



North Elevation
188°S (T) ● 33°58'4"S, 22°31'3"E ±4

Avifauna Compliance Statement

REMOVAL AND REPLACEMENT OF VARIOUS
EXISTING CULVERTS AND PIPES IN THE GARDEN
ROUTE, WESTERN CAPE

1 DOCUMENT CONTROL

Project title	PROPOSED REMOVAL AND REPLACEMENT OF VARIOUS EXISTING CULVERTS AND PIPES IN THE GARDEN ROUTE, WESTERN CAPE
Report reference	GRAV/MORA_002
Document prepared for	EnviroWorks (Pty) Ltd
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2 EXECUTIVE SUMMARY

Background

EnviroWorks (Pty) Ltd was appointed as the Environmental Assessment Practitioner (EAP) to undertake the Basic Assessment process for the proposed removal and replacement of existing culverts and associated pipes at **Site 4 (DR1633)** and **Site 8 (DR1602)** within the Mossel Bay Local Municipality, Western Cape. The proposed works are confined to existing road reserves and involve replacing damaged culvert infrastructure without expanding the existing development footprint.

The DFFE Environmental Screening Tool identified the **Animal Species (Avifauna) Theme** as **High sensitivity**, triggered by the potential occurrence of **Knysna Warbler (*Bradypterus sylvaticus*)** at both sites, **Denham's Bustard (*Neotis denhami*)** at Site 8, and **African Marsh Harrier (*Circus ranivorus*)** with a medium sensitivity trigger. Consequently, an avifaunal site sensitivity verification was required in accordance with the **Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes** and the **Species Environmental Assessment Guideline Version 4.1 (2026)**.

MORA Ecological Services (Pty) Ltd was appointed as the independent specialist to undertake the avifaunal assessment, verify the DFFE screening sensitivity, evaluate habitat suitability within the project footprint, assess the likelihood of occurrence of screened species, and compile this Avifauna Compliance Statement. Desktop investigations were supplemented by a field verification survey undertaken on **29 and 30 October 2023**.

Findings

The assessment determined that the proposed project footprint consists of existing disturbed road reserves and culvert crossings within the **Garden Route Shale Fynbos** (Site 4) and **Garden Route Granite Fynbos** (Site 8) vegetation types. Habitat within the project footprint has been modified by existing infrastructure and provides limited opportunities for breeding, roosting or long-term occupancy by avifaunal Species of Conservation Concern.

Although **Knysna Warbler** and **Denham's Bustard** have been recorded within the broader SABAP2 Pentad 3355_2210, suitable habitat for these species is absent within the project footprint. Similarly, **African Marsh Harrier** may occasionally forage within the surrounding landscape, but suitable wetland breeding habitat is not present within either site.

Only common and widespread bird species associated with disturbed roadside, riparian and fynbos habitats were recorded during the field survey. None of the Species of Conservation Concern identified by the DFFE Screening Tool were observed during field verification.

Conclusions

Based on habitat suitability, field observations and the ecological requirements of the screened species, the **High** avifaunal sensitivity assigned by the DFFE Environmental Screening Tool is considered representative of the broader landscape rather than the project footprint. The verified avifaunal sensitivity of both Site 4 and Site 8 is therefore assessed as **Low**.

The proposed works are limited to the replacement of existing culverts within previously disturbed road reserves and are not expected to result in significant habitat loss or fragmentation. Potential impacts on avifauna are expected to be localised, temporary and of **Low significance**, provided that the recommended mitigation measures are implemented during construction.

Recommendations

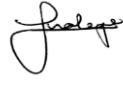
The following measures should be implemented during construction:

- Restrict all construction activities to the approved project footprint and existing road reserve.
- Minimise unnecessary clearing of riparian and roadside vegetation.
- Inspect vegetation for active bird nests prior to clearing, particularly during the breeding season, and avoid disturbing occupied nests where practicable.
- Implement dust suppression and noise control measures where necessary to minimise disturbance to adjacent habitats.
- Prevent the introduction and spread of invasive alien plant species through good housekeeping and rehabilitation of disturbed areas.
- Ensure that construction personnel receive environmental awareness training regarding the protection of wildlife and indigenous vegetation.
- Rehabilitate all temporarily disturbed areas immediately following construction.
- Implement all mitigation measures contained within the Environmental Management Programme (EMPr).

Specialist Opinion

Based on the findings of this assessment, it is the opinion of the specialist that the proposed removal and replacement of existing culverts and associated pipes at Sites 4 and 8 is **acceptable from an avifaunal perspective**. The project is unlikely to result in significant impacts on avifaunal Species of Conservation Concern or their habitats, provided that the recommended mitigation measures are implemented. Accordingly, the submission of an **Avifauna Compliance Statement** is considered appropriate for the proposed development.

3 REVIEW & APPROVAL

Name	Title	Signature	Date
Mokgatla Molepo	Avifaunal Specialist & Author (MORA Ecological Services)		04/08/2026
Megan Smith	Environmental Assessment Practitioner (EnviroWorks)		

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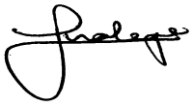
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7 DECLARATION BY THE SPECIALIST

I, **Mokgatla Jerry Molepo**, declare that:

- I act as the independent specialist in this application.
- I will perform the work relating to the application objectively, even if this results in views and findings that are not favourable to the applicant.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations, and any guidelines that have relevance to the proposed activity.
- I will comply with the Act, Regulations, and all other applicable legislation.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant 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, and the objectivity of any report, plan, or document to be prepared by me for submission to the competent authority.
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

MORA Ecological Services (Pty) Ltd

Name of Company

04/08/2026

Date

I, **Prince Molokomme**, declare that:

- I act as the independent specialist in this application.
- I will perform the work relating to the application objectively, even if this results in views and findings that are not favourable to the applicant.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations, and any guidelines that have relevance to the proposed activity.
- I will comply with the Act, Regulations, and all other applicable legislation.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant 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, and the objectivity of any report, plan, or document to be prepared by me for submission to the competent authority.
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

MORA Ecological Services (Pty) Ltd

Name of Company

04/84/2026

8 ABBREVIATION LIST

Abbreviation	Description
AEWA	African-Eurasian Waterbird Agreement
BA	Basic Assessment
BGIS	Biodiversity Geographic Information System
BSP	Biodiversity Spatial Plan
CBA	Critical Biodiversity Area
CBD	Convention on Biological Diversity
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CVB	Channelled Valley-Bottom Wetland
DFFE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GN	Government Notice
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
NBA	National Biodiversity Assessment
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
PAOI	Project Area of Influence
PES	Present Ecological State
Pr. Sci. Nat.	Professional Natural Scientist
SACNASP	South African Council for Natural Scientific Professions
SABAP2	Southern African Bird Atlas Project 2
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
TOPS	Threatened or Protected Species
VEGMAP	National Vegetation Map of South Africa
WCBSP	Western Cape Biodiversity Spatial Plan

9 BACKGROUND

9.1 Introduction

EnviroWorks (Pty) Ltd has been appointed as the Environmental Assessment Practitioner (EAP) for the Basic Assessment process for the proposed removal and replacement of existing culverts and associated pipes at Site 4 (DR1633) and Site 8 (DR1602) within the Mossel Bay Local Municipality, Western Cape (Figure 1). The proposed works are restricted to the replacement of existing damaged road-crossing infrastructure within previously disturbed road reserves and associated watercourse crossings.

The National Web-based Environmental Screening Tool identified the Animal Species Theme as having a High sensitivity, primarily due to the potential occurrence of avifaunal Species of Conservation Concern (SCCs). Consequently, a site sensitivity verification and specialist assessment were required in accordance with the Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes (Government Notice No. 1150 of 30 October 2020, as amended by Government Notice No. 3717 of 28 July 2023).

MORA Ecological Services (Pty) Ltd was appointed as the independent avifaunal specialist to undertake the site sensitivity verification, assess the suitability of habitat within the project footprint and surrounding area, evaluate the likelihood of occurrence of the screened species, and compile this Avifauna Compliance Statement. The assessment was undertaken in accordance with the Species Environmental Assessment Guideline Version 4.1 (2026), which requires the verification of screening tool results through a combination of desktop assessment, field verification and habitat suitability assessment.

The assessment incorporated:

- the DFFE Environmental Screening Tool results;
- Species Environmental Assessment Guideline Version 4.1 (2026);
- Southern African Bird Atlas Project 2 (SABAP2) records for Pentad 3355_2210;
- BirdLife South Africa species accounts and ecological information;
- vegetation mapping (Mucina & Rutherford, 2006; SANBI); and
- field verification undertaken on 29 and 30 October 2023.

The purpose of the assessment was not only to verify the presence or absence of screened species, but also to determine whether the project footprint contains suitable breeding, foraging or roosting habitat capable of supporting these species, thereby verifying the site sensitivity in accordance with the applicable DFFE protocol.

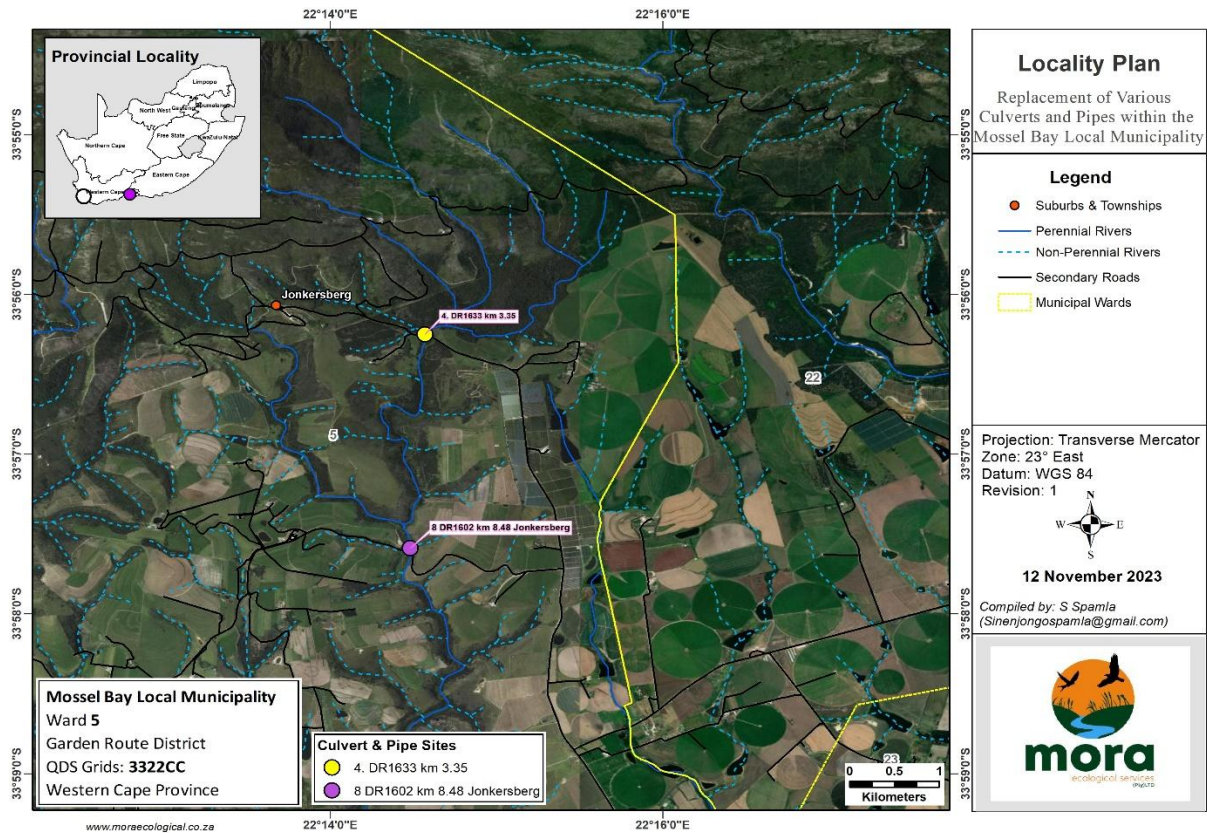


Figure 1: Location of study Site.

9.2 Purpose of the Study

The purpose of this Avifauna Compliance Statement is to:

- verify the avifaunal sensitivity assigned by the DFFE Environmental Screening Tool;
- identify avifaunal Species of Conservation Concern that may occur within the project area;
- assess habitat suitability within the project footprint and immediate surroundings;
- evaluate the likelihood of occurrence of screened species using desktop information and field observations;
- determine whether the proposed development is likely to result in significant impacts on avifauna; and
- provide mitigation measures, where required, to minimise potential impacts during construction and operation.

9.3 Assumptions and Limitations

The assessment was undertaken in accordance with the Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes (Government Notice No. 1150 of 30 October 2020, as amended by Government Notice No. 3717 of 28 July 2023) and the Species Environmental Assessment Guideline Version 4.1 (2026). The following assumptions and limitations apply:

- Information describing the proposed project, including the location and extent of the proposed culvert replacement works, was supplied by the Environmental Assessment Practitioner (EAP) and is assumed to be accurate.
- The assessment was limited to the proposed project footprint and its immediate zone of influence associated with Sites 4 (DR1633) and 8 (DR1602). Areas outside the project footprint were assessed only where necessary to determine habitat connectivity and the potential use of the surrounding landscape by avifaunal species.
- The assessment relied on a combination of desktop information, including the DFFE Environmental Screening Tool, SABAP2 records for Pentad 3355_2210, BirdLife South Africa species accounts, vegetation mapping and field observations to evaluate the likelihood of occurrence of species of conservation concern.
- Field verification was undertaken on 29 and 30 October 2023 during late spring, which coincides with the breeding season for many bird species. Although this period is considered suitable for detecting resident avifauna, some migratory, nomadic or cryptic species may not be detected during a single site visit.
- The absence of a species during the field survey should not be interpreted as evidence that the species is absent from the broader landscape. Species with suitable distribution ranges may occur intermittently in response to seasonal movements, breeding behaviour, rainfall patterns or fluctuations in food availability. Consequently, the likelihood of occurrence was determined using both habitat suitability and known regional distribution, rather than relying solely on field observations.
- Site sensitivity verification was based primarily on the suitability of habitat within the project footprint to support breeding, foraging, roosting or regular occupancy by screened species. Species recorded within the broader SABAP2 pentad were evaluated against habitat conditions present within the project area.
- The proposed works are confined to the replacement of existing culverts and associated infrastructure within previously disturbed road reserves. No significant expansion of the development footprint is proposed; therefore, the assessment focuses on the incremental impacts associated with the proposed construction activities.
- This assessment is based on the site conditions observed during the field survey and the

information available at the time of reporting. Should the project footprint be substantially amended or site conditions change significantly prior to construction, additional specialist verification may be required.

9.4 TERMS OF REFERENCE

The terms of reference for this assessment were to:

- Undertake a desktop review of available avifaunal information relevant to the project area.
- Verify the avifaunal sensitivity assigned by the DFFE Environmental Screening Tool.
- Conduct a site inspection to assess habitat suitability within the project footprint.
- Determine the likelihood of occurrence of avifaunal Species of Conservation Concern identified by the DFFE Screening Tool.
- Assess the potential impacts of the proposed culvert replacement on avifauna and associated habitats.
- Confirm the appropriate site sensitivity rating for the project area.
- Recommend mitigation measures, where necessary, to avoid or minimise impacts on avifauna.
- Compile an Avifauna Compliance Statement in accordance with the **Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes** and the **Species Environmental Assessment Guideline Version 4.1 (2026)**.

9.5 Protocol Compliance Checklist Table

Protocol Requirement (GN 1150 / GN 3717)	Compliance Status	Report Section
Contact details & SACNASP registration of the specialist.	Compliant	Section 1 Document Control
Document Control & Specialist Declaration	Compliant	Section 7 Declaration by Specialist
Methodology used to perform the site sensitivity verification.	Compliant	Section 16 (Methodology) & Section 18 (SSV)
Verification date(s) and seasonal applicability of the inspection	Compliant	Section 18.1 (Site Sensitivity Verification & Re-verification Statement)
Confirmation of site sensitivity (confirm or dispute DFFE Screening Tool).	Compliant	Section 2 Executive Summary & Section 18 (Table 2)
Verifiable Evidence - GPS Track Map showing track in relation to study footprint.	Compliant	Section 16

Verifiable Evidence - Sample Sites (> 4 representative sites with coords, photos & habitat descriptions).	Compliant	Section 18.2
Protection of Sensitive Species (Footnote 13): Ensuring actual names of screening tool sensitive species are withheld in public reports.	Compliant	Section 18
Impact Assessment & Mitigation Hierarchy (Avoidance, Minimisation, Rehabilitation).	Compliant	Section 21 (Impact Assessment) and Section 22 (Mitigation measures)
An explicit opinion on whether the activity should be authorized or not.	Compliant	Section 2 Executive Summary & Section 22 (Conclusion)

10 RELEVANT LEGISLATION

International Law and Conventions

The importance of sustainable development and the protection of environmental resources has become a global driver in the development of new legislation governing industrial practices and their impact on the environment. South Africa has signed and ratified several global treaties, protocols, and conventions, agreeing to implement policies that endorse sustainable development and promote a positive environmental legacy for future generations. A significant international convention to which South Africa is a signatory is the Convention on Biological Diversity (CBD). The CBD is notably the key international convention for sustainable development. The CBD has three main objectives that promote a sustainable future. These are:

- The conservation of biological diversity.
- The sustainable use of its components; and
- The fair and equitable sharing of the benefits from the use of genetic resources.

The convention covers all domains directly or indirectly related to biodiversity and its role in development, ranging from science, politics, and education to agriculture, business, and culture.

South African Constitution (1996)

The foundation of South Africans Environmental law is set in the Constitution of the Republic of South Africa (1996), specifically “Chapter 2- The Bill of Rights: section 24”. This has allowed for the rapid development of environmentally based legislation which guards, enforces, and guides all parties to maintain the human rights granted in the Constitution. These rights include:

The right to an environment that is not harmful to their health or well-being; and

To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

National Environmental Management Act (NEMA, 1998)

The National Environmental Management Act (NEMA), Act 107 of 1998 is the fundamental environmental legislation which aims to strengthen the rights granted in the South African Constitution. The NEMA Act is the foundation of environmental law in South Africa and has set the framework for additional legislation to build on. The Act establishes principles for decision-making on environmental matters, as well as providing motive for institutions which promote cooperative governance, and which can coordinate environmental action plans. Section 2(4) specifies that sustainable development requires the consideration of all relevant factors. In the regard to biodiversity and South Africa's ecological integrity, development should not result in the disturbance of ecosystems and loss of biological diversity, if not possible, these effects must be minimised and remedied. A low-risk, cautious approach should always be applied, considering limits of current knowledge concerning consequences and actions. Always anticipate possible negative impacts on the environment and people's environmental rights, identified impacts should be prevented and where they cannot be altogether prevented, are minimised, and mitigated. Outlined NEMA principles about biodiversity are to:

- Prevent pollution and ecological degradation.
- Promote conservation; and
- Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

National Environmental Management of Biodiversity Act (NEMBA, 2004)

The National Environmental Management of Biodiversity Act (NEMBA) Act 10 of 2004 was designed to provide a management and conservation outline for biological diversity, as drafted under the NEMA. NEMBA focuses on the management and conservation of biodiversity, with its relevant components, which includes the use of indigenous biological resources in a sustainable manner, the fair and equitable sharing of benefits arising from bio-prospecting, cooperative governance in biodiversity management and conservation within the structures of NEMA. The Act, in protecting biodiversity, deals with the protection of threatened ecosystems and species, the control of alien invasive species, genetically modified organisms and regulates bio-prospecting. As with NEMA, NEMBA incorporates and gives effect to international agreements relating to biodiversity. The Act gives the Minister of Environmental Affairs, Forestry and Fisheries the power to categorise any process or activity in a listed ecosystem, as a threatening process,

thereafter, be regarded as an activity contemplated in Section 24(2) (b) of NEMA which states that: Specified activities may not be commenced without prior authorisation from the Minister or MEC and specify such activities. NEMBA is the most prominent statute containing provisions directly aimed at the conservation of b with the Threatened or Protected Species Regulations, February 2007 (TOPS Regulations). The NEMBA Regulations on Threatened or Protected Species (TOPS, 2007) lists all the species that are threatened with extinction and therefore, nationally protected under an approach to sustainable use and development. Periodically, Red Data books are published, and the data used to update these lists of protected species.

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

- To prevent the unauthorized introduction and spread of alien species and invasive species to ecosystems and habitats where they do not naturally occur.
- To manage and control alien species and invasive species to prevent or minimize harm to the environment and to biodiversity.
- To eradicate alien species and invasive species from ecosystems and habitats where they may harm such ecosystems or habitats.
- According to Section 65 of the Act, "Restricted activities involving alien species":
- A person may not carry out a restricted activity involving a specimen of an alien species without a permit issued in terms of Chapter 7.
- Restricted activities include the following:
- Importing into the Republic, including introducing from the sea, any specimen of a listed invasive species.
- Having in possession or exercising physical control over any specimen of a listed invasive species.
- Growing, breeding or in any other way propagating any specimen of a listed invasive species or causing it to multiply.
- Conveying, moving, or otherwise translocating any specimen of a listed invasive species.
- Selling or otherwise trading in, buying, receiving, giving, donating, or accepting as a gift, or in any other way acquiring or disposing of any specimen of a listed invasive species.

- Spreading or allowing the spread of any specimen of a listed invasive species.
- Releasing any specimen of a listed invasive species.

National Environmental Management: Protected Areas Act (Act 57 of 2003) (NEMPAA)

NEMPAA provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. The Act also supports the establishment of a national register of all national, provincial, and local protected areas for the management of those areas per national norms and standards, for intergovernmental cooperation and public consultation in matters concerning protected areas, for continued existence, governance and functions of South African National Parks, and for matters concerning protected areas.

Section 50(5) of NEMPAA states that "no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority."

The Convention on the Conservation of Migratory Species (1983)

The Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) aims to conserve terrestrial, aquatic and avian migratory species throughout their range. It is an intergovernmental treaty, concluded under the aegis of the United Nations Environment Programme, concerned 22 with the conservation of wildlife and habitats on a global scale. Since the Convention's entry into force, its membership has grown steadily to include 117 (as of 1 June 2012) Parties from Africa, Central and South America, Asia, Europe and Oceania. South Africa is a signatory to this convention.

The African-Eurasian Waterbird Agreement (1999)

The African-Eurasian Waterbird Agreement. The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) is the largest of its kind developed so far under the CMS. The AEWA covers 255 species of birds ecologically dependent on wetlands for at least part of their annual cycle, including many species of divers, grebes, pelicans, cormorants, herons, storks, rails, ibises, spoonbills, flamingos, ducks, swans, geese, cranes, waders, gulls, terns, tropic birds, auks, frigate birds and even the South African penguin. The agreement covers 119 countries and the European Union (EU) from Europe, parts of Asia and Canada, the Middle East and Africa.

11 RECEIVING ENVIRONMENT

The proposed project comprises the removal and replacement of existing culverts and associated pipes at **Site 4 (DR1633)** and **Site 8 (DR1602)** within the Mossel Bay Local Municipality, Western Cape. Both sites are situated within existing road reserves where infrastructure is already present and have been subjected to historical disturbance associated with road construction and maintenance. The proposed works are confined to the existing infrastructure footprint and do not involve the development of new road alignments.

Site 4 (DR1633)

Site 4 is located within the Fynbos Biome, Shale Fynbos Bioregion, and is mapped as Garden Route Shale Fynbos (Figure 2). This vegetation type occurs on undulating coastal plains and hills and is characterised by dense proteoid, ericaceous and graminoid fynbos. In the broader landscape, Afrotropical forests commonly occupy fire-protected habitats, while riparian corridors may support scrub forests and narrow belts of transitional vegetation. Within the project footprint, vegetation has been modified by the existing road crossing and associated maintenance activities, resulting in disturbed roadside vegetation with limited habitat value for avifaunal Species of Conservation Concern.

Site 8 (DR1602)

Site 8 falls within the Fynbos Biome, Granite Fynbos Bioregion, and is mapped as Garden Route Granite Fynbos (Figure 2). This vegetation type is characterised by dense proteoid and graminoid fynbos with ericaceous vegetation associated with seepage areas. The project footprint is confined to an existing road crossing over a river and is surrounded by disturbed roadside vegetation. Although intact fynbos occurs in the surrounding landscape, habitat within the project footprint has been altered by existing infrastructure and does not represent intact natural habitat.

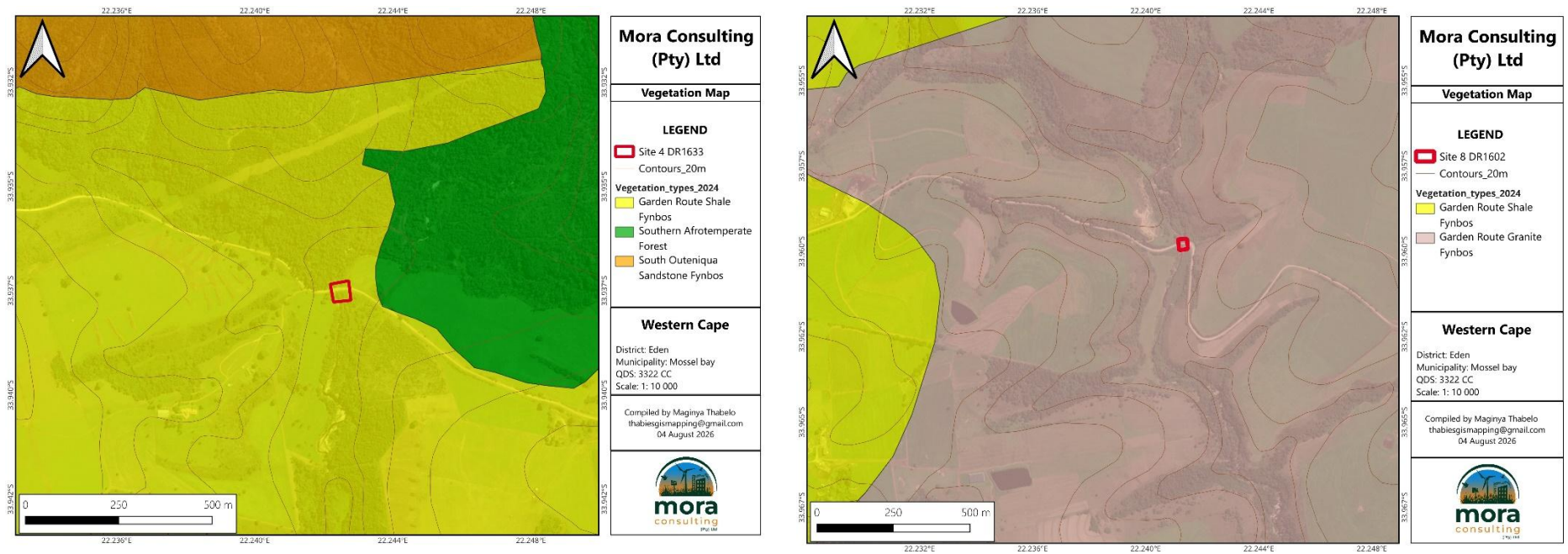


Figure 2: Vegetation map of the sites.

11.1 Hydrology and Aquatic System

Hydrological features and aquatic ecosystems play an important role in maintaining terrestrial biodiversity by supporting ecological processes such as water regulation, nutrient cycling, habitat provision, and ecological connectivity. Rivers, drainage lines, and wetlands contribute to landscape-level ecological functioning by providing water resources for flora and fauna, supporting riparian vegetation, and facilitating species movement across the landscape. According to the NBA (2018), both sites overlap with the Channeled-Valley Bottom wetland (CVB) and river (Figure 3). Ground-truthing confirmed the river, and the CVB was not confirmed.

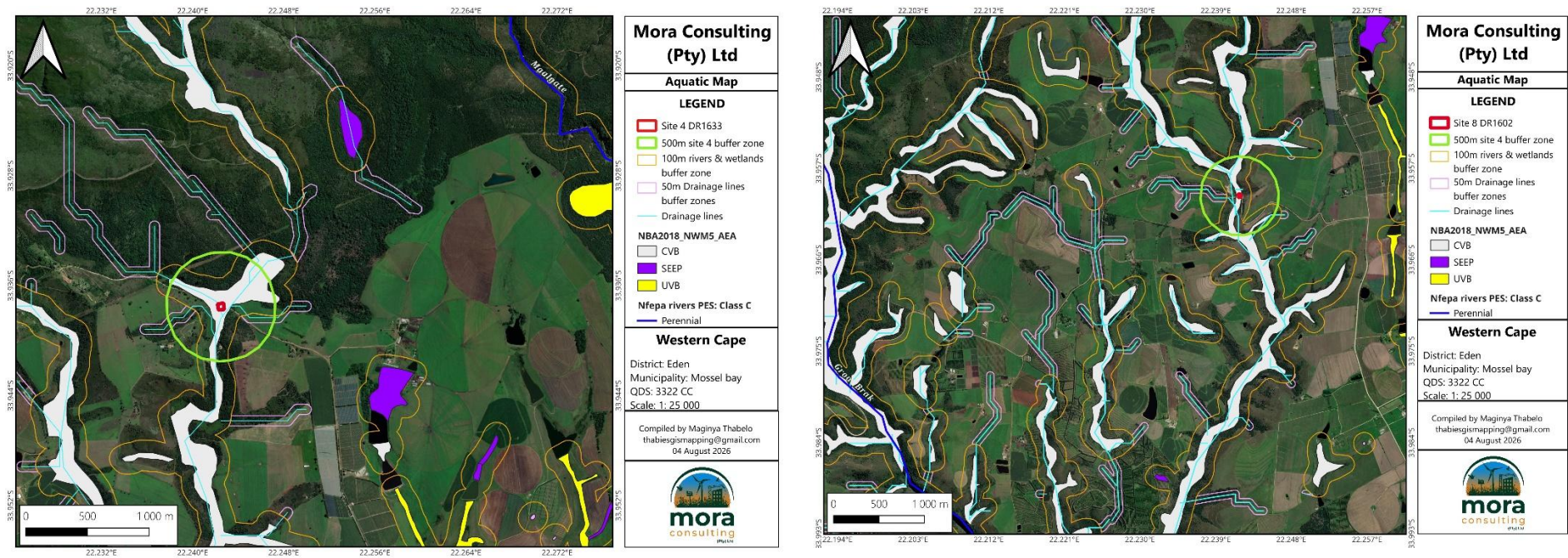


Figure 3: Aquatic map of the sites.

11.2 Avifaunal Habitat

Both project sites are associated with existing river crossings and contain narrow riparian corridors that provide habitat for common bird species and may provide temporary foraging opportunities for some Species of Conservation Concern. However, the project footprints are small, disturbed and confined to existing road infrastructure. Habitat required by screened species, including extensive wetlands, dense forest-edge thickets or large open grasslands, is absent from the project footprints. While suitable habitat for certain species occurs elsewhere within the broader landscape and SABAP2 pentad, the project areas themselves provide limited opportunities for breeding or long-term occupancy by avifaunal Species of Conservation Concern. Consequently, the avifaunal habitat value of the project footprints is considered **Low**, despite the broader landscape supporting higher ecological value.

Photo plate 1: Habitat found in the project area:





12 CONSERVATION STATUS

This Biodiversity Plan delineates on a map, commonly known as a Critical Biodiversity Areas (CBA), biodiversity priority areas called Critical Biodiversity Areas, Ecological Support Areas and Protected Areas. These areas are the portfolio of sites that are required to meet the region's biodiversity targets and need to be maintained in the appropriate condition for their category. It is highly recommended that this Conservation Plan be a primary biodiversity consideration in Environmental Impact Assessments.

Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services. In other words, if these areas are not maintained in a natural or near-natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses.

Criteria of Identifying CBA

A CBA is an area that must remain in good ecological condition in order to meet biodiversity targets for ecosystem types, species of special concern or ecological processes. CBAs can meet biodiversity targets for terrestrial or aquatic features, or both. Together with protected areas, the portfolio of CBAs identified in a biodiversity plan must collectively meet biodiversity targets for representation of ecosystem types and species of special concern, and may also meet biodiversity targets for some ecological processes. Ecological Support Areas (ESAs) are terrestrial and aquatic areas that are not essential for meeting biodiversity representation targets (thresholds), but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration. The

degree or extent of restriction on land use and resource use in these areas may be lower than that recommended for CBAs.

Criteria for Identifying ESAs

An ESA is an area that must remain in at least fair ecological condition in order to: meet biodiversity targets for ecological processes that have not been met in CBAs or protected areas; meet biodiversity targets for representation of ecosystem types or species of special concern when it is not possible to meet them in CBAs; support ecological functioning of a protected area or CBA (e.g. protected area buffers); or a combination of these. ESAs can meet biodiversity targets for terrestrial, aquatic, or both. All ecological processes important for the long-term persistence of ecosystems and species should be adequately included in the portfolio of protected areas, CBAs and ESAs. Sites selected to form part of ESAs could include sites in good, fair, or even severely modified ecological conditions, as long as the current ecological condition is compatible with fulfilling the purpose for which the ESA has been selected. The desired state/management objective for most ESAs is to maintain them in at least fair ecological condition. For severely modified ESAs, the management objective is to prevent further deterioration of the current ecological condition.

According to the Western Cape Biodiversity Spatial Plan – Mossel Bay (2017), the site falls within CBA 1 for aquatic and ESA 2 (**Figure 4**).

Mossel Bay Municipality: Avifauna Compliance

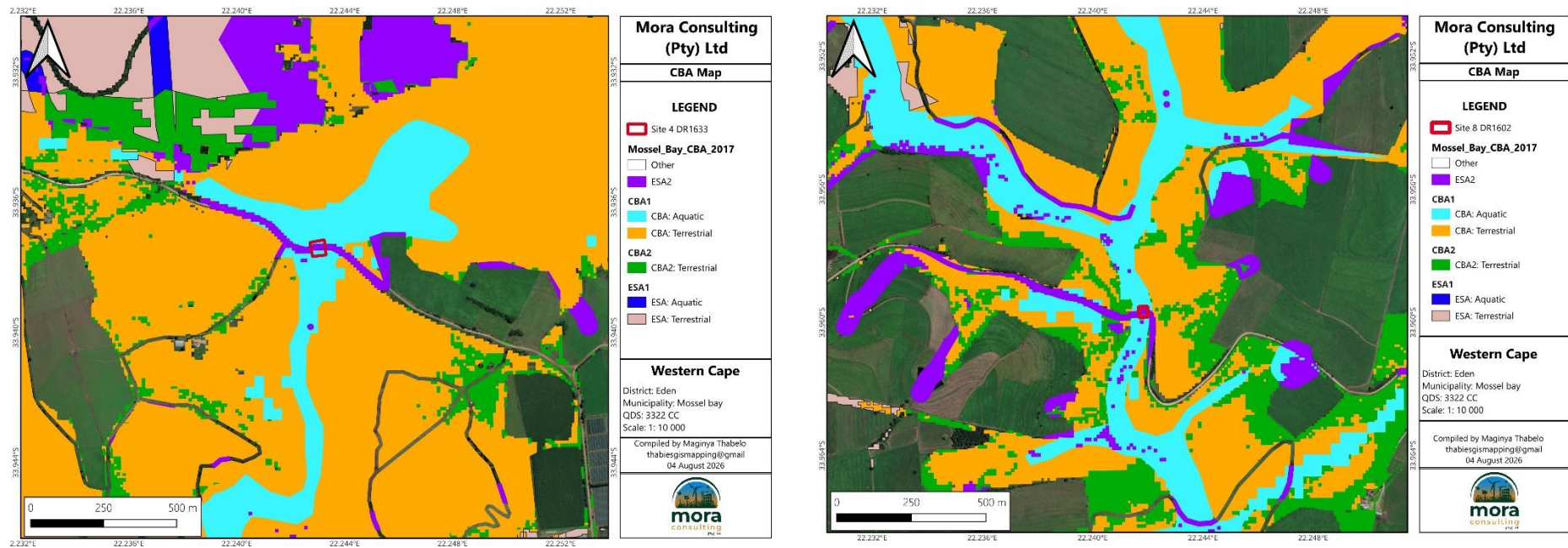


Figure 4: Conservation status of the sites.

13 KEY BIODIVERSITY AREAS (2024)

Site-based management efforts are among the most effective means to reduce global biodiversity loss. Therefore, it is crucial to identify sites with globally significant biodiversity, so that we can prioritise where and how to act most effectively. Key Biodiversity Areas are the most important places in the world for species and their habitats. Through the Key Biodiversity Area (KBA) programme in South Africa, we identify, map, monitor, and conserve these high-priority areas to help safeguard the most critical sites for nature.

SANBI and BirdLife South Africa lead this important initiative in South Africa in collaboration with several other partners.

What are Key Biodiversity Areas, and why are they important?

Key Biodiversity Areas (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 ecosystems. The aim is to help prevent the rapid loss of biodiversity by supporting nationally led efforts to identify places worldwide that are critical for the survival of unique plants and animals and the ecological communities they comprise. KBAs provide a global currency for identifying the most biologically significant sites, thereby focusing our collective efforts on conserving the places that matter most.

Sites qualify as global KBAs if they meet the specific standardised criteria and quantitative thresholds focused on one or more of the five trigger aspects:

Threatened biodiversity	Sites that support significant populations of species or ecosystems at risk of extinction.
Geographically restricted biodiversity	Sites that hold species or ecosystems with limited global ranges or extent.
Ecological integrity	Sites with intact ecological communities that maintain natural processes and have low human impact.
Biological processes	Locations critical for key life-cycle events such as breeding aggregations, refuges, or recruitment sources.
Irreplaceability	Sites essential for achieving conservation goals, where loss would significantly reduce options for biodiversity protection.

According to the South African KBAs (2024), both sites fall within the KBA (Figure 5).

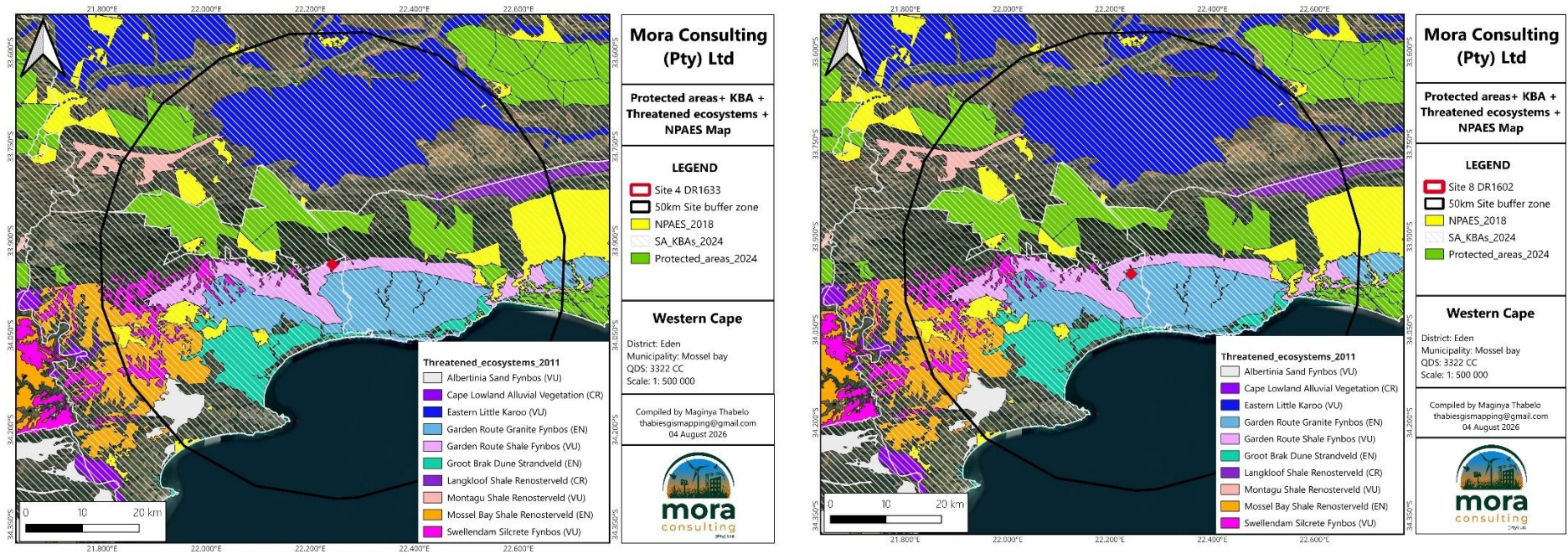


Figure 5: KBA, NPAES, and Threatened Ecosystem of the sites.

South African Protected Areas (2024)

The Protected Areas (2024) dataset was used to determine whether the site falls within or near any formally declared protected areas (SANBI, 2024). This dataset represents the most recent spatial inventory of legally declared protected areas in South Africa, including national parks, provincial nature reserves, and private nature reserves recognised under the National Environmental Management: Protected Areas Act (Act 57 of 2003) (Republic of South Africa, 2003; SANBI, 2024). Protected areas are formally designated to conserve biodiversity, maintain ecological processes, and safeguard representative ecosystems and species habitats, thereby contributing to national and international biodiversity conservation commitments (DEA, 2016; SANBI, 2019).

According to the Protected Areas (2024) dataset, the study area does not fall within any protected area. (Figure 5).

14 Ecosystem Threat Status

The NBA primarily focuses on evaluating biodiversity at the ecosystem and species levels in the four realms (terrestrial, inland aquatic, estuarine, and marine), as well as in two cross-realm areas (the coast and South Africa's sub-Antarctic territory), which are subject to the two headline indicators of threat status and protection level (Driver et al., 2011).

Ecosystem Threat Status and Protection Level

The National Environmental Management: Biodiversity Act (Act 10 of 2004) provides for the listing of threatened or protected ecosystems in one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU), or Least Threatened (LT). The main purpose of listing Threatened Ecosystems is to reduce the rate of ecosystem and species extinctions and to prevent further degradation and loss of structure, function, and composition of threatened ecosystems (Nel & Driver, 2014). Ecosystem threat status outlines the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function, and composition, on which their ability to provide ecosystem services ultimately depends (Driver et al., 2011) of each ecosystem type that remains in good ecological condition (Driver et al., 2011).

The level of ecological protection indicates whether or not ecosystems are sufficiently protected. Based on the percentage of each ecosystem type within a protected area recognized under the Protected Areas Act, ecosystem types are categorized as not protected, poorly protected, moderately protected, or well protected (Driver et al., 2012).

The National Environmental Management: Biodiversity Act, (Act No. 10 OF 2004) (NEM:BA) provides a National List of Ecosystems that are threatened and in need of protection – GN 1002 of 2011. According to

the NEM:BA List of threatened ecosystems (2011), the project sites are located within any threatened ecosystems (Figure 5).

15 Landscape and Local Corridors

For certain movement-related ecological processes to occur, such as species migration, seasonal and altitudinal dispersal, and range displacement in response to climate change, connections must be maintained. Therefore, these corridors primarily aim to maintain regional connectivity to support ecological processes rather than to meet specific biodiversity targets. It should be noted that none of the development components fall within a Landscape Corridor. The river passing through both sides can act as a local corridor.

16 METHODOLOGY AND ASSESSMENT APPROACH

16.1 Desktop

A desktop assessment was undertaken using freely available geographic information and mapping tools, including QGIS (v. 3.44.0) and Google Earth Pro (v. 7.3.6). These tools are reliable, accurate, and effective for detecting and analysing present and historical imagery across most of the world, including Western Cape Province. The desktop study consulted available spatial and ecological datasets for the project site and surrounding areas to obtain the most recent and reliable information on the ecosystem.

16.2 Field Assessment

The specialists conducted a one-day on-site survey on 29th and 30th October 2023. A reconnaissance 'walkabout' and point survey were undertaken to determine the general habitat types found throughout the study area. The focus was on identifying species of conservation concern (SCC), Threatened or Protected Species (TOPS), or Red Data Listed (RDL) Species.

16.2.1 Avifauna

Several threatened bird species have been recorded in the Western Cape Province to date. Bird species at the site were identified and recorded using a notebook, the Bird Lasser Version 1.0.8 Build 8 (<http://www.birdlasser.com>), binoculars 10x42, and the iNaturalist app (<http://www.iNaturalist.org>) during walking transects. At least 4-5 hours were spent on site, and all bird species heard and seen flying and perching within a 20-30m radius (Macchi & Grau, 2012) were recorded. Additionally, remains such as feathers, droppings, and nests were used to identify potential species. Flying birds were recorded only when they flew against the observers. A list of the species potentially to occur in the area was downloaded from the SABAP2 online source, SABAP2 Coverage: 3355_2210, and a complete list is attached in the appendix section of this report.

16.2.2 Red Data Listed Species

A desktop assessment was also conducted to screen key, threatened, or species of concern within the study area. The aim was to obtain and provide a list of potentially threatened species that may occur, as highlighted, and to verify the site assessment (**see Appendix I**).

The presence of species of concern, rare or protected species, or suitable habitat was sought and recorded during the field assessment. The definitions of status and category for the Red Data Listed Species are provided in Table 1.

Table 1: Red List Data Status and definitions as per SANBI (2010) guidelines.

P- Protected Species		
M- Medicinal species		
EX	Extinct	A taxon is Extinct when there is no reasonable doubt that the last individual has died. Taxa should be listed as extinct only once exhaustive surveys throughout the historic range have failed to record an individual.
EW	Extinct in the Wild	A taxon is Extinct in the Wild when it is known to survive only in cultivation or as a naturalized population (or populations) well outside the past range.
CR PE	Critically Endangered (Possibly Extinct)	Critically Endangered (Possibly Extinct) taxa are those that are, on the balance of evidence, likely to be extinct, but for which there is a small chance that they may be extant. Hence, they should not be listed as Extinct until adequate surveys have failed to record the taxon.
CR	Critically Endangered	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the five IUCN criteria for Critically Endangered and is therefore facing an extremely high risk of extinction in the wild.
EN	Endangered	A taxon is Endangered when the best available evidence indicates that it meets any of the five IUCN criteria for Endangered and is therefore facing a very high risk of extinction in the wild.
VU	Vulnerable	A taxon is Vulnerable when the best available evidence indicates that it meets any of the five IUCN criteria for Vulnerable and is therefore facing a high risk of extinction in the wild.

NT	Near Threatened	A taxon is Near Threatened when available evidence indicates that it nearly meets any of the five IUCN criteria for Vulnerable and is therefore likely to qualify for a threatened category in the near future.
CRITICALLY RARE		A taxon is Critically Rare when it is known to occur only at a single site but is not exposed to any direct or plausible potential threat and does not qualify for a category of threat according to the five IUCN criteria.
RARE		A taxon is Rare when it meets any of the four South African criteria for rarity but is not exposed to any direct or plausible potential threat and does not qualify for a category of threat according to the five IUCN criteria.
DECLINING		A taxon is Declining when it does not meet any of the five IUCN criteria and does not qualify for the categories Critically Endangered, Endangered, Vulnerable or Near Threatened, but there are threatening processes causing a continuing decline in the population.
DDD	Data Deficient— Insufficient Information	A taxon is DDD when there is inadequate information to make an assessment of its risk of extinction, but the taxon is well defined. Data Deficient is not a category of threat. However, listing of taxa in this category indicates that more information is required, and that future research could show that a threatened classification is appropriate.
LC	Least Concern	A taxon is Least Concern when it has been evaluated against the five IUCN criteria and does not qualify for the categories Critically Endangered, Endangered, Vulnerable or Near Threatened, and it is not rare, and the population is not declining.

17 ENVIRONMENTAL IMPACT ASSESSMENT

Any activities associated with a natural system, whether historical or current, will affect the surrounding environment, typically negatively. The purpose of this phase of the study was to identify and assess the potential impacts and their significance, and to describe the mitigation required to limit perceived impacts on the natural environment. In determining the impacts of the activities, due consideration was given to prior factors affecting the freshwater ecosystem within the study area. The major issues and potential impacts related to terrestrial biodiversity within the project site and immediate surroundings were established using existing information, specialist input and site investigations.

Mitigation hierarchy

A **no-net-loss approach** will be adopted to manage project-related impacts.

- **Avoidance** – impacts are to be avoided where practicable e.g., through the implementation of alternatives.
- **Mitigation** – should it not be possible to avoid all impacts; the remaining impacts are to be mitigated to acceptable levels.
- **Offset** – As the last option, should it not be possible to avoid and mitigate all impacts to acceptable levels it will be necessary to offset the remaining impacts. Suitable offset programmes will need to be identified that will meet legal and Zee Minerals requirements.

The impacts have been ranked before and after the implementation of the mitigation measures. Where mitigation is not sufficient to reduce the impact to acceptable levels offsets will need to be identified.

Predictions on future changes on ecosystems and populations once a development has happened are seldom straightforward, except in cases such as the total loss of a habitat to development. Whilst a possible mechanism for an impact to occur can usually be identified, the actual likelihood of occurrence and its severity are much harder to describe (Hill & Arnold, 2012).

A closely related issue is that of the effectiveness of ecological mitigation which stems from ecological assessments (including freshwater ecological assessments), as well as in response to legal and planning policy requirements for development. Many recommendations may be incorporated into planning conditions or become conditions of protected species licences, but these recommendations are implemented to varying degrees, with most compliance being for the latter category (i.e., protected species) because there is a regulatory framework for implementation. What is often missing is the follow-up monitoring and assessment of the mitigation with sufficient scientific rigour or duration to determine whether the mitigation, compensation or enhancement measure has actually worked in the way intended (Hill and Arnold, 2012).

Many of the above impacts are not only a result of the direct impact on a particular species, but rather due to what is known as the 'Edge Effect', which can be explained as follows: Ecosystems consist of a mosaic of many different patches. The size of natural patches affects the number, type, and abundance of species they contain. At the periphery of natural patches, influences of neighbouring environments become apparent; this then is the 'Edge Effect'. Patch edges may be subjected to degradation due factors such as increased levels of heat, dust, desiccation, disturbance, invasion of exotic species and other negative agents. Edges seldom contain species that are rare, habitat specialists or species that require larger tracts of undisturbed core habitat to survive in the long term. Fragmentation due to development reduces core habitat and greatly extends edge habitat, which causes a shift in the species composition, which in turn puts great pressure on the dynamics and functionality of ecosystems (Perlman and Milder, 2004).

18 SITE SENSITIVITY VERIFICATION

The DFFE Environmental Screening Tool identified the **Animal Species (Avifauna) Theme** as **High sensitivity** for both Site 4 (DR1633) and Site 8 (DR1602). The high sensitivity rating was triggered by the potential occurrence of **the Knysna Warbler (*Bradypterus sylvaticus*) at both sites and of the Denham's Bustard (*Neotis denhami*) at Site 8**. In addition, the **African Marsh Harrier (*Circus ranivorus*)** was identified as having a medium-sensitivity trigger for both sites.

A site sensitivity verification was undertaken through a desktop assessment, review of SABAP2 records for Pentad 3355_2210, habitat assessment, and field verification conducted on 29 and 30 October 2023. The assessment evaluated the availability of suitable breeding, foraging and roosting habitat within the project footprint, together with the ecological requirements and known distribution of the screened species.

Although **Knysna Warbler** and **Denham's Bustard** have been recorded within the broader SABAP2 pentad, suitable habitat for these species is absent within the project footprint. The existing road reserves are highly disturbed and confined to existing culvert crossings. Site 4 and Site 8 lack the dense forest-edge thickets and riparian understorey vegetation required by the Knysna Warbler, while Site 8 lacks the extensive open grasslands or shrubland mosaics required by the Denham's Bustard for breeding, display, or regular foraging. Consequently, these species may occur elsewhere within the surrounding landscape but are unlikely to utilise the project footprint on a regular basis.

The **African Marsh Harrier** was assigned a medium sensitivity by the Screening Tool due to its regional distribution. However, the project areas do not contain marshes, reedbeds or extensive wetlands that provide suitable breeding habitat. While individuals may occasionally forage over the surrounding landscape during movement between suitable wetlands, the project footprint offers limited habitat value and does not support regular occupancy.

No Species of Conservation Concern identified by the Screening Tool were observed during the field survey. The assessment therefore concludes that the high sensitivity assigned by the Screening Tool

does not reflect the habitat conditions within the project footprint. Based on habitat suitability, the level of disturbance associated with the existing road infrastructure, the limited availability of breeding and foraging habitat, and the restricted extent of the proposed works, the verified avifaunal sensitivity for both sites is considered **Low (Figure 6)**.



Figure 6: Sensitivity map of the sites.

Table 2: Summary of the Avifauna Theme Sensitivity Verification.

Theme	DFFE Screening Tool Report Sensitivity	Specialist Sensitivity	Rating Confirmed / Disputed and Reasons	Compliance Statement or Full Assessment
Animal Species (Avifauna)	High	Low	Disputed. The Screening Tool identified High sensitivity based on the potential occurrence of Knysna Warbler at Sites 4 and 8 and Denham's Bustard at Site 8, with African Marsh Harrier identified as Medium sensitivity at both sites. Field verification, supported by habitat suitability assessment and SABAP2 records, confirmed that although these species occur within the broader landscape, the project footprint does not provide suitable habitat for breeding or regular occupancy. Knysna Warbler requires dense forest-edge and riparian thickets, which are absent within the disturbed road reserve. Denham's Bustard requires extensive open grasslands or shrubland mosaics that are not present at Site 8. African Marsh Harrier may occasionally forage over the area but suitable wetland breeding habitat is absent. No screened Species of Conservation Concern were observed during the field survey, and the proposed works are confined to existing disturbed road infrastructure. Consequently, the verified avifaunal sensitivity of the project area is considered Low , and an Avifauna Compliance Statement is considered appropriate.	Compliance Statement

Table 3: Expected Avifaunal SCC with a distribution that includes the project area and the likelihood of occurrence within the project area.

Common group	Common species	Genus	Species	Conservation status (IUCN/Regional)	Ecology	Likelihood of Occurrence	Justification
	Hamerkop	<i>Scopus</i>	<i>umbretta</i>	NT	Associated with many aquatic habitats including estuarine, rivers, ponds, lakesides and irrigation systems and even occasionally recorded along rocky shorelines (Elliott et al. 2020). Requires trees for nesting and roosting (Elliott et al. 2020). Mostly feeds on amphibians, both adults and tadpoles. Also known to take small fish and invertebrates (Elliott et al. 2020). Generally, wades in shallow water hunting but will also take prey from the surface of water during flight (Elliott et al. 2020). Sedentary but will move locally in response to rain. Does not appear to use the same nest for more than a few months (Elliott et al. 2020). Hamerkop builds one of the largest bird nests proportional to their body weight. The nest is large and comprised of sticks,	Medium	The river and associated riparian habitat within the project area provide suitable foraging habitat where Hamerkop may feed on amphibians, fish and aquatic invertebrates. However, the project footprint lacks suitable mature trees and large stick nests required for breeding and long-term occupancy. The species may utilise the site opportunistically while moving through the landscape or when prey availability is favourable. Consequently, there is a medium

					with a central chamber, usually sited in fork of tree. A pair may construct multiple nests, some of which may never be used. A diversity of other animal species takes advantage of unoccupied nests as breeding sites or dens (e.g. Gula and Downs 2023).		probability of the species being recorded within the project area for foraging, although breeding is considered unlikely.
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	Secretarybird	<i>Sagittarius</i>	<i>serpentarius</i>	VU	The species prefers open grassland and scrub, with the ground cover shorter than 50 cm and with sufficient scattered trees as roost/nest sites. It extends into savannah where sufficiently open areas exist (Boshoff and Allan 1997, Dean and Simmons 2005). It is absent from Mountain Fynbos, forest, dense woodland, and very rocky, hilly, or mountainous woodland (Boshoff and Allan 1997). Within the historically Renosterveld-dominated areas of the Western Cape the species utilises fallow fields and pastures (Hofmeyr et al. 2014). It occurs from sea-level to montane grasslands over 2000 m.	Low	The project area is dominated by fynbos vegetation associated with an existing road reserve and does not contain the extensive open grassland, pasture or agricultural habitats preferred by Secretarybird. Suitable nesting and regular foraging habitat are absent. Although individuals may occasionally move through the broader landscape, the project footprint is unlikely to support regular use.
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Bustard	Denham's	<i>Neotis</i>	<i>denhami</i>	VU	Denham's Bustard is usually encountered alone or in small groups of 2–7 birds, with occasional aggregations as large as 28 individuals (Allan 2002). Displaying males were recorded in the Overberg region of Western Cape between August and December, with egg-laying taking place in September to October (Allan 2005). The species is omnivorous (Collar 1996) and inhabits grasslands, grassy Acacia-studded dunes, fairly dense shrubland, light woodland, farmland, crops, and dried marsh areas up to 3000 m elevation (del Hoyo et al. 1996).	Low	Although Denham's Bustard has been recorded within the broader region, the project area does not provide the extensive open grasslands, agricultural fields or open shrubland mosaics required for feeding, breeding and display. The disturbed road reserve and narrow footprint are unsuitable for regular occupancy.
Buzzard	Forest	<i>Buteo</i>	<i>trizonatus</i>	NT	Forest Buzzards are found in both Afromontane forests and plantations of alien trees, mostly <i>Pinus</i> species, but also <i>Eucalyptus</i> species (Boshoff 1997). Palmer et al. (1985) found that nests within pine plantations had indigenous forests nearby, while no nests were found in pine plantations away from indigenous forests. The Forest Buzzard is mainly a perch hunter dropping onto prey. Prey includes small mammals,	Low	Suitable indigenous forest habitat occurs within the wider landscape; however, the project footprint is confined to an existing road reserve and lacks extensive forest habitat and mature nesting trees. The species may occasionally fly over or forage

					birds, snakes, lizards, chameleons and a wide variety of large invertebrates (Steyn 1982, Palmer et al. 1985).		along habitat edges, but the footprint is unlikely to support breeding or regular occupancy.
Crane	Blue	<i>Grus</i>	<i>paradisea</i>	VU	Blue Cranes are dry grassland birds, found in open grassland habitats in the east of South Africa and in the shrubby grasslands of the Nama Karoo (Allan 2005). They are also commonly found in agricultural habitats, especially in the Western Cape wheatlands, but also increasingly in the Karoo, where they are found in large numbers on irrigated lucerne lands (Allan 1993, Craig 2024). In the Western Cape wheatlands they use a matrix of pastures and cereal croplands, moving seasonally between these habitats as food availability and visibility changes	Low	The project area does not contain the extensive open grasslands, cultivated fields or wetland roosting habitat preferred by Blue Crane. Existing fynbos vegetation, topography and road disturbance reduce habitat suitability. Although individuals may occasionally occur within the broader landscape, the project footprint is unlikely to support

					throughout the year (Allan 1995). Blue Cranes normally roost in wetlands or shallow dams (Young et al. 2003).		foraging or breeding.
Darter	African	<i>Anhinga</i>	<i>rufa</i>	NT	This diving bird requires close proximity to freshwater and brackish environments of shallow lakes, swamps, lagoons as well as slow-moving rivers bordered by trees, reeds, or mangroves that are suitable for roosting (del Hoyo et al. 2020). It stays away from fast flowing rivers, areas with thick floating plants, and is rare in open sea (Hockey et al. 2005). The African Darter is a solitary feeder and mainly feed on fish, although they also eat crustaceans, frogs, insects and occasionally molluscs,	Low	Although the river may provide limited foraging opportunities, the project area lacks the slow-moving, fish-rich waterbodies and suitable roosting trees typically used by African Darter. The footprint is unlikely to support breeding or regular use, and any occurrence would be incidental.

					small terrapins and aquatic snakes (del Hoyo et al. 1992).		
Duck	White-backed	<i>Thalassornis</i>	<i>leuconotus</i>	NT	This species typically resides in calm, shallow freshwater environments such as lakes, pools, and lagoons (del Hoyo et al. 1992). It is also found in pans, inland deltas, floodplains, marshes, and swamps that are surrounded by abundant emergent and floating vegetation, like reeds, papyrus, and water lilies (<i>Nymphaea</i> spp.) (Brown et al. 1982, Madge and Burn 1988, del Hoyo et al. 1992, Kear 2005). They generally avoid very open water (del Hoyo et al. 1992).	Low	The project area does not contain the calm, vegetated wetlands, marshes or shallow freshwater bodies required by White-backed Duck. Suitable breeding and foraging habitat are absent, making regular use of the project area unlikely.

Duck	Yellow-billed	<i>Anas</i>	<i>undulata</i>	NT	Found in all open waters, rivers and estuaries that are characterised with slow-moving water (Mclachlan and Liversidge 1939). Additionally, it can occupy artificial reservoirs linked to mining activities, dams, salt pans, sewage treatment facilities, and the open water sections of estuaries (del Hoyo et al. 1992, Kear 2005, Vernon and Dean 2005).	Low	The river corridor may provide limited temporary habitat; however, the project footprint lacks the extensive slow-moving open water preferred by the species. Individuals may occasionally occur while moving between wetlands or waterbodies, but long-term use of the project area is unlikely.
Eagle	Crowned	<i>Stephanoaetus</i>	<i>coronatus</i>	VU	Crowned Eagles' preferred habitat is primary forest. They also inhabit woodland and forested gorges of savanna and shrubland, as well as modified habitats like exotic tree plantations. Being large birds, they require large trees to nest in and usually select the emergent trees as easy access into the nest is important. Their diet is composed primarily of mammals, particularly hyraxes, primates and antelopes, and less frequently birds, and reptiles (Boshoff et al. 1994, McPherson et al. 2016).	Low	Crowned Eagle requires extensive indigenous forest or woodland containing large emergent trees for nesting and hunting. The project footprint is restricted to disturbed roadside habitat and does not provide suitable nesting habitat or sufficient prey resources. Although the species may occasionally fly over the broader

[illegible]

Harrier	Black	<i>Circus</i>	<i>maurus</i>	EN	Favoured breeding habitat is Fynbos, particularly Strandveld and Mountain Fynbos. In fragmented Renosterveld habitat it is typically only found in high-quality patches >100 ha in size (or where fragments are well-connected or contiguous). Foraging habitat also includes high-altitude grasslands and alpine meadows (Drakensberg), down to Karoo scrub, mesic areas in semi-desert, marshy floodplains and croplands where they hunt Common Quail. Small mammals dominate the diet in coastal areas, while the diet changes with altitude and habitat: birds (especially quail) can form 50% of the diet in montane and Renosterveld areas (Curtis et al. 2004) particularly in hot midday weather when mice are less available (Garcia-Heras et al. 2017). From analysis of 1000 pellets collected over 10 years (2006-2015), mammals formed 64%, birds 19% and reptiles 16% of all 1685 identified prey (Garcia-Heras et al. 2016a). In coastal areas mammals	Low	Although the surrounding region contains fynbos vegetation, the project footprint is small, disturbed and associated with existing road infrastructure. The site lacks the extensive, intact fynbos required for breeding and regular foraging. Individuals may occasionally forage while moving through the landscape, but regular utilisation of the project area is unlikely.
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					formed 65% of the 1197 prey, but 55% of 563 prey in inland/montane areas. For birds the proportions were 15% (coastal) and 25% (inland/montane), with reptiles making up the differences (16%) in both regions (Garcia-Heras et al. 2016a).	
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Kite	Black-winged	<i>Elanus</i>	<i>caeruleus</i>	NT	The Black-winged Kite inhabits open habitats including savanna, shrubland, grassland, and agricultural areas. It is primarily a rodent specialist but also feeds on small birds, reptiles, and large insects. The species hunts by hovering or from a perch.	Low	Black-winged Kite may occasionally hunt over open areas within the surrounding landscape where small mammals are available. However, the narrow disturbed project footprint does not provide suitable breeding habitat or extensive foraging areas. Any occurrence would be opportunistic, resulting in a Low likelihood of occurrence.
Night Heron	Black-crowned	<i>Nycticorax</i>	<i>nycticorax</i>	NT	Black-crowned Night Heron inhabit wetlands, rivers, lakes, swamps, marshes, estuaries as well as dams and ponds (Brown et al. 1982, Hancock and Kushlan 1984, Martin 1997, Taylor et al. 1999). The species has a wide tolerance for water quality conditions, being found in saline, brackish or freshwater wetlands (del Hoyo et al. 1992). They require nearby trees, dense vegetation or reeds to roost during daylight hours, emerging at dusk to forage	Low	The project area lacks the sheltered wetlands, reedbeds and densely vegetated roosting habitat preferred by Black-crowned Night Heron. While individuals may occasionally forage along the river corridor during movement between suitable habitats, breeding and regular

					along muddy or sandy shorelines and patches of shallow water (Martin 1997, del Hoyo et al. 1992).		occupancy are unlikely.
Plover	Kittlitz's	<i>Charadrius</i>	<i>pecuarius</i>	NT	The Kittlitz's Plover is a versatile bird found across both inland and coastal areas, thriving in open habitats at low elevations. This bird has a preference for dry terrains such as open mudflats with short grass that are in or near water bodies (Hockey et al. 2005). Its breeding sites are diverse, ranging from lakes and rivers to alkaline grasslands, lagoons, tidal mudflats, inland saltmarshes, including artificial water bodies (Urban et al. 1985, Hockey et al. 2005, Zefania and Székely 2013). However, it tends to steer clear of sandy or rocky beaches as	Medium	Small areas of exposed substrate and open ground adjacent to the river may provide temporary foraging habitat for Kittlitz's Plover. However, the project footprint does not provide extensive suitable breeding habitat. Individuals may utilise the area opportunistically while moving between nearby wetlands and river margins, with occurrence varying according to

					well as tall, dense closed vegetation and steep terrain.		seasonal conditions and food availability.
Shoveler	Cape	<i>Anas</i>	<i>smithii</i>	NT	Cape Shoveler prefers shallow, plankton-rich wetlands and dams, but it also occurs on tidal estuaries, saltpans, saline lagoons, and in the shallow bays and upper reaches of large dams (Siegfried 1965, Geldenhuys 1976, Tarboton et al. 1987).	Low	The project area lacks the shallow wetlands, dams and open waterbodies preferred by Cape Shoveler. Suitable breeding and feeding habitat are absent within the project footprint, and any occurrence would be incidental

Teal	Red-billed	<i>Anas</i>	<i>erythrorhyncha</i>	NT	The Red-billed Teal prefers shallow permanent or temporary eutrophic freshwater wetlands including, dams, sewage ponds and other artificial wetlands, with submerged, floating and peripheral vegetation (Johnsgard 1978, del Hoyo et al. 1992). Known to breed on shallow wetlands or shallow bays of larger ones with fringing emergent vegetation (Colahan 2005).	Low	The project footprint does not contain the shallow vegetated wetlands preferred by Red-billed Teal for feeding and breeding. Although individuals may occasionally use nearby watercourses while dispersing, the project area does not provide suitable habitat for regular occupancy.
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Warbler	Knysna	<i>Bradypterus</i>	<i>sylvaticus</i>	NT	The Knysna Warbler occurs along the edges of Afro-temperate forests and in thick, tangled vegetation along the banks of watercourses or drainage lines in forest patches in the Fynbos Biome (Berruti 1997). It has adapted to thickets of introduced <i>Rubus</i> brambles, where it can be locally common, particularly in the Western Cape. Birds may favour narrow belts of suburban riverine woodland with a dense, tangled understorey (Pryke et al. 2011). This was attributed to the availability of nesting substrate as opposed to prey availability (Pryke et al. 2011). The Knysna Warbler is insectivorous, taking a range of invertebrates, but favouring arachnids and amphipods (Visser and Hockey 2002). It breeds in spring and early summer, August-December (Smith 2005).	Low	Although Knysna Warbler has been recorded within the broader landscape, the project footprint lacks the dense riparian thickets, forest margins and tangled understorey required for foraging and breeding. Existing disturbance associated with the road reserve further reduces habitat suitability. The species may occur elsewhere within the surrounding landscape where suitable habitat exists, but utilisation of the project area is considered unlikely.
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19 RESULTS

Birds are highly mobile and may utilise a variety of habitats across the landscape depending on habitat availability, food resources and seasonal conditions. The project areas at Sites 4 (DR1633) and 8 (DR1602) are located within the Fynbos Biome and are associated with existing road crossings over river systems. The surrounding landscape comprises Garden Route Shale Fynbos (Site 4) and Garden Route Granite Fynbos (Site 8), with riparian vegetation occurring along the watercourses. However, the project footprints are confined to existing disturbed road reserves and culvert infrastructure, where habitat has been modified by previous construction and maintenance activities. Habitat within the project footprint provides limited value for avifaunal Species of Conservation Concern, although it supports a range of widespread and common bird species.

Photographs illustrating the habitat characteristics of the project sites are presented in **Photo Plate 1**.



Photo Plate 1: General habitat characteristics observed within the project area during the field survey.

Field verification was undertaken on **29 and 30 October 2023**. During the survey, only common and widespread bird species were recorded within the project area (Table X), including species typically associated with disturbed riparian and roadside habitats. No avifaunal Species of Conservation Concern identified by the DFFE Environmental Screening Tool, including **Knysna Warbler** (*Bradypterus sylvaticus*), **Denham's Bustard** (*Neotis denhami*), or **African Marsh Harrier** (*Circus ranivorus*), were observed during the survey.

Table 4: List of birds observed during the site verification.

Common name	Species	Conservation status
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Southern Bishop*+	Red	<i>Euplectes orix</i>	LC
Pied Crow**		<i>Corvus albus</i>	LC
Laughing Dove*		<i>Spilopelia senegalensis</i>	LC
Yellow Bishop*+		<i>Euplectes capensis</i>	LC
Hadada Ibis*		<i>Bostrychia hagedash</i>	LC

Site * and Site 8*

20 ECOLOGICAL FUNCTION

Ecological function refers to the degree of connectivity and interaction between ecosystems within the landscape. Highly connected systems are generally more sensitive to disturbances and play a key role in maintaining ecosystem services, including habitat provision, climate regulation, and the persistence of biodiversity.

Description of the Sensitivity scale

- **No Go Areas:** Areas that have irreplaceable biodiversity or important ecosystem function values which may be lost permanently if these ecosystems are transformed, with a high potential of also affecting adjacent and/or downstream ecosystems negatively.
- **High ecological function:** Sensitive ecosystems with either low inherent resistance or resilience towards disturbance factors, or highly dynamic systems considered to be stable and important for the maintenance of ecosystem integrity, for example, pristine grasslands, pristine wetlands, and pristine ridges.
- **Medium ecological function:** Relatively important ecosystems at gradients of intermediate disturbances. An area may be considered of medium ecological function if it is directly adjacent to a sensitive/pristine ecosystem.
- **Low ecological function:** Degraded and highly disturbed systems with little or no ecological function.

Conservation status of the vegetation

- **High conservation importance:** Ecosystems with high species richness which usually provide suitable habitats for several threatened species. Traditionally termed 'no-go' areas and unsuitable for development and should be conserved.
- **Medium conservation importance:** Ecosystems with intermediate levels of species diversity without any threatened species. Low-density development may be accommodated, provided the current species diversity is conserved.
- **Low conservation importance:** Areas with little or no conservation potential and usually species-poor (most species are generally exotic).

20.1 Conservation Importance, PES, and EIS Summary

Attribute	Rating	Justification
Ecological Function	Low	The proposed works are confined to existing culverts and disturbed road reserves. Ecological processes and habitat connectivity within the surrounding landscape will remain intact, with only temporary and localised disturbance anticipated during construction.
Conservation Importance	Low	Although the broader landscape comprises Garden Route Shale Fynbos and Garden Route Granite Fynbos, the project footprint is limited to previously disturbed infrastructure corridors and does not contain intact habitats or important breeding habitat for avifaunal Species of Conservation Concern.
Ecological Sensitivity	Low	Habitat within the project footprint is disturbed and provides limited value for Species of Conservation Concern. Sensitive habitats occur outside the development footprint and are not expected to be significantly affected by the proposed replacement of existing culverts.

21 IMPACT ASSESSMENT

Nature of Impacts Identified

The proposed removal and replacement of existing culverts and associated pipes have the potential to result in temporary and localised impacts on avifauna within the project area. As the works are confined to existing road crossings and previously disturbed infrastructure corridors, no significant loss of natural habitat is anticipated. Potential impacts are primarily associated with construction activities and are expected to be of short duration.

Potential impacts on avifauna include:

- Temporary disturbance and displacement of birds due to construction activities, increased human presence, vehicle movement, and noise.
- Localised removal or trimming of disturbed roadside and riparian vegetation where required to facilitate construction activities, resulting in a temporary reduction in available foraging or shelter habitat for common bird species.
- Temporary disturbance to birds utilising adjacent riparian habitats during construction.
- Increased risk of injury or mortality to common bird species through interaction with construction vehicles and machinery, although this risk is expected to be low due to the limited extent and duration of the works.

- Temporary increases in dust generation, which may reduce the quality of nearby vegetation if appropriate dust suppression measures are not implemented.
- Potential establishment and spread of invasive alien plant species following vegetation disturbance if disturbed areas are not rehabilitated promptly.
- Temporary reduction in habitat quality within the immediate construction footprint during the construction phase.
- Minor cumulative impacts when considered together with existing road maintenance activities within the surrounding landscape.

21.1 Avifauna Compliance Statement

This Avifauna Compliance Statement has been prepared in accordance with the Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes (Government Notice No. 1150 of 30 October 2020, as amended by Government Notice No. 3717 of 28 July 2023) and the Species Environmental Assessment Guideline Version 4.1 (2026) under the National Environmental Management Act (Act No. 107 of 1998).

Impact	Issue	Nature of Impact	Extent of Impact	Sensitive Areas
Temporary disturbance to avifauna	Construction activities, increased noise, vibration and human presence during culvert replacement	Direct impacts: Temporary disturbance and displacement of common bird species within and adjacent to the construction footprint. Indirect impacts: Short-term disturbance to birds utilising nearby riparian habitat. Impacts are expected to be localised due to the limited extent and duration of the proposed works.	Localised to the project footprint	No avifaunal no-go areas were identified within the project footprint. Riparian vegetation adjacent to the watercourses should be protected as far as practicable.
Temporary loss of habitat	Limited vegetation clearing associated with construction activities	Direct impacts: Localised removal or trimming of disturbed roadside and riparian vegetation where required to facilitate construction. Indirect impacts: Temporary reduction in available shelter and foraging habitat for common bird species until disturbed areas are rehabilitated.	Localised	Clearing should be restricted to the approved construction footprint, and unnecessary disturbance of riparian vegetation should be avoided.
Disturbance to Species of Conservation Concern	Construction activities within the vicinity of suitable habitat	Direct impacts: No breeding or critical habitat for screened Species of Conservation Concern was identified within the project footprint. Indirect impacts: Species may occasionally move through the broader landscape; however, impacts are expected to be negligible because suitable habitat is absent from the project footprint.	Site-specific	No confirmed breeding habitat or critical avifaunal habitat occurs within the project footprint.
Spread of invasive	Soil disturbance and movement of	Direct impacts: Disturbed areas may become susceptible to colonisation by invasive alien plants.	Localised	Disturbed areas should be rehabilitated promptly and monitored for invasive alien plant establishment.

alien plant species	construction machinery	Indirect impacts: Alien plant establishment may reduce habitat quality if not controlled during rehabilitation.		
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22 MITIGATION MEASURES

22.1 Planning Phase

To minimise potential impacts on avifauna during construction, the following measures should be implemented prior to the commencement of works:

- Clearly demarcate the approved construction footprint before construction begins.
- Restrict all planned activities to the existing road reserve and culvert footprint.
- Minimise the extent of vegetation clearing by limiting disturbance to areas required for construction.
- Identify and retain indigenous vegetation outside the approved working area wherever practicable.
- Ensure all construction personnel receive environmental awareness training, including the protection of indigenous bird species and their habitats.

22.2 Construction Phase

The following mitigation measures should be implemented throughout construction:

- Restrict all construction activities, vehicle movement and material storage to the approved construction footprint.
- Inspect vegetation scheduled for clearing for active bird nests before vegetation removal commences.
- If active nests are encountered, establish an appropriate no-go buffer and avoid disturbance until the nesting attempt has been completed, where practicable and subject to specialist advice.
- Minimise unnecessary disturbance to riparian vegetation adjacent to the culvert crossings.
- Limit vegetation clearing to the minimum required for safe construction activities.
- Maintain construction vehicles and equipment in good working condition to minimise excessive noise emissions.
- Restrict unnecessary idling of machinery and avoid excessive noise where practicable.

- Apply dust suppression measures during dry and windy conditions to reduce dust deposition on surrounding vegetation.
- Enforce low vehicle speeds within the construction area to minimise the risk of collisions with wildlife.
- Prohibit the feeding, hunting, trapping, collecting or deliberate disturbance of birds and other wildlife by construction personnel.
- Implement effective waste management practices and ensure that no waste is disposed of within the river, riparian zone or surrounding natural habitat.
- Store fuels, oils and hazardous substances in designated areas away from watercourses and implement appropriate spill prevention and response measures.
- Prevent the introduction and spread of invasive alien plant species through good housekeeping and the cleaning of machinery where required.
- Prohibit open fires within or adjacent to the construction site unless specifically authorised.

22.3 Rehabilitation Phase

Following completion of construction, the following measures should be implemented:

- Rehabilitate all temporarily disturbed areas as soon as practicable after construction.
- Stabilise exposed soils to minimise erosion and sedimentation of adjacent watercourses.
- Encourage the natural regeneration of indigenous vegetation or revegetate disturbed areas with locally indigenous species where required.
- Remove all construction waste, surplus material and temporary infrastructure from the site.
- Monitor rehabilitated areas for the establishment of invasive alien plant species and implement control measures where necessary.
- Reinstatement of disturbed areas to a condition that is as close as reasonably possible to the pre-construction condition.

22.4 Operational Phase

As the project involves the replacement of existing culverts and does not introduce new operational infrastructure, operational impacts on avifauna are expected to be negligible. Nevertheless, the following measures should be maintained:

- Maintain the integrity of riparian vegetation adjacent to the culvert crossings.
- Avoid unnecessary vegetation clearing during future maintenance activities.
- Ensure routine maintenance activities remain confined to the existing road reserve.
- Remove litter and waste generated during maintenance activities.
- Control invasive alien plant species should they establish within rehabilitated areas.

23 CONCLUSION

The DFFE Environmental Screening Tool identified the Animal Species (Avifauna) Theme as having a High sensitivity for the proposed culvert replacement works at Sites 4 (DR1633) and 8 (DR1602), triggering the requirement for a specialist avifaunal assessment. This assessment verified the screening results through a desktop review, habitat suitability assessment, SABAP2 records, and field verification undertaken on 29 and 30 October 2023 in accordance with the Protocol for the Specialist Assessment and Minimum Report Requirements for Environmental Themes and the Species Environmental Assessment Guideline Version 4.1 (2026).

Although the DFFE Screening Tool identified Knysna Warbler (*Bradypterus sylvaticus*), Denham's Bustard (*Neotis denhami*), and African Marsh Harrier (*Circus ranivorus*) as species of conservation concern with potential to occur within the broader area, the field assessment confirmed that the project footprint does not provide suitable habitat to support regular occupancy, breeding or important foraging opportunities for these species. Knysna Warbler and Denham's Bustard have been recorded within the broader SABAP2 Pentad 3355_2210; however, the disturbed road reserves, existing culvert infrastructure and limited availability of suitable habitat within the project footprint substantially reduce the likelihood of these species occurring within the areas that will be affected by the proposed works.

Only common and widespread bird species associated with disturbed roadside, riparian and fynbos habitats were recorded during the field survey. No avifaunal Species of Conservation Concern identified by the Screening Tool were observed within either project site. The assessment therefore supports the conclusion that the High screening sensitivity assigned by the DFFE Screening Tool is not representative of the conditions within the project footprint and that a Low verified avifaunal sensitivity is appropriate.

The proposed activities are limited to the removal and replacement of existing culverts and associated infrastructure within previously disturbed road reserves. The project does not involve the establishment of new road alignments or extensive vegetation clearing, and impacts on avifauna are expected to be localised, temporary and of low significance. With the implementation of the recommended mitigation measures and adherence to the Environmental Management Programme

(EMPr), no significant adverse impacts on avifaunal biodiversity or Species of Conservation Concern are anticipated.

Based on the findings of this assessment, it is the opinion of the specialist that the proposed development is acceptable from an avifaunal perspective, and that the submission of an Avifauna Compliance Statement is appropriate for the proposed removal and replacement of the existing culverts and associated pipes at Sites 4 and 8 within the Mossel Bay Local Municipality.

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25 APPENDICES

25.1 Appendix I: SAPAB2 Data

Common_group	Common_species	Genus	Species	Conservation status (IUCN/Regional)	RepRate
	Bokmakierie	<i>Telophorus</i>	<i>zeylonus</i>	LC	62.3
	Hamerkop	<i>Scopus</i>	<i>umbretta</i>	NT	6.5
	Neddicky	<i>Cisticola</i>	<i>fulvicapilla</i>	LC	87.0
	Quailfinch	<i>Ortygospiza</i>	<i>atricollis</i>	LC	1.3
	Secretarybird	<i>Sagittarius</i>	<i>serpentarius</i>	VU	3.9
Apalis	Bar-throated	<i>Apalis</i>	<i>thoracica</i>	LC	80.5
Batis	Cape	<i>Batis</i>	<i>capensis</i>	LC	36.4
Bishop	Yellow	<i>Euplectes</i>	<i>capensis</i>	LC	74.0
Boubou	Southern	<i>Laniarius</i>	<i>ferrugineus</i>	LC	81.8
Brownbul	Terrestrial	<i>Phyllastrephus</i>	<i>terrestris</i>	LC	28.6
Bulbul	Cape	<i>Pycnonotus</i>	<i>capensis</i>	LC	98.7
Bunting	Cape	<i>Emberiza</i>	<i>capensis</i>	LC	2.6
Bushshrike	Olive	<i>Chlorophoneus</i>	<i>olivaceus</i>	LC	22.1
Bustard	Denham's	<i>Neotis</i>	<i>denhami</i>	VU	11.7
Buzzard	Common	<i>Buteo</i>	<i>buteo</i>	LC	19.5
Buzzard	Forest	<i>Buteo</i>	<i>trizonatus</i>	NT	9.1
Buzzard	Jackal	<i>Buteo</i>	<i>rufofuscus</i>	LC	85.7
Camaroptera	Green-backed	<i>Camaroptera</i>	<i>brachyura brachyura</i>	LC	13.0
Canary	Brimstone	<i>Crithagra</i>	<i>sulphurata</i>	LC	36.4
Canary	Cape	<i>Serinus</i>	<i>canicollis</i>	LC	54.5
Canary	Forest	<i>Crithagra</i>	<i>scotops</i>	LC	23.4
Canary	White-throated	<i>Crithagra</i>	<i>albogularis</i>	LC	1.3
Canary	Yellow	<i>Crithagra</i>	<i>flaviventris</i>	LC	16.9

Chat	Familiar	<i>Oenanthe</i>	<i>familiaris</i>	LC	3.9
Cisticola	Grey-backed	<i>Cisticola</i>	<i>subruficapilla</i>	LC	9.1
Cisticola	Levaillant's	<i>Cisticola</i>	<i>tinniens</i>	LC	37.7
Cisticola	Wailing	<i>Cisticola</i>	<i>lais</i>	LC	27.3
Cisticola	Zitting	<i>Cisticola</i>	<i>juncidis</i>	LC	51.9
Coot	Red-knobbed	<i>Fulica</i>	<i>cristata</i>	LC	81.8
Cormorant	Reed	<i>Microcarbo</i>	<i>africanus</i>	LC	59.7
Cormorant	White-breasted	<i>Phalacrocorax</i>	<i>lucidus</i>	LC	27.3
Coucal	Burchell's	<i>Centropus</i>	<i>burchellii</i>	LC	31.2
Crake	Black	<i>Zapornia</i>	<i>flavirostra</i>	LC	15.6
Crane	Blue	<i>Grus</i>	<i>paradisea</i>	VU	24.7
Crombec	Long-billed	<i>Sylvietta</i>	<i>rufescens</i>	LC	3.9
Crow	Cape	<i>Corvus</i>	<i>capensis</i>	LC	76.6
Crow	Pied	<i>Corvus</i>	<i>albus</i>	LC	14.3
Cuckoo	African Emerald	<i>Chrysococcyx</i>	<i>cupreus</i>	LC	1.3
Cuckoo	Black	<i>Cuculus</i>	<i>clamosus</i>	LC	5.2
Cuckoo	Diederik	<i>Chrysococcyx</i>	<i>caprius</i>	LC	10.4
Cuckoo	Klaas's	<i>Chrysococcyx</i>	<i>klaas</i>	LC	18.2
Cuckoo	Red-chested	<i>Cuculus</i>	<i>solitarius</i>	LC	15.6
Cuckooshrike	Grey	<i>Coracina</i>	<i>caesia</i>	LC	5.2
Darter	African	<i>Anhinga</i>	<i>rufa</i>	NT	29.9
Dove	Laughing	<i>Spilopelia</i>	<i>senegalensis</i>	LC	18.2
Dove	Lemon	<i>Columba</i>	<i>larvata</i>	LC	1.3
Dove	Namaqua	<i>Oena</i>	<i>capensis</i>	LC	9.1
Dove	Red-eyed	<i>Streptopelia</i>	<i>semitorquata</i>	LC	83.1
Dove	Ring-necked	<i>Streptopelia</i>	<i>capicola</i>	LC	84.4
Dove	Rock	<i>Columba</i>	<i>livia</i>	LC	2.6
Dove	Tambourine	<i>Turtur</i>	<i>tympanistria</i>	LC	10.4
Drongo	Fork-tailed	<i>Dicrurus</i>	<i>adsimilis</i>	LC	89.6
Duck	African Black	<i>Anas</i>	<i>sparsa</i>	LC	5.2
Duck	White-backed	<i>Thalassornis</i>	<i>leuconotus</i>	NT	5.2

Duck	White-faced Whistling	<i>Dendrocygna</i>	<i>viduata</i>	LC	41.6
Duck	Yellow-billed	<i>Anas</i>	<i>undulata</i>	NT	94.8
Eagle	Crowned	<i>Stephanoaetus</i>	<i>coronatus</i>	VU	1.3
Eagle	Long-crested	<i>Lophaetus</i>	<i>occipitalis</i>	LC	6.5
Eagle-Owl	Spotted	<i>Bubo</i>	<i>africanus</i>	LC	1.3
Egret	Little	<i>Egretta</i>	<i>garzetta</i>	LC	1.3
Egret	Western Cattle	<i>Bubulcus</i>	<i>ibis</i>	LC	77.9
Falcon	Peregrine	<i>Falco</i>	<i>peregrinus</i>	LC	1.3
Firefinch	African	<i>Lagonosticta</i>	<i>rubricata</i>	LC	3.9
Fiscal	Southern	<i>Lanius</i>	<i>collaris</i>	LC	96.1
Fish Eagle	African	<i>Haliaeetus</i>	<i>vocifer</i>	LC	3.9
Flufftail	Red-chested	<i>Sarothrura</i>	<i>rufa</i>	LC	1.3
Flycatcher	African Dusky	<i>Muscicapa</i>	<i>adusta</i>	LC	18.2
Flycatcher	African Paradise	<i>Terpsiphone</i>	<i>viridis</i>	LC	16.9
Flycatcher	Blue-mantled Crested	<i>Trochocercus</i>	<i>cyanomelas</i>	LC	6.5
Flycatcher	Fairy	<i>Stenostira</i>	<i>scita</i>	LC	2.6
Flycatcher	Fiscal	<i>Melaenornis</i>	<i>silens</i>	LC	59.7
Flycatcher	Spotted	<i>Muscicapa</i>	<i>striata</i>	LC	1.3
Goose	Egyptian	<i>Alopochen</i>	<i>aegyptiaca</i>	LC	89.6
Goose	Spur-winged	<i>Plectropterus</i>	<i>gambensis</i>	LC	29.9
Goshawk	African	<i>Accipiter</i>	<i>tachiro</i>	LC	5.2
Grassbird	Cape	<i>Sphenoeacus</i>	<i>afer</i>	LC	51.9
Grebe	Little	<i>Tachybaptus</i>	<i>ruficollis</i>	LC	59.7
Greenbul	Sombre	<i>Andropadus</i>	<i>importunus</i>	LC	98.7
Guineafowl	Helmeted	<i>Numida</i>	<i>meleagris</i>	LC	83.1
Harrier	Black	<i>Circus</i>	<i>maurus</i>	EN	1.3
Harrier-Hawk	African	<i>Polyboroides</i>	<i>typus</i>	LC	5.2
Heron	Black-headed	<i>Ardea</i>	<i>melanocephala</i>	LC	76.6
Heron	Grey	<i>Ardea</i>	<i>cinerea</i>	LC	36.4
Heron	Purple	<i>Ardea</i>	<i>purpurea</i>	LC	1.3
Honeyguide	Lesser	<i>Indicator</i>	<i>minor</i>	LC	1.3

Honeyguide	Scaly-throated	<i>Indicator</i>	<i>variegatus</i>	LC	1.3
Hoopoe	African	<i>Upupa</i>	<i>africana</i>	LC	20.8
Ibis	African Sacred	<i>Threskiornis</i>	<i>aethiopicus</i>	LC	84.4
Ibis	Hadada	<i>Bostrychia</i>	<i>hagedash</i>	LC	93.5
Kestrel	Rock	<i>Falco</i>	<i>rupicolus</i>	LC	2.6
Kingfisher	Brown-hooded	<i>Halcyon</i>	<i>albiventris</i>	LC	24.7
Kingfisher	Giant	<i>Megaceryle</i>	<i>maxima</i>	LC	9.1
Kingfisher	Malachite	<i>Corythornis</i>	<i>cristatus</i>	LC	13.0
Kingfisher	Pied	<i>Ceryle</i>	<i>rudis</i>	LC	1.3
Kite	Black-winged	<i>Elanus</i>	<i>caeruleus</i>	NT	41.6
Kite	Yellow-billed	<i>Milvus</i>	<i>aegyptius</i>	LC	9.1
Lapwing	Black-winged	<i>Vanellus</i>	<i>melanopterus</i>	LC	48.1
Lapwing	Blacksmith	<i>Vanellus</i>	<i>armatus</i>	LC	54.5
Lapwing	Crowned	<i>Vanellus</i>	<i>coronatus</i>	LC	58.4
Lark	Cape Clapper	<i>Mirafra</i>	<i>apiata</i>	LC	5.2
Lark	Large-billed	<i>Galerida</i>	<i>magnirostris</i>	LC	3.9
Lark	Red-capped	<i>Calandrella</i>	<i>cinerea</i>	LC	23.4
Longclaw	Cape	<i>Macronyx</i>	<i>capensis</i>	LC	42.9
Martin	Brown-throated	<i>Riparia</i>	<i>paludicola</i>	LC	22.1
Martin	Rock	<i>Ptyonoprogne</i>	<i>fuligula</i>	LC	14.3
Moorhen	Common	<i>Gallinula</i>	<i>chloropus</i>	LC	68.8
Mousebird	Red-faced	<i>Urocolius</i>	<i>indicus</i>	LC	7.8
Mousebird	Speckled	<i>Colius</i>	<i>striatus</i>	LC	71.4
Mousebird	White-backed	<i>Colius</i>	<i>colius</i>	LC	1.3
Night Heron	Black-crowned	<i>Nycticorax</i>	<i>nycticorax</i>	NT	1.3
Oriole	Black-headed	<i>Oriolus</i>	<i>larvatus</i>	LC	22.1
Ostrich	Common	<i>Struthio</i>	<i>camelus</i>	LC	1.3
Peafowl	Indian	<i>Pavo</i>	<i>cristatus</i>	Exotic	10.4
Pigeon	African Olive	<i>Columba</i>	<i>arquatrix</i>	LC	6.5
Pigeon	Speckled	<i>Columba</i>	<i>guinea</i>	LC	49.4
Pipit	African	<i>Anthus</i>	<i>cinnamomeus</i>	LC	49.4

Pipit	Plain-backed	<i>Anthus</i>	<i>leucophrys</i>	LC	18.2
Plover	Kittlitz's	<i>Charadrius</i>	<i>pecuarius</i>	NT	1.3
Plover	Three-banded	<i>Charadrius</i>	<i>tricoloris</i>	LC	14.3
Prinia	Karoo	<i>Prinia</i>	<i>maculosa</i>	LC	59.7
Puffback	Black-backed	<i>Dryoscopus</i>	<i>cubla</i>	LC	20.8
Quail	Common	<i>Coturnix</i>	<i>coturnix</i>	LC	29.9
Quelea	Red-billed	<i>Quelea</i>	<i>quelea</i>	LC	10.4
Raven	White-necked	<i>Corvus</i>	<i>albicollis</i>	LC	19.5
Red Bishop	Southern	<i>Euplectes</i>	<i>orix</i>	LC	71.4
Robin	White-starred	<i>Pogonocichla</i>	<i>stellata</i>	LC	3.9
Robin-Chat	Cape	<i>Cossypha</i>	<i>caffa</i>	LC	84.4
Robin-Chat	Chorister	<i>Cossypha</i>	<i>dichroa</i>	LC	14.3
Saw-wing	Black	<i>Psaldoprocne</i>	<i>pristoptera</i>	LC	44.2
Scrub Robin	Karoo	<i>Cercotrichas</i>	<i>coryphoeus</i>	LC	2.6
Seed eater	Streaky-headed	<i>Crithagra</i>	<i>gularis</i>	LC	18.2
Shelduck	South African	<i>Tadorna</i>	<i>cana</i>	LC	1.3
Shoveler	Cape	<i>Anas</i>	<i>smithii</i>	NT	6.5
Snipe	African	<i>Gallinago</i>	<i>nigripennis</i>	LC	1.3
Sparrow	Cape	<i>Passer</i>	<i>melanurus</i>	LC	18.2
Sparrow	House	<i>Passer</i>	<i>domesticus</i>	LC	48.1
Sparrow	Southern Grey-headed	<i>Passer</i>	<i>diffusus</i>	LC	32.5
Sparrowhawk	Black	<i>Accipiter</i>	<i>melanoleucus</i>	LC	6.5
Spoonbill	African	<i>Platalea</i>	<i>alba</i>	LC	6.5
Spurfowl	Cape	<i>Pternistis</i>	<i>capensis</i>	LC	18.2
Spurfowl	Red-necked	<i>Pternistis</i>	<i>afer</i>	LC	7.8
Starling	Black-bellied	<i>Notopholia</i>	<i>corrusca</i>	LC	18.2
Starling	Common	<i>Sturnus</i>	<i>vulgaris</i>	LC	84.4
Starling	Pied	<i>Lamprotornis</i>	<i>bicolor</i>	LC	1.3
Starling	Red-winged	<i>Onychognathus</i>	<i>morio</i>	LC	10.4
Stonechat	African	<i>Saxicola</i>	<i>torquatus</i>	LC	83.1
Stork	White	<i>Ciconia</i>	<i>ciconia</i>	LC	2.6

Sugarbird	Cape	<i>Promerops</i>	<i>cafer</i>	LC	3.9
Sunbird	Amethyst	<i>Chalcomitra</i>	<i>amethystina</i>	LC	29.9
Sunbird	Collared	<i>Hedydipna</i>	<i>collaris</i>	LC	2.6
Sunbird	Greater Double-collared	<i>Cinnyris</i>	<i>afer</i>	LC	76.6
Sunbird	Grey	<i>Cyanomitra</i>	<i>veroxii</i>	LC	2.6
Sunbird	Malachite	<i>Nectarinia</i>	<i>famosa</i>	LC	20.8
Sunbird	Orange-breasted	<i>Anthobaphes</i>	<i>violacea</i>	LC	2.6
Sunbird	Southern Double-collared	<i>Cinnyris</i>	<i>chalybeus</i>	LC	36.4
Swallow	Barn	<i>Hirundo</i>	<i>rustica</i>	LC	45.5
Swallow	Greater Striped	<i>Cecropis</i>	<i>cucullata</i>	LC	48.1
Swallow	Pearl-breasted	<i>Hirundo</i>	<i>dimidiata</i>	LC	9.1
Swallow	White-throated	<i>Hirundo</i>	<i>albigularis</i>	LC	32.5
Swift	African Black	<i>Apus</i>	<i>barbatus</i>	LC	3.9
Swift	Alpine	<i>Tachymarptis</i>	<i>melba</i>	LC	1.3
Swift	Little	<i>Apus</i>	<i>affinis</i>	LC	2.6
Swift	White-rumped	<i>Apus</i>	<i>caffer</i>	LC	6.5
Tchagra	Southern	<i>Tchagra</i>	<i>tchagra</i>	LC	1.3
Teal	Cape	<i>Anas</i>	<i>capensis</i>	LC	1.3
Teal	Red-billed	<i>Anas</i>	<i>erythrorhyncha</i>	NT	61.0
Thick-knee	Spotted	<i>Burhinus</i>	<i>capensis</i>	LC	7.8
Thrush	Olive	<i>Turdus</i>	<i>olivaceus</i>	LC	16.9
Trogon	Narina	<i>Apaloderma</i>	<i>narina</i>	LC	2.6
Turaco	Knysna	<i>Tauraco</i>	<i>corythaix</i>	LC	36.4
Wagtail	Cape	<i>Motacilla</i>	<i>capensis</i>	LC	75.3
Warbler	Knysna	<i>Bradypterus</i>	<i>sylvaticus</i>	NT	6.5
Warbler	Lesser Swamp	<i>Acrocephalus</i>	<i>gracilirostris</i>	LC	7.8
Warbler	Little Rush	<i>Bradypterus</i>	<i>baboecala</i>	LC	41.6
Warbler	Victorin's	<i>Cryptillas</i>	<i>victorini</i>	LC	18.2
Warbler	Yellow-throated Woodland	<i>Phylloscopus</i>	<i>ruficapilla</i>	LC	5.2
Waxbill	Common	<i>Estrilda</i>	<i>astrild</i>	LC	54.5
Waxbill	Swee	<i>Coccyzygia</i>	<i>melanotis</i>	LC	28.6

Weaver	Cape	<i>Ploceus</i>	<i>capensis</i>	LC	89.6
Weaver	Southern Masked	<i>Ploceus</i>	<i>velatus</i>	LC	2.6
White-eye	Cape	<i>Zosterops</i>	<i>virens</i>	LC	71.4
Whydah	Pin-tailed	<i>Vidua</i>	<i>macroura</i>	LC	29.9
Woodpecker	Knysna	<i>Campethera</i>	<i>notata</i>	LC	2.6
Woodpecker	Olive	<i>Dendropicos</i>	<i>griseocephalus</i>	LC	5.2

26 SPECIALIST DETAILS AND CURRICULUM VITAE,

The surveys and assessment were undertaken by Mokgatla Jerry Molepo, a registered Ecologist and Director of MORA Ecological Services (Pty) Ltd.

26.1 Curriculum Vitae

EDUCATION:

- MSc Zoology, Nelson Mandela University (Percy FitzPatrick Institute of African Ornithology Centre of Excellence)

Research Project Topic: Foraging behaviour and thermal physiology in Cape Sugarbirds: sex-specific responses to temperature.

- BSc Honours in Zoology, University of Limpopo

Research Project Topic: Morphometrics and plumage variation in the South African Fiscal flycatcher *Sigelus silens* Shaw 1809.

- BSc Botany & Zoology, University of Venda
- Grade 12, Marobathota High School

CERTIFICATES:

- SASS5 Aquatic Biomonitoring, GroundTruth
- Hydropedology and Wetland Functioning, Terra Soil Science & Water Business Academy
- Section 21 (c) & (i) Water Use Authorisation Training, Department of Water and Sanitation
- Basic Project Management, Hudisa Business School

PROFESSIONAL MEMBERSHIP:

- South African Council for Natural Scientific Professions (SACNASP) – Professionally registered as Professional Natural Scientist. **Registration number:** 009509
- British Ecological Society (BES). **Membership number:** 1010709
- Zoological Society of Southern Africa (ZSSA). **Membership number:** 691

WORK EXPERIENCE:

- MORA Ecological Services (Pty) Ltd: April 2018 – Current, I am Biodiversity Specialist, and my duties include (i) Conducting Biodiversity, Aquatic Impact Assessments, Rehabilitation (ii) Compilation of specialist reports.
- Arcus Consulting: May - November 2017, I was a subcontracted avifaunal surveyor for the proposed Highlands Wind Energy Farm, Somerset East, Eastern Cape.

- Centre for African Conservation Ecology (ACE), Nelson Mandela University: 2015 - 2016, I was a field guide/ environmental educator. Responsibilities: taking school learners on trial walks inside the Nelson Mandela University Nature Reserve.
- South African National Biodiversity Institute (SANBI): May – December 2014, I was a Zoological Systematics Technician. Responsibilities: (i) Insect identification and curation, and (ii) compiling the animal checklist of South Africa, (iii) Sourcing wildlife crime reports on endangered animals and plants for Barcode of Wildlife Project, (iv) Monitoring the bird population in the Botanical Garden.
- Department of Zoology, University of Venda: 2009 – 2013, I was a Research Assistant under Dr. T.C Munyai who was conducting a long-term research project which monitored the effects of climate change on biota and processes influencing ecosystem functioning and species diversity patterns.
- Percy FitzPatrick Institute of African Ornithology: March – April 2014, I was a Research Assistant under Dr. Rita Covas' Sociable Weaver Research Project. This is a long-term study which looks at the reproductive success of Sociable weavers at Benfontein Nature Reserve in Kimberley.

26.2 Key Experience In Specialist Projects

Year	Project	Location:	Role(s)
2023	Biodiversity Studies for a proposed development on Farm Searles in Groot Brak	Groot Brak, Western Cape	Ecologist
2023	Biodiversity Studies for the proposed Vaal Special Economic Zone	Gauteng	Ecologist
2023	Avifaunal Study for the proposed 400kV Sorata-Tugela powerline	Free State & KwaZulu-Natal	Avifaunal Specialist/Ornithologist
2023	Faunal Study for the proposed 400kV Sorata-Tugela powerline	Free State & KwaZulu-Natal	Ecologist
2023	Avifaunal Assessment for the proposed 132kV Powerline for Aggeneys Solar	Aggeneys, Northern Cape	Ecologist
2023	Search and Rescue for Lichtenburg Solar PV	Lichtenburg, North West	Ecologist
2022	Preconstruction Avifaunal Monitoring for the proposed Ujekamanzi Wind Energy Farm	Amersfoot, Mpumalanga	Avifaunal Specialist/Ornithologist
2022	Preconstruction Avifaunal Monitoring for the proposed Phefumula Wind Energy Farm	Ermelo, Mpumalanga	Avifaunal Specialist/Ornithologist

2022	Preconstruction Avifaunal Monitoring for the proposed Indwe Wind Energy Farm	Indwe, Eastern Cape	Avifaunal Specialist/Ornithologist
2022	Preconstruction Avifaunal Monitoring for the proposed Biesiesvlei Wind Energy Farm	Smithsfield, Free State	Avifaunal Specialist/Ornithologist
2022	Avifaunal Impact Assessment for the proposed 400kV powerline between Juno and Aurora Substation	West Coast, Western Cape	Avifaunal Specialist/Ornithologist
2022	Avifaunal Impact Assessment for the proposed 400kV powerline between Aries and Aggeneis Substation	Northern Cape	Avifaunal Specialist/Ornithologist
2022	Avifaunal Impact Assessment for the proposed 132kV for Musina-Makhado Special Economic Zone North Site	Musina, Limpopo	Avifaunal Specialist/Ornithologist
2022	Avifaunal Impact Assessment for the proposed Khauta PV Solar including 44kV and 132kV Powerline	Welkom, Free State	Avifaunal Specialist/Ornithologist
2022	Avifaunal Impact Assessment for the proposed NAOS PV Solar including 132kV Powerline	Free State	Avifaunal Specialist/Ornithologist
2022	Preconstruction Avifaunal Assessment for the proposed Lichtenburg PV Solar including 132kV Powerline	Lichtenburg, North West	Avifaunal Specialist/Ornithologist
2022	Preconstruction Botanical Assessment for the proposed Lichtenburg PV Solar including 132kV Powerline	Lichtenburg, North West	Ecologist
2022	Biodiversity Assessment, Land Capability and Veld Condition Assessment for PPC Cement SA Slurry	Slurry, North West	Ecologist
2021	Avifaunal Impact Assessment for the proposed Upington-Aries 2x 400kV	Upington, Northern Cape	Avifaunal Specialist/Ornithologist
2021	Habitat Assessment Post Rehabilitation for PPC Cement SA Dwaalboom Factory	Dwaalboom, Limpopo	Ecologist
2021	Habitat Assessment Post Rehabilitation for Gibson Bay Wind Energy Farm	Humansdorp, Eastern Cape	Ecologist
2021	Wetland Rehabilitation for the sewer pipeline construction in Daveyton	Ekurhuleni East College Campus,	Wetland Ecologist

		Daveyton, Gauteng	
2021	12 Months Wetland Rehabilitation Supervision for Ekangala Ext F Waterborne Sanitation Project	City of Tshwane Metropolitan Municipality, Ekangala, Gauteng	Aquatic Ecologist
2021	Bi-annual Aquatic Biomonitoring for Ekangala Ext F Waterborne Sanitation Project	City of Tshwane Metropolitan Municipality, Ekangala, Gauteng	Aquatic Ecologist
2021	12 Months Surface water and Groundwater monitoring for Ekangala Ext F Waterborne Sanitation Project	City of Tshwane Metropolitan Municipality, Ekangala, Gauteng	Aquatic Ecologist
2021	Estuarine Impact Assessments for the Proposed Mkhambathi and Mbotyi Beach Developments, Ingquza Hill Municipality, Eastern Cape	Ingquza Hill Municipality, Eastern Cape	Ecologist
2021	Botanical Search and Rescue Monitoring Report for A 140 Megawatt Roggeveld Wind Farm and Associated Infrastructure.	Karoo Hoogland Local Municipality, Northern Cape & Laingsburg Local Municipality, Western Cape Provinces	Ecologist
2021	Ecological walkthrough for the proposed National Route 3 (N3) between Cato Ridge and Camperdown in KwaZulu-Natal.	Cato Ridge, KwaZulu-Natal	Ecologist
2021	Avifaunal Impact Assessment for the proposed Musina-Makhado Special Economic Zone South Site	Musina-Makhado, Limpopo	Avifaunal Specialist/Ornithologist
2021	Ecological Impact Assessment for the proposed prospecting on Farm In Die Kom 345 JQ	North West	Ecologist

2021	Rehabilitation Plan for Roggeveld Wind Energy Facility and associated Substation and 33kV and 132kV transmission powerlines.	Karoo Hoogland Local Municipality, Northern Cape & Laingsburg Local Municipality, Western Cape Provinces	Rehabilitation Specialist
2021	Rehabilitation Plan of the sewage effluent in Bethal.	Bethal, Mpumalanga	Rehabilitation Specialist
2021	Invasive Alien Plants Species Eradication and Control Program for Castle Gate Shopping Centre.	Pretoria, Gauteng	Ecologist
2020	Avifaunal Impact Assessment for the proposed 33kV overhead powerlines on Roggeveld Wind Energy Farm.	Karoo Hoogland Local Municipality, Northern Cape & Laingsburg Local Municipality, Western Cape Provinces	Avifaunal Specialist/Ornithologist
2020	Avifaunal & Ecological Impact Assessment for the proposed solar farm on Vaalkloof Nature Reserve.	Breede Valley Municipality, Western Cape	Ecologist
2020	Wetland assessment for the proposed water pipeline upgrade.	Daveyton, Gauteng	Ecologist
2020	Biodiversity Impact Assessment (BIA) for the proposed township establishment in Pretoria North.	Pretoria, Gauteng	Ecologist
2020	Freshwater impact assessment for the proposed water Kagiso Regional Park.	Kagiso, Gauteng	Ecologist
2019	Basic Assessment Report and EMPr for the proposed borehole drilling to supplement water supply for broiler in Delmas, Mpumalanga Province.	Delmas, Mpumalanga	Environmental Assessment Practitioner
2019	Wetland and Ecological Assessment for the proposed upgrading of bulk sewer pipeline in Amsterdam.	Amsterdam, Mkhondo Local Municipality	Ecologist

2019	Ecological assessment for the proposed mine on Farm Palmietfontein 189 IP situated within JB Marks Local Municipality, North West Province.	Ventersdorp, North West	Ecologist
2019	Biodiversity Management Plans for Evander Gold Mine.	Evander, Mpumalanga	Ecologist
2019	Avifaunal assessment for the proposed granite mine outside Mokopane.	Mogalakwena Local Municipality, Limpopo	Avifaunal Specialist/ Ornithologist
2019	Wetland assessment for the proposed grey water pipeline for irrigation.	Makhado Municipality, Limpopo	Ecologist
2019	Ecological assessment for the proposed for Nandoni mixed development.	Nandoni, Thulamela Local Municipality, Limpopo	Ecologist
2019	Ecological assessment for the proposed cultural village on farm Mphaphuli 278MT.	Mukomaasinandu, Thulamela Local Municipality, Limpopo	Ecologist
2019	Ecological assessment for the proposed Musina mixed development.	Musina, Limpopo	Ecologist
2018	Invasive Alien Plants Species Eradication and Control Program Plan for Kwazenzele Ext. 1 Phase 2.	Lesedi Local Municipality, Gauteng province	Ecologist
2018	Updating of Wetland Assessment Report for the Magalies Lapatrie to Moruleng Pipeline.	Moses Kotana Local Municipality, North West province	Ecologist
2018	Avifaunal impact assessment for the proposed construction of two double storey on Mooifontein farm no 14IR, Portion 22 in Norkem, Kempton Park.	City of Ekurhuleni, Gauteng province	Avifaunal Specialist/ Ornithologist
2018	Ecological assessment for the proposed shopping centre and filling station in Madombidzha.	Madombidzha, Makhado	Ecologist

		Municipality, Limpopo province	
2018	Biodiversity Assessment & Management Plan for Cullinan Diamond Mine.	Cullinan, Gauteng province	Ecologist (Faunal Specialist)

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SPECIALIST CONFIRMATION OF REPORT APPLICABILITY

Date: 05 August 2026

Project: Proposed Removal and Replacement of Existing Culverts and Pipes at Sites 4 (DR1633) and 8 (DR1602), Mossel Bay Local Municipality, Western Cape

Subject: Confirmation of the Applicability of the Avifauna Compliance Statement

I, **Mokgatla Molepo**, a registered Professional Natural Scientist (SACNASP Reg. No. 009509), confirm that the Avifauna Compliance Statement prepared for the above-mentioned project remains applicable despite the field verification survey having been undertaken on **29 and 30 October 2023**.

The proposed development has not changed since the original assessment and remains limited to the removal and replacement of existing culverts and associated infrastructure within previously disturbed road reserves. The project footprint has therefore remained unchanged and no additional areas of natural habitat will be affected beyond those assessed in the original report.

At the time of the field assessment, the project areas were already characterised by existing road infrastructure, disturbed roadside vegetation and active riverbank erosion associated with deteriorating culvert crossings. The assessment concluded that the project footprint provided limited habitat for avifaunal Species of Conservation Concern, with no suitable breeding habitat, significant foraging habitat or important sheltering habitat identified within the areas proposed for construction. Although Species of Conservation Concern, including Knysna Warbler and Denham's Bustard, have been recorded within the broader landscape, the project footprint itself was found to be unsuitable for regular occupancy due to its disturbed nature and limited habitat availability.

Since the field survey, the Garden Route region has experienced periods of heavy rainfall and flooding. These events have likely resulted in further erosion of the riverbanks and additional degradation of the existing culvert infrastructure and adjacent disturbed habitat. Such changes would not increase the suitability of the project footprint for avifauna. On the contrary, continued erosion and flood-related disturbance are likely to have further reduced the availability of habitat for breeding, foraging and shelter within the immediate construction footprint. While the surrounding natural fynbos and riparian habitats continue to support avifaunal diversity, including Species of Conservation Concern, there is no reason to conclude that the ecological value of the disturbed project footprint has increased since the original assessment.

Accordingly, the conclusions of the Avifauna Compliance Statement remain unchanged. The verified **Low avifaunal sensitivity** of the project footprint remains appropriate, and the impact assessment, mitigation measures, and recommendations in the report continue to accurately reflect the site's current ecological condition and the anticipated impacts of the proposed development.

It is therefore my professional opinion that the Avifauna Compliance Statement remains valid and fully applicable for the purposes of the current environmental authorisation process.

Yours faithfully,

Mokgatla Molepo, MSc

Pr. Sci. Nat. (SACNASP Reg. No. 009509)

Avifaunal Specialist

MORA Ecological Services (Pty) Ltd