Regalis Environmental Services

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2nd September 2021

Cape EAPrac
17 Progress Street
6530 George

For Attention: Louise-Mari van Zyl

Interim Sewage Conservancy Tanks and Upgrade of existing Municipal Water Line

Thank you for providing maps and information on the interim sewerage conservancy tanks and the upgrade of the municipal water line to the proposed development on Remaining Portion of farm 139, Tergniet, Mossel Bay.

I can hereby confirm that the proposed altered activities will not affect the outcomes of my specialist botanist compliance statement.

Yours sincerely,

Botanical Impact Assessment

for proposed development

of Remainder of Farm 139 (Zandhoogte)

Tergniet, Mossel Bay.

This report was prepared during January 2020 by:

Regalis Environmental Services CC
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INTRODUCTION

A development proposal was approved for Remainder of Farm 139 (Zandhoogte) in the Mossel Bay district, but the approval has lapsed. A botanical impact assessment was done for the previous application my McDonald (2008), but the authorities requested an updated botanical impact assessment.

Regalis Environmental Services was appointed as an independent consultant (see Appendices 1 & 2) and the terms of reference for this assignment was as follows:

- Conduct a **site inspection** to determine the current ecological state of the site and report on the status quo (details of level of invasive alien species, indigenous coverage etc);
- **Compare findings** from the site inspection with the findings of **Dr McDonald** and detail any differences or changes to the ecosystem;
- Identify any **rare/endangered/protected species** and provide a **species list** for them;
- Identify and **map any sensitive environmental features** (critically endangered / endangered vegetation types or wetland areas etc) that may need protection and/or exclusion from the development footprint – sensitivity map must be provided in digital format preferably KML or KMZ;
- Assess the **development proposal** (as well as reasonable and feasible alternatives provided by the Applicant, limited to two (2) development proposals and the Status Quo alternative);
- Identify and describe **positive/negative impacts** (direct, indirect, cumulative) that may arise from the development (compared to the status quo) and the **acceptable level of change** for each impact;
- Recommend any **change**s to the preferred layout, if necessary, to **avoid negative impacts**;
- Recommend **mitigation measures** that may be required to **minimise negative impacts**;
- Recommend **long-term management requirements** for any areas of special interest for **construction phase** as well as the **operational phase**;
- Review and reference all **relevant biodiversity guidelines** applicable to the Western Cape and the Garden Route region in particular (i.e. Western Cape Biodiversity Spatial Framework, Critical Biodiversity Areas Handbook, Western Cape Biodiversity Specialist Guidelines document, Western Cape Fynbos Forum Ecosystem Guidelines etc);
- Ensure that you report complies with **Appendix 6 of the 2014 Environmental Regulations** (as amended in 2017);
- Liaise with CapeNature to verify the findings/recommendations of your **draft report** before submitting it to the Client;
- **Review and respond** to (biodiversity related) issues raised during the stakeholder engagement process of the Basic Assessment process;
- Submit a **final Botanical Impact Assessment Report** to the Client for use in the Basic Assessment Report.

The proposed development area on the property has been enlarged since the previous development application and study by McDonald (2008). The new development layout is shown on Map 1.

Map 1: New development layout proposal for the property. The red square is the location of the population of the threatened *Euchaetes albertiniana* population that occurs along the road verge of Impala street.

Jan Vlok of RES surveyed the affected area in November 2019 and the results of my field study and recommendations are provided here. My declaration as independent consultant is provided as Appendix 2 and my CV as Appendix 3.

METHODOLOGY AND UNCERTAINTY REGARDING STUDY RESULTS

The national status of the affected vegetation type was determined by means of consulting Mucina *et al (*2006) and updates thereof [South African National Biodiversity Institute (2006-2018). The Vegetation Map of South Africa, Lesotho and Swaziland, Mucina, L., Rutherford, M.C. and Powrie, L.W. (Editors), Online, http://bgis.sanbi.org/Projects/Detail/186, Version 2018]. The regional conservation value of the affected vegetation was determined by means of consulting the updated fine-scale conservation plan for the region by Pence (2017). I am thus confident that the methodology followed complies with:

1. Appendix 6 of the 2014 National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations (and as amended), detailing the requirements for specialist's reports; and,
2. The principals outlined in the *Guideline for Biodiversity Specialists* (WC: DEA&DP, 2005) and those of the *Western Cape Biodiversity Spatial Plan Handbook* (Pool-Stanvliet et al, 2017).

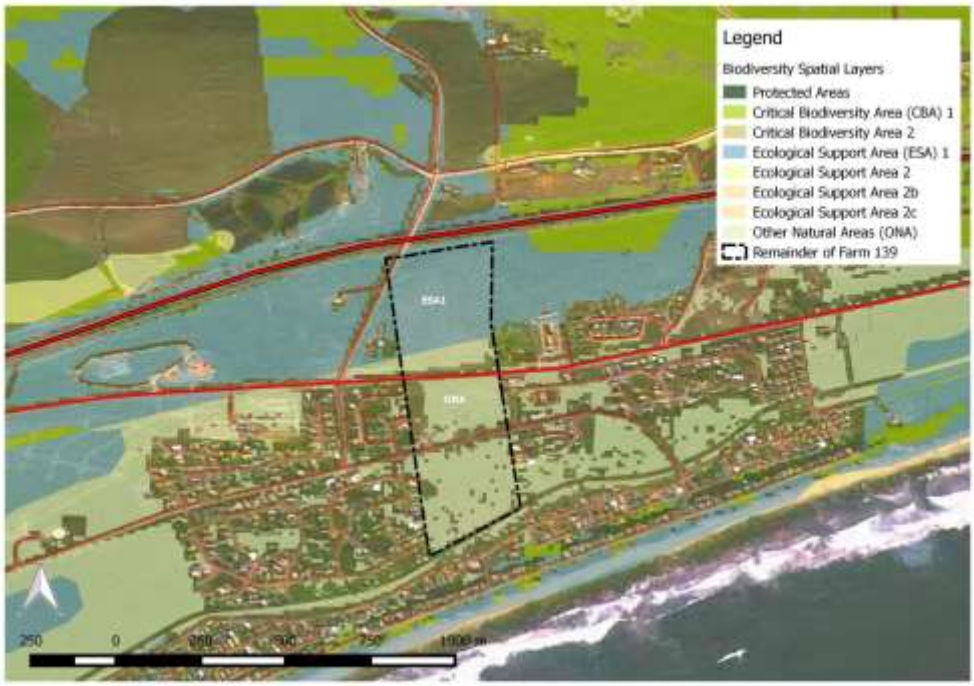
The proposed development area was surveyed on foot to determine the ecological condition of the affected area and to establish if any rare or endangered plant species (*sensu* Raimondo *et al*, 2009 and updates thereof in www.sanbi.redlist) are, or may be present. All the plant species encountered could be identified with certainty as most of the species were still in flower after good recent rain.

I am thus confident that my findings and recommendations comply with the guidelines provided in the *Fynbos Forum Ecosystem Guidelines for Environmental Assessment in the Western Cape (*2nd edition, 2016*)*, the *Guideline for Biodiversity Specialists* (DEA&DP, 2005) and those of the *Western Cape Biodiversity Spatial Plan Handbook* (Pool-Stanvliet et al, 2017).

STUDY RESULTS

Following the national vegetation map the vegetation of the proposed development area was previously mapped as Groot Brak Dune Strandveld (status = Endangered), but is currently mapped as Hartenbos Dune Thicket (status = not determined yet). The regional conservation plan mapped the proposed development area as Other Natural Areas (see Maps 2 & 3).

Map 2. National vegetation of the affected area from Mucina *et al (*2006) and updates thereof [South African National Biodiversity Institute (2006-2018).



Map 3: Regional conservation plan for the affected area (from Pence (2017).

The remnant natural vegetation in the immediate area, such as those along the railway line to the south of the property, confirms that the vegetation on the property did consist of Hartenbosch Dune Thicket (Groot Brak Dune Strandveld). The Dune Thicket was, however, removed from the entire proposed development area and the area was used as agricultural lands thereafter. These lands have not been ploughed for many years and some natural vegetation has established on the old lands. In the area south of Impala street the re-established vegetation has not been disturbed much in recent years and some shrubs have established, but the area north of Impala street has been brushcutted frequently (presumably to control alien vegetation and to reduce fire risk) and the vegetation now consists mostly of grasses and herbs (see Photo's 1 and 2). It is estimated that the proposed development area has a cover of about 50% of indigenous species, with an additional cover of about 20% of alien species (mostly *Acacia cyclops* and especially *Pennisetum clandestinum*).

The indigenous species found within the proposed development area are very similar to those listed by McDonald (2008), but several more herb and grass species were found in the larger proposed development area. The 59 species found in the development area are as follows:

Trees and tall shrubs: *Azima tetracantha, Buddleja saligna, Carissa bispinosa, Diospyros dichrophylla, Euclea racemosa, Exomis microphylla, Grewia occidentalis, Lycium cinereum, Pittosporum viridiflorum, Pterocelastrus tricuspidatus, Searsia crenata, S. glauca, S. pterota, Solanum africanum, S. guineense, Sideroxylon inerme* and *Tarchonathus littoralis*.

Shrubs and Herbs: *Abutilon sonneretianum, Carpobrotrus edulis, Chironia baccifera, Chrysocoma tenuifolia, Conicosia pugioniformis, Crassula expansa, C. tetragona, Delosperma littorale, Dischisma ciliatum, Disperago krausii, Drosanthemum hispidum, Galenia filiformis, Hebenstreitia integrifolia, Helichrysum littorale, H. teretifolium, Hermannia velutina, Leonotis oxymifolia, Mesembryanthemum crystallinum, Nemesia versicolor, Oncosiphon suffruticosus, Osteospermum moniliferum, Passerina vulgaris, Pelargonium capitatum, Pollichia campestris, Rumex saggitatus, Senecio elegans, S. juniperinus, Silene undulata, Tetragonia fruticosa, Wahlenbergia androsacea* and *W. tenella.*

Creepers: *Cynanchum obtusifolium, Sarcostemma viminale* and *Rhoicissis digitata.*

Graminoids: *Cynodon dactylon, Ehrhata villosa, Eragrostis plana, E. curvula, Ficinia oligantha, Hellmuthia membranacea, Sporobolus fimbriatus* and *Stenotaphrum secundatum*.

Geophytes: *Albuca cooperi.*

No rare or threatened species were found within the proposed development area, but a small population of *Euchaetis albertiniana* (status = Endangered) was found along the road verge of Impala street (see Map 1).

Photo 1: Frequently disturbed affected vegetation north of Impala street.

Photo 2: Less disturbed natural regeneration of vegetation south of Impala street with some shrubs established. Most of the prominent ones are the alien *Acacia cyclops*.

CONCLUSIONS AND RECOMMENDATIONS

I agree with the finding of the regional conservation plan and those of McDonald (2008) that the vegetation of the proposed development area is highly transformed and of little significance to conservation. The proposed development area does not contain sensitive habitat types (e.g. wetlands) or act as an important ecological corridor. The proposed development area is surrounded by residential areas, with the northern boundary consisting of highly transformed vegetation that is transected by two major road systems.

The only large Milkwood tree (*Sideroxylon inerme* with d.b.h. > 30 cm) present grows along the eastern boundary fence and will not be affected by the proposed development. The only threatened plant that may be affected by the proposed development, *Euchaetis albertiniana* (status = Endangered), consists of a small population (about 10 plants) along the road verge of Impala street. It is unlikely that this population will survive for an extended period, due to the small size of the population, the limit habitat in which it can survive and the rate at which alien species are invading this road verge. The translocation of these plants is unlikely to be successful and I do not propose any mitigation measures to compensate for the loss of these plants.

As the development of the entire proposed development area will not result in the loss of vegetation of significance to conservation, a significant loss of biodiversity or threaten any important ecological process that sustains the biodiversity of the area, I do not propose any alteration to the proposed layout plan (see Map 1). I find no reason to propose any mitigation actions to limit the impacts of the proposed development. My impact assessment for the proposed development is provided as Appendix 1.

REFERENCES

McDonald, D.J, 2008. Botanical evaluation, Zandhoogte 139, Tergniet, Groot Brakrivier, Southern Cape. Bergwind Consultancy, Claremont.

Mucina, L., Rutherford, M.C. and Powrie, L.W. (eds.), 2006. Vegetation Map of South Africa, Lesotho and Swaziland. 1:1 000 000 scale sheet maps. SANBI, Pretoria.

Pence, G.Q.K., 2017. Western Cape Biodiversity Framework 2017. Status Update: Critical Biodiversity Areas of the Western Cape. Unpublished CapeNature report.

Pool-Stanvliet, R., Duffel-Canham, A., Pence, G. & Smart, R. 2017. Western Cape Biodiversity Spatial Plan Handbook. Stellenbosch, CapeNature.

Raimondo, D., Von Staden, L., Foden, W., Victor, J.E., Helme, N.A., Turner, R.C., Kamundi, D.A. & Manyama, P.A., 2009. Red List of South African plants. Strelitzia 25, SANBI, Pretoria.

APPENDIX 1: BOTANICAL IMPACT ASSESMENT FOR PROPOSED DEVELOPMENT.

The 'no go' option implies retaining the status quo of land management, thus periodic brush cutting of the land to reduce the risk of fires. This in time will result in the development of a vegetation that is largely dominated my graminoids (including expansion of the exotic *Pennisetum clandestinum* which is already present) and hence the loss of most of the current species. It is not possible to recommend a mitigation measure to alter the current land management practice as the landowner has a duty to reduce the fire risk on his land. My impact assessment for the 'no go' option is hence as follows:

Impact description	Extent	Magnitude	Duration	Probability	Confidence	Reversibility	Significance
Loss of sensitive vegetation and threatened plant species.	Local	Medium	Long term	Definite	Certain	Irreversible	Low
Soil erosion with current land management.	Local	Low	Long term	Probable	Probable	Irreversible	Low

The current and previous development layout plans (see Map 1) will have exactly the same botanical impact and my assessment for the current development proposal is as follows:

Impact description	Extent	Magnitude	Duration	Probability	Confidence	Reversibility	Significance
Loss of sensitive vegetation and threatened plant species.	Local	Medium	Long term	Definite	Certain	Irreversible	Low
Soil erosion during construction phase.	Local	Medium	Long term	Probable	Probable	Irreversible	Low

APPENDIX 2: DECLARATION OF INDEPENDANCE

I J.H.J. Vlok as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

- in terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
  - ~~am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 has been appointed to review my work (Note: a declaration by the review specialist must be submitted);~~
- in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of the Specialist:	
Name of Company:	Regalis Environmental Services CC
Date:	26th November 2019

APPENDIX 2: *CV OF CONSULTANT.*

CURRICULUM VITAE

Johannes Hendrik Jacobus Vlok

Biographical Information

Birth: 6th December 1957, Calvinia, South Africa.
Identity Number: 571206 5133 089
Criminal Record: None.
Married to Anne Lise Schutte-Vlok and we have one daughter, Marianne Helena Vlok.

Education

1975 Matriculated at Bellville High School.
1982 Diploma in Forestry, Saasveld Forestry College.
1997 MSc (*Cum Laude*), University of Natal.

Employment

1982-1990. Department of Forestry (later Water Affairs, Forestry and Environmental Affairs), as research technician.
1990-1997. Cape Nature Conservation, as regional botanist.
1997-present. Self employed as environmental advisor (Regalis Environmental Services).

Research Output

One book and more than 30 scientific and popular articles published in international & national journals as primary or as co-author. Delivered three keynote and >20 other verbal papers at scientific forums on ecological and floristic studies. Delivered >300 presentations to civil society in public meetings and *via* other media (radio, newspaper and television) on plant ecology and conservation. Current ResearchGate rating >25 with > 1 000 citations of my papers.

Awards

2003. Leslie Hill medal. **Succulent Society of South Africa**.
2006. Gold award. **C.A.P.E.**
2006. Certificate of Appreciation. **Western Cape Conservation Stewardship Association**.
2008. Special Award. **CapeNature**
2010. Marloth medal. **Botanical Society of South Africa**.

Consultation & Advisory Capacity

Consultant to WWF-SA, Cape Nature and SANPARKS to determine conservation status of land. Several of the studies resulted in the purchase of the properties, now amounting to a value of >R100 million.

Consultant to National, Provincial and private institutions for vegetation restoration projects, environmental impact assessment and environmental management plans. Some of these assignments won national awards.

Referee for many international and national scientific articles and donor funded grants.

Classified, described and mapped Forest, Subtropical Thicket, Fynbos and Succulent Karoo vegetation units in four major donor funded projects.

Expert witness in several Magistrate and Supreme Court cases.

Research Associate of Nelson Mandela University.

Prepared > 250 botanical impact assessments for proposed developments.