

Appendix G.3

TERRESTRIAL BIODIVERSITY (INCLUDING PLANT AND ANIMAL SPECIES) SCOPING REPORT





Sasol South Africa Pty Ltd

TERRESTRIAL BIODIVERSITY (INCL. ANIMAL AND PLANT SPECIES THEMES) SCOPING REPORT

Sasol Gas-to-Power Facility





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Sasol Gas-to-Power Facility

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LIST OF ABBREVIATION

Abbreviation	Full name
CBA	Critical Biodiversity Area
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EMPr	Environmental Management Programme
ESA	Ecological Support Area
IBL	Inside Battery Limit
IBA	Important Bird Areas
IHI	Index for Habitat Integrity
IUCN	International Union for Conservation of Nature
LNG	Liquefied Natural Gas
KBA	Key Biodiversity Areas
MBSP	Mpumalanga Biodiversity Sector Plan
MRG	Methane Rich Gas
NEM:BA	National Environmental Management: Biodiversity Act
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecological Priority Areas
OBL	Outside Battery Limit
ONA	Other Natural Areas
PA	Protected Areas
SABAP	Southern African Bird Atlas Project
SANBI	South African National Biodiversity Institute
SASS5	South African Scoring System version 5
SCC	Species of Conservation Concern
SSV	Site Sensitivity Verification
ToPS	Threatened or Protected Species
VU	Vulnerable
WSP	WSP Group Africa

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SPECIALIST DECLARATION

DECLARATION OF INDEPENDENCE BY SPECIALIST

I, Mandlenkosi Nkala, 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.

DECLARATION OF INDEPENDENCE BY SPECIALIST

I, Sandhya Moodley, 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.

DECLARATION OF INDEPENDENCE BY SPECIALIST

I, Rudolph Greffrath, 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.

1 INTRODUCTION

WSP Group Africa (WSP) has been appointed by Sasol South Africa Pty Ltd to undertake the required specialist assessments in support of the scoping, baseline and impact assessment phases of the environmental regulatory process for the proposed Gas-to-Power Facility. The proposed project is located at the Sasol Secunda Operations in Mpumalanga, South Africa.

1.1 PURPOSE OF THE REPORT

This report presents the baseline terrestrial biodiversity of the study area, with specific consideration of the terrestrial biodiversity, animal species and plant species environmental themes. The report further documents the findings of the Site Sensitivity Verification (SSV) undertaken to verify the environmental sensitivities identified by the National Web-Based Environmental Screening Tool and to assess the potential impacts associated with the proposed development on the receiving terrestrial environment.

The assessment has been undertaken in accordance with the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity (Government Notice No. 320, Government Gazette No. 43110 of 20 March 2020) and the Protocols for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Animal Species and Plant Species (Government Notice No. 1150, Government Gazette No. 43855 of 30 October 2020), promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

The findings of this assessment will inform the Scoping and Environmental Impact Assessment process and will be submitted in support of the application for Environmental Authorisation in accordance with the Environmental Impact Assessment Regulations, 2014 (as amended).

1.2 PROJECT LOCATION AND EXTENT

This proposed project footprint for the Secunda Gas to Power facility is located at the Sasol Secunda Operations in the Govan Mbeki Municipality, within the Gert Sibande District Municipality, in the Mpumalanga province, South Africa (Figure 1-1).

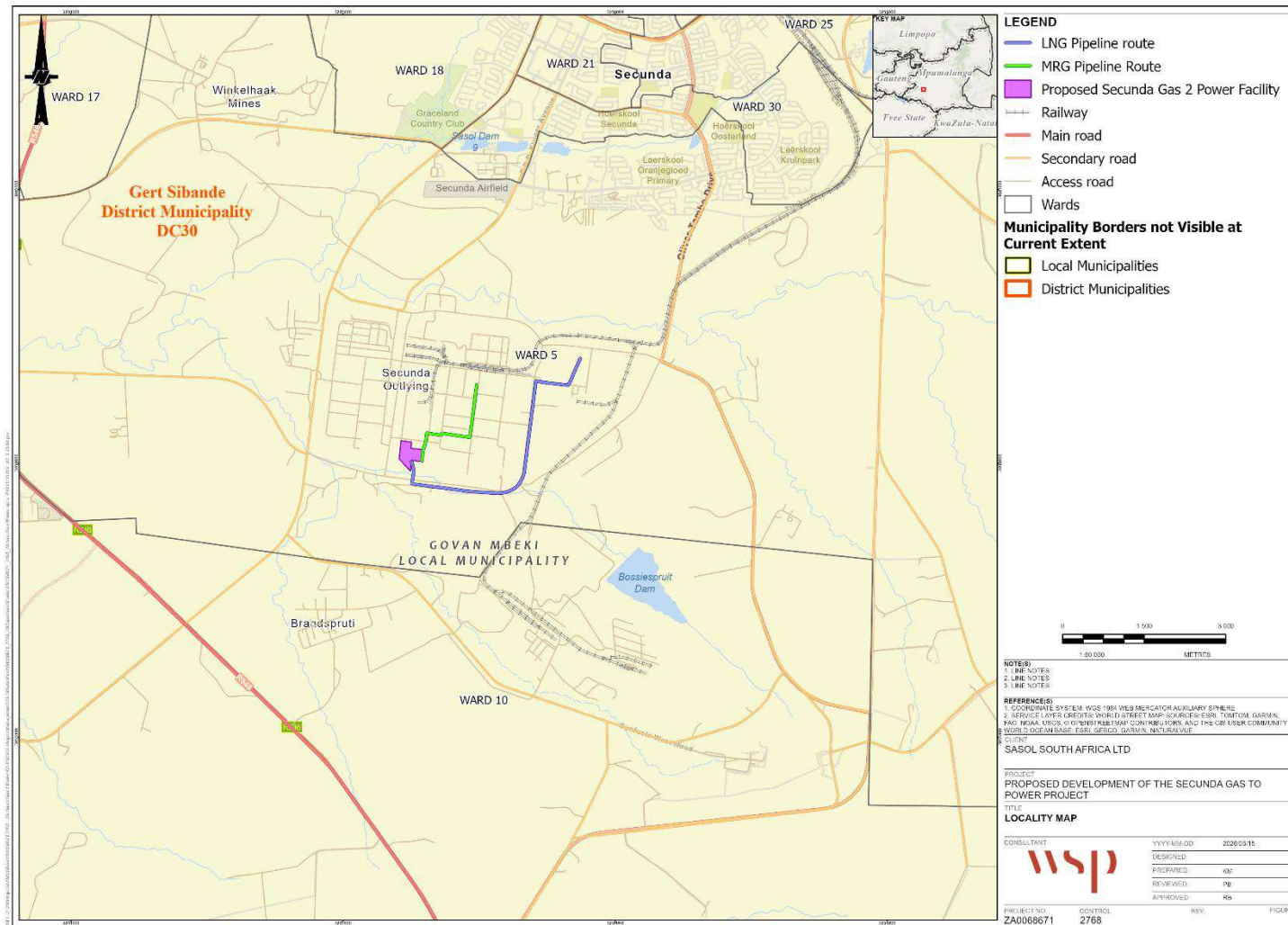


Figure 1-1 - Project locality and layout

1.3 PROJECT DESCRIPTION

The Secunda Gas-to-Power project aims to generate electricity through Liquefied Natural Gas (LNG) (methane rich gas being considered as back-up feed), with the objective to provide power to the national grid, supporting South Africa's growing energy needs.

The Inside Battery Limit (IBL) scope includes the main equipment for generating electricity, which will be proposed by the vendor. The Outside Battery Limit (OBL) scope will focus on the external infrastructure and utilities required to support the Secunda Gas to Power Project (integration into the Secunda facility). The electrical scope will cover the reconfiguration of the electrical network. The installation of transmission lines, along with the routing of high-voltage cables through existing servitudes, will also be considered.

In addition to the electrical work, the OBL scope will involve the installation and routing of various pipelines. These will include pipelines for LNG, Methane Rich Gas (MRG) and any required utilities such as cooling water, raw water, firewater, instrument air, and any effluent. Depending on the IBL requirements, raw water treatment will also be included to achieve the necessary water quality specifications.

An overview of the proposed Gas-to-Power facility configuration is provided in Figure 1-2 below. Currently two configurations are being evaluated, open cycle gas turbines indicated in blue and combined cycle gas turbines indicated in blue, yellow and red.

Figure 1-2 illustrates the possible pipe routings of the LNG from the pressure protection station to the brownfield plot as proposed by the Gas Infrastructure team. There are two routings being considered: one through the primary area and the other in the secondary area around the south eastern side of the factory. The final pipe routing will be selected as the project develops.

The MRG routing for the east and west identified during the screening activities is also shown in Figure 1-2. The pipe routing is from Gas Circuit to the brownfield site and runs through the primary area. This proposed pipe routing might change if an alternate routing is identified. Both east and west MRG pipe routings still need to be confirmed.

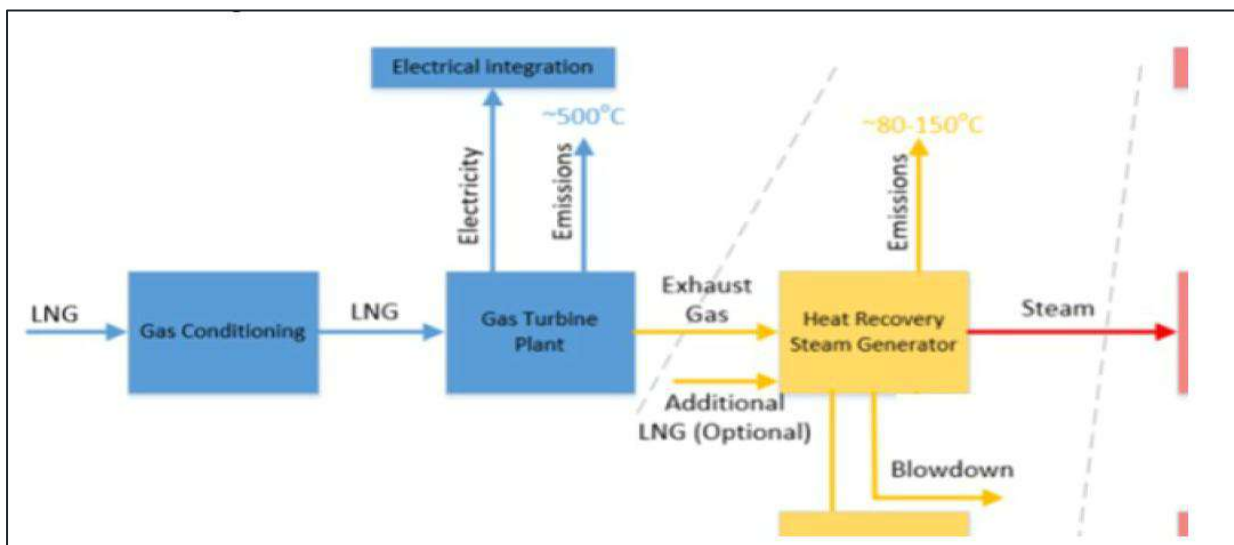


Figure 1-2 - Overview of the Gas to Power facility

2 APPLICABLE LEGISLATION, POLICY AND STANDARDS

This terrestrial biodiversity scoping report, inclusive of animal and plant species themes was undertaken with due consideration of the requirements of applicable national and provincial legislation and associated regulations (see Table 2-1).

Table 2-1 - Relevant environmental and biodiversity legislation and guidelines.

Applicable Legislation and Guideline	Relevance to the Proposed Project
National Environmental Management Act, 1998 (Act No 107 of 1998) – NEMA	<p>Section 24 of the NEMA, headed “Environmental Authorisations” sets out the provisions which are to give effect to the general objectives of Integrated Environmental Management, and laid down in Chapter 5 of the NEMA. In terms of section 24(1), the potential impact on the environment of listed activities must be considered, investigated, assessed and reported on to the competent authority charged by the NEMA with granting of the relevant environmental authorisation. In terms of section 24F (1) of the NEMA no person may commence an activity listed or specified in terms of section 24(2)(a) or (b) unless the competent authority has granted an environmental authorisation for the activity.</p> <p>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 NEMA (1998), when applying for environmental authorisation, the following is relevant to this study:</p> <ul style="list-style-type: none"> ■ Protocol for the specialist assessment and report content requirements for environmental impacts on terrestrial biodiversity. ■ Protocol for the specialist assessment and report content requirements for environmental impacts on terrestrial animal species. and ■ Protocol for the specialist assessment and report content requirements for environmental impacts on terrestrial plant species.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	<p>The NEMBA is administered by the Department of Forestry, Fisheries and the Environment (DFFE) and provides the framework under the NEMA for the:</p> <ul style="list-style-type: none"> ■ Management and conservation of South Africa's biodiversity; ■ The protection of species and ecosystems that warrant protection; ■ The fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; and ■ The establishment and functions of a South African National Biodiversity Institute (SANBI). <p>Amongst other components, the NEMBA includes:</p> <ul style="list-style-type: none"> ■ Lists of Critically Endangered, Endangered, Vulnerable and Protected Species (February 2007), with associated amendments (December 2007 and 3 June 2020) (ToPS), published under Section 56(10 of NEMBA; ■ Threatened or Protected Species Regulations (February 2007); ■ National list of threatened terrestrial ecosystems for South Africa (2011, and 2021 revision), published under Section 51(1)(a) of NEMBA; and ■ National Biodiversity Offset Guideline (2023), which provides guidance on the need to develop biodiversity offsets. <p>The purpose of ToPS lists and regulations are to regulate the permit system concerning restricted activities involving specimens of listed threatened or protected species. The primary purpose of listing threatened ecosystems is to</p>

	<p>reduce the rate of ecosystem and species extinction by identifying ‘witness’ sites’ of exceptionally high conservation value and enabling and facilitating proactive management of these ecosystems.</p> <p>Chapter 5 of NEMBA also provides a list of regulations and guidance concerning alien invasive species, including:</p> <ul style="list-style-type: none"> ■ A guideline for Monitoring, Control and Eradication Plans (September 2015); ■ 2020 Alien and Invasive Species Regulations (September 2020); and ■ 2016 and 2020 Alien and Invasive Species Lists (March 2021).
Mpumalanga Nature Conservation Act (Act No. 10 of 1998)	<p>Amongst other provisions, the Mpumalanga Nature Conservation Act (Act No. 10 of 1998) provides lists of specially protected and protected flora and fauna. Of particular relevance to this specialist study are species of flora that are listed under:</p> <ul style="list-style-type: none"> ■ Schedule 11 and 12: Protected and Specialist Protected Plants.
Other Relevant national and Provincial Policies, Plans and Guidelines	<p>Other relevant policies, plans and guidelines that were considered during this study include:</p> <ul style="list-style-type: none"> ■ Mpumalanga Biodiversity Sector Plan; ■ National Biodiversity Offset Policy (2017); ■ National Protected Area Expansion Strategy (2016); and ■ Species Environmental Assessment Guideline (SANBI, 2020).

3 ENVIRONMENTAL SCREENING TOOL

The study area was assessed at a desktop level using the National Web-based Environmental Screening Tool. According to the Screening Tool, the terrestrial biodiversity sensitivity theme of the study area is classified as 'Very High', while the animal and plant species themes are classified as 'Medium' sensitivity. The features triggering these sensitivities are discussed in the section that follows.

3.1 TERRESTRIAL BIODIVERSITY SCREENING TOOL

According to the screening tool, the terrestrial biodiversity theme for the study area is rated as 'Very High' sensitivity (see Figure 3-1), due to the study area being located within Soweto Highveld Grassland vegetation (Vulnerable - VU).



Figure 3-1 – Terrestrial biodiversity sensitivity theme ascribed by the DFFE screening tool.

3.2 ANIMAL SPECIES THEME

According to the screening tool, the animal species theme for the study area is rated as 'Medium' sensitivity (see Figure 3-2), due to the potential overlap with the following animal SCC: *Hydroprogne caspia* – VU (Caspian tern), *Crocidura maquassiensis* – VU (Makwassie musk shrew) and *Lepidochrysops procera* (Grassveld Nimble Blue), which is a rare habitat specialist.

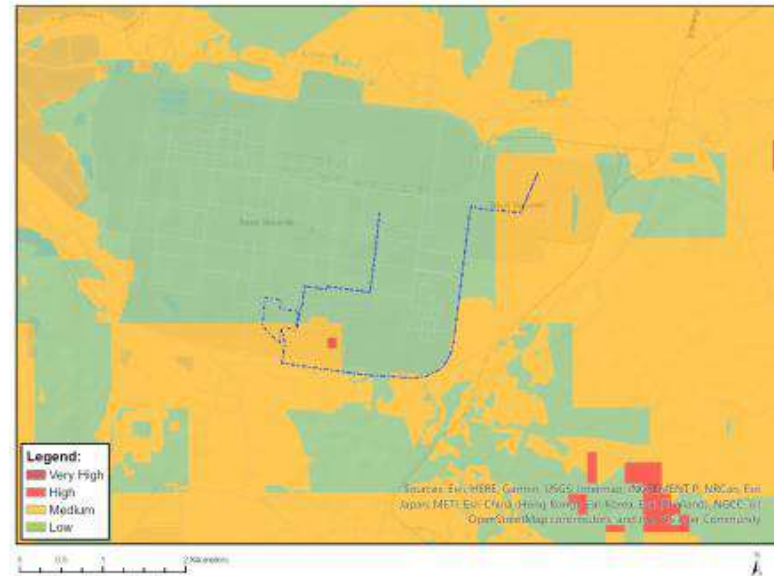


Figure 3-2 – Animal sensitivity theme ascribed by the DFFE screening tool.

3.3 PLANT SPECIES THEME

According to the screening tool, the plant species theme for the study area is rated as ‘Medium’ sensitivity (see Figure 3-3), due to the potential occurrence of the following SCC plant species: Sensitive species 691 - VU, Sensitive species 1252 - VU and *Pachycarpus suaveolens* – VU (Sweet-Scented Pachycarpus).

It should be noted that species that are susceptible to overexploitation have been redacted and referred to by their assigned ‘sensitive species’ number per the species assessment guidelines (SANBI, 2020).

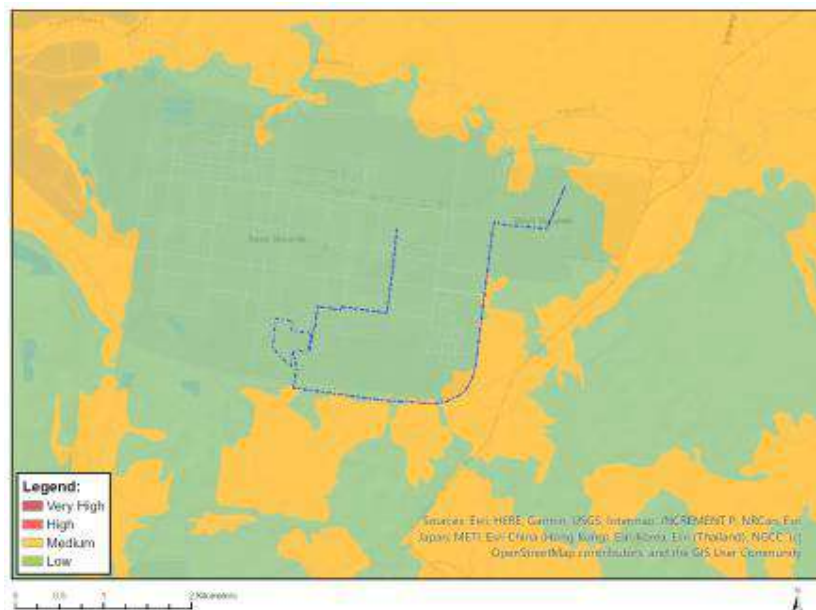


Figure 3-3 - Plant sensitivity theme ascribed by the DFFE screening tool.

4 METHODOLOGY

This assessment was undertaken in accordance with the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity (Government Notice No. 320, Government Gazette No. 43110 of 20 March 2020) and the Protocols for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Animal Species and Plant Species (Government Notice No. 1150, Government Gazette No. 43855 of 30 October 2020). These protocols prescribe the requirements for Site Sensitivity Verification (SSV), specialist assessment methodologies and minimum reporting requirements applicable to the terrestrial biodiversity, animal species and plant species themes.

To establish a robust understanding of the terrestrial biodiversity, animal species and plant species sensitivities associated with the study area, the assessment incorporated a desktop review and field-based site verification. The desktop assessment included a review of available biodiversity datasets, conservation planning information, relevant literature, historical aerial imagery, and previous specialist studies undertaken within the study area and surrounding region. These sources were used to identify potentially sensitive biodiversity features, ecological support areas, habitat types, SCC and other ecological constraints that may be relevant to the proposed project.

The field verification survey was undertaken to confirm the environmental sensitivities identified through the desktop assessment and the National Web-Based Environmental Screening Tool. The survey focused on the assessment of habitat availability and condition, verification of vegetation communities and ecological features present within the study area, identification of faunal habitat and evidence of animal utilisation where observed, evaluation of habitat suitability for SCC and documentation of existing disturbances and land use practices that may influence biodiversity sensitivity.

The findings of the desktop assessment and field verification were integrated to verify the environmental sensitivities associated with the terrestrial biodiversity, animal species and plant species themes, inform the baseline characterisation of the receiving environment, and identify potential biodiversity-related constraints requiring further consideration during the Environmental Impact Assessment (EIA) phase. Where necessary, recommendations are provided regarding additional specialist investigations that may be required during the EIA phase to address identified information gaps and confirm the occurrence of species or habitats of conservation significance.

The specific tasks undertaken as part of the desktop assessment and field verification are described in the sections that follow.

4.1 STUDY AREA

For the purposes of this assessment, the study area comprises the proposed development footprint and the surrounding area of influence within which direct, indirect and cumulative effects associated with the proposed development may occur. While the mapped development footprint formed the primary focus of the assessment (Figure 1-1), the desktop review and field verification also considered the adjacent terrestrial environment and surrounding habitats to provide appropriate ecological context and to identify biodiversity features that may influence or be influenced by the proposed development.

No discrete buffer was applied to the study area mapping during the Scoping Phase. However, the assessment was not restricted solely to the development footprint, and consideration was given to the

broader receiving environment where relevant to the identification and verification of terrestrial biodiversity, animal species and plant species sensitivities, ecological connectivity, habitat availability, and potential impact pathways associated with the proposed development.

This approach is considered appropriate for the Scoping Phase and allows for the identification of biodiversity constraints within both the development footprint and the broader area of ecological influence.

4.2 DESKTOP STUDY

In line with the assessment and reporting requirements prescribed by the relevant biodiversity assessment protocols, this terrestrial biodiversity assessment, including the animal species and plant species themes, incorporated a comprehensive desktop review to support the SSV process and the development of a baseline understanding of the terrestrial receiving environment. The desktop assessment focused on the proposed development footprint and the surrounding area of influence to ensure that biodiversity features, ecological processes, habitat connectivity, and other environmental constraints relevant to the proposed development were adequately considered.

The objective of the desktop review was to collate, analyse, and interpret available ecological information relating to terrestrial ecosystems, vegetation communities, biodiversity priority areas, SCC, and ecological support features that may occur within or adjacent to the study area. Information obtained through the desktop review was subsequently verified, where applicable, during the field-based component of the assessment.

The following datasets and information sources were reviewed and analysed to identify sensitive terrestrial biodiversity features, biodiversity priority areas, vegetation types, ecological corridors, habitat availability, and associated conservation statuses relevant to the study area:

- National vegetation types and their conservation status were obtained from the National Vegetation Map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006; 2018 update).
- The conservation status and distribution of plant Species of Conservation Concern were obtained from the Threatened Species Programme and the Red List of South African Plants Online (SANBI, 2020).
- The conservation status and distribution of fauna Species of Conservation Concern were obtained from the IUCN Red List of Threatened Species, the Red Data Book of the Mammals of South Africa, Swaziland and Lesotho, the South African Reptile Conservation Assessment (SARCA), the Southern African Frog Re-assessment Group (SA-FRoG) database, and relevant avifaunal conservation databases where applicable.
- The Mpumalanga Biodiversity Sector Plan (MBSP) (2024) was reviewed to identify Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs), biodiversity priority areas, ecological corridors, and associated land-use planning guidelines applicable to the study area and surrounding landscape.
- Available protected area datasets, Key Biodiversity Areas (KBAs), National Freshwater Ecosystem Priority Area (NFEPA) products, and other relevant biodiversity planning layers were reviewed to provide broader ecological context and identify biodiversity features of conservation importance within the study area and surrounding area of influence.
- Historical aerial photography, satellite imagery, topographical mapping, and available specialist studies relevant to the study area and surrounding region were reviewed to assess current land use, habitat condition, habitat connectivity, and existing sources of disturbance.

4.3 FIELD STUDY

4.3.1 SURVEY PERIOD

A field survey of the study area and area of influence was conducted on 24 April 2026 over an eight-hour period. Both proposed gas pipeline route options (the LNG and MRG pipeline routes), as well as the proposed facility footprint, were assessed. The survey was conducted during the late wet season, when vegetation cover and species detectability were generally favourable, thereby supporting the verification of vegetation communities, habitat characteristics, and the identification of plant species present within the study area.

4.3.2 SURVEY METHODOLOGY

A terrestrial ecologist undertook a systematic field survey of the study area using a combination of pedestrian transects and vehicle-based traverses to ensure representative coverage of the study area and surrounding area of influence. The survey focused on verifying the environmental sensitivities identified during the desktop assessment and by the National Web-Based Environmental Screening Tool, as well as characterising the terrestrial habitats, vegetation communities and ecological features present.

The field assessment included the evaluation of habitat condition and integrity, assessment of habitat suitability for SCC and documentation of ecological features that may influence the sensitivity of the receiving environment. Particular attention was given to natural and semi-natural habitats, areas of elevated biodiversity value, habitat connectivity and other ecological attributes that may represent biodiversity constraints to the proposed development.

Observations of faunal activity, including direct sightings, tracks, scats, burrows, nests and other signs of animal utilisation, were recorded opportunistically where encountered. The assessment further considered the availability and suitability of habitats that may support SCC or provincially protected species known or expected to occur within the broader region based on existing biodiversity records and habitat preferences.

Field observations were integrated with the findings of the desktop assessment to verify environmental sensitivities, characterise the baseline terrestrial environment and identify biodiversity-related constraints and considerations requiring further assessment during the Environmental Impact Assessment (EIA) phase.

4.4 SCREENING OF IMPACTS AND MITIGATION

In accordance with Appendix 2 of the Environmental Impact Assessment Regulations, potential terrestrial biodiversity, animal species and plant species impacts associated with the proposed development were identified and considered during the Scoping Phase. The findings of the SSV informed the identification of potential biodiversity constraints and the development of high-level management recommendations. Detailed impact assessment and significance rating, where required, should be undertaken during the Environmental Impact Assessment phase.

4.5 STUDY LIMITATIONS AND ASSUMPTIONS

The following limitations and assumptions are applicable to this assessment:

- This Scoping Phase assessment is based on a review of available biodiversity datasets, published literature, conservation planning products, available aerial imagery, and previous ecological studies

relevant to the study area and surrounding region, supplemented by a single field survey undertaken on 24 April 2026.

- The assessment was undertaken during a single survey event and therefore provides a temporal snapshot of environmental conditions present within the study area at the time of the survey. Species composition, habitat condition, and ecological processes may vary seasonally and inter-annually in response to climatic conditions and natural ecological dynamics.
- The primary objective of the field survey was to verify environmental sensitivities, characterise habitats and ecological features, and assess habitat suitability for SCC. The survey was not intended to constitute a comprehensive species inventory or dedicated species-specific survey for all faunal and floral taxa that may occur within the study area.
- The absence of a species during the survey should not be interpreted as confirmation that the species is absent from the study area. Certain species may remain undetected due to seasonal variability, life-history characteristics, low population densities, cryptic behaviour, restricted activity periods, or temporary absence from suitable habitat at the time of survey.

5 BASELINE TERRESTRIAL ENVIRONMENT

This section summarises the terrestrial biodiversity sensitivities identified as part of the desktop assessment process.

5.1 REGIONAL SETTING

The study area is situated within the Grassland Biome, which occupies approximately 28% of South Africa's land surface and represents the dominant biome across the central plateau and inland portions of the eastern subcontinent (Mucina & Rutherford, 2006). The biome is associated with summer rainfall conditions and is characterised by vegetation communities dominated by perennial grasses and herbaceous species, with woody vegetation generally confined to drainage lines, rocky outcrops, and other protected habitats.

At a finer bioregional scale, the study area falls within the Mesic Highveld Grassland Bioregion, which is characterised by moderate to high summer rainfall, cold dry winters, and productive grassland systems dominated by sourveld grass species. Historically, these ecosystems supported extensive natural grassland communities maintained through ecological processes such as fire and grazing. Fire remains a key ecological driver within the region, contributing to the maintenance of grassland structure, nutrient cycling, species diversity, and the suppression of woody encroachment (SANBI, 2016).

The broader region surrounding Secunda has undergone substantial landscape transformation as a result of agricultural activities, urban expansion, mining, energy generation, petrochemical industries, transportation infrastructure, and associated support services. Consequently, large portions of the natural grassland landscape have been fragmented and modified, resulting in a mosaic of transformed land interspersed with remnant areas of natural and semi-natural habitat. Despite these historical and ongoing land use pressures, remaining grassland habitats continue to provide important ecological functions, including habitat for SCC, ecological connectivity between biodiversity priority areas, and the maintenance of ecosystem processes at a regional scale.

Within this regional context, biodiversity sensitivities are often associated with remnant natural grassland habitat, drainage features, wetlands, ecological corridors, and other relatively undisturbed habitat patches that persist within the transformed landscape. These features frequently represent important refugia for indigenous flora and fauna and therefore warrant consideration during the planning and assessment of new infrastructure developments.

5.1.1 TERRESTRIAL CRITICAL BIODIVERSITY AREAS (CBAS) AND ECOLOGICAL SUPPORT AREAS (ESAS)

The study area was compared to relevant available spatial biodiversity planning datasets, i.e. the Mpumalanga Biodiversity Sector Plan (MBSP) to assess the local and regional biodiversity context.

The MBSP defines five categories of conservation focus: Protected areas, Critical Biodiversity Areas (CBA), Ecological Support Areas (ESA), Other Natural Areas (ONA), and modified habitats. Definitions for each of these categories are listed below.

- **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 MBSP.

- **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.

At a desktop level, the study area does not intersect with CBAs or ESAs based on the MBSP. However, the LNG Pipeline runs parallel to ONAs (see Figure 5-1).

5.1.2 LAND COVER

According to the National Land Cover (NLC) dataset (GTI, 2020), the study area is situated within a highly modified landscape comprising a mosaic of built-up areas, grassland, cultivated land, wetlands, waterbodies, and areas associated with mining and quarrying activities (Figure 5-2). Built-up land cover forms the dominant land use within the central portion of the study area, reflecting the extensive industrial and associated infrastructure footprint of the existing Sasol operations.

The proposed Gas-to-Power facility footprint is located entirely within an area classified as built-up land cover. Similarly, the majority of the MRG Pipeline route traverses built-up and transformed areas associated with existing industrial infrastructure, with only limited interaction with adjacent grassland and wetland features.

The LNG Pipeline route follows a more peripheral alignment and intersects a broader range of land cover types. While portions of the route occur within transformed and built-up areas, the alignment also traverses areas mapped as grassland and passes through several wetland systems and associated waterbody features. In addition, portions of the surrounding landscape are classified as mines and quarries, particularly to the south and east of the study area, reflecting the extensive mining and industrial land uses characteristic of the broader Secunda region.

The land cover mapping indicates that the proposed project is largely associated with an already modified industrial landscape. However, the presence of remnant grassland habitat, wetlands, and other natural or semi-natural features within and adjacent to the study area highlights the need for site-specific verification of ecological sensitivities and consideration of potential biodiversity constraints during the impact assessment process.

5.1.3 PRIORITY AREAS FOR PROTECTED AREA EXPANSION

Priority Focus Areas (PFAs) identified through the National Protected Area Expansion Strategy (NPAES) represent large, relatively intact landscapes of high biodiversity value that have been

identified as priorities for future protected area expansion (Driver et al., 2012). These areas contribute to the long-term protection of biodiversity and ecological processes and should, where possible, remain unfragmented to facilitate future conservation initiatives.

As illustrated in Figure 5-3, the study area is not located within a Priority Focus Area for protected area expansion. The proposed Gas-to-Power facility footprint and both the LNG and MRG pipeline route options occur within the existing industrial and transformed landscape associated with the broader Sasol Secunda operations. Several Priority Focus Areas are, however, present within the surrounding landscape to the north, south and southeast of the study area.

Given the transformed nature of the study area and its location within an established industrial complex, the proposed development is not anticipated to result in the direct loss or fragmentation of land identified as a Priority Focus Area. Nevertheless, the presence of Priority Focus Areas within the broader region highlights the importance of maintaining ecological connectivity and avoiding unnecessary impacts on remaining natural habitat and biodiversity features that contribute to landscape-scale ecological functioning.

5.1.4 PROTECTED AREAS

Protected areas form the cornerstone of South Africa's biodiversity conservation network and play an important role in safeguarding ecosystems, ecological processes, species of conservation concern, and ecosystem services. Protected areas are formally recognised and managed to conserve biodiversity and contribute to the long-term persistence of ecological functioning at local, regional, and national scales.

A review of the Protected Areas Database indicates that the study area does not overlap with any formally protected area. Similarly, the proposed Gas-to-Power facility footprint and the LNG and MRG pipeline route options do not intersect any nationally protected areas.

Given the location of the proposed development within the existing industrial landscape associated with the Sasol Secunda complex, direct impacts on formally protected areas are not anticipated. Protected areas are therefore not considered a key terrestrial biodiversity constraint to the proposed development.

5.1.5 IMPORTANT BIRD AREAS

Important Bird Areas (IBAs) are sites identified by BirdLife International and BirdLife South Africa as being of particular importance for the conservation of bird species and their habitats. These areas are designated using internationally recognised criteria based on the presence of threatened, range-restricted, biome-restricted, or congregatory bird species and represent priority areas for avifaunal conservation.

A review of the national Important Bird Area dataset indicates that the study area does not overlap with any designated IBA. The proposed Gas-to-Power facility footprint and both pipeline route options are located within the industrialised Secunda landscape and are not situated within or adjacent to any recognised IBA.

The closest IBA to the study area is the Amersfoort-Bethal-Carolina District IBA, located approximately 28 km from the proposed development. Given the separation distance and the absence of any direct spatial overlap, Important Bird Areas are not considered a significant biodiversity constraint to the proposed development.

5.1.6 NATIONAL THREATENED ECOSYSTEMS

The National List of Threatened Terrestrial Ecosystems (NTEs) identifies ecosystem types that are considered threatened from a national biodiversity conservation perspective and which are afforded protection under the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). Ecosystem threat status provides an indication of the risk of ecosystem loss and is based on the extent of historical habitat transformation, remaining habitat availability and the likelihood of continued habitat loss.

According to the National Terrestrial Ecosystem dataset (SANBI, 2021), portions of the study area intersect ecosystems classified as Vulnerable (Figure 5-4). The mapped Vulnerable ecosystem corresponds to Soweto Highveld Grassland (Figure 5-5), which is discussed further in the vegetation section of this report. The mapped ecosystem extends across portions of the broader landscape and is intersected by sections of the proposed LNG pipeline alignment. In contrast, the proposed Gas-to-Power facility footprint and the MRG pipeline route are largely situated within the existing Sasol industrial complex and do not substantially overlap mapped Vulnerable ecosystem areas.

It is important to note that ecosystem threat status is assigned at an ecosystem level and does not necessarily reflect the current ecological condition of individual sites. While portions of the LNG pipeline alignment overlap areas mapped as Vulnerable Soweto Highveld Grassland, extensive historical industrial development, associated infrastructure, agricultural transformation and other anthropogenic disturbances have altered portions of the original ecosystem within the area of influence. Consequently, the presence of a mapped threatened ecosystem does not necessarily indicate the presence of intact or well-conserved habitat on the ground.

Notwithstanding the transformed nature of much of the study area, remnant grassland habitats associated with the Soweto Highveld Grassland ecosystem may still contribute to local biodiversity value, ecological connectivity, and habitat availability for SCC. As such, the condition, extent, and ecological significance of these remaining habitats were considered during the SSV process and informed the assessment of terrestrial biodiversity sensitivities associated with the proposed development.

5.1.7 KEY BIODIVERSITY AREAS (KBA)

Key Biodiversity Areas (KBAs) are sites identified as contributing significantly to the global persistence of biodiversity. These areas are recognised using internationally standardised criteria and are considered important for the conservation of species, ecosystems, and ecological processes. KBAs may occur within terrestrial, freshwater, estuarine or marine environments and are intended to guide biodiversity conservation planning and decision-making.

A review of the national KBA dataset indicates that the study area does not overlap with any designated Key Biodiversity Area. The proposed Gas-to-Power facility footprint and both the LNG and MRG pipeline route options are situated within the existing industrialised landscape associated with the Sasol Secunda operations and are not located within or adjacent to a recognised KBA.

The nearest Key Biodiversity Area is the Devon Grasslands KBA, which occurs approximately 13 km west of the study area. Given the separation distance and absence of direct spatial overlap, Key Biodiversity Areas are not considered a significant terrestrial biodiversity constraint to the proposed development.

5.1.8 VEGETATION TYPES

The study area is situated within the Grassland Biome and is mapped predominantly as Soweto Highveld Grassland (Gm 8), which represents the dominant natural vegetation type occurring within the study area and wider surrounding landscape (Figure 5-4). Soweto Highveld Grassland is classified as Vulnerable and corresponds with the National Threatened Ecosystem designation discussed in Section 5.1.5.

It is important to note that the mapped vegetation type represents the historical or potential natural vegetation expected to occur in the absence of significant anthropogenic disturbance. Within the study area, extensive industrial development associated with the Sasol Secunda complex, together with supporting infrastructure, transformed areas, historical cultivation, and other land use activities has resulted in the substantial modification of portions of the original vegetation. Consequently, large areas associated with the proposed facility footprint and sections of the pipeline alignments no longer support intact examples of the mapped vegetation type.

The habitat associations, ecological characteristics and conservation status of Soweto Highveld Grassland are discussed below.

5.1.8.1 Soweto Highveld Grassland Gm 8 (VU)

Soweto Highveld Grassland is a mesic grassland vegetation type occurring across the Highveld of Gauteng and Mpumalanga, extending broadly between Johannesburg and Ermelo in the north, and the Vaal River and Perdekop areas in the south (Mucina & Rutherford, 2006). The vegetation is typically characterised by short to medium-height tufted grassland occurring on gently undulating plains, with *Themeda triandra* commonly forming a dominant component of the grass layer together with species such as *Heteropogon contortus*, *Eragrostis curvula*, *Elionurus muticus*, *Setaria sphacelata* and *Cymbopogon pospischilii*. The ecosystem also supports a diverse suite of forbs and geophytes and is frequently associated with wetlands, drainage lines, seep systems and other moisture-dependent habitats which contribute significantly to overall biodiversity patterns within the landscape.

The vegetation type occurs within a summer rainfall region receiving approximately 662 mm of rainfall per annum and is maintained by ecological processes such as fire and grazing, which play an important role in maintaining grassland structure, species diversity and ecological functioning. In an intact condition, Soweto Highveld Grassland provides habitat for a wide range of flora and fauna, including several SCC, and contributes to ecological connectivity and ecosystem functioning across the broader Highveld landscape.

Soweto Highveld Grassland is currently classified as Vulnerable, reflecting the significant historical loss and fragmentation of this ecosystem as a result of urban expansion, agricultural transformation, mining activities, industrial development and associated infrastructure. Within the broader Secunda region, large portions of the original vegetation have been transformed by industrial activities, cultivation, mining-related land uses and associated support infrastructure. Consequently, remaining natural and semi-natural grassland habitats frequently occur as fragmented remnants within a modified landscape matrix.

Although substantial portions of the proposed development footprint have been transformed by existing industrial infrastructure associated with the Sasol Secunda complex, remnant grassland habitat, wetlands, drainage features and other semi-natural habitats remain present within the area of



influence. These habitats retain ecological value and continue to provide suitable habitat for SCC and other indigenous flora and fauna. As such, while the mapped vegetation type should not be interpreted as occurring in an entirely intact state throughout the study area, the remaining natural and semi-natural habitat associated with the Soweto Highveld Grassland ecosystem remains ecologically relevant and was therefore considered.

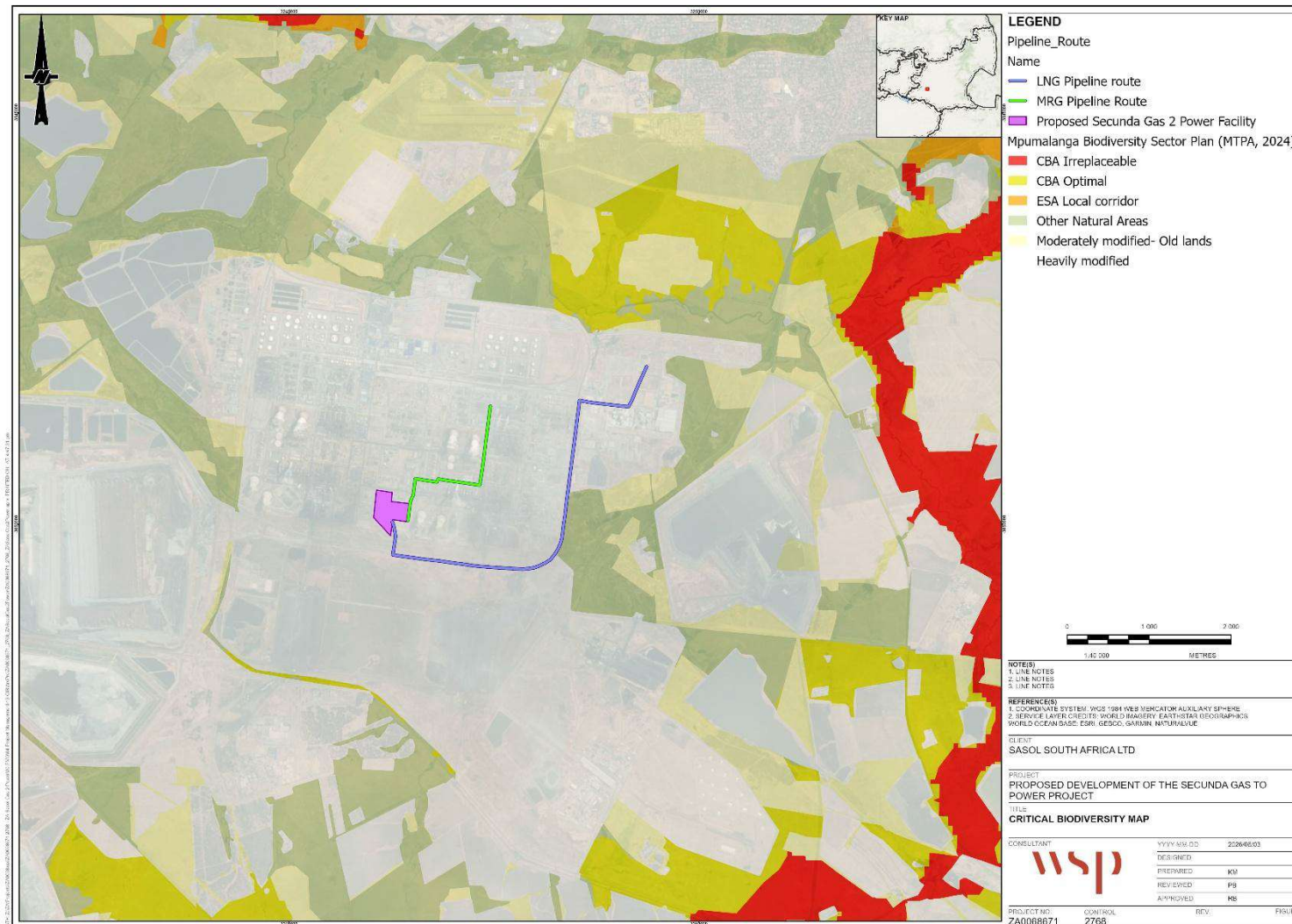


Figure 5-1 - MBSP in relation to the study area

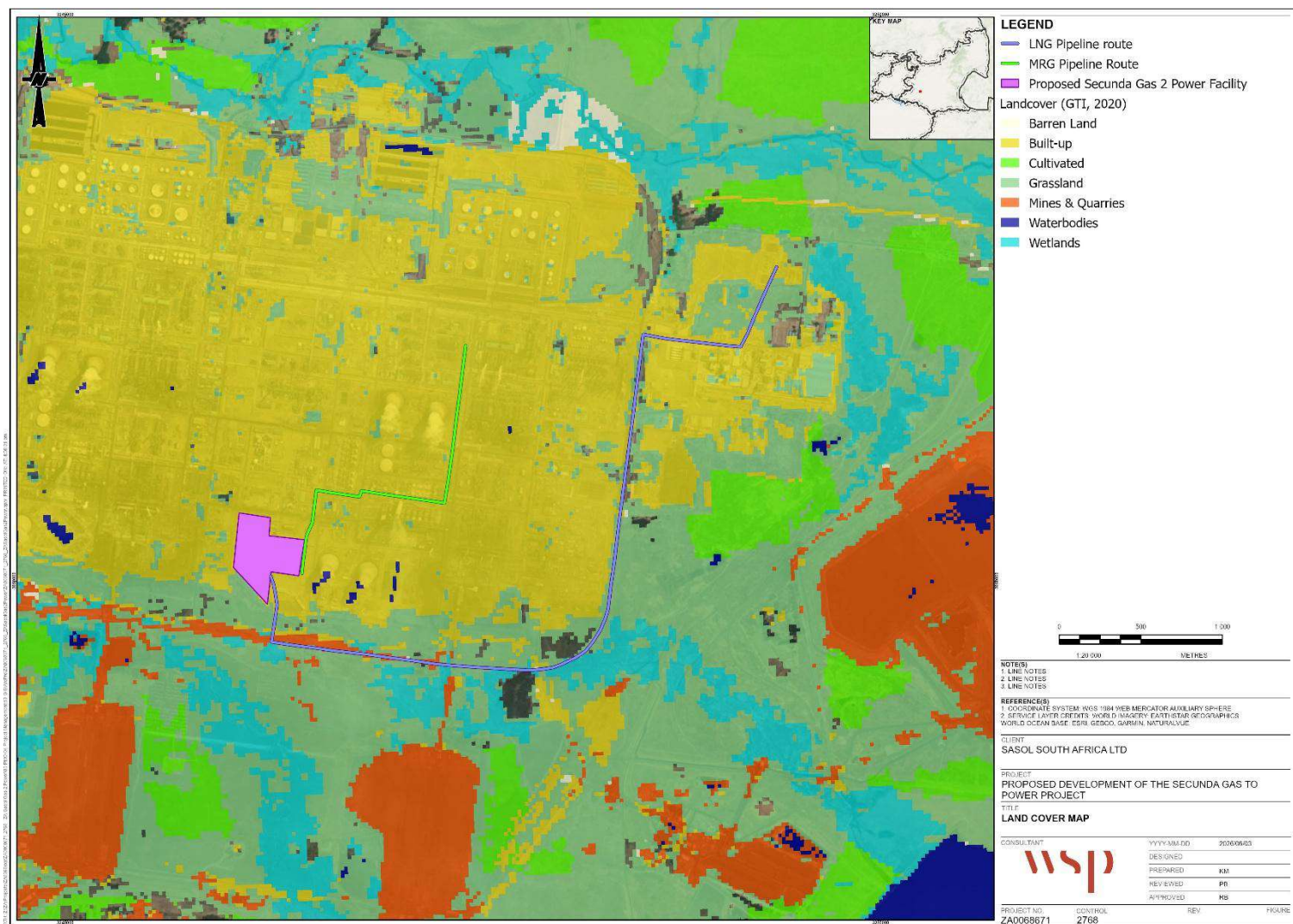


Figure 5-2 - Landcover in relation to the study area

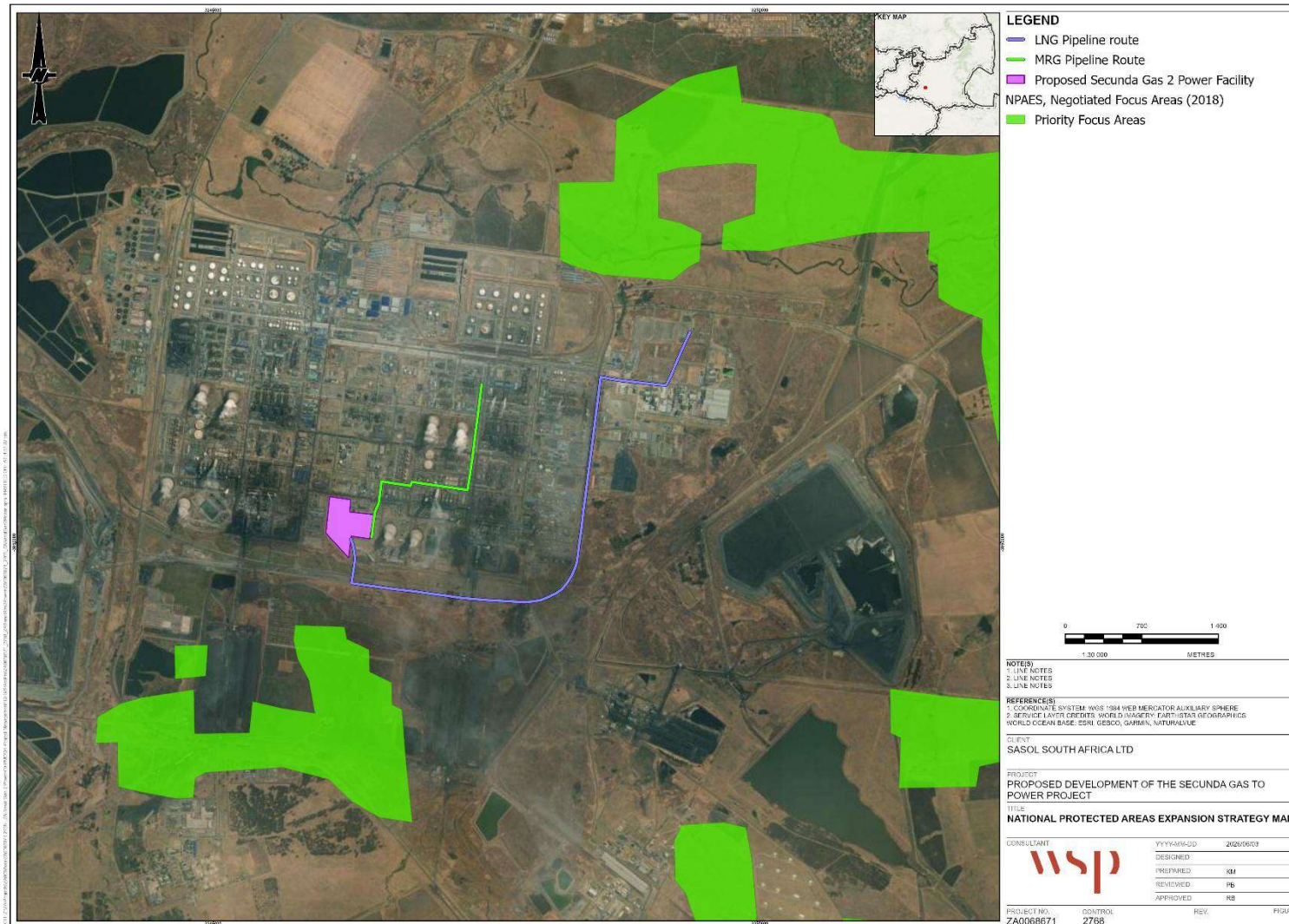


Figure 5-3 - NPAES in relation to the study area

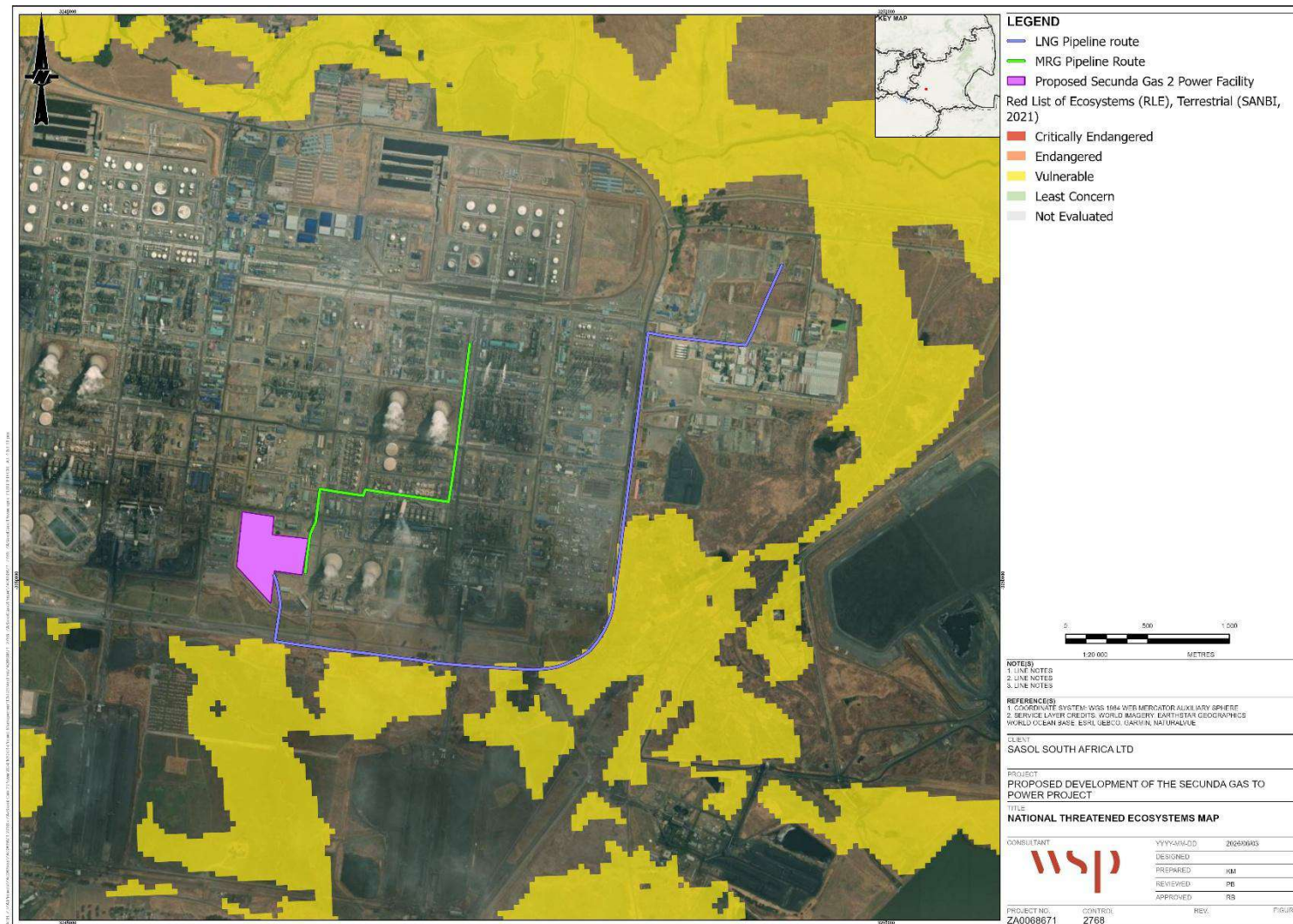


Figure 5-4 - Nationally threatened ecosystems in relation to the study area

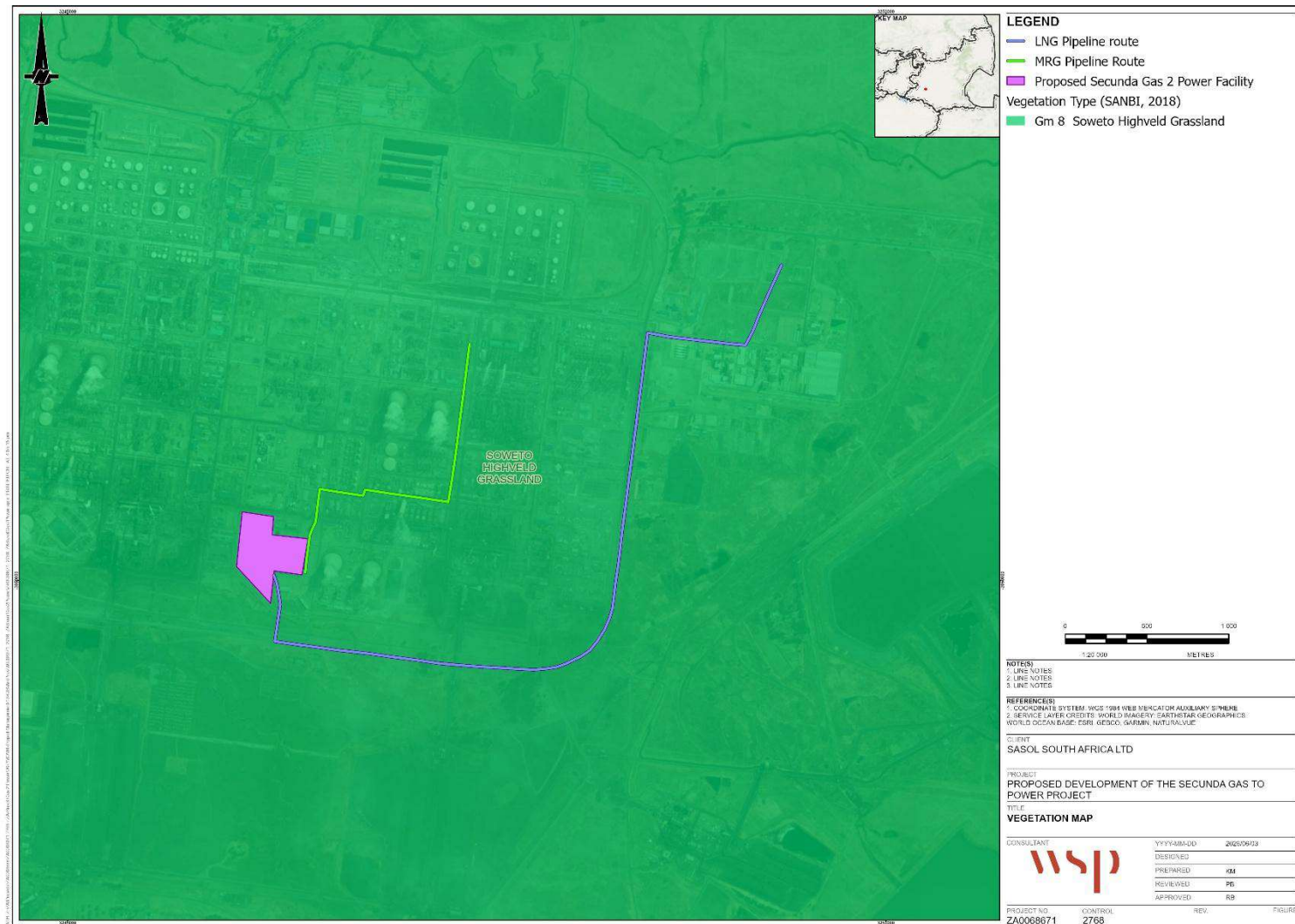


Figure 5-5 - Vegetation types in relation to the study area

6 FIELD SURVEY FINDINGS

A field survey of the study area and surrounding area of influence was undertaken by a terrestrial ecologist on 24 April 2026 over an approximately eight-hour period. The survey included the proposed Gas-to-Power facility footprint, the LNG pipeline route and the MRG pipeline route. The purpose of the survey was to verify the environmental sensitivities identified through the desktop assessment and National Web-Based Environmental Screening Tool and to characterise the terrestrial biodiversity features, habitat condition, ecological disturbances, and biodiversity sensitivities present within the receiving environment.

Particular emphasis was placed on the verification of vegetation communities, assessment of faunal habitat availability, identification of ecological features of conservation importance, and evaluation of habitat suitability for SCC. The findings of the field survey were integrated with the desktop assessment to develop a site-specific understanding of the terrestrial biodiversity, animal species, and plant species sensitivities associated with the proposed development. The outcomes of the field assessment are discussed in the sections that follow.

6.1 PLANT SPECIES/FLORA

The field survey confirmed that although large portions of the study area have been transformed by existing industrial infrastructure and associated land uses, remnant natural and semi-natural habitats remain present within the broader study area and area of influence. These habitats include grassland, wetland, and drainage-associated vegetation communities characteristic of the Soweto Highveld Grassland ecosystem and are capable of supporting a range of indigenous plant species, including SCC.

In accordance with the IUCN Red List Categories and Criteria, the Red List of South African Plants (SANBI) recognises three categories of threatened species, namely Critically Endangered, Endangered, and Vulnerable. A further five categories of conservation concern are recognised, namely Near Threatened, Critically Rare, Rare, Declining, and Data Deficient.

Plant species listed under the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) Threatened or Protected Species Regulations and/or the Mpumalanga Nature Conservation Act (Act No. 10 of 1998) are afforded additional legislative protection and may require avoidance, permitting, or species-specific management measures where impacts cannot be avoided.

The desktop assessment and field survey therefore considered the likelihood of occurrence of SCC and protected plant species within the study area and surrounding area of influence, the findings of which are discussed below.

6.1.1 FLORA SCC

The DFFE Environmental Screening Tool rated the plant species theme for the study area as 'Medium' sensitivity due to the potential occurrence of the following flora SCC:

- Sensitive species 691 – VU;
- Sensitive species 1252 - VU; and
- *Pachycarpus suaveolens* (Sweet-Scented Pachycarpus) – VU.

During the field survey, no threatened or protected plant species were recorded within the study area or proposed development footprint. However, a population of approximately 25 individuals of *Crinum bulbispermum* (Orange River Swamp Lily), a species protected under provincial legislation, was recorded approximately 198 m southwest of the study area boundary (26°33'54.68"S; 29°09'32.82"E) within the broader area of influence (Figure 6-1).

The recorded population occurs outside the proposed development footprint and outside the defined study area assessed for direct impacts. Furthermore, the population is separated from the proposed infrastructure by existing disturbance features, including a road corridor, which is likely to reduce the potential for direct or indirect project-related impacts. As such, the recorded *Crinum bulbispermum* population is not expected to be directly affected by the proposed development.

While the species was not recorded within the study area itself, its presence within the broader area of influence demonstrates that suitable habitat for protected plant species persists within the surrounding landscape. This finding further supports the conclusion that remnant natural and semi-natural habitats associated with the Soweto Highveld Grassland ecosystem continue to retain ecological value and biodiversity significance despite the extensive transformation of the broader industrial landscape.

Habitat associations, conservation status, and likelihood of occurrence of the identified sensitive plant species are presented in Table 6-1.

Table 6-1 - Sensitive plant species

Scientific Name	Red-list status	Provincial Protection status	Habitat Preferences	Occurrence Relative to the Study area
<i>Crinum bulbispermum</i>	Least Concern	Protected	Prefers wetland and moist environments, and typically occurs along riverbanks and stream edges, as well as in swampy grasslands and seasonally wet areas.	Not recorded within the Study Area; confirmed within adjacent habitat in the Area of Influence (Figure 6-1)
<i>Pachycarpus suaveolens</i>	Vulnerable	-	Favours short, annually burnt grassland between 1400-2000 m.	Unlikely
Sensitive species 691	Vulnerable	Protected	It occurs in grassland habitats where it favours very shallow coarse sediments on flat rock protrusions.	Unlikely
Sensitive Species 1252	Vulnerable	Protected	Primarily associated with mesic to moderately moist, well-drained environments.	Unlikely



Figure 6-1 - The *Crinum bulbispermum* (Orange River Swamp Lilly) (26°33'54.68"S; 29°9'32.82"E)

6.2 ANIMAL SPECIES/FAUNA

Although substantial portions of the study area are associated with existing industrial infrastructure and transformed land cover, remnant grassland habitat and other semi-natural habitats remain present within the area of influence. These habitats continue to provide ecological resources for a range of fauna species and retain the potential to support SCC, particularly species associated with grassland and wetland ecosystems.

In accordance with the IUCN Red List Categories and Criteria, the Red Lists of South African mammals, birds, reptiles, amphibians and invertebrates recognise three categories of threatened species, namely Critically Endangered, Endangered, and Vulnerable. A further five categories of conservation concern are recognised, namely Near Threatened, Critically Rare, Rare, Declining, and Data Deficient.

Fauna species listed under the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) Threatened or Protected Species Regulations and/or the Mpumalanga Nature Conservation Act (Act No. 10 of 1998) are afforded additional legal protection and may require species-specific management measures where impacts cannot be avoided.

The desktop assessment and field survey considered the likelihood of occurrence of fauna SCC within the study area and surrounding area of influence, taking into account available habitat, ecological condition, known species distributions and field observations. The findings are discussed by taxonomic group below.

6.2.1 MAMMALS

The DFFE Environmental Screening Tool identified the Makwassie Musk Shrew (*Crocidura maquassiensis*), a Vulnerable species, as having the potential to occur within the study area.

The Makwassie Musk Shrew is typically associated with moist grassland habitats where sufficient vegetative cover and suitable microhabitats are available. Although portions of the area of influence retain natural and semi-natural habitat, extensive industrial transformation within the proposed development footprint has substantially reduced the availability of suitable habitat. Consequently, the likelihood of occurrence of this species within the development footprint is considered low.

Although no mammal SCC were recorded within the study area itself, evidence of Serval (*Leptailurus serval*) in the form of scat was recorded within the broader area of influence during the field survey (26°34'4.83"S; 29°10'52.52"E; Figure 4-12). The record was located outside the study area and outside areas likely to be directly affected by the proposed development. Serval is a wetland-associated mesocarnivore that primarily feeds on small mammals and is closely associated with wetlands, drainage features, and other habitats that provide suitable prey resources and cover. Although the species is listed as Least Concern globally, it is classified as Near Threatened in South Africa and is protected under provincial legislation.

While the serval was not recorded within the study area, its occurrence within the broader area of influence demonstrates that the surrounding landscape continues to support fauna species of conservation importance despite the high degree of industrial and agricultural transformation that characterises the wider Secunda region. This finding is consistent with previous studies undertaken in the area, which have documented notable serval persistence within a landscape comprising a mosaic of industrial infrastructure, wetlands, grasslands, and associated habitats (Loock et al., 2018). The record further highlights the ecological importance of remnant wetland and grassland habitats occurring outside the development footprint and within the broader receiving environment.

Habitat associations, conservation status, and likelihood of occurrence of sensitive mammal species are provided in Table 6-2.

Table 6-2 - Sensitive mammal species

Family	Scientific Name	Red-list status	Provincial Protection status	Habitat Preferences	Probability of Occurrence in Study Area
Felidae	<i>Leptailurus serval</i>	Near Threatened	Protected	Closely associated with wetland habitats.	Recorded within the area of influence; not recorded within the study area (Figure 6-2).
Soricidae	<i>Crocidura maquassiensis</i>	Vulnerable	-	Primarily associated with moist grassland habitats within savanna and grassland biomes, often occurring in rocky or montane areas that provide suitable cover.	Unlikely



Figure 6-2 - *Leptailurus serval* (serval) scat observed outside the study area (26°34'4.83"S; 29°10'52.52"E)

6.2.2 AVIFAUNA

The DFFE Environmental Screening Tool identified the Caspian Tern (*Hydroprogne caspia*), a Vulnerable species, as having the potential to occur within the study area.

A review of SABAP2 records indicates that approximately 148 bird species have been recorded within the broader region, highlighting the importance of the remaining grassland, wetland and aquatic habitats in supporting avifaunal diversity. However, no avifaunal SCC were recorded during the field survey.

The Caspian Tern is primarily associated with large waterbodies, estuaries, coastal environments and suitable roosting and foraging areas. While artificial waterbodies occur within the broader landscape, the highly transformed nature of the development footprint and the absence of suitable breeding or roosting habitat suggest that the likelihood of regular utilisation of the study area by this species is low.

6.2.3 INVERTEBRATES

The DFFE Environmental Screening Tool identified the Grassveld Nimble Blue (*Lepidochrysops procera*) as having the potential to occur within the study area.

This species is a habitat specialist associated with relatively intact grassland ecosystems and specific host plant requirements. No evidence of the species was recorded during the field survey and the highly transformed nature of much of the development footprint is not considered favourable for its occurrence.

Although isolated remnants of grassland habitat remain within the broader landscape, the likelihood of occurrence of *Lepidochrysops procera* within the proposed development footprint is considered low. No invertebrate SCC were recorded during the survey.

7 SITE SENSITIVITY VERIFICATION OUTCOMES

7.1 OVERVIEW OF SSV FINDINGS

The SSV confirmed that terrestrial biodiversity sensitivities vary across the proposed development alternatives. While the proposed Sasol Gas-to-Power facility footprint and MRG Pipeline route occur predominantly within the existing Sasol Secunda operational area and are associated with extensively transformed habitat, portions of the LNG Pipeline route traverse less disturbed areas that retain remnant grassland habitat, wetland features, drainage corridors and associated ecological functions.

Consequently, the SSV identified during the field verification process differ from those assigned by the National Web-Based Environmental Screening Tool, which is based on regional biodiversity datasets and does not account for current on-site conditions or levels of habitat transformation. The proposed Sasol Gas-to-Power facility footprint and associated MRG Pipeline route are therefore considered to exhibit low terrestrial biodiversity sensitivity, including the terrestrial biodiversity, animal species and plant species themes (Table 7-1). This is primarily due to the highly transformed nature of these areas, which are characterised by industrial infrastructure, disturbed surfaces, artificial fill, existing service corridors and ongoing operational activities, with limited remaining natural habitat.

In contrast, the LNG Pipeline route is considered to exhibit an overall medium terrestrial biodiversity sensitivity (Table 7-2). Although portions of the alignment occur within transformed areas, sections of the route traverse secondary grassland habitat and intersect, or occur in close proximity to, the Groot-Bossiespruit and associated wetland systems. These habitats retain ecological functionality and continue to provide ecological connectivity, habitat resources and biodiversity value within the broader landscape.

Based on the SSV outcomes, the MRG Pipeline route is considered the environmentally preferred alternative from a terrestrial biodiversity perspective, as it is largely confined to existing transformed areas and disturbed infrastructure corridors. The LNG Pipeline route, while still considered developable from a terrestrial biodiversity perspective, traverses habitats of greater ecological value and therefore presents a comparatively higher biodiversity sensitivity. Consequently, the MRG Pipeline route is anticipated to result in the lowest potential impact on terrestrial biodiversity, animal species and plant species resources.

7.1.1 PROPOSED GAS-TO-POWER-FACILITY AND MRG PIPELINE

The proposed Sasol Gas-to-Power facility footprint and MRG Pipeline route occur entirely within the existing Sasol Secunda operational area and are associated with highly transformed land cover characterised by industrial infrastructure, existing service corridors, artificial fill, paved surfaces and gravel hardstands (Figure 7-1 and 7-2). The facility footprint is currently utilised for operational purposes, including the storage of equipment and machinery, and consequently exhibits limited ecological functionality and biodiversity value.

Although isolated vegetated areas occur within portions of the facility footprint and along sections of the MRG Pipeline route, these habitats are secondary in nature and highly disturbed. Vegetation associated with modified stormwater drainage features is dominated by disturbance-tolerant and alien invasive species including *Bidens pilosa* (Blackjack), *Tagetes minuta* and *Phragmites australis* (Common Reed). These areas are structurally and compositionally altered and do not represent intact examples of the region's natural vegetation.

The proposed MRG Pipeline route largely follows existing disturbed corridors and pipeline servitudes within the operational area and does not traverse intact grassland habitat, wetlands or other terrestrial biodiversity features of elevated conservation importance. Although the route crosses and runs adjacent to a modified stormwater drainage channel along portions of its alignment, these habitats occur within an industrial setting and display a high degree of disturbance.

Overall, the proposed facility footprint and MRG Pipeline route are characterised by highly modified habitat conditions, limited ecological integrity and low biodiversity value. Consequently, both development components are considered to exhibit low terrestrial biodiversity sensitivity from terrestrial biodiversity, animal species and plant species perspectives.

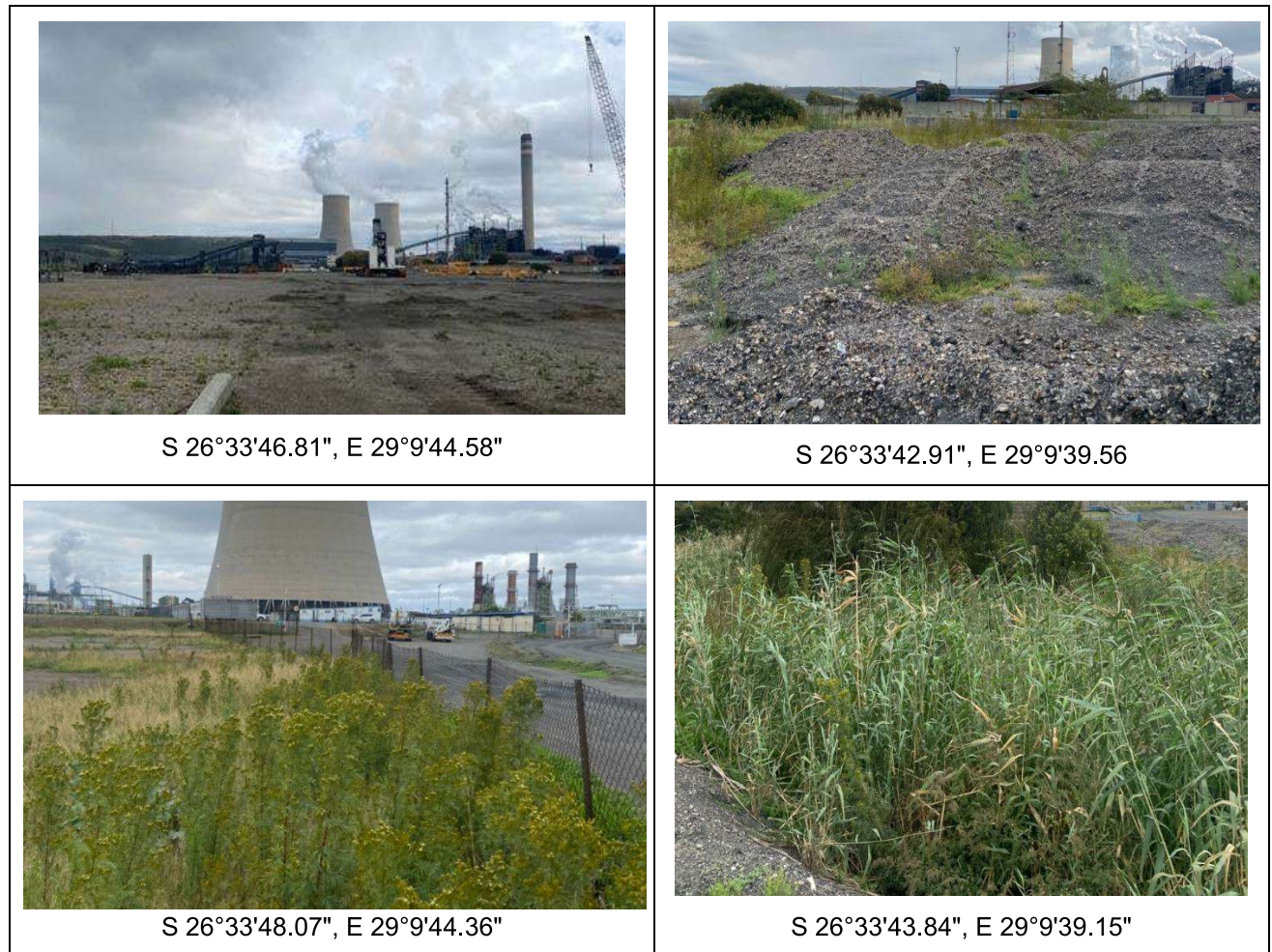


Figure 7-1 - Field survey images of proposed Sasol Gas-to-Power Facility



Figure 7-2 - Field survey images of the MRG Pipeline route

7.1.2 LNG PIPELINE ROUTE

In contrast, the LNG Pipeline route traverses a broader range of habitat types and intersects areas that retain greater ecological functionality (Figure 7-3). Portions of the alignment occur within secondary grassland habitat and intersect, or occur in close proximity to, the Groot-Bossiespruit and associated wetland systems. The route crosses the Groot-Bossiespruit on two occasions and thereafter follows the drainage corridor and associated wetland habitat for approximately 2.5 km.

Although portions of the alignment occur within previously disturbed areas, several sections retain semi-natural habitat characteristics and remain connected to broader grassland and wetland systems within the surrounding landscape. These habitats contribute to ecological connectivity, support indigenous biodiversity, and provide habitat resources for a range of flora and fauna. Consequently, the LNG Pipeline route traverses an environment of higher ecological value than that associated with the proposed Gas-to-Power facility footprint and MRG Pipeline route.

No plant or animal SCC were recorded within the LNG Pipeline route itself during the field survey. However, evidence of *Leptailurus serval* (Serval), a provincially protected and Near Threatened mammal species, was recorded within the broader area of influence associated with adjacent wetland habitat. Although this record was located outside the study area and outside areas likely to be directly affected by the proposed development, it demonstrates that the surrounding landscape continues to support fauna species of conservation importance. The record further highlights the ecological significance of remnant wetland and grassland habitat occurring within the broader receiving environment surrounding the LNG Pipeline alignment.

Therefore, while the LNG Pipeline route remains developable from a terrestrial biodiversity perspective, the presence of secondary grassland habitat, wetland-associated ecological features, and greater landscape connectivity results in a higher site-based sensitivity than that associated with the proposed Gas-to-Power facility footprint and MRG Pipeline route.



Figure 7-3 - Field survey images of the LNG Pipeline route

7.2 DETAILED SSV

The SSV confirmed that terrestrial biodiversity sensitivities vary across the proposed development alternatives. While the proposed Sasol Gas-to-Power facility footprint and MRG Pipeline route occur predominantly within the existing Sasol Secunda operational area and are associated with extensively transformed habitat, portions of the LNG Pipeline route traverse less disturbed areas that retain remnant grassland habitat, wetland features, drainage corridors and associated ecological functions.

Consequently, the site-based sensitivities identified during the field verification process differ from those assigned by the National Web-Based Environmental Screening Tool, which is based on regional biodiversity datasets and does not account for current on-site conditions or levels of habitat transformation. The proposed Sasol Gas-to-Power facility footprint and associated MRG Pipeline route are therefore considered to exhibit low terrestrial biodiversity sensitivity, including the terrestrial biodiversity, animal species and plant species themes (Table 7-1). In contrast, the LNG Pipeline route is considered to exhibit an overall medium terrestrial biodiversity sensitivity (Table 7-2) owing to its

interaction with secondary grassland habitat and proximity to the Groot-Bossiespruit and associated wetland systems.

Based on the SSV outcomes, the MRG Pipeline route is considered the environmentally preferred alternative from a terrestrial biodiversity perspective, as it is largely confined to existing transformed areas and disturbed infrastructure corridors. The LNG Pipeline route, while still considered developable from a terrestrial biodiversity perspective, traverses habitats of comparatively greater ecological value and therefore presents a higher biodiversity sensitivity.

Table 7-1 - Terrestrial biodiversity, animal and plant species SSV outcomes for the Proposed Sasol Gas-to-Power Facility and MRG Pipeline

Theme	Screening Tool Sensitivity	Site-based Sensitivity	Motivation
Terrestrial Biodiversity	Very High	Low	The Screening Tool sensitivity is triggered by the regional occurrence of the Vulnerable Soweto Highveld Grassland vegetation type. However, the proposed Gas-to-Power facility footprint and MRG Pipeline route occur within the existing Sasol Secunda operational area and are largely transformed by paved and gravelled surfaces, artificial fill, existing infrastructure, and ongoing industrial activities. Remaining vegetation is limited and largely confined to disturbed margins and modified drainage features with reduced ecological functioning. The site-based terrestrial biodiversity sensitivity is therefore considered Low.
Animal Species	Medium	Low	No animal SCC, or evidence thereof, were recorded within the proposed facility footprint or along the MRG Pipeline route during the field survey. These areas are highly modified, fenced, and subject to ongoing industrial disturbance, resulting in limited habitat availability for the species identified by the Screening Tool, including the Makwassie Musk Shrew (<i>Crocidura maquassiensis</i>), Caspian Tern (<i>Hydroprogne caspia</i>) and Grassveld Nimble Blue (<i>Lepidochrysops procera</i>). The site-based animal species sensitivity is therefore considered Low.
Plant Species	Medium	Low	No plant SCC were recorded within the proposed facility footprint or along the MRG Pipeline route during the field survey. A population of <i>Crinum bulbispermum</i> , a provincially protected species, was recorded approximately 198 m outside the study area within the broader area of influence. Given the separation distance from the proposed infrastructure and the presence of existing disturbance features between the recorded population and the development area, direct

			impacts are not anticipated. The site-based plant species sensitivity is therefore considered Low.
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Table 7-2 - Terrestrial biodiversity, animal and plant species SSV outcomes for the LNG Pipeline Route

Theme	Screening Tool Sensitivity	Site-based Sensitivity	Motivation
Terrestrial Biodiversity	Very High	Medium	The Screening Tool sensitivity is triggered by the regional occurrence of the Vulnerable Soweto Highveld Grassland vegetation type. Although portions of the LNG Pipeline route occur within transformed areas, sections of the alignment traverse secondary grassland habitat and intersect, or occur in close proximity to, the Groot-Bossiespruit and associated wetland systems. These habitats retain ecological functionality and contribute to ecological connectivity, habitat availability and biodiversity value within the broader landscape. Consequently, a Medium site-based terrestrial biodiversity sensitivity is considered appropriate.
Animal Species	Medium	Medium	No animal SCC were recorded within the LNG Pipeline route itself during the field survey. However, evidence of <i>Leptailurus serval</i> (Serval), a Near Threatened and provincially protected species, was recorded within the broader area of influence associated with adjacent wetland habitat. While this record occurred outside the study area and outside areas likely to be directly affected by the proposed development, it confirms that the surrounding landscape retains habitat capable of supporting fauna species of conservation importance. Given the route's proximity to wetlands, drainage features and secondary grassland habitat, the LNG Pipeline route is considered to retain moderate habitat value for fauna species and is consequently assigned a Medium site-based sensitivity.
Plant Species	Medium	Low	No plant SCC were recorded within the LNG Pipeline route during the field survey. Although secondary grassland habitat occurs along portions of the alignment, no protected or threatened plant species were identified within the development corridor. The site-based plant species sensitivity is therefore considered Low.

8 CONCLUSION AND RECOMMENDATIONS

Based on the combined desktop assessment and field verification survey, the proposed Gas-to-Power facility and MRG Pipeline route are considered to exhibit low terrestrial biodiversity sensitivity, as they are largely confined to the highly transformed Sasol Secunda operational area, which is characterised by extensive disturbance, existing industrial infrastructure, and vegetation dominated by disturbance-tolerant and invasive species. No plant or animal SCC were recorded within the proposed facility footprint or MRG Pipeline route, and habitat suitability for SCC within these areas is considered limited.

In contrast, the LNG Pipeline route is considered to exhibit an overall low to medium terrestrial biodiversity sensitivity due to its interaction with comparatively less disturbed environments, including sections associated with the Groot-Bossiespruit, adjacent wetland habitats, drainage features, and secondary grassland vegetation that retain ecological functionality and provide habitat resources for indigenous species. Although no SCC were recorded within the LNG Pipeline route itself, the surrounding landscape remains capable of supporting fauna and flora of conservation importance, as evidenced by the presence of provincially protected and SCC habitat within the broader area of influence.

The SSV confirmed that the regional sensitivities identified by the National Web-Based Environmental Screening Tool are not uniformly applicable across all proposed development components, particularly within the highly transformed Sasol Secunda operational area. However, portions of the LNG Pipeline route retain ecological characteristics more consistent with the sensitivities identified through the desktop assessment and therefore warrant additional consideration during project planning and implementation.

Overall, the proposed development is considered acceptable from a terrestrial biodiversity, animal species and plant species perspective, subject to the implementation of appropriate environmental management measures and adherence to the environmental controls contained within the Environmental Management Programme (EMPr).

Based on the findings of this assessment, the MRG Pipeline route is the environmentally preferred alternative, as it remains largely within transformed areas and existing infrastructure corridors and avoids direct interaction with remnant grassland and wetland-associated habitat. Consequently, the MRG Pipeline route is anticipated to result in the lowest potential impact on terrestrial biodiversity resources and should be prioritised during project planning where technically feasible.

8.1 SCOPING-LEVEL IMPACT MANAGEMENT RECOMMENDATIONS

The following high-level management recommendations are provided to inform project planning, detailed design, and EMPr development:

- Development activities should remain confined to the authorised and demarcated development footprint at all times, and unnecessary disturbance of surrounding habitat should be avoided.
- Where practical, existing disturbed areas, infrastructure corridors and previously modified surfaces should be utilised in preference to undeveloped or semi-natural habitat.
- Construction activities should be undertaken in a manner that minimises unnecessary disturbance to adjacent grassland, wetland and drainage-associated habitats.

- Existing site-specific environmental management procedures applicable to alien invasive plant control should continue to be implemented in accordance with the applicable Sasol management plans.
- All temporary construction disturbances should be rehabilitated as soon as practicable following construction, with disturbed areas stabilised and revegetated using appropriate indigenous vegetation where required.
- Open trenches and excavations should be minimised where possible and should not be left open for extended periods to reduce potential risks to fauna moving through the area.
- No trapping, hunting, collecting, poisoning or intentional disturbance of fauna may be undertaken by site personnel.
- Environmental awareness training should be provided to construction personnel prior to commencement of works. Training should include awareness of protected animal and plant species that may occur within the broader area of influence, appropriate reporting procedures for wildlife observations, and compliance with site-specific environmental controls.
- Should any protected plant species or fauna of conservation importance be encountered during construction activities, the relevant environmental personnel should be notified and appropriate avoidance or management measures implemented where necessary.
- Environmental induction must be provided to all staff and contractors prior to commencement of works. This induction shall include specific awareness training on the presence and conservation importance of protected animal and plant species within the project area. Personnel must be instructed to avoid any disturbance to such species, with particular emphasis on *Crinum bulbispermum* and *Leptailurus serval*, and to adhere strictly to all site-specific environmental controls and permit conditions.

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