storage of hazardous substances should nevertheless remain subject to appropriate controls, as localised contamination of soils and surface runoff could occur where substances are poorly managed. The use of pesticides, herbicides and fertilisers should be undertaken in accordance with applicable requirements and good agricultural practice, with measures in place to prevent unnecessary application, spills, pooling and runoff.								
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation		
	Spatial	Activity	1	Activity	1	Activity	1	
	Duration	Very short	1	Very short	1	Very short	1	
	Frequency	Infrequent	2	Seldom	3	Infrequent	2	
	Intensity	Medium – Low	2	Medium	3	Medium – Low	2	
	Severity	Low	5	Low	7	Low	5	
	Consequence	Low	6	Low	8	Low	6	
	Probability	Plausible	3	Plausible	3	Plausible	3	
	Impact Significance	Low	9	Medium	11	Low	9	
Mitigation	Possible - prevention of accidental spillages can be drastically mitigated with very low likelihood of occurrence through appropriate housekeeping and management and training of all staff.							

	Confidence	High	
Mitigation Measures	- All hazardous substances, including fuels, pesticides, herbicides and fertilisers, must be stored and handled in accordance with applicable requirements and in a manner that prevents accidental spills and releases to the environment. - Hazardous substances and hazardous waste must not be stored or disposed of within aquatic features, drainage areas or their regulated areas. - Fuels and other liquid hazardous substances must be stored on suitable impermeable surfaces, with appropriate secondary containment where applicable. - Pesticides, herbicides and fertilisers must be applied strictly in accordance with product requirements and good agricultural practice, with application controlled to prevent unnecessary use, pooling or runoff. - An emergency response procedure must be in place to address accidental spills or leakages. - Appropriate spill response materials must be available where hazardous substances are stored or handled. - Any spills must be cleaned up promptly, with contaminated soil and absorbent materials collected and disposed of at an appropriately authorised facility. - All personnel involved in the handling and application of hazardous substances must receive appropriate environmental awareness and handling training. - Hazardous waste, where generated, must be appropriately stored and disposed of at a suitably authorised facility. - Septic and/or conservancy tanks for domestic effluent, where present, must be appropriately maintained and emptied as required.		

Impact:	Increase in sedimentation and turbidity levels of instream habitats			
Nature of impact:	Direct			
Sedimentation and increased turbidity could potentially occur where unmanaged surface runoff from agricultural areas mobilises exposed soil or sediment, particularly during intense rainfall events. However, the agricultural areas are already established and are managed using irrigation infrastructure, including drip irrigation systems, which limits the generation of concentrated surface runoff under normal operating conditions. The aquatic assessment confirmed that no drainage features or watercourses were observed within the affected agricultural areas and that the agricultural areas are separated from the identified downstream aquatic systems by existing roads, canal infrastructure and intervening agricultural areas. The Sundays River and associated aquatic systems are therefore not directly connected to the affected areas. Some localised sediment mobilisation may occur during extreme rainfall events, particularly where erosion channels or bare areas develop. However, given the limited hydrological connectivity and the distance from the Sundays River and other identified aquatic features, the likelihood of sediment generated within the affected agricultural areas materially increasing sedimentation or turbidity within downstream aquatic systems is considered low.				
Impact Rating	Impact Status	Negative Impact	Negative Impact	Negative Impact

	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Site	2	Site	2	Site	2
	Duration	Very short	1	Very short	1	Very short	1
	Frequency	Seldom	3	Seldom	3	Seldom	3
	Intensity	Low	1	Low	1	Low	1
	Severity	Low	5	Low	5	Low	5
	Consequence	Low	7	Low	7	Low	7
	Probability	Plausible	3	Plausible	3	Plausible	3
	Impact Significance	Low	10	Low	10	Low	10
	Mitigation	Possible					
	Confidence	High					
Mitigation Measures	- Stormwater and erosion control measures must be maintained and monitored during the operational phase. Should erosion channels or areas of significant soil mobilisation become evident, these must be stabilised, backfilled where appropriate, compacted and re-vegetated as soon as practicable. - Existing and future agricultural areas should be managed to minimise concentrated surface runoff and erosion. Where required, berms, swales or other suitable stormwater management measures should be used to attenuate concentrated flows and prevent the formation of erosion channels. - Drip irrigation systems should be maintained and continued in use to minimise excessive irrigation, surface runoff and associated soil erosion and sediment mobilisation. - Areas of exposed soil associated with agricultural activities should be stabilised or re-vegetated where practicable to reduce the potential for sediment mobilisation during rainfall events.						

Impact:	Soil disturbance
Nature of impact:	Direct (soil erosion, soil loss, damage to soil structure)
Description of impact	The majority of soils (112.6 ha) on the farmed area is considered to be of high agricultural potential. The historical clearing and establishment of the agricultural areas resulted in disturbance of the soil profile and conversion of the land to cultivated areas. During the initial clearing and establishment of the agricultural areas, exposed soils would have been susceptible to wind and water erosion, particularly where larger areas were cleared at a time or where clearing coincided with rainfall or strong wind conditions.

Impact:	Soil disturbance							
	During ongoing agricultural operations, soil disturbance associated with tillage and periodically exposed soil following harvesting and prior to planting may result in localised soil erosion. Heavy machinery can compact the soil, while excessive watering can result in leaching of nutrients. Inappropriate application or management of fertilisers and pesticides may result in soil contamination. Mismanagement of soil and water use can potentially result in damage to soil structure, loss of soil and soil contamination. Unnecessary removal of intact vegetation in the area can increase the potential for erosion, while mismanagement of stormwater can result in soil erosion if not correctly managed. Appropriate soil management, irrigation practices, stormwater management and limiting the extent of exposed soil will assist in reducing these potential impacts. Working smaller areas at a time, where practicable, can reduce the extent and duration of exposed soil and thereby reduce the potential for wind and water erosion. Maintaining a permanent organic or protective cover on worked areas will further assist in preventing soil erosion and preserving soil quality.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		
	Impact Criteria	Baseline / no go -(farming in place in 1989)		Without mitigation		With mitigation		
	Spatial	Activity	1	Site	2	Site	2	
	Duration	Short	2	Short	2	Short	2	
	Frequency	Infrequent	2	Infrequent	2	Infrequent	2	
	Intensity	Low	1	Low – medium	2	Low	1	
	Severity	Low	5	Low	6	Low	5	
	Consequence	Low	6	Low	8	Negligible	7	
	Probability	Plausible	3	Plausible	3	Plausible	3	
	Impact Significance	Low	9	Medium	11	Low	10	
	Mitigation	Possible						
	Confidence	High						
Mitigation Measures	- Conservation Agriculture (Grain SA) should be considered as an approach to management of the farming area, including:## - Continuous minimum mechanical soil disturbance to prevent damage to soil structure. - Permanent organic soil cover to assist with erosion control and reduce water loss. - Diversification of crop species grown in sequences and/or associations. - Composting is recommended to take place on site and used on the farmed areas. - Permission in terms of Regulation 2 of the CARA is required before the virgin soil may be disturbed mechanically (application submitted)							

Impact:	Soil disturbance
	• Most of the subsoils are friable in the moist state although set hard in the dry state. Deep ripping to 1 m will benefit deeper rooting while ridging is recommended over the rip-lines. The top 30 cm or only topsoil should be used to create the ridges. This should provide effective rooting depths in excess of 80 cm. in most instances. • Orchard rows should be interspaced with protective vegetation • Optimize irrigation water to minimize nutrient leaching • Avoid use of heavy machinery to prevent soil compaction as far as possible • Tillage of wet soil should be avoided, as wet soil is more susceptible to shearing and compression. • Ripping of moist to wet soil must not occur – it will cause further smearing and compaction. • Where ripping takes place, ensure that the soil is sufficiently dry to allow effective deep ripping. • Where practicable, work smaller areas at a time to limit the extent and duration of exposed soil and reduce the potential for wind and water erosion. • Avoid unnecessary or excessive application of fertilisers and pesticides and apply agricultural chemicals in accordance with recommended rates and conditions. • Maintain permanent organic or protective cover on worked areas where practicable to reduce erosion and assist in preserving soil quality.

Impact:	Pesticides and fertilizers
Nature of impact:	Direct / cumulative (soil, runoff)
Description of impact	Nitrogen is an important nutrient for citrus cultivation and is used to support vegetative growth, flowering and fruit production. Phosphorous is required for photosynthesis, root development and plant maturation, while potassium contributes to fruit development, size, colour and flavour and assists plants in tolerating adverse climatic conditions. The use of fertilizers and pesticides has the potential to affect surrounding vegetation and fauna, as well as soil and water resources, if these substances are applied or managed inappropriately. Excessive application of fertilizers may affect soil quality and result in nutrient leaching, while pesticides may contaminate soil and surface water if they are incorrectly applied or transported from the agricultural areas by runoff. Excess irrigation water may also move soluble nutrients and agricultural chemicals through the soil profile and potentially into groundwater. At the scale of the affected agricultural areas, the potential impact is considered to be of low significance where fertilizers and pesticides are appropriately managed and applied. However, given the established agricultural character of the greater Sundays River Valley and the extent of

Impact:	Pesticides and fertilizers						
	agricultural activities within the surrounding area, the cumulative use of fertilizers and pesticides has the potential to contribute to a broader, medium-significance impact on soil and water resources.						
	Appropriate application rates, responsible pesticide use, optimisation of irrigation, prevention of unnecessary runoff and leaching, and compliance with applicable agricultural requirements will assist in reducing the contribution of the affected agricultural areas to these impacts.						
Impact Rating	Direct impact						
	Impact Status	Negligible		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Site	2	Site	2	Activity	1
	Duration	Short	2	Short	2	Very short	1
	Frequency	Seldom	3	Seldom	3	Seldom	3
	Intensity	Low – medium	2	Low – medium	2	Low	1
	Severity	Medium	7	Medium	7	Low	5
	Consequence	Medium	9	Medium	9	Negligible	6
	Probability	Plausible	3	Plausible	3	Plausible	3
	Impact Significance	Medium	12	Medium	12	Low	9
	Mitigation	Possible					
	Confidence	High					
	Impact Rating	Cumulative					
Impact Status		Negligible		Negative Impact		Negative Impact	
Impact Criteria		Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
Spatial		Local	3	Local	3	Local	3
Duration		Medium	3	Medium	3	Medium	3
Frequency		Seldom	3	Seldom	3	Seldom	3
Intensity		Low – medium	2	Medium	3	Low - Medium	2
Severity		Medium	8	Medium	9	Medium	8
Consequence		Medium	11	Medium	12	Medium	11
Probability		Plausible	3	Probable	4	Probable	4
Impact Significance		Medium	14	Medium	16	Medium	15
Mitigation		Possible / difficult					
Confidence		High					

Impact:	Pesticides and fertilizers
Mitigation Measures	• Apply fertilizers and pesticides only where required and in accordance with recommended application rates, timing and methods. • Optimise irrigation to meet crop requirements and minimise excessive water application, nutrient leaching and unnecessary runoff. • Where practicable, investigate the use of organic inputs and alternative fertilisers, including manure, compost, vermicompost and microbial bio-fertilisers. • Maintain soil cover and appropriate soil-management practices to reduce runoff and the mobilisation of agricultural chemicals. • Keep all agricultural chemicals clearly labelled and securely stored in an appropriate storage facility. • Use target-specific pesticides and, where practicable, avoid persistent pesticides in favour of less persistent alternatives. • Avoid indiscriminate aerial spraying and do not undertake pesticide application during windy conditions where this may result in spray drift. • Do not apply pesticides when bees are present or where application may adversely affect non-target organisms. • Ensure that workers involved in the application of pesticides and fertilizers receive appropriate training in their safe and correct use. • Ensure that appropriate personal protective equipment (PPE) is provided and used during pesticide application. • Maintain records of fertilizer and pesticide application, including the product, application rate, location and date of application. • Comply with applicable legislation and requirements governing the use, storage and application of agricultural remedies and fertilizers.

Impact:	Dust generation
Nature of impact:	Direct
Description of impact	The land portions are surrounded by natural and agricultural land uses, and dust generation is an existing feature of the wider agricultural landscape. The main sources of dust are associated with agricultural activities, exposed soils and vehicle and machinery movement. The historical clearing of vegetation and establishment of the agricultural areas would have resulted in temporary dust generation, particularly where larger areas of soil were exposed and during windy and dry conditions. Dust generation may also occur periodically during ongoing agricultural activities where soil is exposed or disturbed, including during soil preparation, vehicle and machinery movement and other farming activities. Given the existing agricultural land use and the relatively localised nature and temporary duration of dust generated from exposed or disturbed areas, the impact on air quality is considered to have been of low significance. The potential for dust generation can be reduced through limiting unnecessary vegetation clearing, maintaining protective soil cover and avoiding the unnecessary exposure of large areas of soil.

Impact:	Dust generation						
	The historical clearing and subsequent establishment of the agricultural areas are unlikely to have resulted in emissions of a scale that would constitute a listed activity in terms of Section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), as amended. The impact is considered to be negative of low significance with mitigation measures in place.						
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Very short	1	Very short	1	Very short	1
	Frequency	Regular	4	Regular	4	Seldom	3
	Intensity	Low	1	Low – medium	2	Low	1
	Severity	Low	6	Medium	7	Low	5
	Consequence	Low	7	Low	8	Low	6
	Probability	Plausible	3	Plausible	3	Plausible	3
	Impact Significance	Low	10	Medium	11	Low	9
	Mitigation	Possible					
	Confidence	High					
Mitigation Measures	• Avoid unnecessary or blanket clearing of vegetation. • Retain indigenous vegetation where practicable. • Maintain permanent organic/protective cover on worked areas. • Work smaller areas at a time, where practicable, to limit the extent and duration of exposed soil. • Where large areas of soil are temporarily exposed, particularly during dry and windy conditions, implement appropriate dust suppression measures where required. • Maintain agricultural roads and disturbed areas appropriately to minimise dust generated by vehicle and machinery movement.						

Impact:	Water use
Nature of impact:	Direct
Description of impact	Water is sourced from the Lower Sundays River Water Association. Water use over the years shows that the quota allocated to the land portions has not been exceeded, and water use has reduced considerably following the implementation of drip irrigation. The quota assigned to the land portions is 937 800 m ³ , while recorded water use was 382 920 m ³ for the period July 2024 to June 2025. The current water use is therefore within the allocated quota, with the existing drip irrigation system contributing to improved water-use efficiency.

Impact:	Water use							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation		
	Spatial	Activity	1	Activity	1	Activity	1	
	Duration	Very short	1	Very short	1	Very short	1	
	Frequency	Daily	5	Daily	5	Daily	5	
	Intensity	Low	1	Low	1	Low	1	
	Severity	Medium	7	Medium	7	Medium	7	
	Consequence	Low	8	Low	8	Low	8	
	Probability	Slim	1	Slight	2	Slim	1	
	Impact Significance	Low	9	Low	10	Low	9	
	Mitigation	Possible						
	Confidence	High						
Mitigation Measures	• Ensure no wastage of water (no leaking taps, pipes etc) and responsible use • Monitoring of water use to continue • Ensure all pipes are correctly installed and aligned to applicable SANS standards and correctly maintained for the life of the operation • Ensure any leaks are attended to immediately for the life of the operation • Maintain the existing drip irrigation system and ensure that it is appropriately operated and maintained. • Permanent cover of soil is recommended to reduce evapotranspiration • Optimise irrigation scheduling and application rates according to crop requirements and prevailing conditions to minimise unnecessary water use and nutrient leaching.							

Impact:	Electricity Use			
Nature of impact:	Direct			
Description of impact	Electricity is required primarily for irrigation and associated agricultural operations. The use of drip irrigation reduces water requirements and associated pumping energy. Harvesting is undertaken by hand, and no processing or manufacturing is carried out on site, limiting electricity demand associated with the agricultural operations. Overall electricity consumption associated with the farming activities is considered relatively low, and the impact on non-renewable energy resources is expected to remain low.			
Impact Rating	Impact Status	Negative Impact	Negative Impact	Negative Impact
	Impact Criteria	Baseline / no go (Existing - 45 ha)	Without mitigation	With mitigation

Impact:	Electricity Use							
	Spatial	Activity	1	Activity	1	Activity	1	
	Duration	Very short	1	Very short	1	Very short	1	
	Frequency	Regular	4	Regular	4	Regular	4	
	Intensity	Low	1	Low	1	Low	1	
	Severity	Low	6	Low	6	Low	6	
	Consequence	Low	7	Low	7	Low	7	
	Probability	Slim	1	Slim	1	Slim	1	
	Impact Significance	Low	8	Low	8	Low	8	
	Mitigation	Possible						
	Confidence	High						
Mitigation Measures	• Best-practice energy-efficiency measures should be incorporated into the ongoing farming operations to minimise electricity consumption. • The existing drip irrigation system should be appropriately operated and maintained to ensure efficient water delivery and minimise unnecessary pumping. • Irrigation pumps should be appropriately sized and maintained, and where practicable, pump output should be matched to the irrigation requirements of the relevant zones to minimise unnecessary electricity consumption. • Energy-efficient equipment and practices should be considered when existing agricultural equipment or irrigation infrastructure is replaced or upgraded. • The potential use of renewable energy, including solar energy, for irrigation pumping and other suitable farm electricity requirements may be considered where technically and economically feasible.							

Impact:	Unintentional and uncontrolled fires			
Nature of impact:	Direct (fire) and indirect (visual, smoke, smog)			
Description of impact	Unintentional and uncontrolled fires have the potential to adversely affect the social and natural environment, including surrounding vegetation, agricultural areas, infrastructure and air quality through smoke and associated emissions. The dwelling and immediate surrounding area are characterised by thicket vegetation with a low level of alien invasive species (AIS) infestation, while the wider area has low to moderate AIS infestation in some areas. The surrounding vegetation provides a potential fuel source; however, based on the existing land use and vegetation characteristics, the site is considered to be in a relatively low fire-risk area. The potential impact of an uncontrolled fire is therefore considered to be negative, but of low significance, particularly where appropriate fire prevention, response and emergency measures are maintained.			
Impact Rating	Impact Status	Negative Impact	Negative Impact	Negative Impact

Impact:	Unintentional and uncontrolled fires						
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation	
	Spatial	Site	2	Site	2	Site	2
	Duration	Very short	1	Very short	1	Very short	1
	Frequency	Rare	1	Rare	1	Rare	1
	Intensity	Medium	3	Medium	3	Medium	3
	Severity	Low	5	Low	5	Low	5
	Consequence	Low	7	Low	7	Low	7
	Probability	Plausible	3	Plausible	3	Slight	2
	Impact Significance	Low	10	Low	10	Low	9
	Mitigation	Possible					
	Confidence	High.					
Mitigation Measures	- No open fires are permitted except in appropriately designated and controlled areas. - No cigarette butts, matches or other burning substances may be discarded into the environment. Cigarette butts must be fully extinguished and disposed of in designated waste receptacles. - Appropriate fire prevention and emergency response measures must be maintained for the operation. - Any fire detected on or adjacent to the property must be reported and attended to immediately. - Emergency contact numbers for the relevant fire response services must be readily available. - Fire risk conditions, including periods of high winds, drought and very dry conditions, should be monitored and appropriate precautionary measures implemented during periods of elevated fire danger.						

Impact:	General Waste pollution
Nature of impact:	Direct and indirect and cumulative (disturbance to flora and fauna; health impacts, visual impacts)
Description of impact	Waste generated needs to be carefully managed to ensure impacts on the environment are reduced. Site visits carried out found no evidence of construction rubble on site or litter in the general area. Organic waste generated through harvesting is composted on site, with the compost heaps regularly turned and managed. General waste streams generated from the site include: - Cleared vegetation; - General waste items (paper, tins and plastic);

Impact:	General Waste pollution						
	- Cleared alien invasive species; and - Organic waste generated during harvesting. The existing composting and reuse of organic waste reduces the quantity of organic material requiring disposal and is considered an appropriate waste management practice						
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation (operations)	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Short	2	Short	2	Very short	1
	Frequency	Seldom	3	Seldom	3	Infrequent	2
	Intensity	Low	1	Low	1	Low	1
	Severity	Low	6	Low	6	Low	4
	Consequence	Low	7	Low	7	Low	5
	Probability	Plausible	3	Plausible	3	Slight	2
	Impact Significance	Low	10	Low	10	Low	7
	Mitigation	Possible					
	Confidence	High					
Mitigation Measures	Operations and maintenance as required - Identify all general waste streams. - Waste management must follow the waste hierarchy – avoid, reduce, reuse, recycle, dispose. Where possible, waste generated on site must be reused or recycled. - Continue composting organic materials generated on the farm and reuse the compost where practicable. Compost heaps must be appropriately managed and regularly turned. - Provide suitable waste receptacles. - Identify the closest registered general waste disposal facility. - Under no circumstances may solid waste be burnt or buried on site or in the surrounding area. - Keep the area clear of waste and ensure no littering (include in environmental awareness training). - Any vehicles transporting waste or other loose materials must be appropriately loaded and covered to prevent spillage or loss of material.						

Impact:	Transport and roads							
Nature of impact:	Direct (management and harvesting) and indirect (related services)							
Description of impact	The citrus farm requires a transport network from the orchard-to-the packhouse. Fruit is collected in 350-400kg plastic bulk bins or 2-3 ton picking trailers pulled by tractors / flat-bed / Low-bed Trucks: These are used to move bins from the orchards to the central packhouse, minimizing the time harvested fruit spends sitting in the sun. In-field transport must use smooth bins and trailers to prevent bruising and rind damage.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation		With mitigation		
	Spatial	Activity	1	Activity	1	Activity	1	
	Duration	Very short	1	Very short	1	Very short	1	
	Frequency	Seldom	3	Seldom	3	Seldom	3	
	Intensity	Low	1	Low	1	Low	1	
	Severity	Low	5	Low	5	Low	5	
	Consequence	Low	6	Low	6	Low	6	
	Probability	Slim	1	Slight	2	Slim	1	
	Impact Significance	Low	7	Low	8	Low	7	
	Mitigation	Possible						
	Confidence	High.						
Mitigation Measures	Construction and maintenance as required (include in training to contractors and subcontractors) - Existing and permissible access roads should be used to access the development area at all times; no offroad driving permitted on site and when traversing adjacent land portions to access the site. This must be clearly communicated to all drivers - Entrance to the site only permitted from designated access points provided by landowner - Ensure strict access control to and from the construction site at all times. - All construction vehicles are to be monitored to ensure they are not overly full so the likelihood of spillage of debris is prevented. Ensure any debris spilled onto roads is cleared up. - Any loose materials transported to / from site must be covered. - Surrounding area and roads should be monitored for debris and materials associated with the proposed development and cleaned up as soon as such becomes apparent. - All materials to be delivered in a safe manner at designated delivery area located within footprint of the development site; ensure sufficient space is allocated in the construction site plan to provide safe turning for larger trucks. - Speed travelled by construction vehicles must be kept to a minimum and speed limits enforced; contractors and service providers are to travel slowly and avoid collisions with wildlife.							

Impact:	Transport and roads
	All vehicles are to be in good working order and equipped with spare parts (tyre etc) to avoid breakdowns along the private road and disrupting other users of the road.

Impact:	Social - Income generation						
Nature of impact:	Direct (management and harvesting) and indirect (related services)						
Description of impact	The land portions form part of the established agricultural landscape of the Sundays River Valley, an area characterised by commercial agricultural production, including citrus farming. Agricultural activities were already established in the area prior to the current farming operation and therefore provided employment and associated economic opportunities under the baseline condition. The current farming activities have, however, increased the extent of agricultural production on the land portions and consequently provide additional employment and income-generation opportunities compared with the baseline condition. Employment is associated with the management, maintenance and harvesting of the agricultural areas, with harvesting undertaken by hand. The farming operation also provides indirect economic benefits through the use of local services and suppliers. The continued operation of the farm therefore represents a positive contribution to local employment and income generation, with the current operation providing greater employment opportunities than would have been associated with the baseline agricultural use. The impact is considered to be positive and of medium significance.						
Impact Rating	Impact Status	Negative		Positive Impact		Positive Impact	
	Impact Criteria	Baseline / no go (Existing - 45 ha)		Without mitigation (construction)		With mitigation (operations)	
	Spatial	Activity	1	Activity	1	Activity	1
	Duration	Short to medium	3	Short to medium	3	Short to medium	3
	Frequency	Seldom	3	Seldom	3	Seldom	3
	Intensity	Low	1	Low	1	Low	1
	Degree	Medium	7	Low	7	Low	7
	Consequence	Medium	8	Low	8	Low	8
	Probability	Slight	2	Probable	4	Probable	4
	Impact Significance	Low	10	Medium	12	Medium	12
	Mitigation	Possible					
	Confidence	High.					

Impact:	Social - Income generation
Mitigation Measures	• Prioritise the use of local labour for agricultural activities • Make use of local contractors, suppliers and service providers where reasonably practicable. • Use local materials and products where suitable and available. • Maintain fair and appropriate employment practices and provide workers with appropriate training for their duties. • Where additional labour is required, opportunities should be advertised locally where practicable. • Maintain the existing farming operation to support the continued provision of employment and associated local economic opportunities.

Impact :	Agricultural production and contribution to the regional agricultural economy					
Nature of impact:	Direct (productive use of agricultural land); indirect (contribution to the agricultural economy and food production)					
Description of impact	The agricultural assessment confirmed that the majority of the farmed area (approximately 112.6 ha) comprises soils of high agricultural potential. The total development footprint is an estimated 129 ha, with approximately 122 ha of the property established under citrus production, making productive use of land suitable for intensive irrigated agriculture. The activity contributes to the production of citrus for local and export markets, supports the regional agricultural economy and associated value chain, and makes use of land identified as being suitable for agricultural production. The impact is considered positive of medium high significance. Without the agricultural development, the high agricultural potential of the land would not be utilised for productive agricultural purposes, resulting in the loss of the associated agricultural production and economic benefits.					
Impact Rating	Impact Status	Negative		Positive Impact		Positive Impact
	Impact Criteria	Baseline / no go – (without the agricultural development, the high agricultural potential of the land would not be utilised for productive agricultural purposes)		Without mitigation		With mitigation
	Spatial	Activity	1	Site	2	Activity
	Duration	Long term	5	Medium to long term	5	Medium to long term
	Frequency	Rare	1	Regular	4	Regular
	Intensity	Low	1	Low – medium	2	Low – medium
	Severity	Medium	7	Medium	11	Medium
	Consequence	Low	8	Medium	13	Negligible
	Probability	Plausible	3	Expected	5	Plausible
	Impact Significance	Medium	11	Medium High	17	Medium High

Impact :	Agricultural production and contribution to the regional agricultural economy	
	Management	Possible
	Confidence	High
Management Measures	- Continue implementing sustainable agricultural practices to maintain long-term agricultural productivity. - Continue implementing soil and water conservation measures to protect the productive capacity of the land. - Continue implementing biodiversity-friendly farming practices, including the retention of vegetated areas between orchard blocks where practicable.	

6. Conclusion

The landowner would like to submit an application in terms of Section 24G of the NEMA to authorise the existing agricultural worked areas and supporting structures.

The majority of direct impacts (refer to (Table 7) associated with the activity are rated as negative of low significance with mitigation management measures in place. The exceptions are the direct impacts on indigenous vegetation, ecological support areas and fragmentation of natural habitat, which are rated as negative of medium significance. The cumulative impact on loss of vegetation in the area is rated as negative of medium-high significance. Cumulative impacts associated with use of pesticides and fertilizers in the local area is rated as negative of medium significance. These cumulative impacts reflect the broader pattern of agricultural transformation within the Sundays River Valley and cannot be effectively addressed through isolated rehabilitation of the subject site alone.

The site contains land with high agricultural potential, consistent with the agricultural sensitivity identified by the Screening Tool. The site is considered suitable for agricultural use, including citrus production, and the existing agricultural use contributes to food production, as well as to the agricultural economy through productive use of the land and associated agricultural activities. Employment opportunities and income generation created due to the expanded operation is rated as a positive impact of medium significance. Agricultural production and contribution to the regional agricultural economy is rated as a positive impact of medium high significance.

An Environmental Management Programme (EMPr) has been compiled as part of the S24G application process to provide measures to mitigate potential negative operational impacts and enhance positive impacts. Refer to PART 2 – SECTION A – Appendix 4: Environmental Management Programme (EMPr).

The draft Section 24G NEMA application and accompanying reports will be distributed and made available to all registered and affected parties for a 30-day comment and review period. Thereafter the application and accompanying reports will be updated as required as submitted to the competent authority for consideration.

Table 7: Summary of impacts

Impact	Nature of impact	Baseline / no go	Without mitigation	With mitigation
Economic impact – Expansion without required approval in place	Direct and indirect	Negligible	Negative Low	Negative Low
Loss of indigenous vegetation	Direct	Negative Medium	Negative Medium	Negative Medium
Loss of indigenous vegetation	Cumulative	Negative Medium	Negative Medium High	Negative Medium High
Loss of Ecological support areas	Direct	Negative Medium	Negative Medium	Negative Medium
Loss of Ecological support areas	Cumulative	Negative Low	Negative Low	Negative Low
Loss of fauna SCC	Direct	Negative Low	Negative Low	Negative Low
Loss of fauna SCC	Cumulative	Negative Low	Negative Low	Negative Low
Loss of flora SCC	Direct	Negative Low	Negative Low	Negative Low

Impact	Nature of impact	Baseline / no go	Without mitigation	With mitigation
Loss of flora SCC	Cumulative	Negative Low	Negative Low	Negative Low
Fragmentation of natural habitat	Direct	Negative Medium	Negative Medium	Negative Medium
Fragmentation of natural habitat	Cumulative	Negative Medium	Negative Medium	Negative Medium
Loss / disturbance of / to palaeontological resources.	Direct	Low / Negligible	Low / Negligible	Low / Negligible
Loss / disturbance of heritage and archaeological resources	Direct	Low / Negligible	Low / Negligible	Low / Negligible
Changes to hydrological regimes of the local watercourses	Indirect	Negative Low	Negative Low	Negative Low
Hazardous substances - Potential pollution of all water resources	Direct	Negative Low	Negative Medium	Negative Low
Increase in sedimentation; turbidity levels of instream habitats	Direct	Negative Low	Negative Low	Negative Low
Soil disturbance	Direct	Negative Low	Negative Medium	Negative Low
Pesticides and fertilizers	Direct	Negative Medium	Negative Medium	Negative Low
Pesticides and fertilizers	Cumulative	Negative Medium	Negative Medium	Negative Medium
Dust generation	Direct	Negative Low	Negative Medium	Negative Low
Water use	Direct	Negative Low	Negative Low	Negative Low
Electricity use	Direct	Negative Low	Negative Low	Negative Low
Unintentional and uncontrolled fires	Direct / Indirect	Negative Low	Negative Low	Negative Low
General Waste pollution	Direct and indirect and cumulative	Negative Low	Negative Low	Negative Low
Transport and roads	Direct and indirect	Negative Low	Negative Low	Negative Low
Employment opportunities and income generation	Direct and indirect	Positive low	Positive medium	Positive medium
Agricultural production and contribution to the regional agricultural economy	Direct and indirect	Positive medium	Positive medium high	Positive medium high

Appendix 1: Impact Identification and Assessment Methodology

The purpose of impact assessment is to assign a qualified significance to impacts which are predicted to occur as a result of the various aspects of an activity.

The following definitions apply:

- **Activity:** A distinct process or task undertaken by an organisation for which a responsibility can be assigned. Activities also include facilities or pieces of infrastructure that are possessed by an organisation.
- **Environmental aspect:** An element of an organisations activities, products and services which can interact with the environment. The interaction of an aspect with the environment may result in an impact.
- **Environmental impacts:** The consequences of these aspects on environmental resources or receptors of particular value or sensitivity, for example, disturbance due to noise and health effects due to poorer air quality.
- **Receptors:** Comprise, but are not limited to, people or human-made systems, such as local residents, communities and social infrastructure, as well as components of the biophysical environment such as aquifers, flora and paleontology.

Aspects

Aspects associated with the proposed project are differentiated into construction and operation phases of the project. The nature of the impact is described. Once this has been undertaken the significance of the impact is determined.

Identifying significant environmental impacts

The significant environmental impacts are identified using three sources of information:

- The nature of the receiving environment (the environment includes the social, cultural and biophysical environment)
- A review and understanding of the aspects associated with the proposed project.
- All comments received from interested and affected parties during the public participation process. The issues raised will be described giving consideration to the associated activity and the aspect of that activity that is likely to result in an impact.

Nature of the impact

Impacts on the environment can lead to changes in existing conditions; the nature of the impact can be direct, indirect or cumulative.

- **Direct impacts** refer to changes in environmental components that result from direct cause-effect consequences of interactions between the environment and project activities. The direct impact is caused by the action and occurs at the same time and place.
- **Indirect (Secondary) impacts** result from cause-effect consequences of interactions between the environment and direct impacts. The indirect impact is caused by the action and occurs later in time or is further removed in distance.
- **Cumulative impacts** refer to the combined effect of changes to the environment caused by multiple human activities over space and time. Cumulative impact is the sum of existing conditions and the direct / indirect impacts resulting from the project. Example: A single cut in the forest is unlikely to have a detectable change, however increasing multiple cuts in the forest caused by a number of human activities is likely to decrease fauna and flora and increase soil erosion. Cumulative effects can thus be additive or synergistic. A synergistic effect refers to when the combined effect is greater than the sum of individual effects.

Method for assessing the overall significance of impacts

The overall significance of the impact is critical for defining mitigation and monitoring strategies. The qualified significance of predicted impacts assists to determine the manner in which aspects should be managed in order to avoid or minimise the predicted impacts.

Overall significance of the impacts is determined through systematically rating the following criteria of the impacts:

- The status of the impact
- The spatial extent of the impact
- The severity of negativity or degree of positivity of the impact
 - The duration of the impact
 - The frequency of the impact
 - The intensity of the impact
- The consequence of the impact
- The probability of the impact occurring

Impact Status

A qualitative rating of positive or negative is assigned to impact status. Refer to **Error! Reference source not found.** (methodology).

Spatial Extent

The spatial extent for each aspect, receptor and impact is defined. The geographical coverage (spatial extent) description will take account of the following factors:

- The physical extent / distribution of the aspect
- The physical extent / distribution of the receptor
- The proposed impact as a result of the aspect
- The nature of the baseline environment within the area of impact

For example, the impacts of noise are likely to be confined to a smaller geographical area than the impacts of atmospheric emissions, which may be experienced at some distance. The significance of impacts also varies spatially; noise may be significant in the immediate vicinity. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating. Refer to **Error! Reference source not found.** (methodology).

Duration

The duration refers to the length of time that an aspect of a proposed project may cause change on the receiving environment. The receiving environment could refer to either the social or cultural or biophysical environment. The change caused may be a positive or negative change. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Frequency

The frequency of the impact occurring refers to how often the aspect results in a given impact on the receiving environment. The receiving environment could refer to either the social or cultural or biophysical environment. The impact may be positive or negative. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Intensity

The intensity refers to the magnitude of the impact experienced by the receiving environment. The environment could refer to either the social or cultural or biophysical environment. The impact experienced may be a positive or negative impact. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Severity / Degree

The severity is the sum of the intensity, duration and frequency of the impact and therefore a quantitative value ranging from 3 – 18 is assigned to the rating. If the impact is positive, the degree of positivity is determined. A qualitative description is assigned to the rating.

Consequence

A qualitative description is assigned to the rating. The consequence is the sum of the Severity (Intensity + Duration + Frequency) and Spatial Extent. Therefore, a quantitative value ranging from 4 – 24 is assigned to the rating.

Probability

In order to determine the significance of the impact, the probability of the impact occurring must first be rated. The probability refers to the likelihood that an impact will result from the aspect in question. A qualitative description is assigned to the rating. A quantitative value ranging from 1 – 6 is assigned to the rating.

Overall Significance

A definition of a “significant impact” for the purposes of the study is: “An impact which, either in isolation or in combination with others, could, in the opinion of the specialist, have a material influence on the decision-making process, including the specification of mitigating measures.”

A qualitative description is assigned to the rating. The significance is the sum of the Consequence and Probability. Therefore a quantitative value ranging from 5 - 30 is assigned to the rating. A value of 5, 6 or 7 represents a low significance and described as “not harmful”. A value of 30 presents a Very High Significance and is described as an “environmental disaster”.

Mitigation

The Mitigation ratings are described qualitatively according to the success and feasibility of the mitigation option in question. The impacts are further rated before and after mitigation / management options. Negative impacts are assessed with mitigation measures in place in order to give an overall significance rating with mitigation in place. Positive impacts are assessed with management measures in place in order to give an overall significance rating with management in place.

Confidence

The confidence of the EAP is assigned a qualitative value.

Impact Assessment Rating methodology

Impact Status						
Rating	Negative			Positive		
Description	An impact is rated negative if any degree of negative change will occur in the receiving environment as a result of any aspect of the proposed project. The environment refers to the social environment or the cultural environment or the biophysical environment. Negative impacts are to be avoided, minimised, or mitigated.			An impact is rated positive if any degree of positive change will occur in the receiving environment as a result of any aspect of the proposed project. The environment refers to the social environment or the cultural environment or the biophysical environment. Positive impacts are to be enhanced.		
Scale (Spatial Extent)						
Refers to the spatial area the aspect will impact on the environment. The impact may be positive or negative.						
Rating	Activity specific	Site specific	Local area Specific	Municipal	Provincial / National	International
Description	Impact only experienced on area where activity is located	Impact extends to the entire site of the project	Impact extends beyond site into surrounding areas	Impact extends beyond local area into municipal areas	Impact extends beyond municipal area into provincial and	Impact extends beyond national area

					may extend nationally	
Value	1	2	3	4	5	6
Duration						
Refers to the length of time that the aspect may cause a change on the environment. The change may be positive or negative.						
Rating	Very Short term	Short term	Short - Medium term	Medium term	Medium - Long term	Long term
Description	1 day to 3 month	3 months to one year	One year to three years	Three years to ten years	Life of operation	Extends beyond post closure
Value	1	2	3	4	5	6
Frequency						
Refers to how often the aspect may impact on the environment. The impact may be positive or negative.						
Rating	Rarely	Infrequent	Seldom	Regular	Often	Continuously
Description	Could occur annually	Could occur within 6 months	Monthly	Weekly	Daily	Non stop
Value	1	2	3	4	5	6
Intensity (Magnitude / Size)						
Refers to the intensity of the impact experienced by the receiving environment. The impact may be positive or negative.						
Rating	Low	Low to medium	Medium	Medium to High	High	Very High
Description	Low intensity experienced only by receiving environment and / or occurs within 100 metres of activity	Low – medium intensity on receiving environment and / or occurs 100 – 500 metres of activity	Medium intensity on receiving environment and / or occurs 500 – 1000 metres of activity	Medium to high intensity on receiving environment and / or occurs within 1000 – 5000 metres of activity	High intensity on receiving environment and / or occurs within 5000 – 10 000 metres of activity	Very high intensity on receiving environment and / or within 10 000 metres or beyond of the activity
Value	1	2	3	4	5	6
Severity of negative impact						
Severity (Intensity + Duration + Frequency) The severity of an environmental aspect is determined by the degree of change to the baseline environment, and considers the following: The reversibility of the negative impact, The sensitivity of the receptor to the stressor, The impact duration, its permanency and whether it increases or decreases with time.						
Rating	Negligible	Low Negative	Medium Negative	Medium - High Negative	High Negative	Very High Negative
Description	There will be negligible impact as a result of the aspect	There will be a minor impact as a result of the aspect. This is easily reversible.	The aspect will result in a moderate impact. Reversibility of the impact easy but costly.	The aspect will result in a high impact. Reversibility of the impact possible but costly.	The aspect will result in a high impact. Reversibility of the impact difficult and costly.	The aspect will result in a severe impact. Reversibility of the impact not likely.
Value	3	4-6	7-9	10-12	13-15	16-18
Degree of positive impact						
Degree (Intensity + Duration + Frequency) The severity of an environmental aspect is determined by the degree of change to the baseline environment, and considers the following: The enhancement of the positive impact, The sensitivity of the receptor to the opportunity, The impact duration, its permanency and whether it increases or decreases with time.						
Rating	Negligible	Low Positive	Medium Positive	Medium High Positive	High Positive	Very High Positive
Description	There will be negligible impact as a result of the aspect	There will be a minor impact as a result of the aspect.	The aspect will result in a moderate impact.	The aspect will result in a high impact.	The aspect will result in a high impact.	The aspect will result in a very high positive impact.
Value	3	4-6	7-9	10-12	13-15	16-18

Negative Consequence						
Consequence = (Severity + Spatial extent)						
Rating	Negligible	Negative low	Negative Medium	Negative Medium High	Negative High	Negative Very High
Description	Impact has insignificant consequence on receiving environment. Requires little or no mitigation.	Impact requires in situ mitigation and receptor mitigation.	Impact requires in situ mitigation and receptor mitigation	Impact requires in situ mitigation, receptor mitigation and repair or restoration.	Impact requires in situ mitigation, receptor mitigation and repair or restoration and possible compensation.	Impact is to be avoided
Value	4	5-8	9-12	13-16	17-20	20-24
Positive Consequence						
Consequence = (Degree + Spatial extent)						
Rating	Negligible	Positive low	Positive Medium	Positive Medium High	Positive High	Positive Very High
Description	Impact has insignificant consequence on receiving environment.	Impact has a positive consequence; management required to enhance positive outcomes.	Impact has a positive consequence; management required to enhance positive outcomes.	Impact has a positive consequence; management required to enhance positive outcomes.	Impact has a positive consequence; management required to maintain positive outcomes.	Widespread / substantial beneficial effect. No alternative ways to achieve same benefits. Management required to maintain positive outcomes.
Value	4	5-8	9-12	13-16	17-20	20-24
Probability						
Refers to the likelihood that an impact will result from the aspect in question. The impact may be positive or negative.						
Rating	Slim	Slight	Plausible	Probable	Expected	Anticipated
Description	0 - 9% likelihood	10 – 25 % likelihood	26 - 50% likelihood	51 - 75% likelihood	76 - 90% likelihood	91 - 100 % likelihood
Value	1	2	3	4	5	6
Negative Significance						
(Consequence + Probability)						
Rating	Negligible	Low	Medium	Medium High	High	Very High
Description	Not harmful	Slightly harmful	Harmful	Very Harmful	Considerably Harmful	Disaster
Value	5	6-10	11-15	16-20	21-25	26-30
Positive Significance						
(Consequence + Probability)						
Rating	Negligible	Low	Medium	Medium High	High	Very High
Description	Insignificant	Slightly positive	Positive	Positive but not substantial.	Substantial positive impact.	Necessity
Value	5	6-10	11-15	16-20	21-25	26-30
Mitigation of negative impact						
Rating	None	Likely	Possible	Difficult	Unlikely	Not possible
Description	Mitigation not required. Impact remains the same.	Impact can be avoided with mitigation which has proven results.	Impact can be minimised and managed with mitigation	Difficult or costly to mitigate.	Difficult and costly to mitigate	Impact cannot be mitigated
Management of positive impact						
Rating	None	Likely	Possible	Difficult	Unlikely	Not possible
Description	Management not required. Impact	Impact can be easily enhanced with management	Impact can be enhanced with management	Difficult or costly to enhance but possible	Difficult and costly to enhance	Impact cannot be enhanced

EAP Services

	remains the same.	which has proven results.				
Confidence Refers to the confidence level the EAP has in predicting the impact.						
Rating	Low	Medium low	Medium	Medium High	High	Very High