

NTUSI DAIRY FARM, PTN 4 KLIPSPRUIT 137 HT

WETLAND DELINEATION



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UNDERTAKEN BY:

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1. INTRODUCTION

The proposed Ntusi Dairy Farm is situated 27km west of Piet Retief, north of the R543 road. The purpose of this investigation was to delineate the boundaries of wetlands on ptn 4 Klipspruit 137 HT.

2. METHODOLOGY

The wetlands on ptn 4 Klipspruit 137 HT were delineated using the delineation methodology “A Practical field procedure for the identification and delineation of wetlands and riparian areas” for the delineation of the wetland boundaries, as described by the Department of Water Affairs and Forestry (2005).

One wetland field survey of the property was undertaken, on the 14-15 May 2012, GPS positions and photographs were taken at each survey point. White painted survey stakes were placed along the wetland boundary to indicate the edge of the wetland area.

The GPS positions were used to map the boundaries of the wetland areas.

The recommendations and mitigation measures follow from the wetland delineation.

3. RESULTS

3.1 Description of the study site:

The study site is situated in the Mkhondo Local Municipality, on portion 4 of Klipspruit 137 HT, situated to the west of Piet Retief. The property borders onto the southern bank of the Heyshope Dam within the W51B quaternary catchment. The wetland feeds water into the Heyshope Dam, which is situated in the Assegaai River.

3.2 Vegetation:

The vegetation of the site is classified as Eastern Highveld Grassland, with slightly to moderately undulating plains, including some pans and low hills. The vegetation is short and dominated by highveld grasslands such as *Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc. (Mucina and Rutherford, 2006).

The majority of the property is utilised for community cattle grazing. As a result the area has been heavily grazed.

3.3 Description of the wetlands:

Table 3.1. Delineated Wetland Areas

Wetland	Hectares	Percentage
A	58.8	46.68
B	44.9	35.59
C	7.9	6.29
D	1.6	1.24
E	0.9	0.71
F	4.8	3.79
G	2.0	1.56
H	4.5	3.54
I	0.8	0.60
Total	126.0	100.00

A total of 126 ha (22%) of the 574 ha farm was delineated as wetland areas (Table 3.1) (Appendix 1: Wetland Map). The majority of the wetland area can be classified as either seasonal or permanent wetland areas. The wetlands often abutted onto rocky areas or areas with very shallow soils. The wetlands are showing signs of overgrazing and cattle are causing erosion in permanent zones where pools are used for the watering of the cattle.

Wetland A: Main river channel and surrounding seepage wetland bordering onto river channel. (58.8ha)

The main river channel flows from the southern boundary of the property to the northern boundary and ultimately into the Heyshope Dam. Surrounding seepage wetland borders onto the river channel for almost the entire length of the river channel.

The surrounding seepage wetland area is relatively broad at the head of the wetland and is interspersed with areas of shallow and often rocky terrestrial soils. The wetland area consists of a matrix of temporary, seasonal and permanent wetland areas, but becomes more consistently seasonal than permanent closer to the river channel. The seepage wetland area narrows down and disappears on the eastern side of the river channel just below Wetland G, but remains relatively wide on the western side of the channel except for just above Wetland B.

The river channel has been severely degraded by trampling of cattle as they cross the river channel and come down to the river to drink. This is causing the erosion of the river banks and desiccation of the surrounding seepage wetland areas.

There is an old road crossing which is severely eroded (Appendix 1: Wetland Map).



Photo 1: Wetland A showing erosion of river bank as a result of cattle trampling.



Photo 2: Wetland A showing erosion at road crossing.



Photo 3: Wetland A showing broad seasonal to permanent seepage zone with cattle grazing within it.

Wetland B: Seepage Wetland Area. (44.9ha)

This is a large seepage wetland area to the west of Wetland A. The head of the wetland is predominately permanent wetland, with pools that are utilised for watering of cattle. The soils of the broad midsection indicate a seasonal wetland area, but it appears as though the area is becoming dried out by overgrazing which is reducing the vegetation cover.

The wetland borders onto areas of shallow rock. Shallow rock separates wetlands B and C.



Photo 4: Pool used for cattle watering at head of Wetland B.



Photo 5: Dry pool within middle of Wetland B.

Wetland C: Seepage Wetland Area. (7.9ha)

This is a seepage wetland area to the north of Wetland B. The wetland is predominately seasonal. It appears as though the area is becoming dried out by overgrazing which is reducing the vegetation cover.

The wetland borders onto shallow rocky areas to the south.

Wetland D: Seepage Wetland Area. (1.6ha)

Wetland D is a small isolated seasonal to permanent seepage wetland bordering onto shallow rocky areas.

Wetland E: Seepage Wetland Area. (0.9ha)

Wetland E is a small isolated seasonal to permanent seepage wetland bordering onto shallow rocky areas.

Wetland F: Seepage Wetland Area. (4.8ha)

Wetland F is a seasonal to predominately permanent seepage wetland area. The wetland borders onto shallow rocky areas on its southern and eastern boundary. There are numerous pools that are utilised for the watering of cattle. These areas are becoming eroded.



Photo 6: Pool within Wetland F showing erosion as a result of cattle using pool for water.



Photo 7: Rocky areas typically bordering many of the wetlands

Wetland G: Seepage Wetland Area. (2.0ha)

Wetland H is a seasonal to predominately permanent seepage wetland area. The wetland borders onto shallow rocky areas on its northern and eastern boundary. There is a pool at the head of the wetland that is utilised for the watering of cattle. This area is becoming eroded.

Wetland H: Seepage Wetland Area. (4.5ha)

Wetland H is a seasonal to predominately permanent seepage wetland area. The wetland borders onto shallow rocky areas on its northern and southern boundary. There are two pools at the head of the wetland that are utilised for the watering of cattle. There is a headcut into the wetland and a pool (Appendix 1: Wetland Map). Below the headcut the wetland area has become desiccated and erosion is taking place alongside the stream.



Photo 8: Headcut within wetland H.



Photo 9: Desiccated wetland below headcut.

Wetland I: Seepage Wetland Area. (0.8ha)

Wetland F is a seasonal to predominately permanent seepage wetland area. The wetland narrows down into a pool that is utilised for the watering of cattle.

4. RECOMMENDATIONS

4.1 General Recommendations:

- It is recommended that no development takes place within 30m of the demarcated wetland boundary.
- That Working for Wetlands is approached to assist in the building of gabions to prevent further wetland erosion and to protect and restore the wetland areas.
- That cattle watering points be established outside of the wetland areas.
- That the number of cattle be reduced to the lands carrying capacity.
- That suitable crossing points be created within the wetland for vehicles, people and cattle to prevent further erosion at the existing crossing points.

5. CONCLUSION

The wetland study identified extensive wetland areas (126ha), covering 22% of the property. The wetland areas will not be affected by the proposed dairy, slurry dam and steel shed development. The study did identify that the current land use practise of community cattle grazing is having a negative effect on the wetland areas and will result in the gradual deterioration of the wetlands and ultimately to the loss of grazing. Recommendations are made to protect and restore the wetland areas to ensure the sustainability of the area in terms of both the ecological functionality of the wetlands and economic viability.

6. REFERENCES

- DWAF, 2005. *A practical field procedure for identification and delineation of wetlands and riparian areas*. Department of Water Affairs and Forestry, Pretoria.
- Mucina, L and Rutherford, M.C. (eds) 2006. *The vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19. Southern African National Biodiversity Institute, Pretoria.

APPENDIX 1: MAP 1. WETLAND AREAS

