



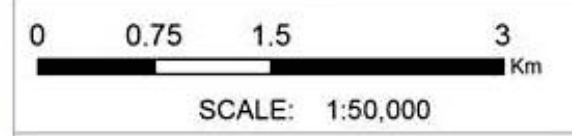
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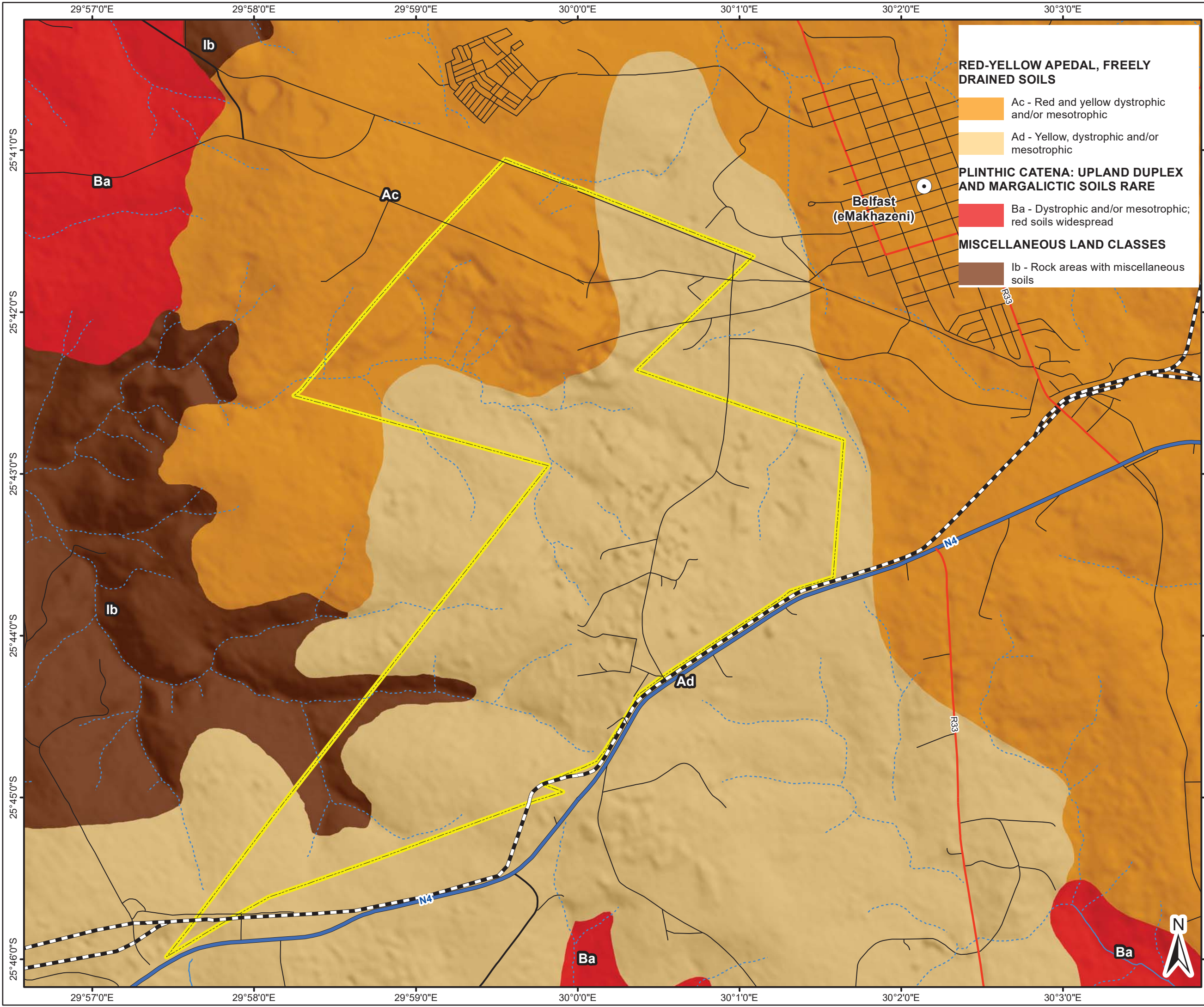
- Site Boundary
- Road Network**
- National Route
- Street
- Secondary Road
- Main Road
- River Systems**
- Perennial River
- Non-Perennial River
- Lithology**
- Q Surface deposit; alluvium
- Pv Shale, shaly sandstone, grit, sandstone, conglomerate, coal in places near base and top
- Pe



PROPERTY DESCRIPTION:  
 PAARDEPLAATS 380 & PAARDEPLAATS 425  
 NEAR THE TOWN: BELFAST  
 REGISTRATION DIVISION: JT; MPUMALANGA

CLIENT:	CI GROUP (PTY) LTD
DATE: 11 OCTOBER 2019	DATUM PROJECTION: WGS84 GEOGRAPHIC
DRAWN BY: M MORELLI GIS SPECIALIST	REVIEWED BY: M KRUGER HYDROGEOLOGIST





# Glisa EMP & IWUL Consolidation Project

### LEGEND

- Towns
- Rivers and Streams
  - Non-Perennial
  - Perennial
- Road Network
  - National Route
  - Main Road
  - Secondary Road
  - Street
  - Railway Line
  - Consolidated Mining Right

**RED-YELLOW APEDAL, FREELY DRAINED SOILS**

- Ac - Red and yellow dystrophic and/or mesotrophic
- Ad - Yellow, dystrophic and/or mesotrophic

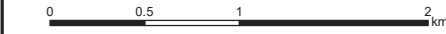
**PLINTHIC CATENA: UPLAND DUPLEX AND MARGALICTIC SOILS RARE**

- Ba - Dystrophic and/or mesotrophic; red soils widespread

**MISCELLANEOUS LAND CLASSES**

- Ib - Rock areas with miscellaneous soils

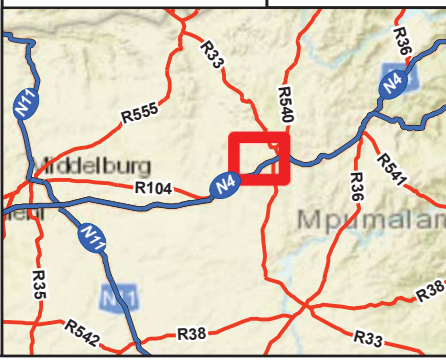
## SOILS GLISA & PAARDEPLAATS

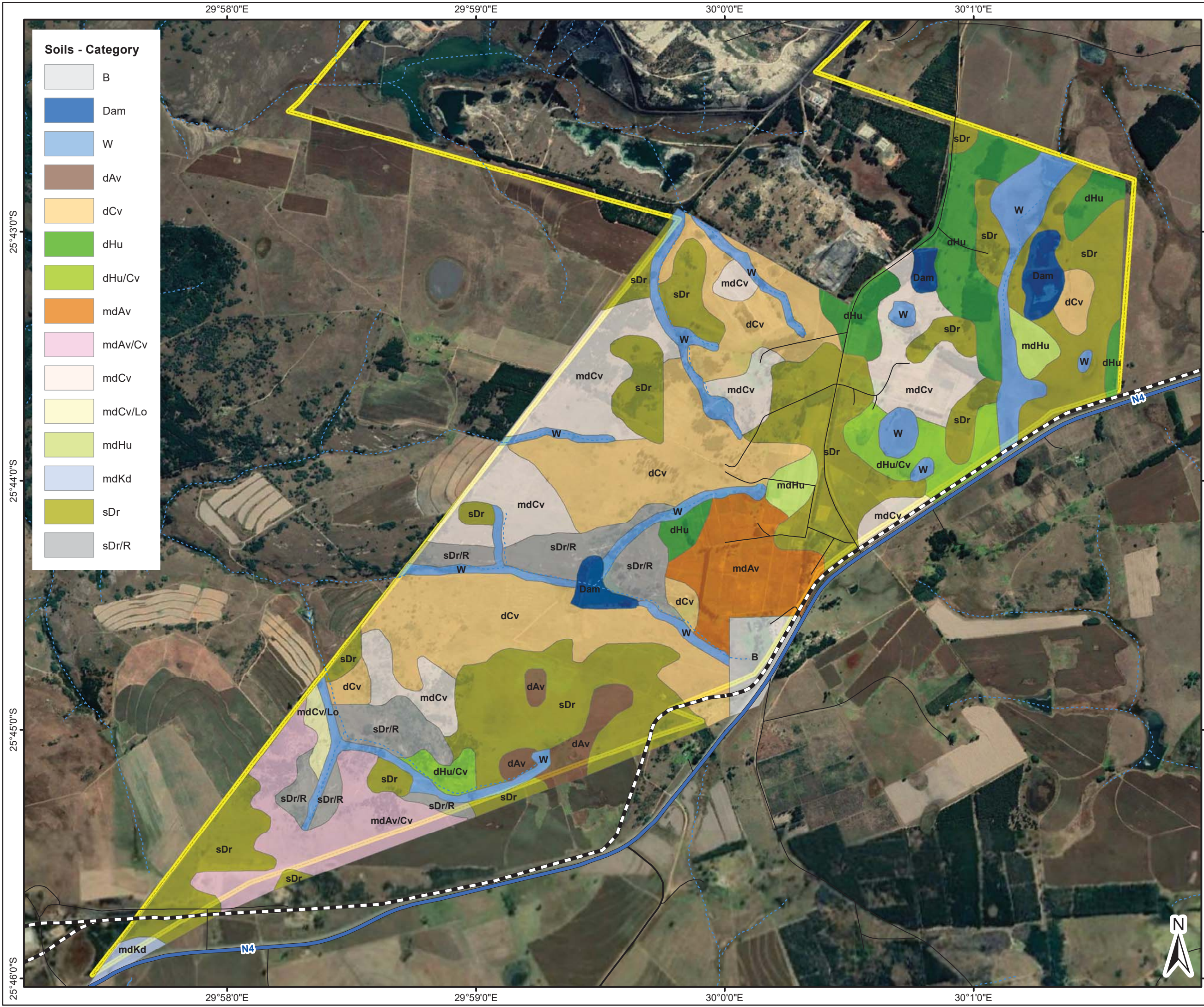


Reviewed: R. Janse Van Rensburg Environmental Compliance and Assessment Manager	Drawn by: A Brower GIS Consultant
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Datum: WGS 1984  
Units: Degree

Scale: 1:40 000  
CIGroup: 19-0001  
Map ID: 126-001-16-v3  
Date: 18/06/2020





**Soils - Category**

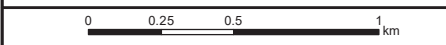
Light Grey	B
Dark Blue	Dam
Light Blue	W
Brown	dAv
Orange	dCv
Green	dHu
Light Green	dHu/Cv
Orange	mdAv
Pink	mdAv/Cv
Light Orange	mdCv
Yellow	mdCv/Lo
Light Green	mdHu
Light Blue	mdKd
Dark Green	sDr
Grey	sDr/R

**Glisa EMP & IWUL Consolidation Project**

**LEGEND**

Circle with dot	Towns
Dashed blue line	Non-Perennial Rivers and Streams
Solid blue line	Perennial Rivers and Streams
Thick blue line	National Route
Red line	Main Road
Thin black line	Secondary Road
Thin black line	Street
Black and white dashed line	Railway Line
Yellow outline	Consolidated Mining Right

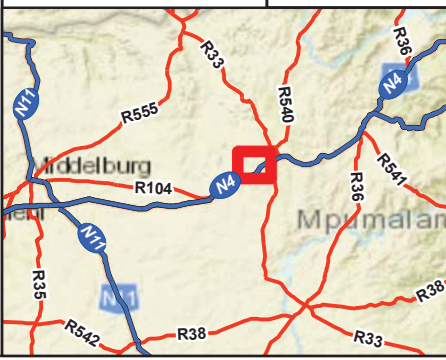
**SOILS**

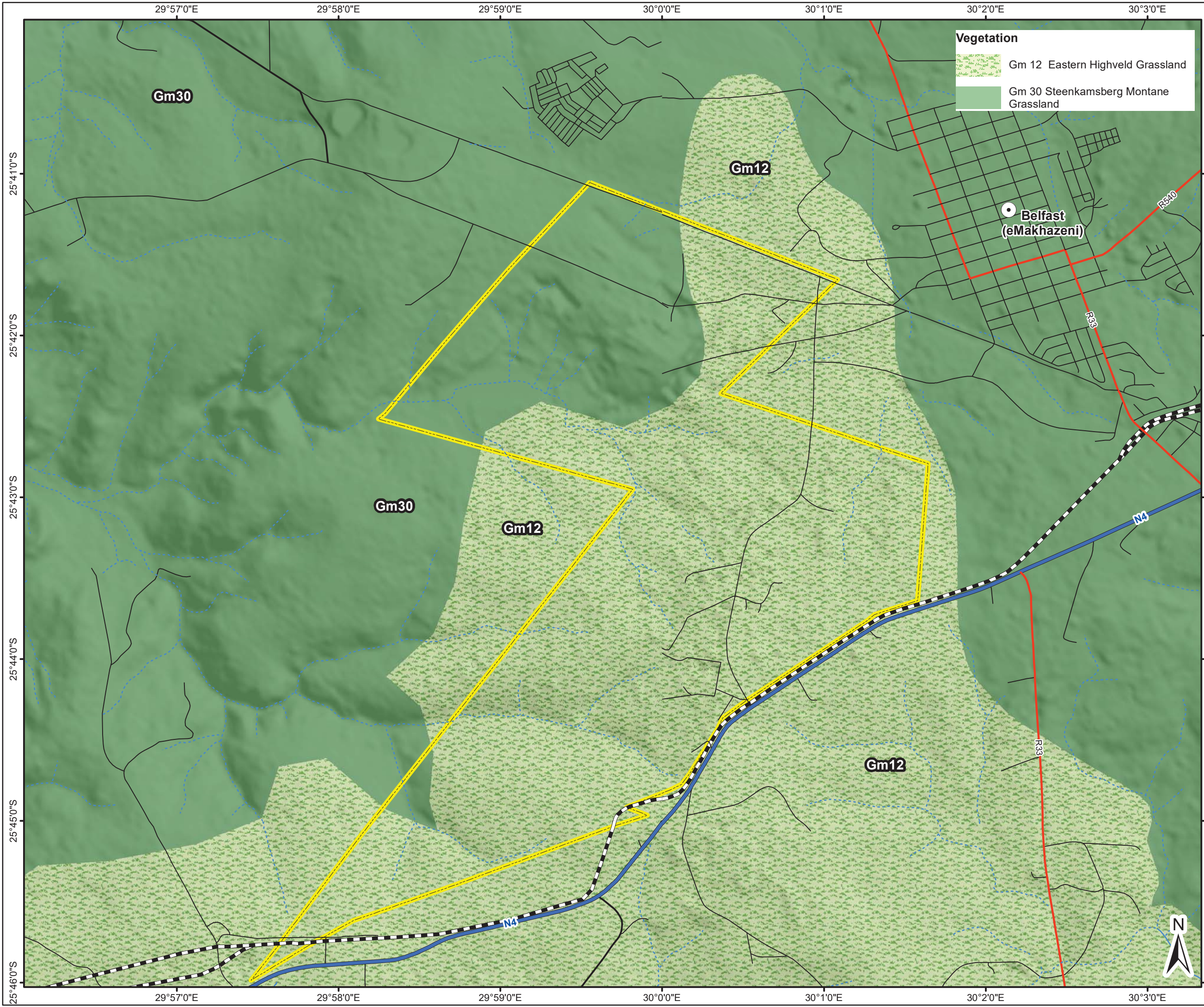


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Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree

	Scale: 1:26 000
	CIGroup: 19-0001
	Map ID: 126-001-61
	Date: 20/04/2021





# Glisa EMP & IWUL Consolidation Project

- LEGEND**
- Towns
  - Rivers and Streams**
    - Non-Perennial
    - Perennial
  - Road Network**
    - National Route
    - Main Road
    - Secondary Road
    - Street
    - Railway Line
    - Consolidated Mining Right

**Vegetation**

- Gm 12 Eastern Highveld Grassland
- Gm 30 Steenkamsberg Montane Grassland

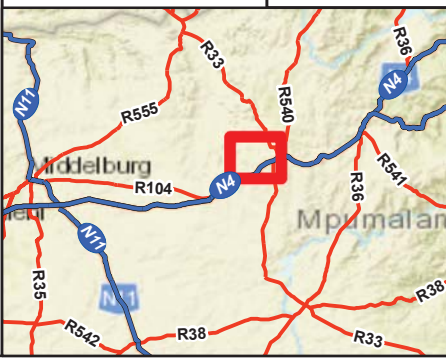
## VEGETATION GLISA & PAARDEPLAATS

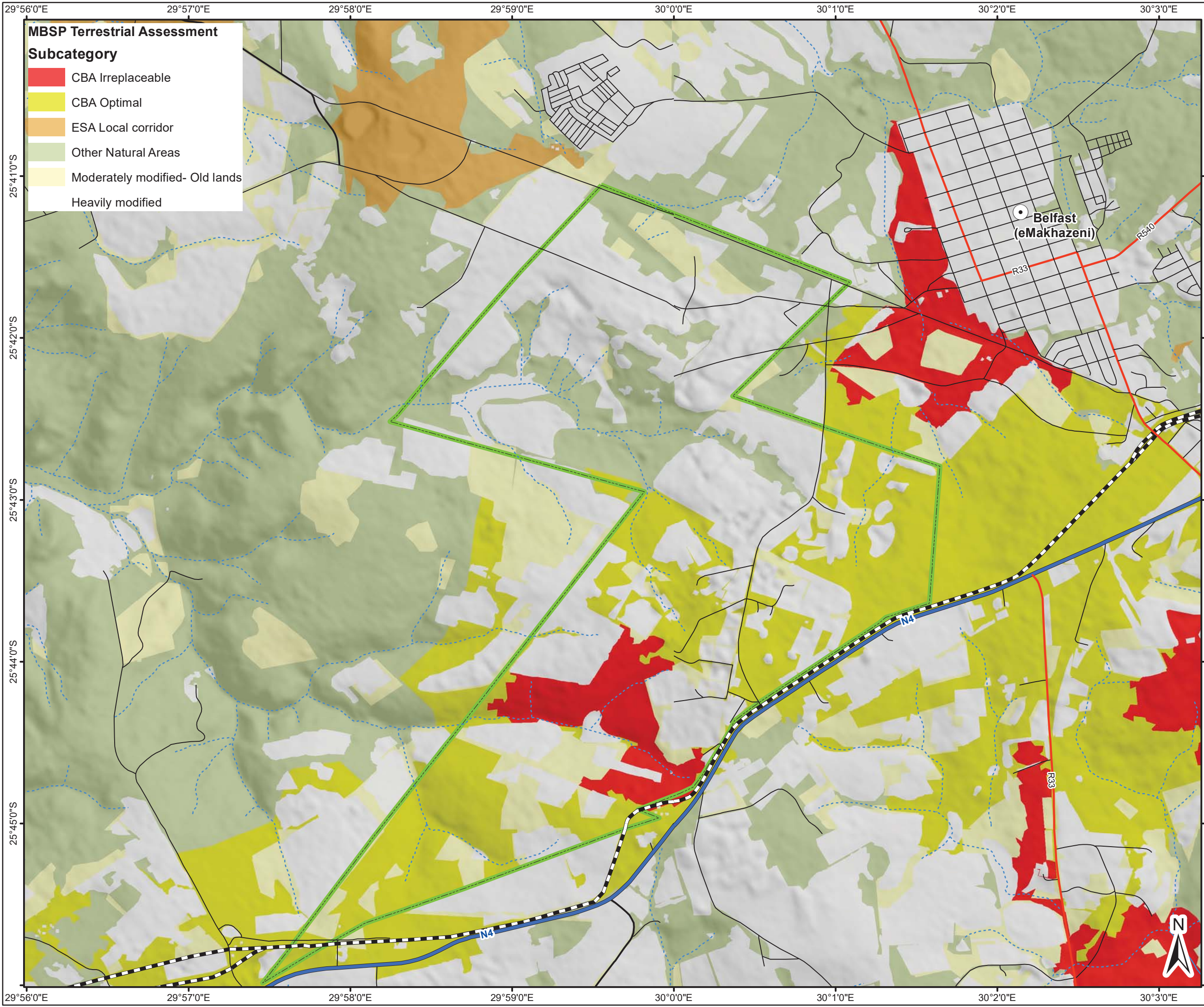


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Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree

	Scale: 1:40 000
	CIGroup: 19-0001
	Map ID: 126-001-17-v3
	Date: 18/06/2020





# Glisa EMP & IWUL Consolidation Project

## LEGEND

- Towns
- Rivers and Streams
  - Non-Perennial
  - Perennial
- Road Network
  - National Route
  - Main Road
  - Secondary Road
  - Street
  - Railway Line
  - Consolidated Mining Right

## CRITICAL BIODIVERSITY AREAS GLISA & PAARDEPLAATS



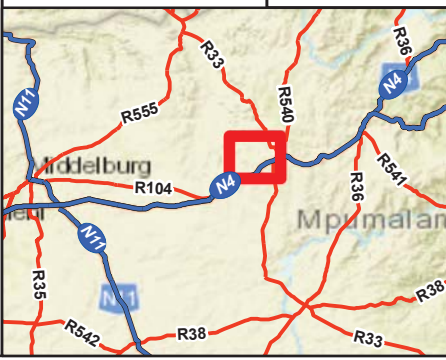
Reviewed: R. Janse Van Rensburg  
 Environmental Compliance and Assessment Manager

Drawn by: A Brower  
 GIS Consultant

Coordinate System: GCS WGS 1984  
 Datum: WGS 1984  
 Units: Degree














**cigroup** DO IT RIGHT

Scale: 1:40 000  
 CIGroup: 19-0001  
 Map ID: 126-001-19-V2  
 Date: 18/06/2020

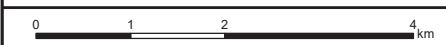


# Glisa EMP & IWUL Consolidation Project

## LEGEND

-  Towns
- Rivers and Streams**
  -  Non-Perennial
  -  Perennial
- Road Network**
  -  National Route
  -  Main Road
  -  Secondary Road
  -  Street
  -  Railway Line
  -  Consolidated Mining Right
- Mining and Biodiversity Guidelines**
  -  A. Legally Protected - Mining Prohibited
  -  B. Highest Biodiversity Importance - Highest Risk For Mining
  -  C. High Biodiversity Importance - High Risk To Mining
  -  D. Moderate Biodiversity Importance - Moderate Risk For Mining

## MINING AND BIODIVERSITY GUIDELINES



Reviewed: R. Janse Van Rensburg  
Environmental Compliance and Assessment Manager

Drawn by: A Brower  
GIS Consultant

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Datum: WGS 1984  
Units: Degree

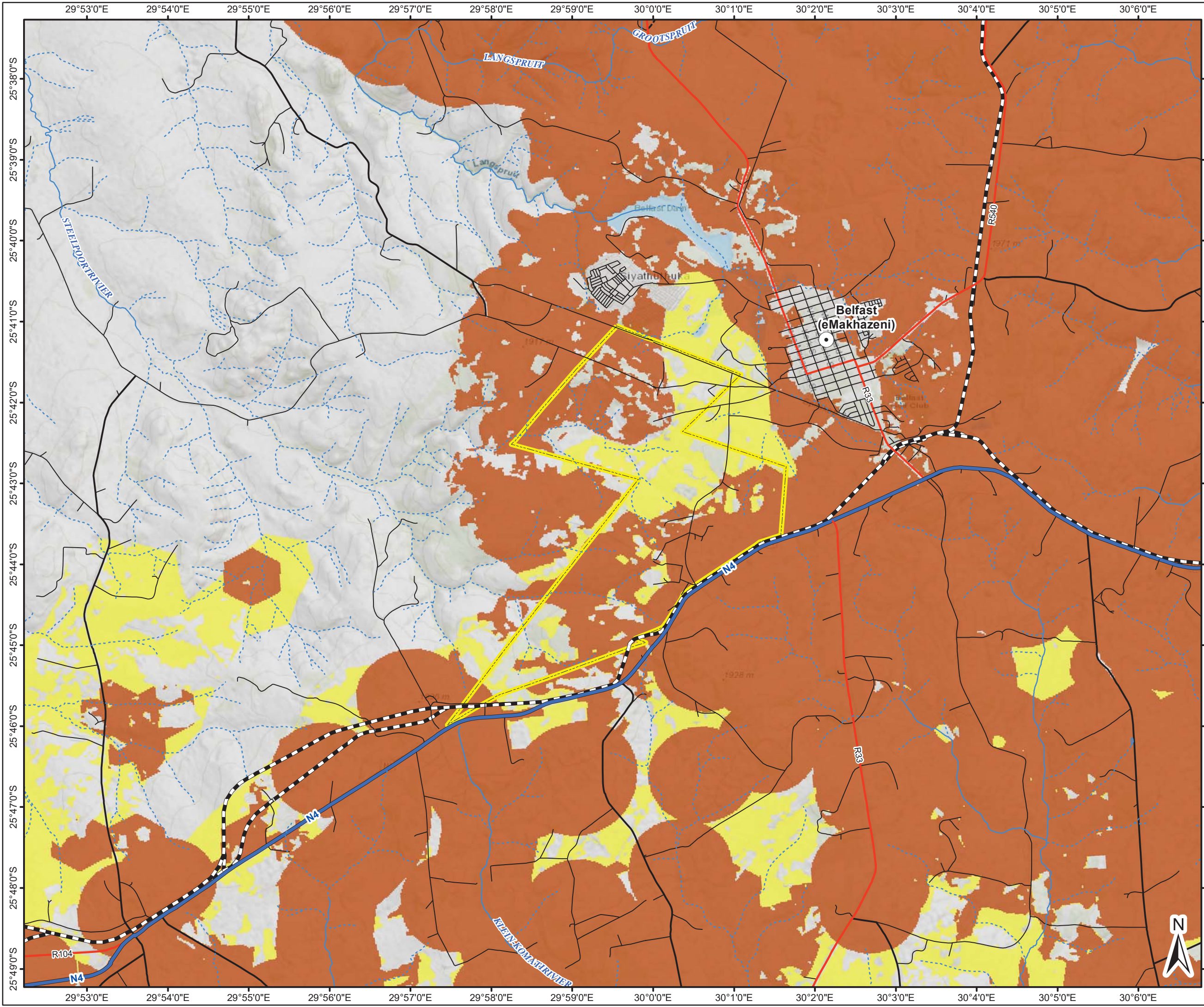
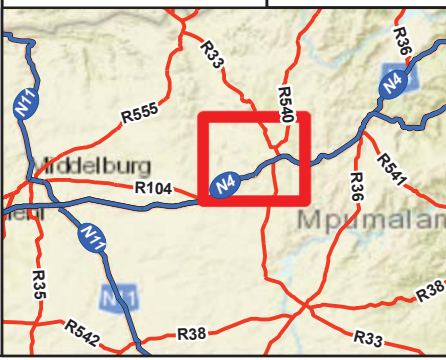
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DO IT RIGHT

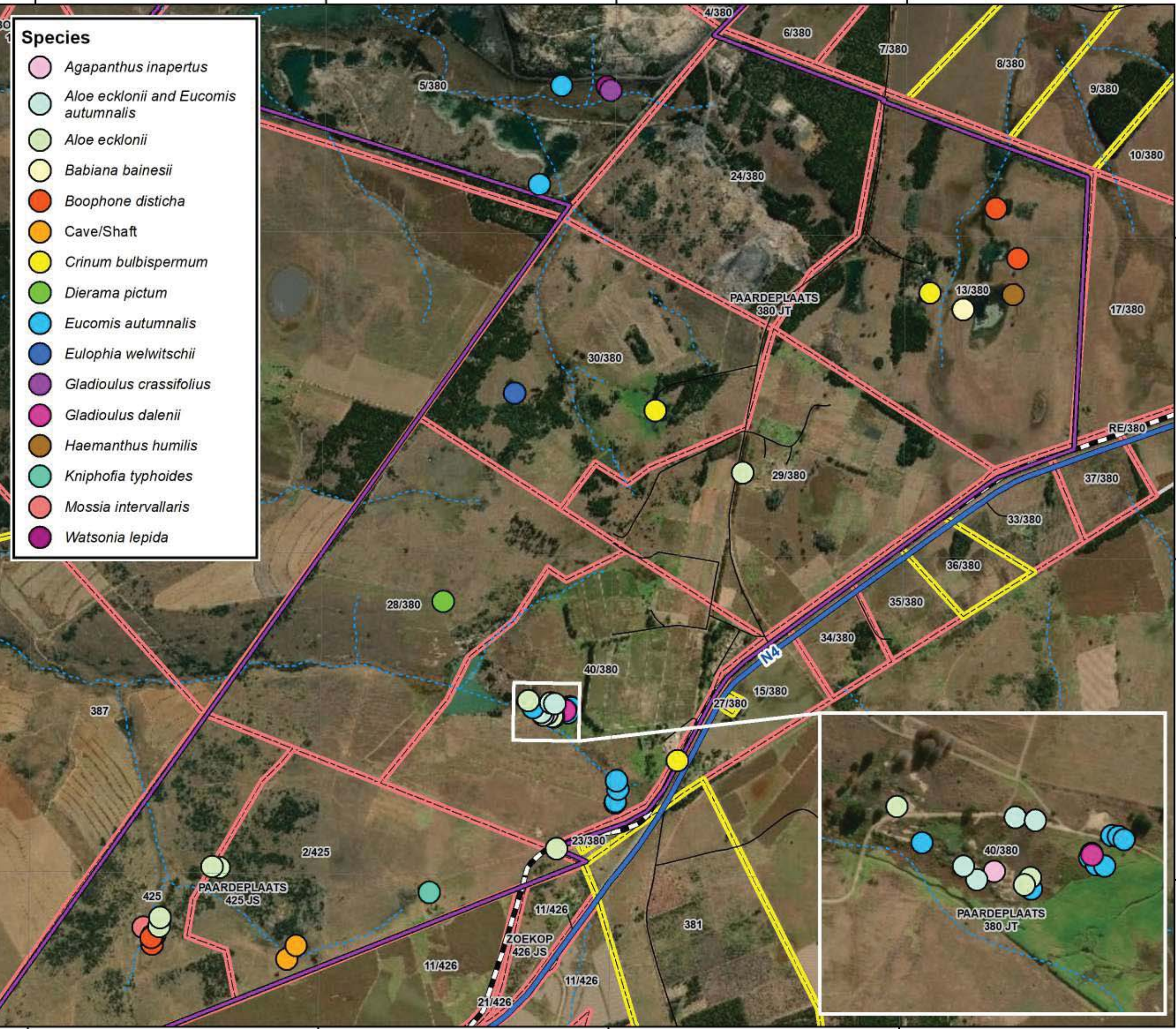
CIGroup: 19-0001

Map ID: 126-001-64

Date: 18/05/2021



29°58'0"E 29°59'0"E 30°0'0"E 30°1'0"E



- Species**
- *Agapanthus inapertus*
  - *Aloe ecklonii* and *Eucomis autumnalis*
  - *Aloe ecklonii*
  - *Babiana bainesii*
  - *Boophone disticha*
  - Cave/Shaft
  - *Crinum bulbispermum*
  - *Dierama pictum*
  - *Eucomis autumnalis*
  - *Eulophia welwitschii*
  - *Gladiolus crassifolius*
  - *Gladiolus dalenii*
  - *Haemanthus humilis*
  - *Kniphofia typhoides*
  - *Mossia intervallaris*
  - *Watsonia lepida*

# NBC Biodiversity Land Management Plan

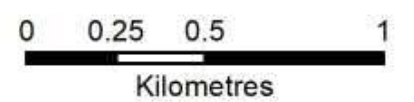
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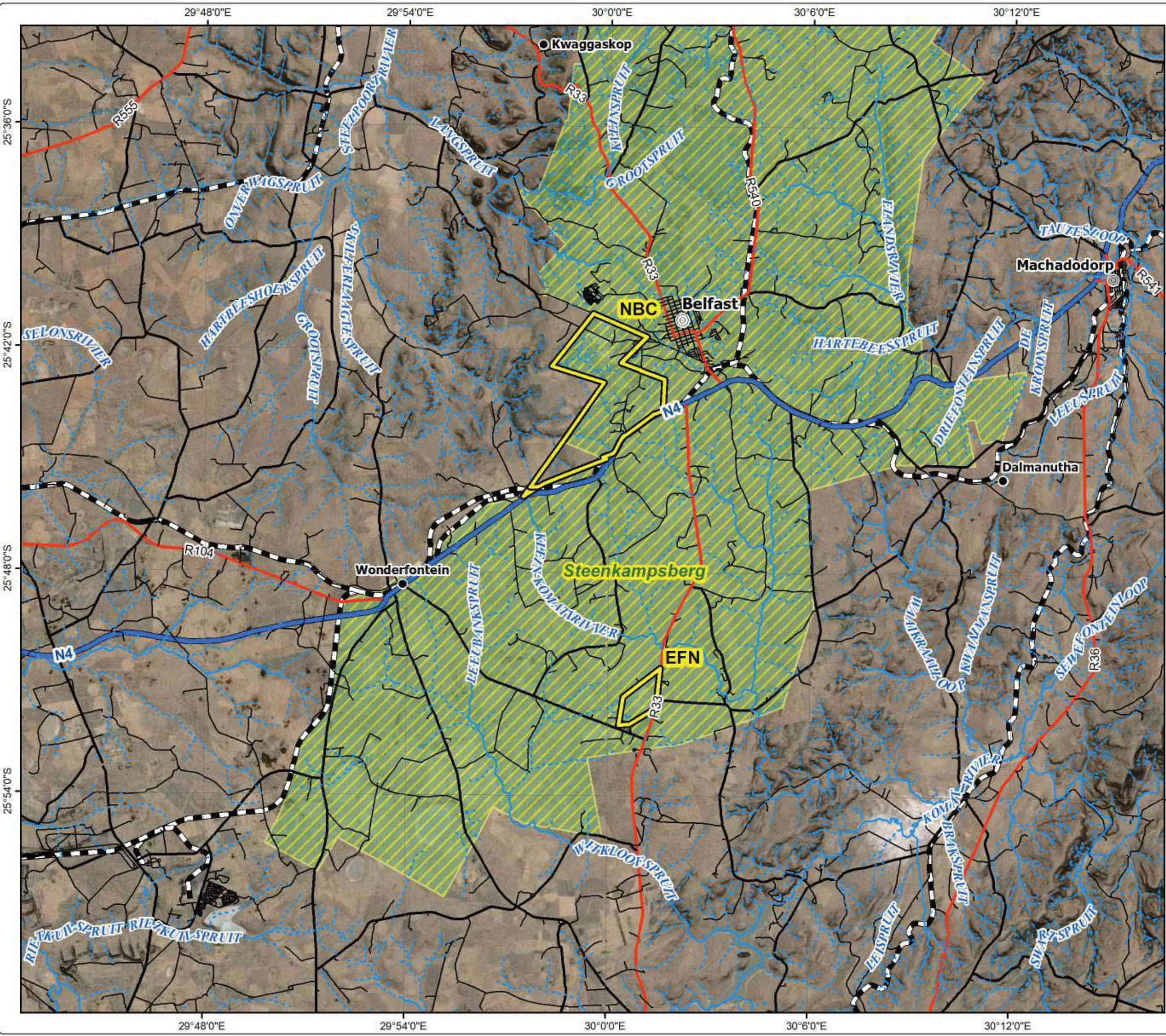
### Legend

- Project Area
  - Non-Perennial
  - National Route
  - Secondary Road
  - Street
  - Railway Line
  - Directly Affected
  - Indirectly Affected
  - Parent Farm Boundary
- Land Tenure**
- Directly Affected
  - Indirectly Affected
  - Parent Farm Boundary



Projection: Transverse Mercator  
 Datum: WGS 1984  
 Central Meridian: 29°E  
 Date: 15/03/2021  
 Ref #: UCD6860\_FF\_12\_KWT





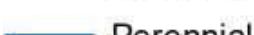




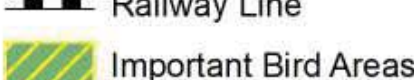




# NBC Biodiversity Land Management Plan

## Important Bird Areas

### Legend

-  Project Area
-  Secondary Town
-  Other Town
-  Settlement
-  Non-Perennial
-  Perennial
-  National Route
-  Main Road
-  Secondary Road
-  Street
-  Railway Line
-  Important Bird Areas



Projection: Transverse Mercator  
 Datum: WGS 1984  
 Central Meridian: 29°E  
 Date: 19/02/2021  
 Ref #: UCD6860\_FF\_07\_AJM





29°56'0"E 29°58'0"E 30°0'0"E 30°2'0"E

- Species**
- Agapanthus inapertus*
  - Aloe ecklonii* and *Eucomis autumnalis*
  - Aloe ecklonii*
  - Babiana bainesii*
  - Boophone disticha*
  - Cave/Shaft
  - Crinum bulbispermum*
  - Dierama pictum*
  - Eucomis autumnalis*
  - Eulophia welwitschii*
  - Gladiolus crassifolius*
  - Gladiolus dalenii*
  - Haemanthus humilis*
  - Kniphofia typhoides*
  - Mossia intervallaris*
  - Watsonia lepida*

# NBC Biodiversity Land Management Plan

## Vegetation Units

### Legend

- Project Area
- Secondary Town
- Non-Perennial
- Perennial
- National Route
- Main Road
- Secondary Road
- Street
- Railway Line

- ### Vegetation Units
- Alien Stands
  - Rocky Outcrop
  - Secondary Grassland
  - Transformed Areas

25°42'0"S

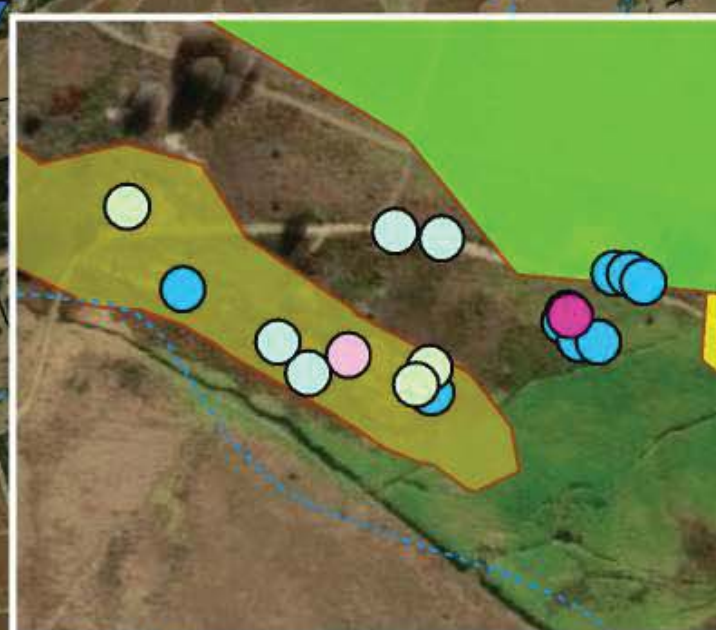
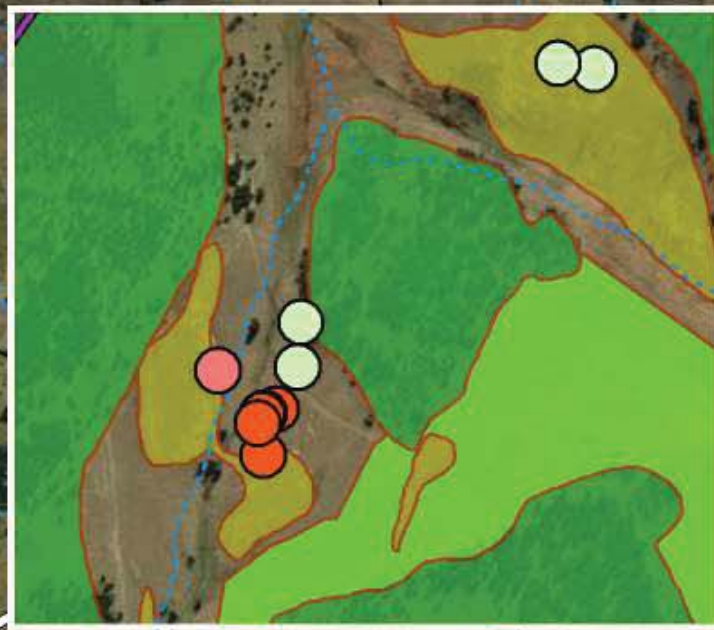
25°42'0"S

25°44'0"S

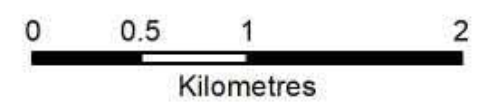
25°44'0"S

25°46'0"S

25°46'0"S



Projection: Transverse Mercator  
 Datum: WGS 1984  
 Central Meridian: 29°E  
 Date: 25/03/2021  
 Ref #: UCD6860\_FF\_13\_KWT

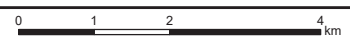


29°56'0"E 29°58'0"E 30°0'0"E 30°2'0"E

# Glisa EMP & IWUL Consolidation Project

- LEGEND**
- Towns
  - Rivers and Streams**
    - Non-Perennial
    - Perennial
  - Road Network**
    - National Route
    - Main Road
    - Secondary Road
    - Street
    - Railway Line
    - Quaternary Catchments
    - Consolidated Mining Right
  - Water Management Areas**
    - Inkomati-Usuthu
    - Olifants

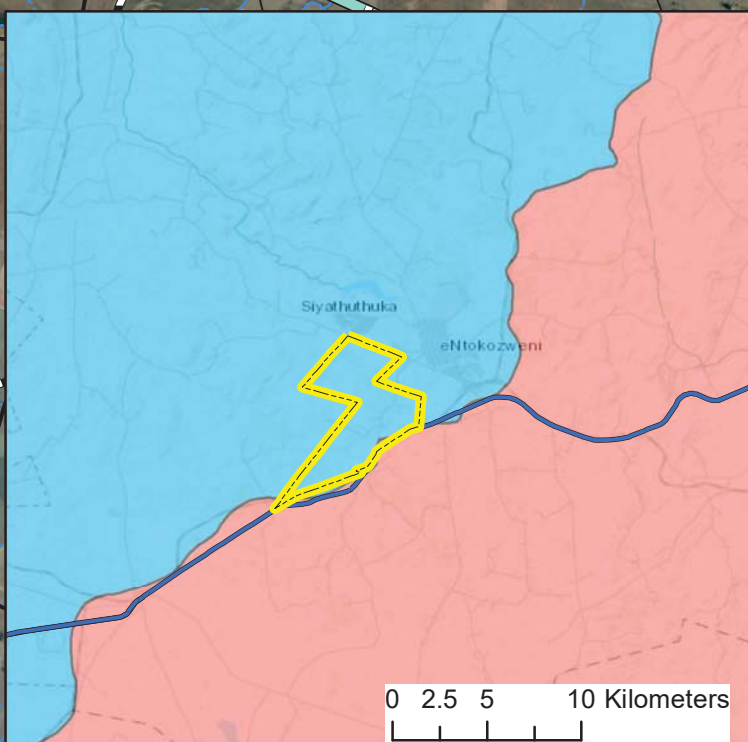
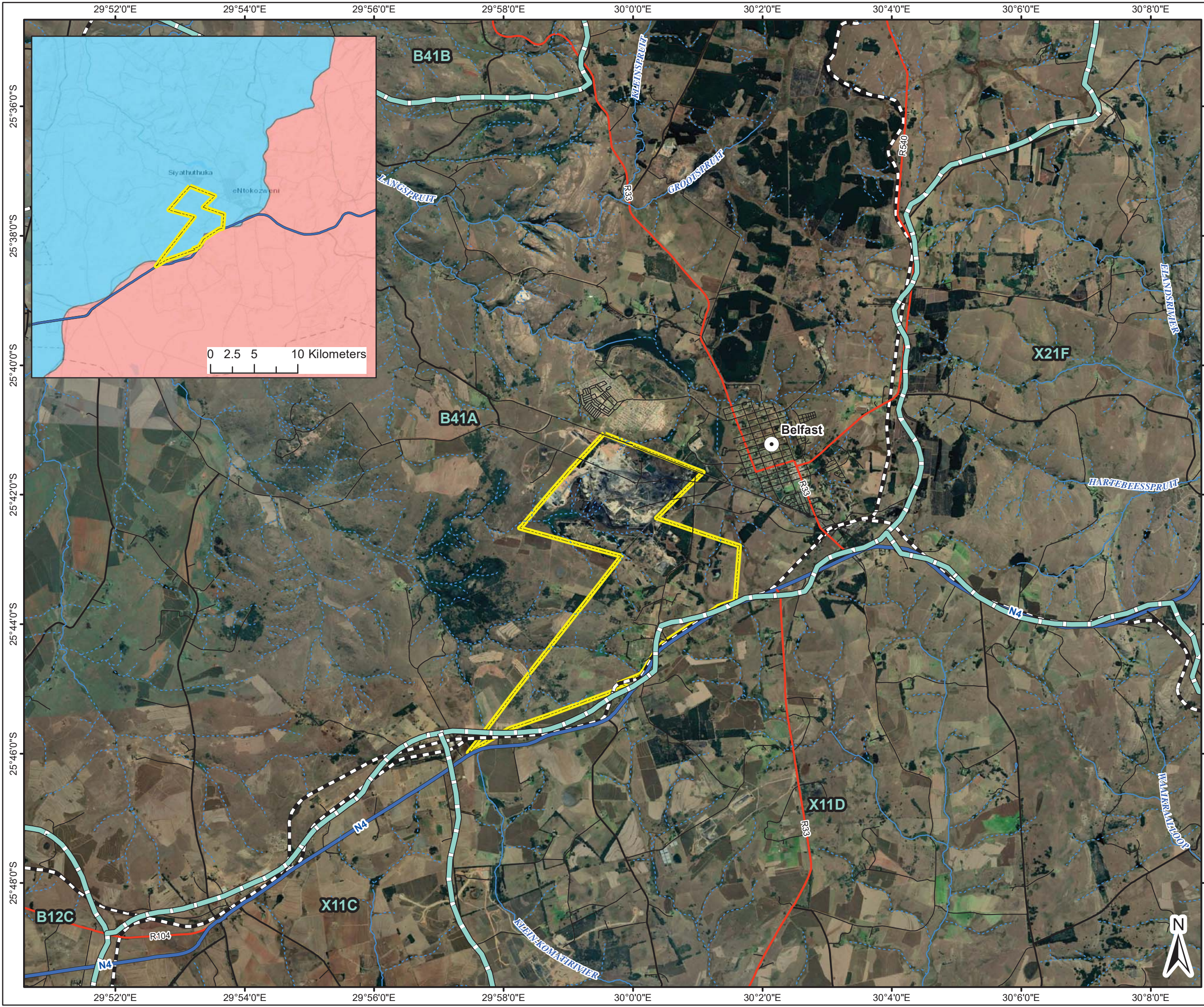
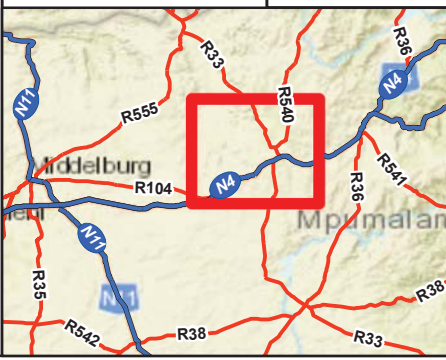
## CATCHMENTS

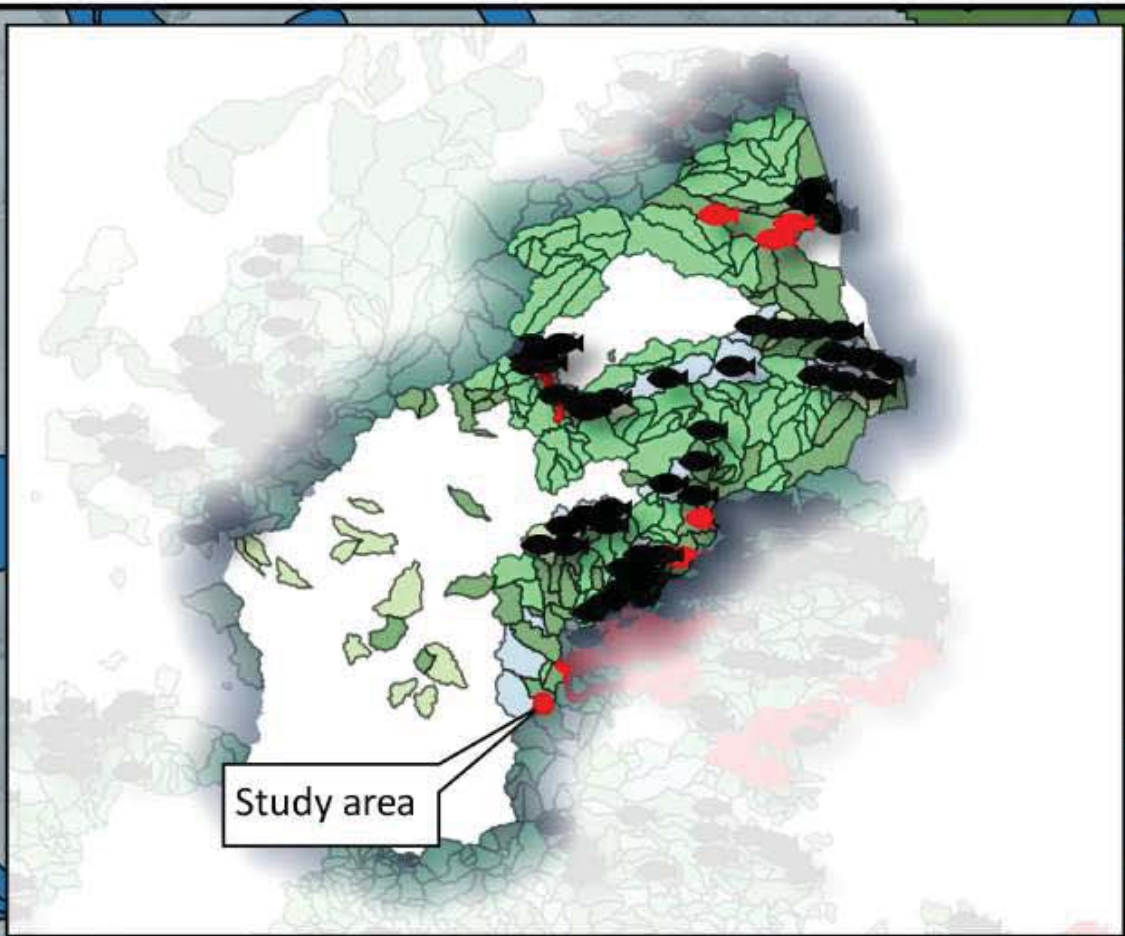


Reviewed: R. Janse Van Rensburg Environmental Compliance and Assessment Manager	Drawn by: A Brower GIS Consultant
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Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree

	Scale: 1:100 000
	CIGroup: 19-0001
	Map ID: 126-001-03-v3
	Date: 17/06/2020





**NBC Consolidation Project**

**National Freshwater Ecosystem Priority Areas**



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Web: www.ecologyinternational.net



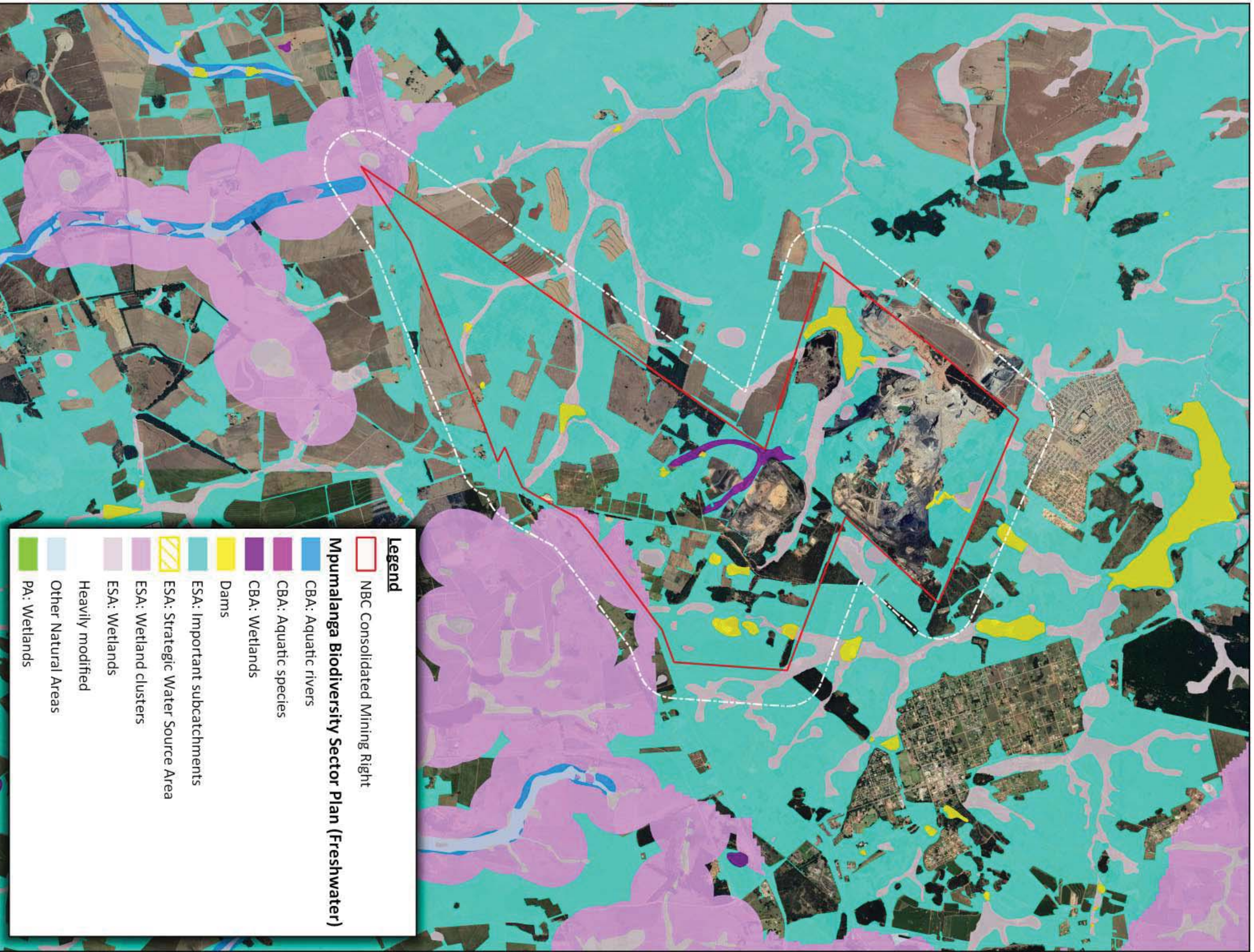
1:45,000

0.5 0 0.5 1 1.5 2 km



Date: May 2021

Coordinate System:  
Geographic WGS84



**Legend**  
 NBC Consolidated Mining Right

**Mpumalanga Biodiversity Sector Plan (Freshwater)**

- █ CBA: Aquatic rivers
- █ CBA: Aquatic species
- █ CBA: Wetlands
- █ Dams
- █ ESA: Important subcatchments
- ▨ ESA: Strategic Water Source Area
- █ ESA: Wetland clusters
- █ ESA: Wetlands
- Heavily modified
- Other Natural Areas
- █ PA: Wetlands

0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic WGS84



**NBC Consolidation Project**

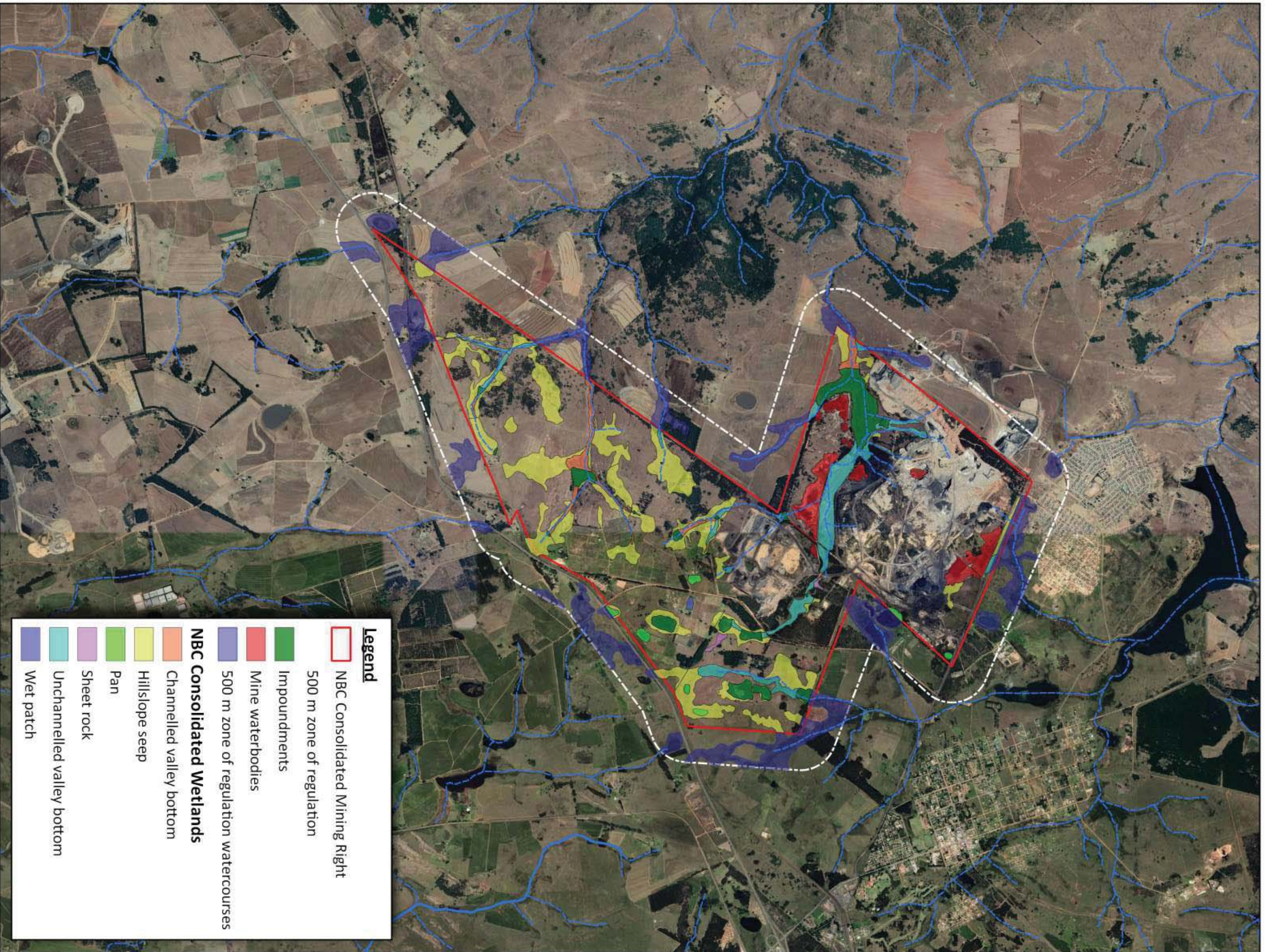
**Mpumalanga Biodiversity Sector Plan**

(2019)

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**Legend**

- NBC Consolidated Mining Right
- 500 m zone of regulation
- Impoundments
- Mine waterbodies
- 500 m zone of regulation watercourses

**NBC Consolidated Wetlands**

- Channelled valley bottom
- Hillslope seep
- Pan
- Sheet rock
- Unchannelled valley bottom
- Wet patch

**NBC Consolidation Project**

**Wetland Delineation**



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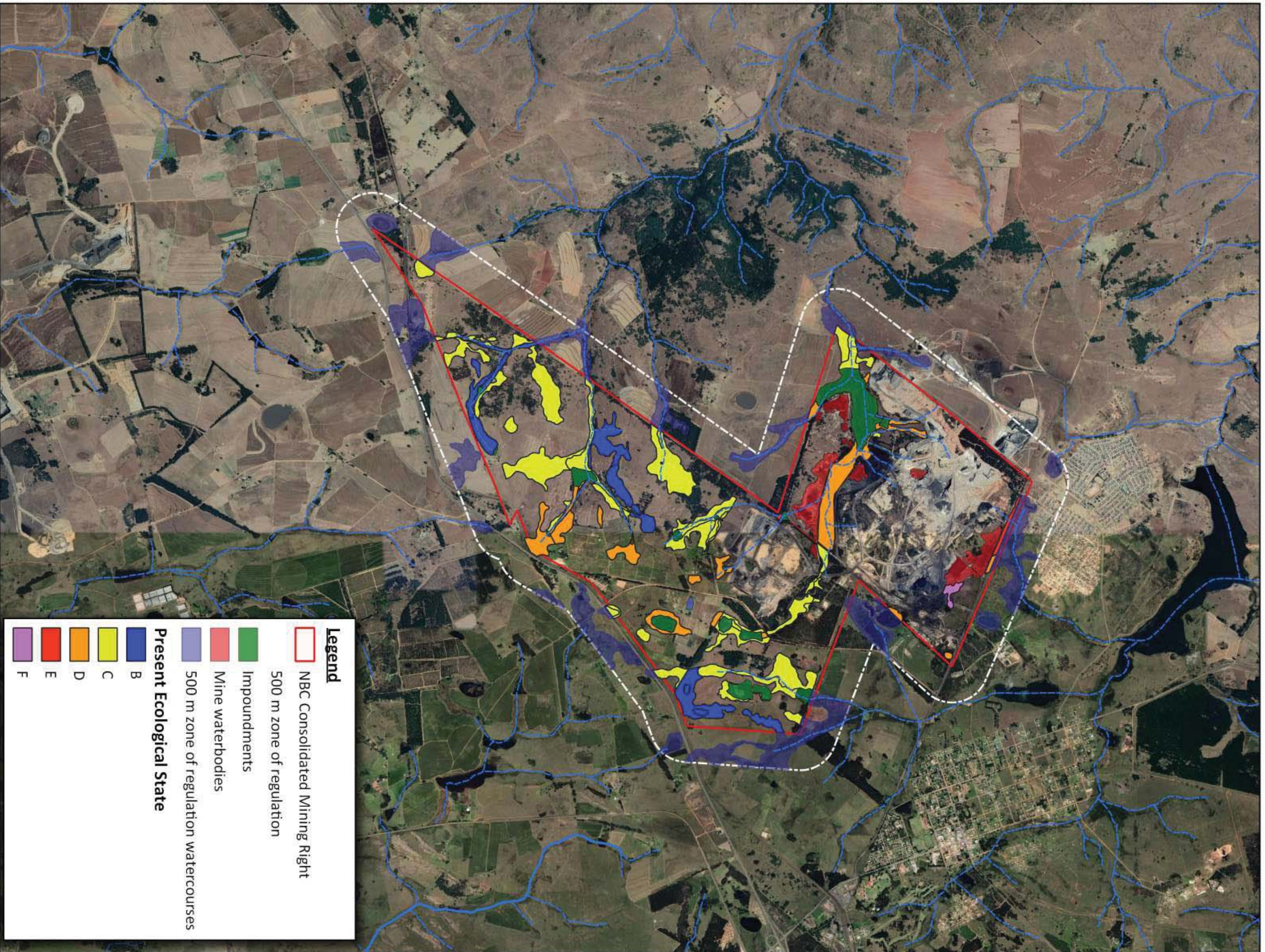


0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic: WGS84



**Legend**

- NBC Consolidated Mining Right
- 500 m zone of regulation
- Impoundments
- Mine waterbodies
- 500 m zone of regulation watercourses
- Present Ecological State**
- B
- C
- D
- E
- F

**NBC Consolidation Project**

Present Ecological State



**Ecology International**  
Sustainability through Collaboration

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Web: [www.ecologyinternational.net](http://www.ecologyinternational.net)

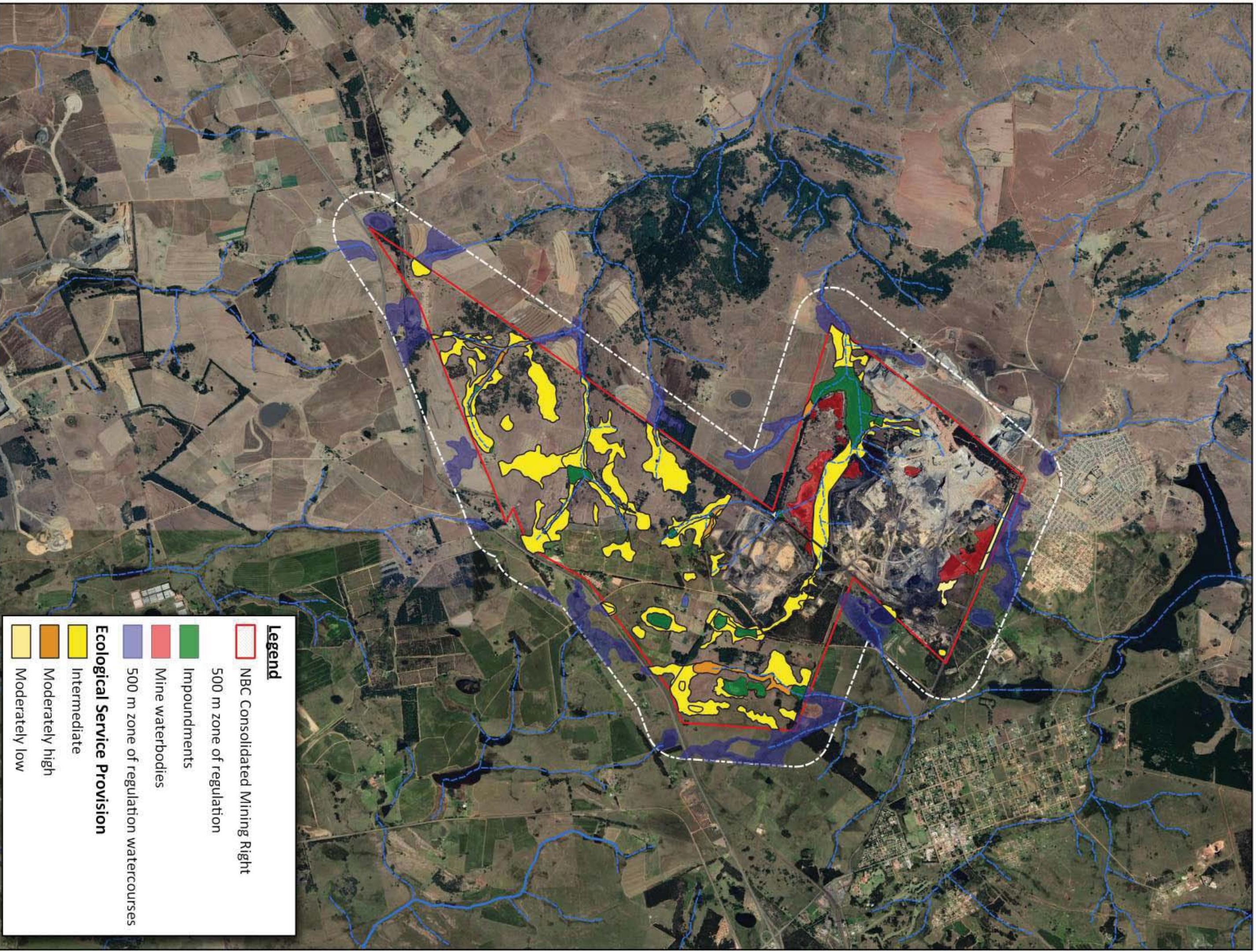


0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic: WGS84



**Legend**

- NBC Consolidated Mining Right
- 500 m zone of regulation
- Impoundments
- Mine waterbodies
- 500 m zone of regulation watercourses

**Ecological Service Provision**

- Intermediate
- Moderately high
- Moderately low

**NBC Consolidation Project**

Ecological Service Provision



**Ecology International**  
Sustainability through Collaboration

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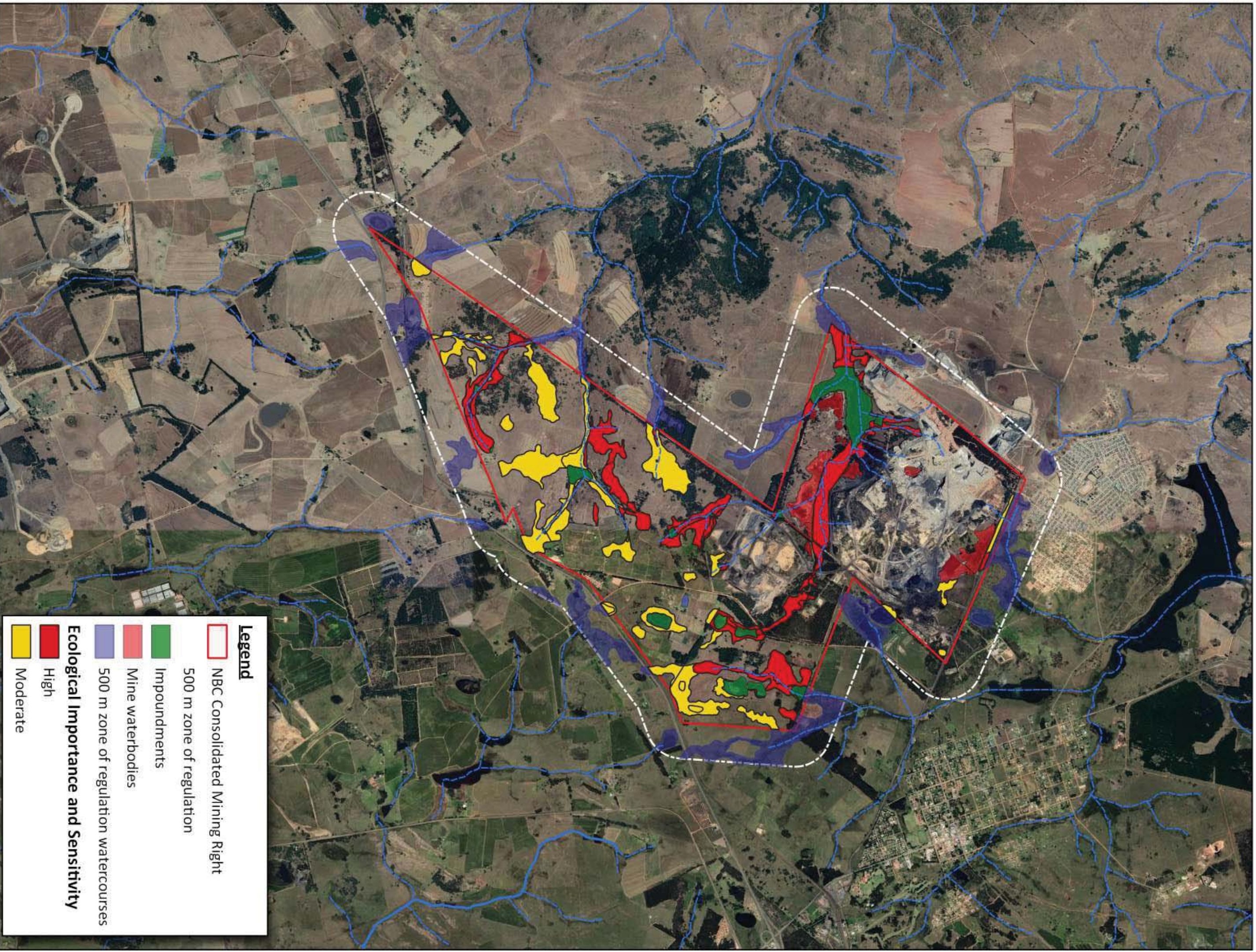


0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic: WGS84



**Legend**

- NBC Consolidated Mining Right
- 500 m zone of regulation
- Impoundments
- Mine waterbodies
- 500 m zone of regulation watercourses

**Ecological Importance and Sensitivity**

- High
- Moderate

**NBC Consolidation Project**



**Ecology International**  
Sustainability through Collaboration

Ecological Importance and Sensitivity

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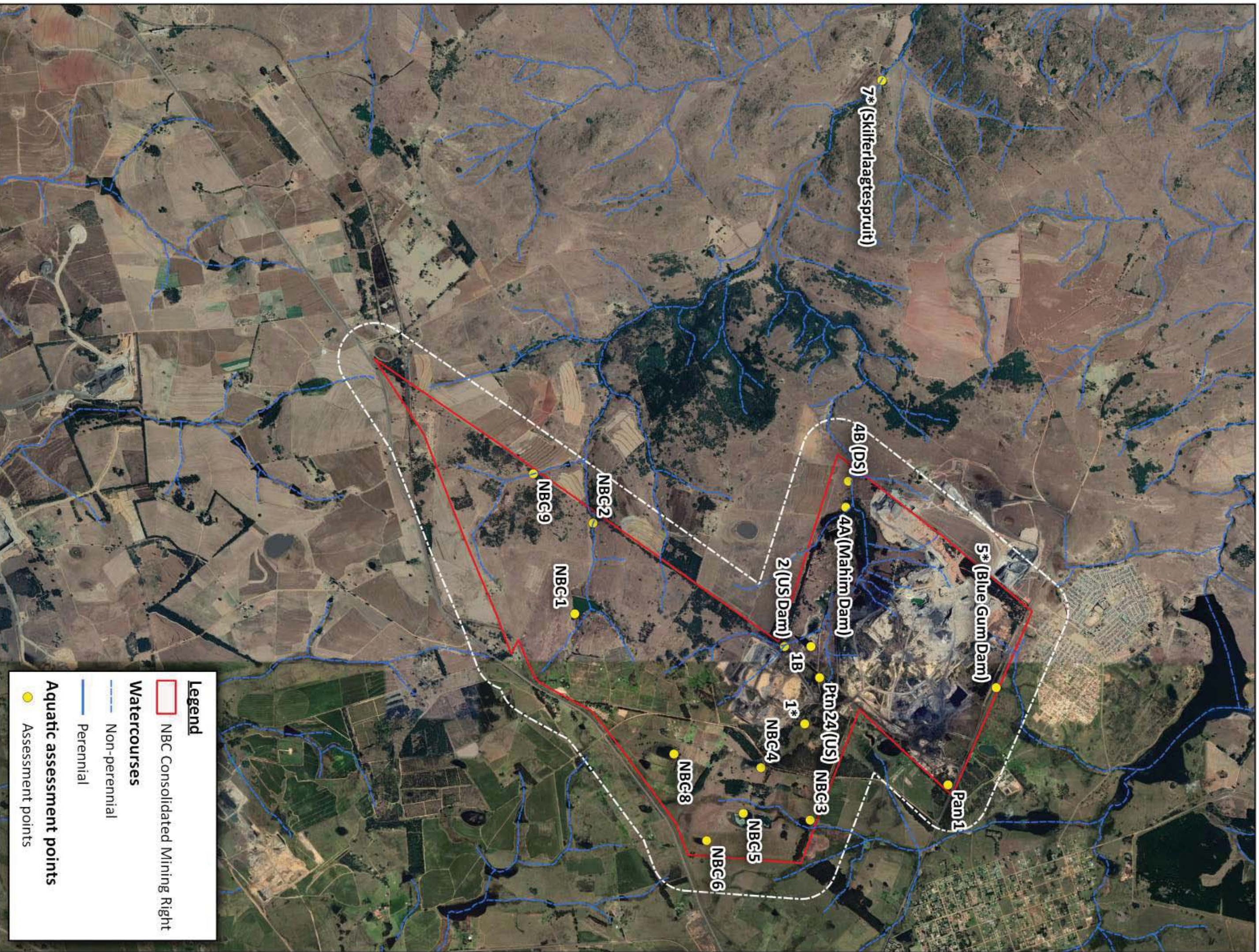
0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic: WGS84





**Legend**

- NBC Consolidated Mining Right

**Watercourses**

- Non-perennial
- Perennial

**Aquatic assessment points**

- Assessment points

0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic: WGS84

## NBC Consolidation Project



Aquatic assessment points

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Web: [www.ecologyinternational.net](http://www.ecologyinternational.net)

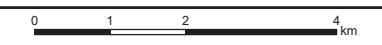


# Glisa EMP & IWUL Consolidation Project

**LEGEND**

- Towns
- Rivers and Streams**
  - Non-Perennial
  - Perennial
- Road Network**
  - National Route
  - Main Road
  - Secondary Road
  - Street
  - Railway Line
- Inland Water**
  - Dams and lakes
  - Dry pans
  - Reservoirs and water tanks
  - Marsh and swamps
  - Non-perennial pans
  - Delineated Wetlands
  - Consolidated Mining Right

## SURFACE WATER & RIVERS GLISA & PAARDEPLAATS



Reviewed: R. Janse Van Rensburg Environmental Compliance and Assessment Manager	Drawn by: A Brower GIS Consultant
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Coordinate System: GCS WGS 1984  
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Units: Degree

**cigroup**  
DO IT RIGHT

Scale: 1:100 000  
CIGroup: 19-0001  
Map ID: 126-001-30-v4  
Date: 18/06/2020

