

## 10.4 The Specialist

**Note:** Duplicate this section where there is more than one specialist.

Rudolph Greffrath

I ....., as the appointed specialist hereby declare/affirm the correctness of the information provided as part of the application, and that I:

- in terms of the general requirement to be independent (tick which is applicable):

|                                     |                                                                                                                                                                                                                                                                 |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |                                                                                                                                                                                                                            |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | am not independent, but another EAP that is independent and meets the general requirements set out in Regulation 13 has been appointed to review my work (Note: a declaration by the review specialist must be submitted); |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- have expertise in conducting specialist work as required, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- will ensure compliance with the EIA Regulations 2014;
- will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the application;
- will take into account, to the extent possible, the matters listed in regulation 18 of the regulations when preparing the application and any report, plan or document relating to the application;
- will disclose to the proponent or applicant, registered interested and affected parties and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority or the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority (unless access to that information is protected by law, in which case I will indicate that such protected information exists and is only provided to the competent authority);
- declare that all the particulars furnished by me in this form are true and correct;
- am aware that it is an offence in terms of Regulation 48 to provide incorrect or misleading information and that a person convicted of such an offence is liable to the penalties as contemplated in section 49B(2) of the National Environmental Management Act, 1998 (Act 107 of 1998).

 Digitally signed by Greffrath, Rudolph (ZARG05575)  
Location: Pr.Sci.Nat 400018/17  
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+02'00'

Signature of the specialist

WSP Africa

Name of company

2026/03/09

Date



## 10.5 The Review Specialist

Rudolph Greffrath

I ..... as the appointed review specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- am independent, and other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity;
- am fully aware of and meet all of the requirements of Regulation 13, and that failure to comply with any the requirements may result in disqualification;
- have reviewed/will review all the work undertaken by the specialist;
- have disclosed/will disclose, to the applicant, the EAP, other specialist (if any), the Department and interested and affected parties, all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and
- am aware that a false declaration is an offence in terms of regulation 48 of the 2014 NEMA EIA Regulations.



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Rudolph (ZARG05575)  
Location: Pr.Sci.Nat 400018/17  
Date: 2026.03.09 11:45:17  
+02'00'

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Signature of the review specialist

WSP Africa

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Name of company

2026/03/09

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Date





McCain Food (Pty) Ltd

# TERRESTRIAL BIODIVERSITY FAUNA AND FLORA COMPLIANCE STATEMENT

MCCAIN DELMAS PROPOSED WASTEWATER  
TREATMENT PLANT AND EXPANSION OF DIESEL  
STORAGE PROJECT





McCain Food (Pty) Ltd

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# TERRESTRIAL BIODIVERSITY FAUNA AND FLORA COMPLIANCE STATEMENT

MCCAIN DELMAS PROPOSED WASTEWATER  
TREATMENT PLANT AND EXPANSION OF DIESEL  
STORAGE PROJECT

**PUBLIC**

**PROJECT NO. 41107366**

**OUR REF. NO. 41107366-REP-00002**

**DATE: AUGUST 2026**

WSP

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# QUALITY CONTROL

| Issue/revision | Issue                                                                                                                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| Date           | August 2025                                                                                                                                                                                                                                                       |
| Prepared by    | Rudolph Greffrath                                                                                                                                                                                                                                                 |
| Signature      |  <div>           Digitally signed by Greffrath, Rudolph (ZARG05575)<br/>           Location: Pr.Sci.Nat 400018/17<br/>           Date: 2026.07.15 05:31:37 +02'00         </div> |
| Checked by     | Shavaughn Davis                                                                                                                                                                                                                                                   |
| Signature      |  <div>           15-Jul-26         </div>                                                                                                                                       |
| Authorised by  | Olivia Allen                                                                                                                                                                                                                                                      |
| Signature      |  <div>           Digitally signed by Allen, Olivia (ZAOA05122)<br/>           Date: 15/July/2026         </div>                                                                |
| Project number | 41103766                                                                                                                                                                                                                                                          |
| Report number  | 41107366-REP-00002                                                                                                                                                                                                                                                |

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# EXECUTIVE SUMMARY

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McCain Foods SA (Pty) Ltd (McCain) is proposing to develop a wastewater treatment plant and expand diesel storage at their Delmas site in the Mpumalanga Province (hereafter refer to as the Project area).

WSP Group Africa (Pty) Ltd (WSP) was appointed to undertake the necessary terrestrial screening studies, in support of the environmental regulatory process required to authorise the proposed development-related activities and infrastructure. This terrestrial biodiversity fauna and flora compliance statement report describes the available information for the terrestrial plant and animal as well as biodiversity of areas that will potentially be impacted by the proposed infrastructure and activities.

The outcome of the site sensitivity verification assessment contained in this report, as required by the NEMA gazetted protocols for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity, is presented. The report also documents the baseline level assessment of the potential impacts of the proposed Project on terrestrial, i.e. terrestrial vegetation communities and associated flora and fauna species. A suite of preliminarily recommended measures for the mitigation of any negative impacts for consideration in the development of the environmental management programme (EMPr) for the Project, as well as the required scope of baseline data gathering studies for the EIA phase, are provided.

The Environmental Screening tool considered the Project area as having Very High Terrestrial Biodiversity sensitivity based on the presence of the Endangered vegetation type, Eastern Highveld Grassland; however, site verification disputed this classification and assigned a Low sensitivity.

The Animal Species Theme is considered as having a Medium sensitivity due to the potential presence of fauna species of conservation concern, namely *Eupodotis Senegalensis*, *Chrysospalax villosus*, *Crocidura maquassiensis*, *Dasymys robertsii*, and *Clonia uvarovi*. Site verification disputed this classification and assigned a Low sensitivity, due to the absence of animal SCC. No animal SCC is expected to occur on site due to the current site condition and anthropogenic pressure.

The sensitivity of the site based on the Terrestrial Plant Species Theme is considered Low; no plant species of conservation concern (SCC) is expected to occur in the Project area. The site verification corroborated this classification and confirmed a Low sensitivity.

None of the SCC flagged by the screening tool have been observed on site. Due to the disturbed and transformed nature of the Local Study Area (LSA), the usage by these species for breeding, or foraging on a regular basis, is considered unlikely. These areas of the Project area, which are currently mapped as High sensitivity, is of Low sensitivity for the Terrestrial Biodiversity Themes, based on the findings of this study.

Since the proposed project infrastructure and activities, and the anticipated area of influence for terrestrial biodiversity receptors, is situated within areas that are considered to be of Low sensitivity further to the verification process conducted as part of this study, a terrestrial biodiversity compliance statement (inclusive of animal and plant species) is therefore motivated, in accordance with the Environmental Impact Assessment Regulations, as promulgated in terms of Section 24 (5)



of the National Environmental Management Act, 1998 (Act No. 107 of 1998), published in GN. No. 320 dated 20 March 2020. It is nevertheless essential that the recommended mitigation and management measures (Section 8) be strictly implemented to ensure that any potential impacts to sensitive species resulting from the proposed activities are avoided/minimised.

**Contact name Rudolph Greffrath**

Contact details +27 74 143 2980 | [rudolph.greffrath@wsp.com](mailto:rudolph.greffrath@wsp.com)

# 1 REPORT REQUIREMENTS

This report has been compiled to comply with the Requirements for a Terrestrial Biodiversity, Plant Species and Animal Species Compliance Statement as per Government Notices 320 and 1150 published in terms of NEMA, dated 20 March 2020: “Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation”. The section below details the requirements in table format and references the relevant sections of this report where the required information can be located.

| Item No.                   | Requirement                                                                                                                                                                                                                                                                    | Report Reference |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 3.1.                       | The compliance statement must be prepared by a suitably qualified specialist registered with the SACNASP, with expertise in the field of Biodiversity, Plant and Animal sciences                                                                                               | Section 2        |
| 3.2                        | The compliance statement must;                                                                                                                                                                                                                                                 | -                |
| 3.2.1                      | be applicable to the preferred site and the proposed development footprint                                                                                                                                                                                                     | Section 5.1      |
| 3.2.2                      | confirm that the site is of “low” sensitivity for Biodiversity, Plant and Animal themes                                                                                                                                                                                        | Section 7        |
| 3.2.3                      | indicate whether or not the proposed development will have an impact on the Biodiversity, Plant and Animal features                                                                                                                                                            | Sections 8       |
| 3.3                        | The compliance statement must contain, as a minimum, the following information:                                                                                                                                                                                                | -                |
| 3.3.1.                     | contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae                                                                                                                                                          | Section 2        |
| 3.3.2                      | a signed statement of independence by the specialist                                                                                                                                                                                                                           | Section 2.1      |
| 3.3.3                      | a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment                                                                                                                                           | Section 5.4      |
| 3.3.4                      | a baseline profile description of biodiversity and ecosystems of the site;                                                                                                                                                                                                     | Section 6        |
| 3.3.5                      | the methodology used to verify the sensitivities of the Terrestrial Biodiversity, Plant and Animal species features on the site including the equipment and modelling used where relevant                                                                                      | Section 5        |
| 3.3.6                      | in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase | N/A              |
| 3.3.7                      | where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMP;.                                                                                                                                                                  | Section 8        |
| 3.3.8                      | a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and                                                                                                                                                                           | Section 5.7      |
| 5.3.7 (Plant Species only) | the mean density of observations/ number of samples sites per unit area.                                                                                                                                                                                                       | 5.5              |
| 3.3.9                      | any conditions to which this statement is subjected.                                                                                                                                                                                                                           | N/A              |
| 3.4                        | A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.                                                                                                                                           | Quality Control  |

## 2 SPECIALIST DETAILS AND DECLARATION

|                            |                                                                                                                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Name:</b>               | <b>Rudolph Greffrath (Report Compilation)</b>                                                                      |
| Cell Number:               | 074 143 2980                                                                                                       |
| Email:                     | Rudolph.Greffath@wsp.com                                                                                           |
| Qualification:             | B. Tech- Conservation Science                                                                                      |
| Professional Affiliations: | South African Council for Natural Scientific Professions (SACNASP)<br>Pr.Sci.Nat. – 400017/18 (Ecological Science) |
| Experience:                | 17 years of consulting experience, primary expertise in terrestrial ecology                                        |

|                            |                                                                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name:</b>               | <b>Shavaughn Davis (Report review)</b>                                                                                                     |
| Cell Number:               | 073 233 6110                                                                                                                               |
| Email:                     | shavaughn.davis@wsp.com                                                                                                                    |
| Qualification:             | M.Sc. Zoology                                                                                                                              |
| Professional Affiliations: | South African Council for Natural Scientific Professions (SACNASP)<br><i>Pr.Sci.Nat.</i> – 115025 (Zoological Science, Ecological Science) |
| Experience:                | 17 years of consulting experience, primary expertise in wetland ecology and zoology                                                        |

## DECLARATION OF INDEPENDENCE BY SPECIALIST

I, Rudolph Greffrath, a duly authorised representative of WSP (Pty) Ltd, declare that I –

- Act as the independent specialist in this application.
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed.
- Do not have nor will have a vested interest in the proposed activity proceeding.
- Have no, and will not engage in, conflicting interests in the undertaking of the activity; and undertake to disclose, to the competent authority, any information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document.

 Digitally signed by Greffrath,  
Rudolph (ZARG05575)  
Location: Pr.Sci.Nat 400018/17  
Date: 2026.07.15 05:32:56  
+02'00'

I, Shavaughn Davis, a duly authorised representative of WSP (Pty) Ltd, declare that I –

- Act as an independent specialist in this application.
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed.
- Do not have nor will have a vested interest in the proposed activity proceeding.
- Have no, and will not engage in, conflicting interests in the undertaking of the activity.
- Undertake to disclose, to the competent authority, any information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document.

 15-Jul-26

### **3 INTRODUCTION AND BACKGROUND**

---

McCain Foods SA (Pty) Ltd (McCain) is proposing the development of a wastewater treatment plant and the expansion of diesel within the McCain Delmas Plant situated in the Mpumalanga Province of South Africa (hereafter refer to as the Project area).

WSP Group Africa was appointed to undertake the necessary terrestrial ecology baseline studies, in support of the environmental regulatory process required to authorise development-related activities and infrastructure. This terrestrial biodiversity, plant species and animal species assessment report describes the available information for the terrestrial biodiversity of areas that will potentially be impacted by the proposed infrastructure and activities. The project area location is displayed in Figure 3-1.

#### **3.1 PURPOSE OF THE REPORT**

This report describes the baseline terrestrial biodiversity (inclusive of plant and animal species) of the study area and details the outcomes of the site sensitivity verification of the potential terrestrial environmental sensitivity of the site under consideration for the Project. Reporting has been undertaken in accordance with the gazetted requirements for Terrestrial Biodiversity Specialist Assessment (Notice No.320 and 1150 Government Gazette 43110 of March 2020) and Plant and Animal Theme Specialist Assessment (Notice No.1150 Government Gazette 43855 of October 2020). This report will be submitted as part of the application for Environmental Authorisation, in accordance with the requirements of the Environmental Impact Assessment Regulations.

#### **3.2 PROJECT LOCATION AND EXTENT**

The McCain project area is located near the town of Delmas in the Nkangala District Municipality in the Mpumalanga Province (Figure 3-1). The proposed project components are illustrated in Figure 5-1 and are described below.

#### **3.3 PROJECT COMPONENTS AND ACTIVITIES**

##### **3.3.1 PROPOSED WASTEWATER TREATMENT PLANT**

McCain Delmas proposes to develop a new wastewater treatment plant (WWTP) to treat effluent that is generated from the manufacturing process. The plant will have a maximum treatment flowrate of 3 400 m<sup>3</sup>/day and will be located in the northwestern corner of the site, on McCain-owned property. The effluent will be treated to meet the quality requirements that would be suitable for discharge to municipal sewer or for plant use (potable water quality). Waste activated sludge (WAS) from the treatment plant will be temporarily stored in hoppers on site and ultimately disposed offsite.

The plant will include an anaerobic digestion process for chemical oxygen demand (COD) containing wastes on site, such as fryer waste, slivers, and other materials that are collected in the main wastewater screen and oily-water screen. The anaerobic digester will convert the COD into biogas, which can be used to either generate power or displace natural gas in the processing plant's boilers. The digester feed flow will be approximately 385 m<sup>3</sup>/day, with a total digestion volume of 9 074 m<sup>3</sup>.

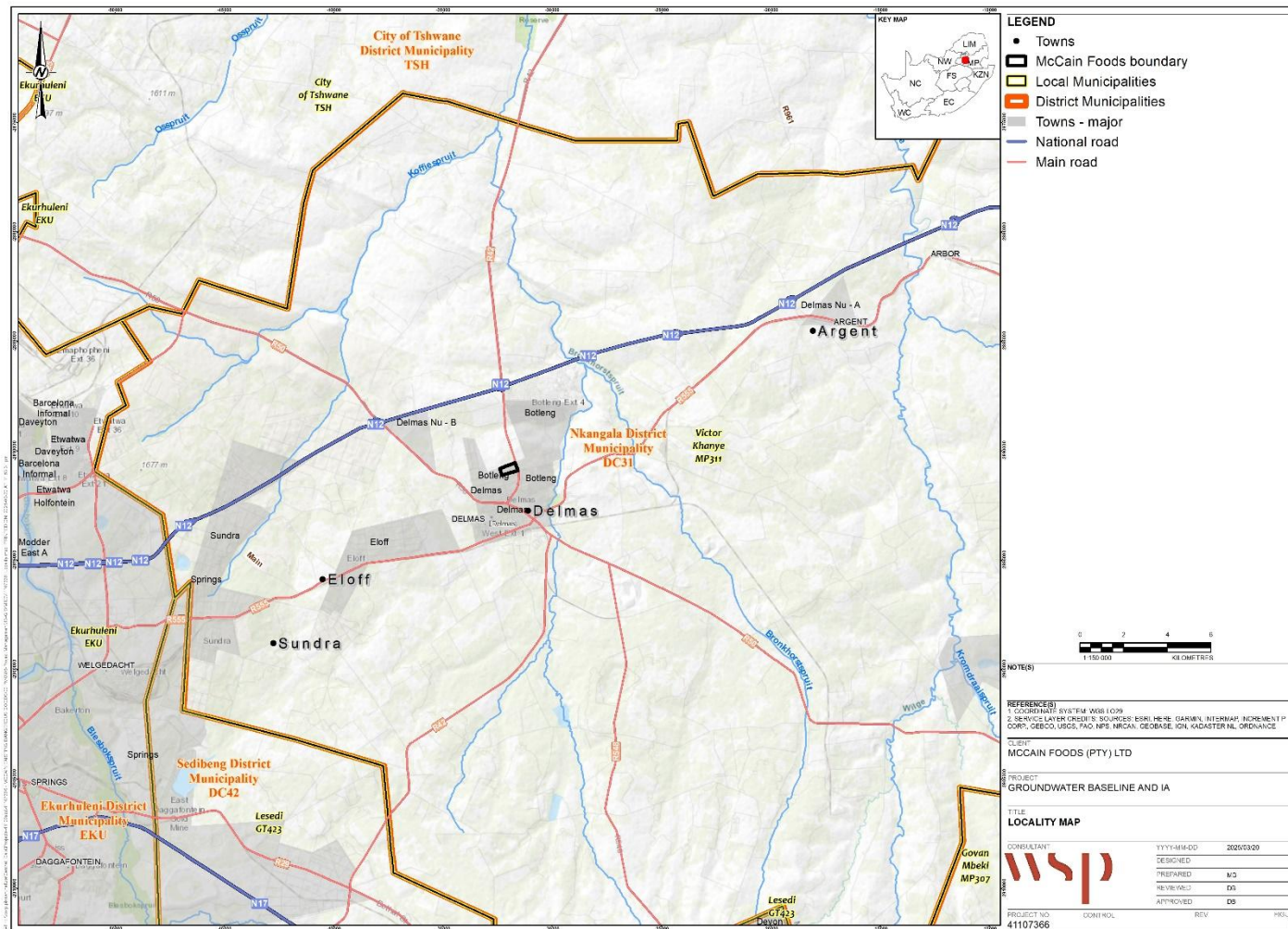
The development footprint for the facility will be approximately 9 000 m<sup>2</sup> and will include the following key infrastructure components:

- Primary Clarifier (existing);
- Equalisation Tank;
- Upflow Anaerobic Sludge Blanket (UASB) Feedtank & Pumps;
- UASB Sludge;
- Activated Sludge;
- Waste Water Process Building;
- Secondary Clarifier;
- Biogas Digester;
- Biogas & Power Building; and
- Flare.

### **3.3.2 PROPOSED DIESEL TANK**

McCain Delmas cumulatively stores 43.782 m<sup>3</sup> of diesel in various tanks on site and proposes to install an additional 79 m<sup>3</sup> diesel storage tank next to a current 30 m<sup>3</sup> diesel storage tank. The proposed diesel storage tank will be a self-bunded (double wall) containerised tank, with the same design as the current 30 m<sup>3</sup> diesel storage tank.

**Figure 3-1 - Locality map of the McCain Project Area**



## 4 APPLICABLE SOUTH AFRICAN LEGISLATION, POLICY AND STANDARDS

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Applicable national and provincial legislation, associated regulations and policies that are pertinent to biodiversity, which were used to guide the terrestrial biodiversity, plant and animal assessment include:

- National Environmental Management Act (NEMA) (Act No. 107 of 1998) (as amended) including Section 24, concerning Procedures for the assessment and minimum criteria for reporting on identified themes in terms of Sections 24(5)(a) and (h) and 44 of the NEMA, when applying for environmental authorisation;
- Protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity, animal and plant species;
- National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (as amended) (NEMBA), specifically:
  - ToPS – National lists of critically endangered, endangered, vulnerable and protected species (2007); and
  - National list of alien and invasive species (2016).
- National Water Act (Act No. 36 of 1998) (as amended);
- Mpumalanga Nature Conservation Ordinance (Act No. 12 of 1983); and
- National Protected Area Expansion Strategy (2016).

The following South African national policies and guidelines were also taken into consideration (where relevant) in the development of the baseline description and impact assessment process:

- The Draft National Biodiversity Offset Policy (2017);
- The National Biodiversity Offset Guideline (2023); and
- The Species Environmental Assessment Guideline (SANBI, 2020).

## 5 METHODOLOGY

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This report has been drafted in accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in Terms of Sections 24(5)(a) and (h) and 44 of NEMA:

- (G.NR. 320 of 2020)-Protocol for the specialist assessment and minimum report content requirements for environmental impacts on Terrestrial Biodiversity; and
- (G.NR. 1150 of 2020)-Protocol for the specialist assessment and minimum report content requirements for environmental impacts on animal species and plant species.

### 5.1 STUDY AREA

The study area for the assessment was defined as the development footprint i.e. the area in which the proposed developments will take place, referred to as the Local Study Area (LSA), which includes the area that will be disturbed or impacted by development activities (Figure 5-1). The project involves three LSAs within the greater McCain Delmas property. The Project Area of Influence (PAOI) was defined as the McCain Delmas property, which also serves as a buffer area, assessed to give effect to possible indirect impacts such as noise and dust that may affect adjacent habitats.

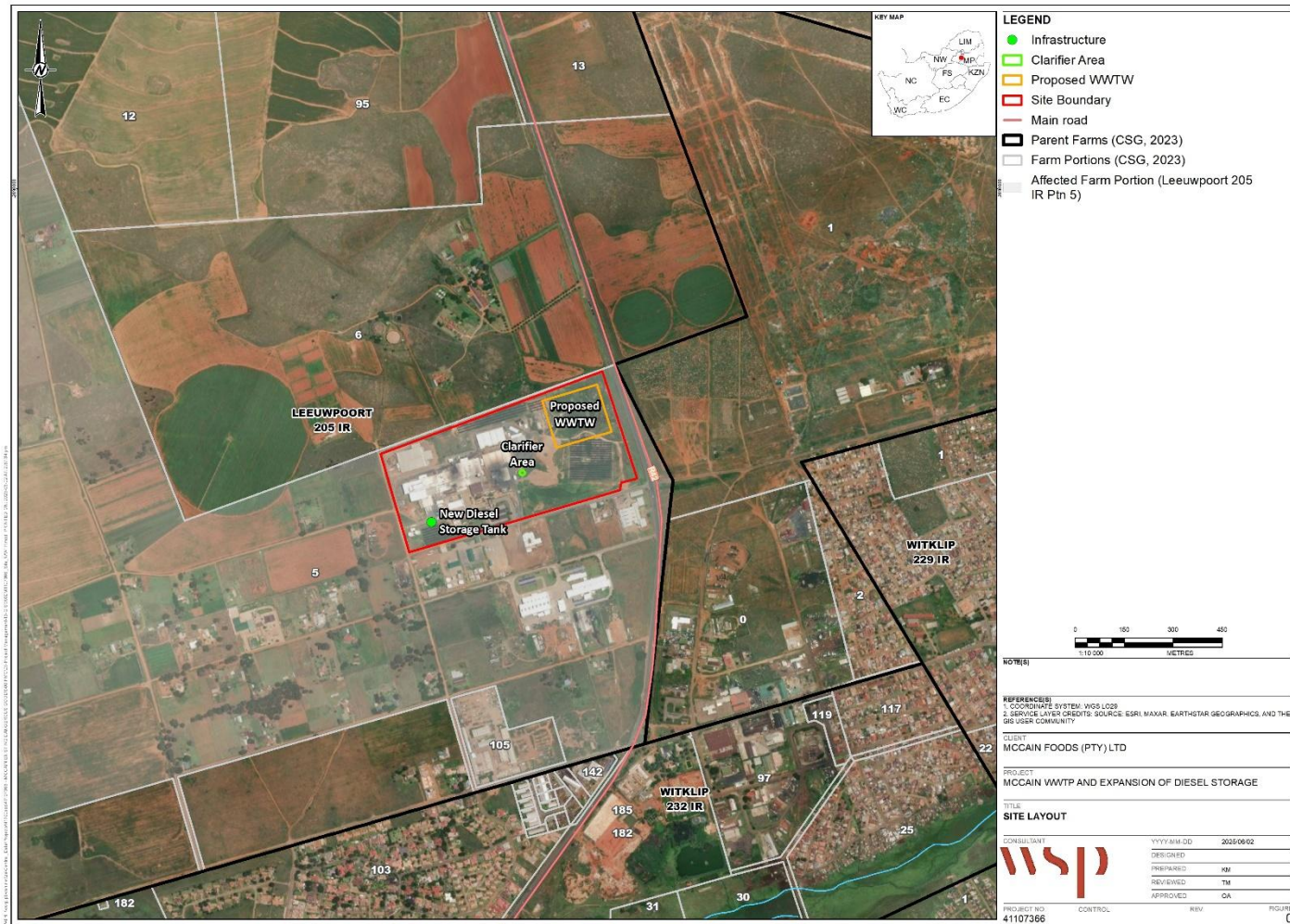


**Figure 5-1 – Location of the project components (LSA) within the McCain Delmas site boundary (PAOI)**

## 5.2 ENVIRONMENTAL SCREENING TOOL

The National Web-based Environmental Screening Tool is a geographically based web-enabled application that allows a proponent intending to apply for environmental authorisation in terms of the Environmental Impact Assessment (EIA) Regulations 2014, as amended to screen their proposed site for any environmental sensitivity. Based on the sensitivity rating, a suitably qualified specialist must prepare the relevant report or opinion memo that is to be submitted as part of the EA application

### 5.2.1 TERRESTRIAL BIODIVERSITY

According to the Tool, the Terrestrial Biodiversity Theme for the study area is rated 'Very High Sensitivity' due to its overlap with land mapped as:

- Endangered Eastern Highveld Grassland.

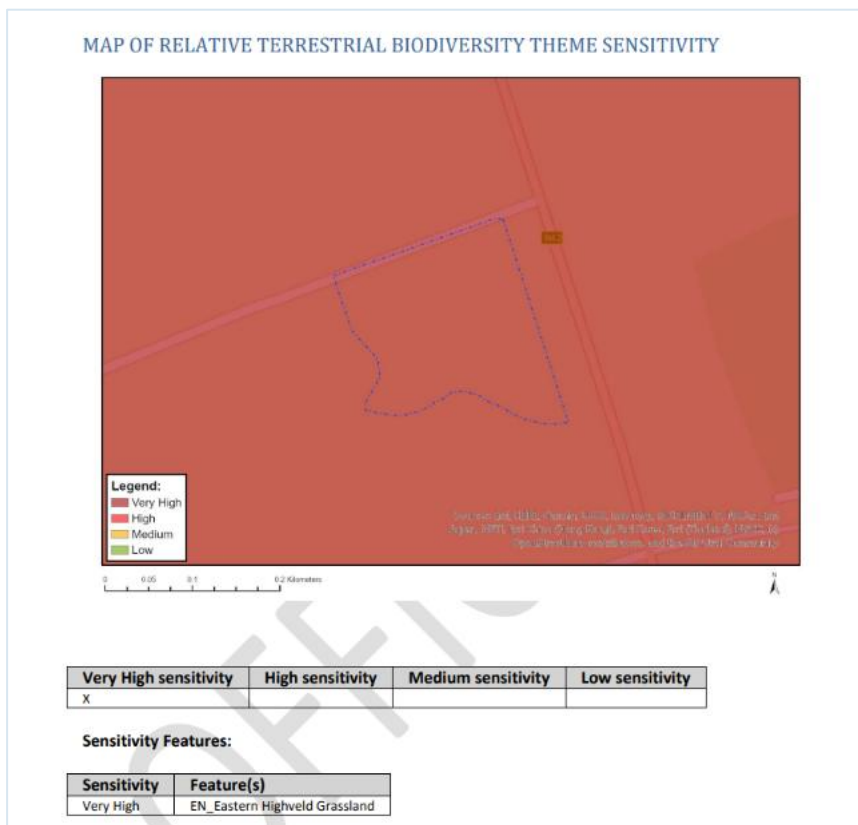


**Figure 5-2 - DFFE Screening Tool Results - Terrestrial Biodiversity Theme**

### 5.2.2 PLANT SPECIES THEME

The National Web Based Screening Tool indicated that the Project area is considered to be of 'Medium' sensitivity in terms of the Plant Species Theme on account of no potential presence of flora species of conservation concern.

## MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at [eladatarequests@sanbi.org.za](mailto:eladatarequests@sanbi.org.za) listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|-----------------------|------------------|--------------------|-----------------|
|                       |                  | X                  |                 |

### Sensitivity Features:

| Sensitivity | Feature(s)                    |
|-------------|-------------------------------|
| Medium      | Sensitive species 196         |
| Medium      | <i>Pachycarpus suaveolens</i> |

**Figure 5-3 - DFFE Screening Tool Results - Plant Theme**

## 5.2.3 ANIMAL SPECIES THEME

The Project area is considered to be of 'Medium' sensitivity in terms of the Animal Species Theme, due to the potential presence of the following species of conservation concern (SCC):

- *Eupodotis senegalensis* – White-bellied Bustard;
- *Chrysospalax villosus* – Rough-haired Golden Mole;
- *Crocidura maquassiensis* – Maquassie Musk Shrew;
- *Dasymys robertsii* – Roberts's Water Rat; and
- *Clonia uvarovi* – Uvarov's Clonia (a species of predatory katydid).

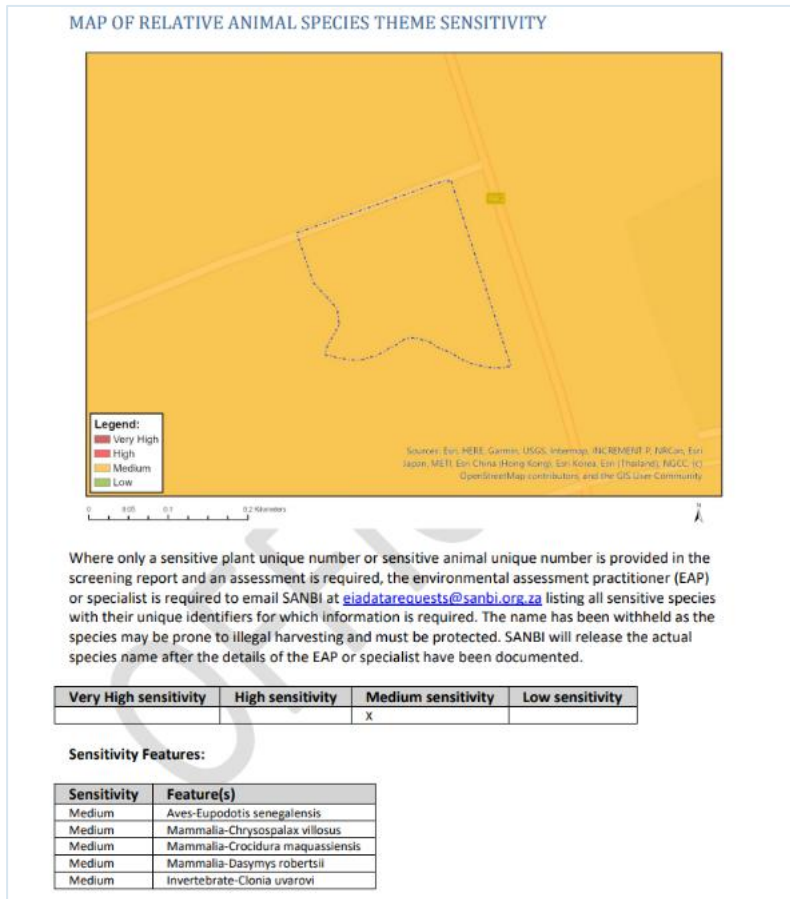


**Figure 5-4 - DFFE Screening Tool Results- Animal Species Theme**

## 5.3 DESKTOP ANALYSIS

A desktop analysis of available satellite imagery, biodiversity datasets and published literature was conducted to determine the potential sensitivity of the LSA and PAOI. The specific approach to this desktop analysis for the terrestrial biodiversity, plants and animals is described below.

### 5.3.1 TERRESTRIAL BIODIVERSITY AND FLORA

In line with the assessment and reporting requirements set out in the protocol, this terrestrial biodiversity compliance statement (Inclusive of Animal and Plant Species themes) included a desktop literature review to aid in developing a baseline description of the site.

The aim of the desktop literature review component was to collate and review available ecological information related to important biodiversity and conservation features in the PAOI, including presence of protected areas or important conservation areas, key ecological processes and functions, and the likely composition of local terrestrial biodiversity.

The existing available datasets that were reviewed and consolidated to assess terrestrial ecosystems and associated flora and vegetation include:

- A general vegetation type description relevant to the broader study area was obtained from Mucina and Rutherford (2018); and

- The formal conservation context of the region at a provincial and national level was established based on the Mpumalanga Biodiversity Sector Plan (2019), the National List of Threatened Ecosystems (NEMBA Threatened Ecosystems, 2011), the South African Protected Areas Database (SAPAD), the South African Conservation Areas Database (SACAD) and the national protected area expansion strategy.

### 5.3.2 FAUNA

The aim of the desktop literature review component was to collate and review data and information pertaining to terrestrial animal species that may occur in the LSA and PAOI, based on historic distribution ranges or recent records. Literature and data that were reviewed were obtained from a variety of online and literature sources, as discussed below.

#### 5.3.2.1 Mammals

- A list of mammal species that are known to occur in the region was compiled based on the historic distribution ranges of mammal species listed for the 2628BA Quarter Degree Square (QDS) on the MammalMAP database (Fitzpatrick Institute of African Ornithology, 2023).

#### 5.3.2.2 Avifauna

- A list of Avifauna species that are known to occur in the region was compiled based on the historic distribution ranges of mammal species listed for the 2628BA Quarter Degree Square (QDS) SABAP2 database.

#### 5.3.2.3 Herpetofauna (Reptiles and Amphibians)

- A list of herpetofauna that potentially occur on site was compiled based on the distribution maps presented in Bates et al., (2014) for reptiles, and Du Preez and Carruthers (2009) for amphibians; and
- Additional herpetofauna data were also sourced from ReptileMAP and FrogMAP for the 2628BA QDS (Fitzpatrick Institute of African Ornithology, 2023).

#### 5.3.2.4 Invertebrates of Conservation Concern

Lists of invertebrate species potentially occurring on-site were obtained from LepiMAP, LacewingMAP, OdonataMAP, DungbeetleMAP, ScorpionMAP and SpiderMAP for the 2628BA QDS (Fitzpatrick Institute of African Ornithology, 2023). These were screened against available Red Lists to identify potential species of conservation concern.

## 5.4 SITE SURVEY

A site sensitivity verification survey was conducted on the 25<sup>th</sup> of June 2025 (representative of the dry season) to confirm the sensitivity of any sensitive terrestrial ecosystems present within the PAOI. Due to the largely modified nature of the PAOI, lying as it does within the enclosed and largely developed McCain Delmas property, this was not considered a significant limitation in confirming the potential sensitivities highlighted for the study area.

A total of 5 sample sites were visited and assessed within the PAOI during the site survey. The approach to surveying the study area for vegetation, flora and fauna is detailed in the subsequent sections.

#### **5.4.1 VEGETATION AND FLORA**

The site survey focused on land portions of the study area that are associated with the proposed infrastructure and focused on general habitat character and condition and potential to support plant SCCs.

The sampling and assessment methodology was aligned with the SANBI (2020) recommendations, and included the following:

- The vegetation assessment was conducted by using meander searches to identify suitable habitat for, and/or the presence of, flora SCCs in areas of natural habitat.
- Data collected during the assessment included habitat character and condition, general flora species composition and evidence of disturbances.
- Flora nomenclature is based on species names presented on SANBI's Red List of South African Plants website.
- Vegetation structural classification was based on Edwards (1983).

#### **5.4.2 FAUNA**

The site visit was conducted for one day during the dry season focusing on fauna screening. The specific methodologies used during the field programme were based, in part, on those recommended in SANBI (2020).

##### **5.4.2.1 Mammals**

Mammal sampling included active sampling methodologies:

- Passive sampling aimed to record mammals of all sizes and included direct observations, indirect observations and anecdotal evidence.
  - Direct observations were made during opportunistic encounters of mammals made while walking and driving in the PAOI;
  - Indirect observations included the identification of mammal tracks, faeces, burrows and mounds made while conducting the walked-transects; and
  - McCain staff present were also consulted to obtain anecdotal evidence of mammal species present in the PAOI.

##### **5.4.2.2 Avifauna**

- Avifauna species present were recorded during meandering transects through the PAOI and recording sightings of birds. Habitat suitability for SCC that may be present was also conducted.
- McCain staff present were also consulted to obtain anecdotal evidence of avifaunal species present in the PAOI.

##### **5.4.2.3 Herpetofauna (reptiles and amphibians)**

- Screening for reptiles and amphibians was based on active searches and opportunistic observations made while walking in the PAOI; and
- McCain staff present were also consulted to obtain anecdotal evidence of herpetofaunal species present in the PAOI.

#### **5.4.2.4 Invertebrates**

- Screening for general invertebrate species was based on active searches and opportunistic observations made while walking in the PAOI,
- Screening for invertebrate SCC was based on both active searches based on known habitat preference of the invertebrate SCC, and identification of appropriate habitat for the SCC; and
- McCain staff present were also consulted to obtain anecdotal evidence of invertebrate species present in the PAOI.

### **5.5 DELINEATION AND MAPPING OF HABITAT UNITS**

The findings of the site survey observations, as well as the desktop analysis of current satellite imagery of the site were used in combination to map the habitat units present within the study area.

### **5.6 ASSESSMENT OF SPECIES OF CONSERVATION CONCERN**

#### **5.6.1 THREATENED, NEAR THREATENED AND/OR PROTECTED SPECIES STATUS**

Species of Conservation Concern (SCC) were identified based on regional Red Lists of threatened species, including Vulnerable (VU), Endangered (EN), Critically Endangered (CR), and Near Threatened (NT) species. Additionally, species listed as Specially Protected, Protected, or Threatened under national and provincial conservation legislation were also considered and included as SCC in this report, due to their specific conservation management requirements. Relevant Red Lists and legislation included:

- Red List of Mammals of South Africa, Lesotho and Swaziland (Child et al., 2016);
- SANBI's online Red List of South Africa Species (for reptiles, amphibians and invertebrates) ([www.speciesstatus.sanbi.org](http://www.speciesstatus.sanbi.org));
- The South African Red Data Book for Avifauna 2025;
- The Southern African Bird Atlas Project 2 (SABAP2);
- National Environmental Management: Biodiversity Act (Act No. 10 of 2004) - Threatened or Protected Species List (Notice 389 of 2013) (NEMBA ToPS List, 2007); and
- Mpumalanga Nature Conservation Act (Act No. 10 of 1998).

#### **5.6.2 HABITAT SUITABILITY ASSESSMENTS FOR SPECIES OF CONSERVATION CONCERN**

Habitat suitability assessments were conducted for SCC that have historically been recorded in the region to determine a 'probability of occurrence' in the LSA. The following parameters were used in the assessments:

- Habitat requirements: Most threatened species have very specific habitat requirements. The presence of these habitats in the LSA was evaluated;
- Habitat status: The status or ecological condition of available habitat was assessed. Often a high level of habitat degradation will negate the potential presence of sensitive species; and
- Habitat linkage: Dispersal and movement between natural areas for breeding and feeding are important population-level processes. Habitat connectivity within the LSA and to surrounding natural habitat and corridors was evaluated to determine the likely persistence of SCC.

### 5.6.3 ASSESSMENT OF SITE ECOLOGICAL IMPORTANCE

The ecological importance (sensitivity) of vegetation communities and habitats was determined using the protocol for evaluating site ecological importance (SEI) as published in SANBI's Species Assessment Guideline (SANBI, 2020). SEI is considered to be a function of the biodiversity importance (BI) of a receptor and its resilience to impacts (receptor resilience, RR), as per:

$$SEI = BI + RR.$$

Biodiversity importance is a function of conservation importance (CI) and the functional integrity (FI) of the receptor, as per:

$$BI = CI + FI$$

- Conservation Importance is defined as “the importance of a site for supporting biodiversity features of conservation concern present, e.g., populations of IUCN threatened and Near Threatened species (CR, EN, VU and NT), Rare species, range-restricted species, globally significant populations of congregatory species, and areas of threatened ecosystem types, through predominantly natural processes” (SANBI, 2020).
- Functional Integrity is defined as “A measure of the ecological condition of the impact receptor as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts” (SANBI, 2020).
- Receptor Resilience is defined as “the intrinsic capacity of the receptor to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention” (SANBI, 2020).

For tables detailing the rating criteria for Conservation Importance, Functional Integrity and Receptor Resilience and the scoring matrices, refer to Appendix B. Table 3 presents a guideline for interpreting the SEI (SANBI, 2020).

**Table 5-1 – Assessment of Site Ecological Importance**

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

| Site Ecological Importance | Interpretation in relation to proposed development activities                                                                                        |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Low</b>                 | Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities. |
| <b>Very Low</b>            | Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.                 |
| Source: SANBI (2020).      |                                                                                                                                                      |

## 5.7 STUDY ASSUMPTIONS AND LIMITATIONS

- The baseline description is qualitative and is based on available national datasets and published literature for the study area region, and previous ecological studies conducted in the study area in conjunction with a dry season screening survey.
- The field study was completed in the dry season; therefore, certain plant species that remain dormant during this time might not have been recorded.

## 6 TERRESTRIAL BIODIVERSITY, FLORA AND FAUNA BASELINE DESCRIPTION

### 6.1 REGIONAL TERRESTRIAL BIODIVERSITY CONTEXT

#### 6.1.1 TERRESTRIAL CRITICAL BIODIVERSITY AREAS (CBAS) AND ECOLOGICAL SUPPORT AREAS (ESAS)

The PAOI was compared to relevant available spatial biodiversity planning datasets, i.e. the Mpumalanga Biodiversity Sector Plan (2022), in order to assess the local and regional biodiversity context of the site.

The Mpumalanga Biodiversity Sector Plan defines five categories of conservation focus: protected areas, critical biodiversity areas (CBA), ecological support areas (ESA), other natural areas, and modified habitats. Definitions for each are listed below. These areas present risks to the Project in terms of impact, as well as opportunities for contribution to achieving provincially set targets for biodiversity conservation, through focused biodiversity management planning and adherence to the mitigation hierarchy at EIA stage:

- **Protected Areas:** protected areas recognised in terms of the National Environmental Management Protected Areas Act, No. 57 of 2003, that are currently considered to meet biodiversity targets in the FSBSP.
- **Critical Biodiversity Area:** areas (outside of Protected Areas) that are required to meet biodiversity targets for biodiversity pattern (species and ecosystems) and ecological processes. They should remain in a natural state that is maintained in good ecological condition.
- **Ecological Support Area:** play an important role in supporting the ecological functioning of critical biodiversity areas or for generating or delivering important ecosystem services. They

support landscape connectivity and resilience to climate change adaptation. They need to be maintained in at least an ecologically functional state.

- **Other Natural Areas:** often retain much of their natural character and may contribute significantly to maintenance of viable species populations and natural ecosystem functioning and may provide important ecological infrastructure and ecosystem services. They are not, however, prioritized for immediate conservation action in the MBSP.
- **Modified:** often referred to as transformed, these areas have lost a significant proportion (or all) of their natural biodiversity and in which ecological processes have broken down (in some cases irretrievably), as a result of biodiversity-incompatible land-use practices such as ploughing, hardening of surfaces, mining, cultivation and the construction of houses or other built infrastructure.

A portion of the PAOI is mapped as Other Natural Areas (ONA) (Figure 6-1), which is largely aligned with grassland and a small patch of forested land as presented in the national landcover dataset (GTI, 2020) (Figure 6-2). These datasets are based on satellite imagery interpretation and as such the data may be aged and requires in-field verification. A key output of the vegetation and flora baseline study is the vegetation/habitat map of the Project area, which defines the location and extent of natural and modified vegetation communities.

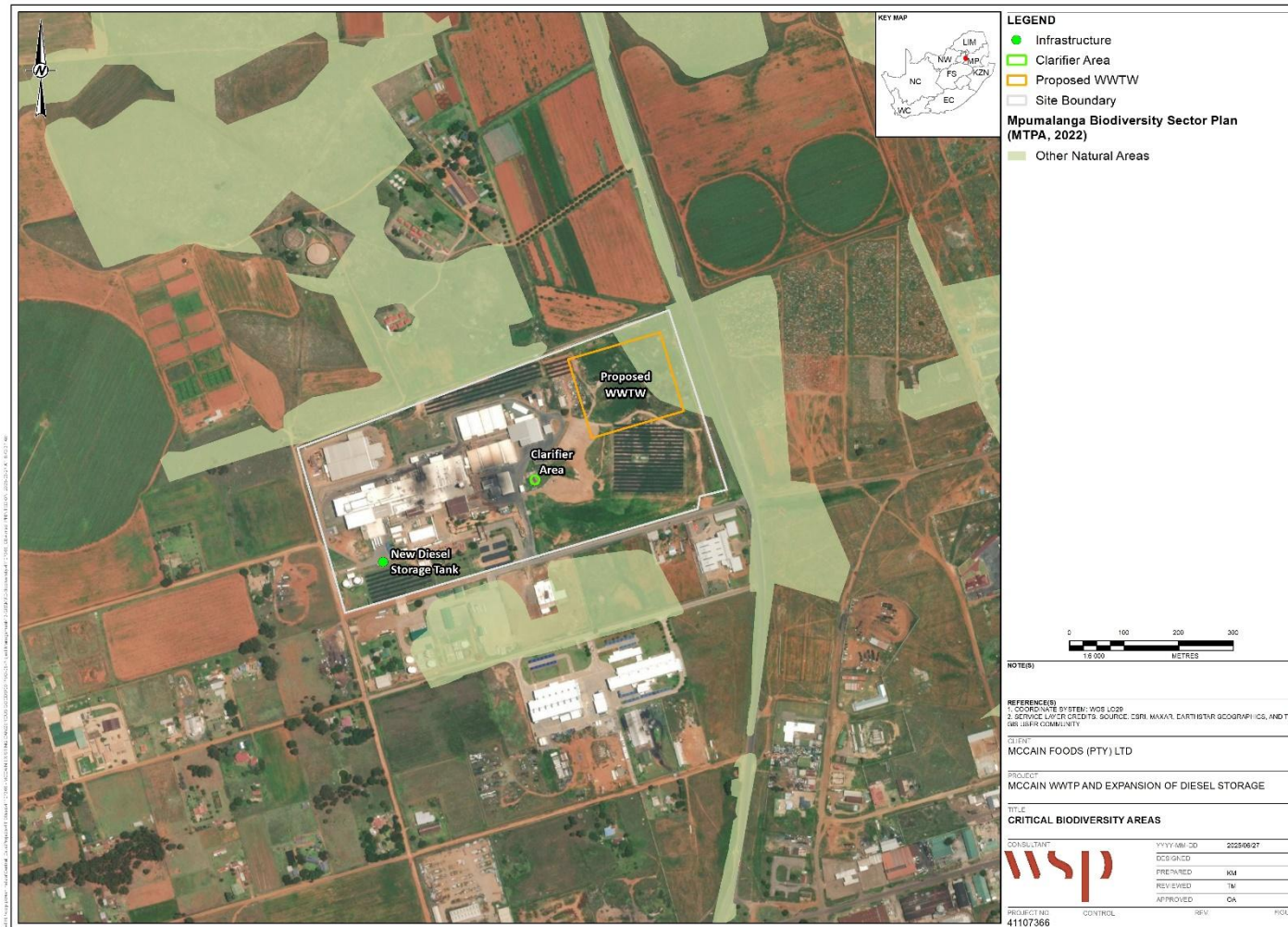


**Figure 6-1 - Project area in relation to MBSP (2019)**

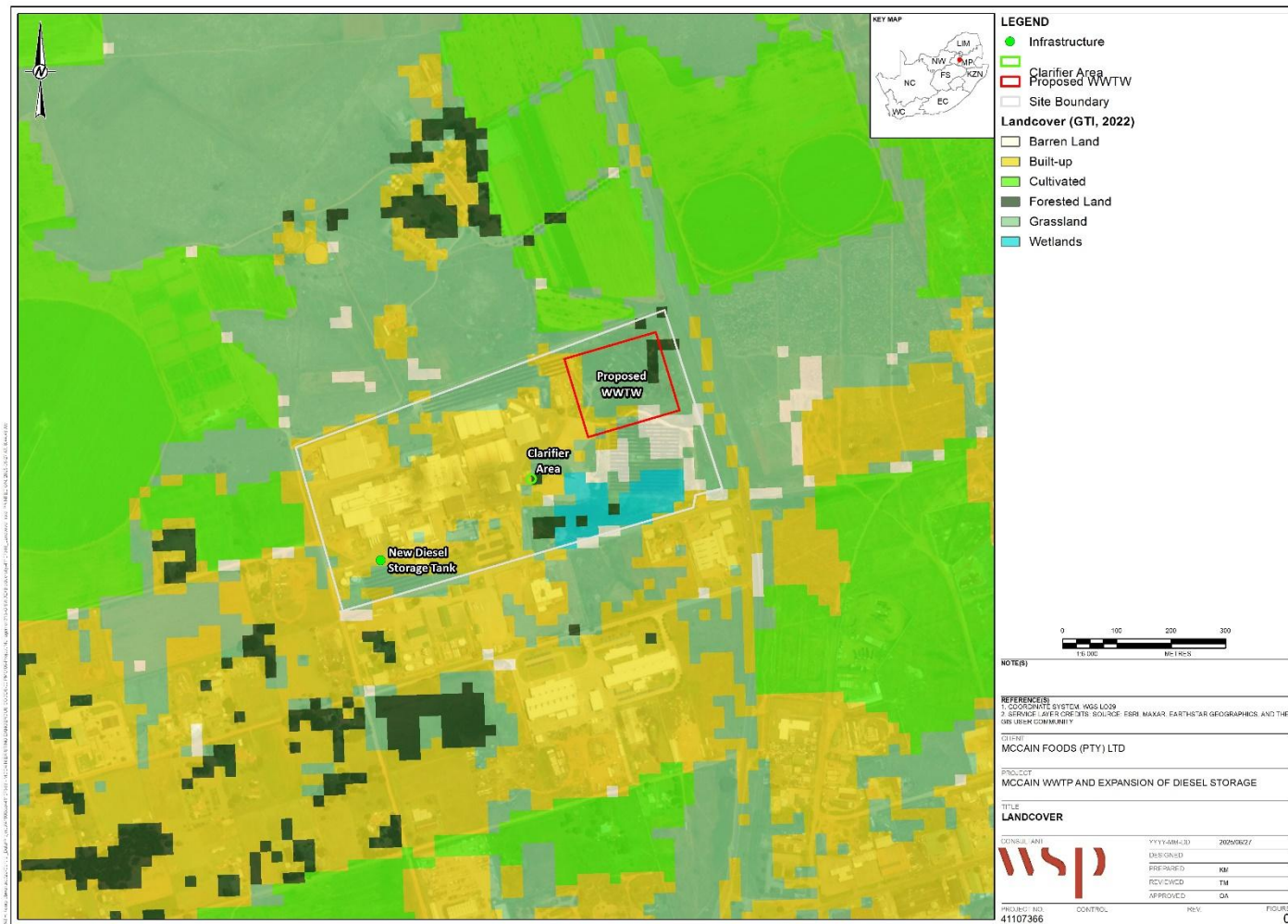


Figure 6-2 - Landcover dataset for Project area (GTI,2020)

### **6.1.2 PRIORITY AREAS FOR PROTECTED AREA EXPANSION**

The LSA does not coincide with areas that have been identified as Priority Focus Areas as part of the National Protected Area Expansion Strategy (2018) (Figure 6-3), which is aligned with the MBSP CBA's and ESAs (Figure 6-1).

### **6.1.3 PROTECTED AREAS**

No nationally protected areas are situated within the LSA, as described by the National Protected Areas Register (DFFE, 2022) (Figure 6-4).

### **6.1.4 KEY BIODIVERSITY AREAS**

As per communication from BirdLife South Africa (July 2024) it should be noted that IBAs are being replaced by Key Biodiversity Areas (KBAs).

KBAs are 'sites that contribute significantly to the global persistence of biodiversity', which means they are the most important places in the world for species and their habitats – whether these be in terrestrial, freshwater, estuarine or marine ecosystem (Key Biodiversity Areas, 2024).

The Global Standard for the Identification of Key Biodiversity Areas, published in 2016, sets out internationally agreed scientific criteria for the identification of KBAs worldwide. Sites qualify as global KBAs if they meet the specific standardised criteria and quantitative thresholds focused on one or more of five trigger aspects:

- Threatened biodiversity
- Geographically restricted biodiversity
- Ecological integrity
- Biological processes
- Irreplaceability through quantitative analysis

The closest KBA to the LSA is the Devon Grasslands Key Biodiversity Area (KBA ID100757) (Figure 6-5). The LSA and PAOI do not coincide with a KBA.

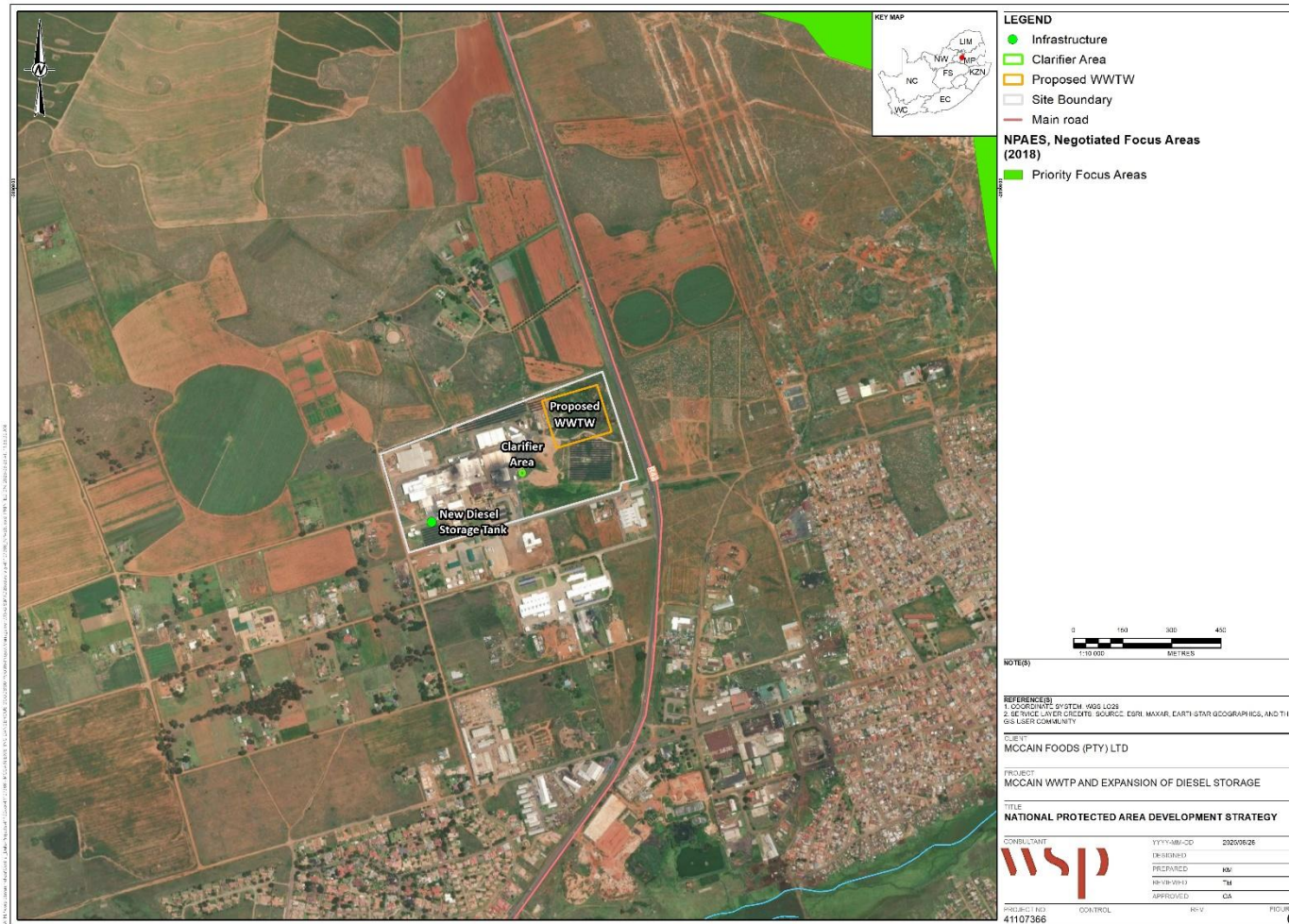


Figure 6-3 - LSA in relation to National Protected Area Expansion Strategy (2018)

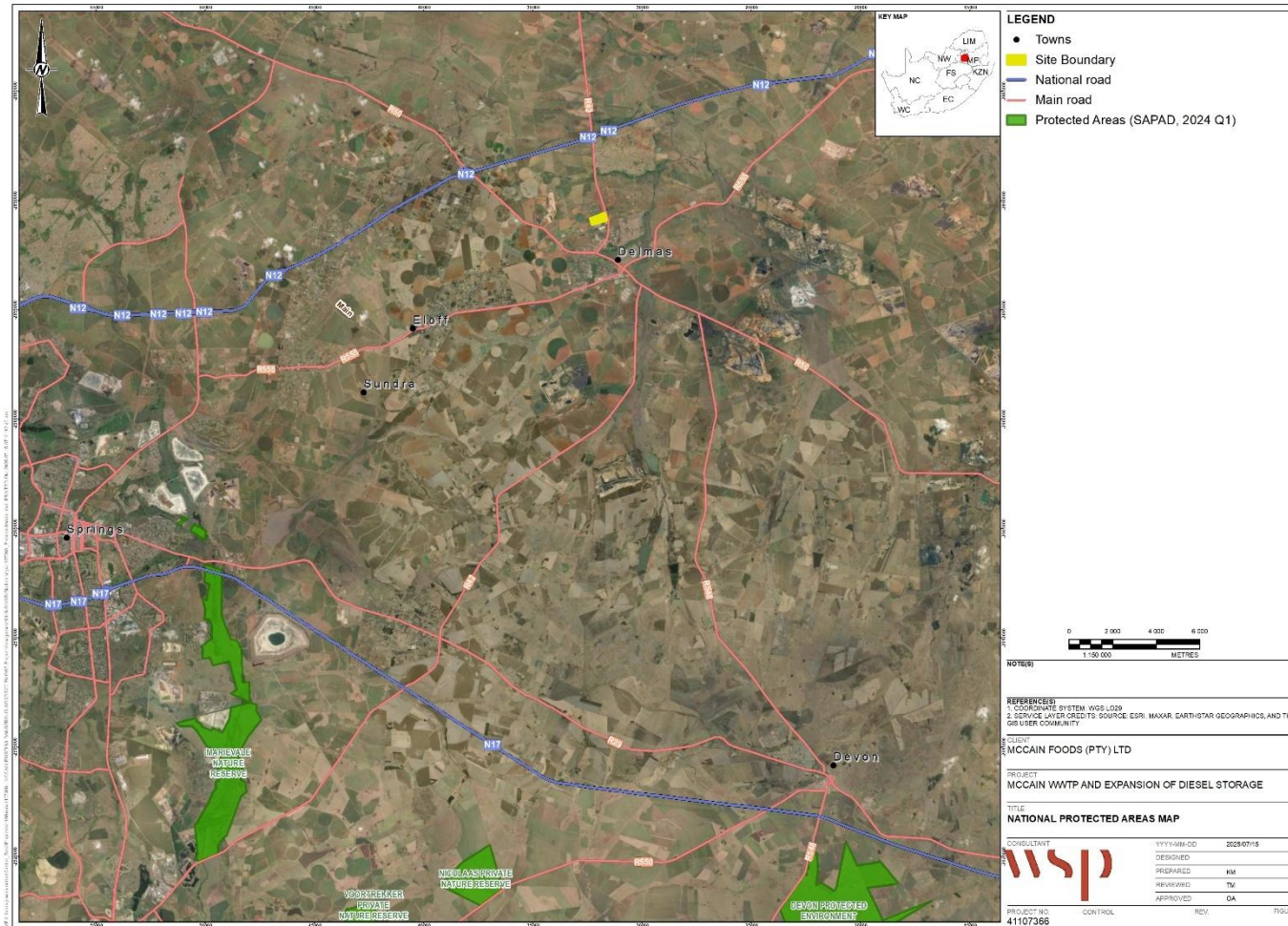


Figure 6-4 - LSA in relation to South African Protected Area Database (2023)

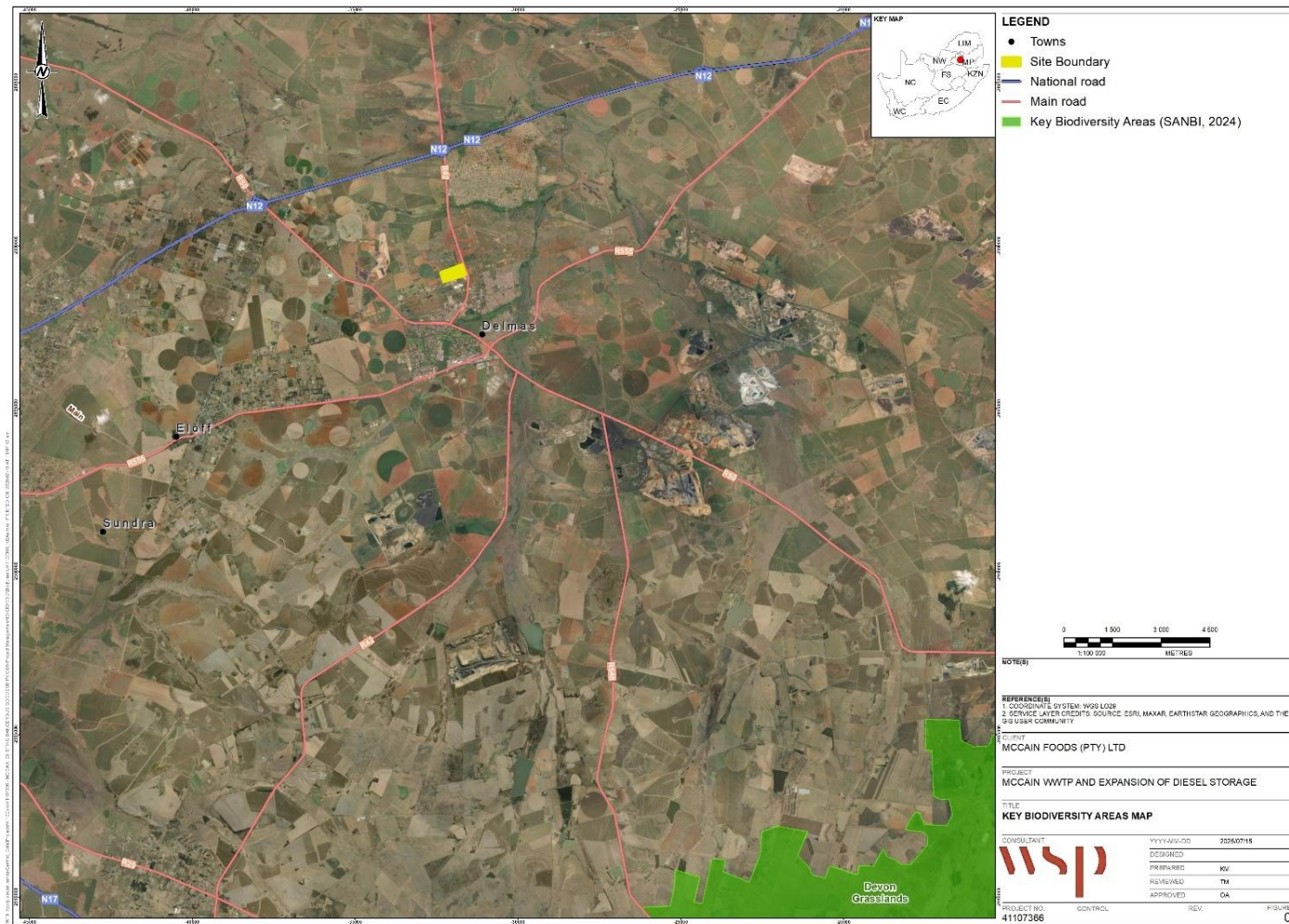


**Figure 6-5 - LSA in relation to Key Biodiversity Areas (2024)**

## 6.2 TERRESTRIAL VEGETATION AND FLORA

The LSA is situated within the Eastern Highveld Grassland (Gm12) vegetation type (Figure 6-9). This vegetation type is listed as Endangered (Figure 6-10), and is characterised by slightly to moderately undulating plains, including some low hills and pan depressions. The vegetation is a short dense grassland dominated by the usual highveld grass composition.

### 6.2.1 HABITAT DESCRIPTION AND EXISTING IMPACTS

Data collected during the field survey indicates that the proposed Project footprints have been subject to anthropogenic disturbance, mostly in the form of historic vegetation clearance, storage of construction rubble, and alien invasive plant (AIP) species infestation on the proposed WWTW footprint, and complete transformation to hard infrastructure and manicured lawns on the proposed diesel tank site. The vegetation and habitat units encountered are displayed in Figure 6-8.

The WWTW portion of the site remains under alien invasive plant cover, with little to no indigenous vegetation present. The central and eastern portion of the WWTW site includes building and construction rubble that was stored there during construction of the McCain Delmas facility and completely cleared of vegetation in 2016. The eastern section of the WWTW was not disturbed during this time but has regressed due to considerable AIP infestation.

The diesel tank storage area has been transformed since construction of the McCain Delmas facility and no natural vegetation remains here.

Vegetation structure in the more natural areas in general is low closed grassland (sensu. Edwards, 1983). Compositionally, compared to rehabilitated grasslands, previously cleared areas are limited in nutrients and thus floristically depauperate. Dominant grass species recorded in this unit during the field survey include the tall, robust thatching grasses *Hyparrhenia hirta* and *Chloris virgata*, and relict-pioneer and early-seral taxa such as *Eragrostis racemosa*, *Eragrostis curvula* and *Eragrostis plana*.

Forbs recorded include a mixture of indigenous and alien ruderal and weedy species, such as *Bidens pilosa*, *Campuloclinium macrocephalum*, *Conyza albida*, *Pseudognaphalium luteo-album*, *Rumex acetosella*, *Tagetes minuta*, *Verbena bonariensis* and *Solanum panduriforme*.

In terms of woody vegetation, aggregations of alien *Acacia mearnsii* trees were noted in areas of secondary grassland, as were scattered *Sesbania* shrubs. A full list of species recorded can be found in Appendix A.

Other prominent forms of existing disturbance on site include a gravel road that runs along the perimeter of the study area, which also serves as a fire break (Figure 6-6). The grassland habitat encountered in the study area is not used for any specific purpose such as livestock grazing and is therefore not managed accordingly.

The previously transformed areas are regarded as modified habitats. On-site grassland habitat is a secondary floral community, derived from the regeneration of disturbed areas.

The diesel storage tank storage area is completely transformed and is not representative of the natural state vegetation as described from a desktop perspective (Figure 6-7).

| WWTW                                                                               |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |
| North Corner                                                                       | Northeastern Corner                                                                 |
|  |  |
| Fire Break adjacent to the boundary wall                                           | AIPs on the previous dumping area                                                   |

**Figure 6-6 – Proposed WWTW site location**

| Diesel Storage Tank                                                                |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |
| Diesel Storage hard stand                                                          | Adjacent to hard stand                                                              |
|  |  |
| Current Diesel Storage on hard stand                                               | Walkway adjacent to hard stand                                                      |

**Figure 6-7 – Proposed Diesel Storage Tank location**

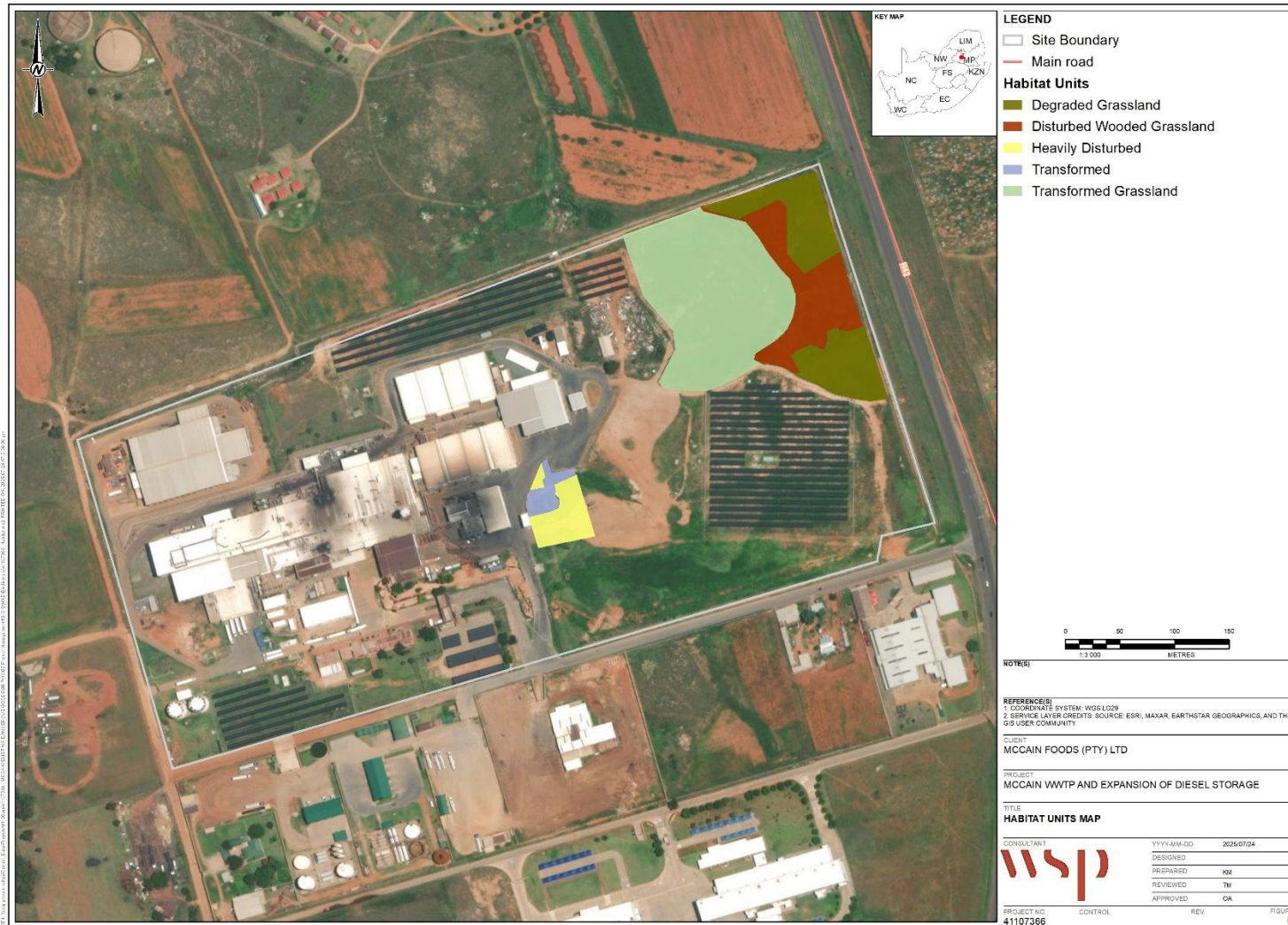


Figure 6-8 - Delineated Vegetation Units

### **6.2.2 VEGETATION AND FLORA FEATURES OF CONSERVATION CONCERN**

In light of the above-described condition of the site, for both those areas that have been completely transformed to infrastructure footprints and those still supporting disturbed and modified vegetation, it is confirmed that the study area does not support vegetation representative of the Endangered Eastern Highveld Grassland vegetation type. No plant SCCs were confirmed during the site survey, and the largely modified and disturbed nature of the site renders it unlikely to support any plant SCCs. Therefore, habitat within the LSA is considered to be of low and very low sensitivity.

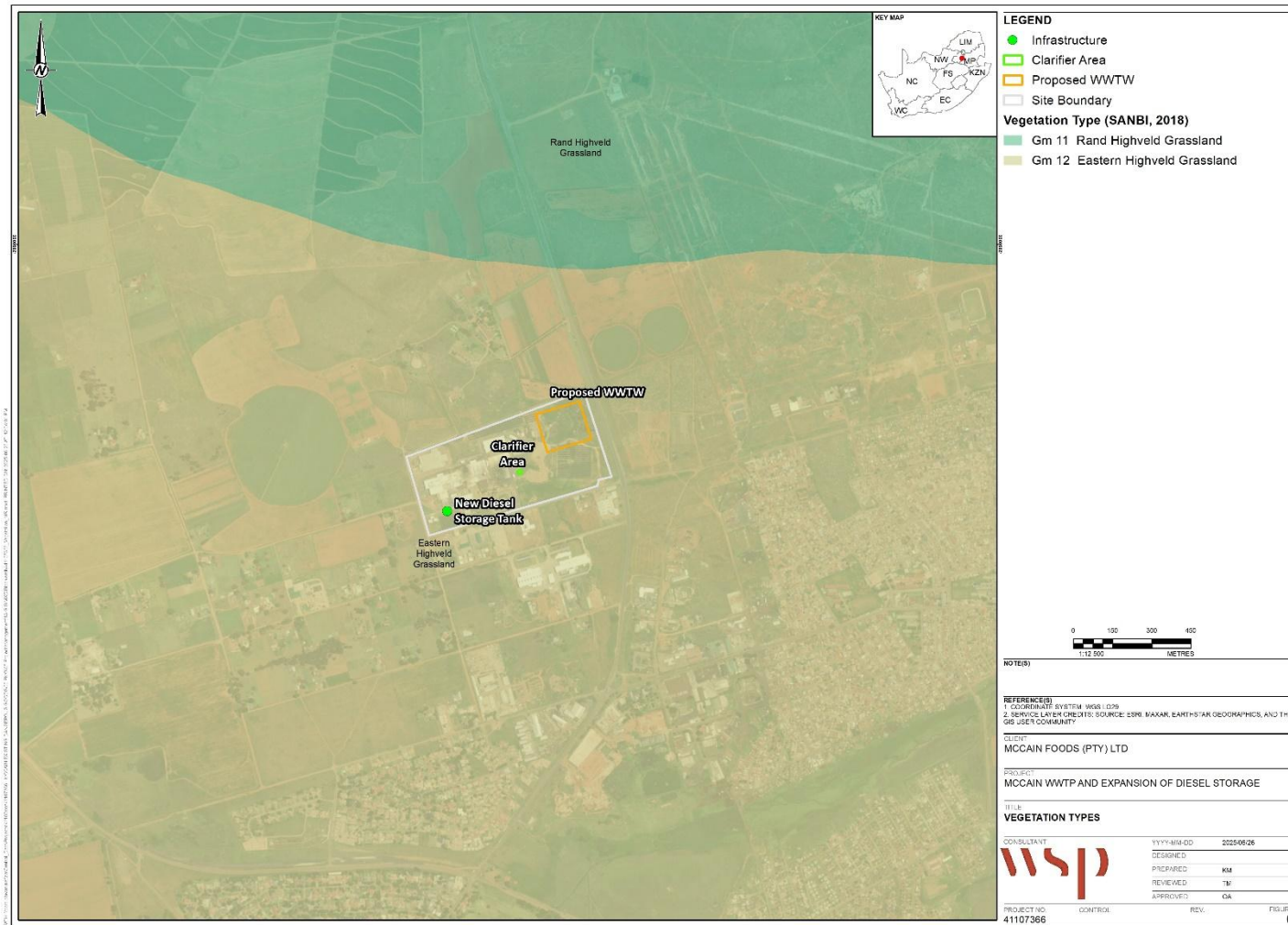


**Figure 6-9 - LSA in relation to National Vegetation Types**

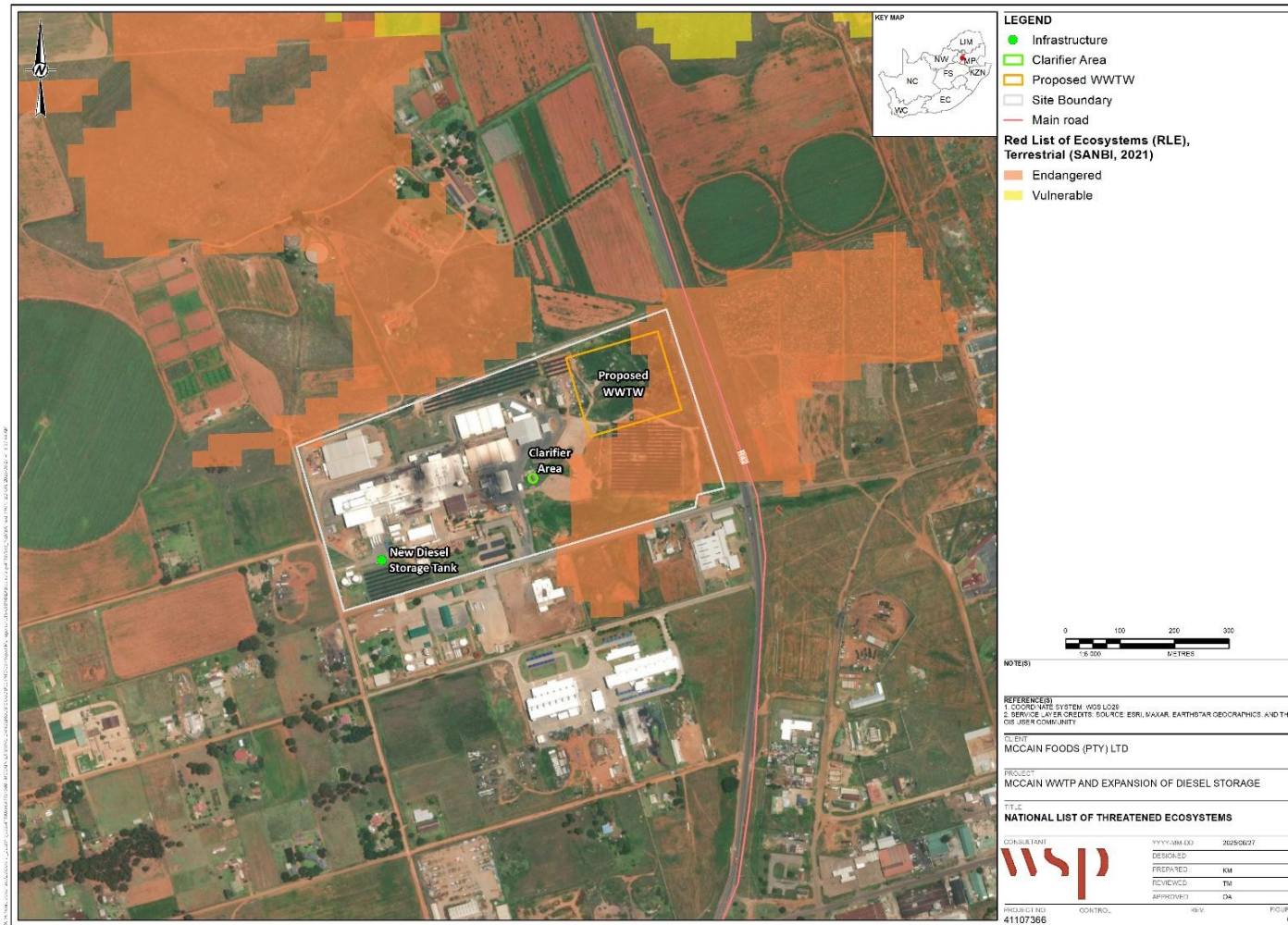


**Figure 6-10 - LSA in relation to National Threatened Ecosystems**

## 6.3 FAUNA

The current habitat condition encountered within the LSAs and PAOI has resulted in limited habitat corridors, connectivity or habitat refugia availability for fauna. The PAOI (McCain Delmas property) is also walled off from the surrounding landscape for security reasons, thereby limiting potential utilisation of the site by many faunal species. Vegetation is present in the form of a disturbed, wooded grassland patch that was noted to support nesting avifauna. However, none of the species recorded on site are of conservation concern and it is highly unlikely that SCCs would occur in the LSA given the lack of suitable habitat, and matrix of anthropogenic activities and impacts present.

### 6.3.1 MAMMALS

No mammal species were recorded during the site visit, which is attributed to the isolated and impacted nature of the study area. The screening tool highlighted the potential presence of three mammalian SCCs, which are discussed below. The desktop analysis did not highlight the potential presence of any additional mammalian SCCs.

#### Makwassie Musk Shrew (*Crocidura maquassiensis*)

This is a rare species endemic to South Africa, Swaziland and Zimbabwe, existing in moist grassland habitats in the Savannah and Grassland biomes. Although it has a wide inferred extent of occurrence, it appears to be patchily distributed. Wetlands are used as a proxy for suitable habitat and calculate the amount of natural habitat remaining within buffer strips around wetlands as the inferred area of occupancy (AOO), which yields a range of 1,790–2,089 km<sup>2</sup> (32 m buffer strip). We suspect that these habitat patches are severely fragmented as shrews have a poor dispersal ability, and continuing rates of urban and rural expansion (highest rates are 15% and 9%, respectively, in Limpopo Province) may have increased overgrazing and water abstraction, which may reduce the suitability of patches and the corridors between them. This species was not encountered during the field visit and is unlikely to occur in the PAOI due to the current state of the available habitat, the levels of ongoing disturbance, and the lack of suitable wetland habitat.

#### Roberts's Water Rat (*Dasymys robertsii*)

These species have been recorded from a wide variety of habitats, including forest and savannah, swampland and grasslands, but they rely on intact wetlands in these areas. They have not been recorded from agricultural landscapes or dam areas. They occur specifically in reed beds and among semi-aquatic grasses in wetlands or swampy areas or along rivers and streams, as well as in grassy areas close to water wherein they co-occur with *Otomys* spp. (Skinner and Chimimba 2005). This species was not encountered during the field visit and is unlikely to occur in the PAOI due to the current state of the available habitat, the levels of ongoing disturbance, and the lack of suitable wetland habitat.

#### Rough-haired Golden Mole (*Chrysospalax villosus*)

Found on sandy soils in grasslands, meadows and along edges of marshes in Savanna and Grassland biomes of South Africa. Recorded from gardens and parklands, also found in dense stands of kikuyu grass (*Pennisetum clandestinum*) and marginally on golf courses adjoining natural grasslands. This species was not encountered during the field visit and is unlikely to occur in the PAOI due to the current state of the available habitat, the levels of ongoing disturbance, and the lack of suitable wetland habitat.

### 6.3.2 AVIFAUNA

The avifauna species recorded during the site visit are displayed in Table 6-1 below. No SCCs were recorded.

The screening tool indicated the potential presence, based on habitat suitability modelling, of *Eupodotis senegalensis* (White Bellied Bustard), a nationally Vulnerable, and internationally Least Concern listed species. White-bellied Bustards inhabit open grasslands, savannahs, and lightly wooded areas across sub-Saharan Africa. They are found from Senegal, east to Ethiopia and south to Tanzania and northern Mozambique. These birds prefer areas with short grass and scattered trees or bushes. They are non-migratory, maintaining year-round territories in suitable habitats throughout their range. The specific habitat required by the White Bellied Bustard is not present on site and no evidence was found to suggest their presence.

**Table 6-1 - Animal species recorded during the field visit**

| Species Name           | Common Name                | Conservation Status (SANBI) |
|------------------------|----------------------------|-----------------------------|
| Blacksmith Lapwing     | <i>Vanellus armatus</i>    | Least Concern               |
| Hardeda Ibis           | <i>Bostrychia hagedash</i> | Least Concern               |
| Southern Masked Weaver | <i>Ploceus velatus</i>     | Least Concern               |
| Red-faced mousebird    | <i>Urocolius indicus</i>   | Least Concern               |
| Red-chested Cuckoo     | <i>Cuculus solitarius</i>  | Least Concern               |
| House sparrow          | <i>Passer domesticus</i>   | Least Concern               |
| Dark capped Bulbul     | <i>Pycnonotus tricolor</i> | Least Concern               |
| Southern Red bishop    | <i>Euplectes orix</i>      | Least Concern               |

### 6.3.3 HERPETOFAUNA

No reptile or amphibian species were recorded during the site visit, likely due, in part, to the isolated and impacted nature of the study area, as well as the lack of suitable habitat. No herpetofauna SCC were flagged by the screening tool as having a probability of occurring in the LSA.

### 6.3.4 INVERTEBRATES

The winter timing of the survey did not coincide with the most suitable times for most invertebrate species activity. For this reason, the only species that was considered during the field visit was the *Clonia* species highlighted by the screening report.

Uvarov's *Clonia* is a species of Orthoptera in the family Tettigoniidae. The threat status of Uvarov's *Clonia* (*Clonia uvarovi*) is Vulnerable under criterion B1. It's extent of occurrence is relatively small (~5,000 km<sup>2</sup>), it has only been recorded in five locations from Gauteng and North-West Provinces, and the area, extent and quality of its habitat are expected to be in decline due to grazing pressure, cultivation, urban development, invasive alien plants and climate change. Furthermore, this species is not known to occur in any protected areas. This species inhabits tall woodland savannah. This habitat type is absent from the PAOI; therefore, the site is not expected to support this invertebrate species.

## 6.4 EXISTING IMPACTS ON BIODIVERSITY AND DRIVERS OF CHANGE

The LSA and PAOI have been significantly transformed through past, and ongoing, disturbance. They also exist within a landscape that has been largely transformed due to agricultural activities (conversion to cultivated lands), and urban and pre-urban expansion. These land use changes have resulted in a loss of natural vegetation and habitat, and in conjunction with infrastructure such as roads, powerlines, and property boundary fences/walls, etc., have caused habitat fragmentation, and create barriers to faunal movement. Ongoing development also has indirect impacts on remaining natural, adjacent areas, such as air and water pollution. These local and landscape level changes reduce habitat availability and the quality and suitability of remaining habitats.

## 7 SITE SENSITIVITY VERIFICATION

Based on the outcomes of the desktop assessment and field survey, it is the opinion of the specialist that the land is low sensitivity for terrestrial biodiversity features, including animal and plant species, as per Table 7-1 and Figure 7-1. A full Terrestrial Biodiversity Assessment is therefore NOT required for these aspects of Terrestrial Biodiversity.

Since the proposed project infrastructure and activities, and the anticipated area of influence for terrestrial biodiversity receptors, are situated within areas that are of low sensitivity further to the verification process conducted as part of this study, a terrestrial biodiversity compliance statement (inclusive of animal and plant species) is therefore motivated. There is no restriction to development of the WWTW Facility or the Diesel storage tank. It is nevertheless essential that all the recommended mitigation and management measures (Section 8.1) be strictly implemented to ensure that any potential impacts to sensitive species or habitats resulting from the proposed activities are avoided/minimised.

**Table 7-1 – Site sensitivity verification results**

| Environmental Theme      | DFFE Screening Tool Sensitivity | Specialist Sensitivity Verification                                                                                                                                                      | Applicable Protocol                           |
|--------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Terrestrial Biodiversity | <b>Very high</b>                | <b>Low</b> sensitivity due to the dominant presence of modified habitats and the confirmed absence of vegetation representative of Vulnerable Eastern Highveld Grassland vegetation type | Terrestrial Biodiversity Compliance Statement |
| Animal Species           | <b>Medium</b>                   | <b>Low</b> sensitivity due to disturbed nature of a large part of the site and lack of suitable habitat for SCCs                                                                         | Animal Species Compliance Statement           |
| Plant Species            | <b>Medium</b>                   | <b>Low</b> sensitivity due to disturbed nature of a large part of the site and lack of suitable habitat for SCCs                                                                         | Plant Species Compliance Statement            |

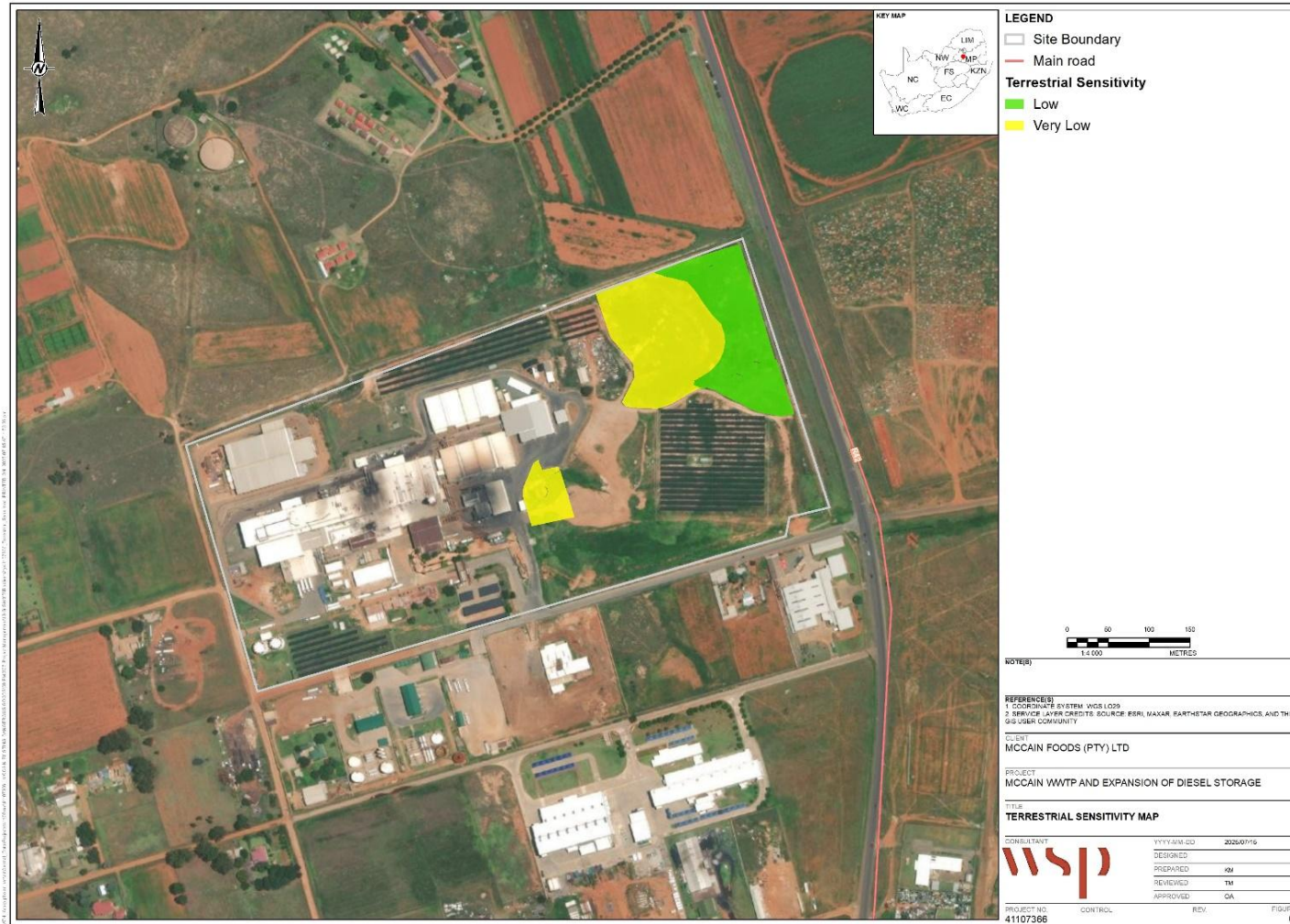


**Figure 7-1 - Terrestrial Ecology (Inclusive of Animal and Plant sp.) sensitivity mapping**

## 8 PROPOSED IMPACT MANAGEMENT ACTIONS AND MONITORING REQUIREMENTS

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Although the project area is of low sensitivity in terms of the presence of any intact, natural habitats or vegetation of importance, or the support of plant and animal species of conservation concern, certain aspects of the Project have the potential to impact any species utilising the area. Potential impacts include:

- Direct loss and disturbance of remaining habitat;
- Further establishment and spread of alien and invasive species; and
- Injury and mortality of faunal species.

Given the low sensitivity of the terrestrial biodiversity, and plant and animal species receptors, these impacts have been assigned low significance, both with and without mitigation and management. However, management actions are recommended to ensure that the impact of the project activities on species and remaining habitats is minimised.

The impact assessment approach and formal impact assessment outcomes that confirm the LOW significance of impact to terrestrial biodiversity, plant and animal species can be found in Appendix B.

### 8.1 RECOMMENDED IMPACT MANAGEMENT ACTIONS

The following impact management actions are recommended:

- Avoid undisturbed areas, to the extent possible. Vegetation clearing should be restricted to the proposed project footprints only, with no clearing permitted outside of these areas.
- Install erosion prevention measures prior to the onset of construction activities. Measures should include sediment barriers along the lower edge of bare soil areas, and re-vegetation of disturbed areas as soon as possible.
- High rainfall periods (usually November to March) should be avoided during the construction phase to avoid increased surface runoff leading to erosion that may modify the remaining habitat on site.
- An alien and invasive species management plan should be developed for the Project, which includes details of strategies and procedures that must be implemented on site to control the spread of alien and invasive species. A combined approach using both chemical and mechanical control methods, with periodic follow up treatments informed by regular monitoring, is recommended.
- Existing stands of alien and invasive species should be removed from the Project area prior to commencement of construction.
- It is recommended that a speed limit of 40 km/h is implemented on all maintenance roads running through the study area to minimise risk to fauna from vehicles.
- Ensure that all waste material is removed.
- All disturbed areas are to be rehabilitated and reseeded where necessary.
- A record of fauna mortalities/injury due to interactions with Project infrastructure/activities should be kept on site and regularly reviewed to inform the need for implementation of any additional mitigation measures.

## 9 CONCLUSIONS

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The following conclusions can be made:

- Due to the Very High and Medium terrestrial biodiversity, plant theme and animal theme sensitivities respectively identified for the development footprint at a desktop level and confirmed to be Low through the site survey, this report serves as a compliance statement, in accordance with the gazetted requirements for Terrestrial Biodiversity Specialist Assessment (Notice No.320 and 1150 Government Gazette 43110 of March 2020) and Plant and Animal Theme Specialist Assessment (Notice No.1150 Government Gazette 43855 of October 2020).
- This compliance statement is applicable to the study area as described in the EIA documentation and detailed in this report.
- Due to its transformed and degraded habitat and lack of very high sensitivity features, the study area is of a low sensitivity for terrestrial ecosystems, plants and animals.
- The proposed development will not have a significant impact on sensitive terrestrial ecosystems, assuming that the proposed impact management actions are integrated into the project's EMP and implemented to avoid the risk.

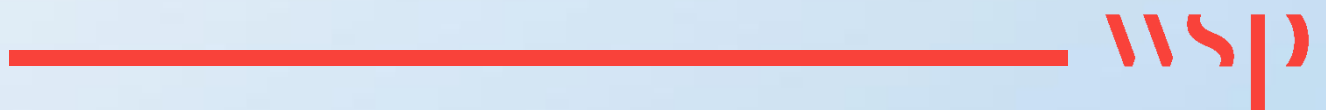
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# Appendix A

## **PLANT SPECIES RECORDED**

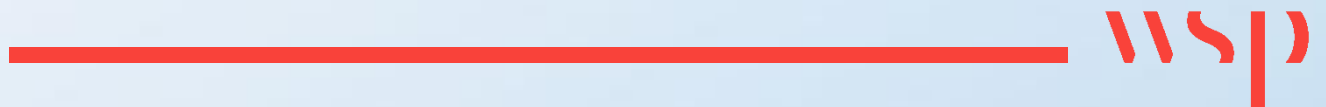


## PLANT SPECIES RECORDED

| Scientific Name                     | Common Name                    | Ecological Status                 | Form  |
|-------------------------------------|--------------------------------|-----------------------------------|-------|
| <i>Acacia mearnsii</i>              | Black Wattle                   | Alien Invasive                    | Tree  |
| <i>Amaranthus hybridus</i>          | Pigweed                        | Alien Invasive                    | Herb  |
| <i>Andropogon appendiculatus</i>    | Vlei Bluestem                  | Decreaser - Climax                | Grass |
| <i>Berkheya setifera</i>            | Buffalo-tongue Berkheya        | Medicinal                         | Herb  |
| <i>Berkheya speciosa</i>            | -                              | Medicinal                         | Herb  |
| <i>Berkheya umbellata</i>           | -                              | Traditional                       | Herb  |
| <i>Bidens pilosa</i>                | Common Black-jack              | Alien Invasive                    | Herb  |
| <i>Brachiaria brizantha</i>         | Common signal grass            | Climax Increaser 1                | Grass |
| <i>Campuloclinium macrocephalum</i> | Pompom Weed                    |                                   | Herb  |
| <i>Cenchrus ciliaris</i>            | Foxtail Buffalo grass          | Subclimax climax Decreaser        | Grass |
| <i>Chloris virgata</i>              | Feather top chloris            | Pioneer increaser 2               | Grass |
| <i>Cirsium vulgare</i>              | Scotch Thistle                 | Alien Invasive 1                  | Herb  |
| <i>Conyza albida</i>                | Tall fleabane                  | Alien Invasive                    | Shrub |
| <i>Datura ferox</i>                 |                                | Alien invasive 1                  | Shrub |
| <i>Flax-leaf fleabane</i>           | Flax-leaf fleabane             | Alien Invasive                    | Herb  |
| <i>Cortaderia selloana</i>          | -                              | Alien invasive 1                  | Grass |
| <i>Cosmos bipinnatus</i>            | Cosmos                         | Alien Invasive                    | Shrub |
| <i>Cymbopogon plurinodis</i>        | Narrow-leaved Turpentine Grass | Increaser 3 - Climax              | Grass |
| <i>Cynodon dactylon</i>             | Couch Grass                    | Increaser 2 - Pioneer             | Grass |
| <i>Digitaria eriantha</i>           | Common Finger Grass            | Decreaser - Climax                | Grass |
| <i>Eragrostis curvula</i>           | Weeping Love Grass             | Increaser 2 - Subclimax to climax | Grass |
| <i>Eragrostis racemosa</i>          | Narrow Heart Love Grass        | Increaser 2 - Subclimax           | Grass |
| <i>Eragrostis plana</i>             |                                |                                   | Grass |
| <i>Gomphocarpus fruticosus</i>      | Milkweed                       | Alien Invasive                    | Herb  |
| <i>Hyparrhenia hirta</i>            | Common Thatching Grass         | Increaser 1 - Subclimax to climax | Grass |
| <i>Pennisetum sphacelatum</i>       | Bull Grass                     | Climax Decreaser                  | Grass |
| <i>Persicaria lapathifolia</i>      | Spotted Knotweed               | Alien Invasive                    | Herb  |
| <i>Pseudognaphalium luteo-album</i> |                                |                                   |       |
| <i>Rumex acetosella</i>             |                                |                                   |       |
| <i>Persicaria serrulata</i>         | Knotweed/Snake Root            | Alien Medicinal                   | Herb  |
| <i>Solanum panduriforme</i>         | Yellow Bitter-apple            | Medicinal Weed                    | Shrub |
| <i>Sporobolus africanus</i>         | Rattail dropseed               | Subclimax increaser 3             | Grass |
| <i>Tephrosia purpurea</i>           | Silver Tephrosia               | Medicinal                         | Herb  |
| <i>Themeda triandra</i>             | Red Grass                      | Decreaser - Climax                | Grass |
| <i>Verbena bonariensis</i>          | Tall Verbena                   | Alien invasive                    | Shrub |

# Appendix B

## **IMPACT ASSESSMENT METHODOLOGY AND OUTCOME**



## METHODOLOGY

| Criteria                      | Number of Points to Score |            |             |           |               |
|-------------------------------|---------------------------|------------|-------------|-----------|---------------|
|                               | Score 1                   | Score 2    | Score 3     | Score 4   | Score 5       |
| Impact Magnitude (M)          | Very low                  | Low        | Medium      | High      | Very high     |
| Impact Extent (E)             | Site only                 | Local      | Regional    | National  | International |
| Impact Reversibility (R)      | Reversible                |            | Recoverable |           | Irreversible  |
| Impact Duration (D)           | Immediate                 | Short Term | Medium term | Long term | Permanent     |
| Probability of Occurrence (P) | Improbable                | Low        | Medium      | High      | Definite      |

| Based on impact significance criteria determined by DEAT, 1998                                                                                             |                                                           |                                           |                                                         |                                                 |                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|---------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|
| CRITERIA                                                                                                                                                   | SCORE 1                                                   | SCORE 2                                   | SCORE 3                                                 | SCORE 4                                         | SCORE 5                                                 |
| <b>Impact Magnitude (M)</b><br>The degree of alteration of the affected environmental receptor                                                             | Very low                                                  | Low                                       | Medium                                                  | High                                            | Very high                                               |
| <b>Impact Extent (E)</b><br>The geographical extent of the impact on a given environmental receptor                                                        | <b>Site:</b><br><br>Site only                             | <b>Local:</b><br><br>Inside activity area | <b>Regional:</b><br><br>Outside activity area           | <b>National:</b><br><br>National scope or level | <b>International:</b><br>Across borders or boundaries   |
| <b>Impact Reversibility (R)</b><br>The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change | <b>Reversible:</b><br><br>Recovery without rehabilitation |                                           | <b>Recoverable:</b><br><br>Recovery with rehabilitation |                                                 | <b>Irreversible:</b><br><br>Not possible despite action |
| <b>Impact Duration (D)</b><br>The length of permanence of the impact on the environmental receptor                                                         | <b>Immediate:</b><br><br>On impact                        | <b>Short term:</b><br><br>0-5 years       | <b>Medium term:</b><br><br>5-15 years                   | <b>Long term:</b><br><br>Project life           | <b>Permanent:</b><br><br>Indefinite                     |
| <b>Probability of Occurrence (P)</b><br>The likelihood of an impact occurring in the absence of pertinent environmental management measures or mitigation  | Improbable                                                | Low Probability                           | Probable                                                | Highly Probably                                 | Definite                                                |
| ENVIRONMENTAL SIGNIFICANCE = (MAGNITUDE + EXTENT + REVERSIBILITY + DURATION) x PROBABILITY                                                                 |                                                           |                                           |                                                         |                                                 |                                                         |
| <b>TOTAL SCORE</b>                                                                                                                                         | 4 to 15                                                   | 16 to 30                                  | 31 to 60                                                | 61 to 80                                        | 81 to 100                                               |
| <b>ENVIRONMENTAL SIGNIFICANCE RATING</b>                                                                                                                   | Very low                                                  | Low                                       | Moderate                                                | High                                            | Very High                                               |

## IMPACT ASSESSMENT OUTCOMES

| Impact number | Aspect                            | Description                                                                    | Stage                       | Character | Ease of Mitigation | Pre-Mitigation |    |    |     |    |    |        | Post-Mitigation |    |    |     |    |    |        |
|---------------|-----------------------------------|--------------------------------------------------------------------------------|-----------------------------|-----------|--------------------|----------------|----|----|-----|----|----|--------|-----------------|----|----|-----|----|----|--------|
|               |                                   |                                                                                |                             |           |                    | (M+            | E+ | R+ | D)x | P= | S  | Rating | (M+             | E+ | R+ | D)x | P= | S  | Rating |
| Impact 1:     | Vegetation Clearing               | Loss of modified habitat for commonly occurring fauna and flora                | Construction                | Negative  |                    | 2              | 1  | 1  | 2   | 3  | 18 | N2     | 2               | 1  | 1  | 2   | 3  | 18 | N2     |
| Significance  |                                   |                                                                                |                             |           |                    | N2 - Low       |    |    |     |    |    |        | N2 - Low        |    |    |     |    |    |        |
| Impact 2:     | Vegetation Clearing               | Faunal Mortality                                                               | Construction                | Negative  |                    | 2              | 1  | 1  | 3   | 3  | 21 | N2     | 2               | 1  | 1  | 3   | 3  | 21 | N2     |
| Significance  |                                   |                                                                                |                             |           |                    | N2 - Low       |    |    |     |    |    |        | N2 - Low        |    |    |     |    |    |        |
| Impact 3:     | Vegetation Clearing               | Spread of Alien Invasive Plant species                                         | Construction                | Negative  |                    | 2              | 1  | 1  | 3   | 3  | 21 | N2     | 2               | 1  | 1  | 3   | 4  | 28 | N2     |
| Significance  |                                   |                                                                                |                             |           |                    | N2 - Low       |    |    |     |    |    |        | N2 - Low        |    |    |     |    |    |        |
| Impact 3:     | Operation of Infrastructure       | Continued Spread of Alien Invasive Plant species                               | Operational                 | Negative  |                    | 2              | 1  | 1  | 3   | 3  | 21 | N2     | 2               | 1  | 1  | 3   | 3  | 21 | N2     |
| Significance  |                                   |                                                                                |                             |           |                    | N2 - Low       |    |    |     |    |    |        | N2 - Low        |    |    |     |    |    |        |
| Impact 4:     | Operation of Infrastructure       | Further disturbance of modified habitat for commonly occurring fauna and flora | Operational                 | Negative  |                    | 2              | 1  | 1  | 3   | 3  | 21 | N2     | 2               | 1  | 1  | 3   | 3  | 21 | N2     |
| Significance  |                                   |                                                                                |                             |           |                    | N2 - Low       |    |    |     |    |    |        | N2 - Low        |    |    |     |    |    |        |
| Impact 5:     | Closure/Removal of Infrastructure | Spread of Alien Invasive Plant species                                         | Closure and Decommissioning | Negative  |                    | 2              | 1  | 1  | 2   | 3  | 18 | N2     | 2               | 1  | 1  | 2   | 3  | 18 | N2     |
| Significance  |                                   |                                                                                |                             |           |                    | N2 - Low       |    |    |     |    |    |        | N2 - Low        |    |    |     |    |    |        |



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