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DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

Government Notice No. 435 (22 March 2019)

*APPENDIX 2: Generic Environmental Management Programme (EMPr) for  
the Development and Expansion for Overhead Electricity Transmission  
and Distribution Infrastructure Template.*

PREPARED FOR:

ALBANY WIND POWER (PTY) LTD  
Waterfront Business Park, Building 5 – Ground Floor,  
1204 Humerail Road, Humerail, Port Elizabeth, 6001,  
Eastern Cape Province  
Tel: +27 (0)41 506 4900

PREPARED BY:

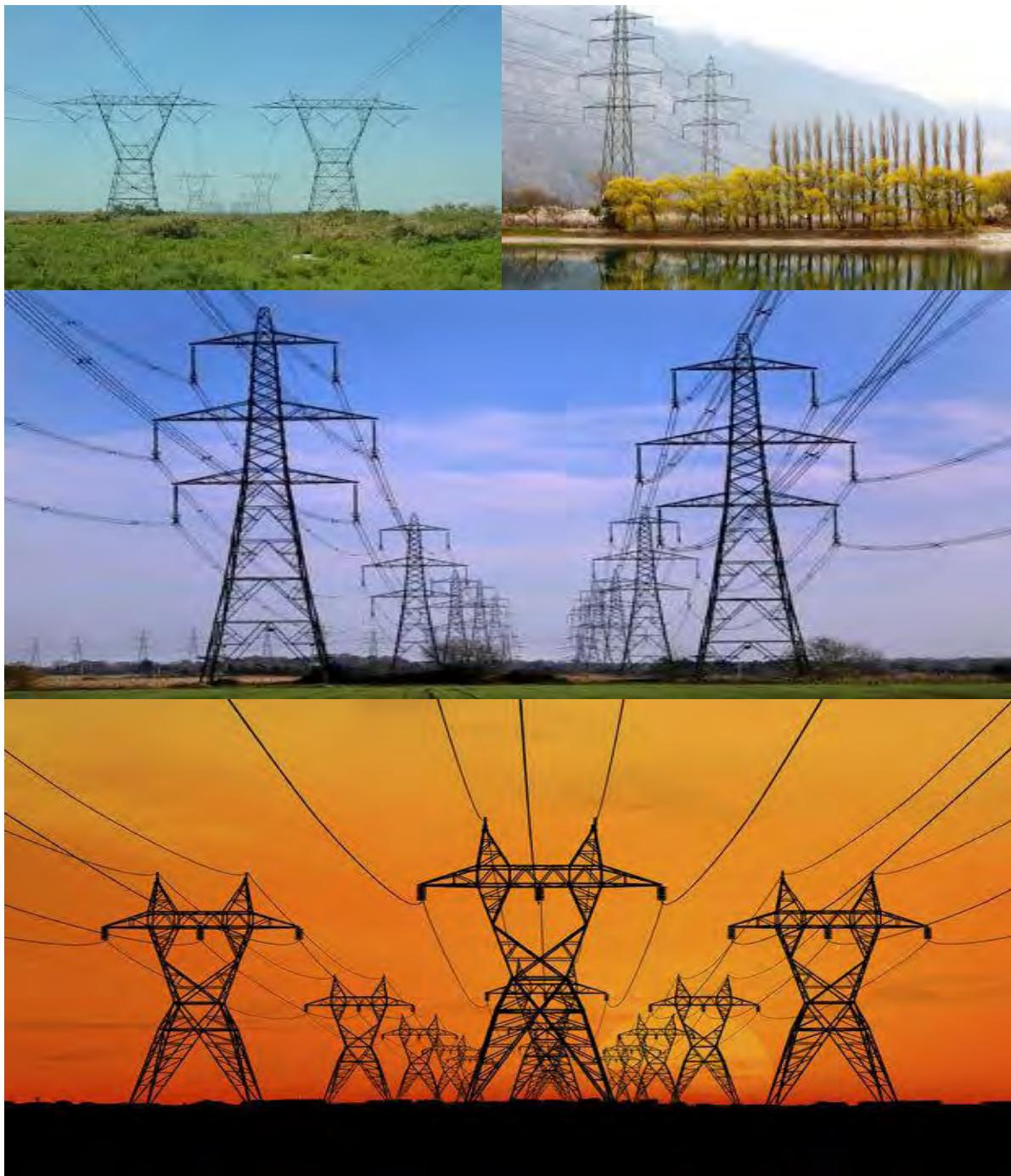


PORT ELIZABETH  
36 Pickering Street, Newton Park,  
Port Elizabeth, 6001,  
Eastern Cape Province  
Tel: +27 (0)41 393 0700 | +27 (0)41 045 0494  
[www.cesnet.co.za](http://www.cesnet.co.za)

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APPENDIX 2  
GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE  
DEVELOPMENT AND EXPANSION FOR OVERHEAD ELECTRICITY  
TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE

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**environmental affairs**

Department:  
Environmental Affairs  
**REPUBLIC OF SOUTH AFRICA**

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## INTRODUCTION

### 1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended, (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the competent authority (CA).

### 2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of overhead electricity transmission and distribution infrastructure, and all listed and specified activities necessary for the realisation of such infrastructure.

### 3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

### 4. Scope

The scope of this generic EMPr applies to the development or expansion of overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realisation of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is not legally binding	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	<p>Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved.</p> <p>The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity.</p> <p>Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column.</p> <p>Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template is not required to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA.</p> <p>To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.</p>
			Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr

Part	Section	Heading	Content
			<p>template contained in <u>Part B: Section 1</u>, and understands that the impact management outcomes and impact management actions are legally binding. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of <u>Part C</u>.</p> <p>This section must be submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of <u>Part B: section 2</u> not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.</p>
C		Site specific sensitivities/attributes	<p>If any specific environmental sensitivities/attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (<u>Part B: section 1</u>)</p> <p>This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if <u>Part C</u> is applicable to the site, it is required to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP, and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding.</p>

Part	Section	Heading	Content
			This section applies only to additional impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in <u>Part B: section 1</u> .
	Appendix 1		Contains the method statements to be prepared prior to commencement of the activity. The method statements are not required to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the corridor in which the proposed overhead electricity transmission and distribution infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: <https://screening.environment.gov.za/screeningtool>. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps must identify features both within the planned working area and any known sensitive features in the surrounding landscape within 50m from the development footprint. The overhead transmission and distribution profile must be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions must be used.

Sub-section 3 is the declaration that the applicant/proponent or holder of the EA in the case of a change of ownership must complete, which confirms that the applicant/EA holder will comply with the pre-approved generic EMPr template in Section 1 and understands that the impact management outcomes and actions are legally binding.

- (a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

**PART A – GENERAL INFORMATION****1. DEFINITIONS**

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

**"clearing"** means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

**"construction camp"** is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

**"contractor"** - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

**"hazardous substance"** is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

**"method statement"** means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover applicable details with regard to:

- (i) Construction procedures;
- (ii) Plant, materials and equipment to be used;
- (iii) Transporting the equipment to and from site;
- (iv) How the plant/ material/ equipment will be moved while on site;
- (v) How and where the plant/material/equipment will be stored;
- (vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- (vii) Timing and location of activities;
- (viii) Compliance/ non-compliance; and
- (ix) Any other information deemed necessary by the Project Manager.

**"slope"** means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

**“solid waste”** means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

**“soil”** means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

**“topsoil”** means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil; and

**“works”** means the works to be executed in terms of the Contract

## 2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
CEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
<b>RI&amp;AP's</b>	Registered interested and affected parties

### 3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table A: Guide to roles and responsibilities for implementation of an EMPr.

Responsible Person (s)	Role and Responsibilities
Developer's Project Manager (DPM)	<p><u>Role</u></p> <p>The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Be fully conversant with the conditions of the EA;</li> <li>- Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s);</li> <li>- Issuing of site instructions to the Contractor for corrective actions required;</li> <li>- Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and</li> <li>- Ensure that periodic environmental performance audits are undertaken on the project implementation.</li> </ul>
Developer Site Supervisor (DSS)	<p><u>Role</u></p> <p>The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS</p>

Responsible Person (s)	Role and Responsibilities
	<p>is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Ensure that all contractors identify a contractor's Environmental Officer (cEO);</li> <li>- Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO;</li> <li>- Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO;</li> <li>- Issuing of site instructions to the Contractor for corrective actions required;</li> <li>- Will issue all non-compliances to contractors; and</li> <li>- Ratify the Monthly Environmental Report.</li> </ul>
Environmental Control Officer (ECO)	<p><u>Role</u></p> <p>The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non- compliance with the Performance Specifications as set out in the EA and EMPr.</p> <p>The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &amp; Affected Parties' (RI&amp;AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.</p> <p><u>Responsibilities</u></p>

Responsible Person (s)	Role and Responsibilities
	<p>The responsibilities of the ECO will include the following:</p> <ul style="list-style-type: none"> <li>- Be aware of the findings and conclusions of all EA related to the development;</li> <li>- Be familiar with the recommendations and mitigation measures of this EMPr;</li> <li>- Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them;</li> <li>- Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required;</li> <li>- Educate the construction team about the management measures contained in the EMPr and environmental licenses;</li> <li>- Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective;</li> <li>- Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements;</li> <li>- In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses;</li> <li>- Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns;</li> <li>- Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr;</li> <li>- Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO);</li> <li>- Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc) as well as corrective and preventive actions taken;</li> <li>- Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken;</li> <li>- Assisting in the resolution of conflicts;</li> <li>- Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor;</li> <li>- In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance;</li> <li>- Maintenance, update and review of the EMPr;</li> <li>- Communication of all modifications to the EMPr to the relevant stakeholders.</li> </ul>
developer Environmental Officer	Role

Responsible Person (s)	Role and Responsibilities
(dEO)	<p>The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Be fully conversant with the EMPr;</li> <li>- Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures;</li> <li>- Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s);</li> <li>- Confine the development site to the demarcated area;</li> <li>- Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO);</li> <li>- Assist the contractors in addressing environmental challenges on site;</li> <li>- Assist in incident management;</li> <li>- Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;</li> <li>- Assist the contractor in investigating environmental incidents and compile investigation reports;</li> <li>- Follow-up on pre-warnings, defects, non-conformance reports;</li> <li>- Measure and communicate environmental performance to the Contractor;</li> <li>- Conduct environmental awareness training on site together with ECO and cEO;</li> <li>- Ensure that the necessary legal permits and / or licenses are in place and up to date;</li> <li>- Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;</li> </ul>
Contractor	<p><u>Role</u></p> <p>The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where</p>

Responsible Person (s)	Role and Responsibilities
	<p>specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- project delivery and quality control for the development services as per appointment;</li> <li>- employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period;</li> <li>- ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely;</li> <li>- attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones;</li> <li>- ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.</li> </ul>
contractor Environmental Officer (cEO)	<p><u>Role</u></p> <p>Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria:</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> <li>- Be on site throughout the duration of the project and be dedicated to the project;</li> <li>- Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site;</li> <li>- Implementing the environmental conditions, guidelines and requirements as stipulated within the EA,</li> </ul>

Responsible Person (s)	Role and Responsibilities
	<p>EMPr and Method Statements;</p> <ul style="list-style-type: none"><li>- Attend the Environmental Site Meeting;</li><li>- Undertaking corrective actions where non-compliances are registered within the stipulated timeframes;</li><li>- Report back formally on the completion of corrective actions;</li><li>- Assist the ECO in maintaining all the site documentation;</li><li>- Prepare the site inspection reports and corrective action reports for submission to the ECO;</li><li>- Assist the ECO with the preparing of the monthly report; and</li><li>- Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.</li></ul>

#### 4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead electricity transmission and distribution infrastructure projects as a minimum requirement.

##### 4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

##### 4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

##### 4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

#### 4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record “Matters for Attention” that will be reviewed at the next meeting.

#### 4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

#### 4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

#### 4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints

received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, *inter alia*, There is a deviation from the environmental conditions, impact management outcomes and impact management actions , as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

#### 4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's CEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

#### 4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated, and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Abolition facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

#### 4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (section 4.11) below.

#### 4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in (section 4.10) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

#### 4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

#### 4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes must be included in the EMPr file and be submitted to the CA at intervals as indicated in the EA.

An Environmental Audit Report must be prepared monthly. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

#### 4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

**PART B: SECTION 1: Pre-approved generic EMPr template****5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS**

This section provides a pre-approved generic EMPr template with aspects that are common to the development of overhead electricity transmission and distribution infrastructure. There is a list of aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contractor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

## 5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All staff must receive environmental awareness training prior to commencement of the activities;</li> <li>- The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;</li> <li>- Refresher environmental awareness training is available as and when required;</li> <li>- All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;</li> <li>- The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: <ul style="list-style-type: none"> <li>a) Safety notifications; and</li> <li>b) No littering.</li> </ul> </li> <li>- Environmental awareness training must include as a minimum the following: <ul style="list-style-type: none"> <li>a) Description of significant environmental impacts, actual or potential, related to their work activities;</li> <li>b) Mitigation measures to be implemented when carrying out specific activities;</li> <li>c) Emergency preparedness and response procedures;</li> <li>d) Emergency procedures;</li> <li>e) Procedures to be followed when working near or within sensitive areas;</li> <li>f) Wastewater management procedures;</li> <li>g) Water usage and conservation;</li> <li>h) Solid waste management procedures;</li> </ul> </li> </ul>	The Contractor and the contractor Environmental Officer (cEO).	The Contractor must ensure that construction staff undertake the compulsory Environmental Awareness Training Sessions. Information posters should be placed in accessible locations.	Pre-construction phase and construction phase (for any new staff).	The appointed Environmental Control Officer (ECO).	Monthly.	An Environmental Site File should be compiled and maintained by the cEO for the duration of the construction phase. This file should include proof of training, attendance registers, etc., and the ECO should review this file and include copies of the relevant documents as appendices to the monthly audit reports.

i) Sanitation procedures; j) Fire prevention; and k) Disease prevention.  – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in appropriate languages that all staff can understand.						
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## 5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;</li> <li>- Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;</li> <li>- Sites must be located where possible on previously disturbed areas;</li> <li>- The camp must be fenced in accordance with Section 5.5: Fencing and gate installation; and</li> <li>- The use of existing accommodation for contractor staff, where possible, is encouraged.</li> </ul>	The Contractor.	Submission of a detailed Method Statement for approval.	Pre-construction phase.	The appointed ECO.	Monthly.	Evidence of compliance as well as a copy of the Method Statement to be submitted to the ECO and appended to the pre-construction audit report.

### 5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development;</li> <li>- Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and</li> <li>- Unauthorised access and development related activity inside access restricted areas is prohibited.</li> </ul>	The Contractor and the cEO.	Demarcation and relevant signage.	Pre-construction phase and construction phase.	The ECO.	Weekly.	The ECO must monitor the site to ensure that these areas have been demarcated (photographic evidence) and that construction is not taking place within restricted areas.

## 5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area;</li> <li>- An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;</li> <li>- The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;</li> <li>- All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition</li> <li>- All contractors must be made aware of all these access routes.</li> <li>- Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;</li> <li>- Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads;</li> <li>- In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: <i>photographic record</i>; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;</li> <li>- Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands; and</li> <li>- Access roads must only be developed on pre-planned and approved roads.</li> </ul>	The Developer Site Supervisor (DSS), the Contractor, the CEO and the affected Landowners.	Formal Access Agreement with landowners and in accordance with the conditions of the EA relating to access roads.	Continual.	The CEO and the ECO.	Prior to the commencement of the construction phase and monthly thereafter.	The Contractor must provide a copy of the access agreement, as well as any specific conditions, to the ECO. The CEO should keep a photographic record of the access road signage as well as the access general condition of the access roads.

## 5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Use existing gates provided to gain access to all parts of the area authorised for development, where possible;</li> <li>- Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record;</li> <li>- All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;</li> <li>- At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;</li> <li>- Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;</li> <li>- Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;</li> <li>- Original tension must be maintained in the fence wires;</li> <li>- All gates installed in electrified fencing must be re-electrified;</li> <li>- All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities;</li> <li>- Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora;</li> <li>- Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the landowner;</li> <li>- All fencing must be developed of high-quality material bearing the SABS mark;</li> </ul>	The Contractor.	A Method Statement, detailing the proposed new gates and fences, should be submitted by the Contractor to the Developer Site Supervisor (DSS) and the ECO for approval prior to the construction of the new gates and fencing. Access at gates should be monitored, an access register should be maintained daily and all fences must be maintained throughout the construction phase to ensure site security.	Pre-construction and construction phases.	The DSS, the cEO and the ECO.	Prior to the commencement of the construction phase and monthly thereafter.	Photographic evidence of all new gates and fenced-off areas should be included in the monthly audit reports. Copies of the access registers must be submitted to the cEO for inclusion in the environmental file.

- The use of razor wire as fencing must be avoided;						
- Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;						
- On completion of the development phase all temporary fences are to be removed;						
- The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

## 5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;</li> <li>- The Contractor must ensure the following:             <ul style="list-style-type: none"> <li>a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river;</li> <li>b. No damage occurs to the riverbed or banks and that the abstraction of water does not entail stream diversion activities; and</li> <li>c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.</li> </ul> </li> <li>- Ensure water conservation is being practiced by:             <ul style="list-style-type: none"> <li>a. Minimising water use during cleaning of equipment;</li> <li>b. Undertaking regular audits of water systems; and</li> <li>c. Including a discussion on water usage and conservation during environmental awareness training.</li> <li>d. The use of grey water is encouraged.</li> </ul> </li> </ul>	The Contractor and the cEO.	All construction staff should receive Environmental Awareness Training. The Contractor and the cEO should monitor and supervise the construction staff to ensure that watercourses are not damaged during construction.	Construction phase.	The cEO and the ECO.	The cEO should be responsible for monitoring on a daily basis and report to the ECO on a monthly basis. Should a watercourse be damaged, the cEO should report it to the ECO immediately.	The cEO should keep photographic evidence of development within proximity to watercourses. The ECO should include the photographic evidence in the monthly audit reports. The cEO should provide the ECO with copies of the attendance registers as proof that construction staff have received Environmental Awareness Training.

## 5.7 Storm and wastewater management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Runoff from the cement/concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager;</li> <li>- All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;</li> <li>- Natural storm water runoff is not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;</li> <li>- Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.</li> </ul>	The Contractor and the cEO.	A Stormwater Management Plan and Waste Management Plan should be compiled and implemented by the Contractor throughout the Construction Phase. The cEO should obtain copies of all waste removal slips for inclusion in the Environmental File.	Construction phase.	The cEO and the ECO.	The cEO should monitor stormwater and wastewater management throughout the duration of the Construction Phase and report to the ECO on a monthly basis.	Copies of the waste removal slips should be included in the ECO's monthly audit reports. The cEO and the ECO should monitor the <b>Contractor's</b> compliance with the Stormwater Management Plan and Waste Management Plan and photographic evidence should be obtained when necessary.

## 5.8 Solid and hazardous waste management

Impact management outcome: Waste is appropriately stored, handled and safely disposed of at a recognised waste facility.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All measures regarding waste management must be undertaken using an integrated waste management approach;</li> <li>- Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;</li> <li>- A suitably positioned and clearly demarcated waste collection site must be identified and provided;</li> <li>- The waste collection site must be maintained in a clean and orderly manner;</li> <li>- Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;</li> <li>- Staff must be trained in waste segregation;</li> <li>- Bins must be emptied regularly;</li> <li>- General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;</li> <li>- Hazardous waste must be disposed of at a registered waste disposal site;</li> <li>- Certificates of safe disposal for general, hazardous and recycled waste must be maintained.</li> </ul>	The Contractor and the CEO.	The Waste Management Plan must be implemented by the Contractor throughout the Construction Phase. The Contractor must ensure that all construction staff wear the correct Personal Protective Equipment (PPE). The CEO should obtain copies of all waste removal slips for inclusion in the Environmental File.	Construction phase.	The CEO and the ECO.	The CEO should monitor waste management throughout the duration of the Construction Phase and report to the ECO on a monthly basis.	Copies of the waste removal slips and certificates should be included in the ECO's monthly audit reports. The CEO and the ECO should monitor the Contractor's compliance with the Waste Management Plan and photographic evidence should be obtained when necessary.

## 5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;</li> <li>- In the event of a spill, prompt action must be taken to clear the polluted or affected areas;</li> <li>- Where possible, no development equipment must traverse any seasonal or permanent wetland</li> <li>- No return flow into the estuaries must be allowed and no disturbance of the Estuarine Functional Zone should occur;</li> <li>- Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;</li> <li>- There must not be any impact on the long-term morphological dynamics of watercourses or estuaries;</li> <li>- Existing crossing points must be favored over the creation of new crossings (including temporary access)</li> <li>- When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: <ul style="list-style-type: none"> <li>a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse</li> <li>b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained;</li> <li>c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable</li> </ul> </li> </ul>	The Contractor.	<p>The Waste Management Plan must be implemented by the Contractor throughout the Construction Phase. Water use authorisation must be obtained prior to the commencement of the Construction Phase. Adherence with the conditions of General Authorisations and/or Water Use Licenses, issued in terms of the National Water Act (NWA, Act No. 36 of 1998, as amended). The cEO and/or the Contractor must notify the ECO of all direct and/or indirect spills of pollutants into the watercourses.</p>	Pre-construction phase and construction phase.	The cEO and the ECO.	Daily monitoring by the cEO and monthly monitoring by the ECO.	Copies of the water use authorisations must be submitted to the ECO and included in the Environmental File. The cEO and ECO must monitor the Contractor's compliance with the conditions of the water use authorisations. Photographic evidence should be included in the monthly audit reports of any direct and/or indirect spills of pollutants into the watercourses. All major non-compliances relating to the pollution of watercourses must be reported to the relevant competent

materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						authorities.
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### 5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>General:</p> <ul style="list-style-type: none"> <li>- Indigenous vegetation which does not interfere with the development must be left undisturbed;</li> <li>- Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;</li> <li>- Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;</li> <li>- Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed;</li> <li>- The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;</li> <li>- Trees felled due to construction must be documented and form part of the Environmental Audit Report;</li> <li>- Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;</li> <li>- Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained;</li> <li>- A daily register must be kept of all relevant details of herbicide usage;</li> <li>- No herbicides must be used in estuaries (watercourses);</li> </ul>	The Contractor and a Botanical Specialist (appointed to undertake Search and Rescue)	<p>No-go areas must be demarcated or fenced-off, and construction staff must be informed of all no-go areas. All relevant permits must be obtained prior to the clearance of vegetation or the pruning of protected trees. An Alien Vegetation Management Plan should be compiled and implemented. All alien vegetation must be disposed of in accordance with the Alien Vegetation Management Plan and disposal slips/certificates should be obtained.</p> <p>A</p>	Pre-construction phase and construction phases.	The cEO and the ECO.	<p>Daily monitoring by the cEO and monthly monitoring by the ECO.</p>	Copies of all relevant plant removal permits must be included in the pre-construction audit report. Photographic evidence of the Floral Search and Rescue must be included in the pre-construction audit report. The Contractor's compliance with the Alien Vegetation Management Plan must be monitored and disposal slips/certificates must be

<ul style="list-style-type: none"> <li>- All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to Section 5.3: Access restricted areas.</li> </ul> <p>Servitude:</p> <ul style="list-style-type: none"> <li>- Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager;</li> <li>- Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the landowner and the EA holder</li> <li>- Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility;</li> <li>- Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280;</li> <li>- Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation;</li> <li>- In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered.</li> </ul>		<p>suitably qualified Botanical Specialist should be appointed to undertake a thorough Search and Rescue prior to the commencement of the construction phase.</p>					<p>included the Environmental File. Record, including GPS coordinates and photographs, must be kept of all trees felled during construction.</p>
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## 5.11 Protection of fauna

Impact management outcome: Minimise disturbance to fauna.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present;</li> <li>- The breeding sites of raptors and other wild bird species must be taken into consideration during the planning of the development programme;</li> <li>- Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present;</li> <li>- Nesting sites on existing parallel lines must be documented;</li> <li>- Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;</li> <li>- Bird guards and diverters must be installed on the new line as per the recommendations of the specialist;</li> <li>- No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;</li> <li>- No deliberate or intentional killing of fauna is allowed;</li> <li>- In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and</li> <li>- No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.</li> </ul>	The Contractor.	No-go areas, including any highly sensitive faunal habitats and no-go areas identified by the Avifaunal Specialist, must be demarcated or fenced-off, and construction staff must be informed of all no-go areas. The conditions of the Ecological Assessment Report and Avifaunal Assessment Report must be adhered to for all relevant phases of development.	The cEO, the ECO and an Avifaunal Specialist must be appointed, where necessary or according to the conditions of the Avifaunal Assessment Report and/or the EA, to undertake the required monitoring.	Daily monitoring by the cEO, monthly monitoring and reporting by the ECO. Avifaunal Specialist monitoring in accordance with the conditions of the EA.	Copies of all relevant faunal permits must be included in the pre-construction audit report. Photographic evidence of the Faunal Search and Rescue must be included in the pre-construction audit report. The ECO, where necessary in consultation with the Avifaunal Specialist, must report on the Contractor's compliance with the recommendations and mitigation measures specified in the Avifaunal Assessment Report.	

## 5.12 Protection of heritage resources

Impact management outcome: Minimise impact to heritage resources.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in Section 5.3: Access restricted areas;</li> <li>- Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;</li> <li>- All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.</li> </ul>	The Contractor.	All identified sensitive heritage resources must be demarcated. Construction staff must be educated on the identification of sensitive archaeological and palaeontological resources. The relevant permits must be obtained prior to the commencement of the construction phase. All mitigation measures stipulated in the Heritage Assessment Report and Palaeontological Assessment Report must be implemented during the specified phases of development.	All phases of development.	The CEO, the ECO and a suitably qualified Archaeological and/or Palaeontological Specialist must be appointed, where necessary, or according to the conditions of the Archaeological and Palaeontological Assessment Reports and the EA, to undertake the required monitoring.	The CEO should monitor excavations and any archaeological and palaeontological resources which are identified must be reported to the ECO. The ECO must report these findings to a suitably qualified specialist and include the findings as well as the specialist's recommendations in the monthly audit reports.	The pre-construction audit report should include copies of all relevant permits as well as photographic evidence of the demarcated sites. The GPS coordinates, specialist's recommendations and photographs of any archaeological or palaeontological findings which are identified during the construction phase must be included in the monthly audit reports. Where necessary, additional permits must be obtained from the relevant competent authorities. The ECO should report on the Contractor's compliance with the relevant mitigation measures.

## 5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;</li> <li>- All unattended open excavations must be adequately fenced or demarcated;</li> <li>- Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;</li> <li>- Ensure structures vulnerable to high winds are secured;</li> <li>- Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.</li> </ul>	The Contractor and the appointed Community Liaison Officer (CLO).	All safety mitigation measures, including those stipulated in the Socio-Economic Assessment Report and the EA, must be implemented during the relevant phases of development. A suitably qualified CLO must be appointed to engage with the public and to maintain a complaints and incidents register. The Contractor must erect signage containing all emergency contact details, including the CLO contact details.	All phases of development.	The CLO and the ECO.	Any complaints or incidents, identified by or reported to the CLO should be submitted to the ECO as they are identified/received.	The CLO must compile and maintain an incident and complaints register. This should be submitted to the ECO on a monthly basis for inclusion in the monthly audit reports. Photographic evidence of the emergency contact details signage must be included in the relevant audit report(s). The ECO must inspect the demarcation of all identified hazardous areas within the site, including open excavations, and include photographic evidence in the audit report(s).

## 5.14 Sanitation

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Mobile chemical toilets are installed onsite if no other ablution facilities are available;</li> <li>- The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;</li> <li>- Where mobile chemical toilets are required, the following must be ensured: <ul style="list-style-type: none"> <li>a) Toilets are located no closer than 100 m to any watercourse or water body;</li> <li>b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause;</li> <li>c) No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr;</li> <li>d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out;</li> <li>e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;</li> <li>f) Toilets are serviced regularly, and the ECO must inspect toilets to ensure compliance to health standards;</li> </ul> </li> <li>- A copy of the waste disposal certificates must be maintained.</li> </ul>	The Contractor.	The implementation and management of sanitation facilities must be in accordance with the conditions of this EMPr, the conditions of the EA and the Waste Management Plan.	Construction Phase.	The ECO.	The ECO should monitor the maintenance of the sanitation facilities for inclusion in the monthly audit reports.	Copies of the waste disposal certificates must be submitted to the ECO for inclusion in the audit reports. The ECO should monitor the <b>Contractor's</b> compliance with the Waste Management Plan as well as the general levels of sanitation on the site.

## 5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Undertake environmentally-friendly pest control in the camp area;</li> <li>- Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS;</li> <li>- The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area;</li> <li>- Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;</li> <li>- Free condoms must be made available to all staff on site at central points;</li> <li>- Medical support must be made available;</li> <li>- Provide access to Voluntary HIV Testing and Counselling Services.</li> </ul>	The Contractor.	The Contractor should ensure that information posters are placed within the site camp and provision should be made for medical guidance/support, where necessary.	Construction phase.	The ECO.	The ECO should report on the measures which have been implemented to prevent disease on a monthly basis.	The ECO should monitor the compliance with these management actions through verbal discussions with the Contractor, construction staff and photographic evidence of information posters.

### 5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;</li> <li>- The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;</li> <li>- All staff must be made aware of emergency procedures as part of environmental awareness training;</li> <li>- The relevant local authority must be made aware of a fire as soon as it starts;</li> <li>- In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section 5.17).</li> </ul>	The Contractor.	An Emergency Response Action Plan (ERAP) should be compiled during the pre-construction phase and implemented throughout the construction phase, as well as during the operational phase. Emergency contact details should be clearly displayed at relevant locations onsite and the details should include all relevant emergency contacts details which are relevant to the area, which must include but not be limited to the Fire Protection Agency (FPA), the South African Police Service (SAPS), healthcare facilities (including ambulance), snake/scorpion/spider bite hotline.	All phases of development.	The ECO.	Whenever required.	The ECO should review the ERAP prior to the commencement of the construction phase, monitor the implementation of the conditions and mitigation relating to emergency procedures, including the availability of emergency contact details within the site, and ensure that the correct procedures and relevant individuals and organisations are contacted if/when an emergency occurs. The Contractor should advise the ECO of any emergencies which occur onsite, together with a record of action taken, within twenty-four (24) hours of the emergency occurring. The ECO must include any emergencies and procedures followed in the relevant audit report(s) and include photographic evidence, where available.

## 5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;</li> <li>- All hazardous substances must be stored in suitable containers as defined in the Method Statement;</li> <li>- Containers must be clearly marked to indicate contents, quantities and safety requirements;</li> <li>- All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill/leak from the stored containers;</li> <li>- Bunded areas to be suitably lined with a SABS approved liner;</li> <li>- An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;</li> <li>- All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);</li> <li>- All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;</li> <li>- Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;</li> <li>- The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;</li> <li>- The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);</li> <li>- The floor of the bund must be sloped, draining to an oil separator;</li> <li>- Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are</li> </ul>	The Contractor and the cEO.	The Waste Management Plan and Stormwater Management Plan must be implemented by the Contractor throughout the Construction Phase. The Contractor must ensure that all construction staff wear the necessary PPE. The cEO should obtain copies of all waste removal slips for inclusion in the Environmental File. Method Statements should be submitted for approval, where required.	Construction phase.	The cEO and the ECO.	The cEO should monitor waste management and stormwater management throughout the duration of the Construction Phase and report to the ECO on a monthly basis or within 24 hours of an emergency.	The ECO must monitor the <b>Contractor's</b> compliance with the all relevant conditions in the environment al documents and all Method Statements, the Stormwater Management Plan and the Waste Management Plan. In addition, the ECO should check whether spill kits are available within the construction site. Copies

contained; <ul style="list-style-type: none"><li>- All empty externally dirty drums must be stored on a drip tray or within a bunded area;</li><li>- No unauthorised access into the hazardous substances storage areas must be permitted;</li><li>- No smoking must be allowed within the vicinity of the hazardous storage areas;</li><li>- Adequate fire-fighting equipment must be made available at all hazardous storage areas;</li><li>- Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used;</li><li>- An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;</li><li>- The responsible operator must have the required training to make use of the spill kit in emergency situations;</li><li>- An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;</li><li>- In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and wastewater management and 5.8 for solid and hazardous waste management.</li></ul>							of hazardous waste disposal certificates must be included in the monthly audit reports.
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## 5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;</li> <li>- During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;</li> <li>- Leaking equipment must be repaired immediately or be removed from site to facilitate repair;</li> <li>- Workshop areas must be monitored for oil and fuel spills;</li> <li>- Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;</li> <li>- The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;</li> <li>- Water drainage from the workshop must be contained and managed in accordance Section 5.7: storm and wastewater management.</li> </ul>	The Contractor and cEO.	The Waste Management Plan and Stormwater Management Plan must be implemented by the Contractor throughout the Construction Phase. The cEO should obtain copies of all waste removal slips for inclusion in the Environmental File. Method Statements should be submitted for approval, where required. The ERAP should be implemented throughout the construction phase. Emergency contact details should be clearly displayed at relevant locations onsite.	Construction phase.	The cEO and the ECO.	The cEO should monitor waste management and stormwater management throughout the duration of the Construction Phase and report to the ECO on a monthly basis or within 24 hours of an emergency, such as an accidental spill.	The ECO must monitor the Contractor's compliance with the all relevant conditions in the environmental documents and all Method Statements, the Stormwater Management Plan and the Waste Management Plan. In addition, the ECO should check whether spill kits and drip trays are available within the construction site and adequately used when necessary. Copies of all waste disposal certificates must be submitted to the ECO for inclusion in the audit reports.

## 5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.						
Impact Management Actions		Implementation		Monitoring		
Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance	
<ul style="list-style-type: none"> <li>- Concrete mixing must be carried out on an impermeable surface;</li> <li>- Batching plants areas must be fitted with a containment facility for the collection of cement laden water.</li> <li>- Dirty water from the batching plant must be contained to prevent soil and groundwater contamination</li> <li>- Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;</li> <li>- A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;</li> <li>- Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility;</li> <li>- Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;</li> <li>- Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions)</li> <li>- Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility;</li> <li>- Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.</li> </ul>	The Contractor and the CEO.	The Contractor should erect temporary fencing around the batching plant(s) during the construction phase. The Waste Management Plan and Stormwater Management Plan must be implemented by the Contractor throughout the Construction Phase. The CEO should obtain copies of all waste removal slips for inclusion in the Environmental File. Method Statements should be submitted for approval, where required. The Contractor must ensure that all construction staff have the necessary PPE, including dust masks and protective eyewear. and dust abatement measures must be applied during periods of excessive dust or activities which produce excessive dust.	Construction phase.	The CEO, the CEO and the CLO.	The CEO should monitor the batching plant(s) daily and report to the ECO should the mitigation measures not suffice. The ECO should recommend additional mitigation measures if/when required.	The ECO must monitor the Contractor's compliance with the Waste Management Plan and the Stormwater Management Plan. The ECO should provide photographic evidence of the necessary temporary fencing which is erected around the batching plants(s). In addition, the ECO should obtain proof that excess materials have been disposed of at a registered disposal facility. Should the CLO receive complaints from the public relating to dust emissions, the ECO should be notified immediately.

## 5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;</li> <li>- Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible;</li> <li>- Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;</li> <li>- During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;</li> <li>- Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;</li> <li>- Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;</li> <li>- Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;</li> <li>- Straw stabilisation must be applied at a rate of one bale/10 m<sup>2</sup> and harrowed into the top 100 mm of top material, for all completed earthworks;</li> <li>- For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.</li> </ul>	The Contractor.	The Contractor must ensure that the construction staff wear the necessary PPE, including dust masks and protective eyewear. Dust abatement measures must be applied during periods of excessive dust or activities which produce excessive dust. Clear signage should be erected to indicate the speed limits of 40 km/h along dust roads and 20 km/h in unconsolidated and non-vegetated areas. Fines should be issued to any individuals that do not adhere to the speed limits.	Construction phase.	The ECO, the cEO and the CLO.	The cEO should monitor the condition of the site daily and the ECO should report on the dust emissions in the monthly audit reports. The CLO must report any complaints to the ECO immediately.	Compliance with the mitigation measures to avoid excessive dust emissions must be audited in the ECO's monthly audit reports and, where necessary, the ECO must recommend additional mitigation measures to avoid excessive dust generation. Should the CLO receive complaints from the public relating to dust emissions, the ECO should be notified immediately. Photographic evidence of the speed limit signage should be included in the monthly audit reports.

## 5.21 Blasting

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Any blasting activity must be conducted by a suitably licensed blasting contractor; and - Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	The Contractor/ a suitably licensed Blasting Contractor and the CLO.	The Contractor must notify the CLO at least 48 hours prior to blasting activities taking place. The CLO must notify the surrounding landowners, emergency services and construction staff of the proposed blasting activities at least 24 hours prior to blasting activities taking place. The Contractor should submit a Method Statement to the ECO for approval prior to blasting activities taking place. The Contractor must take the necessary precautions to prevent the generation of excessive dust emissions. The size of explosive charges used for blasting (if required) should be optimised to balance breaking capacity against minimising any vibration impact and fly-rock. Blasting must be restricted to periods of calm wind conditions to minimise the potential for dust dispersion. Dust abatement techniques must be used before and during blasting activities. The ERAP should include specific emergency protocols relating to blasting activities and all construction workers must be made aware of these protocols prior to blasting activities taking place.	Construction phase.	The ECO, the CLO and the cEO.	If/when required.	Compliance with the mitigation measures to avoid excessive dust emissions must be audited in the ECO's monthly audit reports and, where necessary, the ECO must recommend additional mitigation measures to avoid excessive dust generation during blasting activities. Should the CLO receive complaints from the public relating to the blasting activities, the ECO should be notified immediately. The CLO must submit proof of the required blasting notifications to the ECO for inclusion in the monthly audit report(s). Photographic evidence of the blasting sites should be included in the monthly audit reports. The cEO must obtain verbal proof that the construction staff have been notified of these emergency protocols.

## 5.22 Noise

Impact Management outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- The Contractor must keep noise level within acceptable limits. Restrict the use of sound amplification equipment for communication and emergency only;</li> <li>- All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;</li> <li>- Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;</li> <li>- Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.</li> </ul>	The Contractor.	<p>The Contractor must ensure that no construction activities occur outside of the authorised [in the EA] timeframes. The Contractor should take precautions to minimise noise generated on site (e.g. install and maintain silencers on machinery where necessary). No amplified music must be allowed on site. The Contractor must not use sound amplification equipment on site unless in emergency situations. Compliance with the appropriate legislation with respect to noise is mandatory. The Contractor must be familiar with, and adhere to, any local by-laws and regulations regarding the generation of noise. All noise-making equipment must be turned off when not in use. Machinery should be serviced regularly to avoid unnecessary noise.</p>	Construction phase.	The ECO, the cEO and the CLO.	<p>The cEO should monitor the noise levels onsite daily and the ECO should report on the noise levels in the monthly audit reports. The CLO must report any complaints to the ECO immediately.</p>	<p>Compliance with the mitigation measures to avoid excessive dust emissions must be audited in the ECO's monthly audit reports and, where necessary, the ECO must recommend additional mitigation measures to avoid excessive dust generation. Should the CLO receive complaints from the public relating to dust emissions, the ECO should be notified immediately.</p> <p>Photographic evidence of the speed limit signage should be included in the monthly audit reports.</p>

## 5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Designate smoking areas where the fire hazard could be regarded as insignificant;</li> <li>- Firefighting equipment must be available on all vehicles located on site;</li> <li>- The local Fire Protection Agency (FPA) must be informed of construction activities;</li> <li>- Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;</li> <li>- Two way swap of contact details between ECO and FPA.</li> </ul>	The Contractor and the ECO.	Designated smoking areas must be created, and the relevant signage must be in place to indicate these areas. Firefighting equipment must be available in all vehicles as well as at the site camp. Fire extinguishers must be serviced regularly to ensure that they are in good working order. The ERAP must include fire prevention and firefighting procedures. Emergency contact details should be clearly displayed at relevant locations onsite.	Construction phase and Operational phase.	The CEO and the ECO.	Daily.	The ECO should review the ERAP prior to the commencement of the construction phase, monitor the implementation of the conditions and mitigation relating to emergency procedures, including the availability of emergency contact details within the site, and ensure that the correct procedures and relevant individuals and organisations are contacted if/when an emergency occurs. The Contractor should advise the ECO of any emergencies which occur onsite, together with a record of action taken, within twenty-four (24) hours of the emergency occurring. The ECO must include any emergencies and procedures followed in the relevant audit report(s) and include photographic evidence, where available. The ECO must liaise with the relevant FPA regarding the proposed fire prevention measures in the ERAP and recommend the inclusion of any additional measures suggested by the FPA into the ERAP. The CEO should provide the ECO with copies of the attendance registers as proof that construction staff have received Environmental Awareness Training.

## 5.24 Stockpiling and stockpile areas

Impact management outcome: Erosion and sedimentation as a result of stockpiling are reduced.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses and water bodies;</li> <li>- All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;</li> <li>- Topsoil stockpiles must not exceed 2 m in height (1.5 m in height stipulated in the EIR);</li> <li>- During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);</li> <li>- Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.</li> </ul>	The Contractor and the cEO.	<p>The Contractor must stockpile and store material in accordance with the EA, the EMPr and the Stormwater Management Plan. The cEO must monitor the construction areas for signs of erosion and the ECO and the Contractor should be informed at the first signs of erosion to ensure that additional mitigation methods are recommended. The Alien Vegetation Management Plan should be implemented, and all alien vegetation must be disposed of in accordance with the Alien Vegetation Management Plan and disposal slips/certificates should be obtained. Any stockpiling of gravel, cut, fill or any other material, including spoil, must only be in areas which have been approved by the ECO within the defined working area. The Contractor should ensure that the material does not wash or blow away. Stockpiles of topsoil must not be covered with plastic. The Contractor must not stockpile any material within 20 <b>m of any “no-go” areas</b> and topsoil stockpiles should not exceed 1.5 m in height, as per the mitigation measures stipulated in the EIR.</p>	Construction phase.	The cEO and ECO.	Daily (cEO) and monthly reporting (ECO).	The cEO and ECO should monitor the stockpiling of materials. The ECO must report on the Contractor's compliance with the conditions and recommendations of the EA, the EMPr, the Stormwater Management Plan and the Alien Vegetation Management Plan. Should the recommended erosion and sedimentation mitigation measures not adequately prevent erosion and the sedimentation of watercourses, the ECO should recommend addition mitigation measures and rehabilitation/remedial measures (for areas which have been eroded or where sedimentation occurs).

## 5.25 Finalising tower positions

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- No vegetation clearing must occur during survey and pegging operations;</li> <li>- No new access roads must be developed to facilitate access for survey and pegging purposes;</li> <li>- Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas;</li> <li>- The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.</li> </ul>	The Contractor, a suitably qualified Botanical Specialist and <b>the Developer's Site Supervisor (DSS)</b>	A suitably qualified Botanical Specialist must be appointed to undertake micro-siting of the layout, including the tower positions, within the approved areas prior to the finalisation of the layout. The final layout must be demarcated. Vegetation clearance must not occur prior to the demarcation of the final layout and vegetation clearance must not occur outside of the approved and demarcated areas. The relevant permits, such as plant removal permits, must be obtained prior to the clearance of vegetation.	Pre-construction phase and construction phase.	The ECO and the cEO.	Pre-construction demarcation and throughout the construction phase.	The ECO should approve the final development layout, in accordance with the EA and specialist input. The cEO should ensure that no vegetation clearing takes place during the demarcation process. Should vegetation clearing take place during the process of demarcating the layout, the cEO must report it to the ECO immediately. The ECO should report on the Contractor's compliance with the conditions, recommendations and mitigation measures relating to vegetation clearance.

### 5.26 Excavation and Installation of foundations

Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal site, if not used for backfilling purposes;</li> <li>- Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;</li> <li>- Management of equipment for excavation purposes must be undertaken in accordance with Section 5.18: Workshop equipment maintenance and storage; and</li> <li>- Hazardous substances spills from equipment must be managed in accordance with Section 5.17: Hazardous substances.</li> <li>- Batching of cement to be undertaken in accordance with Section 5.19: Batching plants;</li> <li>- Residual cement must be disposed of in accordance with Section 5.8: Solid and hazardous waste management.</li> </ul>	The Contractor and Construction Staff.	<p>Construction staff must be informed before construction starts on the possible types of heritage sites and cultural material which they could encounter and the procedures to follow if they find such sites. Should concentrations of palaeontological and/or archaeological heritage material and human remains be uncovered during construction, all work must cease immediately and it must be reported to a suitably qualified Archaeological/ Palaeontological Specialist as well as the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/excavation can be undertaken.</p> <p>Excess spoil must be disposed of in accordance with the Waste Management Plan. Topsoil which is going to be used for landscaping and rehabilitation purposes must not be mixed with subsoil, foreign material must be removed from topsoil, topsoil must not be compacted, and this soil should be left exposed for the minimum time to reduce the risk of erosion and the growth of alien vegetation. Alien vegetation must be removed in accordance with the Alien Vegetation Management Plan.</p>	Construction phase.	The ECO and a suitably qualified Archaeological/ Palaeontological Specialist.	When required during the Construction Phase.	<p>Copies of the waste disposal certificates must be submitted to the ECO for inclusion in the audit reports. The ECO should monitor the <b>Contractor's</b> compliance with the relevant conditions to excavation and installation, the Waste Management Plan and the Alien Vegetation Management Plan. The ECO should assist the Contractor in contacting a suitably qualified Archaeological/ Palaeontological Specialist, if/when required.</p>

## 5.27 Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Prior to erection, assembled towers and tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation;</li> <li>- In sensitive areas, tower assembly must take place off-site or away from sensitive positions;</li> <li>- The crane used for tower assembly must be operated in a manner which minimises impact to the environment;</li> <li>- The number of crane trips to each site must be minimised;</li> <li>- Wheeled cranes must be utilised in preference to tracked cranes;</li> <li>- Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact;</li> <li>- Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads;</li> <li>- Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing;</li> <li>- No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor;</li> <li>- Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites;</li> <li>- Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil;</li> <li>- Excavated slopes must be no greater than 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes;</li> <li>- Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed;</li> <li>- Only existing disturbed areas are utilised as spoil areas;</li> </ul>	The Contractor.	Where practical and feasible, connecting lines should be buried. For overhead lines, the Contractor should comply with the conditions of this EMPr, the Final EIR, the Specialist Reports and the EA.	Construction phase.	The CEO and ECO.	Daily and monthly.	Either the CEO or the ECO should be present during the assembly and erecting of towers to ensure that the management actions are implemented and to provide photographic evidence into the ECO's monthly audit reports.

<ul style="list-style-type: none"><li>- Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum;</li><li>- Surface water runoff is appropriately channeled through or around spoil areas;</li><li>- During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that;</li><li>- The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation;</li><li>- The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.</li></ul>						
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## 5.28 Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid Access restricted areas and other sensitive areas;</li> <li>- The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks;</li> <li>- Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances;</li> <li>- In the case of the development of overhead transmission and distribution infrastructure, a one metre "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and hand held implements, with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used;</li> <li>- Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter;</li> <li>- Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing;</li> <li>- No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines, fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing;</li> <li>- Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 workdays minimum), in writing, must be provided to the landowner;</li> </ul>	The Contractor.	Where practical and feasible, connecting lines should be buried. For overhead lines, the Contractor should comply with the conditions of this EMPr, the Final EIR, the Specialist Reports and the EA.	Construction phase.	The cEO and ECO.	Daily and monthly.	Either the cEO or the ECO should be present during the stringing operations to ensure that the management actions are implemented and to provide photographic evidence into the ECO's monthly audit reports.

- Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.						
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## 5.29 Socio-economic

Impact management outcome: Socio-economic development is enhanced.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Develop and implement communication strategies to facilitate public participation;</li> <li>- Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;</li> <li>- Sustain continuous communication and liaison with neighboring owners and residents</li> <li>- Create work and training opportunities for local stakeholders; and</li> <li>- Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.</li> </ul>	The Contractor, the CLO and the DSS.	All mitigation measures stipulated in the Socio-Economic Assessment Report and the EA, must be implemented during the relevant phases of development. A suitably qualified CLO must be appointed to engage with the public and to maintain a complaints and incidents register. The Contractor must erect signage containing all emergency contact details, including the CLO contact details.	All phases of development.	The CLO and the ECO.	Any complaints or incidents, identified by or reported to the CLO should be submitted to the ECO as they are identified/received.	The CLO must compile and maintain an incident and complaints register. This should be submitted to the ECO on a monthly basis for inclusion in the monthly audit reports.

## 5.30 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in sections 5.17: management of hazardous substances and 5.18 workshop, equipment maintenance and storage;</li> <li>- Hazardous storage areas must be well ventilated;</li> <li>- Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;</li> <li>- Emergency and contact details displayed must be displayed;</li> <li>- Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;</li> <li>- Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;</li> <li>- Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;</li> <li>- Structures vulnerable to high winds must be secured;</li> <li>- Wind and dust mitigation must be implemented;</li> <li>- Cement and materials stores must have been secured;</li> <li>- Toilets must have been emptied and secured;</li> <li>- Refuse bins must have been emptied and secured;</li> <li>- Drip trays must have been emptied and secured.</li> </ul>	The Contractor, the CLO and DSS.	The conditions of this EMPr, the EA and any relevant conditions in the specialist reports relating to site closure must be implemented during site closure. The CLO must notify the surrounding landowners of site closure 24 hours in advance, if possible. The Contractor must ensure that emergency contact details are displayed at the entrance to the site during site closure.	All phases.	The ECO, the CLO and the <b>Developer's</b> Project Manager (DPM).	Whenever temporary closure of the site occurs.	The ECO must inspect the site during site closure to ensure that all relevant mitigation measures have been implemented and that emergency contact details are available at the entrance to the site. The CLO and the ECO should be available should the public have queries/complaints/concerns relating to the temporary site closure.

### 5.31 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<ul style="list-style-type: none"> <li>- All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided;</li> <li>- All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983</li> <li>- All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;</li> <li>- Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;</li> <li>- Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;</li> <li>- Rehabilitation of tower sites and access roads outside of farmland;</li> <li>- Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;</li> <li>- Stockpiled topsoil must be used for rehabilitation (refer to Section 5.24: Stockpiling and stockpiled areas);</li> <li>- Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;</li> <li>- Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;</li> <li>- Subsoil must be ripped before topsoil is placed;</li> <li>- The rehabilitation must be timed so that rehabilitation can take</li> </ul>	The Contractor, Botanical Specialist and the DSS	During landscaping and rehabilitation, the Contractor must ensure compliance with all relevant management plans as well as compliance with the conditions of this EMPr, the EA and all specialist reports. Where necessary, a suitably qualified Botanical Specialist and/or Horticulturist must provide input into the landscaping and rehabilitation of the site.	Construction phase, post-construction phase and the operational phase.	The ECO.	Monthly.	The ECO should monitor the site landscaping and rehabilitation against all required conditions. Photographic evidence should be provided, where necessary. Additional mitigation measures for rehabilitation should be recommended if rehabilitation is undertaken according to all requirements but it is not successful.

place at the optimal time for vegetation establishment; - Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled ; - Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; - Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. - Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						
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## 6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of regulation 26(h) of the EIA Regulations.

## PART B: SECTION 2

## 7 SITE SPECIFIC INFORMATION AND DECLARATION

## 7.1 Sub-section 1: contact details and description of the project

## 7.1.1 Details of the applicant:

Name of applicant: Albany Wind Power (Pty) Ltd.

Tel No: +27 (0)41 506 4900

Fax No: N/A

Postal Address: Waterfront Business Park, Building 5 – Ground Floor, 1204 Humerail Road,  
Humerail, 6001.

Physical Address: As above.

## 7.1.2 Details and expertise of the EAP:

Name of environmental consultancy: Coastal and Environmental Services (Pty) Ltd.

Name of EAP: Dr Alan Carter

Tel No: +27 (0)43 726 7809

Fax No: +27 (0)86 410 7822

E-mail address: [a.carter@cesnet.co.za](mailto:a.carter@cesnet.co.za)

Expertise of the EAP (Curriculum Vitae included): Please see Appendix 2.

7.1.3 Project name: ALBANY WIND ENERGY FACILITY NEAR MAKHANDA (GRAHAMSTOWN),  
EASTERN CAPE PROVINCE (DEFF Reference Number: 14/12/16/3/3/2/1131)

7.1.4 Description of the project: Albany Wind Power is proposing the development of the Albany WEF which will consist of up to sixty-six (66) turbines, each capable of generating up to six (6) Mega Watts (MW) of power. The proposed maximum power output of the facility is up to 297 MW. The proposed turbine footprints and associated facility infrastructure (internal access roads, substations, construction compound, batching plant and operations building) will cover an area of approximately 67 ha depending on final layout design should the project proceed to the construction phase.

In summary, the proposed Albany WEF includes (please see Figure 1):

- Up to sixty-six (66) turbines with a generation capacity of up to 6 MW each with a maximum nominal power output of up to 297 MW;
- The proposed WEF will include turbines with a rotor diameter of up to 170 m, a hub height of up to 130 m and blade length of up to 85 m;
- Internal access roads of between 8 m (during operation) and 14 m (during construction, to be partly rehabilitated) wide to each turbine;

- ▲ Existing roads will be used as far as possible. However, where required, internal access roads will be constructed between the turbines;
- ▲ Foundations with an area of up to 550 m<sup>2</sup> for each turbine;
- ▲ A primary laydown area of approximately 3 900 m<sup>2</sup> adjacent to each turbine;
- ▲ Temporary infrastructure including a site camp and a laydown area of approximately 30 m<sup>2</sup> per turbine (all to be rehabilitated post construction);
- ▲ A 25 m<sup>2</sup> area for switchgear and/or transformer at each turbine;
- ▲ Medium voltage cabling between turbines and the switching stations, to be laid underground where technically feasible;
- ▲ An area of up to 100 000 m<sup>2</sup> for the substation, battery storage and site office area; and
- ▲ Batching plant, temporary laydown area and construction compound area of approximately 90 000 m<sup>2</sup>.

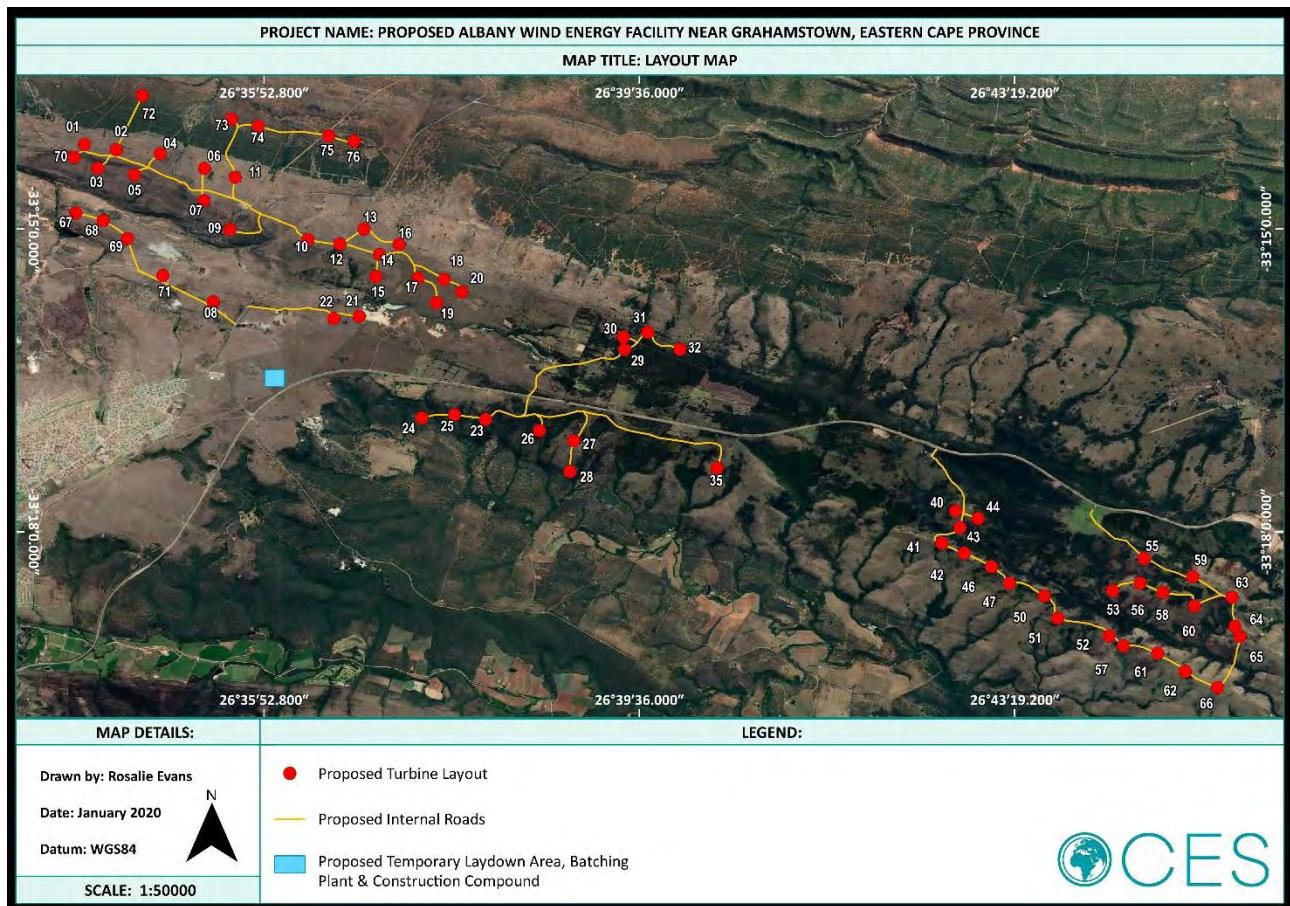


Figure 1: Albany WEF Layout Map.

The turbine footprints and associated facility infrastructure (internal access roads, substations, construction compound, batching plant and operations building) will potentially cover total combined area of approximately 105 ha during the construction phase. This footprint will be reduced through rehabilitation, resulting in a maximum final total combined footprint of approximately 67 ha.

The footprint of the facility is calculated as follows:

Table 1: Construction Footprint of the Albany WEF.

FACILITY COMPONENT	<u>CONSTRUCTION FOOTPRINT</u>	<u>FINAL REHABILITATION</u>	<u>AFTER</u>
		<u>TOTAL</u>	<u>TOTAL</u>
Laydown Area			

(crane hardstand)	$3\ 900\ m^2 \times 66\ \text{turbines} = 257\ 400\ m^2$ which equates to 25.74 ha	$3\ 900\ m^2 \times 66\ \text{turbines} = 257\ 400\ m^2$ which equates to 25.74 ha
Temporary Laydown Area, Batching Plant and Construction Compound	<u>TOTAL</u> 90 000 m <sup>2</sup> which equates to 9.00 ha	<u>TOTAL</u> 0 m <sup>2</sup> which equates to 0.00 ha
Turbine Foundation	<u>TOTAL</u> Up to 550 m <sup>2</sup> x 66 turbines = 36 300 m <sup>2</sup> which equates to 3.63 ha	<u>TOTAL</u> 550 m <sup>2</sup> x 66 turbines = 36 300 m <sup>2</sup> which equates to 3.63 ha
Temporary Infrastructure (including a site camp and a laydown area)	<u>TOTAL</u> $30\ m^2 \times 66 = 1\ 980\ m^2$ which equates to 0.20 ha	<u>TOTAL</u> $0\ m^2 \times 66 = 0\ m^2$ which equates to 0.00 ha
Switchgear and/or Transformer	<u>TOTAL</u> $25\ m^2 \times 66 = 1\ 650\ m^2$ which equates to 0.17 ha	<u>TOTAL</u> $25\ m^2 \times 66 = 1\ 650\ m^2$ which equates to 0.17 ha
New Internal Access Roads (14 m construction, rehabilitated to 8 m during operation)	<u>TOTAL</u> $36\ 000\ m \times 14\ m = 504\ 000\ m^2$ which equates to 50.4 ha	<u>TOTAL</u> $36\ 000\ m \times 8\ m = 288\ 000\ m^2$ which equates to 28.8 ha
Upgraded Existing Internal Access Roads	<u>TOTAL</u> $11\ 000\ m \times 14\ m = 154\ 000\ m^2$ which equates to 15.4 ha	<u>TOTAL</u> $11\ 000\ m \times 8\ m = 88\ 000\ m^2$ which equates to 8.8 ha
<b>TOTAL FOOTPRINT:</b>	104.54 ha of clearing needed for the <u>construction phase</u> of the development of the proposed Albany WEF	67.14 ha of clearing remaining during the post-construction <u>operational phase</u> (after rehabilitation)

Albany Wind Power plan to develop the following grid infrastructure (please see Figure 2):

- Option 1 (preferred) - An up to 23 000 m<sup>2</sup> Independent Power Producer (IPP) Substation (MV/132 KV) which will include, battery storage and site office area, situated in the middle of the site.
  - The grid connection will be a Line-In-Line-Out (LILO) on the Pembroke-Albany 132 KV line.
- Option 2 - Direct connection, via the same corridor, to the potential 132 KV substation, adjacent to the Eskom Albany 132 KV substation, up to 23 000 m<sup>2</sup>, which will include battery storage and a site office area situated in the middle of the site.
- Two (2) collector substations, each 10 000 m<sup>2</sup>, (Collector Substation West and Collector Substation East) will be constructed.
- All turbines will connect, via underground MV lines, either directly to the IPP substation or to a collector. Each collector will in turn connect to the IPP substation via MV or 132 KV overhead line(s) within the grid corridor.
- Grid corridor width is 500 m wide to allow for manoeuvrability for the final line position within the corridor.
- The corridor from Collector Substation West to the main corridor is 170 m in width with a flanking area to accommodate for the line turn in.

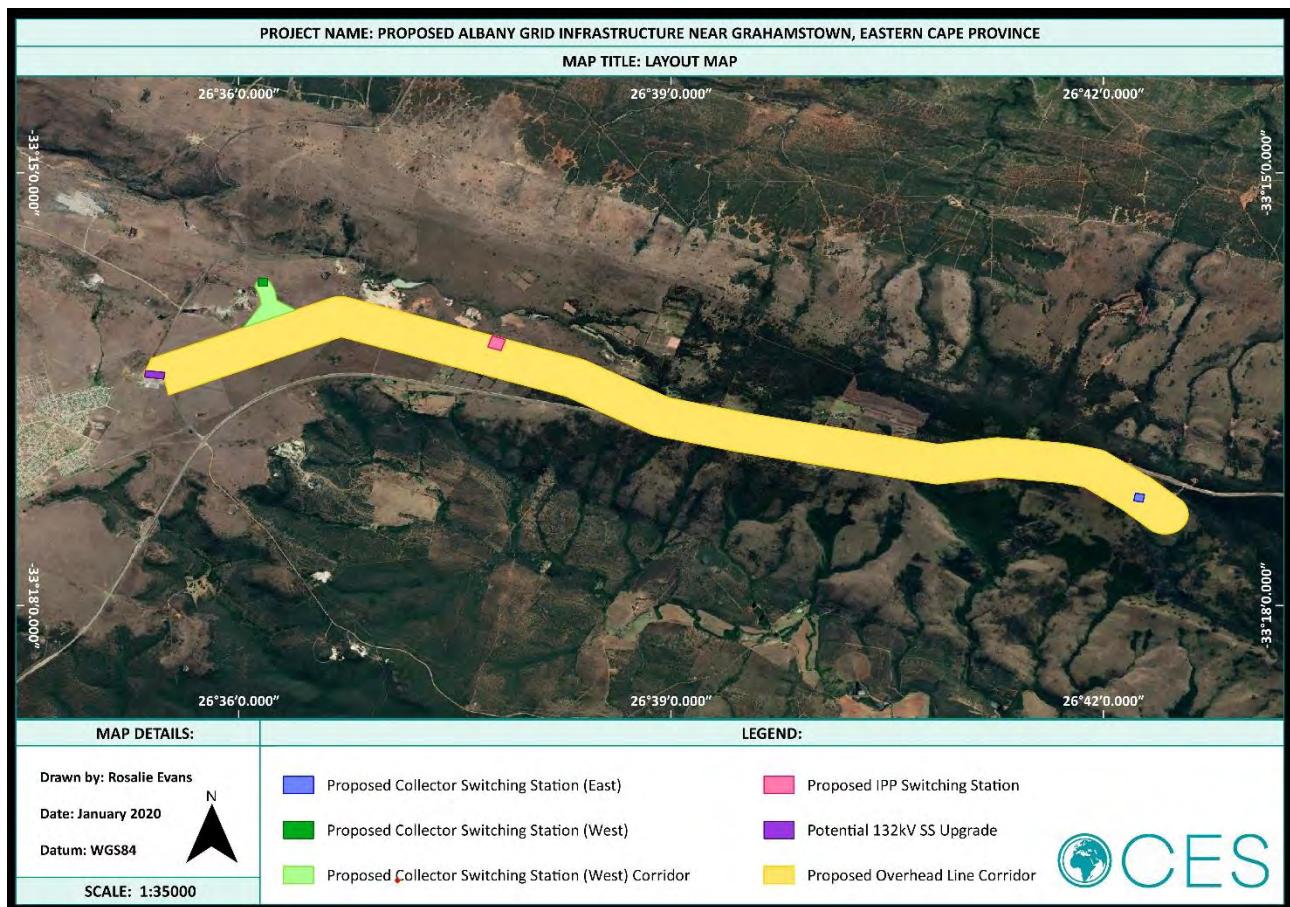


Figure 2: Albany Grid Connection Layout Map.

The grid connection footprint will potentially cover a total combined area of approximately 4.6 ha during the construction phase. This footprint will be reduced through rehabilitation, resulting in a maximum final total combined footprint of approximately 4.3 ha. The corridor, in which the powerline is proposed, covers 34 ha in total. This corridor does not need to be cleared, but needs to be trimmed to ensure that the line is accessible, and is only required for maintenance services. In order to better picture the facility a combined map has been included (Figure 3).

The footprint of the grid connection facility is calculated as follows:

Table 2: Proposed Albany Grid Infrastructure Development Footprint.

INFRASTRUCTURE COMPONENT	CONSTRUCTION FOOTPRINT	FINAL FOOTPRINT AFTER REHABILITATION
Option 1: IPP Switching Station (battery storage and site office)	<u>TOTAL</u> 23 000 m <sup>2</sup> <i>which equates to 2.3 ha</i>	<u>TOTAL</u> 23 000 m <sup>2</sup> <i>which equates to 2.3 ha</i>
Option 2: Direct connection (battery storage and site office)	<u>TOTAL</u> 10 000 m <sup>2</sup> x 2 = 20 000 m <sup>2</sup> <i>which equates to 2 ha</i>	<u>TOTAL</u> 10 000 m <sup>2</sup> x 2 = 20 000 m <sup>2</sup> <i>which equates to 2 ha</i>
Two (2) Collector Switching Stations (west and east)	<u>TOTAL</u> 11 000 m/250 m = 44 monopoles 44 x 72 m <sup>2</sup> = 3 168 m <sup>2</sup> <i>which equates to 0.3168 ha</i>	<u>TOTAL</u> 11 000 m/250 m = 44 monopoles 44 x 2 m <sup>2</sup> = 88 m <sup>2</sup> <i>which equates to 0.0088 ha</i>
Collector Switching Station	<u>TOTAL</u>	<u>TOTAL</u>

Collector Corridor (West)	500 m/250 m = 2 monopoles 2 x 72 m <sup>2</sup> = 144 m <sup>2</sup> <i>which equates to 0.0144 ha</i>	500 m/250 m = 2 monopoles 2 x 2 m <sup>2</sup> = 4 m <sup>2</sup> <i>which equates to 0.0004 ha</i>
TOTAL FOOTPRINT:	4.63 ha of clearing needed for the <u>construction phase</u> of the development of the proposed Albany Grid Infrastructure	4.31 ha of clearing remaining during the post-construction <u>operational phase</u> (after rehabilitation)

Table 3: Proposed Albany Grid Maintenance Servitudes (as per Eskom Requirements).

INFRASTRUCTURE COMPONENT	CORRIDOR REQUIREMENTS
Overhead Line (total length and width of line servitude)	<p><u>TOTAL SERVITUDE</u> 11 000 m x 31 m = 341 000 m<sup>2</sup> <i>which equates to 34.1 ha overhead line servitude area.</i></p> <p><u>TOTAL MAINTENANCE TRACKS</u> (within the servitude) 11 000 m x 4 m = 44 000 m<sup>2</sup> <i>which equates to 4.4 ha maintenance tracks.</i></p>
Collector Switching Station Collector Corridor (West)	<p><u>TOTAL SERVITUDE</u> 500 m x 31 m = 15 500 m<sup>2</sup> <i>which equates to 1.55 ha overhead line servitude area.</i></p> <p><u>TOTAL MAINTENANCE TRACKS</u> (within the servitude) 500 m x 4 m = 2 000 m<sup>2</sup> <i>which equates to 0.2 ha maintenance tracks.</i></p>

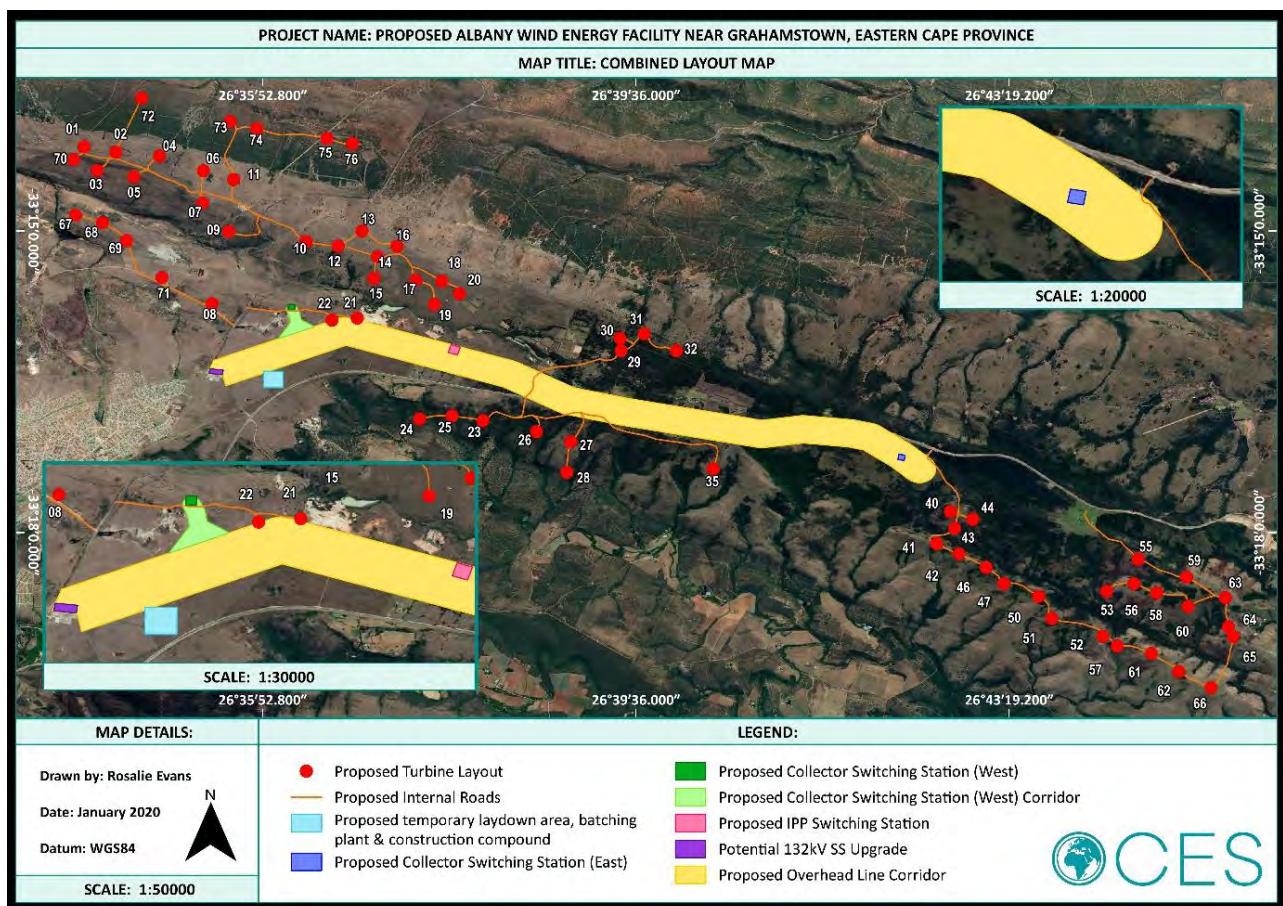


Figure 3: Layout Map of the Proposed Albany WEF and Grid Infrastructure.

## 7.1.5 Project location:

FARM NAME	SG DIGIT NUMBER	FARM NUMBER/PORTION	AREA (HA)
(no name)	C00200000000022300002	Farm 223, Remaining Extent & Portion 2	84.5
The Orchards	C00200000000023300003	Farm 233, Portion 3	477.0
(no name)	C00200000000023400001	Farm 234, Portion 1	37.3
Collingham Towers	C00200000000023500000	Farm 235, Remaining Extent	142.0
Tempe	C00200000000024000010	Farm 240, Portion 10	82.4
Tempe	C00200000000024000011	Farm 240, Portion 11	167.0
Tempe	C00200000000024000012	Farm 240, Portion 12	116.0
Tempe	C00200000000024000007	Farm 240, Portion 7	117.0
Tempe	C00200000000024000008	Farm 240, Portion 8	416.0
Tempe	C00200000000024000009	Farm 240, Portion 9	543.0
Tempe	C00200000000024100000	Farm 241, Remaining Extent	672.0
Grobbelers Kloof	C00200000000033400001	Farm 334, Portion 1	204.0
Grobbelers Kloof	C00200000000033400002	Farm 334, Portion 2	210.0
Grobbelers Kloof	C00200000000033400003	Farm 334, Portion 3	75.4
Grobbelers Kloof	C00200000000033400004	Farm 334, Portion 4	54.4
(no name)	C00200000000035800001	Farm 358, Portion 1	8.31
(no name)	C00200000000035800003	Farm 358, Portion 3	6.73
Allandale	C00200000000058100000	Farm 581	36.0
Miniplaas	C00200000000058200000	Farm 582	51.7
Nutwood	C00200000000058300000	Farm 583, Remaining Extent	51.8
(no name)	C00200000000059900000	Farm 599, Remaining Extent	111.0
(no name)	C00200000000060100000	Farm 601, Remaining Extent	125.0
Green Hills	C00200000000066300000	Farm 663, Remaining Extent	437.0
Green Hills	C00200000000066300001	Farm 663, Remaining Extent & Portion 1	616.7
Green Hills	C00200000000066300002	Farm 663, Remaining Extent & Portion 2	575.8
Green Hills	C00200000000066300003	Farm 663, Remaining Extent & Portion 3	34.2
Green Hills	C00200000000066300004	Farm 663, Remaining Extent & Portion 4	641.2
(no name)	C00200020000480700000	Erf 4807, Remaining Extent	192.0
TOTAL			6285.4 ha

TURBINE COORDINATES (INITIAL LAYOUT)		
WTG 01	33°14'09.82" S	26°34'06.03" E
WTG 02	33°14'13.02" S	26°34'25.00" E
WTG 03	33°14'23.84" S	26°34'13.93" E
WTG 04	33°14'15.29" S	26°34'51.10" E
WTG 05	33°14'27.71" S	26°34'35.82" E
WTG 06	33°14'24.29" S	26°35'17.78" E
WTG 07	33°14'43.27" S	26°35'17.05" E
WTG 08	33°15'40.86" S	26°35'24.13" E
WTG 09	33°15'00.37" S	26°35'32.41" E
WTG 10	33°15'06.39" S	26°36'18.77" E
WTG 11	33°14'28.98" S	26°35'35.76" E
WTG 12	33°15'39.71" S	26°36'58.43" E
WTG 13	33°15'00.08" S	26°36'52.25" E
WTG 14	33°15'15.22" S	26°37'01.49" E
WTG 15	33°15'28.32" S	26°36'59.13" E
WTG 16	33°15'48.73" S	26°37'30.37" E
WTG 17	33°15'29.29" S	26°37'24.39" E
WTG 18	33°15'30.01" S	26°37'39.95" E
WTG 19	33°15'43.94" S	26°37'35.45" E
WTG 20	33°15'37.74" S	26°37'50.44" E
WTG 21	33°15'51.99" S	26°36'49.38" E
WTG 22	33°15'56.66" S	26°36'34.03" E
WTG 23	33°16'53.30" S	26°38'04.42" E
WTG 24	33°16'52.17" S	26°37'26.69" E
WTG 25	33°16'50.37" S	26°37'46.12" E

WTG 26	33°17'00.14" S	26°38'34.84" E
WTG 27	33°17'05.76" S	26°38'56.88" E
WTG 28	33°17'23.88" S	26°38'54.93" E
WTG 29	33°16'12.86" S	26°39'26.89" E
WTG 30	33°16'04.12" S	26°39'26.58" E
WTG 31	33°16'01.52" S	26°39'40.29" E
WTG 32	33°16'11.49" S	26°40'00.25" E
WTG 35	33°17'21.99" S	26°40'22.31" E
WTG 40	33°17'44.29" S	26°42'43.89" E
WTG 41	33°18'06.70" S	26°42'35.98" E
WTG 42	33°18'12.69" S	26°42'49.25" E
WTG 43	33°17'57.67" S	26°42'46.54" E
WTG 44	33°17'49.50" S	26°42'58.81" E
WTG 46	33°18'20.62" S	26°43'05.67" E
WTG 47	33°18'30.41" S	26°43'16.42" E
WTG 50	33°18'38.06" S	26°43'36.88" E
WTG 51	33°18'51.26" S	26°43'44.74" E
WTG 52	33°19'01.82" S	26°44'15.48" E
WTG 53	33°18'35.06" S	26°44'17.37" E
WTG 55	33°18'15.61" S	26°44'36.26" E
WTG 56	33°18'30.47" S	26°44'33.91" E
WTG 57	33°19'07.17" S	26°44'26.88" E
WTG 58	33°18'36.32" S	26°44'47.82" E
WTG 59	33°18'26.21" S	26°45'05.18" E
WTG 60	33°18'43.89" S	26°45'06.04" E
WTG 61	33°19'12.12" S	26°44'44.32" E
WTG 62	33°19'22.91" S	26°45'00.65" E
WTG 63	33°18'39.09" S	26°45'29.19" E
WTG 64	33°17'33.20" S	26°42'26.21" E
WTG 65	33°19'01.52" S	26°45'32.96" E
WTG 66	33°17'15.25" S	26°41'49.15" E
WTG 67	33°14'50.57" S	26°34'00.93" E
WTG 68	33°14'55.08" S	26°34'17.15" E
WTG 69	33°15'05.72" S	26°34'31.56" E
WTG 70	33°14'17.45" S	26°33'59.87" E
WTG 71	33°15'27.76" S	26°34'52.62" E
WTG 72	33°13'40.74" S	26°34'40.51" E
WTG 73	33°13'54.73" S	26°35'33.40" E
WTG 74	33°13'59.12" S	26°35'49.14" E
WTG 75	33°14'04.96" S	26°36'31.10" E
WTG 76	33°14'07.95" S	26°36'46.69" E

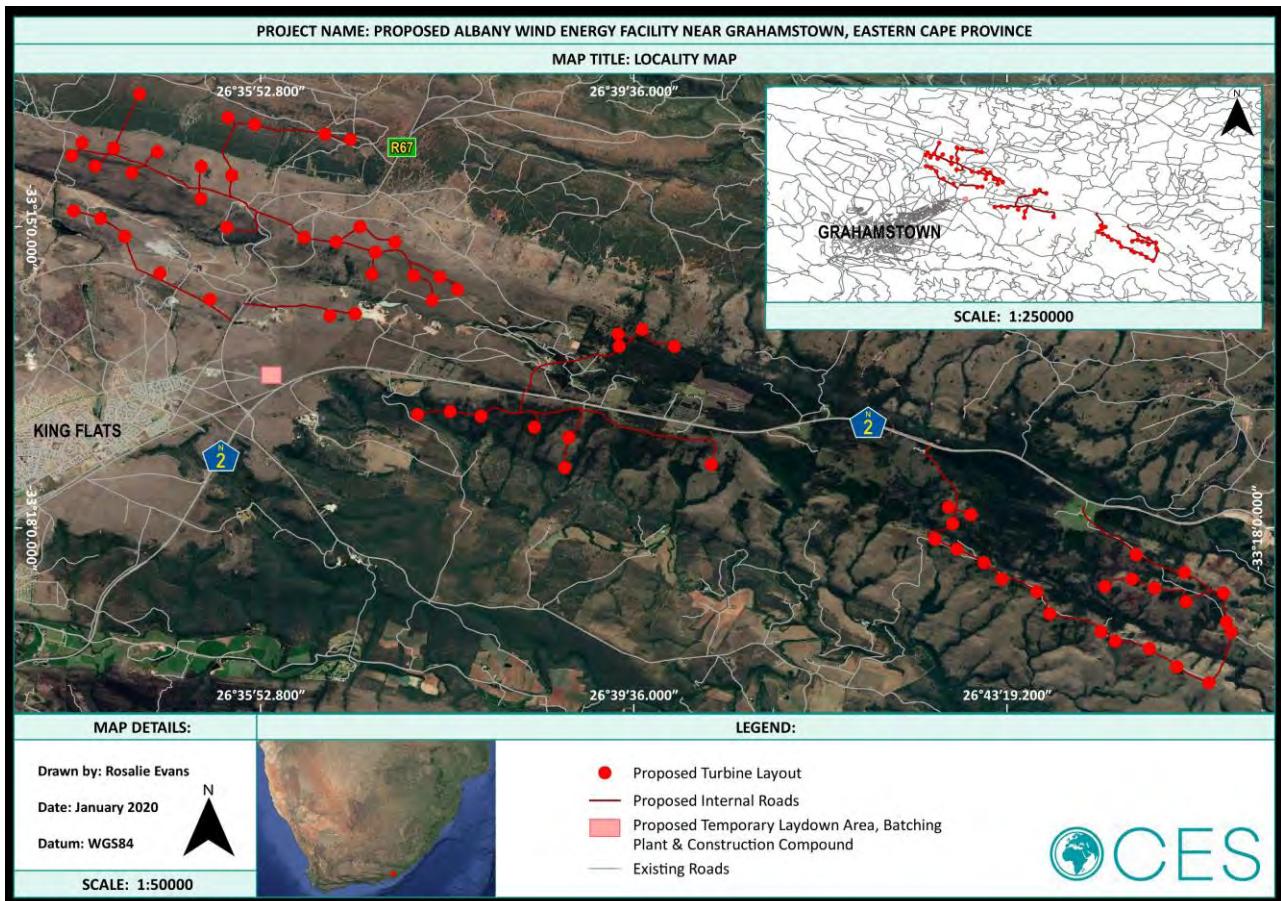


Figure 4: Locality Map of the Proposed Albany WEF.

#### 7.16 Preliminary technical specification of the overhead transmission and distribution:

- Length:  
Overhead lines of approximately 11 500 m and underground lines of approximately 37 000 m
- Tower parameters
  - Number and types of towers: 44 monopoles
  - Tower spacing (mean and maximum): 250 m and 300 m
  - Tower height (lowest, mean and height): 13 m, 18 m and 25 m
  - Conductor attachment height (mean): 18 m
  - Minimum ground clearance: 13 m

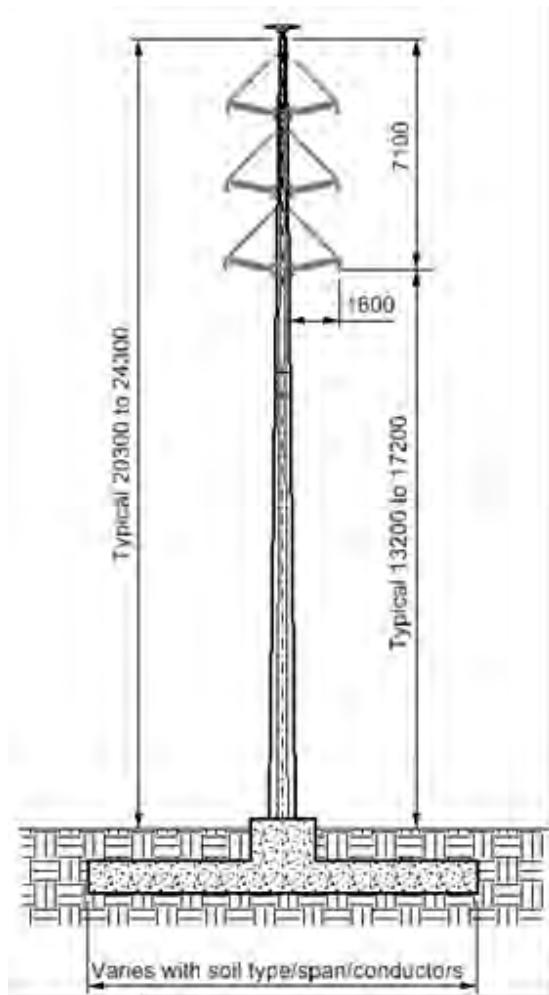


Figure 5: Example of a typical monopole.

## 7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: <https://screening.environment.gov.za/screeningtool>. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.

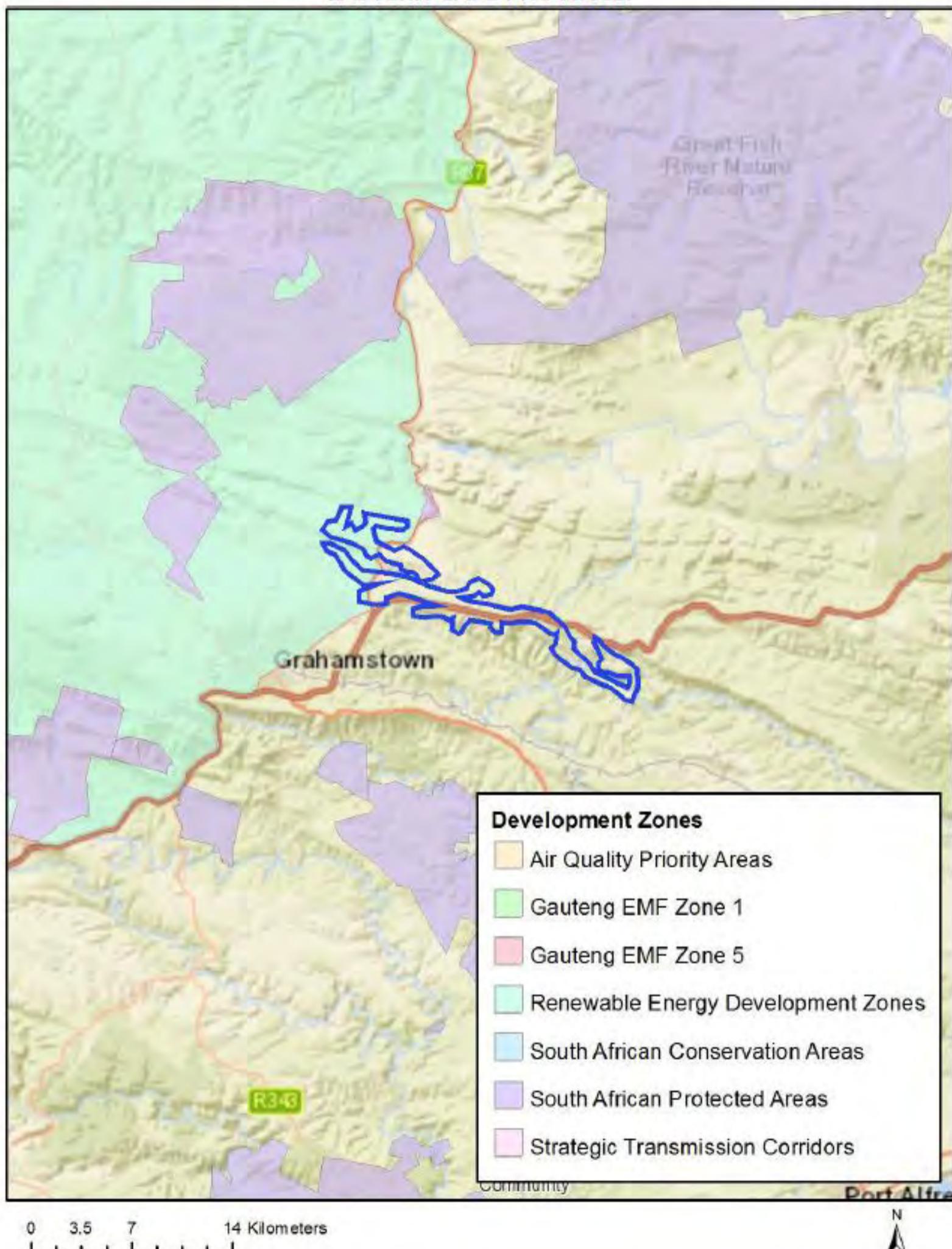
The pages that follow include A3 sensitivity maps of the proposed site which were created using the [National Screening Tool](#). The maps include the following themes and their sensitivities (Utilities Infrastructure > Electricity > Generation > Renewable > Wind > Electricity > Distribution and Transmission > Powerline):

THEME	VERY HIGH SENSITIVITY	HIGH SENSITIVITY	MEDIUM SENSITIVITY	LOW SENSITIVITY
Agricultural	X			
Animal Species		X		
Aquatic Biodiversity	X			
Archaeological and Cultural Heritage		X		
Civil Aviation		X		
Palaeontology		X		
Plant Species		X		
Defence	X			
Terrestrial Biodiversity	X			

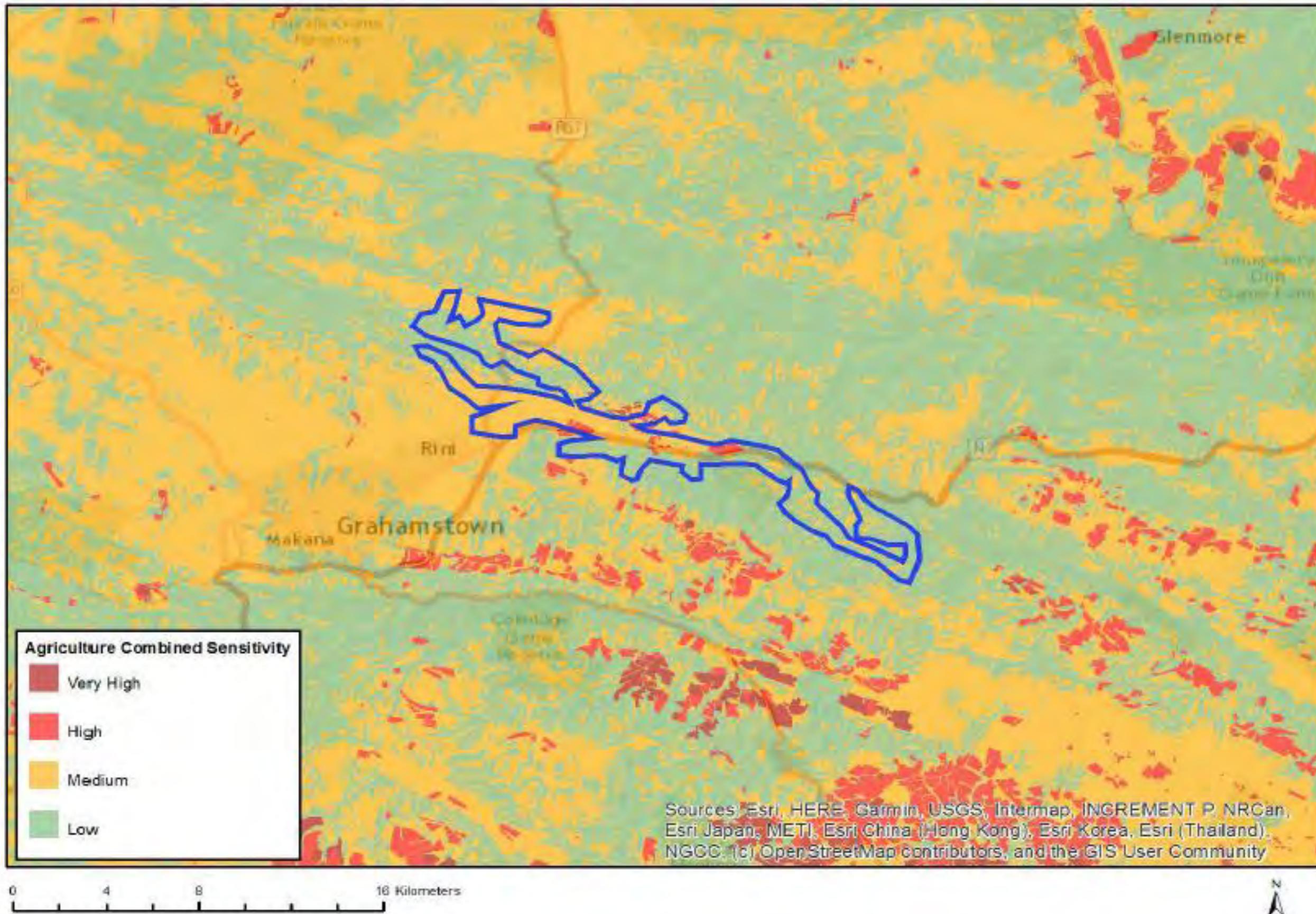
1. MAP INDICATING PROPOSED DEVELOPMENT FOOTPRINT WITHIN APPLICABLE DEVELOPMENT INCENTIVE, RESTRICTION, EXCLUSION OR PROHIBITION ZONES
2. MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY
3. MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY
4. MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY
5. MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY
6. MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY
7. MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY
8. MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY
9. MAP OF RELATIVE DEFENCE THEME SENSITIVITY
10. MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

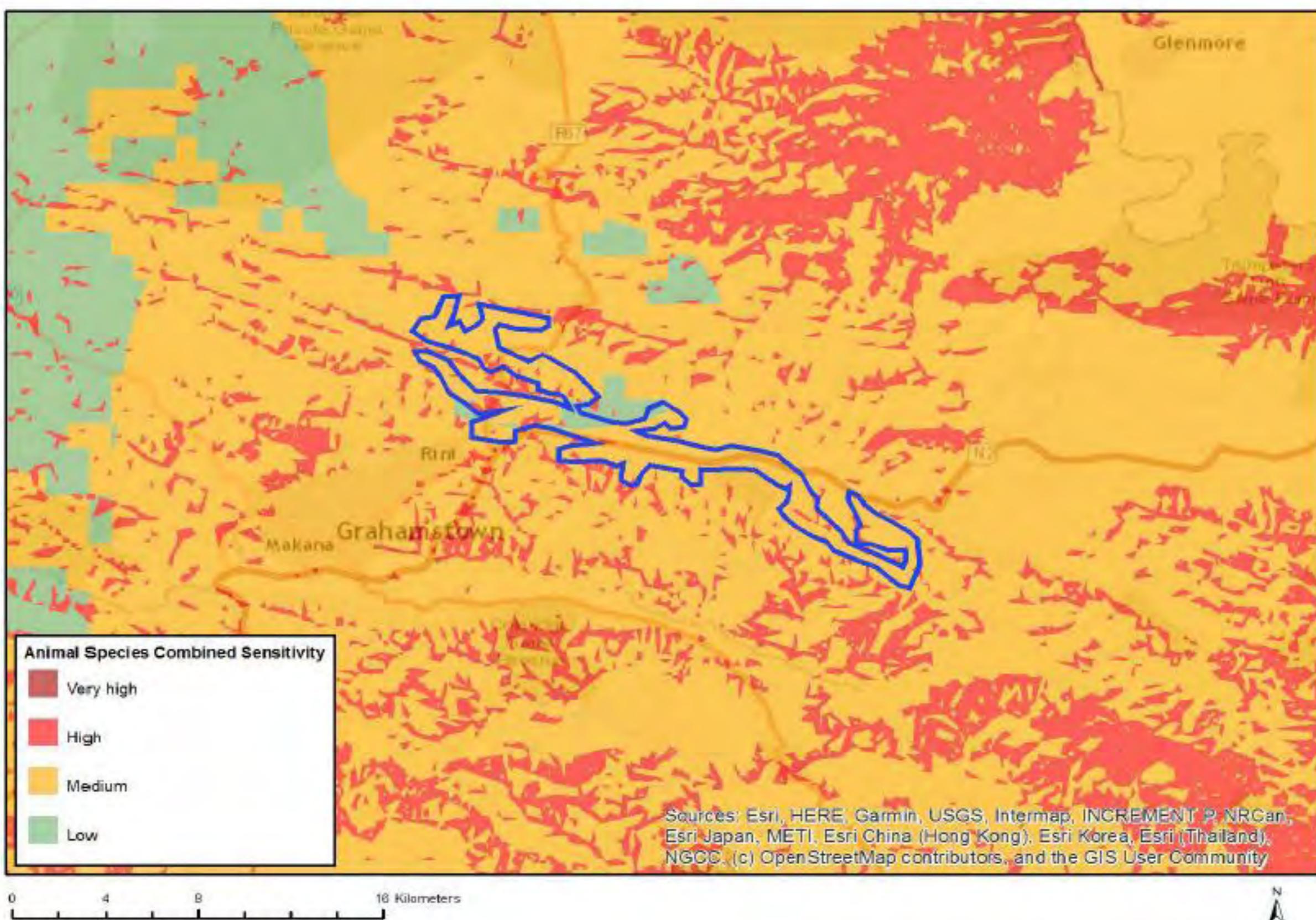
**Project Location: PROPOSED ALBANY WIND ENERGY FACILITY NEAR MAKHANDA, EASTERN CAPE PROVINCE.**



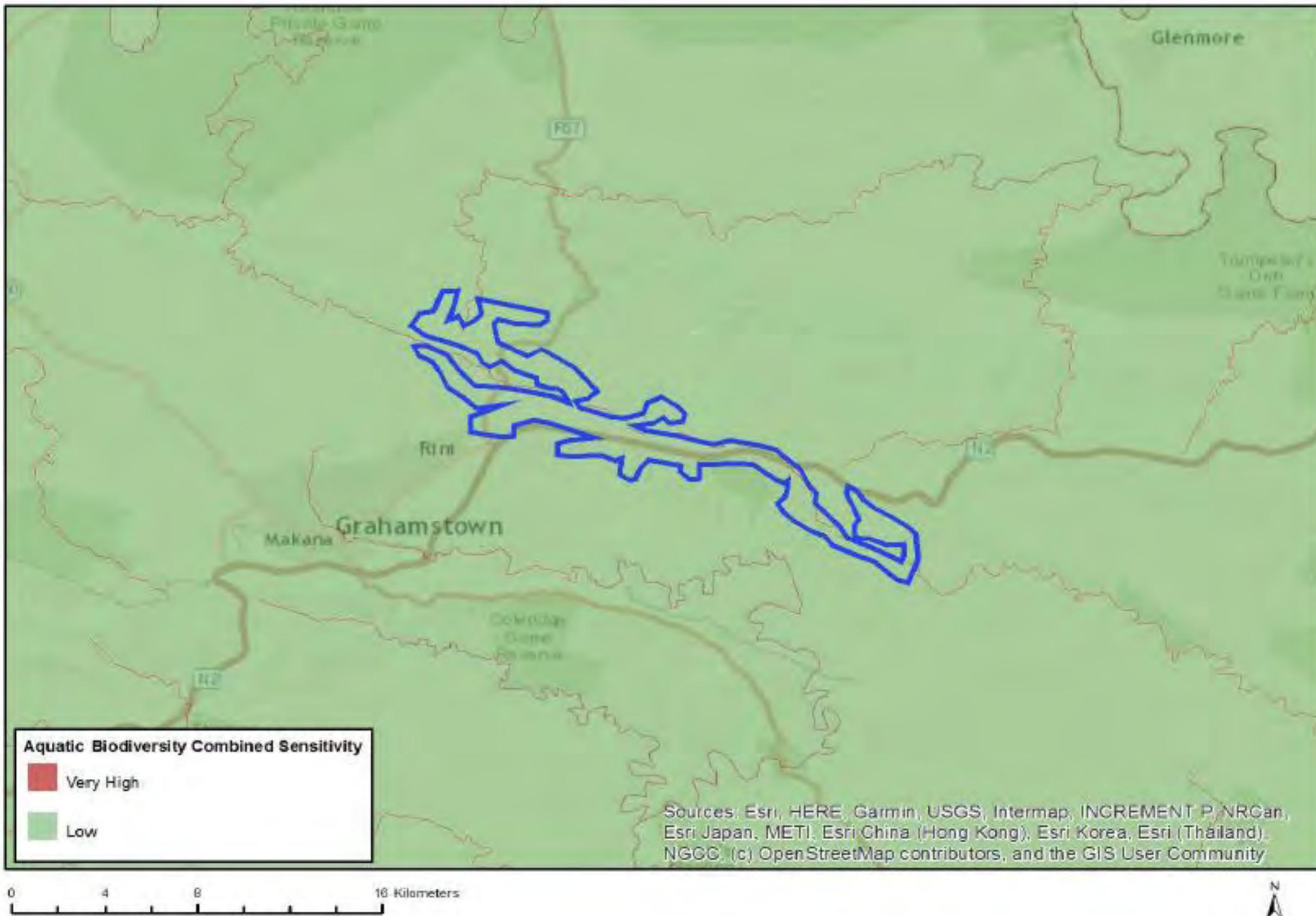
## MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



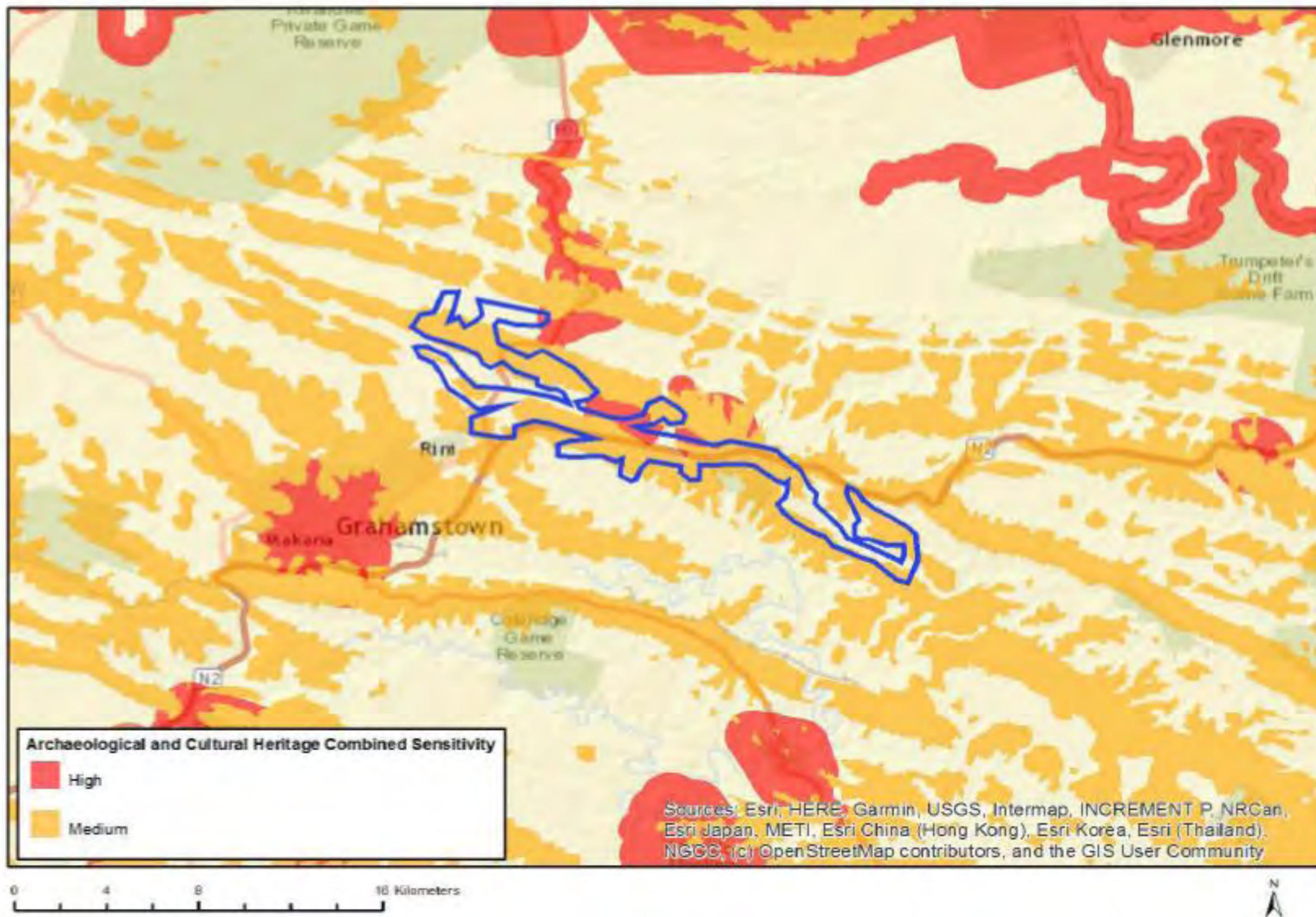
## MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



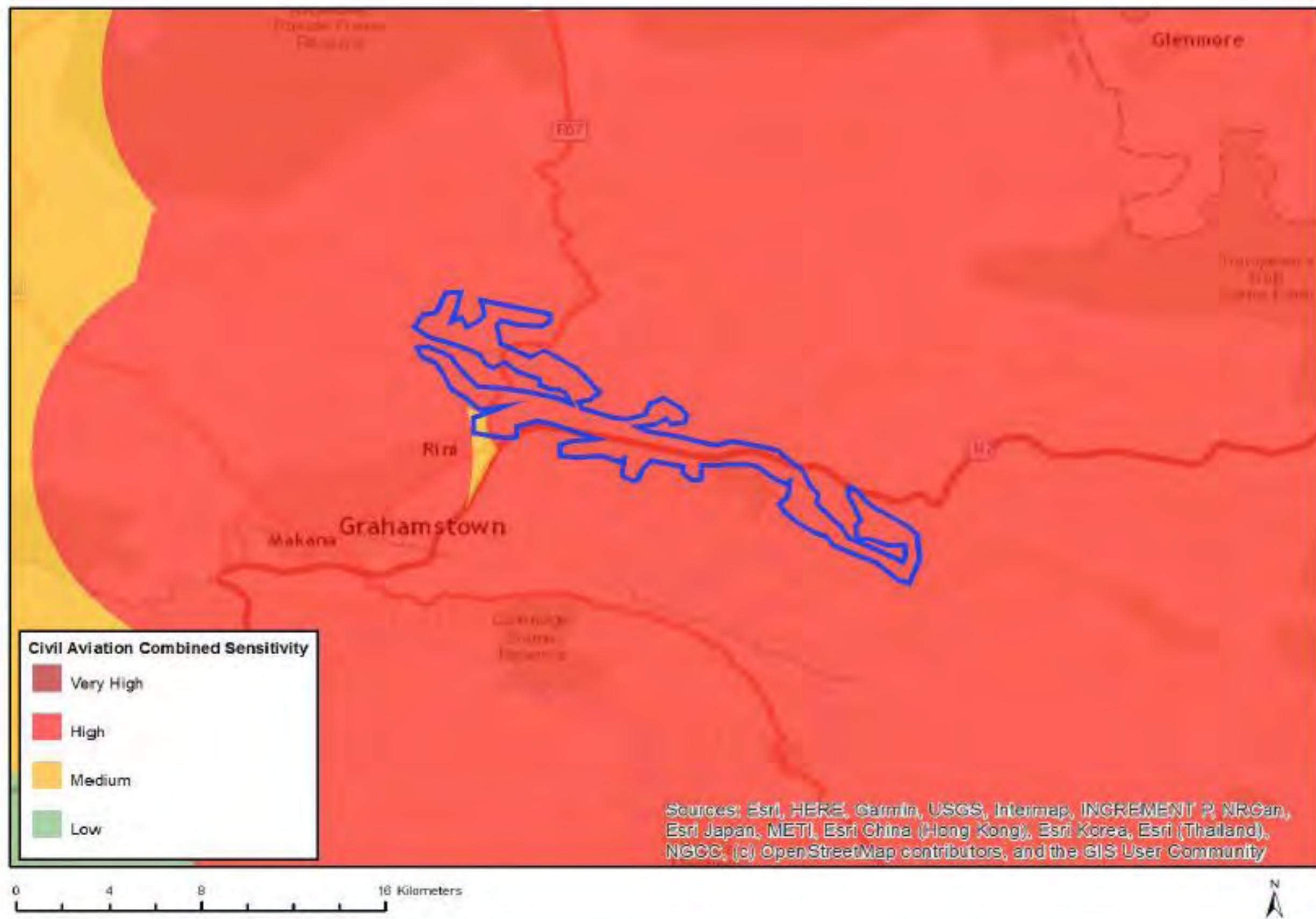
## MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



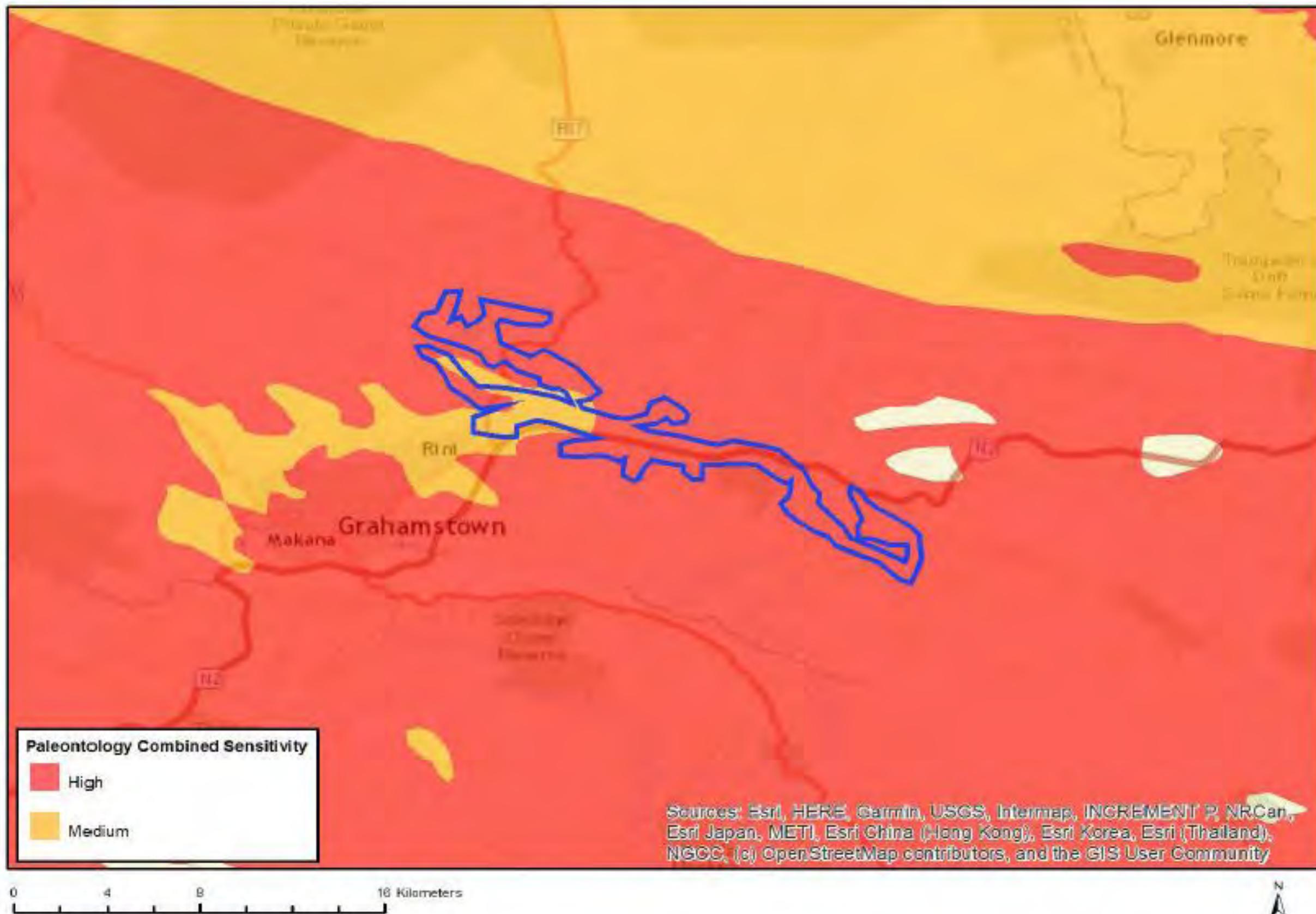
## MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



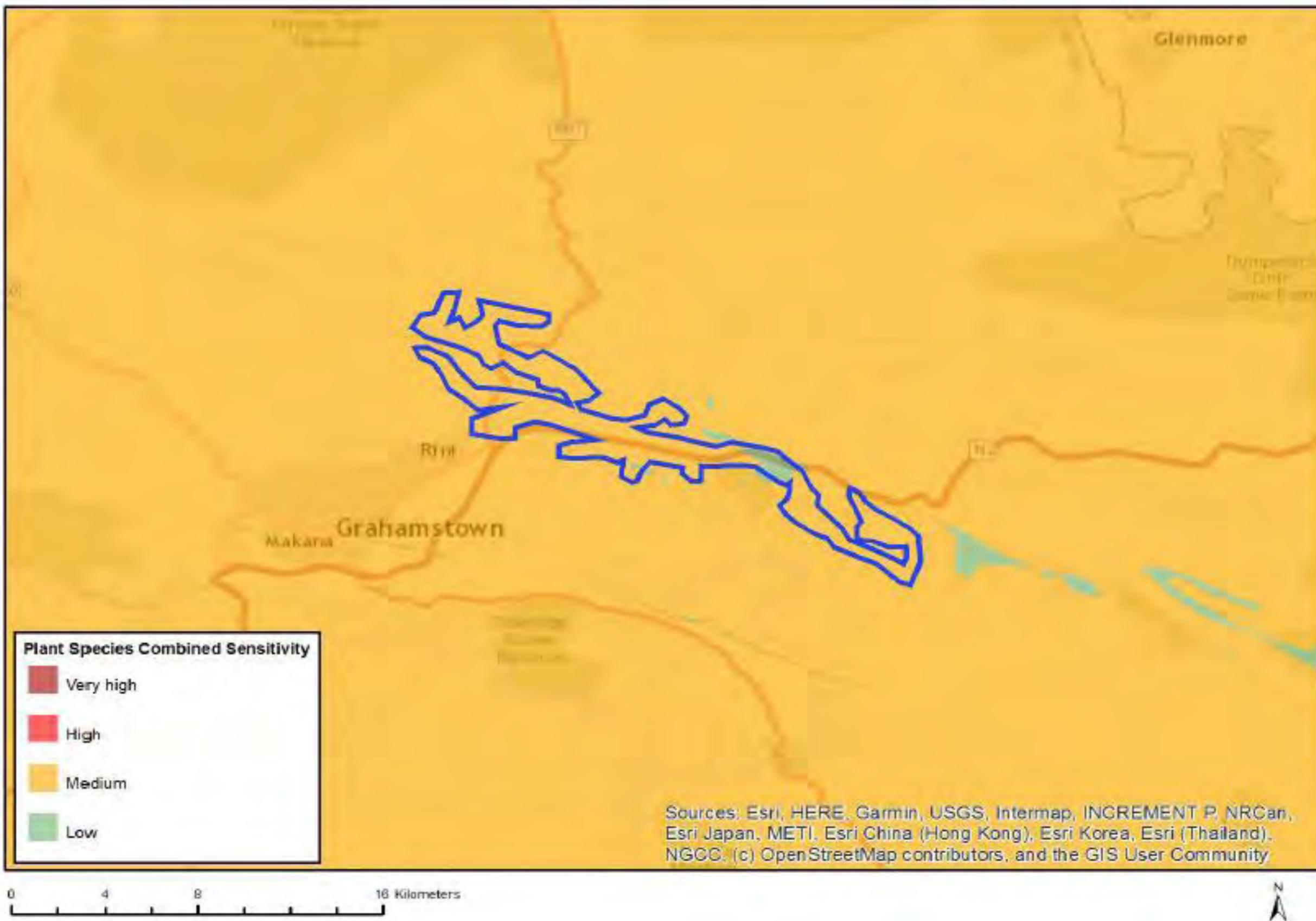
## MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



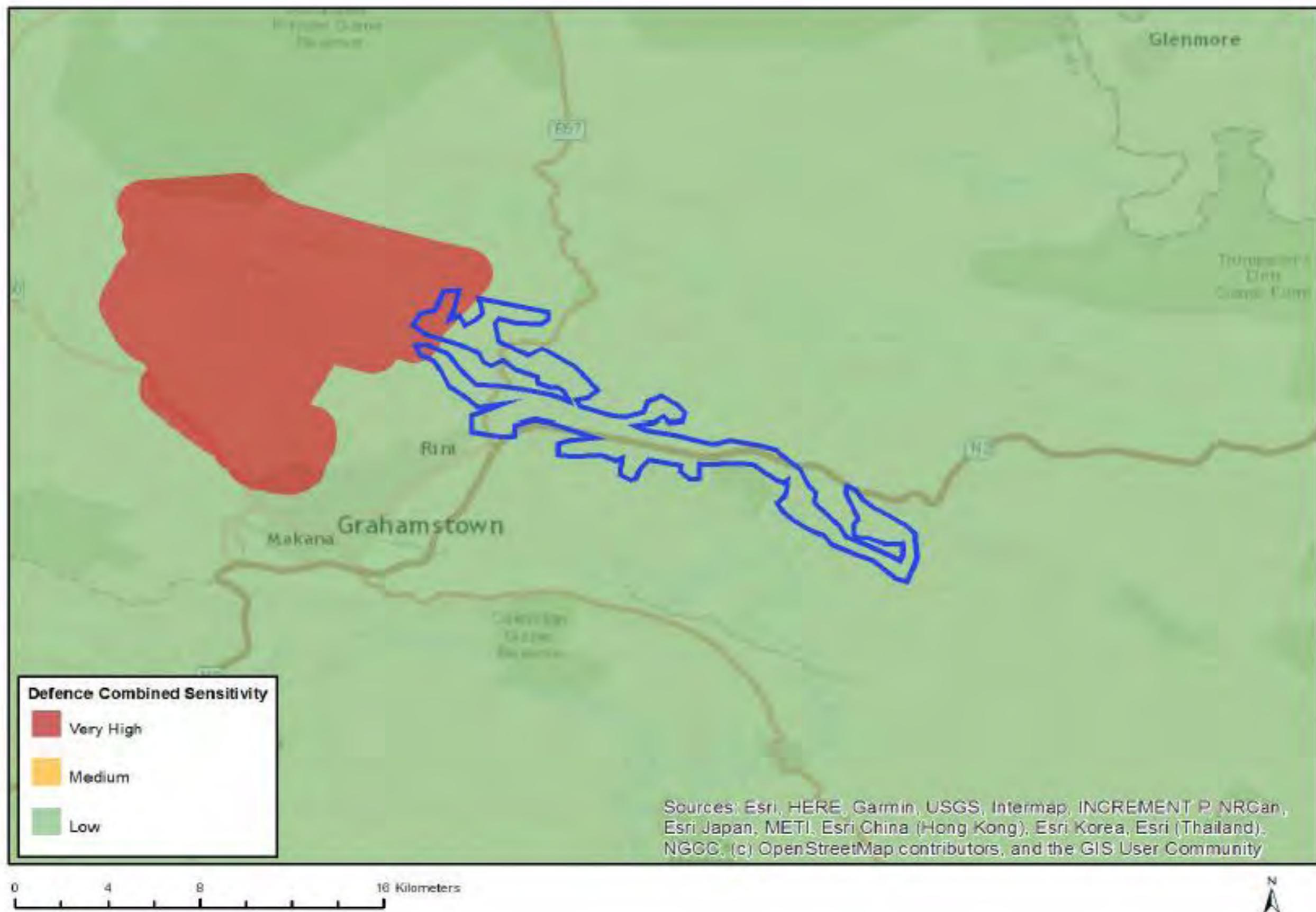
## MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



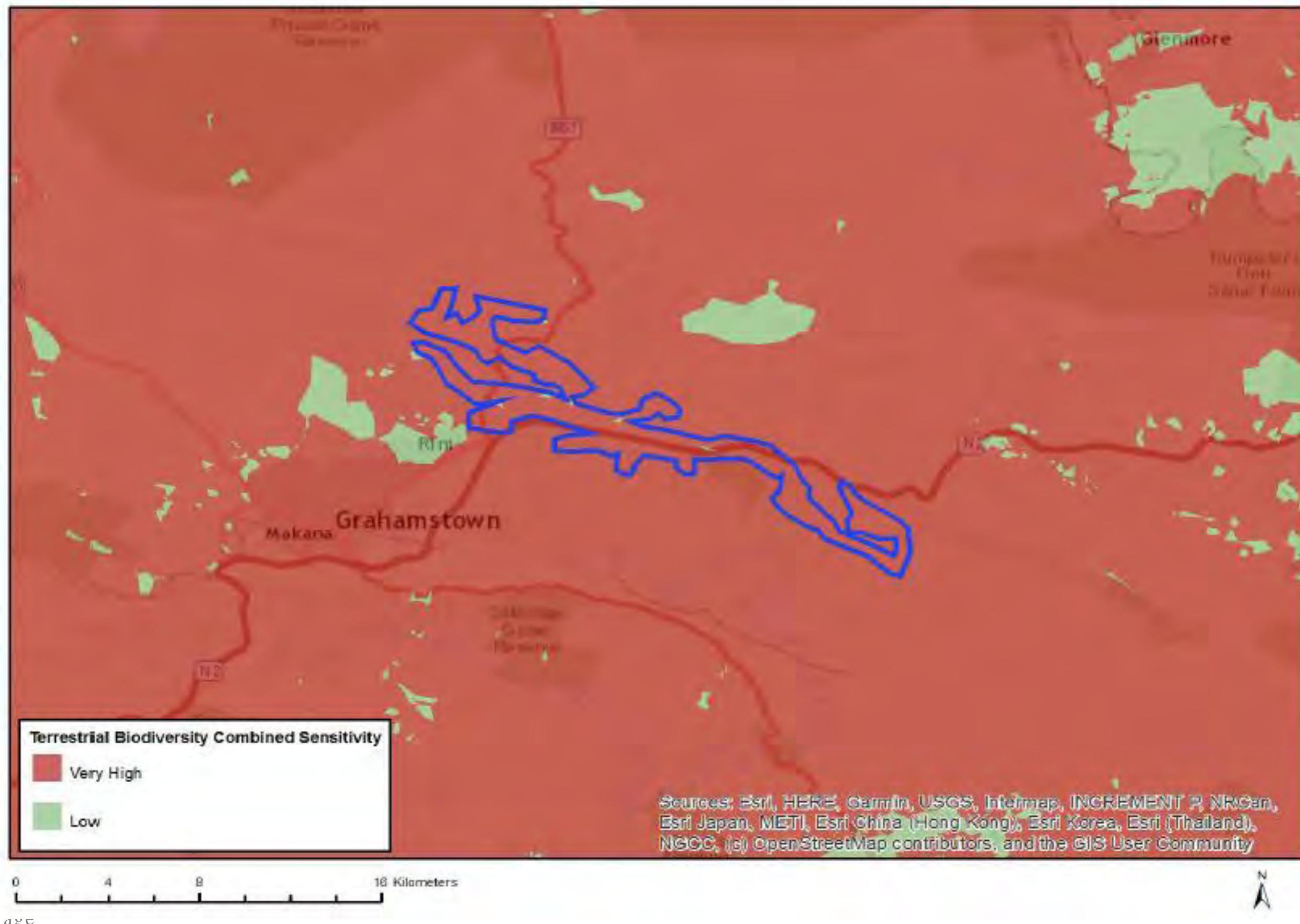
## MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



## MAP OF RELATIVE DEFENCE THEME SENSITIVITY



## MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

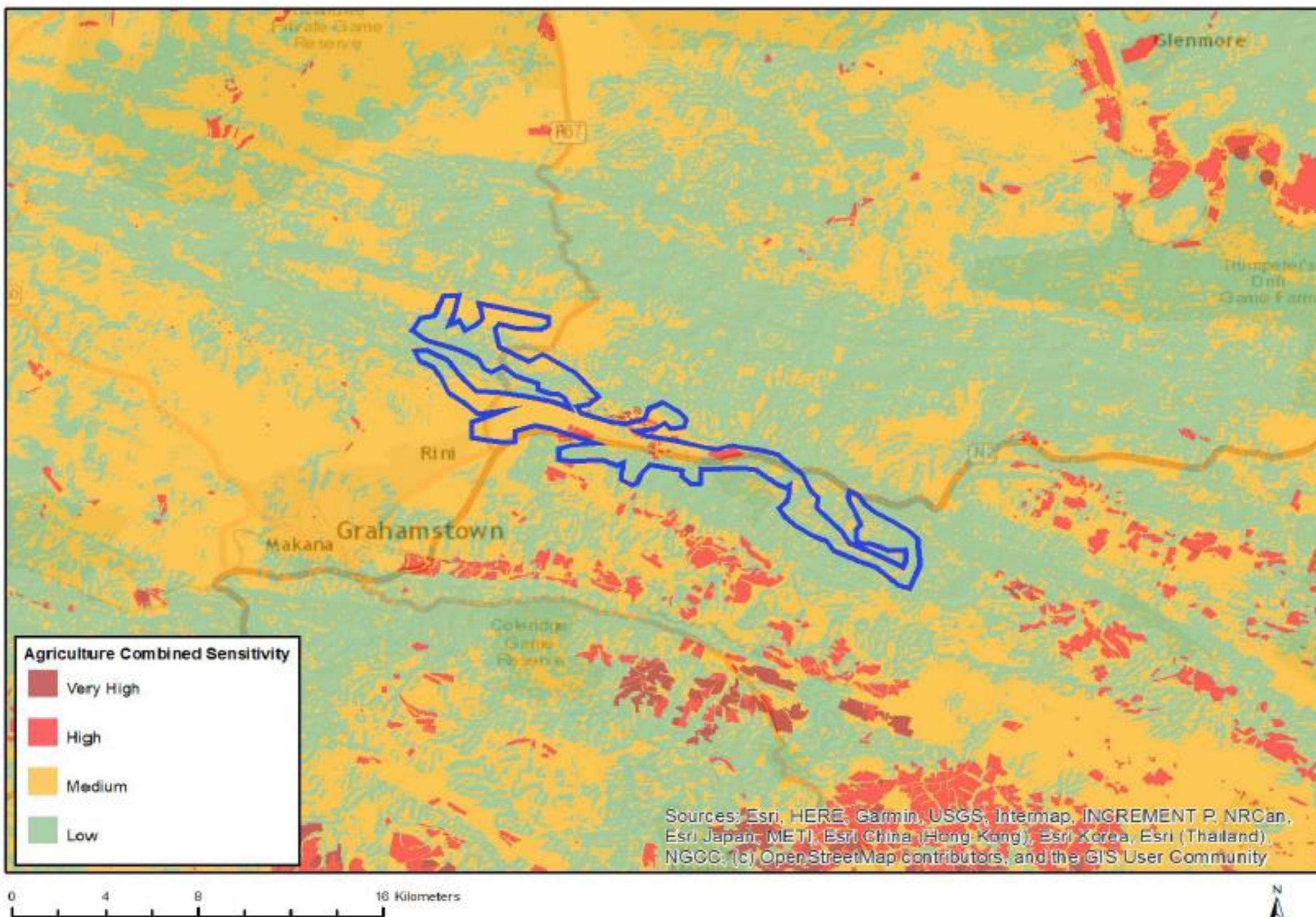


The pages that follow include A3 sensitivity maps of the proposed site which were created using the [National Screening Tool](#). The maps include the following themes and their sensitivities (Utilities Infrastructure > Electricity > Generation > Renewable > Wind > Electricity > Generation > Renewable > Wind):

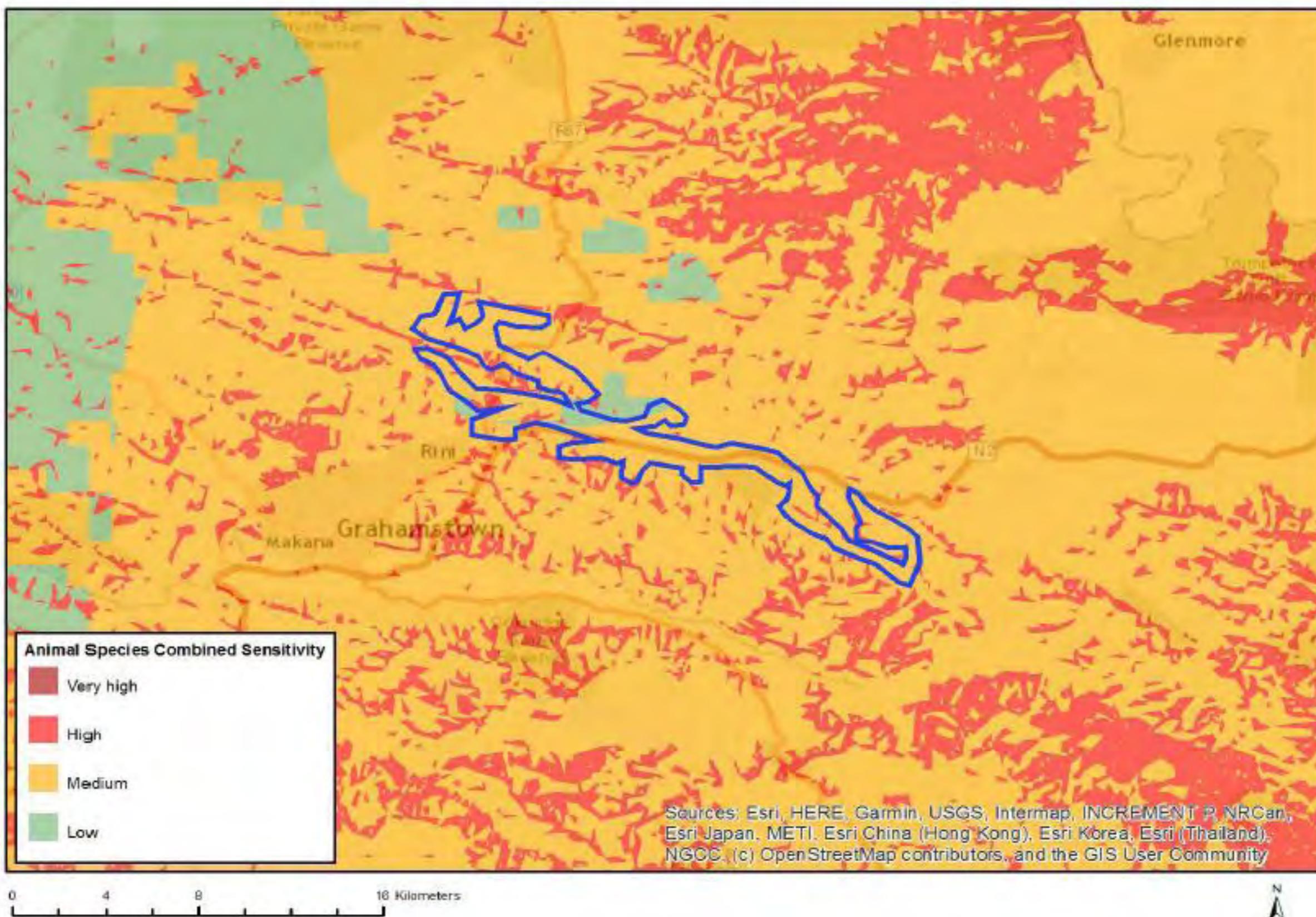
THEME	VERY HIGH SENSITIVITY	HIGH SENSITIVITY	MEDIUM SENSITIVITY	LOW SENSITIVITY
Agricultural	X			
Animal Species		X		
Aquatic Biodiversity	X			
Archaeological and Cultural Heritage		X		
Avian (Wind)	X			
Bats (Wind)		X		
Civil Aviation		X		
Defence	X			
Flicker	X			
Landscape (Wind)	X			
Noise	X			
Palaeontology		X		
Plant Species		X		
RFI (Wind)	X			
Terrestrial Biodiversity	X			

1. MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY
2. MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY
3. MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY
4. MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY
5. MAP OF RELATIVE AVIAN (WIND) THEME SENSITIVITY
6. MAP OF RELATIVE BATS (WIND) THEME SENSITIVITY
7. MAP OF RELATIVE CIVIL AVIATION (WIND) THEME SENSITIVITY
8. MAP OF RELATIVE DEFENCE (WIND) THEME SENSITIVITY
9. MAP OF RELATIVE FLICKER THEME SENSITIVITY
10. MAP OF RELATIVE LANDSCAPE (WIND) THEME SENSITIVITY
11. MAP OF RELATIVE NOISE THEME SENSITIVITY
12. MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY
13. MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY
14. MAP OF RELATIVE RFI (WIND) THEME SENSITIVITY
15. MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

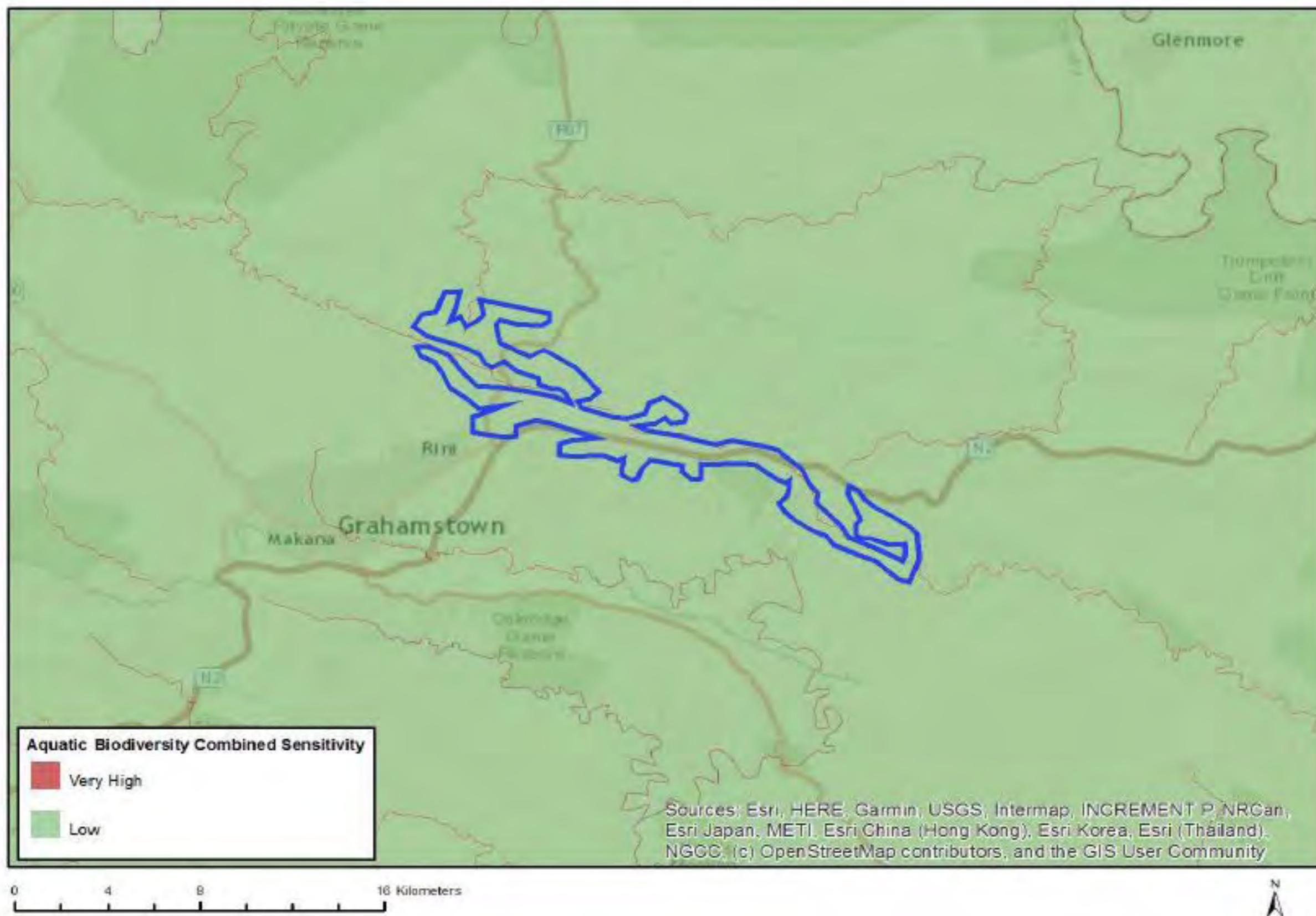
## MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



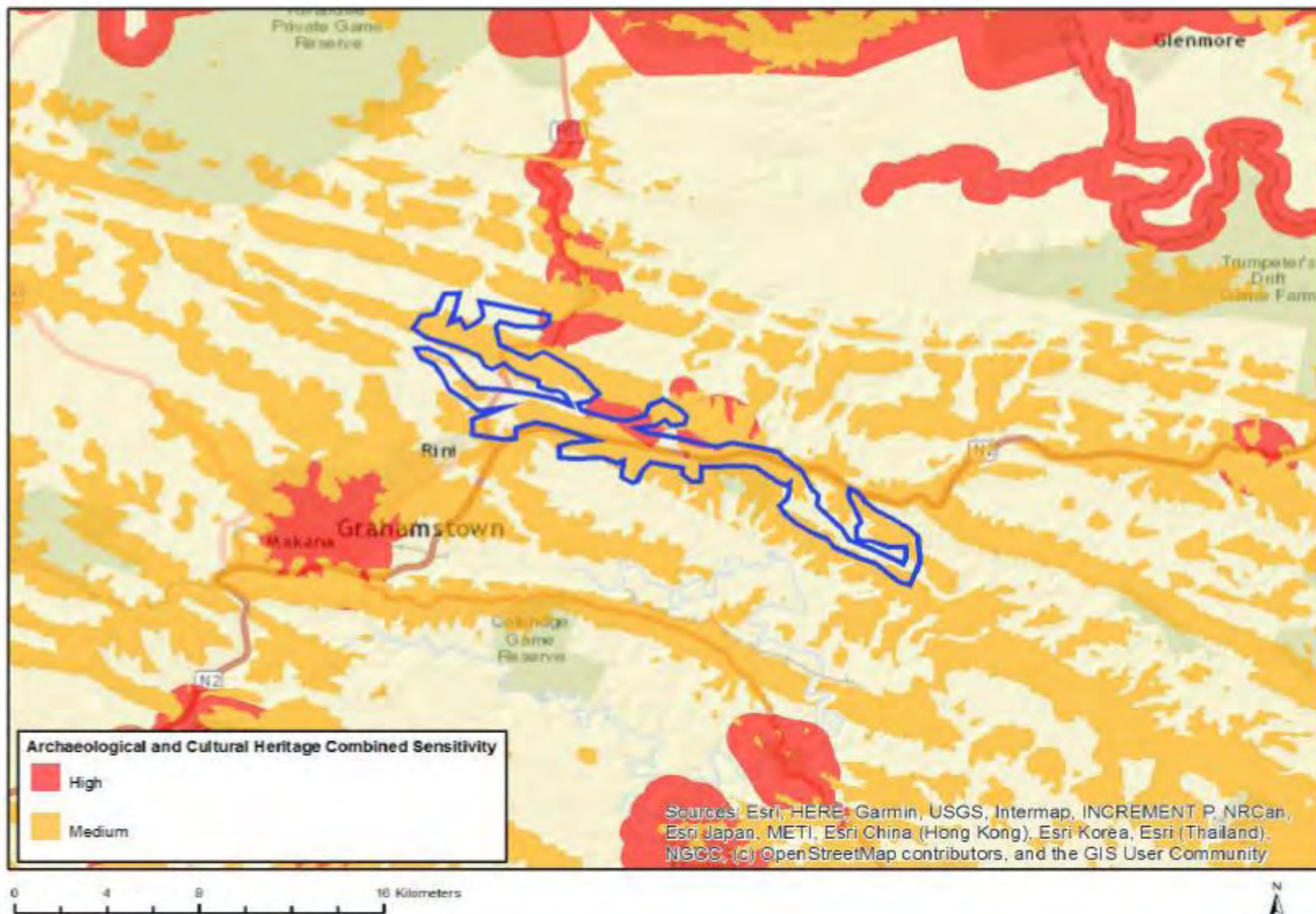
## MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



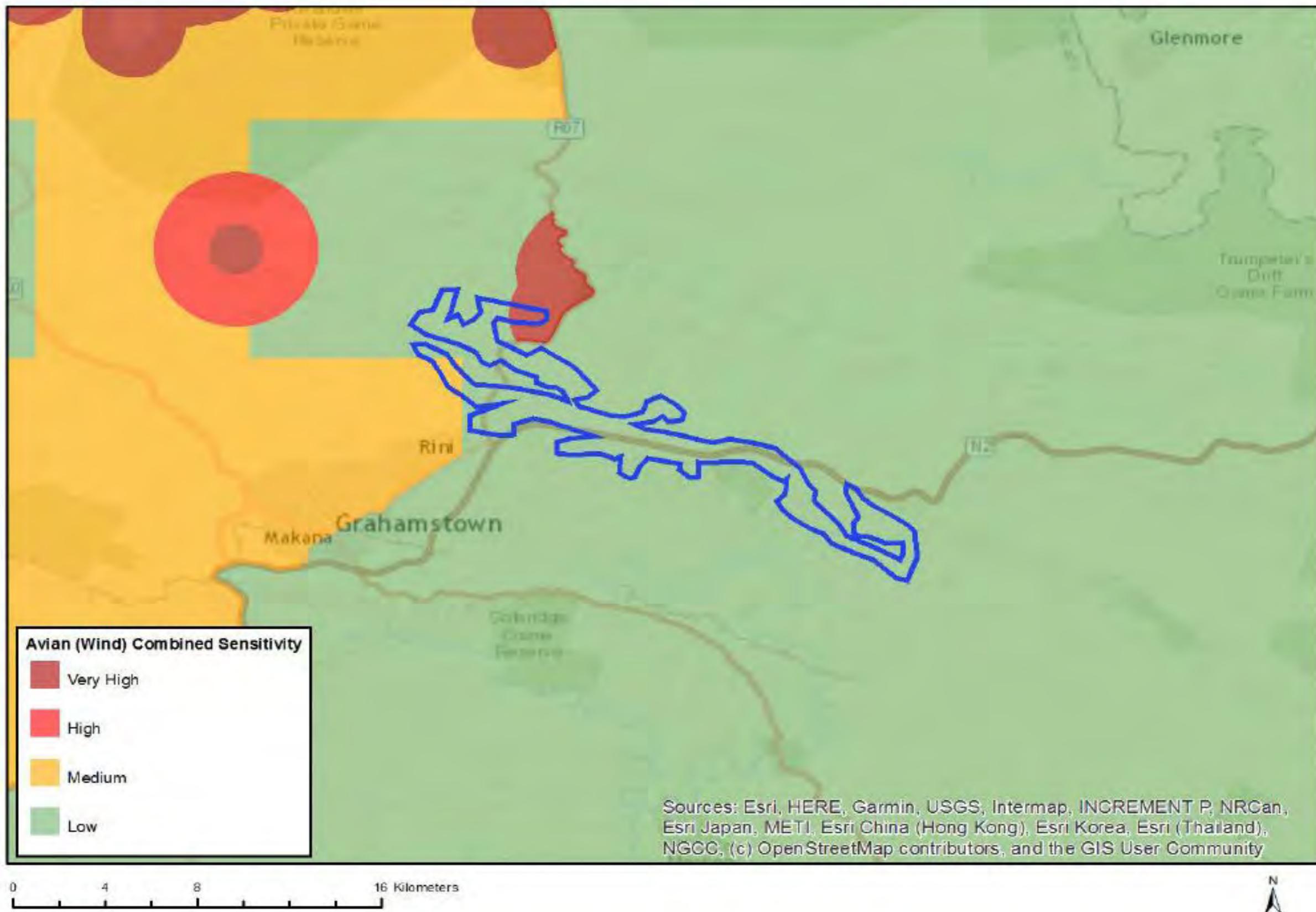
## MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



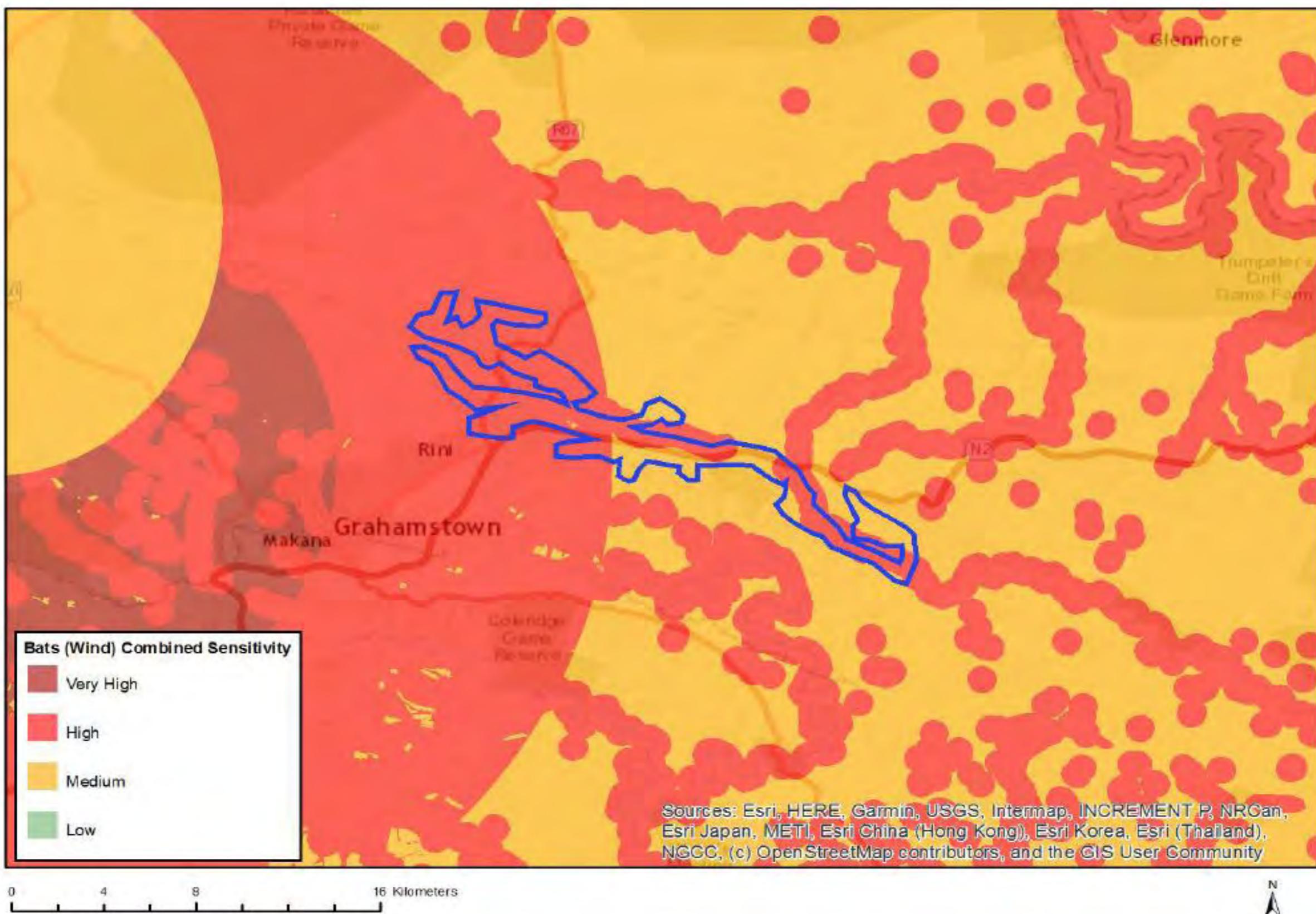
## MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



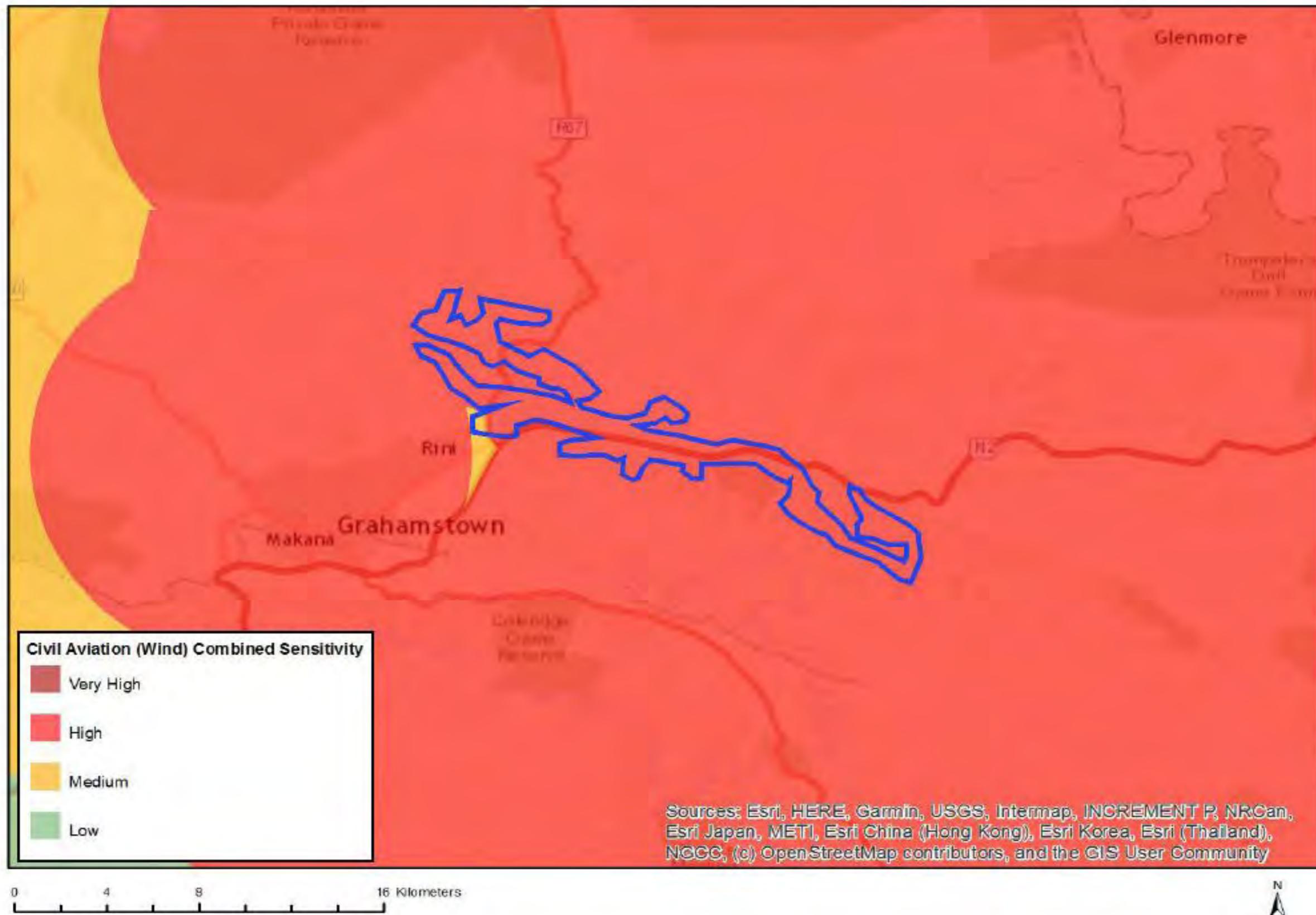
## MAP OF RELATIVE AVIAN (WIND) THEME SENSITIVITY



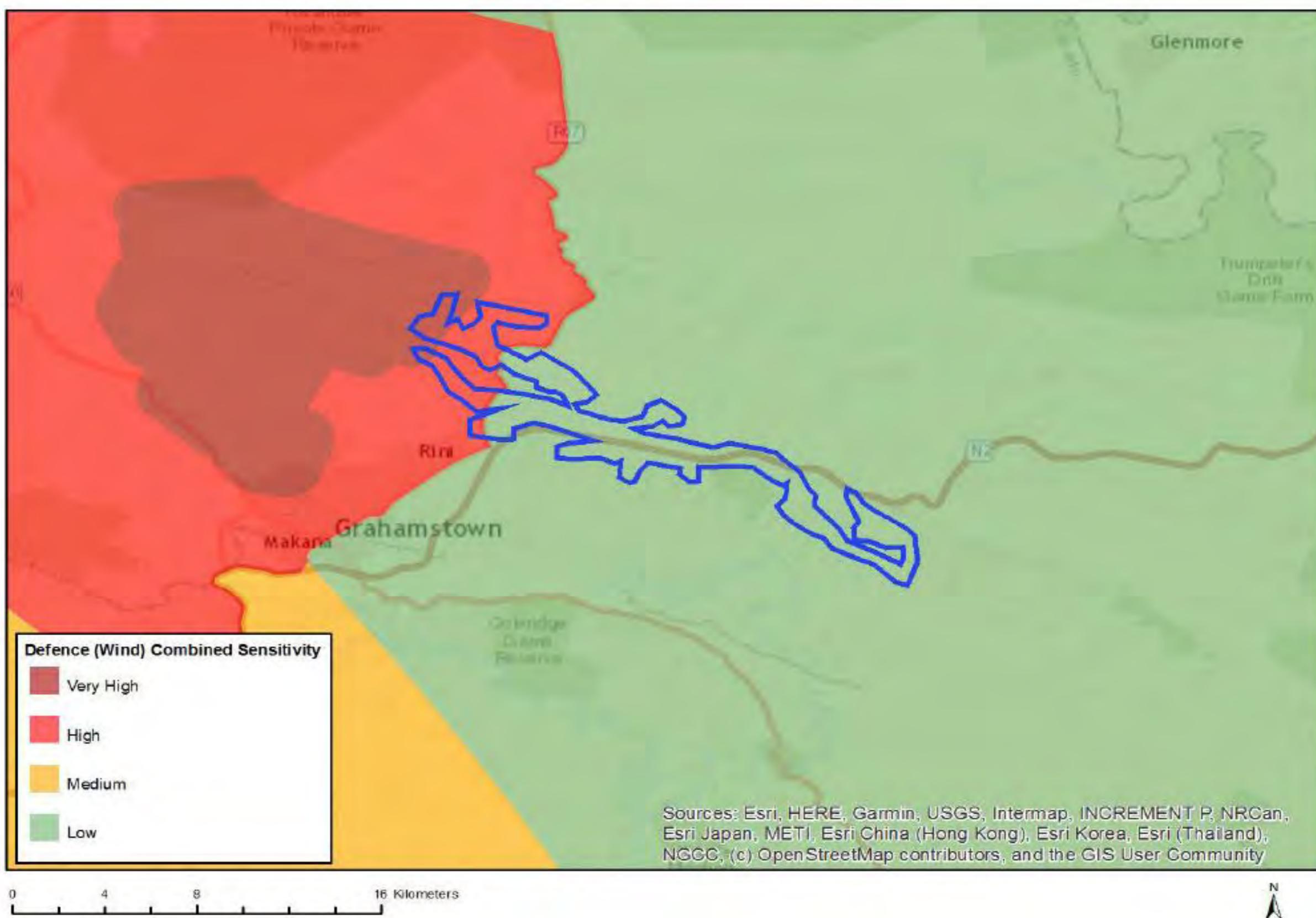
## MAP OF RELATIVE BATS (WIND) THEME SENSITIVITY



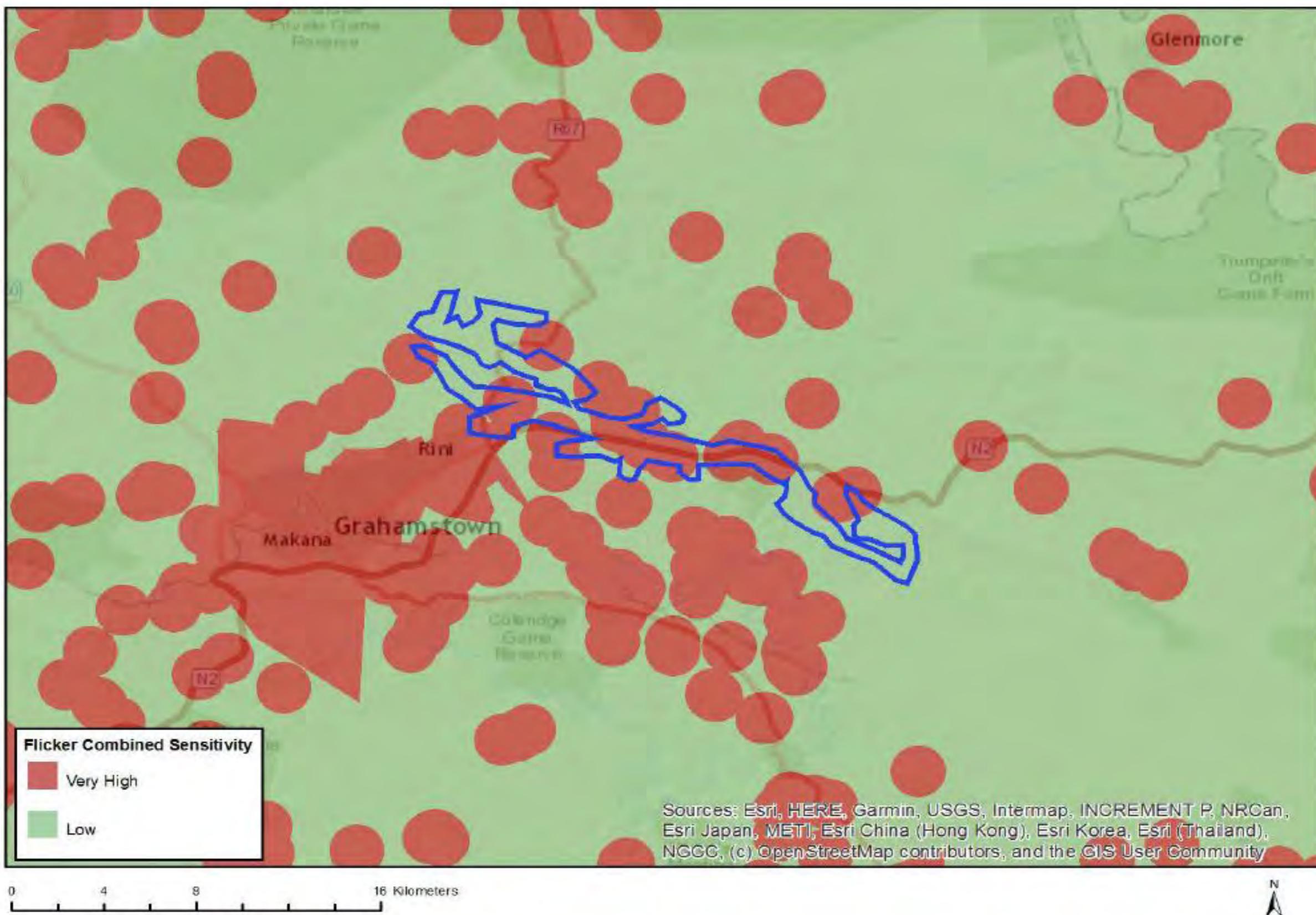
## MAP OF RELATIVE CIVIL AVIATION (WIND) THEME SENSITIVITY



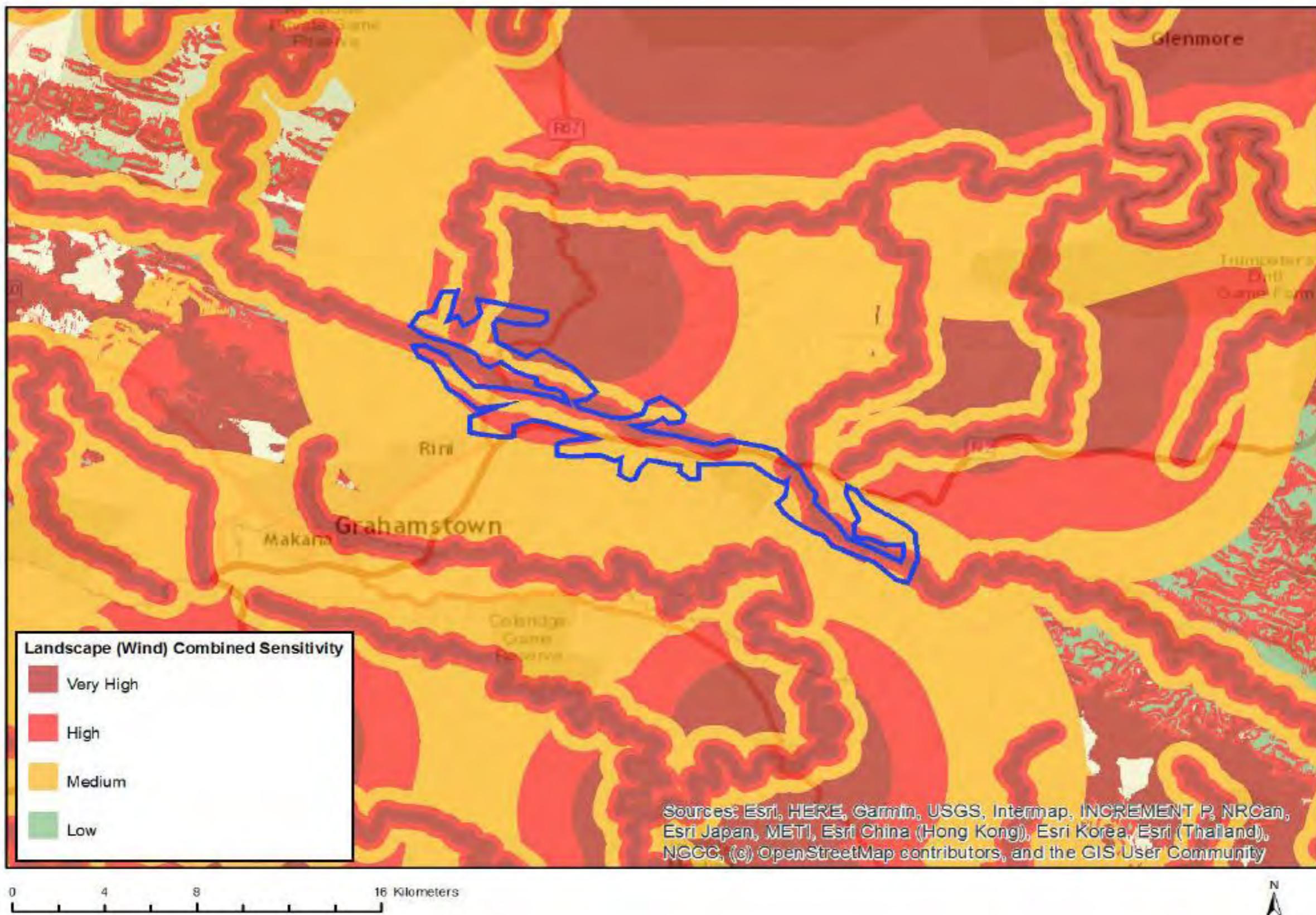
## MAP OF RELATIVE DEFENCE (WIND) THEME SENSITIVITY



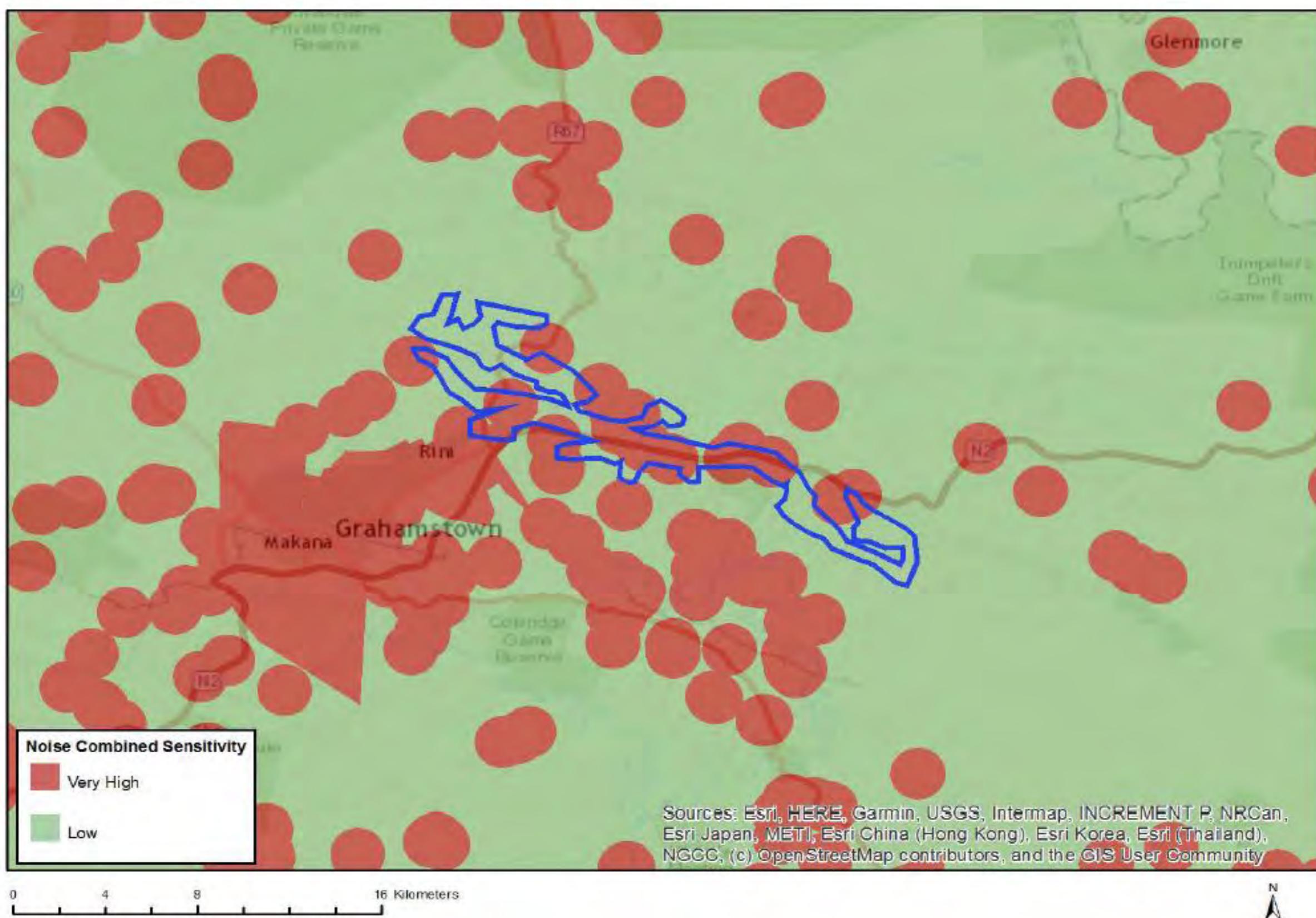
## MAP OF RELATIVE FLICKER THEME SENSITIVITY



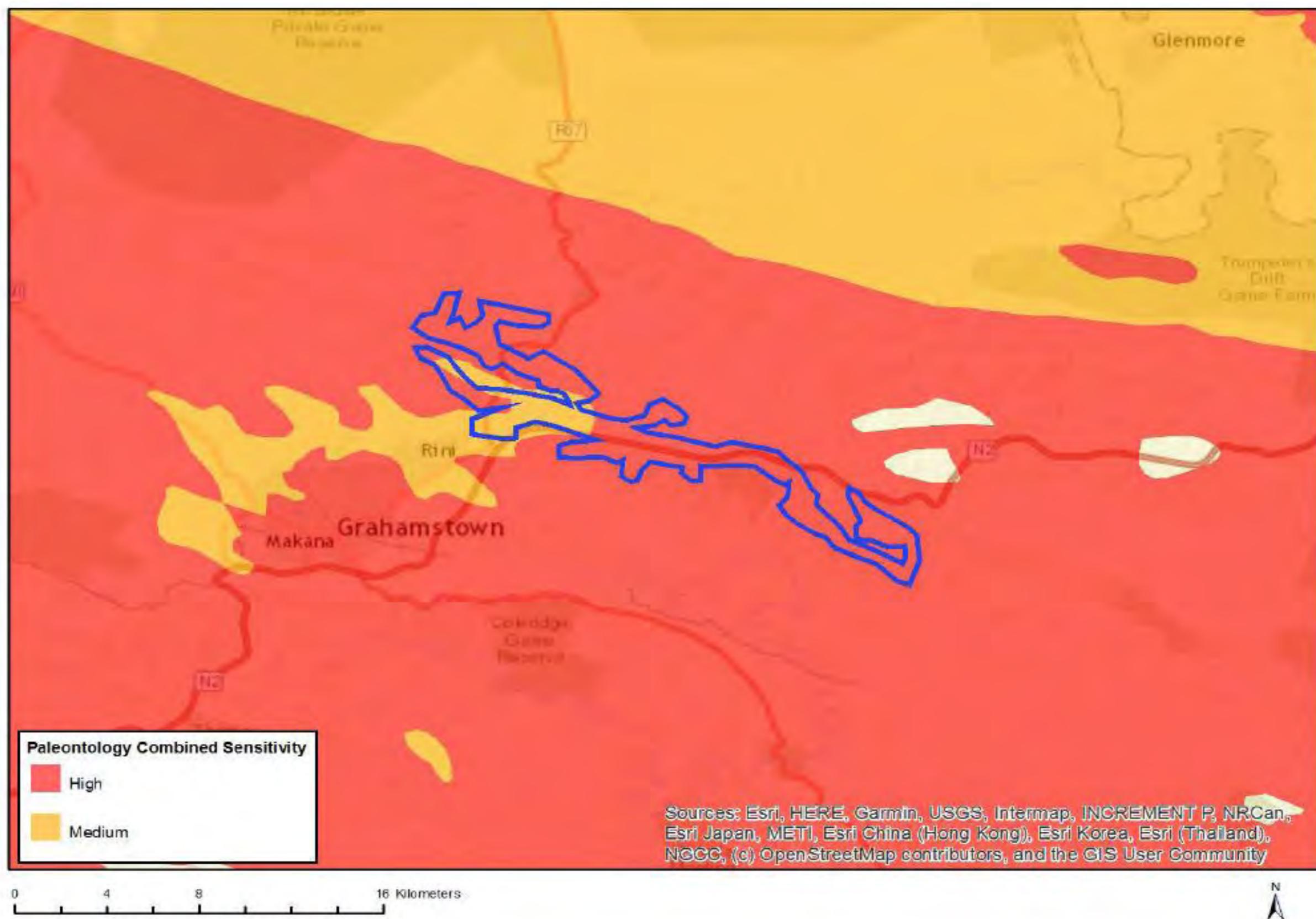
## MAP OF RELATIVE LANDSCAPE (WIND) THEME SENSITIVITY



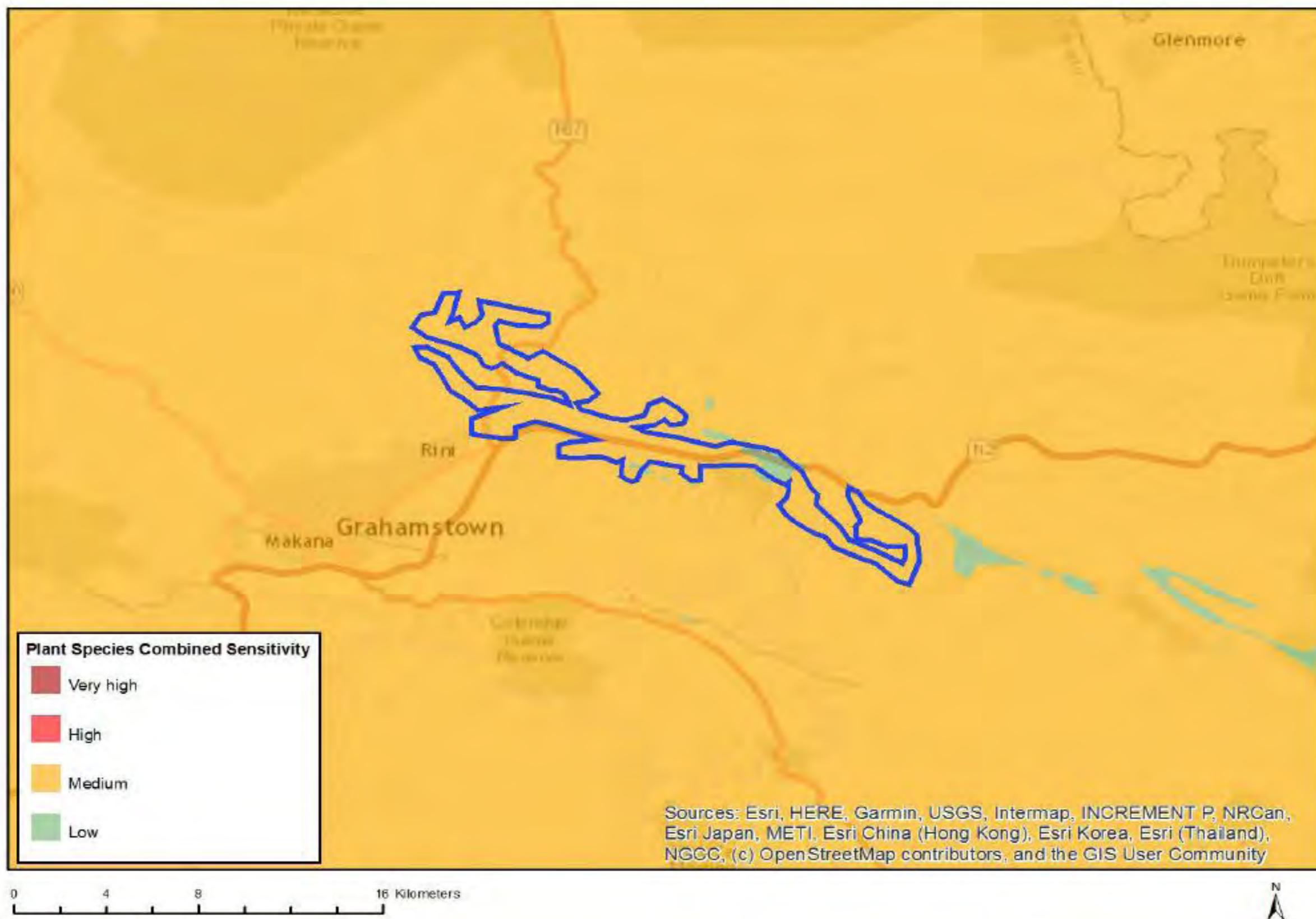
## MAP OF RELATIVE NOISE THEME SENSITIVITY



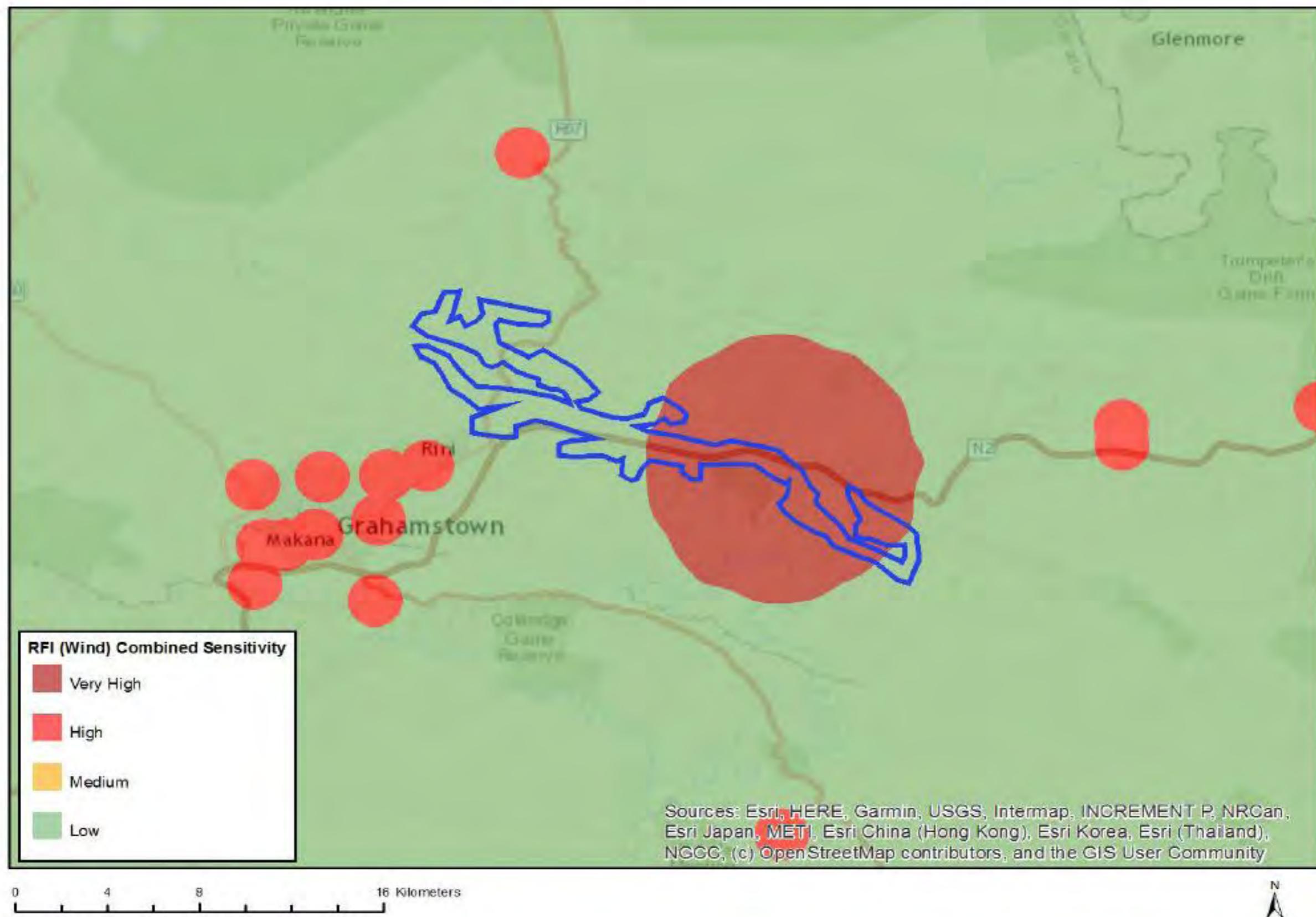
## MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



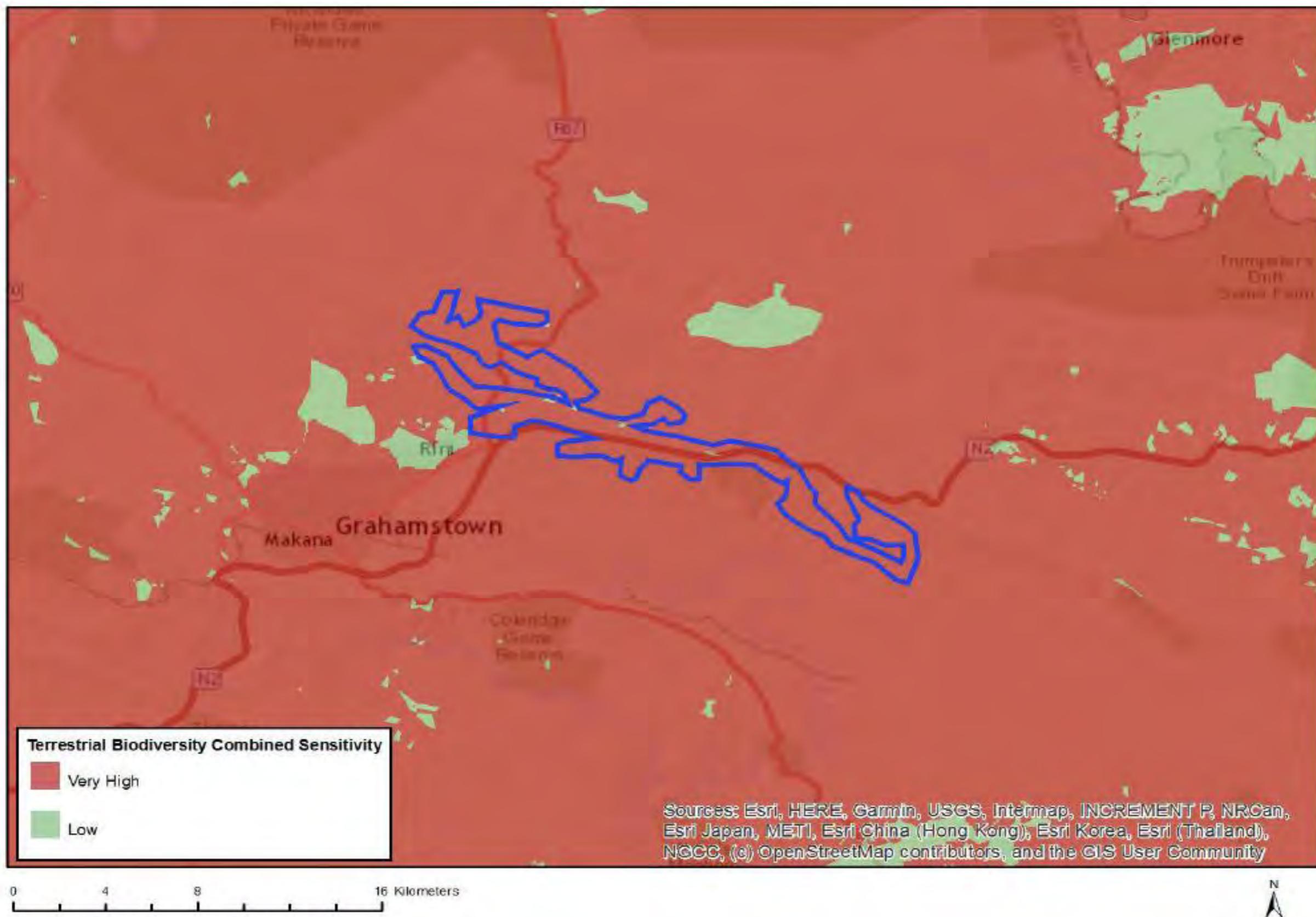
## MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



## MAP OF RELATIVE RFI (WIND) THEME SENSITIVITY



## MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



**7.3 Sub-section 3: Declaration**

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 days prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/Applicant/holder of EA 

Date: 11-03-2020

**7.4 Sub-section 4: amendments to site specific information (Part B; section 2)**

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

## PART C

### 8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and actions must be included in this section. These specific management controls must be referenced spatially, and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

~~This section will not be required should the site contain no specific environmental sensitivities or attributes.~~

\* Please refer to the sensitivity maps in the relevant specialist reports as well as the Draft Environmental Impact Report (EIR) for the WEF sensitivity and the Draft Basic Assessment Report (BAR) for the grid infrastructure sensitivity.

### 9. Recommendations of the EAP and Specialists

In addition to PART B: SECTION 1: Pre-approved generic EMPr template, the following mitigation, management and monitoring measures have been recommended for the various phases of the Albany WEF development. This section includes recommendations by the EAP as well as the relevant specialists.

#### PLANNING AND DESIGN PHASE RECOMMENDATIONS

The following mitigation measures must be implemented as part of the planning and design phase:

- Project planning must include a plan for traffic control that will be implemented, especially during the construction phase of the development. Consultation with the local Road Traffic Unit in this regard must be done early in the planning phase. The necessary road traffic permits must be obtained for transporting parts, containers, materials and construction equipment to the site.
- Careful planning of the routes taken by heavy vehicles must highlight areas of road that may need to be upgraded in order to accommodate these vehicles. Once identified, these areas must be upgraded if necessary.
- All hazardous substances such as paints, diesel and cement must be stored in a bunded area with an impermeable surface beneath them.

- Cement mixing must be conducted at a single location which must be centrally located, where practical. This mixing must take place on an impermeable surface, and dried waste cement must be disposed of with building rubble.
- The applicant must ensure that all relevant legislation and policy is consulted and further ensure that the project is compliant with such legislation and policy. These must include (but not restricted to):
  - Local and District Spatial Development Frameworks
  - Local Municipal bylaws
- In addition, planning for the construction and operation of the proposed energy facility must consider available best practice guidelines, up to date at the proposed time of construction.
- Structures must be located at least 32m away from identified drainage lines.
- A Stormwater Management Plan must be designed and implemented to ensure maximum water seepage at the source of water flow.
- The Stormwater Management Plan must also include management mitigation measures for water pollution, wastewater management and the management of surface erosion e.g. by considering the applicability of contouring, etc.
- A Waste Management Plan must be developed for handling onsite waste. This plan must designate an appropriate area where waste can be stored before disposal.
- All general waste must be disposed of at a registered landfill site.
- Wherever possible, construction activities must be undertaken during the driest part of the year to minimize downstream sedimentation due to excavation, etc. When not possible, suitable stream diversions structures must be used to ensure that riversstreams are not negatively impacted by construction activity.

### CONSTRUCTION PHASE RECOMMENDATIONS

The following mitigation measures must be implemented during the construction phase:

- Fugitive/nuisance dust must be reduced by implementing one of or a combination of the following
  - Damping down of un-surfaced and un-vegetated areas;
  - Retention of vegetation where possible;
  - Excavations and other clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas;
  - A speed limit of 40km/h must not be exceeded on dirt roads;
- Any complaints or claims emanating from the lack of dust control must be attended to immediately by the Contractor.
- There must be no burning of construction waste or debris onsite. Cooking is not permitted on site. Smoking on site must be confined to a designated area in the vicinity of the site office which must be equipped with the necessary fire extinguishers.
- The Stormwater Management Plan must be implemented. There must be no earthworks within 32m of the drainage lines to avoid contamination of water sources.
- The Waste Management Plan, incorporating recycling and waste minimisation, must be implemented. The plan must be explained to all employees as part of the environmental induction training. All waste must be disposed of at an appropriately licensed landfill site.
- The storage of fuels and hazardous materials must be located away from sensitive water resources. All hazardous substances (e.g. diesel, oil drums, etc.) must be stored in a bunded area.
- All construction materials must be stored in a central and secure location with controlled access with an appropriate impermeable surface.
- The recommendations of the Stormwater Management Plan must be implemented to mitigate the impacts of run-off water on pollution.

- The concrete batching plant must be clearly demarcated, and no sprawl must be tolerated.
- Stockpiled excavated material must not be stored within 32m of a watercourse.
- Stockpile areas must be suitably bunded to prevent waterborne erosion of exposed soils where there is a likelihood that the soils will be washed into a watercourse.
- Materials used for infilling must be suitably stabilized to ensure that scour and erosion of the existing bed/banks is exacerbated.
- Subsoil cannot be disposed of onsite without the appropriate Waste License in terms of the NEMA: Waste Act. This must be stipulated in the Waste Management Plan.
- Spoil could be used to rehabilitate open borrow pits or erosion features. Disposal of spoil material to a registered landfill must be the last option. No spoil stockpiles will be allowed to remain onsite once construction activities have ceased.
- The following construction recommendations from the Agricultural Assessment must be implemented:
  - Farmers must be compensated for what is lost during the construction phase.
  - The construction phase must be kept as short as possible.
  - Topsoil must be replaced during rehabilitation and the contractor must ensure that the soil is well fertilised and rolled.
  - When rehabilitated the site seeds of indigenous, area-relevant seeds must be used.
  - The soil must be irrigated to ensure germination and establishment of the seed occurs.
  - No unauthorised individuals must be allowed to access the site without permission from the landowners and/or the developers. Theft and vandalism must be reduced by providing additional security to farmers where necessary.
- The following construction recommendations from the Bat Assessment must be implemented:
  - Disturbance and destruction of farm buildings must be avoided.
  - No part of any turbine, including the entire rotor swept zone must be constructed within areas of high bat sensitivity. IWS discourages the development in areas of medium and medium-high bat sensitivity, however, operational mitigation measures are recommended in the operational section to minimise bat fatalities in these zones.
  - Clearing of natural vegetation areas must be kept to a minimum.
  - Construction near cliff-faces and mountainous areas in south and south-east of site must be avoided.
  - Whilst it is unlikely that any new large roosts (consisting of more than 50 bats) will be discovered on site or immediately adjacent, such roosts must be reported if found during the operational phase.
  - Turbines, including the blade length, must be spaced ≥300 m from each other.
  - All turbines (including their full rotor swept zone) must be kept out of all High bat sensitivity areas.
  - There must be at least a 500m no turbine development zone around any sub-stations or office/operations and maintenance buildings.
- The following construction recommendations from the Ecological Assessment must be implemented:
  - Where possible, internal roads and turbine hardstands must be planned and constructed to avoid highly sensitive areas.
  - Where access roads and/or turbine hardstands do need to be located within highly sensitive areas then there must be further ground-truthing to determine the exact road routes and turbine hardstand locations so to, where possible, avoid site specific sensitive areas.
  - Wherever possible, existing service/access roads must be used.
  - Clearing of vegetation must be kept to a minimum and all rocky outcrops and wetlands must be avoided.
  - Construction areas must be demarcated with hazard tape and no clearing must occur outside of these areas. Laydown areas and construction camps must be

located in areas of low sensitivity. Where this is not feasible, then in areas of moderate sensitivity.

- An Environmental Control Officer (ECO) must be employed to monitor the clearing of vegetation for the construction of roads and hardstands.
- The construction of turbine hardstands on rocky outcrops must be avoided.
- Speed restrictions (40 km per hour is recommended) must be in place to reduce the likelihood of animals being killed along the roads.
- Driving within the site must be restricted to day-light hours. Driving before sunrise and after sunset must be restricted as far as practically possible.
- Wherever possible, existing service/access roads must be used.
- Access to all internal roads must be restricted through locked gates and/or guarded booms.
- It is recommended that construction staff are educated regarding poaching and any such activities must be strictly prohibited.
- All the lizards and tortoises, which are likely to occur within the proposed site are listed as Schedule II species on the PNCO List, and it is therefore illegal for any construction staff to remove them from the site. It is recommended that construction staff are educated with regards to reptile conservation and that all staff employed by the developer ensure that any reptiles encountered are not killed. Any reptiles encountered must be allowed to move away from the area but those which require relocation must be relocated in accordance with local legislation. A rescue plan must be developed to protect reptiles which could fall into construction pits.
- All frogs and toads are listed as Schedule II species on the PNCO List and it is therefore illegal to remove them from the site without a permit. Where possible, the placement of turbine hardstands must avoid all aquatic habitats as they are valuable habitats for protected amphibian species.
- If amphibians are encountered during construction works, all construction staff must be educated with regards to amphibian conservation to ensure that they are not harmed or killed. Any amphibians encountered must be allowed to move away from the area or carefully relocated to an area within the same catchment. The construction of turbine hardstands must avoid the wetland areas.
- In the event of the unearthing of any mole species during construction, all construction staff must be educated with regards to mammal conservation to ensure that they are not killed, and any mammals encountered must be allowed to move away from the area or carefully moved to an area outside of the project activities.
- A mole specialist must be appointed to undertake a detailed survey to confirm the presence/absence of Golden moles and assist with micro-siting of the WEF and associated infrastructure and developing a plan to mitigate impacts if detected or favourable habitat is identified (such as relocation).
- Soil stockpiles must be limited to 1.5 m in height.
- Construction activities such as the digging of trenches, which could result in excessive dust pollution, must preferably cease during period of high winds, where practically feasible.
- Newly cleared and exposed areas must be managed for dust and landscaped with indigenous vegetation to avoid soil erosion. Where necessary, temporary stabilization measures must be used until vegetation establishes.
- Where possible, fine materials must be covered or kept in containers during transportation to avoid contamination of the surrounding areas.
- The turbine and road layouts need to undergo micro-siting prior to finalisation of the turbine layout.
- A comprehensive Plant Search and Rescue must be undertaken by a suitably qualified specialist prior to vegetation clearance.
- All relevant plant permits must be in place prior to the removal or removal and relocation of protected species.

- Plant SCC found within the proposed site must either be housed in an onsite nursery for use during rehabilitation or be relocated to suitable areas where vegetation clearance will not occur.
  - Areas of the proposed site which contain large populations of SCC must be avoided where possible.
  - The clearance of vegetation, at any given time, must be kept to a minimum to reduce the possibility of soil erosion.
  - The clearing of vegetation and damage to plants must not be permitted in any areas which have demarcated as no-go areas, these include the Southern Mistbelt Forest patches (Beggars Bush State Forest) as well as the Ecca Local Authority Nature Reserve.
  - Where possible, all temporary infrastructure must be placed in areas which have already been transformed.
  - A site-specific Alien Vegetation Management Plan must be implemented during the construction phase, and continued monitoring and eradication needs to take place throughout the life of the project.
  - Alien vegetation, within the development footprints, must be removed from the site and disposed of at a registered waste disposal site.
  - The development footprints and immediate surroundings must be monitored for the growth/regrowth of alien vegetation throughout the construction (and operation) phase.
  - A Rehabilitation Management Plan must be developed and implemented during the construction phase as construction is complete at each site.
- The following construction recommendations from the Heritage Assessment must be implemented:
- The stone packed features and stone walling must be noted and a no-impact / no-development buffer of 20 m be established. Potential negative impact on the stone walling (BHSW2) is of concern. It is recommended that an alternative access road be constructed south of the stone walling to access the five turbines (WTG 70, WTG 3, WTG 5, WTG 7, WTG 9) on the northern boundary of the Farm Glen Craig 241.
  - Any heritage features found on site during construction must be reported to the Albany Museum. A permit must be obtained prior to the removal of any heritage features.
- The following construction recommendations from the Noise Assessment must be implemented
- Ensure a good working relationship between the developer/contractor and all potentially noise-sensitive receptors. Communication channels must be established to ensure prior notice to the sensitive receptor if work is to take place close to them (especially if work is to take place within 500m from them at night). Information that must be provided to potentially sensitive receptor(s) includes:
    - Proposed working dates, the duration that work will take place in an area and working times;
    - The reason why the activity is taking place;
    - The construction methods that will be used; and
    - Contact details of a responsible person where any complaints can be lodged should there be an issue of concern.
  - Minimize simultaneous night-time construction activities close to receptors 17, 28, 18, 19, 21 and 10 where possible. When night-time activities are to take place close to these receptors they must be as per previous recommendation.
  - Ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures, if available. Engine bay covers over heavy equipment must be pre-fitted with sound absorbing material. Heavy equipment that fully encloses the engine bay must be considered, ensuring that the seam gap between the hood and vehicle body is minimised.
- The following construction recommendations from the Paleontological Assessment must be implemented:

- All excavated holes for wind tower footings (with the exception of WTG positions 72-76, 69 and 23-25) must be examined by a palaeontologist after excavation and before casting of footings.
- All new access roads must simultaneously be inspected by a palaeontologist prior to any rehabilitation.
- During excavation of WTG positions 72-76, 69 and 23-25 the ECO must check for any palaeontological material and immediately report any finds or suspected finds to the palaeontologist.
- The following construction recommendations from the Socio-Economic Assessment must be implemented:
  - Local employment (unskilled, semi- and skilled workers) as well as the number of local SMMEs and vendors must be maximised. Set standards for local employment in the Contractor Services Management Plans.
  - Implement a fair and transparent employment process through the EPC contract and employ a Community Employer Relations Officer for the duration of the construction period.
  - Implement a SMME skills development programme (training on how to tender, understanding contracts, etc.) at least 4 months prior to inviting SMMEs to tender. The programme must not only assist local small businesses but also aim to do skills development for the local Municipality.
  - Communication with the affected communities must be done constructively through one channel, such as the Community Employer Relations Officer through the assistance of the local councillors. This will assist to manage expectations and avoid potential conflict.
  - A policy regarding employment equity of minority groups must be formulated and implemented wherever possible.
  - As part of the tender documents, the Contractor/s must provide subcontracting values per package and the plan on how they will meet procurement of minority groups (women, youth, disabled) and SMMEs targets assigned.
  - Relevant measures must be implemented should the Contractor/s not comply with the social management plan that they submitted (impose penalties, termination where necessary, review of future prospective work, etc.).
  - A local procurement strategy, specifically aimed at increasing the local content of the Project to its maximum, must be implemented.
  - The contractor must involve the Makana LED Department from early on.
  - A value-chain analysis of services required (directly and indirectly related to construction such as transport, laundry, catering, uniform supplies, etc.) must be undertaken. This must be communicated to the Makana LM at least four months prior to the tender process commencing.
  - Ensure that the Community Employer Relations Officer has knowledge of the local communities, is educated with good public relation skills, committed to the cause and is accessible for community members.
  - Care must be taken to communicate the project requirements and time frames to the local communities to avoid raising unrealistic expectations. Work through limited communication channel such as the Community Employer Relations Officer and ward Councillor.
  - Contractually obligate contractors and subcontractors must employ temporary workers through the labour desk/job seeker registration database and make this fact known to the communities.
  - The study area and the beneficiary communities who would benefit through employment, equity, SED and ED spend must be clearly defined.
  - The applicant must collaborate with Waainek Wind Farm to determine the beneficiaries on its Community trust, and how their SED and ED expenditures is allocated. This will ensure that overlapping does not take place. Training programmes must be coordinated wherever possible.

- Larger contractors must be required to work with small SMMEs to train and transfer skills. This must be included in the CSMP.
- The applicant must partner with consulting firms and initiatives that support the Eastern Cape Department of Economic Development Environment and Tourism's SMME support programme. Conduct workshops for the eligible SMMEs that were selected for tailored support measures, issue SMME Resource Packs, provide one-on-one enterprise development support, provide office space (where feasible), finance and support liaising with relevant government and state-owned agencies.
- The applicant must create a point of contact for the public such as a community liaison office, a visitor centre, a website with contact details or even a Facebook group.
- The following awareness and communication mitigation measures must be implemented:
  - Keep open communication channels with the landowners and address any potential issues as a matter of priority.
  - Make contact details of the Contractor and procedures to lodge complaints available to the local communities through the local Councillor, a visitor centre, a website with contact details or even a Facebook group.
  - Make a complaint register / logbook available at the entrance to the construction site and act immediately should issues arise. Circulate summaries of monitoring results to the local communities / landowners when necessary.
  - Announce road disruptions such as road closures by using the local media, road sign boards and other Municipal structures.
  - Consult with surrounding landowners whose livestock, private residences and other infrastructure could be affected by dust, noise and other impacts that result from traffic movement and construction activities.
  - Provide a schedule of the construction activities to landowners and relevant I&APs.
  - Keep the local SAPS, other emergency services and Ward Councillors informed about the construction progress and timelines.
  - Consider circulating summaries of monitoring results (dust, ambient noise levels, etc.) to the local Councillor and landowners.
  - Agree on a procedure to notify the Municipality and emergency services, so that immediate and appropriate measures can be put in place to rectify any problems.
  - Comply with all regulations of the Occupational Health and Safety Act.
  - Should electricity or any other service disruptions occur, inform the local landowners/communities thereof in advance and restore the service as quickly as possible.
  - Establish a Project Steering Committee ("PSC") or similar structure for the duration of the construction period. Members of the PSC (developer, Contractor, Municipality, landowner representatives, etc.) would meet on a quarterly basis to discuss issues that may arise during the course of the construction period.
  - Include the affected local Councillors in the employment process to cooperate with the Community Employer Relations Officer in compiling and managing the job seeker registration database.
  - Apply timeously for the relevant zonings and permits with Council.
  - Establish a protocol for landowners and other affected parties to raise complaints: make a complaints' register available at the entrance to the construction site; make the contact details of the main contractor, CLO, PSC and Ward Councillor available; address complaints speedily.
- The following health and safety measures, to protect workers and the broader community, must be implemented:
  - Construction workers must wear protective clothing (e.g. masks that minimize dust inhalation and clothing that protects against sunburn) and earplugs.

- Lock away dangerous plant, equipment and material when not supervised or in use.
  - Provide safe and clean drinking water and instil regular water breaks to keep workers hydrated.
  - Provide sufficient ablution facilities (chemical/portable toilets, etc.) at strategic locations that are cleaned regularly.
  - Keep the local police, emergency and ambulance services informed of construction times and progress.
  - Ensure that emergency vehicles / ambulance is on stand-by for the duration of the construction period.
  - Erect a safety fence around the entire construction site to prevent illegal trespassing of humans and livestock.
  - Display "danger" warning signs and "no public access" signs at all potential accesses, paths and along the periphery of the construction areas in English and the local languages.
  - Ensure good visibility at the accesses to the site.
  - Adhere to the Emergency and Safety plan procedures for the duration of the construction phase.
- The following construction recommendations from the Visual Assessment must be implemented:
- Night lighting of the construction sites must be minimised within requirements of safety and efficiency.

### OPERATIONAL PHASE RECOMMENDATIONS

The following mitigation measures must be implemented during the operational phase:

- All project structures and buildings must be maintained.
- All hazardous substances must be stored in appropriately bunded locations.
- Recommendations of the Stormwater Management Plan must be implemented throughout the lifespan of the project.
- Recommendation of the Waste Management Plan, incorporating recycling and waste minimisation, must be implemented throughout the lifespan of the project.
- See 12.7.5, Monitoring Recommendations for operational recommendations from the Avifaunal Assessment.
- The following operational recommendations from the Bat Assessment must be implemented:
  - During operational monitoring, quarterly progress reports and annual monitoring reports to be submitted to SABAAP, EWT, the DEA, the Eastern Cape Department of Economic Development (EC: DEDEAT), Environmental Affairs and Tourism and to the SANBI Bird and Bat Database.
  - With the exception of compulsory civil aviation lighting, minimise artificial lighting at night, especially high-intensity lighting, steady-burning, or bright lights such as sodium vapour, quartz, halogen, or other bright spotlights at sub-station, offices and turbines.
  - All non-aviation lights must be hooded downward and directed to minimise horizontal and skyward illumination.
  - All non-aviation internal turbine nacelle and tower lighting must be extinguished when unoccupied.
  - For turbines built within the Medium and Medium-High bat sensitive zones, Table 9, Bat Impact Assessment, is recommended from the commencement of operation in order to keep bat fatalities to a minimum (see below)

BAT SENSITIVITY ZONE	TIME OF YEAR	TIME OF NIGHT	WHEN TEMP >	CUT-IN WIND SPEED
Medium	December, January	From sunset for 6 hours and	12°C	5 m.s <sup>-1</sup>

	and February	for 2 hours before sunrise		
Medium	March	Sunset to sunrise	12°C	5 m.s <sup>-1</sup>
Medium	April	From sunset for 2 hours and for 3 hours before sunrise	12°C	5 m.s <sup>-1</sup>
Medium	May	From sunset for 2 hours	12°C	5 m.s <sup>-1</sup>
Medium	June, July and August	From sunset for 1 hour	12°C	5 m.s <sup>-1</sup>
Medium	September	Sunset to sunrise	12°C	5 m.s <sup>-1</sup>
Medium	October and November	From sunset for 4 hours and for 2 hours before sunrise	12°C	5 m.s <sup>-1</sup>
Medium-High	December, January and February	From sunset for 6 hours and for 2 hours before sunrise	12°C	7.5 m.s <sup>-1</sup>
Medium-High	March	Sunset to sunrise	12°C	7.5 m.s <sup>-1</sup>
Medium-High	April	From sunset for 2 hours and for 3 hours before sunrise	12°C	7.5 m.s <sup>-1</sup>
Medium-High	May	From sunset for 2 hours	12°C	7.5 m.s <sup>-1</sup>
Medium-High	June, July and August	From sunset for 1 hour	12°C	7.5 m.s <sup>-1</sup>
Medium-High	September	Sunset to sunrise	12°C	7.5 m.s <sup>-1</sup>
Medium-High	October and November	From sunset for 4 hours and for 2 hours before sunrise	12°C	7.5 m.s <sup>-1</sup>

- See 12.7.5, Monitoring Recommendations for operational recommendations from the Bat Assessment.
- The following operational recommendations from the Noise Assessment must be implemented:
  - People living in NSD17 must be relocated OR the layout must be redesigned to allow a larger buffer zone between the potentially affected receptors, especially NSD17.
  - The use of quieter wind turbines around the potentially affected receptors or developing a noise curtailment programme to manage the noise level for certain wind turbines during certain wind speeds or directions (NSD17) must be investigated.
  - Should the dwellings at NSD17 not be used for residential purposes at night, these mitigation options will fall away.
- The following operational recommendations from the Socio-Economic Assessment must be implemented:
  - Wherever possible, turbines must not be erected in direct view of lodges and strategic viewpoints at the Game Reserves.
  - Mitigate potential intrusion impacts, implement relevant security measures, maintain infrastructure, fencing and roads and implement dust control measures in co-operation with the private landowners to ensure that their property values do not decrease.
  - Assist and guide the local community with regards to the needs of the WEF plant and the types of supporting industries and services required for its successful operation. Make ED funding available to assist the local SMME's with skills training and capacity building, etc.
  - Identification of projects and respective training programmes must be done once a community needs analysis has been executed. Empower communities through training and leadership – not only to maintain a welfare relationship.
  - Make gender and youth issues a specific outcome of the analysis to ensure that these groups are targeted.
  - Provide feedback to the local communities and then draw up a community-accepted plan.
  - All SED and ED plans must be transparently available to the local government and the community. If possible, local government must play a role in monitoring progress of SED and ED projects.
  - Effective information sharing could be done through the industry associated websites, emailed newsletters, municipal noticeboards, information events and meetings and existing local community channels used by the various wards.

- Link with existing NGOs and pre-established projects but make it a pre-requisite (and set targets) that new community-driven development processes be established and that the NGOs assist in skills transfer to these new groups and processes.
  - There is a need for Wind Power companies to communicate with each other. Waainek, Albany and the Plan 8 WEFs need to at least be aware of each other's approaches in order to effectively communicate with local stakeholders and plan coherently.
  - Implementation of appropriate structures and partnerships with the Municipality LED Unit to manage projects, distribute funds and monitor progress. Ensure that the community priorities and projects are co-ordinated with the IDP priorities.
  - Engage with the LED Unit and inform them of local investments and plans. This unit is crucial for the needs analysis and for the planning and implementation of local community investments. Ensure that results of the needs assessment and SED and ED expenditure are aligned and included with the IDP priorities.
  - Build capacity within the Municipality and include the relevant officials in training programmes that is provided for the consultants and company top- and middle management in terms of conflict resolution, community engagement, gender and race awareness, development economics, social justice and constitutionalism.
  - For the duration of the lease period retain on-going involvement with the current land management structures (landowners etc.) to ensure that responsibilities with regards to land management are adequately financed - collectively and individually where required. Responsibilities and financial provisions must form part of the lease agreements and it could be a mandatory requisite of the agreements that landowners use a portion of their incomes towards land management (security, fencing and so forth).
  - Should any land claims arise (that have been verified by the Regional Land Claims Commissioner), conduct negotiations with legitimate claimants and affected landowners to determine how economic benefits must be distributed.
  - Keep open communication channels with the landowners and Private Game Reserves and address any potential issues as a matter of priority.
- The following operational recommendations related to the Visual Assessment must be implemented:
- According to the Aviation Act, 1962, Thirteenth Amendment of the Civil Aviation Regulations, 1997: "Wind turbines shall be painted bright white to provide maximum daytime conspicuously. The colours grey, blue and darker shades of white must be avoided altogether. If such colours have been used, the wind turbines shall be supplemented with daytime lighting, as required."
  - Lighting must be designed to minimise light pollution without compromising safety. Investigate using motion sensitive lights for security lighting. Turbines are to be lit according to Civil Aviation regulations.
  - Limit aircraft warning lights to the turbines on the perimeter according to CAA requirements, thereby reducing the overall impact.
  - Investigate aircraft warning lights that only activate when the presence of an aircraft is detected.
  - Lighting of ancillary buildings and structures must be designed to minimise light pollution without compromising safety. Motion sensitive lighting can be used for security purposes.

#### DECOMMISSIONING PHASE RECOMMENDATIONS

The following mitigation measures must be implemented during the operational phase:

- This section of mitigation measures must be reassessed by a suitably qualified EAP and specialists prior to decommissioning.

- Littering must be avoided, and litter bins must be made available at various strategic points on site. Refuse from the construction site must be collected on a regular basis and deposited at an appropriate landfill.
- Fugitive/huisance dust must be reduced by implementing one or a combination of the following
  - Damping down of un-surfaced and un-vegetated areas;
  - Retention of vegetation where possible;
  - Excavations and other clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas;
  - A speed limit of 40km/h must not be exceeded on dirt roads;
- Any complaints or claims emanating from the lack of dust control must be attended to immediately by the Contractor.
- Construction vehicles and machinery must make use of existing infrastructure such as roads as far as possible to minimise disturbance on the receiving environment.
- After the removal of all wind turbine-related structures, the disturbed soils must be re-vegetated to avoid unnecessary soil erosion.

### MONITORING RECOMMENDATIONS

- Avifaunal Monitoring:
  - The duration and scope of post-construction monitoring must be informed by the outcomes of the previous year's monitoring and must be reviewed annually. Post-construction monitoring of bird abundance and movements should span a minimum of one year and monitoring for fatalities should take place over a minimum of two to three years and repeated at year five and every five years thereafter. The duration of monitoring must be increased should significant impacts be observed.
  - A contingency mitigation budget must be planned for in the operational phase to allow adaptive management of impacts that arise. If such a situation arises possible necessary mitigation measures could include: further research into the problem (including possibly bird tracking studies); human based turbine shutdown on demand; habitat alteration; bird deterrence from site; and any others identified as feasible at the time.
- Bat Monitoring
  - Post-construction/ operational bat monitoring must be performed according to the South African Good Practise Guidelines for Operational Monitoring for Bats at Wind Energy Facilities (Aronson et al 2014) or later version valid at the time of monitoring. IWS recommends the initial 2 years and then every third year for the remainder of the project.
  - Should operational monitoring show that adjusted annual bat fatalities (adjusted for biases such as searcher efficiency and carcass persistence) ever equal or exceed the threshold level of fatalities guided by SABAAP:
    - 60 bats per annum based on the thresholds provided for Drakensberg Montane Grasslands, Woodlands and Forest ecoregion in MacEwan et al. (2017).
    - 39 bats per annum based on site specific thresholds calculated according to the methods provided in MacEwan et al. (2017).
    - Both methods use the entire 6500ha project boundary area and both threshold levels apply to fatalities of single species, i.e. if two species were among the fatalities estimated for a site, the threshold would apply to each, not to the grouped number of all species combined.
  - Then mitigation actions will only be required at specific turbines that have killed 2 or more bats of the particular bat species that has exceeded the fatality threshold for the previous year of monitoring.

- Such actions at the individual turbines include increasing the cut-in wind speed to 7.5m/s (only exposing 25% of bat activity to spinning blades).
- When dealing with living animals that can respond in different and unpredictable ways to changing environmental, climatic and developmental parameters, it is very difficult to make guaranteed predictions. Lintott et al. (2016) state that the nightly and seasonal activity data collected during pre-construction surveys may provide an indication of the extent of curtailment that is required and therefore the economic viability of the project, however, they highlight the need for a feedback mechanism for practitioners to share the success or failure of mitigation strategies, i.e. adaptive mitigation. The bat specialist conducting the operational monitoring has the right to make further recommendations should they see fit.
- Given the magnitude and extent of wind-turbine related bat fatalities worldwide, the conservation implications are critically important and bat fatalities must be avoided, minimised or mitigated proactively.

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are not required to be submitted to the CA.

**EXAMPLE OF A METHOD STATEMENT TEMPLATE**

**METHOD STATEMENT**

**CONTRACT:**..... **DATE:**.....

**PROPOSED ACTIVITY** (give title of Method Statement and reference number from the EMPr):

**WHAT WORK IS TO BE UNDERTAKEN** (give a brief description of the works):

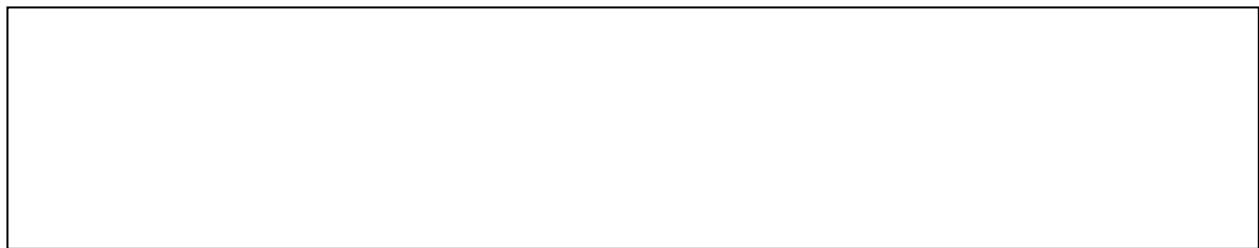
**WHERE ARE THE WORKS TO BE UNDERTAKEN** (where possible, provide an annotated plan and a full description of the extent of the works):

**START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:**

Start Date:

End Date:

**HOW ARE THE WORKS TO BE UNDERTAKEN** (provide as much detail as possible, including annotated sketches and plans where possible):



\* Note: Please attach additional pages should you require more space.

**EXAMPLE OF A METHOD STATEMENT DECLARATIONS**

**DECLARATIONS**

**1) ENVIRONMENTAL CONTROL OFFICER (ECO)**

The work described in this Method Statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

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(Signed)

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(Print name)

Date: \_\_\_\_\_

**2) PERSON UNDERTAKING THE WORKS**

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the ECO will audit my compliance with the contents of this Method Statement

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(Signed)

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(Print name)

Date: \_\_\_\_\_

## APPENDIX 2: CURRICULUM VITAE OF THE EAP AND THE ENVIRONMENTAL TEAM

**ALAN ROBERT CARTER***Curriculum Vitae***CONTACT DETAILS**

Name of Company	<b>Coastal and Environmental Services (Pty) Ltd. t/a CES</b>
Designation	East London Branch – Executive
Profession	Executive
Years with firm	18 (Eighteen) Years
E-mail	<a href="mailto:a.carter@cesnet.co.za">a.carter@cesnet.co.za</a>
Office number	+27 (0) 43 – 7267809 / 8313
Nationality	South African
Professional Affiliations	SACNASP: South African Council for Natural Scientific Profession EAPSA: Environmental Assessment Practitioners Southern Africa IWMSA: Institute Waste Management Southern Africa TSBPA: Texas State Board of Public Accountancy (USA)
Key areas of expertise	<ul style="list-style-type: none"><li>• Marine Ecology</li><li>• Environmental and coastal management</li><li>• Waste management</li><li>• Financial accounting and project feasibility studies</li><li>• Environmental management systems, auditing and due-diligence</li></ul>

**PROFILE****Dr Alan Carter**

Alan has extensive training and experience in both financial accounting and environmental science disciplines with international accounting firms in South Africa and the USA. He is a member of the American Institute of Certified Public Accountants (licensed in Texas) and holds a PhD in Plant Sciences. He is also a certified ISO14001 EMS auditor with the American National Standards Institute. Alan has been responsible for leading and managing numerous and varied consulting projects over the past 25 years.

**ALAN ROBERT CARTER*****Curriculum Vitae*****EMPLOYMENT  
EXPERIENCE**

- October 2013 – Present: Executive (EOH Coastal & Environmental Services, East London, South Africa)
- January 2002 – September 2013: Director (Coastal & Environmental Services, East London, South Africa)
- January 1999 – December 2001: Manager (Arthur Andersen LLP, Public Accounting Firm, Chicago, Illinois USA)
- December 1996 – December 1998: Senior Accountant/Auditor (Ernst & Young LLP, Public Accounting Firm, Austin, Texas, USA.)
- January 1994 – December 1996: Senior Accountant/Auditor (Ernst & Young, Charteris & Barnes, Chartered Accountants, East London, South Africa)
- July 1991 – December 1994: Associate Consultant (Coastal & Environmental Services, East London, South Africa)
- March 1989 – June 1990: Data Investigator (London Stock Exchange, London, England, United Kingdom)

**ACADEMIC  
QUALIFICATIONS**

- Ph.D. Plant Science (Marine) Rhodes University 1987
- B. Compt. Hons. Accounting Science University of South Africa 1997
- B. Com. Financial Accounting Rhodes University 1995
- B.Sc. Hons. Plant Science Rhodes University 1983
- B.Sc. Plant Science & Zoology Rhodes University 1982

**CONTINUING  
PROFESSIONAL  
DEVELOPMENT**

- Environmental Management Systems Lead Auditor Training Course - American National Standards Institute and British Standards Institute (2000)
- ISO 14001:2015 Implementing Changes - British Standards Institute (2015)
- Numerous other workshops and training courses

**ALAN ROBERT CARTER**  
*Curriculum Vitae*



**PROFESSIONAL  
EXPERIENCE**

**Environmental Impact Assessment, Feasibility and Pre-feasibility Assessments:-**

- Managed numerous projects and prepared environmental impact assessment (EIA) reports in terms of relevant EIA legislation and regulations for development proposals including: Infrastructure projects: bulk water and waste water, roads, electrical, mining, ports, aquaculture, renewable energy (solar and wind), industrial processes, housing developments, golf estates and resorts, etc. (2002 – present).
- Projects have also included preparation of applications in terms of other statutory requirements, such as water-use and mining licence /permit applications.
- Managed projects to develop pre-feasibility and feasibility assessments for various projects, including various tourism developments, infrastructure projects, etc.
- Managed project for the East London Industrial Development Zone (ELIDZ) to develop a Conceptual Framework for a Mariculture Zone within the ELIDZ (2009).
- Managed pre-feasibility study to establish a Mariculture Zone within the Coega Industrial Development Zone (2014).
- Assisted City of Johannesburg in the process to proclaim four nature reserves in terms of relevant legislation (2015-2016).
- Acted as Environmental Control Officer (ECO) for numerous projects including solar and wind farms, roads, industrial processes, etc.

**Strategic Environmental Assessment:-**

- Managed Strategic Environmental Assessment (SEA) project toward the development of a Biofuel Industry in the Eastern Cape Province of South Africa (2014-2016)
- Managed Strategic Environmental Assessment (SEA) projects for two South African ports (2006 – 2007).
- Managed Strategic Environmental Assessment (SEA) projects for five (5) local municipalities in the Eastern Cape as part of the municipal Spatial Development Framework plans (2004 – 2005).
- Involved in the financial assessment of various land-use options and carbon credit potential as part of a larger Strategic Environmental Assessment (SEA) for assessing forestry potential in Water Catchment Area 12 in the Eastern Cape of South Africa (2006).

**Climate change, emissions trading and renewable energy:-**

- Provided specialist peer review services for National Department of Environmental Affairs relating to climate change impact assessments for large infrastructure projects (2017-2018).
- Conducted climate change impact assessment for a proposed coal-fired power station in Africa (2017-2018).

**ALAN ROBERT CARTER***Curriculum Vitae*

- Participated in the development of a web-based Monitoring & Evaluation (M&E) system for climate change Mitigation and Adaptation in South Africa for National Department of Environmental Affairs (DEA) (2015-2016).
- Managed project to develop a Climate Change Strategy for Buffalo City Metro Municipality (2013).
- Managed projects to develop climate change strategies for two district municipalities in the Eastern Cape Province (2011).
- Conducted specialist carbon stock and greenhouse gas emissions impact and life cycle assessment as part of the Environmental, Social and Health Impact Assessment for a proposed sugarcane to ethanol project in Sierra Leone (2009 - 2010) and a proposed Jatropha bio-diesel project in Mozambique (2009 - 2010).
- Managed project to develop the Eastern Cape Province Climate Change Strategy (2010).
- Managed project to develop a Transnet National Ports Authority Climate Change Risk Strategy (2009)
- Participated in a project to develop a Renewable Energy roadmap for the East London Industrial Development Zone (ELIDZ) (2013).
- Participated in a project for the East London Industrial Development Zone (ELIDZ) and Eastern Cape Government to prepare a Renewable Energy Strategy (2009).
- Contributed to the development of Arthur Andersen LLP's International Climate Change and Emissions Trading Services (2001).
- Conducted carbon credit (Clean Development Mechanism - CDM) feasibility assessment for a variety of renewable energy projects ranging from biogas to solar PV.
- Participated in the preparation of CDM applications for two solar PV projects in the Eastern Cape.

**Waste Management:-**

- Managed project to develop Integrated Waste Management Plans for six local municipalities on behalf of the Sarah Baartman District Municipality in the Eastern Cape Province (2016).
- Managed project to develop Integrated Waste Management Plans for four local municipalities on behalf of Alfred Nzo District Municipality in the Eastern Cape Province (2015).
- Managed project to develop Integrated Waste Management Plans for eight local municipalities on behalf of Chris Hani District Municipality in the Eastern Cape Province (2011).
- Managed a project to develop a zero-waste strategy for a community development in the Eastern Cape Province (2010).
- Managed waste management status quo analysis for a District Municipality in the Eastern Cape Province (2003).
- For three consecutive years, managed elements of the evaluation of the environmental financial reserves of the three largest solid waste companies (Waste Management, Inc., Republic Services, Inc., Allied Waste, Inc.) and number of smaller waste companies in the USA as part of the annual financial audit process for SEC reporting purposes. Ensured compliance with RCRA and

**ALAN ROBERT CARTER**  
*Curriculum Vitae*



CERCLA environmental regulations.

- Managed elements of the evaluation of the environmental financial reserves of the largest hazardous waste company in the USA (Safety-Kleen, Inc.), as part of the audit process for SEC reporting purposes. Ensured compliance with RCRA and CERCLA environmental regulations.

**Environmental Due Diligence and Business Risk:-**

- Conducted environmental due diligence projects on behalf of the German Development Bank for a forestry pulp and paper operation in Swaziland (2010) and for a large diversified South African agricultural/agro-processing company (2011)
- Managed project for the Transnet National Ports Authority to identify the environmental risks and liabilities associated with the operations of the Port of Durban as part of a broader National initiative to assess business and financial risks relating to environmental management (2006).
- Managed project to determine the financial feasibility of various proposed tourism developments for the Kouga Development Agency in the Eastern Cape Province (2006)
- Contributed significantly to a study to determine the financial and environmental feasibility of three proposed tourism development projects at Coffee Bay on the Wild Coast (2004).
- Conducted sustainability and cost/benefit analysis of various waste water treatment options (including a marine pipeline at Hood Point) for the West Bank of East London (2004).
- Conducted analysis of permit fees and application processing costs for off-road vehicle use on the South African coastline for the Department of Environmental Affairs and Tourism, Marine & Coastal Management (2003).
- Involved in the determination of the historical cost element of environmental remediation insurance claims for a number of multinational companies, including Dow Chemicals, Inc. and International Paper, Inc.
- Evaluated the environmental budgeting process of the US Army and provided best practice guidance for improving the process.

**Policy and Guidelines:-**

- Development of Administration / Application Fee Structure for the Reclamation of Land, Coastal Use Permits, Coastal Waters
- Discharge Permits, Dumping Of Waste at Sea, Off-Road Vehicle Regulations Promulgated in Terms of the National Environmental Management Act: Integrated Coastal Management Act (Act No. 24 Of 2008) (2017).
- Managed project to develop an Estuarine Management Plan for the Buffalo River Estuary for the National Department of Environmental Affairs (2017).
- Managed project to develop a Coastal Management Programme for Amathole District Municipality, Eastern Cape (2015 – 2016).
- Managed project to develop a sustainability diagnostic report as part of the development of the Eastern Cape Development Plan and Vision 2030 (2013).
- Managed project for the Department of Environmental Affairs and Tourism, Marine & Coastal Management to determine the cost implications associated

**ALAN ROBERT CARTER**  
*Curriculum Vitae*



- with the implementation of the Integrated Coastal Management Act (2007).
- Managed project to develop a Conservation Plan and Municipal Open Space System (MOSS) for Buffalo City Municipality (2007)
  - Managed project to develop a Sanitation Policy and Strategy for Buffalo City Municipality, Eastern Cape (2004 – 2006).
  - Managed project to develop an Integrated Environmental Management Plan and Integrated Coastal Zone Management Plan for Buffalo City Municipality, Eastern Cape (2004 – 2005).
  - Managed projects to develop and implement an Environmental Management System (EMS) for the Chris Hani and Joe Gqabi (formerly Ukhahlamba) District Municipalities in the Eastern Cape generally in line with ISO14001 EMS standards (2004 – 2005).
  - Managed project to develop a State of the Environment Report and Environmental Implementation Plans for Amathole, Chris Hani, OR Tambo and Joe Gqabi District Municipalities in the Eastern Cape Province (2005 – 2010).
  - Conducted analysis of permit fees and application processing costs for off-road vehicle use on the South African coastline for the Department of Environmental Affairs and Tourism, Marine & Coastal Management (2003).

**Environmental auditing and compliance:-**

- Conducted environmental legal compliance audit for various large Transnet Freight Rail facilities (2018).
- Managed projects to develop Environmental & Social Management Systems (ESMS) in line with IFC Performance Standards for three (3) wind farms in South Africa (2015-2018).
- Managed project to develop an Environmental & Social Management System (ESMS) in line with IFC Performance Standards for a telecoms company in Zimbabwe on behalf of the German Development Bank (2013)
- Participated in numerous ISO14001 Environmental Management System (EMS) audits for large South African corporations including SAPPi, BHP Billiton, SAB Miller, Western Platinum Refinery, Dorbyl Group and others (2002 – present).
- Reviewed the SHE data reporting system of International Paper, Inc. (IP) for three successive years as part of the verification of the IP SHE Annual Report, which included environmental assessments of 12 IP pulp and paper mills located throughout the USA.
- Conducted Environmental Management System (EMS) reviews for a number of large US corporations, including Gulfstream Aerospace Corporation

**Public financial accounting:-**

- While with Ernst & Young LLP, (USA), functioned as lead financial auditor for various public and private companies, mostly in the technology business segment of up to \$200 million in annual sales. Client experience included assistance in a \$100 million debt offering, a \$100 million IPO and SEC annual and quarterly reporting requirements.
- Completed three years of articles (training contract) in fulfilment of the certification requirements of the South African Institute of Chartered

**ALAN ROBERT CARTER**  
*Curriculum Vitae*



Accountants which included auditing, accounting and preparation of tax returns for many small to medium sized commercial entities.

**Refereed Publications:-**

- Carter, A.R. 1985. Reproductive morphology and phenology, and culture studies of *Gelidium pristoides* (Rhodophyta) from Port Alfred in South Africa. *Botanica Marina* 28: 303-311.
- Carter, A.R. 1993. Chromosome observations relating to bispore production in *Gelidium pristoides* (Gelidiales, Rhodophyta). *Botanica Marina* 36: 253-256.
- Carter, A.R. and R.J. Anderson. 1985. Regrowth after experimental harvesting of the agarophyte *Gelidium pristoides* (Gelidiales: Rhodophyta) in the eastern Cape Province. *South African Journal of Marine Science* 3: 111-118.
- Carter, A.R. and R.J. Anderson. 1986. Seasonal growth and agar contents in *Gelidium pristoides* (Gelidiales, Rhodophyta) from Port Alfred, South Africa. *Botanica Marina* 29: 117-123.
- Carter, A.R. and R.H. Simons. 1987. Regrowth and production capacity of *Gelidium pristoides* (Gelidiales, Rhodophyta) under various harvesting regimes at Port Alfred, South Africa. *Botanica Marina* 30: 227-231.
- Carter, A.R. and R.J. Anderson. 1991. Biological and physical factors controlling the spatial distribution of the intertidal alga *Gelidium pristoides* in the eastern Cape Province, South Africa. *Journal of the Marine Biological Association of the United Kingdom* 71: 555-568.

**Published reports:-**

- Water Research Commission. 2006. Profiling Estuary Management in Integrated Development Planning in South Africa with Particular Reference to the Eastern Cape. Project No. K5/1485.
- Turpie J., N. Sihlophe, A. Carter, T. Maswime and S. Hosking. 2006. Maximising the socio-economic benefits of estuaries through integrated planning and management: A rationale and protocol for incorporating and enhancing estuary values in planning and management. Un-published Water Research Commission Report No. K5/1485

**Conference Proceedings:-**

- Carter, A.R. 2002. Climate change and emission inventories in South Africa. Invited plenary paper at the 5th International System Auditors Convention, Pretoria. Held under the auspices of the South African Auditor & Training Certification Association Conference (SAATCA).
- Carter, A.R. 2003. Accounting for environmental closure costs and remediation liabilities in the South African mining industry. Proceedings of the Mining and Sustainable Development Conference. Chamber of Mines of South Africa, Vol. 2: 6B1-5
- Carter, A.R. and S. Fergus. 2004. Sustainability analysis of wastewater treatment options on the West Bank of East London, Buffalo City. Proceedings of the Annual National Conference of the International Association for Impact

**ALAN ROBERT CARTER***Curriculum Vitae*

Assessment, South African Affiliate: Pages 295-301.

- Carter, A., L. Greyling, M. Parramon and K. Whittington-Jones. 2007. A methodology for assessing the risk of incurring environmental costs associated with port activities. Proceedings of the 1st Global Conference of the Environmental Management Accounting Network.
- Hawley, GL, McMaster AR and Carter AR. 2009, Carbon, carbon stock and life-cycle assessment in assessing cumulative climate change impacts in the environmental impact process. Proceedings of the Annual National Conference of the International Association for Impact Assessment, South African Affiliate.
- Hawley, GL, McMaster AR and Carter AR. 2010. The Environmental and Social Impact Assessment and associated issues and challenges. African, Caribbean and Pacific Group of States (ACP), Science and Technology Programme, Sustainable Crop Biofuels in Africa.
- Carter, A.R. 2011. A case study in the use of Life Cycle Assessment (LCA) in the assessment of greenhouse gas impacts and emissions in biofuel projects. 2nd Environmental Management Accounting Network- Africa Conference on Sustainability Accounting for Emerging Economies. Abstracts: Pages 69-70.

**CERTIFICATION**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

A handwritten signature in black ink, appearing to read "Alan Robert Carter". It is written in a cursive, flowing script.

Alan Robert Carter

Date: 22 January 2020

**CAROLINE ANN EVANS**  
*Curriculum Vitae***CONTACT DETAILS**

Name of Company	<b>CES – Environmental and Social Advisory Services</b>
Designation	Grahamstown Branch
Profession	Senior Environmental Consultant
Years with firm	6 Years
E-mail	<a href="mailto:c.evans@cesnet.co.za">c.evans@cesnet.co.za</a>
Office number	+27 (0)46 622 2364
Nationality	South African
Professional Body	SACNASP, South African Council for Natural Scientific Profession, Professional 2017 (Pending) IAIA
Key areas of expertise	<ul style="list-style-type: none"><li>➤ Project Management</li><li>➤ Renewable Energy</li><li>➤ Wetland Assessment</li></ul>

**PROFILE****Ms Caroline Evans**

Ms Caroline Evans is a Senior Environmental Consultant based in the Grahamstown branch. She holds a BSc degree in Zoology and Environmental Science (with distinction) and a BSc Honours degree in Environmental Science (with distinction), both from Rhodes University. Caroline has completed accredited courses in environmental impact assessments and wetland assessments.

Caroline's primary focuses include Project Management, the general Environmental Impact Assessment Process, Visual Impact Assessments and Wetland Impact Assessments. Examples of fields in which Caroline was the project manager and lead report writer include Wind Energy Facilities and the associated infrastructure (including powerlines), Solar PV, Waste Water Treatment Works, Housing Developments and Agricultural Developments. Her experience with wind energy facilities and associated infrastructure includes the project management and report writing for the Umsobomvu WEF, Dassiesridge WEF, Scarlet Ibis WEF, Albany WEF, Waaihoek WEF and the Great Kei WEF.

Caroline is well versed in South African policy and legislation relating to development, particularly in the Eastern Cape Province. In addition, Caroline's project management experience has helped her gain knowledge and experience in the technical and financial management and coordination of large specialist teams, competent authority and stakeholder engagement, and client liaison.

**CAROLINE ANN EVANS**  
**Curriculum Vitae**



<b>EMPLOYMENT EXPERIENCE</b>	<p><b>EOH Coastal &amp; Environmental Services</b>, Senior Environmental Consultant  <i>August 2016 - present</i> <ul style="list-style-type: none"> <li>• Project Management</li> <li>• Renewable Energy Consultant</li> <li>• Wetland Specialist</li> </ul> </p> <p><b>EOH Coastal &amp; Environmental Services</b>, Environmental Consultant  <i>November 2013 – July 2016</i></p> <p><b>Rhodes University, Department of Environmental Science</b>, Graduate Assistant  <i>January 2010 – January 2012</i></p>
<b>ACADEMIC QUALIFICATIONS</b>	<p><b>Rhodes University</b>, Eastern Cape, South Africa        B.Sc. Honours Environmental Science (with distinction)  <i>2011</i></p> <p><b>Rhodes University</b>, Eastern Cape, South Africa        B.Sc. Zoology &amp; Environmental Science (with distinction)  <i>2007-2010</i></p>
<b>COURSES</b>	<ul style="list-style-type: none"> <li>➤ Rhodes University, Eastern Cape        "Tools for Wetland Assessment" 2010. (with distinction)</li> <li>➤ Rhodes University, Eastern Cape        "Urban Ecology" 2010. (with distinction)</li> <li>➤ Rhodes University, Eastern Cape        "Post Graduate Statistics" 2010. (with distinction)</li> <li>➤ Rhodes University, Eastern Cape        "Environmental Impact Assessment" 2013. (with distinction)</li> </ul>
<b>CONSULTING EXPERIENCE</b>	<p><b>ENVIRONMENTAL IMPACT ASSESSMENTS:</b></p> <ul style="list-style-type: none"> <li>➤ Project: Albany Wind Energy Facility (Grahamstown, EC)        Role: Project Manager and Report Production</li> <li>➤ Project: Umsobomvu Wind Energy Facility (Middelburg, EC / Noupoort, NC)        Role: Project Manager and Report Production</li> <li>➤ Project: Waainek Wind Energy Facility Post-Construction Bird and Bat Monitoring (Grahamstown, EC)        Role: Project Manager and Report Production</li> <li>➤ Project: Dassiesridge Wind Energy Facility (Uitenhage, EC)        Role: Project Manager and Report Production</li> </ul>

**CAROLINE ANN EVANS**  
*Curriculum Vitae*

- Project: Waaihoek Wind Energy Facility (Utrecht, KZN)  
Role: Project Manager and Report Production
- Project: Waaihoek Wind Energy Facility (Utrecht, KZN)  
Role: Project Manager and Report Production
- Project: Great Kei Wind Energy Facility (Komga, EC)  
Role: Assistant Project Manager and Report Production
- Project: Doorndraai Citrus Plantation (Cookhouse, EC)  
Role: Project Manager and Report Production
- Project: Fishwater Flats WWTW Biogas (Port Elizabeth, EC)  
Role: Report Production
- Project: Olivewood Golf and Residential Estate (Chintsa, EC)  
Role: Report Production

**BASIC ASSESSMENTS:**

- Project: Albany Powerline (Grahamstown, EC)  
Role: Project Manager and Report Production
- Project: Scarlet Ibis Wind Energy Facility (NMBM, EC)  
Role: Project Manager and Report Production
- Project: Grey Jade Waterfall Feedlot Biogas (Berlin, EC)  
Role: Project Manager and Report Production
- Project: Black Lite Solar 5MW PV (Berlin, EC)  
Role: Project Manager and Report Production
- Project: Sitrusrand Kirkwood Citrus (Kirkwood, EC)  
Role: Project Manager
- Project: Kareekrans Middleton Pivot (Middleton, EC)  
Role: Project Manager
- Project: Uitsig Boerdery Kirkwood Citrus (Kirkwood, EC)  
Role: Project Manager

**OTHER REPORTS:**

- Project: Eastern Cape Biofuels Strategic Environmental Assessment (EC)  
Role: Report Production
- Project: Coega Industrial Development Zone (EC)  
Role: Report Production
- Project: Umsobomvu WEF EA Amendments (EC & NC)  
Role: Project Manager and Report Production

**CAROLINE ANN EVANS*****Curriculum Vitae***

- Project: Dassiesridge WEF EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Great Kei WEF EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Ukomoleza WEF EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Motherwell WEF EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Golden Valley II WEF EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Peddie WEF and PV EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Nqamakwe WEF and PV EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Thomas River Renewable Energy Facility EA Amendments (EC)  
Role: Project Manager and Report Production
- Project: Qunu WEF and PV EA Amendments (EC)  
Role: Project Manager and Report Production

***SPECIALIST REPORTS:***

- Project: Umsobomvu Wind Energy Facility (Middelburg, EC / Noupoort, NC)  
Role: Visual Impact Assessment
- Project: Dassiesridge Wind Energy Facility (Uitenhage, EC)  
Role: Visual Impact Assessment
- Project: Great Kei Wind Energy Facility (Komga, EC)  
Role: Visual Impact Assessment
- Project: Waaihoek Wind Energy Facility (Utrecht, KZN)  
Role: Visual Impact Assessment & Wetland Impact Assessment
- Project: Olivewood Golf and Residential Estate (Chintsa, EC)  
Role: Visual Impact Assessment
- Project: Oyster Bay Wind Energy Facility (Oyster Bay, EC)  
Role: Wetland Impact Assessment

**CAROLINE ANN EVANS**  
*Curriculum Vitae*



**CERTIFICATION**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

A handwritten signature in black ink, appearing to read "Caroline Ann Evans".

CAROLINE ANN EVANS

Date: June 2019

**ROSALIE ANN EVANS***Curriculum Vitae***CONTACT DETAILS**

<b>Legal Name of Company</b>	<b>Coastal and Environmental Services (Pty) Ltd</b>
<b>Trading Name of Company</b>	<b>CES</b>
<b>Designation</b>	Port Elizabeth Branch
<b>Profession</b>	Senior Environmental Consultant
<b>Years with firm</b>	Five (5) Years & six (6) months
<b>E-mail</b>	<a href="mailto:r.evans@cesnet.co.za">r.evans@cesnet.co.za</a>
<b>Office number</b>	+27 (0)41 393 0700   +27 (0)41 045 0494
<b>Nationality</b>	South African
<b>Professional Body</b>	International Association for Impact Assessment (IAIA) Member No. 5809 Land Rehabilitation Society of Southern Africa (LaRSSA) Member No. 52119
<b>Key areas of expertise</b>	<ul style="list-style-type: none"> <li>➤ Basic Assessments &amp; Environmental Impact Assessments</li> <li>➤ GIS Mapping</li> <li>➤ Project Management</li> <li>➤ Public Participation Process</li> <li>➤ NEMA Section 24 (G) Applications</li> <li>➤ MPRDA Section 53 Applications</li> <li>➤ Agriculture &amp; Soils Assessments</li> </ul>

**PROFILE****Ms Rosalie Evans**

Rosalie is a Senior Environmental Consultant with five (5) and a half years' experience and she is based in the Port Elizabeth branch. She holds a BA degree in Social Dynamics with majors in Geography and Psychology as well as a BA Honours degree in Geography and Environmental Studies, both from Stellenbosch University. Rosalie's honours dissertation analysed the role of small grains in soil carbon sequestration in the agricultural sector of the Western Cape.

Rosalie completed the Introduction to Environmental Impact Assessment Procedure Short Course by Coastal & Environmental Services and the Department of Environmental Science Rhodes University as well as the Estuary Management Short Course by Nelson Mandela University (NMU). In addition, Rosalie is a member of the Land Rehabilitation Society of Southern Africa (LaRSSA) and a member of the International Association for Impact Assessment (IAIA).

Her main focuses include the general Environmental Impact Assessment (EIA) process, project management, the Public Participation Process, NEMA Section 24 (G) Applications and associated reports, GIS Mapping, and Agriculture and Soils Assessments.

**ROSALIE ANN EVANS****Curriculum Vitae**

<b>EMPLOYMENT EXPERIENCE</b>	<p><b>Senior Environmental Consultant, CES</b> 1 August 2018 - present <i>Project Management, Report Reviewing, GIS Mapping, BA and EIA Report Writing, NEMA Section 24 (G) Applications, Sub-consultant Management, MPRDA Section 53 Applications, Specialist Report Writing, Water Use Licensing Process &amp; Public Participation Process.</i></p> <p><b>Environmental Consultant, CES</b> 1 August 2014 – 31 July 2018 <i>GIS Mapping, BA and EIA Report Writing, NEMA Section 24 (G) Applications, MPRDA Section 53 Applications, Specialist Report Writing, Water Use Licensing Process &amp; Public Participation Process.</i></p> <p><b>Online Tutor (2<sup>nd</sup> year Geography, GGH2602), University of South Africa (UNISA)</b> 1 August 2014 – present <i>Responding to/resolving e-tutor group student queries, maintaining the myUnisa GGH2602 e-tutor module site &amp; preparing online activities for GGH2602.</i></p> <p><b>Geography Junior Lecturer (1<sup>st</sup> year Geography, GGH1501), University of South Africa (UNISA)</b> 1 June 2013 – 31 July 2014 <i>Marking undergraduate and post-graduate assignments and examinations, responding to/resolving student queries and maintaining the myUnisa GGH1501 module site, assisting with writing study material for GGH1501 &amp; Assisting with setting up assignments for GGH1501.</i></p>
<b>ACADEMIC QUALIFICATIONS</b>	<p><b>Stellenbosch University, Stellenbosch</b> BA Honours in Geography &amp; Environmental Studies 2012</p> <p><b>Stellenbosch University, Stellenbosch</b> BA in Social Dynamics (Geography &amp; Psychology) 2011</p>
<b>COURSES</b>	<ol style="list-style-type: none"> <li>1. Coastal &amp; Environmental Services and the Department of Environmental Science Rhodes University, Grahamstown. <i>"Introduction to Environmental Impact Assessment Procedure Short Course."</i> 2016.</li> <li>2. Nelson Mandela Metropolitan University, Port Elizabeth. <i>"Estuary Management Short Course."</i> 2016.</li> </ol>
<b>CONSULTING EXPERIENCE</b>	<ol style="list-style-type: none"> <li>1. Potsdam Housing Development EIA, Potsdam, EC. 2016. <i>DEDEAT Application &amp; DEDEAT Scoping Report.</i></li> <li>2. Waaihoek Wind Energy Facility EIA, Utrecht, KZN. 2015/2016. <i>Amended DEA Applications (WEF &amp; Powerline), Amended DEA Powerline, Environmental Impact Report, Appeals Process Public Participation Process &amp; Tourism Assessment Report.</i></li> <li>3. National Route N2 Bypass Road EIA, King William's Town, EC. 2016. <i>DEA Application &amp; DEA Scoping Report</i></li> <li>4. Umsobomvu Wind Energy Facility EIA, Middelburg, EC / Noupoort, NC. 2015. <i>Assisting DEA Environmental Impact Report, Visual Assessment Report &amp; DMR Section 53 Application.</i></li> <li>5. Matatiele to KZN Border Road Upgrade &amp; Borrow Pits BA, Matatiele, EC. 2016. <i>Baseline Sensitivity Report, DEA Application, DEA Basic Assessment Report, Environmental Management Programme, Public Participation Process, DMR Application, DMR Scoping Report &amp; PPP on the Environmental Authorisation.</i></li> <li>6. Upington SEZ &amp; PV Solar EIA, Upington, NC. 2017. <i>Assisting DEA Scoping Report &amp; Tourism Assessment Report.</i></li> <li>7. Molteno Sewer &amp; Sewage Pump Stations BA, Molteno, EC. 2015/2016. <i>Project Management, DEDEAT Application, DEDEAT Basic Assessment Report, Environmental Management Programme, DWS Water Use Applications, Public Participation Process, Rehabilitation, Erosion Management &amp; Alien Invasive Management Plan &amp; PPP on the Environmental Authorisation.</i></li> </ol>

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8. Green River to Zwelitsha and the new Breidbach Interchange Road Upgrade BA, King William's Town, EC. 2016.  
*Baseline Sensitivity Report, DEA Application, DEA Basic Assessment Report, Environmental Management Programme, DWS Water Use Applications, Public Participation Process & PPP on the Environmental Authorisation.*
9. Olivewood Golf & Country Estate BA, Chintsa, EC. 2015/2016.  
*DEDEAT Basic Assessment Report & Public Participation Process.*
10. Lizmore to Heidelberg Road Upgrade & Borrow Pits BA, Heidelberg, WC. 2017.  
*Baseline Sensitivity Report, DEA Application, DEA Basic Assessment Report, Environmental Management Programme, DMR Regulation 2.2 Maps & Specialist Mapping.*
11. Phase 4 Housing Development BA, East London, EC. 2016.  
*Assisting DEDEAT Basic Assessment Report.*
12. Dassiesridge Wind Energy Facility EIA, Uitenhage, EC. 2015.  
*DMR Section 53 Application & Visual Assessment Report.*
13. Lusikisiki Regional Water Supply Scheme EIA: Zalu Dam, Lusikisiki, EC. 2015.  
*Visual Assessment Report & Environmental Management Programme.*
14. Tyityaba Game Reserve Conservation Management Plan, Komga, EC. 2016.  
*Assisting Conservation Management Plan.*
15. Port St Johns Beach Infrastructure EIA, Port St Johns, EC. 2017.  
*Estuarine Assessment Report.*
16. Scarlet Ibis Wind Energy Facility BA, Motherwell, EC. 2017.  
*Agriculture & Soils Assessment Report, DMR Section 53 Application, DMR Regulation 2.2 Map, Public Participation Process Material, Biophysical Mapping & PPP on the Environmental Authorisation.*
17. Albany Wind Energy Facility EIA, Grahamstown, EC. 2018/2019.  
*Agriculture & Soils Assessment Report, DMR Regulation 2.2 Map, Updating Ecological Assessment Report, Assisting DEA Scoping Report, Biophysical Mapping & Public Participation Process Material.*
18. Bodeux Fuel Station EMPr, East London, EC. 2015.  
*Assisting Environmental Management Programme.*
19. Specialist Input for the Route Location of possible Bypasses at Butterworth on National Route N2 Section 17 and 18, Butterworth, EC. 2016.  
*Project Management & Biophysical Mapping.*
20. Specialist Input for the Route Location of possible Bypasses at Dutywa on National Route N2 Section 17 and 18, Dutywa, EC. 2016.  
*Project Management & Biophysical Mapping.*
21. Eastern Cape Biodiversity Conservation Strategy and Action Plan, EC. 2016.  
*Assisting Mapping Specialist Data.*
22. Gonubie Boardwalk NEMA Section 24G Application, Gonubie, EC. 2014.  
*Assisting NEMA Section 24G Application.*
23. Great Kei Wind Energy Facility Section 53 Application, Komga, EC. 2015.  
*DMR Section 53 Application.*
24. Environmental Screening for a Pumped Storage Scheme, Hogsback, EC. 2016.  
*Biophysical Mapping.*
25. Ndlambe Bulk Water Supply Project BA, Ndlambe Municipality, EC. 2016/2017.  
*Route Assessment & DWS Consultation & DWS Water Use Applications.*
26. Justin Le Roux NEMA Section 24G Application, EC. 2017.  
*NEMA Section 24G Application, Basic Assessment Report (for rectification), Environmental Management Programme & Public Participation Process Material.*

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27. Thriftwood NEMA Section 24G Application, EC. 2017.  
*Project Management & Biophysical Mapping.*
28. Kurlandbrik Mine Social and Labour Plan, WC. 2017.  
*Updated Social & Labour Plan.*
29. Brickvest NEMA Section 24G Application, EC. 2017.  
*Project Management, Biophysical Mapping, Public Participation Process Material, NEMA Section 24G Application, DWS Water Use Applications & DWS Risk Assessment.*
30. Wells Estate Social Housing Development BA, Port Elizabeth, EC. 2017.  
*Project Management, DEDEAT Basic Assessment Report, Environmental Management Programme & ELC Meeting Presentation.*
31. St Christopher's Private School BA, Port Elizabeth, EC. 2017.  
*Project Management, DEDEAT Application, Biophysical Mapping & DEDEAT Basic Assessment Report.*
32. Pofadder Prospecting Right, NC. 2017.  
*Biophysical Mapping.*
33. Kenmare Moma Titanium Minerals Mine ESIA, Mozambique. 2018.  
*Biophysical Mapping, Assisting Estuarine Assessment Report, Assisting PPP Posters & Presentation.*
34. Toliar Sand Heavy Minerals Mine ESHIA, Madagascar. 2017.  
*PPP Presentation & Posters & Infrastructure Mapping.*
35. Subdivision & Mixed-Use Development on Erf 1 Parsonsvei EIA, EC. 2017.  
*Project Management, DEDEAT Scoping Report & Public Participation Process.*
36. Bayview Wind Energy Facility EIA, EC. 2017.  
*Agriculture & Soils Assessment Report, Biophysical Mapping, Public Participation Process Material, Chapters of the DEA Scoping Report, Chapters of the DEA Environmental Impact Report, Environmental Management Programme & PPP on the Environmental Authorisation.*
37. General Motors NEMA Section 24G, EC. 2017.  
*Project Management, NEMA Section 24G Application, Public Participation Process Material, Biophysical Mapping, DWS Water Use Applications & DWS Risk Assessment.*
38. Grahamstown to Fish River Pass: Phase 2 Road Upgrade ECO, EC. 2017-2019.  
*Project Management & Review of Monthly Audit Reports.*
39. Joubert Dorndraai Citrus Farm EIA, EC. 2018.  
*DEDEAT Application, Public Participation Process Material, DEDEAT Scoping Report & Biophysical Mapping.*
40. Part 2 Amendment of the Makana Residential Development EA, Grahamstown, EC. 2018.  
*DEDEAT Application for Amendment of Environmental Authorisation, Part 2 Amendment Report, Public Participation Process Material & PPP on the Amended Environmental Authorisation.*
41. Roode Heuwel Prospecting Right, Garies, NC. 2018.  
*Biophysical Mapping.*
42. Citrus Development Section 24(G), Cookhouse, EC. 2018.  
*DEDEAT Basic Assessment Report (for rectification), Environmental Management Programme, Public Participation Process & Biophysical Mapping.*
43. Phase 1 & Phase 2 West End Student Residence Development BA, Port Elizabeth, EC. 2018.  
*Project Management, Public Participation Process Material, Biophysical Mapping, DEDEAT Basic Assessment Report, Environmental Management Programme & PPP on the Environmental Authorisation.*
44. Phase 3 & Phase 4 West End Student Residence Development BA, Port Elizabeth, EC. 2018.

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*Project Management, Public Participation Process Material, Biophysical Mapping, DEDEAT Basic Assessment Report, Environmental Management Programme & PPP on the Environmental Authorisation.*

45. Central Balama Graphite Mine ESIA, Balama, Mozambique. 2018.  
*Land & Natural Resource Use Report.*
46. Waainek Post-Construction Bird and Bat Monitoring, Grahamstown, EC. 2018.  
*Assisting Bat Data Analysis.*
47. Victoria Drive ECO, Port Elizabeth, EC. 2019.  
*Review of Monthly Audit Reports & Quarterly Report Review.*
48. Part 2 Amendment of the Umsobomvu Wind Energy Facility Environmental Authorisation, Middelburg, EC/Noupoort, NC. 2019.  
*DEA Application for Part 2 Amendment, Part 2 Amendment Report, Public Participation Material, DEA Environmental Impact Report for the Umsobomvu I WEF, DEA Environmental Impact Report for the Coleskop WEF, DEA Environmental Impact Report for the Eskom Infrastructure MTS, Agriculture & Soils Assessment Report for the Umsobomvu I WEF, Agriculture & Soils Assessment Report for the Coleskop WEF, Agriculture & Soils Assessment Report for the Eskom MTS, Agriculture & Soils Opinion Letter & Biophysical Mapping.*
49. The Refurbishment of the Kwanobuhle Wastewater Treatment Plant ECO, Nelson Mandela Bay Municipality, EC. 2019.  
*Review of Monthly Audit Reports.*
50. Fishwater Flats Wastewater Treatment Works ECO, Nelson Mandela Bay Municipality, EC. 2019.  
*Review of Monthly Audit Reports.*
51. Residential Development on a Portion of Erf 1226 in Fairview ECO, Port Elizabeth, EC. 2019.  
*Review of Monthly Audit Reports.*
52. Eskom Substation and Powerlines EIA, Heidelberg, GP. 2019.  
*Visual Assessment Report.*
53. Impofu Wind Farms (North, East and West) Section 53 Applications, Oyster Bay, EC. 2019.  
*Project Management & Three (3) Separate DMR Section 53 Applications.*
54. Coleskop Infrastructure Development BA, Middelburg, EC / Noupoort, NC. 2019.  
*Project Management, DEA Application, DEA Draft Basic Assessment Report, DEA Environmental Management Programme Template (March 2019) & Public Participation Process Material.*
55. Umsobomvu Infrastructure Development BA, Middelburg, EC / Noupoort, NC. 2019.  
*Project Management, DEA Application, DEA Draft Basic Assessment Report, DEA Environmental Management Programme Template (March 2019) & Public Participation Process Material.*
56. Khayamnandi Extension on Erven 114, 609, 590 and 24337 ECO, Bethelsdorp, EC. 2019.  
*Review of Monthly Audit Reports & Quarterly Report Review.*
57. Development of Agricultural Lands Section 24(G), Cookhouse, EC. 2019.  
*Section 24(G) Application and Reporting, Environmental Management Programme, Public Participation Process & Biophysical Mapping.*
58. Development of Agricultural Lands Section 24(G), Klipfontein, EC. 2019.  
*Section 24(G) Application and Reporting, Environmental Management Programme, Public Participation Process & Biophysical Mapping.*
59. Development of Citrus and Associated Infrastructure on Nomzamo Farm EIA, Kirkwood, EC. 2019.  
*Project Management, Specialist Coordination & the review of the Application.*

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60. Development of Citrus and Associated Infrastructure on Siyahluma Farm EIA, Addo, EC. 2019.  
*Project Management, Specialist Coordination & the review of the Application.*
61. Development of 19.8 ha of Citrus BA, Kirkwood, EC. 2019.  
*Project Management, DEDEAT Application, DEDEAT Basic Assessment Report, Environmental Management Programme & Public Participation Process.*
62. Development of a Facility for the Recycling & Smelter of Non-ferrous Metals in the Coega SEZ, Port Elizabeth, EC. 2019.  
*Project Management & Specialist Coordination.*
63. Water Use for 7 Wind Farms, EC & NC. 2019.  
*Project Management & DWS Liaison.*
64. Part 2 Amendment of the Ukomoleza Wind Energy Facility EA, Uitenhage, EC. 2019.  
*Biophysical Mapping.*
65. Part 2 Amendment of the Motherwell Wind Energy Facility EA, Uitenhage, EC. 2019.  
*Biophysical Mapping.*
66. Part 2 Amendment of the Dassiesridge Wind Energy Facility EA, Uitenhage, EC. 2019.  
*Biophysical Mapping & Assisting Report Writing.*
67. Part 2 Amendment of the Great Kei Wind Energy Facility EA, Komga, EC. 2019.  
*Biophysical Mapping & Assisting Report Writing.*
68. Driftsands Sewer Collector Augmentation (Phase II) ECO, Port Elizabeth, EC. 2019.  
*Review of Monthly Audit Reports.*
69. Dwarsleegte Farm Citrus Development BA, Kirkwood, EC. 2019.  
*Report Review.*

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**CERTIFICATION**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

ROSALIE ANN EVANS

Date: January 2020

## APPENDIX 3: EXAMPLE OF BASIC ENVIRONMENTAL TRAINING MATERIAL



[www.webweaver.nu/clipart/environmental.shtml](http://www.webweaver.nu/clipart/environmental.shtml)

### Reasons why should we look after the environment

- We have a right to a clean environment
- A clean environment is essential to healthy living
- All our basic needs come from the environment
- A contract has been signed – development vs the environment
- Penalties / fines could be issued

## How to look after the environment

-  Report issues
-  Teamwork
-  Follow the set rules and guidelines (EA, EMPr, Method statements etc.)
-  Conserve, reuse and recycle

## Tips and Guidelines

-  Workers and equipment should not be allowed outside demarcated areas
-  No swimming or polluting of water bodies allowed
-  No damage / disturbance to vegetation or water bodies without consent / permits
-  No disturbance allowed in no-go areas
-  No hunting of animals
-  Report all fires
-  No burning or burying of waste
-  No smoking near hazardous materials
-  Training on fire fighting equipment
-  Hazardous materials to be stored in designated and bunded areas
-  Spill kits and drip trays a must
-  Report all spills
-  Control dust and Noise
-  Maintain construction vehicles
-  Availability and maintenance of sanitation facilities



### Tips and Guidelines

- Only eat in designated areas
- Do not litter
- Vehicles to remain on approved tracks and adhere to speed limit
- Ensure emergency phone numbers are available
- Ensure PPE is worn
- Report fires, leaks and injuries
- Ask if unsure

