

**ISONDLO DAIRY IRRIGATION PROJECT
OKHAHLAMBA LOCAL MUNICIPALITY
KWAZULU-NATAL**

Phase 1 Heritage Impact Assessment

January 2018

**FOR: GCS Water and Environmental (Pty) Ltd
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EXECUTIVE SUMMARY

The National Department of Rural Development and Land Reform (DRDLR) has identified six irrigation projects from their clustering of Rural Enterprise and Industrial Development (REID) Projects to be implemented on behalf of various agricultural cooperatives in various District Municipalities in KwaZulu-Natal. The DRDLR aims to formalize existing agricultural land within the Okhahlamba Local Municipality through a cooperative scheme. Large portions of land within the municipality have been identified as having high agricultural potential, resulting in the agricultural sector forming the dominant economic sector within the area.

This Heritage Impact Assessment (HIA) report relates to the proposed Isondlo Dairy irrigation project. The irrigation project involves the proposed abstraction of water from the Putterill Canal and the construction of infrastructure for irrigation purposes. The cultivation of maize is proposed for this site with vegetables as interim crop variation.

The footprint of the proposed irrigation project is approximately 29 Ha (290000 m²) in size hence it triggers section 38 (1) (c) (i) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) that refers to developments categorised as—

- (c) any development or other activity which will change the character of a site—
 - (i) exceeding 5 000 m² in extent

In addition, the site may either fall within or is situated in close proximity to the buffer zone of the Maloti-Drakensberg Park World Heritage Site (WHS). Proposed developments not in keeping with the status of the area may not be acceptable to the relevant authorities. The Phase I HIA was undertaken to assess whether any heritage resources will be impacted by the proposed Isondlo Dairy irrigation project.

The proposed project area is situated north west of Bergville on the Farm Lente No. 14820 in Ward 9 of the Okhahlamba Local Municipality in KwaZulu-Natal. The centre point of the project area is located at S 28°39'27.9"; E 29°05'16.1". The rural settlements of Zwelisha and Langkloof are located to the south and north of the site.

A site inspection of the proposed irrigation project was undertaken on 10 January 2017. Much of the site was inspected on foot and visibility was good.

The southern and eastern boundary of the proposed project site is bordered by the Putterill water canal. From the southern boundary of the site, an existing section of this canal or a storm water

drain extends into the project area going towards the stream running at the bottom of the slope. This section of canal / drain is damaged with extensive erosion taking place below it.

To the east of this section of canal / drain, there are a number of plots on which subsistence farming is taking place. To the west is the existing Isondlo Dairy and associated buildings. Between the canal and dairy are a number of structures as well as remains of structures as well as depressions in the ground.

Walking northwards one crosses the stream at the bottom of the hill before heading upwards to the crest of the project site. The area immediately north of the stream is undeveloped apart from existing pathways, fencing and some pockets of erosion. Close to the crest of the project area are ploughed fields that extend until a fence and road are reached. Beyond the fence and road are fallow fields and several dwellings that fall outside the proposed project.

During the site inspection, no heritage sites or resources were found on the site of the proposed irrigation project.

The South African fossil sensitivity map indicates that the project area falls into an area of very high fossil sensitivity. An area of very high fossil sensitivity requires a field assessment and protocol for fossil finds. Due to the project area being disturbed, it was recommended that a desktop palaeontological assessment be undertaken in order to determine whether significant fossil finds will be impacted by the proposed project. Depending on the outcome of the desktop study, either a field assessment will be required or monitoring of the project area during the installation of the infrastructure for the proposed irrigation project.

The proposed Isondlo Dairy irrigation project is situated close to the Maloti-Drakensberg Park WHS and possibly falls within the buffer zone of the WHS. No heritage sites were discovered during the site inspection. This could be due to the disturbance of the project area through farming activities (dairy farming, ploughing of fields and subsistence farming) as well as existing infrastructure including a water canal / storm water drain with associated erosion.

The project may proceed only once the desktop palaeontological assessment has been undertaken and the recommendations from the desktop study implemented.

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AUTHOR DETAILS

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1. INTRODUCTION

The National Department of Rural Development and Land Reform (DRDLR) has identified six irrigation projects from their clustering of Rural Enterprise and Industrial Development (REID) Projects to be implemented on behalf of various agricultural cooperatives in various District Municipalities in KwaZulu-Natal (GCS 2017:1). The DRDLR aims to formalize existing agricultural land within the Okhahlamba Local Municipality through a cooperative scheme. Large portions of land within the municipality have been identified as having high agricultural potential, resulting in the agricultural sector forming the dominant economic sector within the area (GCS 2017:7).

This Heritage Impact Assessment (HIA) report relates to the proposed Isondlo Dairy irrigation project. The irrigation project involves the proposed abstraction of water from the Putterill Canal and the construction of infrastructure for irrigation purposes. The cultivation of maize is proposed for this site with vegetables as interim crop variation, and the irrigation scheme will be developed to facilitate cultivation (GCS 2017:7).

2. LEGISLATIVE BACKGROUND

The footprint of the proposed irrigation project is approximately 29 Ha (290000 m²) in size hence it triggers section 38 (1) (c) (i) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) that lists activities that require a heritage impact assessment (HIA). The relevant sub-section refers to developments categorised as—

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000 m² in extent

In addition, the project may impact on graves, structures, archaeological and palaeontological resources that are protected in terms of sections 33, 34, 35, and 36 of the KwaZulu-Natal Heritage Act (No. 4 of 2008) as well as sections 34, 35, and 36 of the National Heritage Resources Act (NHRA).

In addition, the proposed Isondlo Dairy project may either fall within or is situated in close proximity to the buffer zone of the Maloti-Drakensberg Park World Heritage Site (WHS). Proposed developments not in keeping with the status of the area may not be acceptable to the relevant authorities. Regulations regarding activities within the buffer zone were sought by the specialist but none could be found and it is the specialist's understanding that there are still ongoing efforts to delineate the buffer zone on the South African side of the WHS.

In terms of section 3 of the NHRA, heritage resources are:

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds, including—
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including:
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects;
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

The Phase I HIA was undertaken to assess whether any heritage resources will be impacted by the proposed Isondlo Dairy irrigation project.

3. LOCATION

The proposed project area is situated north west of Bergville on the Farm Lente No. 14820 in Ward 9 of the Okhahlamba Local Municipality in KwaZulu-Natal. The centre point of the site is located at S 28°39'27.9"; E 29°05'16.1". The current land use zoning for the development is agricultural. The rural settlements of Zwelisha and Langkloof are located to the south and north of the site.

Figure 1 below shows the outline of the proposed irrigation project and **Figure 2** shows the project site within the wider environment.

4. TERMS OF REFERENCE

Undertake a Phase 1 Heritage Impact Assessment in order to determine the possible existence of heritage resources, as listed above, that could be impacted by the proposed irrigation project. Provide mitigation measures to limit or avoid the impact of the proposed project on heritage resources (if any).

Submit the HIA report to the provincial heritage resources authority, Amafa aKwaZulu-Natali (Amafa), for their assessment and comment.

5. METHODOLOGY

A survey of literature, including other heritage impact assessment reports completed for the larger area, was undertaken in order to ascertain the history of the area and what type of heritage resources have or may be found in the area of development.

An inspection of the project site was undertaken on 10 January 2018. Visibility was good and much of the site was inspected on foot.



Figure 1: Aerial view of proposed project area (indicated with red outline)

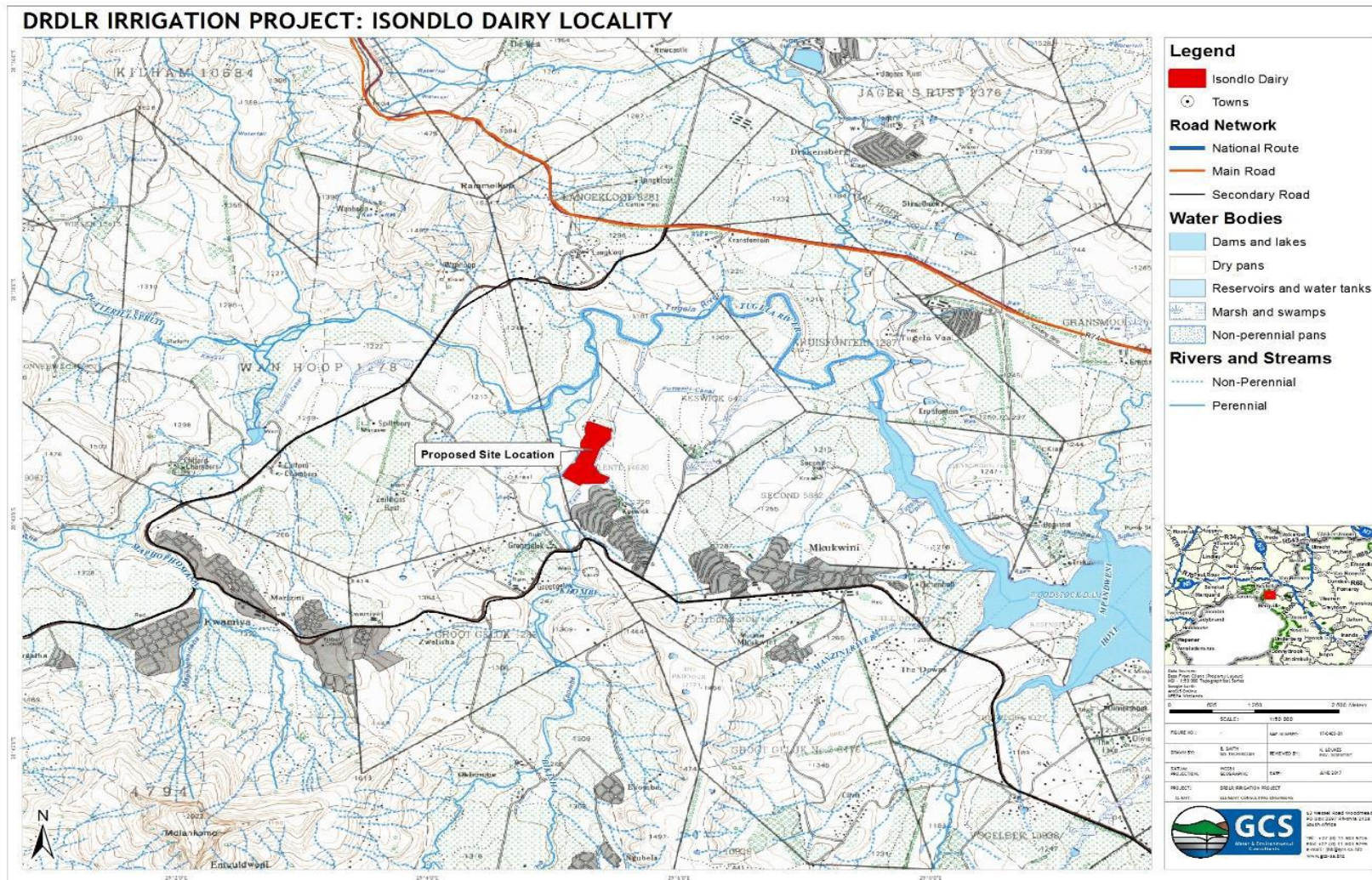


Figure 2: Project site depicted in red within wider context

6. BACKGROUND OF THE STUDY AREA

In 2000, the World Heritage Committee inscribed the uKhahlamba Drakensberg Park as a haven for many threatened and endemic species and for its wealth of rock paintings made by the San people over a period of 4000 years. Located in the Drakensberg Mountains in an area covering 242,813 hectares, the Park is the largest protected area along the Great Escarpment of southern Africa. At its 37th Session, the World Heritage Committee extended the Park to include the Sehlabathebe National Park (SNP). The two parks form what is now known as the Maloti Drakensberg Park which is a property spanning the border between the Kingdom of Lesotho and the Republic of South Africa (State of Conservation Report 2016:11).

The Maloti-Drakensberg Transfrontier Conservation and Development Area covers a further 14 740 km² of the mountains that straddle the north-eastern border between Lesotho and South Africa (see **Figure 3** below).

The occurrence of Early Stone Age tools in the Drakensberg, such as hand axes in areas below the 1 800 m contour suggests that the first inhabitants of the area predated modern humans by at least 800 000 years. Sites belonging to this period in the Drakensberg are mostly characterised by a few surface scatters and individual stone tools usually in close vicinity of water. Anatomically modern people (*Homo sapiens sapiens*) moved into the area about 200 000 years ago. Archaeological assemblages left behind by these people have been termed Middle Stone Age (MSA). MSA sites in the Drakensberg region occur as surface scatters as well as deep cave deposits. Prime archaeological deposits occur in the Eastern Cape and Free State sections of the region. The stone tool assemblages belonging to the ancestors of the San or Bushmen have been termed Later Stone Age (LSA). It was during this period that societies exploited their environments more intensively and effectively. Hundreds of LSA sites occur in the Drakensberg region. In addition, most of the rock art in the region was created by the San (Prins 2017:10).

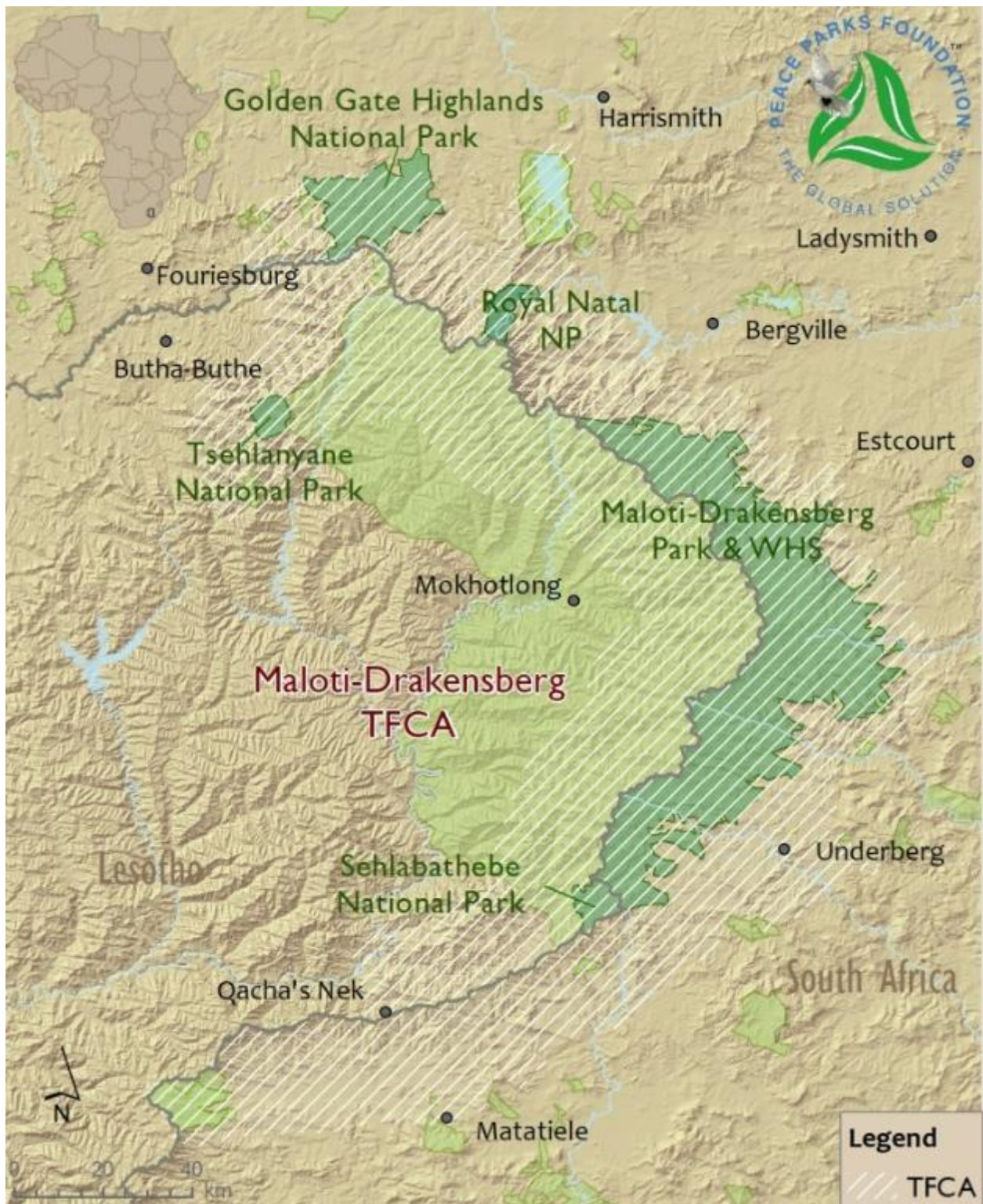


Figure 3: Maloti-Drakensberg Transfronteir Conservation and Development area

The earliest evidence for LSA occupation of the Maloti-Drakensberg comes from Sehonghong Cave in south eastern Lesotho and from Strathalan Cave in the Eastern Cape. Evidence from Good Hope shelter 1 near the bottom of Sani Pass suggests that the earliest archaeological evidence for San people in the KwaZulu-Natal portion of the Drakensberg dates back to approximately 8 000 years ago. Whereas most parts of the Maloti Drakensberg were only

seasonally occupied by San hunter gatherers for the larger part of the last 20 000 years, the situation started to change around 5 000 years ago. This was compounded by the arrival of immigrant black farmers in the region soon after 1600 AD and European colonialism around 1834 AD. Around 1250 AD, agriculturists started occupying the higher altitude, grassland areas typically occupying hill tops with a low stone walling. Although none occur within the designated Maloti-Drakensberg area, they can be found at the fringes, at an altitude of approximately 1 200-1 400 m. By 1600 AD, groups such as the amaZizi reached the foothills of the northern Drakensberg near Winterton. Various splinter groups of the amaZizi left KwaZulu Natal and also settled in parts of Lesotho. By the early 1700s various other Sotho and Nguni-speaking groups moved into the area and established chieftaincies in lower lying areas. Almost 2 000 Iron-Age sites have been identified in the Maloti Drakensberg region. Some sites belonging to the ancestors of the amaZizi and amaNgunwane have been recorded in the Didima Nature Reserve in the south and near Bergville and there is evidence for LIA occupation in the foothills of the northern Drakensberg (Prins 2017:11).

In more 'recent' times, the expansion of the Zulu kingdom under King Shaka around 1818 had a major impact on Iron Age settlement in the region. Various chieftains were attacked, and people fled across the Maloti-Drakensberg region in search of safer settlements elsewhere. In addition, the Voortrekkers arrived in Natal over the Drakensberg and Nkosi Langalibalele and his followers fled the colonial government after they demanded that his followers register their firearms. He retreated up the Bushman River valley before being captured in Lesotho. He was banished to Robben Island making him the first South African to be imprisoned there. His grave is situated at Giants Castle within the WHS (Derwent 2006:88).

7. RESULT OF SITE INSPECTION

The southern and eastern boundary of the proposed project site is bordered by the Putterill water canal. From the southern boundary of the site, an existing section of this canal or a storm water drain extends into the project area going towards the stream running at the bottom of the slope. This section of canal / drain is damaged with extensive erosion taking place below it.



Figure 4: Canal / storm water drain



Figure 5: Canal / storm water drain with erosion and project area in background

To the east of this section of canal / drain, there are a number of plots on which subsistence farming is taking place. This area is fenced. One of the plots has trenches on either side of it as can be seen in **Figure 6** below.



Figure 6 Subsistence farming with trenches dug



Figure 7: Subsistence farming

To the west of the canal / storm water drain as mentioned above is the existing Isondlo dairy and associated buildings. Between the canal and dairy are a number of structures as well as remains of structures as well as depressions in the ground. The purpose of the depressions immediately below the dairy is unknown. It is the specialist's understanding that the structures (dairy included) will not be affected by the proposed irrigation project.



Figure 8: View of Isondlo Dairy



Figure 9: House, dairy and other structures looking southwards

A power line runs behind the dairy and what appears to be a water works is situated outside the project area on its southern boundary.

Walking northwards one crosses the stream at the bottom of the hill before heading upwards to the crest of the project site. The area immediately north of the stream is undeveloped apart from existing pathways, fencing and some pockets of erosion.



Figure 10: Looking southwards over project area with erosion form canal visible



Figure 11: Looking west over project area

Close to the crest of the area are ploughed fields that extend until a fence and road are reached. It is the specialist's understanding that this is the northern boundary of the project area. Beyond the fence and road are fallow fields and several dwellings.



Figure 12: Ploughed fields looking in a north-westerly direction



Figure 13: Northern boundary showing fence, road and structures in background



Figure 14: View of stream running through project area

During the site inspection, no heritage sites were identified on the site of the proposed irrigation project. There are many important heritage sites occurring in the adjacent Maloti Drakensberg Park WHS, and the buffer zone, however, no heritage sites were identified in the project area.

The South African fossil sensitivity map indicates that the project area falls into an area of very high fossil sensitivity (red colour) as indicated on **Figure 15** below. As indicated on the Legend, an area of very high fossil sensitivity requires a field assessment and protocol for fossil finds. The project area is disturbed therefore a desktop palaeontological assessment is recommended in order to determine whether significant fossil finds will be impacted by the proposed project.

Depending on the outcome of this desktop study, either a field assessment will be required or monitoring of the project area during the installation of the infrastructure for the proposed irrigation project.

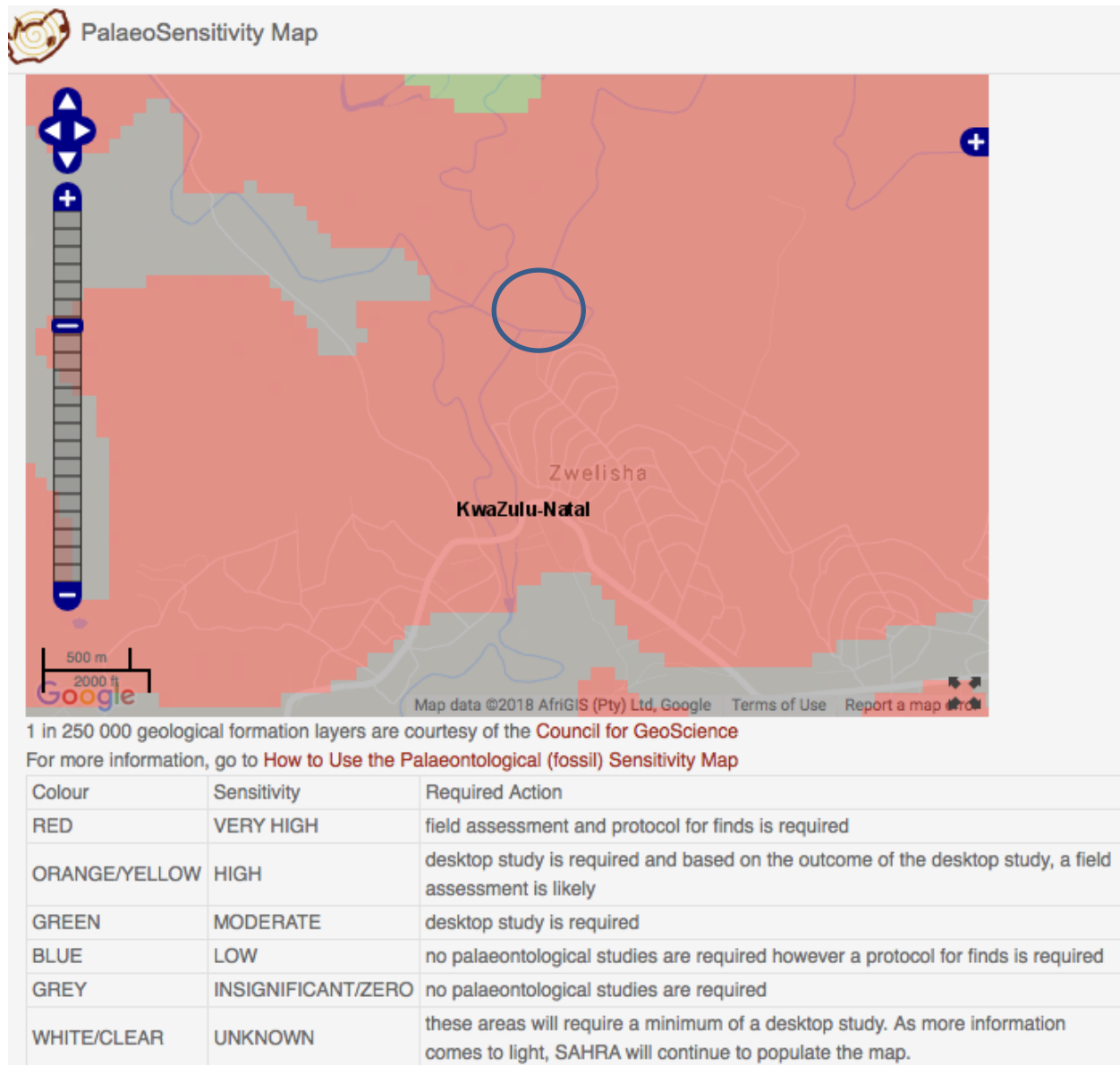


Figure 15: Fossil sensitivity map of project area indicated with blue outline

8. DISCUSSION AND CONCLUSION

The proposed Isondlo Dairy irrigation project is situated close to the Maloti-Drakensberg Park WHS and possibly falls within the buffer zone of the WHS. This was kept in mind during the inspection of the site. However, no heritage sites were discovered during the site inspection. This could be due to the disturbance of the project area through farming activities (dairy farming, ploughing of fields and subsistence farming) as well as existing infrastructure including a water canal / storm water drain with associated erosion. The undisturbed areas along the western boundary of the project area and the undisturbed areas north of and along the stream were inspected and no heritage resources were found during the site survey.

The project may proceed only once the desktop palaeontological assessment has been undertaken and the recommendations from the desktop study implemented.

9. MITIGATION MEASURES

- For any chance heritage finds (graves, archaeological sites, etc.), all work must cease in the area affected and the Contractor must immediately inform the Project Manager. A registered heritage specialist must be called to site to inspect the finding/s. The relevant heritage resource agency (Amafa) must be informed about the finding/s.
- The heritage specialist will assess the significance of the resource and provide guidance on the way forward.
- Permits must be obtained from Amafa if heritage resources are to be removed, destroyed or altered.
- Under no circumstances may any heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should any remains be found on site that could potentially be human remains, the South African Police Service as well as Amafa must be contacted. No SAPS official may remove remains (recent or not) until the correct permit/s have been obtained.
- Depending on the outcome of the desktop palaeontological assessment, the mitigation and monitoring recommendations of the study must be implemented and adhered to.

10. REFERENCES

Derwent, S. 2006. *KwaZulu-Natal Heritage Sites. A guide to some great places*. Claremont. David Philip

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