PROPOSED CLEARANCE OF INDIGENOUS VEGETATION FOR CULTIVATION ON VARIOUS FARMS, NEAR BLOEMHOF DAM, TSWELOPELE FREESTATE PROVINCE.

February 2021

DRAFT ENVIRONMENTAL IMPACT REPORT

Ref Nr: EMS/15,12(b)/20/03

BioBlue
Environmental Sustainability

Registration Nr: 2017/539350/07
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Details of Role Players

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EXECUTIVE SUMMARY

INTRODUCTION

Lobola Farming (Pty) Ltd (hereunder referred to as Lobola Farming) has appointed BioBlue Environmental Sustainability (Pty) Ltd (hereunder referred to as BioBlue) as an independent Environmental Assessment Practitioner (EAP) to undertake the required Scoping and Environmental Impact Assessment(S&EIA) in terms of the National Environmental Management Act 1998 (Act No. 107 0f 1998) EIA Regulation 2014 as amended; for the proposed clearance of indigenous vegetation on the Farm Satara 1475, Portion 1 of the Farm Glen Dover 886, Portion 2 of the Farm Glen Dover 886 and Farm Daeraad 1486, near Bloemhof Dam, Tswelopele Local Municipality in the Free State Province. The purpose of Clearing the sites is to cultivate the land and undertake farming activities.

SITE LOCATION

The proposed project site is located on the various farm portions listed above. It is situated 23km north west of the town of Hoopstad within the Free State Province and 4km from the banks of Bloemhof Dam. This area forms part of the Tswelopele Local Municipality that forms part of the larger Lejweleputswa District Municipality.

BRIEF PROJECT DESCRIPTION

The applicant, Lobola Farming, proposes to establish new cultivated fields in order to expand their current operations. The company has established a commercial and diverse farming enterprise. The team that comprises the operations is highly trained and have extensive knowledge in the farming industry.

The total size of the farms is approximately 2 000ha and the applicant proposes to establish cultivated fields that will equate to approximately 550ha. The exact size of the proposed cultivated fields will depend on the inputs from the various specialists working on the project as well as the final layout.

LEGISLATIVE REQUIREMENTS

In terms of the EIA Regulations of 2014 and activities listed in Listing Notice 2, the following listed activities are deemed applicable to the proposed development based on the information provided by the project proponent, the consultants and specialists.

Listing Notice No.	Activity Description
Listing Notice 2 R325, 07 April 2017, Activity No. 15: The Clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for – (i) The undertaking of a linear activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan	Proposed clearance of approximately 500ha of indigenous vegetation to establish new cultivated fields.
Listing Notice 3 R324, 07 April 2017, Activity 12: The Clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. b) Free State: (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (ii) Within critical biodiversity areas identified in bioregional plans; (iii) On land, where, at the time of the coming into effect of this Notice of thereafter such land was zoned open space, conservation or had an equivalent zoning; (iv) Areas within a watercourse or wetland; or within 100 metres from the edge of a watercourse or wetland	The proposed clearance of vegetations is located within the Free State Province within an Ecological Support Area.

ALTERNATIVES

The word "alternatives", as described in Chapter 1, Regulation 1, Sub-regulation (1) of the EIA Regulations of 2014 (GN No. R. 326), in relation to a proposed activity, means different ways of meeting the general purpose and requirements of the activity which may include alternatives to the-

Property on which or location where the activity is proposed to be undertaken;

- Type of activity to be undertaken;
- Design or layout of the activity;
- Technology to be used in the activity; or
- Operational aspects of the activity; and
- Includes the option of not implementing the activity.

Alternative site layouts of the proposed cultivated fields have been investigated during the Environmental Impact Assessment Process and two alternatives have been considered for this project. No other alternatives, such as technology, will be investigated at this stage as the project only entails the establishment of new cultivated fields.

PUBLIC PARTICIPATION

Scoping Phase

The proposed project and S&EIR have been widely announced with and invitation extended to the public to register as I&APs and to actively participate in the Public Participation Process. The following PP was conducted:

- Print media advertisements that were placed in the Bloemfontein Courant on the 8th of October 2020.
- Identified key stakeholders were contacted telephonically or by email and informed of the proposed clearance and the S&EIR process.
- Site notices indicating where the proposed project site is located was placed around the site as well as at strategic locations in Hoopstad and Bloemhof towns.

No comments were received from I&APs on the DSR.

Environmental Impact Reporting Phase

All registered I&APs were notified of the start of the Environmental Impact Reporting Phase and the availability of the Draft EIR for a period of 30 days (1st of March 2021 to the 30th of March 2021). An advertisement was placed in the Bloemfontein Courant and personal letters will be sent via email to all registered I&APs.

Due to the COVID 19 pandemic and the continued Lockdown the availability of report will be done through electronic means. The identified I&APs on the prepopulated stakeholder database will be sent an email with a link (dropbox or fileshare) to the report.

The Report will be made available on our website.

SPECIALIST ASSESSMENTS

As the project entails the proposed clearance of natural vegetation, the following specialist studies were conducted as part of the Environmental Impact Assessment Process:

- Terrestrial Biodiversity Assessment
- Wetland Assessment

- Phase 1 Heritage Impact Assessment

IMPACT STATEMENT

The proposed project entails the clearance of natural vegetation and thus, the main impacts on the site and surrounding environment will be the fragmentation of the natural vegetation and intact habitat. Most of the impacts will be experienced during the construction or establishment phase as removal of natural vegetation and altering the landscape to allow for crop production is the main aim of the project.

Possible impacts can also be experiences during the operational phase of the project, however, these impacts can easily be mitigated by implementing the proposed mitigation measures such as implementing a monitoring and eradication plan for alien and invasive species.

CONCLUSION AND RECOMMENDATIONS

The process within this EIR has demonstrated through the description of activity and the assessment of impacts that the proposed development does not have any fatal flaws. The impact on the natural vegetation and habitat on the site area can be mitigated by preserving a natural corridor that will allow for the movement of fauna species to and from the Bloemhof dam and nature reserve area.

With the adequate mitigation measures as indicated in this report and the specialist report, the impacts can be further reduced. The Impact Assessment has also identified essential mitigation measures that will mitigate all other impacts associated with the activity to within acceptable levels.

The EAP is of the opinion that the development should be grated Environmental Authorisation based on the assessment above as the negative impacts can be mitigated to a satisfactory level. The following mitigation measures must be included in the Environmental Authorisation:

- An Environmental Control Officer must be appointed prior to commencement of the establishment phase.
- All reports must be available on site.
- A complaints register must be drafted and kept up to date, with reposes on any complaints recorded with each complaint.
- The applicant, site manager, staff and any contractor must adhere to all mitigation measures in the EMPr. The EMPr is a legally binding document to all parties involved in the construction of the activity.

- Development and effective implementation of an Alien and Invasive species monitoring and eradication programme.

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GLOSSARY OF TERMS

- "Activity" means an activity identified in Government Notice Number R718 of 2009, and GNR. 324, R. 325, and R. 327, of 2017 as a listed activity.
- "Alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to property, activity, design or technology.
- "Applicant" means a person who has submitted or intends to submit an application. "Application" means an application for Environmental Authorization in terms of the EIA regulations, 2014 (as amended).
- "Associated Infrastructure," means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility.
- "Biodiversity" The variety of life occurring in an area, including the number of different species, the genetic wealth within each species, and the natural habitat where they are found.
- "Borehole" Includes a well, excavation or any artificially constructed or improved underground cavity that can be used for the purpose of: • intercepting, collecting or storing water in or removing water from an aquifer; • observing and collecting data and information on water in an aquifer; or • re-charging an aquifer.
- "Cultural significance" This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.
- "Cumulative impact" in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
- "Environmental Impact Assessment" in relation to an application to which scoping must be applied, means the process of collecting, organizing, analysing, interpreting and communicating information that is relevant to the consideration of that application.
- "Environment" The environment has been defined as "The external circumstances, conditions and objects that affect the existence and

development of an individual, organism or group". These circumstances include biophysical, social, economic, historical, cultural and political aspects.

- "Environmental Assessment Practitioner" Person or company, independent of the applicant (developer), that manages the environmental assessment process of a proposed project on behalf of the applicant.
- "Environmental Impact Report" In-depth assessment of impacts associated with a proposed development. This forms the second phase of an Environmental Impact Assessment and follows on from the Scoping Report.
- "Environmental Management Programme" means a programme presenting management and mitigation measures in relation to identified or specified activities envisaged in Chapter 5 of the National Environmental Management Act and described in regulation 34.
- "Heritage resources" This means any place or object of cultural significance. It also includes archaeological resources. Scoping Report Page 8 of 45
- "Interested and Affected Party" means an interested and affected party contemplated in section 24(4) (d) of the Act, and which in terms of that section includes - (a) Any person, group of persons or organization interested in or affected by an activity; and (b) Any organ of state that may have jurisdiction over any aspect of the activity.
- "Public Participation Process" means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters;
- "Registered Interested and Affected Party", in relation to an application, means an interested and affected party whose name is recorded in the register opened for that application in terms of regulation 42.
- "Species of Conservation Concern" All those species included in the categories of endangered, vulnerable or rare, as defined by the International Union for the Conservation of Nature and Natural Resources.
- "Significant impact" means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.
- "The Act" means the National Environmental Management: Waste Act, 1998 (Act No.59 of 2008).

DECLARATION OF INDEPENDENCE

The independent Practitioner

I, **Jane Mahaba** declare that I –

- act as the independent Environmental Practitioner for the Environmental Impact Report;
- this report covers the Environmental Impact Assessment aspects only and no other scope of work was requested for this study and the information should be interpreted with caution
- do not have and will not have financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;
- have no and will have any vested interest in the proposed activity proceeding;
- undertake to disclose, to the competent authority any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2010;
- BioBlue accepts no responsibility for the accuracy of any third-party data used in the production of this report.

Signature of Author – – Zander Liebenberg Pri.Sci. Nat *(Reg.No. 117291)*

Signature of Reviewer – Jane Mahaba Cert.Sci. Nat *(Reg.No. 119631)*

Date – 2021/02/26

1 ENVIRONMENTAL IMPACT ASSESSMENT REPORT REQUIREMENTS

The EIA Regulations of 2014 as amended in (GN No. R. 326) stipulate how an S&EIR is undertaken; therefore, the Scoping Report has been drafted in accordance with **Appendix 3 (3)** of the EIA Regulations of 2014 as mended (GN No. R. 326). Below provides a document map indicating section of the report where all required information has been provided and address as per the Appendix 2 of the Regulations.

Table 1: Document Map

APPENDIX 3 REQUIREMENTS	SECTION IN REPORT
a) details of— i. the EAP who prepared the report; and ii. the expertise of the EAP, including a curriculum vitae;	Section 3.2 , Appendix F for Declaration and Curriculum Vitae
b) the location of the development footprint of the activity on the approved site as contemplated in the accepted scoping report, including— i. the 21 digit Surveyor General code of each cadastral land parcel; ii. where available, the physical address and farm name; iii. where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section 2.1
c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is— i. (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or ii. on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Section 2.1 and 2.2 for description and coordinates, Appendix A for A3 plans.
d) a description of the scope of the proposed activity, including— i. all listed and specified activities triggered; ii. a description of the activities to be undertaken, including associated structures and infrastructure;	Section 2.2 for project description and 2.3 for the layout, Appendix A Layouts, Section 4.1-4.2 for listed activities.
e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Section 4.1 – 4.3
f) a motivation for the need and desirability for the proposed development including the need and desirability of the	Section 2.4

APPENDIX 3 REQUIREMENTS	SECTION IN REPORT
activity in the context of the preferred location;	
g) a motivation for the preferred development footprint within the approved site as contemplated in the accepted scoping report	Section 2.3
h) a full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including— i. details of all the alternatives considered; ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; iii. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; iv. the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; v. the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; vi. the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks; vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; viii. the possible mitigation measures that could be applied and level of residual risk; ix. if no alternative development footprints for the activity were investigated, the motivation for not considering such; and x. a concluding statement indicating the location of the preferred alternative development footprint within the approved site as contemplated in the accepted scoping report;	Section 5 (Alternatives) Section 7 and Appendix E (Public Consultation. Section 8 (Baseline Environment)
i) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity, including—— i. a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	Section 9 (Specialist Assessments), 10 (Summary of Findings and Recommendations of the Specialist reports)

APPENDIX 3 REQUIREMENTS	SECTION IN REPORT
ii. an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	
j) an assessment of each identified potentially significant impact and risk, including— i. cumulative impacts; ii. the nature, significance and consequences of the impact and risk; iii. the extent and duration of the impact and risk; iv. the probability of the impact and risk occurring; v. the degree to which the impact and risk can be reversed; vi. the degree to which the impact and risk may cause irreplaceable loss of resources; and vii. the degree to which the impact and risk can be mitigated;	Section 11
k) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;	Section 10
l) an environmental impact statement which contains— i. a summary of the key findings of the environmental impact assessment: ii. a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred development footprint on the approved site as contemplated in the accepted scoping report indicating any areas that should be avoided, including buffers; and iii. a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Section 13
m) based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;.	Section 10 and 14
n) the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;	Section 14
o) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	Section 10, 11, 13 and 14
p) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed	Section 12
q) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	Section 13 and 14
r) where the proposed activity does not include operational aspects, the period for which the environmental	Not Applicable

APPENDIX 3 REQUIREMENTS	SECTION IN REPORT
authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised	
s) an undertaking under oath or affirmation by the EAP in relation to— i. the correctness of the information provided in the reports; ii. the inclusion of comments and inputs from stakeholders and I&APs; iii. the inclusion of inputs and recommendations from the specialist reports where relevant; and iv. any information provided by the EAP to interested and affected parties and any v. responses by the EAP to comments or inputs made by interested or affected parties;	Appendix F
t) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	Not Applicable
u) an indication of any deviation from the approved scoping report, including the plan of study, including— i. any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and ii. a motivation for the deviation	Not Applicable
v) any specific information that may be required by the competent authority.	Not Applicable
w) any other matters required in terms of section 24(4)(a) and (b) of the Act.	Not Applicable

2 INTRODUCTION

Lobola Farming (Pty) Ltd (hereunder referred to as Lobola Farming) has appointed BioBlue Environmental Sustainability (Pty) Ltd (hereunder referred to as BioBlue) as an independent Environmental Assessment Practitioner (EAP) to undertake the required Scoping and Environmental Impact Assessment(S&EIA) in terms of the National Environmental Management Act 1998 (Act No. 107 0f 1998) EIA Regulation 2014 as amended; for the proposed clearance of indigenous vegetation on the Farm Satara 1475, Portion 1 of the Farm Glen Dover 886, Portion 2 of the Farm Glen Dover 886 and Farm Daeraad 1486 near Bloemhof Dam, Tswelopele local Municipality in the Free State Province. The purpose of the proposed clearance of vegetation is to expand their current commercial farming operations within the area.

2.1 PROJECT LOCATION

The site is located approximately 3km from the Bloemhof dam and the Free State and North West provincial border. The site is in the Free State province in the Tswelopele local Municipality. The total site area equates to approximately 2 000 ha. The centre coordinates of the site are 27°46'16.21"S 25°38'36.79"E

Table 2: Farm Portions and 21SG Codes

Farm	21SG Code
Satara 1475	F01700000000147500000
Portion 1 Glen Dover 886	F01700000000088600001
Portion 2 Glen Dover 886	F01700000000088600002
Daeraad 1486	F01700000000148600000

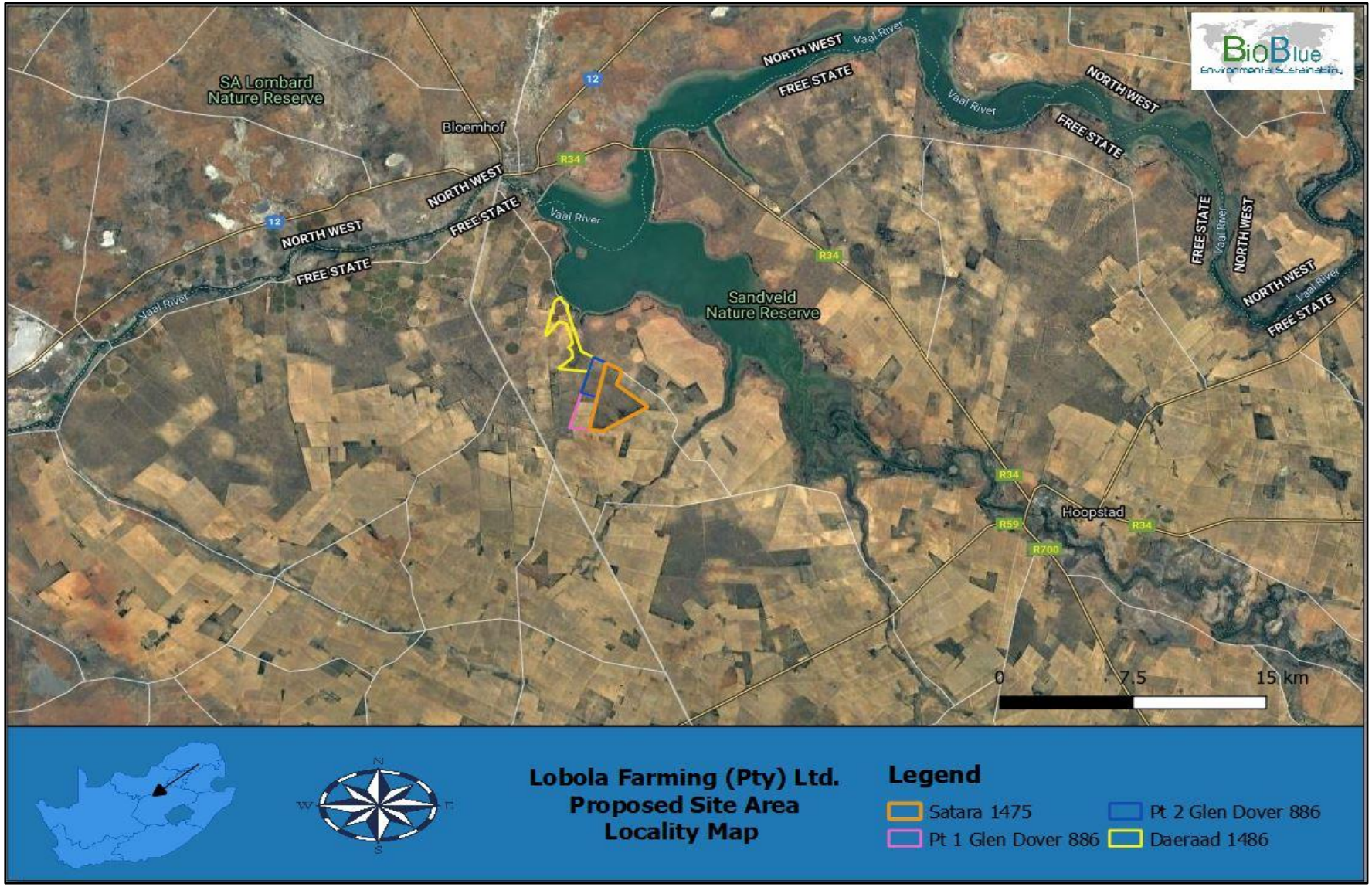


Figure 1: Locality Map

2.2 PROJECT DESCRIPTION

The application proposed to establish up to 550ha of new cultivated fields in order to expand their current commercial farming operations in the area. The current operations include the cultivation of maize, wheat and beans and the applicant intends to expand the operations with the cultivation of potatoes, ground nuts and lucerne. The adjacent land-uses are agricultural in nature with mining activities situated near Bloemhof and Christiana.

During the specialist assessments it was established that a natural corridor will have to be preserved to allow for fauna to move to and from the Bloemhof dam area. These findings have resulted in a maximum clearance area of 355 hectares.

2.3 LAYOUT

The proposed layout for clearance has been established through combining the various specialist assessments conducted and respective recommendations. There are two possible layouts that both include a natural area to be preserved and protected. (Refer to Figure 2 and 3). Layout option 1 has a proposed clearance area of 355ha and layout option 2 has a clearance area of 348ha.

2.4 NEED AND DESIRABILITY

Food security is becoming more of a concern in recent years with the government putting efforts into promoting agricultural activities in the country. The Department of agriculture has rolled out a number of programmes to encourage and assist farming activities and ventures in the country. The Free State province is very well known for its extensive farming communities and has been at the centre of farming for many decades. The province has proved to have productive land and adequate support for dryland farming. Even with the challenges of no rain and a threat for a drought; the province still has an active cultivation culture.

The municipality is fairly rural, and its economic activity is still largely based on agriculture and social services.

Lobola Farming has been involved in farming activities in the Northern Cape province and Free State province on a commercial scale and will utilise their expertise to expand their current operations and in doing so, create additional job opportunities.

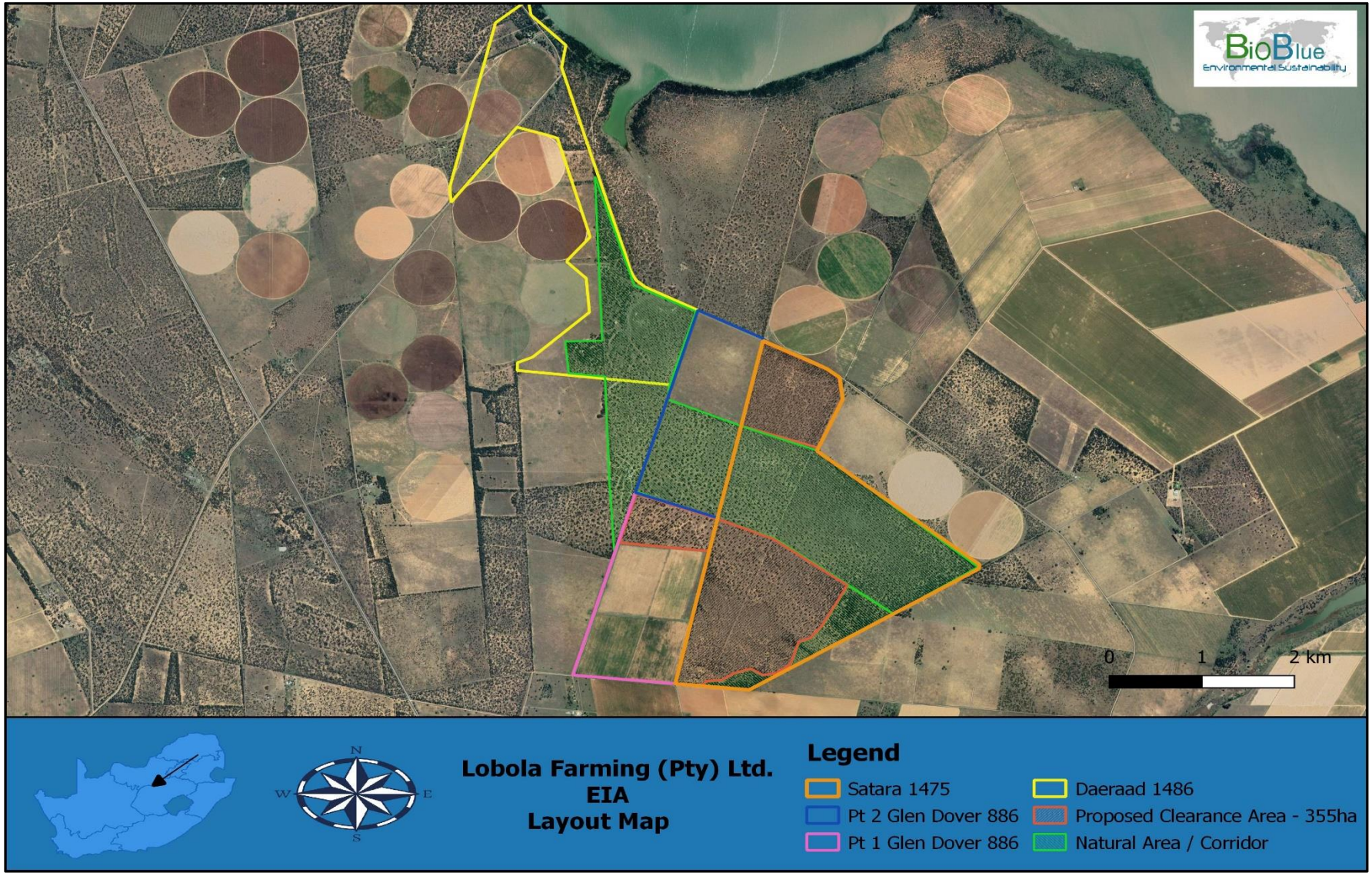


Figure 2: Preferred Option 1 – Layout Map

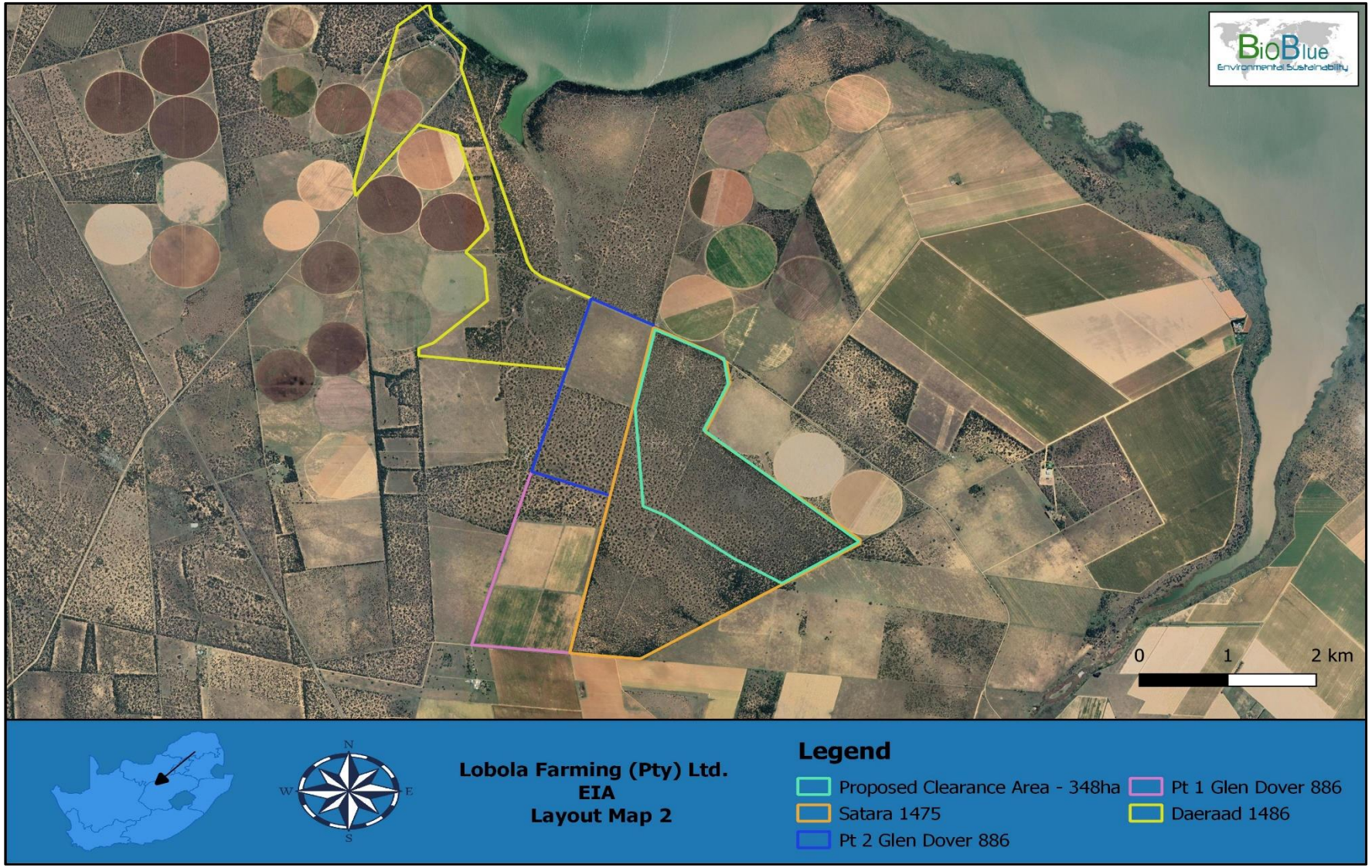


Figure 3: Preferred Option 2 – Layout Map - Southern side of Satara to be conserved along with the remaining area of Portion 2 of Glen Dover .

3 DETAILS OF THE ROLE PLAYERS

3.1 DETAILS OF THE APPLICANT

Please refer to page (ii).

3.2 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

The EAP is Jane Mahaba on behalf of BioBlue Environmental Sustainability (Pty) Ltd, Ms Mahaba has a BSc in Ecology, Environment and Conservation from the University of the Witwatersrand and has over 10 years of experience in the Environmental Management Field (refer to Annexure B for the EAP CV). The EAP has experience in conducted the following processes:

- Basic Assessment, Scoping and Environmental Impact Assessment
- Waste License Application, Water Use License Applications
- Environmental Auditing and Monitoring
- Public Consultation and Stakeholder Engagement

The details of the EAP are stipulated on page (ii).

4 LEGISLATIVE REQUIREMENTS

4.1 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS OF 2014 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)

Section 24(5) and 44 of NEMA asserts that the Minister or Member of the Executive Council (MEC) may make regulations pertaining to applications under NEMA. The Minister (of Environmental Affairs) has made such regulations and the latest were published on 04 December 2014, Amended in April 2017. The EIA Regulations focus primarily on creating a framework for co-operative environmental governance. NEMA provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by State Departments and to provide for matters connected therewith.

In terms of the EIA Regulations of 2014 and activities listed in Listing Notice 2, the following listed activities are deemed applicable to the proposed development based on the information provided by the project proponent and specialists.

Table 3: Triggered Activities in Terms of the EIA Regulations of 2014 as amended

Listing Notice No.	Activity Description
Listing Notice 2 R325, 07 April 2017, Activity No. 15: The Clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for – (i) The undertaking of a linear activity; or (ii) Maintenance purposes undertaken in accordance with a maintenance management plan	Proposed clearance of approximately 500ha of indigenous vegetation to establish new cultivated fields.
Listing Notice 3 R324, 07 April 2017, Activity 12: The Clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. b) Free State: (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that	The proposed clearance of vegetations is located within the Free State Province within an Ecological Support Area.

has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (ii) Within critical biodiversity areas identified in bioregional plans; (iii) On land, where, at the time of the coming into effect of this Notice of thereafter such land was zoned open space, conservation or had an equivalent zoning; (iv) Areas within a watercourse or wetland; or within 100 metres from the edge of a watercourse or wetland	

The listed activities include activities that could potentially have a detrimental impact on the social and biophysical state of the prevailing environment and as such, the applicant is required to obtain an EA by way of an S&EIR process in order undertake the project.

The environmental studies will follow a two-phased approach in accordance with the EIA Regulations of 2014:

- Environmental Scoping Phase; and
- Environmental Impact Reporting Phase.

This report constitutes the Draft Environmental Impact Report (EIR) and assesses the impacts described during the scoping phase and presents the specialist findings as well as the proposed recommendations.

4.2 OTHER RELEVANT LEGISLATION

4.2.1 Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996) as amended has major implications for environmental management. The main effects are the protection of environmental and property rights, the change brought about by the sections dealing with administrative law, such as access to information, just administrative action and broadening of the locus standing of litigants. These aspects provide general and overarching support and are of major assistance in the effective implementation of the environmental management principles and structures of NEMA. Section 24 in the Bill of Rights of the Constitution asserts that: Everyone has 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.

4.2.2 National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The National Heritage Resources Act, 1999 (Act No. 25 of 1999) as amended (NHRA), legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments (including roads) exceed 300 metres in length. The proposed development falls in neither of the stipulated thresholds.

4.2.3 Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)

The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) as amended (CARA), is to provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and/or resources as well as the vegetation and the combating of weeds and invader plants; and for matters connected therewith. In terms of the amendments to the Regulations under the CARA, landowners are legally responsible for the control of alien species on their properties.

4.2.4 National Environmental Management Waste Act 2008 (Act No. 59 of 2008)

The act regulates the management of waste for all types of developments and activities which pose a threat to the environment in terms of the act. Waste is currently a very serious topic around the world and all efforts to minimise and recycle waste are currently being encouraged by government and international agencies. It is therefore important for any development to manage waste in a sensible way and in line with the waste hierarchy where the preference is always minimisation.

4.2.5 Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

This Act is to provide for the health and safety of persons at work; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

4.2.6 Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)

The Act recognises that everyone has a Constitutional right of access to any information held by the state and by another person when that information is required to exercise or protect any rights. The purpose of the Act is to foster a culture of transparency and accountability in public and private bodies and to promote a society in which people have access to information that enables them to exercise and protect their rights. In light of this Act, the S&EIR process includes PP which in essence is a platform for communities affected by the proposed development as well as any other persons with interest to be given access to the information that forms part of this process so as to give comments and raise concerns about the proposed development. The Interested and Affected Parties (I&APs), State Departments and other stakeholders are afforded a period of 30 days, for each draft report (DSR and Draft EIR), to comment on the content of that draft report. The comments received from I&APs, State Departments and other Stakeholders are incorporated into a CRR which forms part of each final report (FSR and Final EIR), the final report inclusive of the CRR will be submitted to the DESTEA for decision making.

4.3 NATIONAL AND PROVINCIAL POLICIES AND/OR GUIDELINES

4.3.1 Integrated Environmental Management

Integrated Environmental Management (IEM) is a philosophy for ensuring that environmental considerations are fully integrated into all stages of the proposed development process. This philosophy aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend to encourage a pro-active approach to sourcing, collating, and presenting information in a manner that can be interpreted at all levels.

The Department of Environmental Affairs (DEA) IEM Information Series guidelines will form part of the literature consulted during this S&EIR process. Of particular relevance are the:

- Companion Guideline on the Implementation of the Environmental Impact Assessment Regulations (DEA, 2012); and
- Public Participation in the EIA Process (DEA, 2010).

Previous documents published by the DEA as part of the 2006 guideline series include:

- Guideline 3: General guide to the EIA Regulations;
- Guideline 4: Public participation; and
- Guideline 5: Assessment of alternatives and impacts.

4.3.2 Free State Biodiversity Plan

The purpose of the biodiversity plan is to unlock meaningful and lasting benefit for both the people of the province (i.e. enhancing human well-being and the environment by enhancing the integrity of the environment. The biodiversity plan's purpose was to create systems that would allow for all actions and tasks performed to be repeated accurately in future updates of the plan.

4.3.3 Tswelopele IDP 2020-2021

The plan for the municipal service delivery and infrastructure planning. The IDP identifies areas of opportunity and improvement and lays out the plan to achieve the municipal mandate in terms of the Local Government Municipal Systems 2000 (Act 32 of 2000).

5 PROJECT ALTERNATIVES

The word "alternatives", as described in Chapter 1, Regulation 1, Sub-regulation (1) of the EIA Regulations of 2014 (GN No. R. 326), in relation to a proposed activity, means different ways of meeting the general purpose and requirements of the activity which may include alternatives to the-

Property on which or location where the activity is proposed to be undertaken;

- Type of activity to be undertaken;
- Design or layout of the activity;
- Technology to be used in the activity; or
- Operational aspects of the activity; and
- Includes the option of not implementing the activity.

5.1 SITE ALTERNATIVE

No feasible site alternatives exist for the proposed clearing project. The applicant owns the properties on which the activity will be undertaken.

5.2 TYPE OF ACTIVITY AND TECHNOLOGY

The proposed farming activities will use the latest technology for the construction, operation and management of the activities on site as well as any ancillary infrastructure. No technology alternatives were therefore considered as the development will use materials and methods in line with best practices for cultivation and to reach the required product output based on supplier requirements.

5.3 LAYOUT ALTERNATIVE

The specialist studies conducted on the proposed site, established that a natural corridor should be preserved to allow for the movement of fauna to and from the Bloemhof dam area.

Two possible layout alternatives have been proposed. (please refer to Figure 2 and 3). These two options both allow for a natural corridor to be preserved and protected as recommended by the specialists. The size difference between the two alternatives is minimal (348ha and 355ha).

5.4 THE NO-GO ALTERNATIVE

This option assumes that a conservative approach will be followed which would ensure that the environment is not impacted upon in anyway and the site remains in its current state. Should the Competent Authority decline the application, the 'No-Go' option will be followed, and the status quo of the site will remain. Should the CA consider the 'No-Go' option; the property will remain in its current state and will not add value to the area in terms of development and by providing employment to the locals. Although site is in a natural form, the surrounding land uses are agricultural and therefore may not be able to contribute to the biodiversity and ecological connectivity in the area.

6 SCOPING REPORTING PHASE

The S&EIR process for the proposed development is comprised of two main phases, namely the Scoping Phase and the EIR Phase. This report documents the tasks that have been undertaken as part of the Scoping Phase and that will be undertaken as part of the EIR Phase. The Scoping Phase serves to define the scope of the later detailed assessment of potential impacts resulting from a proposed development and to establish the baseline conditions of the receiving environment. The Scoping Phase has been undertaken in accordance with the requirements of *Appendix 2 of the EIA Regulations of 2014 (GN No. R. 326) and the IEM Information Series (DEAT, 2002)*.

The objectives of the Scoping Phase are to:

- Ensure that the process is open and transparent and involves the relevant Authorities, the project proponent, and key stakeholders;
- Identify the important characteristics of the affected environment;
- Ensure that feasible and reasonable alternatives are identified and selected for further assessment;
- Determine possible impacts of the proposed project on the biophysical and socio-economic environment and associated mitigation measures; and
- Ensure compliance with the relevant legislation.

The Scoping Report represents the findings of the Scoping Phase of the proposed development and the purpose of the report is, therefore, to document these findings in the form of a Draft and Final Scoping Report.

6.1 CONSULTATION WITH THE COMPETENT AUTHORITY

Consultation with DESTEA has commenced and will continue throughout the S&EIR Application Process. To date the authority consultation included the following:

- Submission, to DESTEA, of a completed EA application form together with applicable appendices in terms of the EIA regulations (2014) promulgated under NEMA;
- Following the submission of the completed EA application form, DESTAE issued the applicant with a reference number; and
- The Draft Scoping Report (DSR) was submitted to DESTEA and made available to the public for commenting for a 30-day period (from 9th of October to 9th of November 2020).
- Comments from DESTEA were received on the 4th December 2020 and the Final Scoping Report was approved.

6.2 CONSULTATION WITH OTHER RELEVANT AUTHORITIES

The Background regarding the proposed development is provided to other relevant Authorities, together with a registration and comment form, formally requesting the input into the S&EIR process. The Authorities include inter alia:

Table 4: Relevant Authorities Consulted

Name and Surname	Contact Details	Company/Organisation
Ms. B.P. Letlole	bletlole@dard.gov.za info@fs.agric.za	Department of Agriculture
Mr. D. Seiphemo	seiphemod@dws.gov.za	Department of Water and Sanitation
Switchboard	051 408 1200 socialmedia@fshealth.gov.za	Department of Health
Ms. Lorato Moalosi **Ms. Grace Mkhosana**	moalosil@destea.gov.za mkhosana@destea.gov.za	Free State Department: Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA)
Municipal Manager	info@lejwe.co.za 057 353 3094/5/8/9	Lejweleputswa District Municipality
Ms. Matiro Rebecca Ellen Mogopodi	municipal.manager@tswelopele.org 051 853 1111	Tswelopele Local Municipality (Municipal Manager)
	info@tswelopele.gov.za 051 853 1111	Tswelopele Local Municipality (Environmental Officer)
Hon. Cllr. Motshabinyana Welhemina Raseu	speaker@tswelopele.org 051 853 1111	Tswelopele Local Municipality (Speaker)
Cllr Baleni	073 179 4339	Tswelopele Local Municipality (Ward Councillor) Ward 8

7 PUBLIC PARTICIPATION PROCESS

The purpose of the Public Participation Process, as per Chapter 6, Regulation 40 of the EIA Regulations of 2014 as amended (GN No. R 326), is to provide access to all information that reasonably has or may have the potential to influence any decision with regard to an application unless access to that information is protected by law. This must include consultation with the DESTEA (in this case), every state department that administers a law relating to a matter affecting the environment relevant to an application for an EA, all organs of state which have jurisdiction in respect of the activity to which the application relates, and all potential or registered (where relevant) I&APs.

The PP process is therefore undertaken in terms of the legislative requirements, *Chapter 6, Regulation 39 - 43 of the EIA Regulations of 2014, as amended, (GN No. R. 326)* as follows:

7.1 IDENTIFICATION OF KEY STAKEHOLDERS AND I&APs

The identification and registration of I&APs will be an ongoing activity during the course of the environmental impact assessment of the proposed development. BioBlue will develop, maintain and constantly update an electronic I&AP database for the application process. As such I&APs were identified using the following:

- Existing I&AP databases for other projects within the study area;
- Placement of advertisements in newspapers;
- Placement of site notices at the proposed development site and any alternatives; and
- Discussions with relevant Authorities and adjacent landowners

I&APs representing the following sectors of society have also been identified in terms of *Chapter 6, Regulation 41, of the EIA Regulations)*:

- Provincial Authorities;
- Local Authorities;
- Parastatal/ Service Providers;
- Non-governmental Organisations;
- Local forums/ unions; and
- Adjacent Landowners.

Refer to Appendix E5 for the stakeholder database.

7.2 NOTIFICATIONS AND ADVERTISEMENTS

The proposed development and S&EIR process will be widely announced with an invitation to the public to register as I&APs and to actively participate in the PP process. This will be achieved using:

- Print media advertisements in the local Bloemfontein Courant newspaper in English (8th October 2020). A second advertisement was placed within the paper on the 4th of March 2021, to indicate the availability of the Draft EIR and EMPr.
- Identified key stakeholders who will be contacted telephonically or by email and informed of the proposed development and the S&EIR process;
- The identified I&APs will be invited to comment on the content of the Draft EIR through letters via Email; (Appendix E5)

- Posters/ site notices indicating where the Draft EIR will be made available and placed at public locations and around the site. (Refer to Appendix E for proof of advertisement)

In accordance with the requirements of the EIA Regulations of 2014, the I&AP registration period commenced with the advertisement of the proposed development in newspapers and the placement of site notices. As stated, the purpose of the advertisements and site notices is to notify the public of the proposed development and to invite the public to register as I&APs and comment on the DSR.

7.3 PUBLIC REVIEW OF THE DRAFT SCOPING REPORT

The DSR was made available to the public for review and commenting for a legislative period of 30 days (from 9 October 2020 to 9 November 2020).

Due to the COVID 19 pandemic and the continued Lockdown the availability of repot was done through electronic means. The identified I&APs on the prepopulated stakeholder database will be sent an email with a link (dropbox or fileshare) to the report. The Report made available on our website.

Note: In order to minimize delays and to submit the final scoping which has been subjected to a 30 day comments period the Invitation to register and the invitation comment on the Draft SR ran concurrently and appeared on the same letters, adverts and notices.

No Comments were received from I&APs on the draft Scoping Report.

7.4 FINAL ENVIRONMENTAL SCOPING REPORT

There are no legislative requirements for the FSR to undergo a PP process; however the comments received from I&APs (Appendix E Scoping Phase) during the review of the DSR are incorporated into a Comments and Response Report (CRR) (Refer to Appendix E Scoping Phase). The FSR was submitted to DESTEA. The Scoping Report was accepted by the DESTEA on 4th December 2020.

7.5 PUBLIC REVIEW OF THE ENVIRONMENTAL IMPACT REPORT

All registered I&APs will be notified of the start of the Environmental Impact Reporting phase and the availability of the Draft EIR for a period of 30 days.

8 BASELINE ENVIRONMENT

8.1 SURROUNDING LANDING USE

The proposed site is surrounded mainly by areas of agricultural activity. There are pockets of natural areas adjacent the site. The Sandvelt Nature Reserve is 3.71 km to the north of the site and approximately 2.78 km to the east. It does border the farm Daeraad 1486. The Bloemhof dam Is the same distance as it makes up part of the reserve.

Table 5: Surrounding Land-Use

Direction	Land Use
North	N of Satara – Cultivated Fields, N of Daeraad – Natural vegetation and Bloemhof Dam
West	Natural vegetation in between cultivated fields
East	Cultivated fields
South	Road and Cultivated fields

Please refer to Appendix B for a photo plate.

8.2 BIOPHYSICAL ENVIRONMENT

8.2.1 CLIMATE

The site falls within the semi-arid region. Annual Temperatures range from a maximum of approximately 31°C in summer and a low of 3.9°C in winter months; with mean annual temperatures ranging between 15°C and 16°C. The municipality is located within a summer rainfall region, generally receiving between 400mm and 600mm of rainfall per annum. Frost occurs throughout the municipal area, usually from April to September (TLM 2020 IEMP).

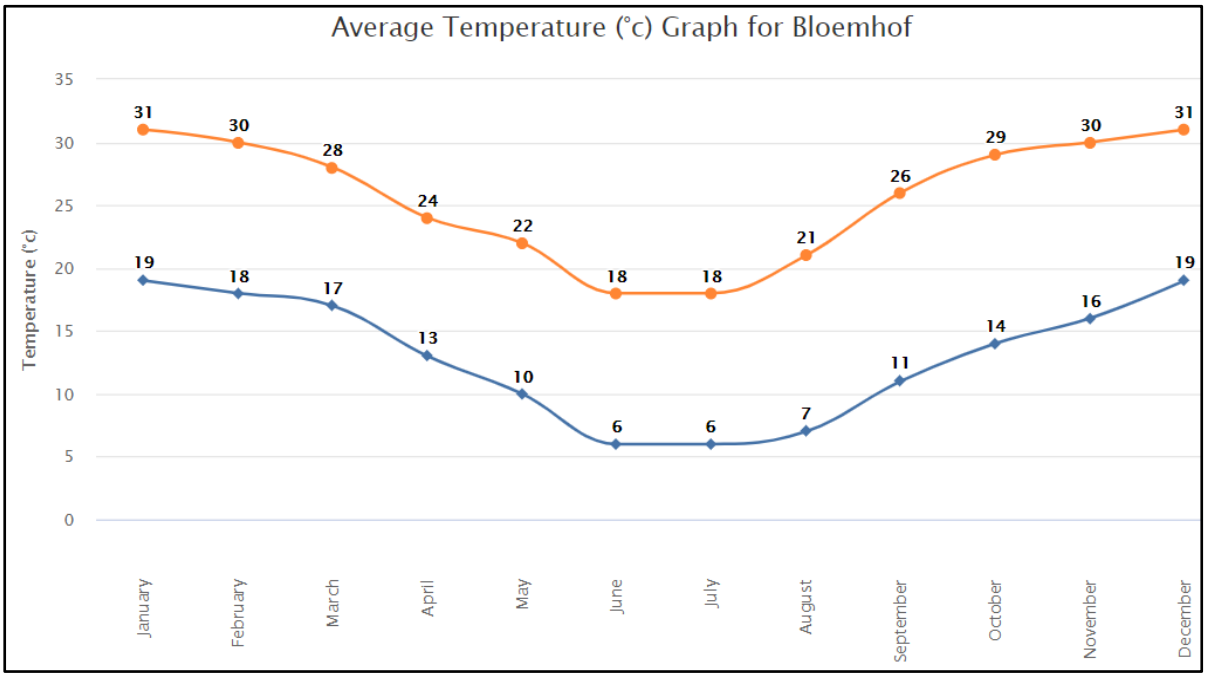


Figure 4: Average Temperatures for Bloemhof - worldweatheronline.com

8.2.2 TOPOGRAPHY

The municipal area is generally flat with a difference of altitude of only 200 metres over 80kms. It gently slopes towards the Vet and Vaal Rivers along its northern and western boundaries. Around and south of Bultfontein is the "Altemit" a sub-region of low hills and depressions containing seasonal wetlands or pans. The altitude of the area I approximately 1320m above sea level.

8.2.3 BIODIVERSITY

The site falls under the Kimberley Thornveld, the IEMP of the municipality hights that these habitats varies considerably as a result of grazing, levels of natural resources and the management thereof. The Kimberley Thornveld generally consists of Camel Thorn (*Vachellia erioloba*) and several tall grass species. The grass layer is complex and is dominated by love grass species *(Eragrotis*), silky awn grass species (*Stipagrotis*) and stick grass species (*Aristida*) (FBDM Wetland report 2017)

The region has lower invasive species diversity compared to the eastern and southern regions of the Free State Province. This can be attributed to the lower moisture content in the area. Commonly occurring alien plant species found within the municipal area, particularly on stream banks and roadsides, include Agave species (Century plant / Sisal), Eucalyptus spp.,

Gleditsia triacanthos (Honey locust), Melia azedarach (Syringa), Opuntia ficus-indica (Prickly pear), Prosopis species (Mesquite), and Salix babylonica (Weeping willow).

The site is within what is described as a Secondary Ecosystem Service Area; these areas have been identified as Natural or Waterbodies, or buffer core areas. These areas protect the functionality of core areas, provide ecosystem services important to local (and sometimes regional) users.

8.2.4 HYDROLOGY

There are two major water systems with the Tswelopele local Municipality where the site is located which comprise of the Vaal and Vet Rivers. The Vaal rivers borders the municipality to the north and the vert forms part of the eastern border of the municipal area. The two rivers flow into the Bloemhof dam which is approximately 2.78km from the proposed site. A wetland assessment has determined the extent of the wetland located on the farm Daeraad 1486.

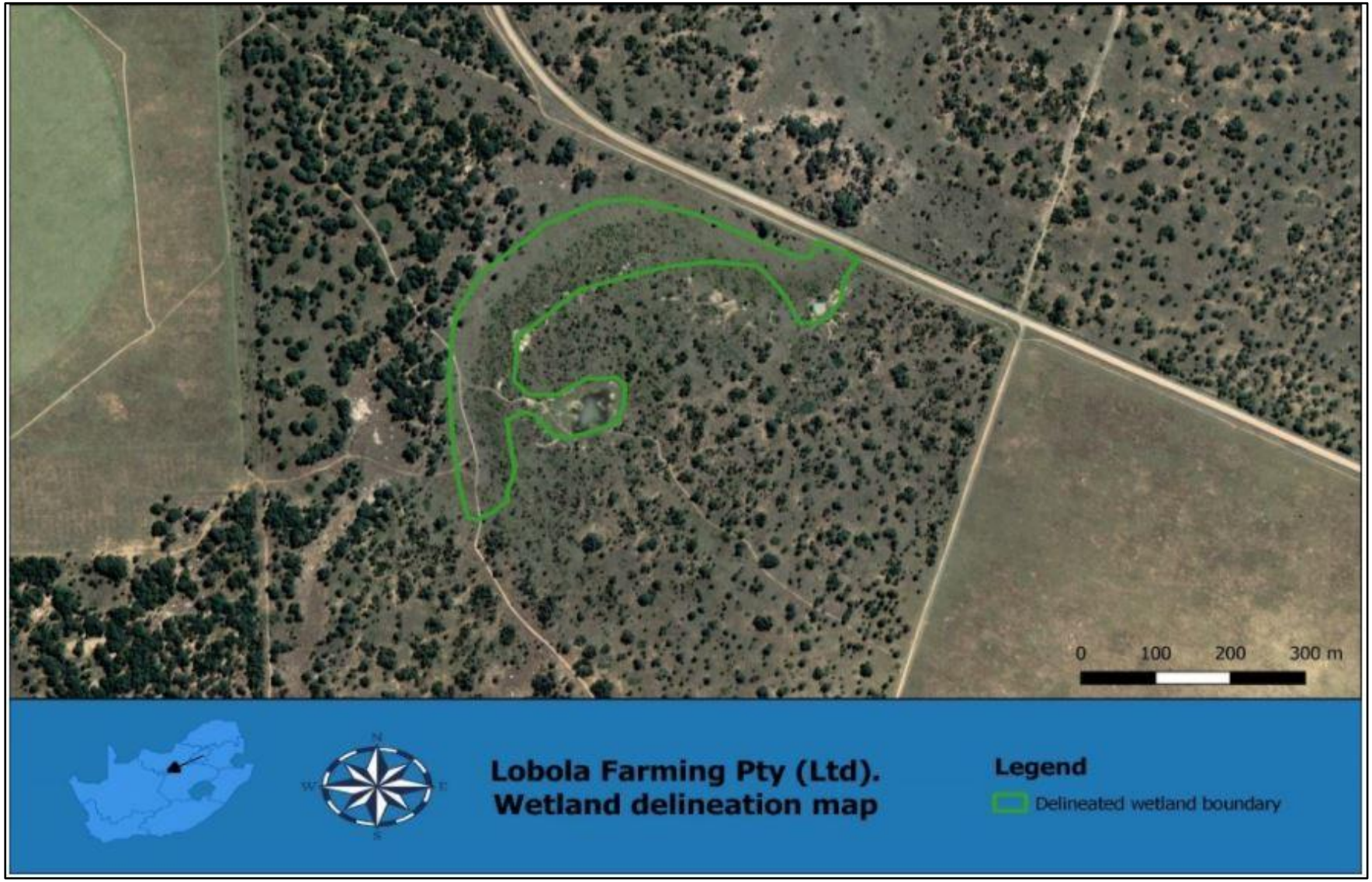


Figure 5: Wetland located on Farm Daeraad 1486

8.3 SOCIO-ECONOMIC CONTEXT

Information in this section is obtained from the Tswelopele Local Municipality IDP 2020/2021 Review.

Tswelopele Local Municipality falls within the Lejweleputswa District area which is situated in the north western parts of the Free State Province. The Municipality is bordered by the North West Province to the north, Fezile Dabi and Thabo Mofutsanyane districts to the north east and east, Mangaung Metro and Xhariep to the south as well as the Northern Cape Province to the west.

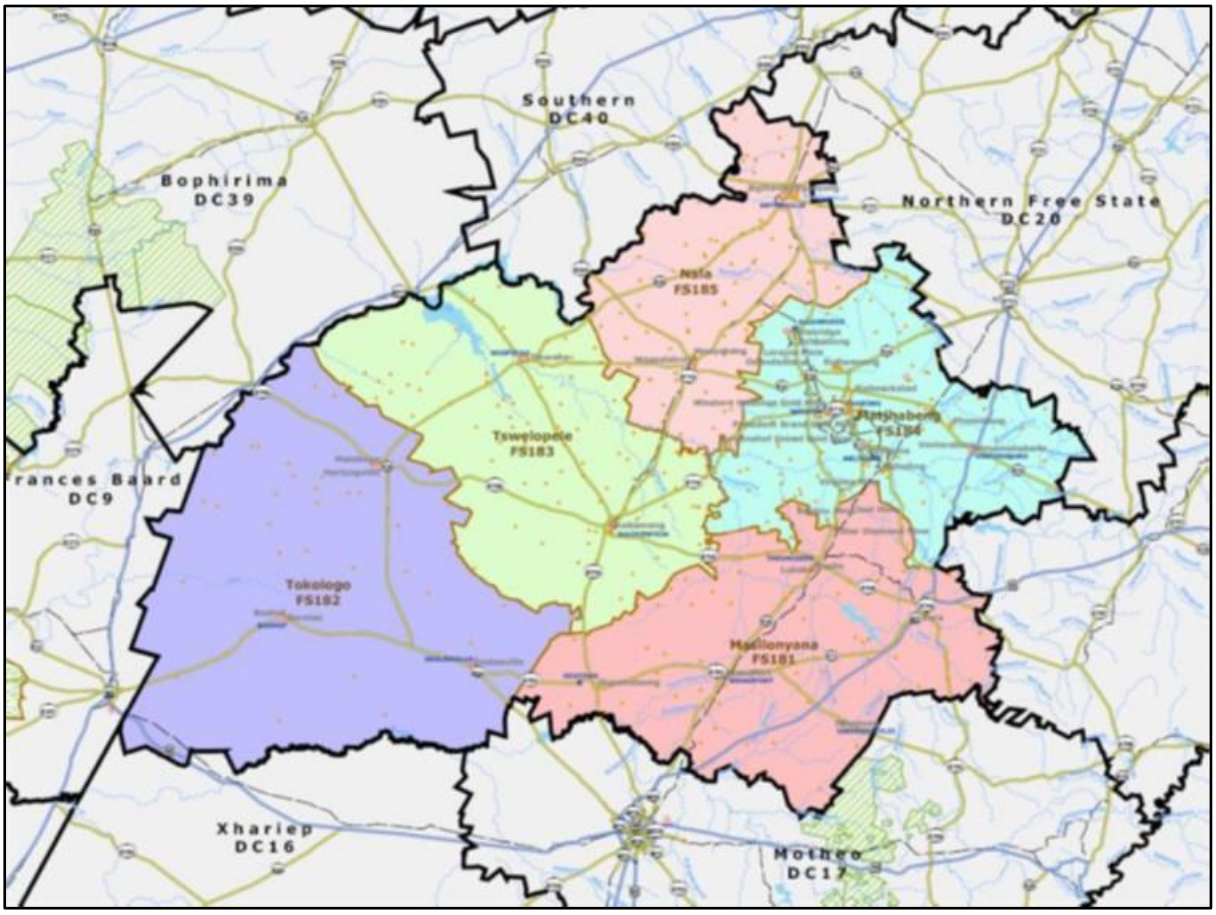


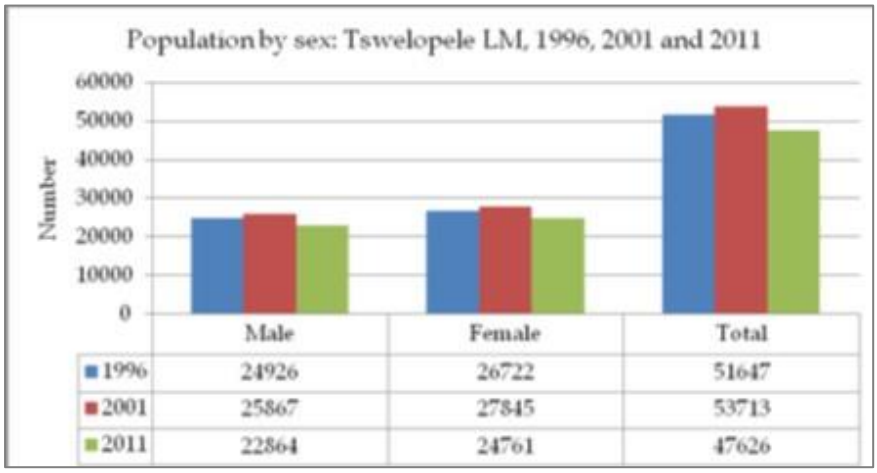
Figure 6: Map of the Municipality in relation to borders (TLM IDP 2020/2021 Review)

The Municipality is the third largest withing the Lejweleputswa District municipality, covering an area of 6 506.68km^2, which accounts for 20.5% of the entire district. According to the Free State Growth & Development Strategy 2013, Tswelopele has 2,168 farms (19% of the district) and 12,299 erven (8% of the district).

8.4 POPULATION

the population in terms of males increased by 3.8% from 1996 to 2001 and showed a decrease of 11.6% in 2011 the reasons for this decrease is a result of increased death rate and the migration from town to town due to slow economic activities in the area. This might have negative impact on the local economic development of the area. The population in terms of females showed an increase of 4.2% from 1996 to 2001 and showed a decrease of 11% which is more or less the same decrease of the males in 2011. The reasons for this decrease is the also as a result of increase death rate in the area.

The 2016 community survey shows a slight decrease in the total population of men as compared to 2011 sensors count from 22 864 to 22 858 which is a decrease of 6 men (Figure 4).



	Male	Female	Total
1996	24926	26722	51647
2001	25867	27845	53713
2011	22864	24761	47626

Figure 7: Population

The 2016 community survey also shows a slight decrease in the total population of women as compared to 2011 sensors count from 24 761 to 22 515 which is a decrease of 6 women. The municipality is committed in engaging the community through the office of the Mayor and also conducting HIV and AIDS community awareness campaigns. There is also a committee appointed by the Mayor working on the issues relating to HIV and AIDS in the municipal area. This will help to reduce the increased death rate.

8.5 HOUSEHOLDS

There is a total of 13 705 households in the Tswelopele local Municipality according to the 2016 survey. This number increased from 11 992 households reported in the 2011 census. The household sizes have decreased from 4.5 in 1996 to 3.5 in 2016.

According to the IDP female headed households have increased from 28.5% in 1996 to 39, 5 in 2011 and a slight in increase of about 1% from 2011 to 2016 period. Meaning 40.5% of the total households in the municipality are female headed (Figure 5).

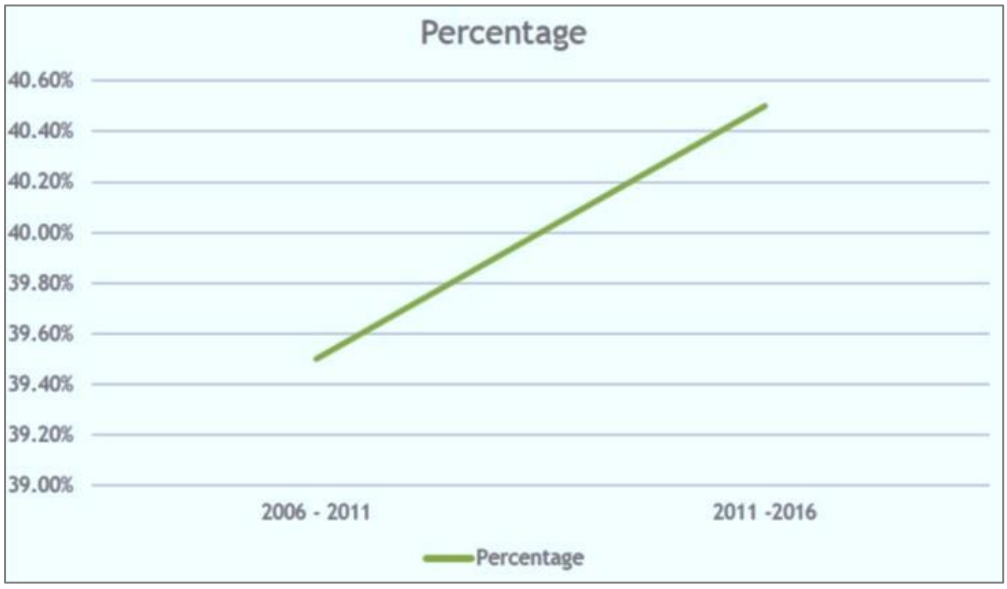


Figure 8: Female Headed households Stats (TLM IDP 2020/2021 Review)

8.6 ECONOMIC

The economy of the Tswelopele local municipality is mainly driven by the Agricultural sector. The sector accounts for 60% of the economic activity of the municipality (Figure 6).

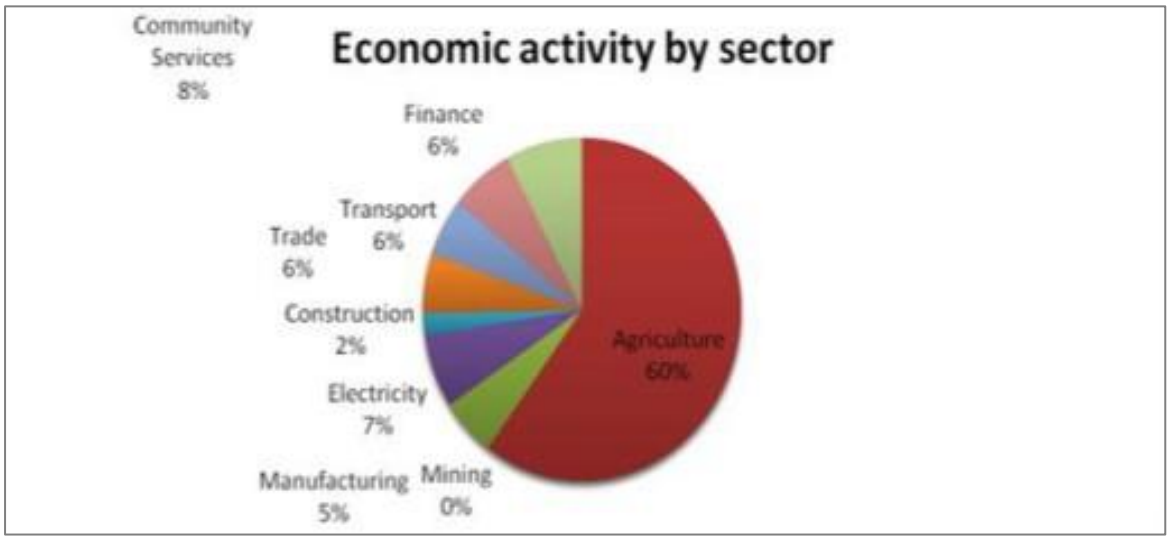


Figure 9: Economic activity by sector IN Lejweleputsa (TLM IDP 2020/2021 Review)

The municipality is also committed to the Local economic development in order to create a suitable environment for creation of jobs and increased economic activities, therefore this will help our communities to participate in the economic activities instead of migration.

8.6.1 Employment

According to the IDP the rate of unemployment had gone down by 9,4% from 2001 till 201. According to the Municipal IDP the unemployment rate for the youth has even gone further down from 4.3% in 2001 to 27.7% in 2011 which is a total percentage of 12.6%.The level of youth unemployed has generally been constant over the period from 2001 – 2011. Some of the youth may not be employed as they are of school going age. The need for sustainable economic development cannot be emphasised more as this high unemployment must be reduced.

9 SPECIALIST ASSESSMENTS

9.1 HERITAGE IMPACT ASSESSMENT

Summary

A. Pelser Archaeological Consulting (APAC) was appointed by BioBlue Environmental Sustainability to conduct a Phase 1 HIA for the Lobola Farming (formerly McStrauss Boerdery) Project. The study and development area is located close to Bloemhof in the Northwest Province and includes portions of the farms Daeraad 1476HO, Daeraad 1486HO, Glendover 886HO & Satara 1475HO.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. Besides a Graveyard, the assessment of the specific study area did not identify any other sites, features or material of cultural heritage (archaeological and/or historical) origin or significance. This report discusses the results of both the background research and physical assessment.

From a Cultural Heritage perspective, it is recommended that the proposed development be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

Terms of Reference

- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
- Review applicable legislative requirements;

Methodology

Survey of literature

A survey of available literature is undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

Field Survey

The field assessment section of any study is conducted according to generally accepted HIA practices and aims at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

Description of the Area

The study and development area is located close to Bloemhof in the Northwest Province and comprises portions of the farms Daeraad 1476HO, Daeraad 1486HO, Glendover 886HO and Satara 1475HO. Although the main focus for the field assessment was Satara, the other portions were to be included in the study as well.

The topography of the study area is in general flat and open, with no rocky ridges or outcrops present. Dense vegetation (grass and tree cover) made visibility difficult, while most of the area is also characterized by a fairly thick sand layer. The area has not been altered extensively by modern developments, with agricultural activities the main impact in the area. This includes livestock grazing, game farming and crop growing.

Results of the Study area Assessment

The field assessment was undertaken during early December 2020. Although sections of the study area have been impacted by agricultural activities (see images below), most of the area's original natural landscape has not been altered extensively. Dense vegetation (grass and tree cover) made visibility on the ground difficult. Another characteristic of the study area

is the relatively thick sand cover across most of it. If any archaeological material were to be present in the area it would be in a sub-surface deposit.

Only one site was identified and recorded in the area during the assessment. This is a recent historical graveyard containing around 10 graves. Most of these are stone-packed without any headstones, although there are 2 graves with cement headstones. The inscription on one of these are illegible, while the 2nd one indicates that the deceased was Marfa Nakedi who was born in 1947 and passed away in 1973. It is assumed that he other graves would date to roughly around the same time period or later and that they belong to people who had worked on the farm/s here.

Graves always carry a High Significance rating from a Cultural Heritage point of view and should be avoided as far as possible and protected against any negative impacts by development. Based on this the following is recommended:

- **Option 1**: Proper fencing in of the site to protect it against any accidental or direct impact by any future development. The site should also be cleaned and properly marked as a cemetery.
- **Option 2**: If the site and graves can't be avoided by the development then the possibility of exhuming & relocating the graves does exist. This option includes detailed social consultation to try and contact any possible descendants of the deceased buried at the site in order to obtain their consent for the exhumations and relocations. Once social consultation has been completed various permits also have to be obtained from local, provincial and National departments and organizations.

GPS Location: S27 43 33.60 E25 38 01.10
Cultural Significance: High.
Heritage Significance: Grade III.
Field Ratings: Local Grade IIIB: Should be included in the heritage register and may be mitigated (High/Medium significance)
Mitigation: See above.

Figure 10: A view of the location of the grave site

Figure 11: The grave of Marfa-Nakedi

Figure 12: The other grave on the site with a headstone. The inscription is not really legible.

Figure 13: Grave site location

Based on the field assessment there would be no reason from a Cultural Heritage point of view why the proposed Lobola Farming project could not continue. The recommendations regarding the grave site found, as well as the further recommendation that will be provided below needs to be adhered too, however.

It should also be noted that although all efforts are made to cover a total area during any assessment and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This will include low stone-packed or unmarked graves. This aspect should be kept in mind when development work commences and if any sites (including graves) are identified then an expert should be called in to investigate and recommend on the best way forward.

Finally, from a Cultural Heritage point of view it is recommended that the proposed Lobola Farming development be allowed to continue taking into consideration the recommended measures above.

9.2 TERRESTRIAL (VEGETATION) BIODIVERSITY ASSESSMENT

Lobolo farming proposes the clearing of vegetation for cultivation on several farms situated south-west of the town of Bloemhof, North West Province. Dimela Eco Consulting was tasked by BioBlue Environmental Sustainability with undertaking the terrestrial vegetation assessment to determine the vegetation sensitivity towards the proposed clearing.

The areas assessed include Portion 1 and 2 of the farm Glendover 886, Satara 1475 and Daeraad 1486. The farms are located between 7km and 16km south of the town of Bloemhof and falls within the Tswelope Local Municipality in Free State Province.

The terms of reference were interpreted as follows:

- Review of existing literature and spatial layers (GIS and historical aerial images) with regards to the site and pipeline routes (includes vegetation maps, threatened ecosystems, and the Free State Biodiversity Conservation Plan);
- A field survey to assess the development footprint for any vegetation sensitivities or habitat for plant species of conservation concern;
- Short list of any plant species of conservation concern (threatened / red listed and near-threatened / orange listed), as well as provincially protected that have historically been recorded on the site or its immediate surrounds, as well as those confirmed to

occur. The presence of suitable habitat and degree of past or current vegetation and soil disturbances were used to rate the probability of such species occurring on the site;

- Map highlighting potential areas of vegetation importance if present; and
- Assessment of potential impacts of the proposed development on sensitive vegetation – if found to be present

The site was undertaken from the 3rd to the 5th of November 2020, after summer rainfall commenced. The bulk of sampling was undertaken within natural vegetation. The vegetation was homogenous, and sampling focussed on searching for variations due to increased soil moisture, rockiness, slope, historic disturbances etc. Mapping was done by comparing georeferenced ground survey data to the visual inspection of available Google-Earth Imagery and in that way extrapolating survey reference points to the entire study area. The Site Ecological Importance in terms of vegetation is discussed and mapped as per the requirements of the Draft Species Environmental Assessment Guideline.

Baseline information to the site:

The site falls within the Kimberley Thornveld, which is currently not considered to be a threatened vegetation unit, albeit poorly protected in statutory reserves. The site does not fall within a listed ecosystem.

According to the Free State Biodiversity Conservation Plan, the site falls mainly within Ecological Support Areas (ESA 1 and ESA 2), with two portions of Critical Biodiversity Area (CBA1) and a small portion of Other Natural Areas (ONA). The most northern CBA 1 on the site was found to comprise degraded Kimberley Thornveld and include edges of croplands and areas historically disturbed by infrastructure. The larger CBA1 on the farm Glendover, comprised natural vegetation and included a drainage line.

Broad vegetation community	Site Ecological Importance (SEI) – mitigation
Croplands	**Very Low (Minimise)**
Grassland and secondary bushveld	**Low (Minimise & Restore)**
Kimberley Thornveld	**Medium (Minimise & Restore)**
Vegetation associated with drainage lines	**High (Avoid & Minimise)**

Refer to page iii of the Vegetation report for the summary of the main biodiversity findings.

Assumptions and Limitations

The following limitations is applicable, although not considered fatal flaws to the study:

- Vegetation studies should be conducted during the growing season of all plant species that may potentially occur. This may require more than one season's survey with two visits undertaken preferably during November and February. However, this report relied on a site visit undertaken between 3-5 November 2020.
- The site visit was undertaken at the onset of summer rainfall. However, several forb species were not yet in flower at the time of this assessment, and geophytes could have been dormant.
- The grass layer on much of the site was dense and smaller forb or geophyte species could have been overlooked.
- Tracks on the Satara farm was limited to vehicle tracks and restricted sampling took place. This area was fenced as a game camp and included buffalo. The specialists were accompanied by the farm manager for safety reasons.
- Aerial imagery does not reflect recent clearing of the vegetation on the site. Field data and aerial imagery were compared and the extent of cultivation and clearing estimated. Therefore, the areas mapped as cultivated or cleared are the minimum areas, as clearing was taking place at the time of the assessment.
- The most northern section of Daeraad and the most southern extent of Glendover was not sampled as this was situated on neighbouring farms. However, data was extrapolated to these areas and mapped.

Field Survey

Method

Prior to the site visit, the vegetation was delineated into homogenous units on the project site, using currently available Google Earth imagery. The field survey focussed on identifying natural and untransformed vegetation, unique features that could indicate local sensitivities such as threatened and protected plants, as well as sensitive ecological features such as wetlands, ridges and rivers that are essential for the maintenance of ecosystems and ecological processes. At several sites within each homogeneous unit, a survey of total visible floristic composition was undertaken. Where access was allowed, random transects will be walked along the proposed routes and on the project site. Plant identification and vegetation description relied on species recorded in the sampling points along the walked transects.

Site Ecological Importance

The Site Ecological Importance in terms of vegetation is discussed and mapped as per the requirements of the Draft Species Environmental Assessment Guideline (SANBI, 2020). The assessment criteria and matrices are detailed in Table 1, Table 2, and Table 3. SEI is considered to be a function of the Biodiversity Importance (BI) of the receptor (e.g. species of conservation concern, the vegetation/fauna community or habitat type present on the site13) and its 679 resilience to impacts (Receptor Resilience) as follows:

SEI = BI + RR

BI in turn is a function of Conservation Importance (CI) and the Functional Integrity (FI) of the receptor as follows:

BI = CI + FI

Conservation Importance (CI) is evaluated in accordance with recognised established internationally acceptable principles and criteria for the determination of biodiversity-related value, including the IUCN Red List of Species, Red List of Ecosystems and Key Biodiversity Areas (KBA; IUCN (2016)).

Please refer to page 4-7 of the vegetation report for matrix and criteria determining the above factors.

Historical Vegetation Type Overview

The study site is situated within the Savanna biome of South Africa in the Eastern Kalahari Bushveld Bioregion. The Savanna biome is the largest biome in southern Africa, occupying over one-third of the surface area of South Africa (Mucina & Rutherford, 2006). It is characterised by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground the vegetation may be referred to as Shrubveld, where it is dense, as Woodland, and the intermediate stages are commonly known as Bushveld (Mucina & Rutherford, 2006).

The Eastern Kalahari Bioregion comprises several vegetation units. Each vegetation unit is similar with regards to plant species composition, soil, topography, and the climatic conditions in which it occurs. The study site is situated in the Kimberley Thornveld which is characterised by often irregular plains with a well-developed tree and shrub layer. Several *Vachellia* and *Senegalia* species (thorn trees) occur in this vegetation type, as well as the nationally protected trees *Vachellia eroiloba* (camel thorn) and *Boscia albitrunca* (Shepherds' tree). Dense stands of *Tarchonanthus camphoratus* (camphor bush) and *Senegalia mellifera* (black thorn) can occur, while the grass layer is open with much bare soil.

The Kimberley Thornveld is currently not considered to be a threatened vegetation unit (e.g. more than 80% of the extent of this vegetation unit remains in a mostly natural state). However, at least 18% of the original extent of Kimberley Thornveld is already transformed mainly by cultivation and overgrazing. This vegetation assessment aimed to ascertain whether the vegetation found on the study site is representative of the Kimberley Thornveld in its natural state, whether the vegetation is in a good condition and to identify any protected plant species that may occur.

Listed Ecosystems

The project site is not situated within a listed ecosystem. The South African Biodiversity Act (Act 10 of 2004) provides for the listing of threatened or protected ecosystems. These ecosystems are grouped into Critically Endangered-, Endangered-, Vulnerable- and Protected Ecosystems (Section 52(1) (a) of the National Environmental Management: Biodiversity Act (Government Gazette 34809, Government Notice 1002, and 9 December 2011)).

Free State Biodiversity Plan

The spatial data for the Free State Biodiversity Plan (Collins, 2015) was assessed (Figure 4). The site falls mainly within Ecological Support Areas (ESA 1 and ESA 2), with two portions of Critical Biodiversity Area (CBA1) and a small portion of Other Natural Areas (ONA). As per Collings (2016):

- CBA1 in the Free State is irreplaceable or near irreplaceable for meeting biodiversity targets. There are no or very few other options for meeting biodiversity targets for the features associated with the site. Such sites are therefore critical, and they need to be maintained to ensure that features targets are achieved and that such features persist. The CBA1 is designated to conserve a representative extent of Kimberley Thornveld.
- The most northern CBA 1 on the site was found to comprise degraded Kimberley Thornveld and include edges of croplands and areas historically disturbed by infrastructure.
- The larger CBA1 on the farm Daeraad, comprised natural vegetation and include a drainage line.

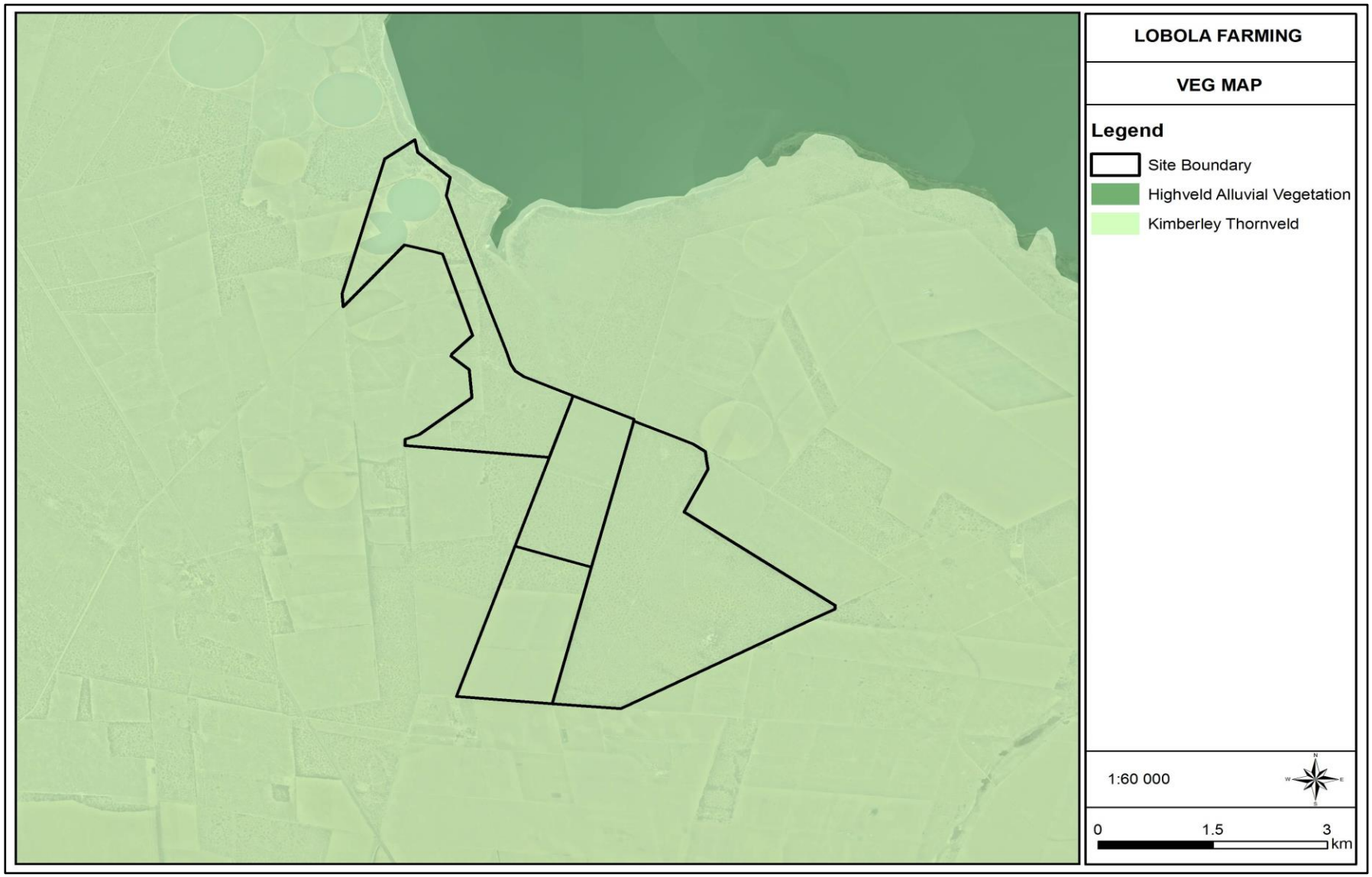


Figure 14: Vegetation Map

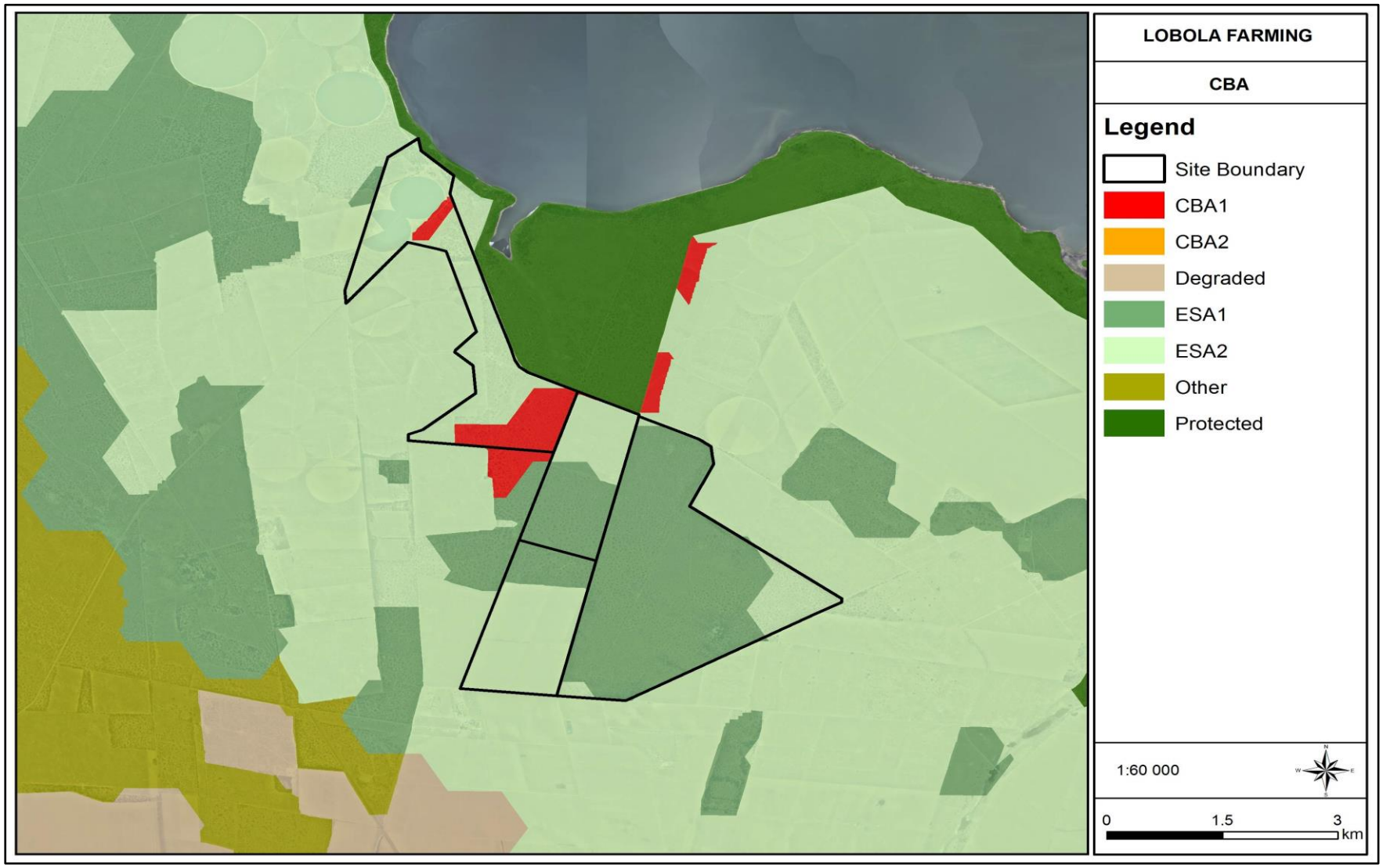


Figure 15: Free State Biodiversity Plan Map

ESAs:

- ESAs play an important role in supporting the ecological functioning of a protected area or Critical Biodiversity Area, or in delivering ecosystem services. In most cases ESAs are currently in at least fair ecological condition and should remain in at least fair functioning condition.
- ESA1 sites are those with minimal degradation and comprise much of the stie.
- ESA2 sites are those with degradation and include mostly the current cultivated areas on the site.

Vegetation Groups

The vegetation on much of the site was homogenous and is representative of the Kimberley Thornveld. The species diversity was dominated by the microphyllous trees *Vachellia erioloba* (camel thorn) and *V karroo* (sweet thorn). The grass layer was dominated by *Eragrostis* species. Small variations were present and was mostly the result of past disturbances, presence of the non-perennial drainage lines and deeper sand. The vegetation within the site was broadly grouped as follows:

- Cultivated fields and modified land;
- Secondary grassland and bushveld;
- Kimberley Thornveld;
- Vegetation associated with the drainage line.
- *Asparagus larcinus* moist vegetation; and
- *Eragrostis* drainage line

Figure 16: Typical bushveld, where Vachellia erioloba colonised the initial grassland vegetation.

Protected plants

NEMBA Threatened or Protected Plant Species (TOPS)

Chapter 4, Part 2 of the National Environmental Management: Biodiversity Act (No. 10 of 2004), (NEMBA) provides for listing of plant and animal species as threatened or protected. If a species is listed as threatened, it must be further classified as Critically Endangered, Endangered or Vulnerable. These species are commonly referred to as TOPS listed. The Act defines these classes as follows:

- Critically endangered species: any indigenous species facing an extremely high risk of extinction in the wild in the immediate future.
- Endangered species: any indigenous species facing a high risk of extinction in the wild in the near future, although it is not a critically endangered species.
- Vulnerable species: any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future; although it is not a critically endangered species or an endangered species.
- Protected species: any species which is of such high conservation value or national importance that it requires national protection. Species listed in this category will include, among others, species listed in terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Medicinal species in this category may still be widespread, but harvesting is causing a continuous decline.

Table 6: TOP species that may be present on the site

Species	Threat class	Potential occurrence on the site
Brachystelma incanum	Vulnerable	Potential habitat within the Kimberley Thornveld. Although this species was not recorded in walked transects or sample plots, it may have been obscured by tall, dry grasses. The closet record of this species is around the town of Wolmaransstad and the site might be just outside of the known distribution of this species.
Harpagophytum procumbens (Devil's claw)	Protected as medicinal plant	This species occurs in well drained sandy habitats in open savanna and woodlands and has a high likelihood of being present on the site and surrounds

National Protected Trees

Table 7: National Protected tree species recorded and other species that are likely to occur

Species	Common name	Vegetation group
Vachellia erioloba	Camel thorn	Kimberley Thornveld
Boscia albitrunca	Shepherd's tee	Kimberley Thornveld the game camp on Satara.

Site Ecological Importance

Table 8: Scoring of vegetation that occurs within the site

Broad vegetation community	Conservation Importance (CI)	Functional Integrity (FI)	Receptor Resilience (RR)	Biodiversity Importance (BI)	Site Ecological Importance (SEI) – mitigation
Croplands	Very low	Very low	High	Very low	**Very Low (Minimise)**
Grassland and secondary bushveld	Low	Medium	Medium	Low	**Low (Minimise & Restore)**
Kimberley Thornveld	Medium	High	Medium	Medium	**Medium (Minimise & Restore**
Vegetation associated with drainage lines	Medium	High	Low	Medium	**High (Avoid & Minimise)**

Layout Recommendations

The size of natural vegetated land affects the number, type and abundance of species they contain. Thus, the larger the patch of the un-fragmented and undisturbed land, the more likely it is to be of conservation importance. At the periphery of such patches of land, influences of neighbouring activities or other patches become apparent, known as the 'edge effect'. Patch edges may be subjected to increased levels of heat, dust, desiccation, disturbance, invasion of exotic species, bush densification and other factors and therefore these areas seldom contain species that are rare, habitat specialists or species that require larger tracts of undisturbed core habitat. Fragmentation due to vegetation clearing can reduces core habitat and greatly extend edge habitat, which causes a shift in the species composition, which in turn puts great pressure on the dynamics and functionality of ecosystems (Perlman & Milder 2005).

It is thus recommended that new clearing of vegetation is kept as close as possible to existing areas of low and very low SEI. Thereby indirect and cumulative impacts can be reduced, and larger open spaces can be conserved. Considering the SEI results and the potential of fragmenting large open spaces, Figure 14 suggest areas that should remain as natural vegetation and includes the farm to the south of the site, Daeraad 1476. These suggestions aim to cluster developed areas together and leaving large, unfragmented natural habitat.

The core area to be conserved is indicated in red. This core area amount to about 268hectares. The area in green is a suggested larger open space and can be amended if narrow strips of vegetation, sensitive to impacts from edge effects, are prevented. Note that the national conservation target of Kimberley Thornveld is 16%. Therefore, at least 16% of Kimberley Thornveld that remain on the site (about 150ha) should be protected around the areas of high sensitivity.

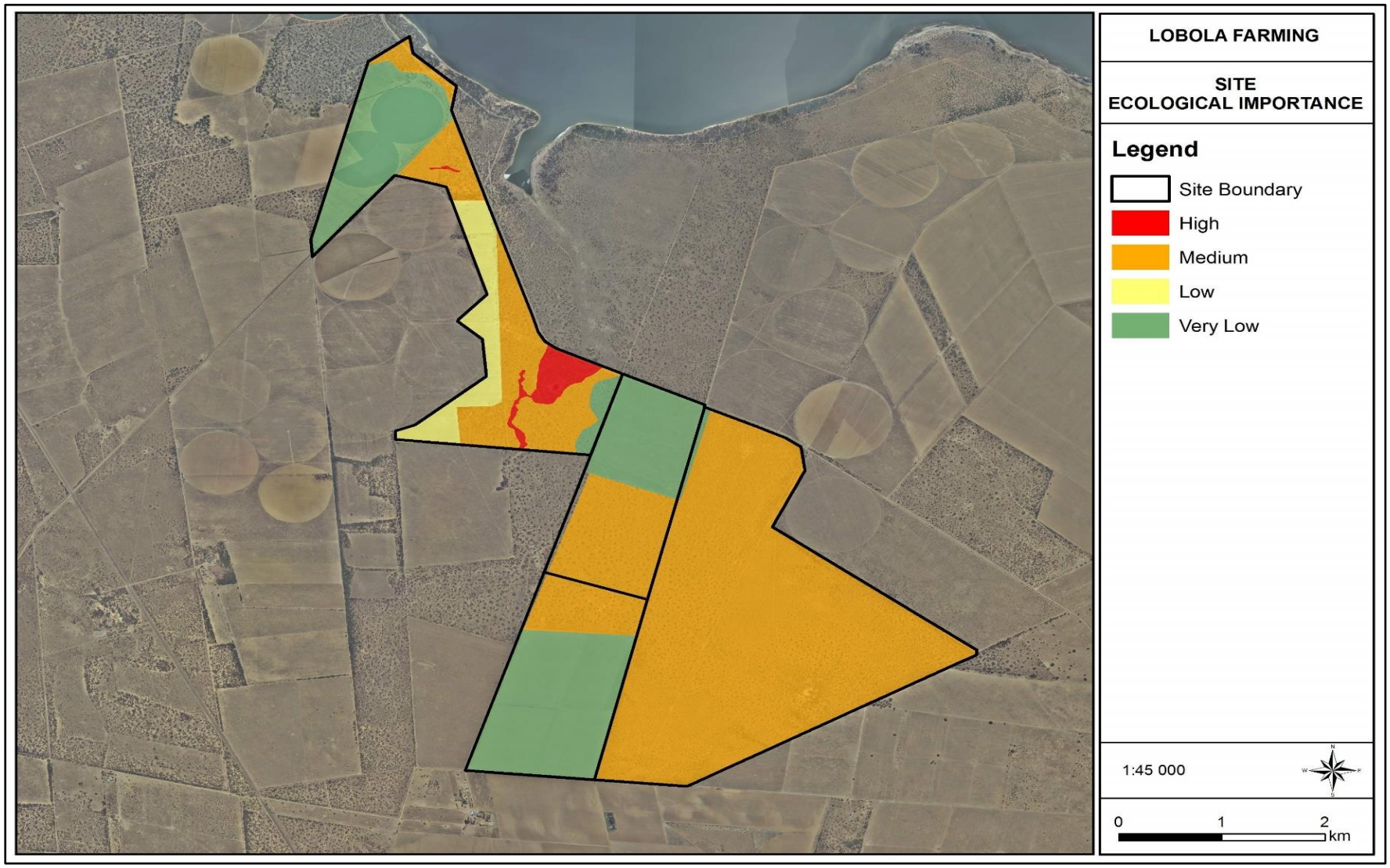


Figure 17: Site Ecological Importance

9.3 TERRESTRIAL FAUNA SPECIES AND BIODIVERSITY IMPACT ASSESSMENT

From the desktop ecological assessment, the following ecological features are of relevance to terrestrial fauna:

- The site lies west of the Sandveld and Bloemhof Dam Nature Reserves IBA.
- PAs (Lake Warden Game Reserve and Sandveld Nature Reserve) extend into the property, encompassing the larger CBA area (below) and the drainage line (below).
- The two CBAs on the property are largely isolated and in terms of the proposed project these areas can be avoided.
    - The smaller CBA in the north showed signs of disturbance. The area is not targeted for crop conversion and should be conserved in its current state.
    - The larger CBA is targeted for some crop development. This area appeared to be part of the extended drainage line and provided some diversity of micro-habitat. The CBA should be preserved in combination with the drainage line area and the connectivity to the Bloemhof dam must also be preserved.
- Isolated surface water features (small pans) are relatively insignificant in terms of the Bloemhof Dam but do offer aquatic habitat to wetland and aquatic specialists and watering holes for fauna during the rainy season. The two main areas identified are within the drainage line, which has been identified as a significant ecological feature on site.

Table 9: Regional and Local ecologically significant features (distances are "as the crow flies" approximations)

Ecological feature / area	**Description of feature relevant to the site**
International Conservation:	No RAMSAR sites or World Heritage sites within 50km of the site.
Important Bird Areas (IBAs) (Plan 2)	The site lies west of the Sandveld and Bloemhof Dam Nature Reserves IBA. Main threats to birds in the IBA are minor and include: Al plant infestation, contaminated water, occasional algal blooms and discarded fishing lines (Marnewick *et al.*, 2015).
Protected Areas (PA) (Plan 2 and Plan 3)	The site lies west of and adjacent to the formally protected Sandveld Nature Reserve. The Bloemhof Dam Nature Reserve lies approximately 3.8km north-east of site. Recent PA data from the Department of Environmental Affairs indicates PAs (Lake Warden Game Reserve and Sandveld Nature Reserve) extending into the property and west of the property (Plan 3). No other PAs or NPAES occur within 10km of the site.

Ecological feature / area	Description of feature relevant to the site
Water Catchments & NFEPA Features (Plan 4)	The site is not within a National Freshwater Priority Area (NFEPA) Catchment. No NFEPA rivers occur on site. All main rivers (Vaal River and Vet River) flowing into and out of the Bloemhof Dam are designated as NFEPA Rivers and, at best, can be considered moderately modified in terms of ecological state and river condition. No NFEPA Rank 1 or 2 wetlands (wetlands of ecological value to species of conservation concern and water birds) occur on or near site.
SWSAs	None occur within 10km of site.
Biome and Ecosystem	The area falls within the Savanna Biome and the Kimberley Thornveld vegetation type. No TOP ecosystems (NEM:BA, GN1002, 2011) occur on or near to the site.
Conservation Plan (Plan 5)	Th site is largely designated as Ecological Support Areas (ESA1 and ESA2 designated as buffers for the protected areas and also a Martial Eagle nesting site) with two limited areas designated as level 1 CBA (conservation of the vegetation unit).
Quarter Degree Grid Square	The site lies within QDGS 2725DA and QDGS 2725DC. All desktop data obtained from the citizen science sites have been sourced for these QDGSs or relevant Pentad.

Methodology

- Ecological Desktop Status
- TOP Species Desktop Lists
- Site Assessment
    - The site assessment included surveying meanders within natural habitat units, including the CBAs on site, and assessing these meanders for micro-habitats, fauna and signs of fauna.
    - In addition scan surveys were completed of nearby agricultural areas and neighbouring areas for general habitat state and ecological connectivity.
- Likelihood of TOP Species

Please refer to page 8 -10 of the Fauna Assessment of the SEI criteria and matrix.

Results

Table 10: Site Characteristics

	
The natural and less disturbed areas support bushveld vegetation typical for the area. Bushveld density varied across the property from open savanna with grassy cover to more dense bushveld with more exposed substrate and more consolidated canopy. Substrates across the property were sandy to sandy loams and suitable for most burrowing fauna. No rocky habitats were noted on site. Vertebrate and invertebrate activity was evident in all bushveld habitats surveyed.	
	
The CBA area encompassed a drainage area with a large pan, dry at the time of the survey. The drainage area supported lightly wooded savanna. Vertebrate and invertebrate activity was evident along the drainage line and also the associated bushveld areas and it is expected that the pan will be very well utilised by fauna during the peak rainfall periods.	

	
Good portions of the farm have been used for crop farming (historically and currently). From Plan 1 one can see that much of the greater area is utilised for agricultural activities and the area forms a significant agricultural node.	

Mammals

Site species (Table 6) are fairly typical for the savanna / agricultural setting. No TOPS or SCC were observed on site and only the following endemic species are considered confirmed:

- Blesbok (*Damaliscus pygargus phillipsi*) (Endemic). Threatened by selective breeding and hybridisation (Dalton *et al*., 2016).
- Common (African) Mole-rat (*Cryptomys hottentotus*) (Endemic) is assumed from soil mounds observed in the drainage line area. Species is considered an eco-engineer increasing the humic content of soil, aerating soil and may enhance infiltration and water holding capacity of soil. Create refuge for other species within their burrows to escape fire. Species is not threatened but is occasionally persecuted as agricultural, garden and golf-course pest (Bennett *et al.*, 2016).

TOPS, SCC & Endemic Species

The TOP and endemic mammals previously recorded in, and with distributions across, the area are indicated in Table 6. As stated under limitations, the larger antelope are indicated but not further discussed. The previously recorded TOP and endemic mammals include:

- Brown Hyaena
- Cape Fox
- Aardvark
- Aardwolf
- Bat-eared Fox
- Xeric Four-Striped Grass Mouse

No other TOP and endemic species are likely to occur on site. No SCC were previously recorded for the QDGS or likely on site. **Refer to Table 6 within the Fauna Assessment for full list of TOP and Endemic Species.**

Birds

The Free State Province lists most indigenous birds as Schedule 1: Protected Game and the list is too extensive to incorporate in this report. The proposed development does not intend any specific scheduled activities involving birds, but the legislation must be consulted and complied with should any bird species need to be handled under any circumstances.

Due to the proximity of the site to the Sandveld and Bloemhof Dam Nature Reserve IBA, the trigger species for this IBA have been incorporated into this assessment. The trigger species for the IBA include (Marnewick *et al.*, 2015):

- Globally threatened species: Lesser Flamingo (*Phoenicopterus minor*) and Kori Bustard (*Ardeotis kori*).
- Regionally threatened species: Pink-backed Pelican (*Pelecanus rufescens*), Caspian Tern (*Sterna caspia*) and Greater Flamingo (*Phoenicopterus ruber*).
- Restricted-range and biome-restricted species: Kalahari Scrub Robin (*Cercotrichas paena*), Barred Wren-Warbler (*Calamonastes fasciolatus*), Sociable Weaver (*Philetairus socius*) and White-bellied Sunbird (*Cinnyris talatala*).
- Congregatory water bird species: Great Crested Grebe (*Podiceps cristatus*), Little Grebe (*Tachybaptus ruficollis*), African Darter (*Anhinga rufa*), African Spoonbill (*Platalea alba*), Cape Shoveler (*Anas smithii*), Pied Avocet (*Recurvirostra avosetta*), Goliath Heron (*Ardea goliath*), Western Cattle Egret (*Bubulcus ibis*), Egyptian Goose (*Alopochen aegyptiacus*), South African Shelduck (*Tadorna cana*) and Red-knobbed Coot (*Fulica cristata*).

Keeping in mind that all water-birds will be restricted to the Bloemhof Dam and the Vaal and Vet Rivers, only the following additional TOP and endemic species likely to occur on site:

- Martial Eagle
- Lesser Kestrel
- Secretarybird
- South African Cliff Swallow
- Cape White-eye
- African Pied Starling

Herpetofauna and Invertebrates are discussed on page 32 to 37 of the Fauna Assessment

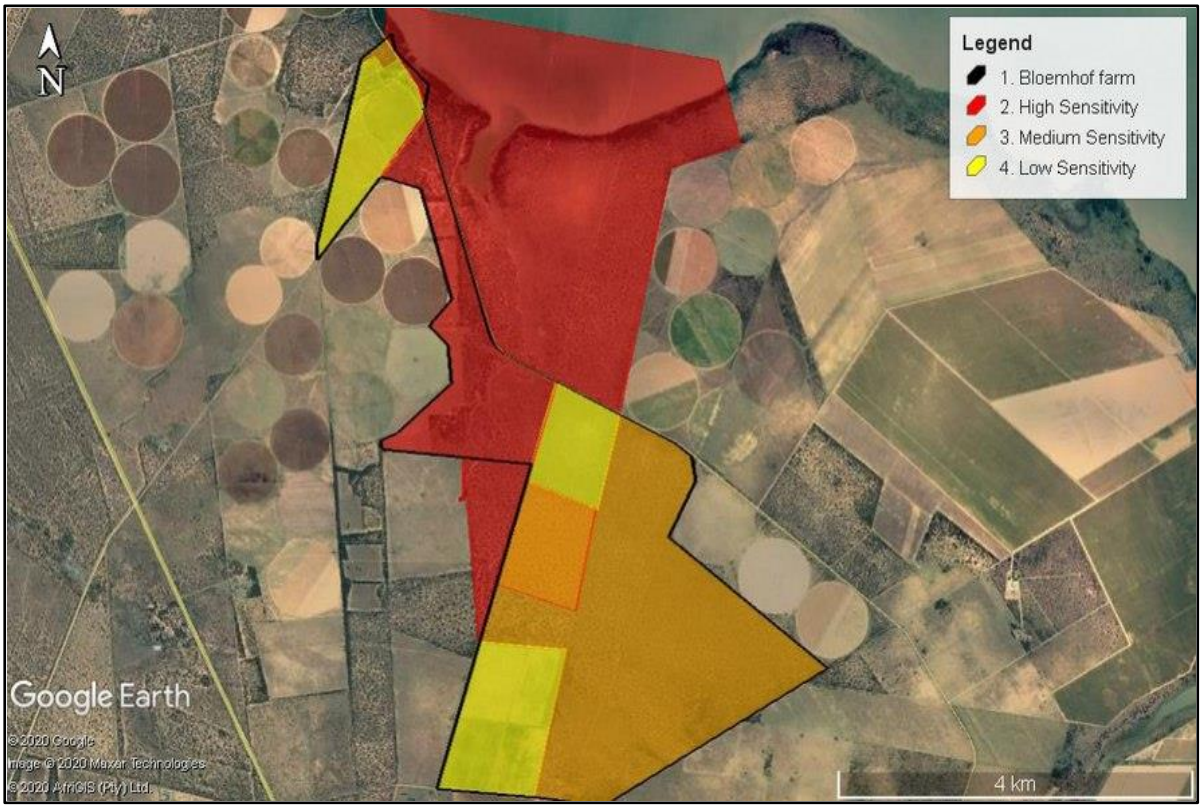


Figure 18: Overall sensitivity of ecological features on site in terms of terrestrial fauna biodiversity

Table 11: Overall Site Ecological Importance Assessment

Evaluation unit	CI	FI	BI	RR	SEI Rating
Drainage line	High	Very High	Very High	High	High (Avoid & Minimise)
Savanna (Open)	Medium	Very high	High	High	Medium (Minimise & Restore)
Savanna (Other)	Medium	Very high	High	Very high	Low (Minimise)
Bloemhof Dam ecotone	Medium	Medium	Medium	Very high	Very Low (Minimise)
Crop fields & cleared areas	Low	Low	Low	Very high	Very Low (Minimise)
Farmstead	Very low	Very low	Very low	Very high	Very Low (Minimise)

Figure 19: No-Go Areas incorporate Pas, CBAs, Drainage line, open savanna habitat significant enough to maintain CI and FI

9.4 WETLAND ASSESSMENT

Wetlands play an important role in water security trough the recharge of groundwater which in turn leads to the replenishing of aquifers as well as by augmenting stream and river flow which in many instances sustains them throughout the year. The soils together with the vegetation in a wetland acts as sponges which keeps the water long after the rains have passed and then slowly lets water trickle out into rivers and streams during the dry periods, thus sustaining flow year-round. Wetland vegetation counter acts erosion by binding and stabilising the soil, dissipating energy from stream flow and storm events as well as being able to rapidly recover from storm events. Wetland systems provide a variety of ecosystem goods and services either directly or indirectly.

The unchanneled valley bottom wetland on site achieved a 1,9 Present Ecological State (PES) score which places it in a category B. An Ecological Importance and Sensitivity (EIS) score of 2 was achieved by the wetland. The wetland has been impacted and relatively degraded but is overall in an ecologically healthy condition. The major anthropogenic impacts upon the wetland system are the public dirt road, the two-spoor track used for farm maintenance and

grazing and trampling by livestock and game. Part of the wetland on the study site forms part of the NFEPA database. The 50m prescribed buffer zone should be implemented to ensure that the edge effects associated with the proposed agricultural expansion namely the pivots don't negatively influence the ecological integrity and continued functioning of the wetland. If the mitigation measures as prescribed in this report are followed the negative impacts of the proposed pivots and associated agricultural activities will be minimal.

Field Survey

A wetland assessment which consisted of a wetland delineation, classification of wetland according to Hydrogeomorphic (HGM) types, Present Ecological State (PES), Ecological Importance and Sensitivity (EIS). Vegetation structure and species diversity were noted along with soil characteristics and ecological degrading features such as erosion, pollution and alien invasive vegetation. The field survey was carried out on the 6th of October 2020 to verify or "ground truth" if a wetland existed on site. The wetland delineation and assessment were conducted on foot.

Wetland Delineation

The wetland delineation was based on the legislatively required methodology as described by DWAF (2005), now known as the department of Water Affairs and Sanitation (DWS). The wetland delineation procedure must identify the outer edge of the temporary zone of the wetland, which marks the boundary between the wetland and adjacent terrestrial areas.

The guidelines also state that locating the outer edge of the temporary zone four specific indicators were employed namely:

- **Terrain Unit** (location in the landscape)
- **Soil form** (wetland soil forms)
- **Vegetation** (presence of hydrophytes) and
- **Soil wetness** (evidence of hydric conditions)

The wetland boundary is defined as the edge where the hydric indicators are encountered within the top 50cm of the surface soil. A Dutch soil auger was used to extract the soil samples to a depth of 50cm. All soil samples were evaluated in hand for soil composition, colour, number and size of mottles as well as wetness. Field verification was limited to the presence of hydric soils on the site as well as presence of hydrophytic vegetation. Soil samples were taken at regular intervals by walking transects of the study area.

Table 12: Impact Score and PES rating for the unchanneled valley bottom

HGM Unit	Ha	Extent (%)	Hydrology		Geomorphology		Vegetation	
			Impact Score	Change Score	Impact Score	Change Score	Impact Score	Change Score
1	1	100	0,0	0	0,2	0	1,9	0
Area weighted impact scores			**0,0**	**0,0**	**0,2**	**0,0**	**1,7**	**0,0**
PES Category			**A**	→	**A**	→	**B**	→

Table 13: Combined impact Score for the unchanneled valley bottom

HYDROLOGY	GEOMORPHOLOGY	VEGETATION	COMBINED IMPACT SCORE
0	0,2	1,7	1,9
A	A	B	B

Table 14: EIS Scores

Ecological Importance and Sensitivity (EIS)		
	Score (0-4)	**Confidence (1-5)**
Biodiversity support	0,67	4,00
Landscape scale	2,00	4,20
Sensitivity of the wetland	1,33	4,00
Ecological Importance and Sensitivity (EIS)	2,00	4,07

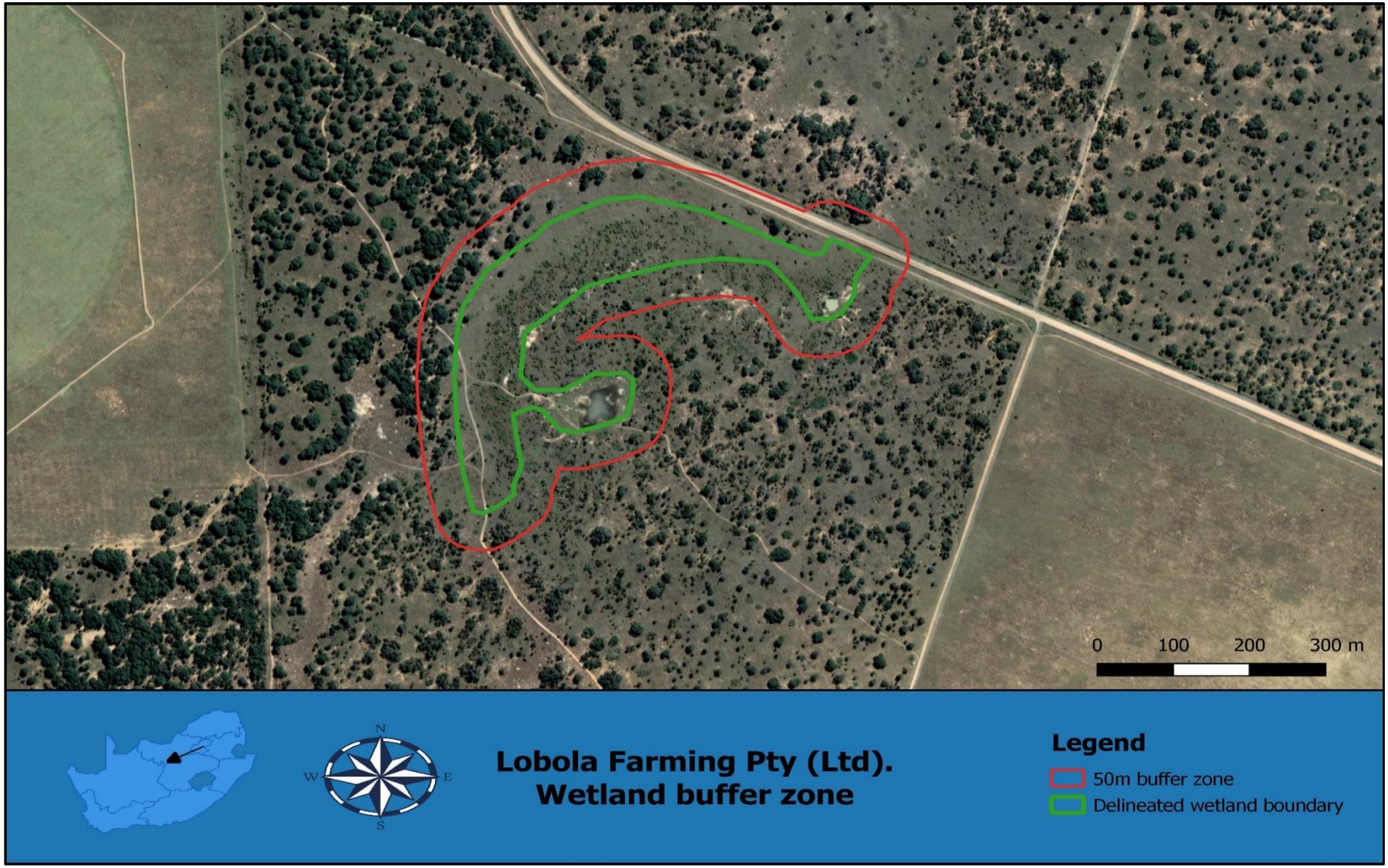


Figure 20: Delineated Wetland boundary with its corresponding 50m buffer zone

10 SUMMARY OF FINDINGS AND RECOMMENDATIONS OF THE SPECIALIST REPORTS

10.1 FINDINGS AND RECOMMENDATIONS – VEGETATION ASSESSEMENT

The larger study area comprises open bushveld wherein cultivation, grazing and historical mining has impacted on the landscape. At the time of this assessment, much of the western section of the site were cultivated. The farms were historically utilised for game, and its highly likely that cattle also grazed the site. The most eastern extent of the site, Satara, is currently used as a game camp.

The vegetation on much of the site was homogenous and was representative of the Kimberley Thornveld. The species diversity was dominated by the microphyllous trees Vachellia erioloba (camel thorn) and V karroo (sweet thorn). The grass layer was dominated by Eragrostis species. Small variations were present and was mostly the result of past disturbances, presence of the non-perennial drainage lines and deeper sand. The table below list the vegetation groups delineated on the site, as well as its Site Ecological Sensitivity (SEI):

Broad vegetation community	Site Ecological Importance (SEI) – mitigation
Croplands	**Very Low (Minimise)**
Grassland and secondary bushveld	**Low (Minimise & Restore)**
Kimberley Thornveld	**Medium (Minimise & Restore)**
Vegetation associated with drainage lines	**High (Avoid & Minimise)**

Recommendations:

- The new clearing activities are kept as close as possible to existing areas of low and very low SEI. Thereby indirect and cumulative impacts can be reduced, and larger open spaces can be conserved.
- A natural corridor area should be preserved along with narrow slithers of vegetation in-between cultivated areas as these play a small role in ecological processes.
- The core conservation area and other open spaces should be as large as possible and preferably connected by the narrower vegetation in between crop areas.

- If the CBA area and a large, unfragmented patch of the surrounding Kimberley Thornveld are conserved, and mitigation measures as listed in this report are implemented as a minimum, the proposed clearing of vegetation can proceed.

10.2 FINDINGS AND RECOMMENDATIONS – FAUNA ASSESSMENT

From the desktop ecological assessment, the following ecological features are of relevance to terrestrial fauna:

- The site lies west of the Sandveld and Bloemhof Dam Nature Reserves IBA.
- PAs (Lake Warden Game Reserve and Sandveld Nature Reserve) extend into the property, encompassing the larger CBA area (below) and the drainage line (below).
- The two CBAs on the property are largely isolated and in terms of the proposed project these areas can be avoided.
- The smaller CBA in the north showed signs of disturbance. The area is not targeted for crop conversion and should be conserved in its current state.
- The larger CBA is targeted for some crop development. This area appeared to be part of the extended drainage line and provided some diversity of micro-habitat. The CBA should be preserved in combination with the drainage line area and the connectivity to the Bloemhof dam must also be preserved.
- Isolated surface water features (small pans) are relatively insignificant in terms of the Bloemhof Dam but do offer aquatic habitat to wetland and aquatic specialists and watering holes for fauna during the rainy season. The two main areas identified are within the drainage line, which has been identified as a significant ecological feature on site.

In terms of terrestrial fauna specifically, no additional faunal assessments or studies are deemed necessary and there is no reason for not authorising the activity as long as the following recommendations are adhered to and the proposed development plan is considered:

- No-go areas as per Plan 9 and within the constraints of the mitigation measures must be preserved on site and no anthropogenic impacts allowed within this area other than veld-management practices as may be needed.
- Birdlife South Africa or the managing body of the Sandveld and Bloemhof Dam Nature Reserves IBA should be notified of the proposed crop clearing activities as a potentially interested party.

- The managing bodies of the Formally Protected Lake Warden Game Reserve, Sandveld Nature Reserve and the Bloemhof Dam Nature Reserve must be notified as affected and potentially interested parties and any requirements included in the EMP.
- Recommendations of the wetland specialist must be implemented on site.
- Any areas designated as highly sensitive by the flora specialists should be considered as highly sensitive in terms of fauna (unique and unmodified fauna habitat provision) and should be considered as no-go areas.
- The mitigation measures of this report and that of the flora report must be included within the EMP.

10.3 FINDINGS AND RECOMMENDATIONS – HERITAGE IMPACT ASSESSMENT

A recent historical graveyard containing around 10 graves was identified in the study area. Most of these are stone-packed without any headstones, although there are 2 graves with cement headstones. The inscription on one of these are illegible, while the 2nd one indicates that the deceased was Marfa Nakedi who was born in 1947 and passed away in 1973.

Graves always carry a High Significance rating from a Cultural Heritage point of view and should be avoided as far as possible and protected against any negative impacts by any development. Based on this the following is recommended:

- Option 1: Proper fencing in of the site to protect it against any accidental or direct impact by any future development. The site should also be cleaned and properly marked as a cemetery.

- Option 2: If the site and graves can't be avoided by the development then the possibility of exhuming & relocating the graves does exist. This option includes detailed social consultation to try and contact any possible descendants of the deceased buried at the site in order to obtain their consent for the exhumations and relocations. Once social consultation has been completed various permits also have to be obtained from local, provincial and National departments and organizations.

Although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be

uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

Finally, from a Cultural Heritage point of view it is recommended that the proposed Lobola Farming development be allowed to continue taking into consideration the recommended measures above.

10.4 FINDINGS AND RECOMMENDATIONS – WETLAND ASSESSMENT

The unchanneled valley bottom wetland on site achieved a 1,9 Present Ecological State (PES) score which places it in a category B. An Ecological Importance and Sensitivity (EIS) score of 2 was achieved by the wetland. The wetland has been impacted and relatively degraded but is overall in an ecologically healthy condition. The major anthropogenic impacts upon the wetland system are the public dirt road, the two-spoor track used for farm maintenance and grazing and trampling by livestock and game. Part of the wetland on the study site forms part of the NFEPA database. The 50m prescribed buffer zone should be implemented to ensure that the edge effects associated with the proposed agricultural expansion namely the pivots don't negatively influence the ecological integrity and continued functioning of the wetland. If the mitigation measures as prescribed in this report are followed the negative impacts of the proposed pivots and associated agricultural activities will be minimal.

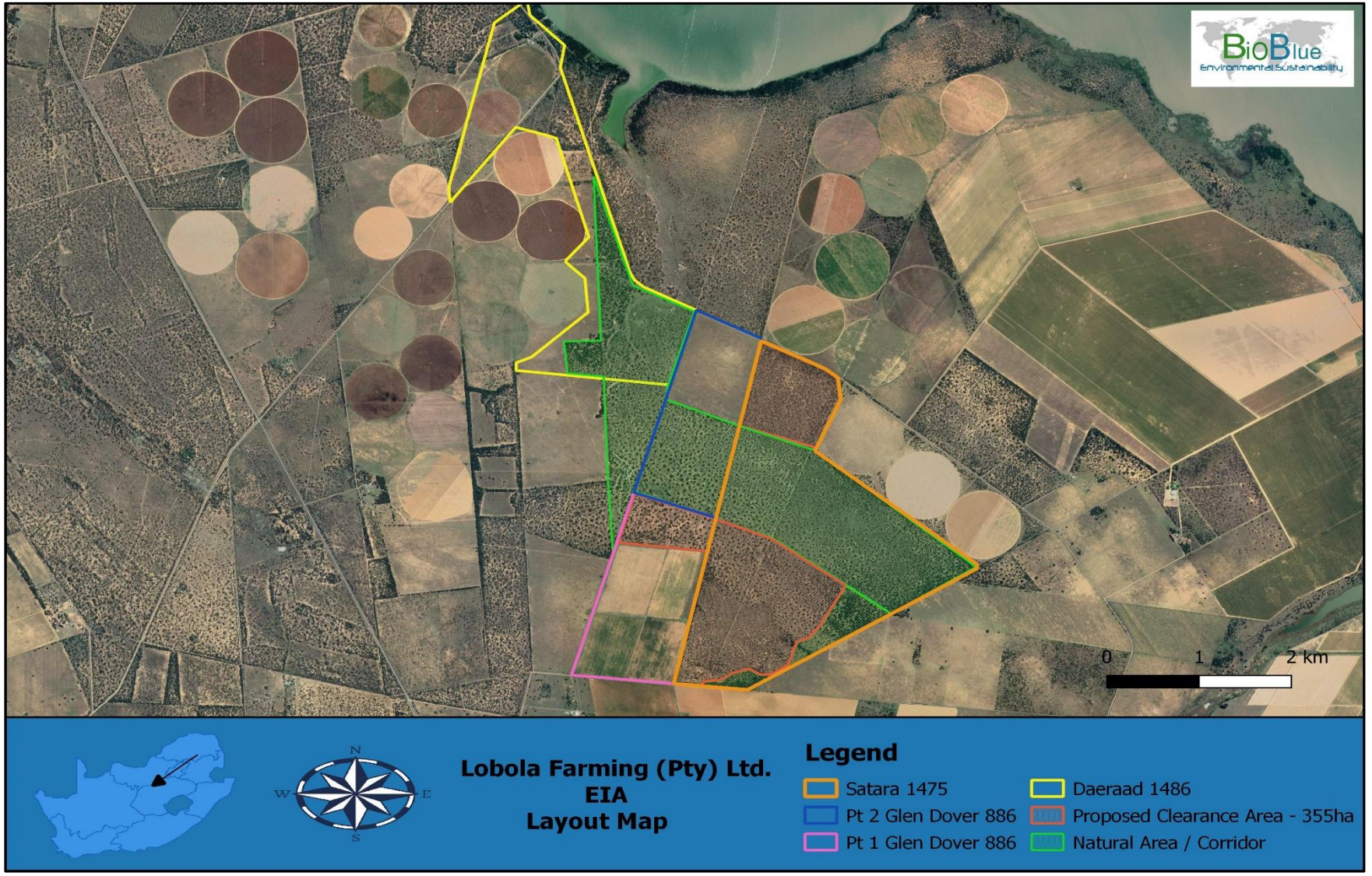


Figure 21: Lobola Farming – Proposed Layout Map – Option 1

11 IMPACT ASSESSMENT

The Scoping Report and Plan of Study for the Environmental Impact Assessment has been accepted by the DESTEA and the Impact Assessment is undertaken in line with the requirements of Appendix 3 of the EIA Regulations (2014) as amended.

11.1 IMPACT ASSESSMENT METHODOLOGY

The following assessment methodology has been used for the purpose of assessing impacts because of the construction / establishment and operational phases also including the assessment of the cumulative impacts of the proposed expansion of agricultural activities.

The impacts arising from the activities are included in the impact assessment tables. This is to identify activities that require certain environmental management actions to mitigate the impacts arising from them. The assessment of the impacts will be conducted according to a synthesis of criteria required by the integrated environmental management procedure (Table 15).

Table 15: Impact Assessment Table

Extent The physical and spatial scale of the impact.	Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.
	Site	The impact could affect the whole, or a significant portion of the site.
	Regional	The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.
	National	The impact could have an effect that expands throughout the country (South Africa).
	International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.
Duration The lifetime of the impact, that is measured in relation to the lifetime of the proposed development.	Short Term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase.
	Short-Medium Term	The impact will be relevant through to the end of a construction phase.
	Medium Term	The impact will last up to the end of the development phases, where after it will be entirely negated.

	Long Term	The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter.
	Permanent	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.
Intensity Is the impact destructive or benign, does it destroy the impacted environment, alters its functioning, or slightly alter the environment itself?	Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.
	Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.
	High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
Probability The likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time.	Improbable	The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0%).
	Possible	The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25%.
	Likely	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50%.
	Highly Likely	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75%.
	Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100%.

Mitigation – The impacts that are generated by the development can be minimised if measures are implemented to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts to minimise impacts and achieve sustainable development.

Determination of Significance – Without Mitigation – Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact "without mitigation" is the prime determinant of

the nature and degree of mitigation required. Where the impact is positive, significance is noted as "positive". Significance will be rated on the following scale:

No significance: The impact is not substantial and does not require any mitigation action;

Low: The impact is of little importance, but may require limited mitigation;

Medium: The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels; and

High: The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

Determination of Significance – With Mitigation – Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation will be rated on the following scale:

No significance: The impact will be mitigated to the point where it is regarded as insubstantial; Low: The impact will be mitigated to the point where it is of limited importance;

Low to medium: The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels;

Medium: Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw;

Medium to high: The impact is of major importance but through the implementation of the correct mitigation measures, the negative impacts will be reduced to acceptable levels; and

High: The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

Assessment Weighting – Each aspect within an impact description was assigned a series of quantitative criteria. Such criteria are likely to differ during the different stages of the project's

life cycle. To establish a defined base upon which it becomes feasible to make an informed decision, it will be necessary to weigh and rank all the identified criteria.

Ranking, Weighting and Scaling – For each impact under scrutiny, a scaled weighting factor will be attached to each respective impact. The purpose of assigning such weightings serve to highlight those aspects considered the most critical to the various stakeholders and ensure that each specialist's element of bias is considered. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspect criteria.

Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance (Table 16)

Table 16: Description of Assessment parameters with its respective weighting

Extent	Footprint	Site	Local	Regional	National
Intensity	Low	_	Medium	_	High
Duration	Short term	Short-Medium	Medium term	Long term	Permanent
Probability	Probable	Possible	Likely	Highly likely	Definite
Rating	1	2	3	4	5
Significance without Mitigation	Low	Low-Med	Medium	Medium-High	High
Rating	0-19	20-39	40-59	60-79	80-100
Weighting Factor	Low	Low-Med	Medium	Medium-High	High
Rating	1	2	3	4	5
Significance with Mitigation	Low	Low-Med	Medium	Medium-High	High
Rating	0-19	20-39	40-59	60-79	80-100
Mitigation Efficiency	Low	Low-Med	Medium	Medium-High	High
Rating	1	0,8	0,6	0,4	0,2

Identifying the Potential Impacts Without Mitigation Measures (WOM) – Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

Calculation 1: Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

Identifying the Potential Impacts with Mitigation Measures (WM) – In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it will be necessary to re-evaluate the impact.

Mitigation Efficiency (ME) – The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation effectiveness (ME) rating. The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and empirical evidence of how effectively the proposed mitigation measures will manage the impact.

Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and subsequently, the lower the impacts with mitigation.

Calculation 2: Significance Rating (WM) = Significance Rating (WM) x Mitigation Efficiency

Or WM = WM x ME

Significance Following Mitigation (SFM) – The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact will, therefore, be seen in its entirety with all considerations considered.

Consideration will also be given to potential cumulative impacts as illustrated below, occur as a result from the combined effect of incremental changes caused by other activities together

with the proposed project. In other words, several developments with insignificant impacts individually may, when viewed together, have a significant cumulative adverse impact on the environment.

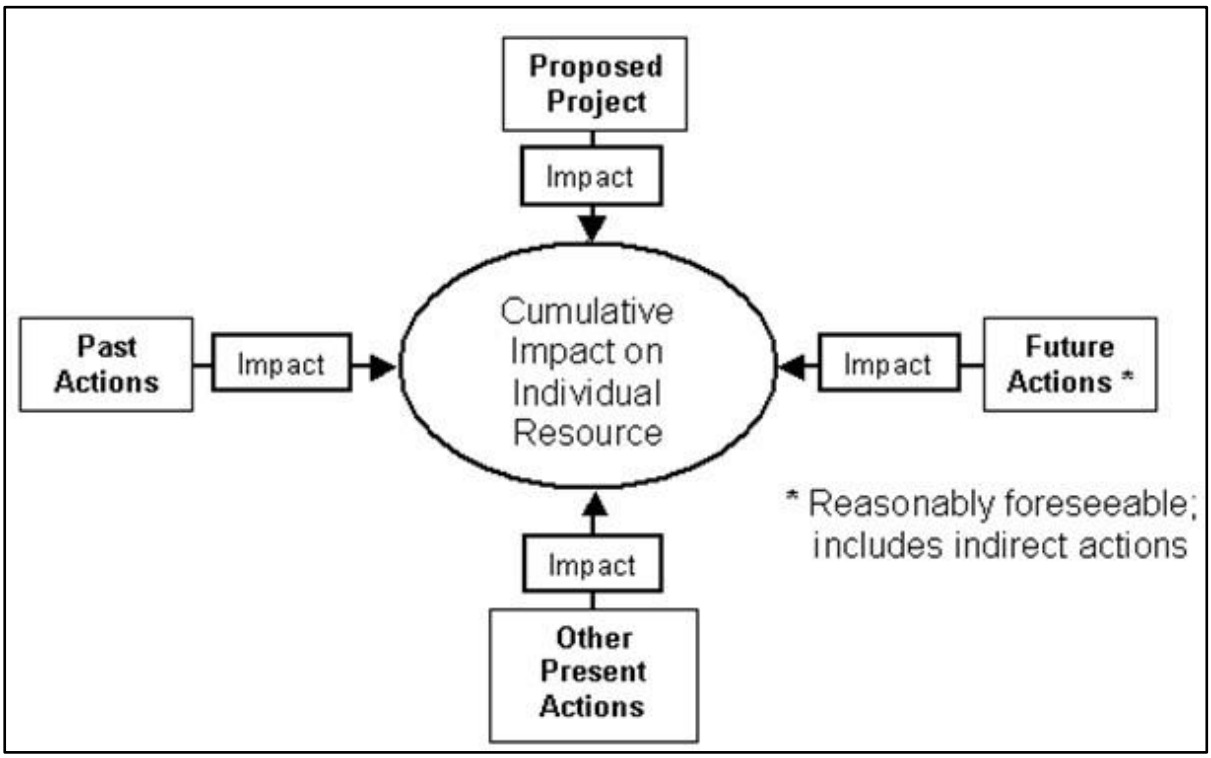


Figure 22: Cumulative impacts illustration
*(*https://www.environment.fhwa.dot.gov/nepa/QAimpact.aspx *)*

An indication of the degree of confidence (low, medium or high) that there is, in the predictions made for each impact, based on the available information and the specialist /. EAP's level of knowledge and expertise will also be reported. The Degree of confidence will however not be taken into account in the determination of consequence or probability.

This assessment is initially done for the scenario where no mitigation measures are implemented. Mitigation measures will then be identified and considered for each impact and the assessment repeated in order to determine the significance of the residual impacts (the impact remaining after the mitigation measure has been implemented) The results of the assessment of the significance of the residual impacts will then be linked to decision-making by Authorities.

11.2 IDENTIFIED POTENTIAL IMPACTS

The potential impacts associated with the proposed development have been identified through the scoping process and categorised in terms of biophysical and socio-economic parameters. The identified potential impacts will be investigated in detail within the Impact Assessment Phase of this S&EIR process.

The identification of key issues and the assessment of the significance of impacts within the process are thus aimed at giving input in the planning phases of the proposed development and ensuring the most viable and least environmentally sensitive environment is utilised for the proposed development.

11.2.1 Construction Phase

- Loss of Biodiversity
- Loss of habitat for fauna species
- Increase in noise due to site preparation;
- Introduction of heavy agricultural vehicles into the proposed development area;
- Potential impact on ambient air quality (dust generation);and
- Potential socio-economic impacts (both positive and negative).

11.2.2 Operational Phase

- Increased noise generation, during operational phase;
- Loss of habitat corridor for fauna species
- Potential pollution of surface water resources;
- Health and Safety;
- Air quality impacts due to fugitive dust from ploughing.

11.2.3 Decommissioning

- Potential impact on ambient air quality (dust generation);
- Potential of invasive species thriving during site Re-vegetation.

Table 17: Construction Phase – Impact Table – Preferred Option 1

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Clearance of Vegetation for the proposed establishment of new cultivated fields	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity Rating) (Rating 3) Significance = 4 x 3 = 12 **Moderate Negative Significance**	• It is proposed that vegetation clearance only occurs within the necessary footprint area of the new cultivated fields. Vegetation should only be removed when necessary to minimise erosion on the proposed site. • The national protected tree *Boscia albitrunca* (shepherds' tree / witgat) was only recorded in the game camp on Satara. It is advised that these trees be marked and avoided if possible, or a tree permit should be obtained. The same should be done for the *Vachellia erioloba or Camel Thorn Tree*. • The delineated natural corridor area should be protected and kept as large as possible. • Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 3 x 2 = 6 **(Low Significance)**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Loss of Fauna & Flora Habitat and protected species	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity Rating) (Rating 3) Significance = 4 x 3 = 12 **Moderate Negative Significance**	• The delineated natural corridor should be protected and any disturbance adjacent to the proposed clearance area should be avoided. • Permits should be obtained for protected tree species that were recorded on site before any actions are taken. The final proposed footprint of clearing must be walked to determine whether *B albitrunca* or *H. procumbens* will be affected. If so, apply for permits for their removal (or relocation of *H procumbens)* prior to vegetation clearing. • Declared weeds and invader plant species should be controlled and eradicated by the means of an eradication and monitoring programme.	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 3 x 2 = 6 **(Low Significance)**
Potential Increase in invasive vegetation	Probability = 3 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	• Alien invasive species, in particular category 1b species that were identified within the study area, should be removed from the development footprint and immediate	Probability = 2 Intensity = 1 Duration = 2 Severity = 1 x 2 = 2 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		surrounds, prior to clearing or soil disturbances. By removing these species, the spread of seeds will be prevented into disturbed soils which could thus have a positive impact on the surrounding natural vegetation. • All vehicles and equipment that enters the site must be free of plant material. Therefore, all equipment and vehicles should be thoroughly cleaned prior to access on to the areas to be cleared. • Continuously monitor the emergence of alien invasive plant species on the site and remove such species as soon as they become apparent.	
Destruction of significant and / or sensitive fauna habitat (Drainage line and Open Savanna)	Probability = 4 Intensity = 2 Duration = 5 Severity = 2 x 5 = 10 (High Severity) (Rating 4) Significance = 4 x 4 = 16	• By respecting the on-site PA area as a no go-zone, the drainage line, the larger CBA and available natural buffers around this area will be preserved.	Probability = 2 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 2 x 3 = 6

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
	High Negative Significance	• By incorporating an approximate 100ha area of the designated open savanna area east of the PA, the Conservation Importance and Functional Integrity of the area will be well maintained. • It will also ensure the preservation of good open bushveld habitat that may be utilised by the potential SCC and TOP species and preserve the patchwork crop and savanna habitat on site, allowing savanna specialists to persist in the area.	**Low Significance**
Nature: Loss of ecological connectivity (drainage line and CBA) and impeded faunal mobility.	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Negative Significance**	• By respecting the on-site PA area as a no-go zone and incorporating an approximate 100ha area of the designated open savanna area east of the PA, a good terrestrial corridor and terrestrial habitat node to the Bloemhof Dam will be preserved. • It will allow the smaller fauna, agile fauna and birds to move between terrestrial open bushveld and the Bloemhof Dam and give access to these animals to the greater ecological corridor around the dam and associated major rivers.	Probability = 2 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 2 x 3 = 6 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		• This will be very important in the face of potential climate change into the future. Larger fauna will be impeded by fencing.	
Loss of, or disruption to, SCC species	Probability = 3 Intensity = 3 Duration = 2 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	• **No clearing** will take place if the Secretary bird is observed to be nesting on site. It is recommended that a specialist be contacted to assess the situation and recommend a way forward. • Ensure that unhindered access for fauna is maintained along the ecological corridors. As SCC birds are known to re-use nests, consideration should be given to incorporating any nesting areas if the species are observed to be nesting on site. • All contractors and staff on site must undergo environmental awareness training which must include the prohibition of any harm or hindrance to any indigenous fauna species. • Ensure safe speed limits in the area.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Soil and Surface Water Pollution	Probability = 3 Intensity = 2	The following precautions need to be taken to minimize the	Probability = 2 Intensity = 2

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
	Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	effects of accidental hydrocarbon spillages. • Tractors and other farming equipment need to be maintained on a regular basis and checked for leakages every morning. • If re-fuelling is to be done on site, drip trays need to be available.	Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Dust Generation: Impact on air quality and vegetation	Probability = 4 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Negative Significance**	During the clearance of vegetation, dust will be generated by the activities. • Only the footprint area of the sites should be cleared and only when necessary to minimise the impact of dust on the surrounding natural areas. • Average speed limits should be communicated to all staff • Access roads should be maintained and no new unnecessary roads should be established.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Employment Opportunities	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Positive Significance**	The proposed expansion will create a possible 15 job opportunities. The local communities should be approached to fill these positions as far as possible.	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Positive Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		Structures should be established to ensure appropriate development and transfer of skills to the local community.	
Increased run-off due to hard and exposed surfaces from exposed soils.	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Negative Significance**	The farming operation must ensure that the proposed activities are well managed and do not lead to erosion of the valuable topsoil layer. • Clearance of vegetation should only be implemented once necessary. • Contours and other management measures should be implemented to ensure that runoff from storm events is minimized.	Probability = 2 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 2 x 3 = 6 **Low Negative Significance**
Historical or Archaeological Impacts	Probability = 4 Intensity = 2 Duration = 5 Severity = 2 x 5 = 10 (High Severity) (Rating 4) Significance = 4 x 4 = 16 **High Negative Significance**	The Graveyard located on the site should be fenced off to protect it against any accidental or direct impact by any future development. The site should also be cleaned as properly marked as a cemetery. Any new materials or sites that are uncovered during the construction phase. The activities should be halted immediately, and an expert should be contacted to investigate.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Table 18: Impacts Associated with the Operational Phase – Preferred Option 1

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Agricultural Impact and land use change	Probability = 3 Intensity = 1 Duration = 4 Severity = 1 x 4 = 4 (Low Severity Rating) (Rating 2) Significance = 2 x 3 = 6 **Low Positive Significance**	The proposed expansion will increase the potential of the agricultural activities on the land. The new expansion areas should be utilised productively and sustainably.	Probability = 3 Intensity = 1 Duration = 4 Severity = 1 x 4 = 4 (Low Severity Rating) (Rating 2) Significance = 2 x 3 = 6 **Low Positive Significance**
Clearance of Vegetation for the proposed establishment of new cultivated fields	Probability = 3 Intensity = 3 Duration = 2 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	After Clearance, the land must be cleared of rubbish, surplus materials and equipment and must be left in a condition as close as possible to that prior to clearing. Measures must be implemented to prevent operational activities from impacting on the adjacent vegetation. Machinery may not turn or park within the natural areas. Drift from chemical herbicides and pesticides must be prevented.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Loss of Fauna & Flora Habitat and protected species	Probability = 3 Intensity = 3 Duration = 2	Operational activities may not trample natural vegetation and work should be restricted	Probability = 2 Intensity = 2 Duration = 2

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
	Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	to previously disturbed footprint. Prevent operational activities from impacting on adjacent vegetation and prevent drift from chemical herbicides and pesticides	Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Potential Increase in invasive vegetation	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 3 = 6 **Low Negative Significance**	A management programme should be established to minimize the proliferation of invasive species and eradicate them where possible. Staff should receive environmental awareness training assist with implementing these management measures.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Positive Significance**
Bush Densification – Bushveld is prone to bush densification whereby open bushveld, in the absence of good veld management, become denser and dominated by stands of encroacher species.	Probability = 4 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 4 x 3 = 12 **Moderate Negative Significance**	Plants in this group are not alien plants, but indigenous plants that tend to become abnormally abundant when the area is degraded or mismanaged. • Monitor the establishment of dense stands of encroacher species and remove or thin as soon as detected.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		• Ensure that areas outside of the operational footprint that were disturbed, are adequately rehabilitated and prevent dense stands of encroacher species.	
Soil and Surface Water Pollution	Probability = 3 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	The following precautions need to be taken to minimize the effects of accidental hydrocarbon spillages. • Tractors and other farming equipment need to be maintained on a regular basis and checked for leakages every morning. • If re-fuelling is to be done on site, drip trays need to be available. • No vehicles may be washed within naturally vegetated areas, except in suitably designed and protected areas. • Strictly prohibit littering and make adequate dustbins available. • During spraying, prevent drift into natural vegetation.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Loss of Ecological connectivity (Drainage line and CBA) and impeded faunal mobility	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 3 x 2 = 6 **Low Negative Significance**	Demarcate no-go areas to ensure no inadvertent activity occurs in these areas. Do not place any obstacles in this area (no cleared trees are to be dumped in the area).	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 2 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Table 19: Impacts Associated with the Construction Phase – Layout Option 2

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Clearance of Vegetation for the proposed establishment of new cultivated fields	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity Rating) (Rating 3) Significance = 4 x 3 = 12 **Moderate Negative Significance**	• It is proposed that vegetation clearance only occurs within the necessary footprint area of the new cultivated fields. Vegetation should only be removed when necessary to minimise erosion on the proposed site. • The national protected tree *Boscia albitrunca* (shepherds' tree / witgat) was only recorded in the game camp on Satara. It is advised that these trees be marked and avoided if possible, or a tree permit should be obtained. The same should be done for	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 3 x 2 = 6 **(Low Significance)**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		the *Vachellia erioloba or Camel Thorn Tree*. • This proposed clearance requires that open space be kept on a small area of Satara that can connect the southern part of Satara (to be conserved) with Portion 2 of Glen Dover. • Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.	
Loss of Fauna & Flora Habitat and protected species	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity Rating) (Rating 3) Significance = 4 x 3 = 12 **Moderate Negative Significance**	• The southern section of Satara should be conserved along with the remaining natural area of Portion 2 of Glen Dover. A natural connection should be established between these two areas. • Permits should be obtained for protected tree species that were recorded on site before any actions are taken. The final proposed footprint of clearing must be walked to determine whether *B*	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 3 x 2 = 6 **(Low Significance)**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		albitrunca or *H. procumbens* will be affected. If so, apply for permits for their removal (or relocation of *H procumbens)* prior to vegetation clearing. • Declared weeds and invader plant species should be controlled and eradicated by the means of an eradication and monitoring programme.	
Potential Increase in invasive vegetation	Probability = 3 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	• Alien invasive species, in particular category 1b species that were identified within the study area, should be removed from the development footprint and immediate surrounds, prior to clearing or soil disturbances. By removing these species, the spread of seeds will be prevented into disturbed soils which could thus have a positive impact on the surrounding natural vegetation. • All vehicles and equipment that enters the site must be free of plant material. Therefore, all equipment and vehicles should be	Probability = 2 Intensity = 1 Duration = 2 Severity = 1 x 2 = 2 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		thoroughly cleaned prior to access on to the areas to be cleared. • Continuously monitor the emergence of alien invasive plant species on the site and remove such species as soon as they become apparent.	
Destruction of significant and / or sensitive fauna habitat (Drainage line and Open Savanna)	Probability = 4 Intensity = 2 Duration = 5 Severity = 2 x 5 = 10 (High Severity) (Rating 4) Significance = 4 x 4 = 16 **High Negative Significance**	• By respecting the on-site PA area as a no go-zone, the drainage line, the larger CBA and available natural buffers around this area will be preserved. • It will also ensure the preservation of good open bushveld habitat that may be utilised by the potential SCC and TOP species and preserve the patchwork crop and savanna habitat on site, allowing savanna specialists to persist in the area.	Probability = 2 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 2 x 3 = 6 **Low Significance**
Nature: Loss of ecological connectivity (drainage line and CBA) and impeded faunal mobility.	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Negative Significance**	• By respecting the on-site PA area as a no-go zone and incorporating an approximate 100ha area of the designated open savanna area east of the PA, a good terrestrial corridor and terrestrial habitat	Probability = 2 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 2 x 3 = 6 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		node to the Bloemhof Dam will be preserved. • It will allow the smaller fauna, agile fauna and birds to move between terrestrial open bushveld and the Bloemhof Dam and give access to these animals to the greater ecological corridor around the dam and associated major rivers. • This will be very important in the face of potential climate change into the future. Larger fauna will be impeded by fencing.	
Loss of, or disruption to, SCC species	Probability = 3 Intensity = 3 Duration = 2 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	• **No clearing** will take place if the Secretary bird is observed to be nesting on site. It is recommended that a specialist be contacted to assess the situation and recommend a way forward. • Ensure that unhindered access for fauna is maintained along the ecological corridors. As SCC birds are known to re-use nests, consideration should be given to incorporating any nesting areas if the species are observed to be nesting on site.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		• All contractors and staff on site must undergo environmental awareness training which must include the prohibition of any harm or hindrance to any indigenous fauna species. • Ensure safe speed limits in the area.	
Soil and Surface Water Pollution	Probability = 3 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	The following precautions need to be taken to minimize the effects of accidental hydrocarbon spillages. • Tractors and other farming equipment need to be maintained on a regular basis and checked for leakages every morning. • If re-fuelling is to be done on site, drip trays need to be available.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Dust Generation: Impact on air quality and vegetation	Probability = 4 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Negative Significance**	During the clearance of vegetation, dust will be generated by the activities. • Only the footprint area of the sites should be cleared and only when necessary to minimise the impact of dust on the surrounding natural areas.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		• Average speed limits should be communicated to all staff • Access roads should be maintained and no new unnecessary roads should be established.	
Employment Opportunities	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Positive Significance**	The proposed expansion will create a possible 15 job opportunities. The local communities should be approached to fill these positions as far as possible. Structures should be established to ensure appropriate development and transfer of skills to the local community.	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Positive Significance**
Increased run-off due to hard and exposed surfaces from exposed soils.	Probability = 4 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 4 = 12 **Moderate Negative Significance**	The farming operation must ensure that the proposed activities are well managed and do not lead to erosion of the valuable topsoil layer. • Clearance of vegetation should only be implemented once necessary. • Contours and other management measures should be implemented to ensure that runoff from storm events is minimized.	Probability = 2 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 2 x 3 = 6 **Low Negative Significance**
Historical or Archaeological Impacts	Probability = 4 Intensity = 2	The Graveyard located on the site should be fenced off to	Probability = 2 Intensity = 2

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
	Duration = 5 Severity = 2 x 5 = 10 (High Severity) (Rating 4) Significance = 4 x 4 = 16 **High Negative Significance**	protect it against any accidental or direct impact by any future development. The site should also be cleaned as properly marked as a cemetery. Any new materials or sites that are uncovered during the construction phase. The activities should be halted immediately, and an expert should be contacted to investigate.	Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Table 20: Impacts Associated with the Operational Phase – Layout Option 2

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Agricultural Impact and land use change	Probability = 3 Intensity = 1 Duration = 4 Severity = 1 x 4 = 4 (Low Severity Rating) (Rating 2) Significance = 2 x 3 = 6 **Low Positive Significance**	The proposed expansion will increase the potential of the agricultural activities on the land. The new expansion areas should be utilised productively and sustainably.	Probability = 3 Intensity = 1 Duration = 4 Severity = 1 x 4 = 4 (Low Severity Rating) (Rating 2) Significance = 2 x 3 = 6 **Low Positive Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
Clearance of Vegetation for the proposed establishment of new cultivated fields	Probability = 3 Intensity = 3 Duration = 2 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	After Clearance, the land must be cleared of rubbish, surplus materials and equipment and must be left in a condition as close as possible to that prior to clearing. Measures must be implemented to prevent operational activities from impacting on the adjacent vegetation. Machinery may not turn or park within the natural areas. Drift from chemical herbicides and pesticides must be prevented.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**
Loss of Fauna & Flora Habitat and protected species	Probability = 3 Intensity = 3 Duration = 2 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9	Operational activities may not trample natural vegetation and work should be restricted to previously disturbed footprint. Prevent operational activities from impacting on adjacent vegetation	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
	Moderate Negative Significance	and prevent drift from chemical herbicides and pesticides	**Low Significance**
Potential Increase in invasive vegetation	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 3 = 6 **Low Negative Significance**	A management programme should be established to minimize the proliferation of invasive species and eradicate them where possible. Staff should receive environmental awareness training assist with implementing these management measures.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Positive Significance**
Bush Densification – Bushveld is prone to bush densification whereby open bushveld, in the absence of good veld management, become denser and dominated by stands of encroacher species.	Probability = 4 Intensity = 2 Duration = 3 Severity = 2 x 3 = 6 (Moderate Severity) (Rating 3) Significance = 4 x 3 = 12 **Moderate Negative Significance**	Plants in this group are not alien plants, but indigenous plants that tend to become abnormally abundant when the area is degraded or mismanaged. • Monitor the establishment of dense stands of encroacher species and remove or thin as soon as detected. • Ensure that areas outside of the operational footprint	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		that were disturbed, are adequately rehabilitated and prevent dense stands of encroacher species.	
Soil and Surface Water Pollution	Probability = 3 Intensity = 2 Duration = 4 Severity = 2 x 4 = 8 (Moderate Severity) (Rating 3) Significance = 3 x 3 = 9 **Moderate Negative Significance**	The following precautions need to be taken to minimize the effects of accidental hydrocarbon spillages. • Tractors and other farming equipment need to be maintained on a regular basis and checked for leakages every morning. • If re-fuelling is to be done on site, drip trays need to be available. • No vehicles may be washed within naturally vegetated areas, except in suitably designed and protected areas. • Strictly prohibit littering and make adequate dustbins available.	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

Potential Impacts	Significance Rating before mitigation	Proposed Mitigation	Significance Rating after mitigation
		• During spraying, prevent drift into natural vegetation.	
Loss of Ecological connectivity (Drainage line and CBA) and impeded faunal mobility	Probability = 3 Intensity = 2 Duration = 2 Severity = 2 x 2 = 4 (Low Severity) (Rating 2) Significance = 3 x 2 = 6 **Low Negative Significance**	Demarcate no-go areas to ensure no inadvertent activity occurs in these areas. Do not place any obstacles in this area (no cleared trees are to be dumped in the area).	Probability = 2 Intensity = 2 Duration = 2 Severity = 2 x 2 = 2 (Low Severity) (Rating 2) Significance = 2 x 2 = 4 **Low Significance**

12 ASSUMPTIONS AND LIMITATIONS

12.1 ASSUMPTIONS

The scope of the EIA is limited to assessing the potential impacts associated with the proposed development, therefore the effect on the surrounding environment is based on the current land-use.

All information provided by the applicant is deemed valid and correct at the time it was provided.

12.2 LIMITATIONS / GAPS IN KNOWLEDGE

The study is limited by the amount of detailed information that could be provided at the time of modelling.

13 IMPACTS STATEMENT

The proposed project entails the clearance of natural vegetation and thus, the main impacts on the site and surrounding environment will be the fragmentation of the natural vegetation and intact habitat. Most of the impacts will be experienced during the construction or establishment phase as removal of natural vegetation and altering the landscape to allow for crop production is the main aim of the project.

Possible impacts can also be experienced during the operational phase of the project, however, these impacts can easily be mitigated by implementing the proposed mitigation measures such as implementing a monitoring and eradication plan for alien and invasive species.

The proposed project is situated within an area that is characterised by agricultural activities with natural areas adjacent to it. The proposed clearance area is characterised by Kimberley thornveld and the largest extent of this area is utilised for game farming purposes.

It is imperative that a large portion of the natural area be conserved and connected to the CBA1 area that will allow for the movement of Fauna between the site and the Bloemhof Dam area. Both proposed Layout options will preserve the required natural area, that will be connected to the CBA1 area as well as the larger Bloemhof Dam protected area.

The overall negative impacts of the site can be mitigated to low significance and therefore the development activities are not expected to impact the surrounding areas in a detrimental manner.

14 CONCLUSION AND RECOMMENDATIONS

The process within this EIR demonstrated through the description of activity and the assessment of impacts that the proposed development does not have any fatal flaws. The impacts on the natural vegetation will be permanent on the proposed footprint areas but will be limited to these areas with the implementation of the mitigation measures as recommended within this report as well as the specialist reports.

The Impact Assessment has also identified essential mitigation measures that will mitigate all other impacts associated with the activity to within acceptable levels.

The EAP is of the opinion that the development should be granted Environmental Authorization based on the assessment above as the negative impacts can be mitigated to a satisfactory level. The following mitigation measures must be included in the Environmental Authorization:

- An Environmental Control Officer must be appointed prior to the commencement of construction
- The authorized area to be cleared must be clearly demarcated
- All reports including monitoring reports must always be available on site.
- A complaints register must be drafted and kept up to date, with reposes on any complaints recorded with each complaint.
- The applicant, site manager, staff and any contractor must adhere to all mitigation measures in the EMPr. The EMPr is a legally binding document to all parties involved in the construction of the activity.
- An Alien and Invasive monitoring and eradication programme must be compiled and implemented throughout the construction and operational phases.
- No trees and other cleared material may be dumped within the adjacent natural areas.
- Vehicles and Equipment have to be maintained throughout the operations and drip trays and spill kits need to be available on site.

15 REFERENCES

- National Environmental Management Act 1998 (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014 as amended.
- Collins, N.B. 2016. Free State Province Biodiversity Plan: Technical Report v1.0. Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs. Internal Report.
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- Integrated Development Plan, 2020-2021 Review Tswelopele Local Municipality
- Integrated Environmental Plan, 2020-2021 Tswelopele Local Municipality
- National Environmental Management Act 1998 (Act 107 of 1998) Environmental Impact Assessment Regulations, 2014 as amended.
- Pelser A. 2020 Phase 1 Heritage Impact Report for the Lobola Farming Project on various farms near Bloemhof, North West Province, Specialist Report.
- Eyssell A. 2020 Vegetation Clearing: Lobola Farming close to Bloemhof, Free State Province, Terrestrial (Vegetation) Biodiversity Assessment, Specialist Report.
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