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Pri.Sci.Nat # 400045/08

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**TERRESTRIAL BIODIVERSITY COMPLIANCE  
STATEMENT – PROPOSED DEVELOPMENT ON  
PORTION 11 OF FARM 1674 (YORK FARM),  
BOSCHENDAL.**

**Submitted to:** Chand Environmental, Cape Town

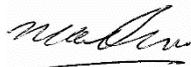
**Client:** Boschendal (Pty) Ltd, Pniel

**20 July 2020**

## **DECLARATION OF INDEPENDENCE**

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence and include an abbreviated Curriculum Vitae.

I, N.A. Helme, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for preparation of this report.



NA Helme

### **Abridged CV:**

Contact details as per letterhead.

Surname : HELME

First names : NICHOLAS ALEXANDER

Date of birth : 29 January 1969

University of Cape Town, South Africa. BSc (Honours) – Botany (Ecology & Systematics). 1990.

Since 1997 I have been based in Cape Town, and have been working as a specialist botanical consultant, specialising in the diverse flora of the great Cape Floristic Region. Since the end of 2001 I have been working on my own and trade as Nick Helme Botanical Surveys, and have undertaken over 1600 botanical assessments.

A selection of recent projects undertaken includes:

- Botanical assessment of Ptns 6 & 7 of Farm Waterfall 1159, Franschoek (Footprint Environmental 2019)
- Botanical baseline assessment of Boschendal Estate (Chand Environmental 2019)
- Botanical impact assessment of Farm 736 Re, Klapmuts (Infinity Consultants 2018)
- Baseline botanical assessment of Swartklip site (Infinity Consultants 2018)
- Baseline botanical assessment of Imhoff Farm, Kommetjie (Khula Environmental 2017)

- Botanical baseline assessment of Droogerivier farm, Leipoldtville (Footprint Environmental 2018)
- Baseline botanical assessment of Swartklip site (Infinity Consultants 2018)
- Botanical assessment of Sebulon farm, Redelinghuys (Natura Libra Environmental Services 2018)
- Botanical assessment of proposed new cultivation on farm Wittewater 93, Piketberg (Cederberg Environmental Assessment Practise 2017)
- Baseline botanical assessment of Imhoff Farm, Kommetjie (Khula Environmental 2017)
- Botanical assessment of Dragon's Nest, Hout Bay (Khula Environmental 2017)
- Botanical assessment of Rem Farm 643, Eersterivier (DBA 2017)
- Ecological assessment of proposed refurbishment of Eskom Kleinmond – Arabella 11kV powerline (Landscape Dynamics 2015)
- Botanical assessment of proposed petrol station at CTFS (Chand Environmental 2016)
- Specialist review of botanical IA studies for proposed Kapteinsklip development node, Mitchells Plain (Khula Environmental 2016)
- Botanical assessment of proposed development on farm Palmiet Valley 54, Wellington (Doug Jeffery Environmental Consultants 2015)
- Ecological assessment of proposed Arcelor Mittal power station, Saldanha (ERM 2015)
- Ecological assessment of proposed Globeleq power station, Saldanha (ERM 2015)
- Botanical assessment of proposed iGas pipeline Saldanha – Ankerlig (CES/EOH 2015)
- Botanical baseline of Communicare land, Morningstar (mlh architects 2015)
- Ecological assessment of proposed refurbishment of 11kV powerline from Kleinmond to Arabella, Western Cape (Landscape Dynamics 2015)
- Botanical walkdown study of new Eskom 132kV powerline Ankerlig – Sterrekus (EIMSA 2015)
- Botanical assessment of proposed cultivation on Rem. Andriesgrond 204, Clanwilliam (Cederberg Environmental Assessment Practise 2015)
- Botanical assessment of proposed dam on Modderfontein farm, Citrusdal (Cederberg Environmental Assessment Practise 2015)

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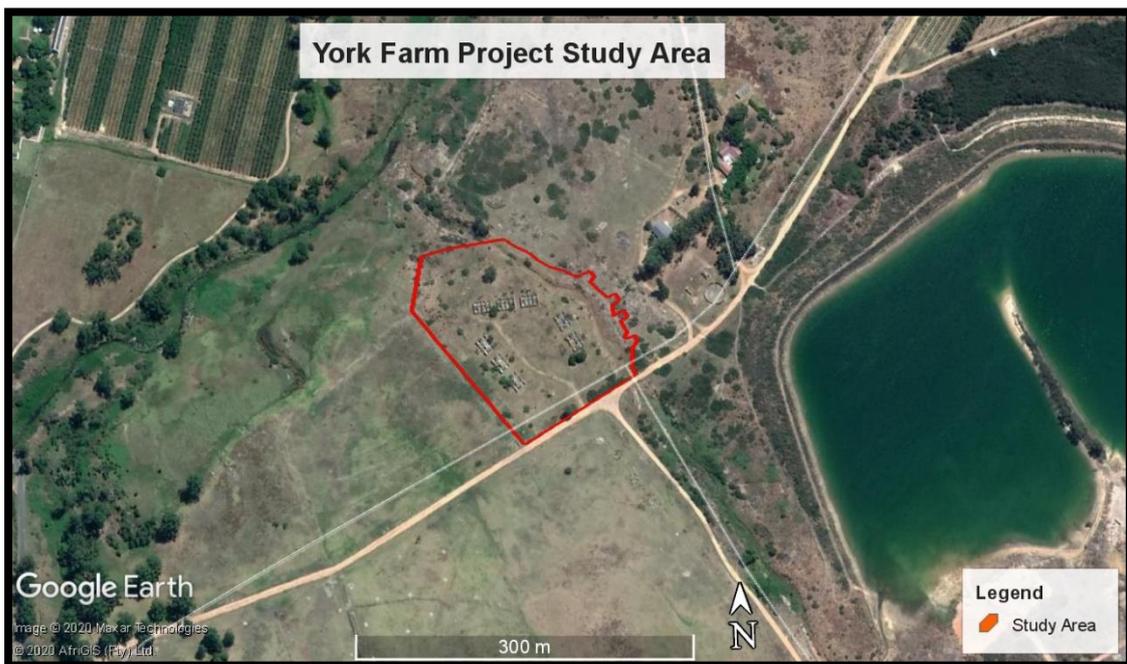
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## 1. INTRODUCTION

This terrestrial biodiversity impact statement was requested to inform the environmental authorisation process for the proposed development of a retreat centre on a portion of Portion 11 of Farm 1674, Boschendal (see Figure 1). The study area is part of what was and is still known as York Farm (also part of greater Boschendal), and is about 2.3ha in extent, and is located about 3km northeast of Pniel.

The need for this statement was determined on reading of the "Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation", as published in the Government Gazette 4310 (20 March 2020). The new minimum requirements and specialist assessment protocols came into effect recently. In cases where the National Environmental Screening Tool identifies a site as having 'Very High' sensitivity (i.e. the whole of the Cape Floristic Region, there are now only two options:

- 1) Conduct a full terrestrial biodiversity impact assessment, or
- 2) If the EAP or the specialist thinks, based on a site inspection, that the site is in fact not 'Very High' but 'Low' sensitivity, then prepare a 'Terrestrial Biodiversity Compliance Statement' that includes a baseline profile description of biodiversity and ecosystems of the site.



**Figure 1:** Google Earth image, showing the study area (red outline).

## **2. TERMS OF REFERENCE**

The terms of reference for this study were to:

- Undertake a site visit to assess the vegetation on site
- Provide a description of the vegetation on the site, including the status of the area in terms of the CoCT BioNet
- Provide a terrestrial ecological sensitivity map, showing any No Go areas (map provided as Google Earth kmz files)
- Assess the terrestrial ecological sensitivity of the site, with reference to the National Screening tool categorization
- Identify likely terrestrial ecological impacts of the proposed project
- Make recommendations for any mitigation required
- Provide a professional statement on whether the proposed project should be authorised.

## **3. LIMITATIONS, ASSUMPTIONS AND METHODOLOGY**

The site was visited most recently on 30 June 2020, which is early in the optimal winter to spring flowering season in this winter rainfall area, and was previously surveyed in December 2018 as part of a botanical baseline of the whole Boschendal Estate (Helme 2019). Potential geophytes (bulbs) and annuals were thus mostly sterile but identifiable and evident, and the seasonality of the most recent site visit is not regarded as a significant constraint on the reliability or comprehensiveness of the botanical observations. In addition, a habitat based approach was used, whereby habitat diversity and quality was used as the primary determinant of conservation value (and hence sensitivity). In order to supplement to data on rare species reference was made to the CapeRares GIS database of threatened plants (maintained by CREW (Custodians of Rare and Endangered Wildflowers) at SANBI), plus observation on the biodiversity website inaturalist.org. The author believes that sufficient information was available to make an accurate assessment of the vegetation and its significance, and the confidence level in the accuracy of the findings is high.

The site was walked and all plant and animal species were noted, and various digital photographs were taken. No faunal trapping or sampling was undertaken and only incidental faunal observations were made during the site visit. The GIS based South African National Biodiversity Institute (SANBI) vegetation map for South Africa (Mucina & Rutherford 2006 and various online updates) was consulted, along with the National Spatial Biodiversity Assessment (NSBA; Rouget

*et al* 2004; Skowno *et al* 2019) and the National List of Threatened Ecosystems (DEA 2011). Conclusions were drawn based on this documentation and professional experience in the area and the region.

Google Earth satellite imagery dated December 2018 (and earlier time series images, going back to 2001) was used to verify vegetation patterns, and for mapping purposes. For purposes of this report the terms site and study area are used interchangeably.

This is not a full impact assessment report.

#### **4. STUDY AREA AND REGIONAL CONTEXT**

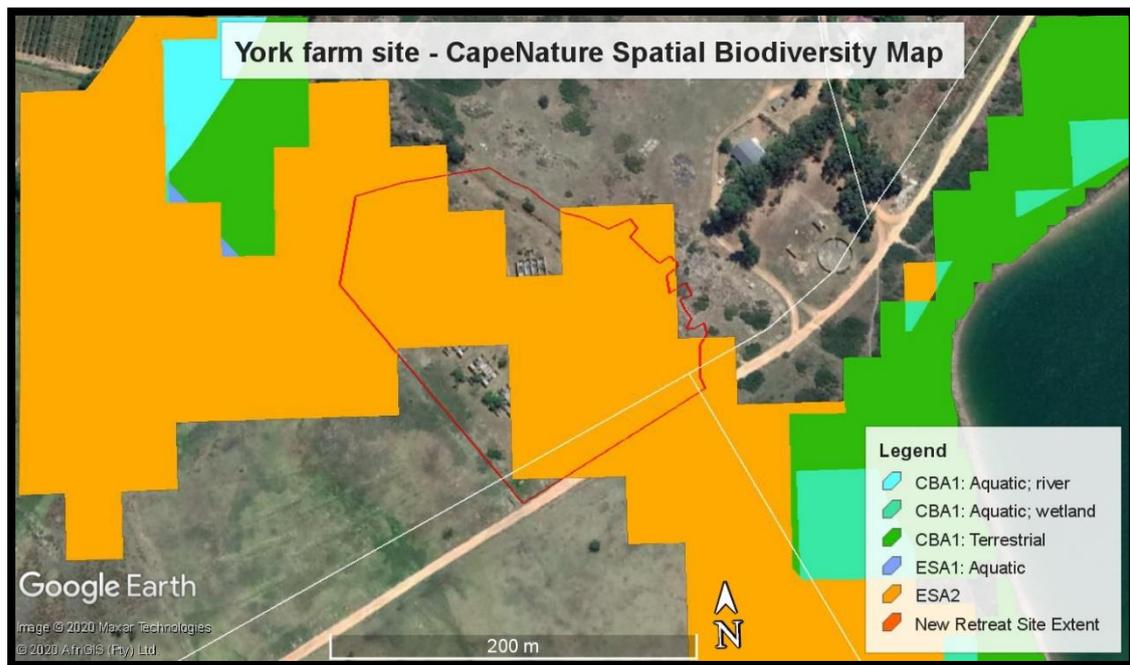
Soils in the area are alluvial sands and loamy sands, with extensive embedded alluvial cobbles (stones and rocks). No rocky outcrops occur on site, and the site is essentially flat, although slightly northwest facing. There are slight depressions in places, some of which are potentially seasonally wet, and there is a highly degraded seasonal drainage line along the eastern boundary of the site, all of which will be discussed by the freshwater specialist, but there is no natural surface water. The ruins of eight buildings are present on site. Fallow, previously cultivated land surrounds the site (except to the southeast), and the grassy fields to the south and southwest are highly eutrophied by decades of pig manure (York Farm was a pig farm).

##### **4.1 National and Regional Context**

The site is located within the Boland region, within the southwest coastal region of the Core Region of the Greater Cape Floristic Region (GCFR), and the region is firmly part of the Fynbos biome. The CFR is one of only six Floristic Regions in the world and is the only one confined to a single country. It is also by far the smallest floristic region, occupying only 0.1% of the world's land surface, and supporting about 9500 plant species, almost half of all the plant species in South Africa. At least 70% of all the species in the Cape region do not occur elsewhere, and many have very small home ranges (these are known as narrow endemics). Many of the lowland habitats are under pressure from agriculture, urbanisation and alien plants, and thus many of the range restricted species are also under severe threat of extinction, as habitat is reduced to extremely small fragments. Data from the nationwide plant Red Listing process undertaken is that 67% of the threatened plant species in the country occur only in the southwestern Cape, and these total over 1800 species (Raimondo *et al* 2009)! It should thus be clear that the

southwestern Cape is a major national and global conservation priority, and is quite unlike anywhere else in the country in terms of the number of threatened plant species.

The CapeNature Spatial Biodiversity Plan (Pence 2017) does not indicate any Critical Biodiversity Areas (CBA) in the study area, but does map about 75% of the site as Ecological Support Area 2 (ESA2; see Figure 2). The guidelines for this category are that it is degraded habitat that should be restored, mainly for its ecological connectivity value. Reasons given for selection of this area as an ESA2 include the threatened status of the underlying (original) vegetation type, water resource protection, and potential habitat for threatened vertebrates (Cape Mountain Zebra). The latter is purely theoretical, as is the former, with negligible natural habitat remaining on site.



**Figure 2:** Extract of the CapeNature Spatial Biodiversity Plan, showing that about 75% of the site is mapped as a terrestrial ESA 2, a relatively low level of priority.

## 5. DESCRIPTION OF THE VEGETATION ON SITE

The vegetation map of South Africa (Mucina & Rutherford 2012) indicates that the original natural vegetation on site (prior to human influence) would have been **Swartland Alluvium Fynbos**. No copy of this map is shown as it adds little value. There is so little remaining indigenous vegetation on site that it is not possible to confirm or dispute this classification, but based on what is present

nearby, the location, and based on the underlying soils, this classification is supported.

The National List of Threatened Ecosystems (DEA 2011) classifies **Swartland Alluvium Fynbos** as Critically Endangered, although this was downlisted to Endangered by Skowno *et al* (2019), due to different habitat loss thresholds being applied.

There is almost no indigenous vegetation remaining on site, due to a long history of agricultural disturbance. The entire site may have been ploughed at some stage, and was then used mostly as accommodation, prior to these buildings becoming abandoned more than ten years ago. Most of the indigenous vegetation on site now has re-established since the site was abandoned.



**Plate 1:** Photo of the central portion of the site, with existing building shells. Note the complete absence of indigenous shrubs.

Common alien invasive species in the area include *Plantago lanceolata*, *Echium plantagineum* (Patterson's curse), *Hypochaeris radicata* (dandelion), *Lupinus* sp. (lupins), *Lolium* sp. (ryegrass), *Avena* spp. (wild oats), *Acacia saligna* (Port Jackson), *Senna didymobotrya*, *Lavatera* sp., *Bromus diandrus* (rippgut brome), *Erigeron bonariensis*, *Raphanus rapistrum* (wildemostert), *Brassica tournefortii*,

*Trifolium angustifolium* and *Pennisetum clandestinum* (kikuyu grass). Various exotic trees are present, some of them quite large.

Indigenous species diversity is very low, not unexpectedly, and species noted include *Cynodon dactylon* (fynkweek), *Carpobrotus edulis* (suurvy), *Ehrharta calycina*, *Senecio burchellii* (hongerblom), *S. pterophorus*, *Seriphium plumosum* (slangbos), *Albuca canadensis*, *Searsia angustifolia* (smalblaar), *Pennisetum macrourum* (fonteingras), *Anthospermum aethiopicum*, *Watsonia meriana*, *Diospyros glabra*, *Leonotis leonurus* (wildedagga), *Oxalis pescaprae*, *Chasmanthe aethiopica*, *Ficinia nodosa*, *Juncus capensis*, *Cyperus longus* and *Pycreus polystachyos*. Total combined coverage of all indigenous plants is estimated to be about 500m<sup>2</sup>.

No plant Species of Conservation Concern were recorded in the study area, and none are expected to survive in this heavily disturbed area.

## **6. FAUNA**

A range of common and widespread birds are likely to use the site but few of these were observed on site. Species observed include Hadedda (*Bostrychia hagedash*), Shrub Karoo Prinia (*Prinia maculosa*), Fiscal Shrike (*Lanius collaris*) and Cape wagtail (*Motacilla capensis*).

Frogs were heard calling from the damper areas, and these were all the widespread *Strongylopus grayii* (clicking stream frog). No other frogs are likely on site. Few reptiles are likely to be resident, although occasional molesnake (*Pseudaspis cana*) and Cape cobra (*Naja nivea*) may cross the site or visit to hunt some of the small mammals on site.

Small mammals likely to be resident are striped fieldmouse (*Rhabdomys pumilio*) and Cape Grey mongoose (*Galerella pulverulenta*), and the characteristic sand turrets of molerat (*Bathyergus suillus* or *Georychus capensis*) were observed.

The faunal diversity of the site is low, and typical of disturbed, remnant habitat in the region. No animal Species of Conservation Concern were recorded in the study area, and none are expected to survive in this disturbed area. Faunal sensitivity is Low on a regional scale.

## **7. ECOLOGICAL SENSITIVITY**

Both botanical and faunal sensitivity of this site is Low on a regional scale, in contrast to the National Screening Tool which classifies all remnants in the Cape region as Very High sensitivity, irrespective of ecological condition or diversity. Key informants of this Low sensitivity include the probable previous cultivation and subsequent heavy use of the site for accommodation and farming purposes, the subsequent low current plant and animal diversity, and the absence of any plant or animal Species of Conservation Concern.

## **8. IDENTIFICATION OF LIKELY IMPACTS**

The likely construction phase ecological impacts of the proposed development are loss of remnant vegetation and faunal habitat on site, as well as possible loss of the few individual animals that are unable to move to adjacent sites.

The rather minor operational phase ecological impacts of the proposed development are primarily habitat fragmentation and loss of current levels of ecological connectivity across the site.

## **9. CONCLUSIONS AND RECOMMENDATIONS**

- The site is of Low botanical and faunal diversity and sensitivity, and presents no faunal or botanical constraints to the proposed development, other than the seasonal drainage line on the eastern edge of the site (to be addressed by freshwater specialist), where development planning should be in line with what is recommended by the freshwater specialist.
- The overall ecological significance of the development of the site (excluding the seasonal drainage line on the eastern edge of the site) would be Low negative (before mitigation) on a regional scale.
- The proposed development could actually enhance the ecological status of this area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts), and making it more attractive to a wider range of birds and insects.
- No specific ecological mitigation is thus required, but it is noted that the landscaping plan is proposing extensive use of indigenous plants, which is supported. The proposed *Podocarpus falcatus* (Real yellowwood) should be replaced with *Ekebergia capensis* (Cape ash) or *Harpephyllum caffrum* (Wild plum), as the former is not adapted to the hot, dry summers in this

area. The tall restio *Restio paniculatus* should also be added to the planting list, for damper areas.

- The proposed development could be authorised without any regionally or nationally significant ecological impacts.

## 10. REFERENCES

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