

BOTANICAL SCREENING FOR NEMA APPLICABILITY OF PROPOSED SEWER PIPELINE FOOTPRINT WITHIN ERF 2224 (OAKHURST FARM), HOUT BAY, CITY OF CAPE TOWN, WESTERN CAPE

INTRODUCTION

A series of sewer pipe linkages are proposed within ERF 2224 Hout Bay. It was necessary to determine the extent of indigenous vegetation within the site since this area is mapped as Critically Endangered vegetation, and more than 300m² of vegetation being impacted would therefore trigger a listed activity in terms of NEMA. A botanical scan of the site was therefore required in order to determine extent of indigenous vegetation cover. Capensis Ecological Consulting (Pty) Ltd t/a Capensis was appointed by Sillito Environmental Consultants to carry out the botanical screening. This report is not a NEMA Applicability checklist but addresses the component of the checklist that relates to the extent of indigenous vegetation.

The following ToR were followed for the botanical study:

1. Site visit to determine the habitat condition.
2. Determine whether or not 300m² or more of indigenous vegetation within a critically endangered ecosystem is present.
3. Compile a report with the findings of the screening study and provide an opinion with respect to the proposed activity and acceptability from a botanical perspective.



Figure 1. Site layout showing the proposed pipeline extensions in relation to existing sewer pipes.

FINDINGS

The site was visited on 17th April 2023 and surveyed on foot. Sample waypoint positions and tracks were obtained using a Garmin GPS map 60C. Photographs were taken and georeferenced by recording a corresponding GPS point using the Garmin GPS. The survey site was previously assessed by McDonald (2008) and Helme (2010). The assessment of the site was to confirm whether or not indigenous vegetation was present, whether the vegetation was representative of Peninsula Granite Fynbos vegetation, and if so how much of the pipeline footprint lies within indigenous vegetation cover.

National Vegetation Map and Ecosystem Status: The Vegetation of South Africa, Lesotho and Swaziland (VEGMAP) assigns the vegetation type within the site as Peninsula Granite Fynbos. This vegetation type is listed as Critically Endangered in The Revised National List of Ecosystems that are Threatened and Need of Protection (Government Gazette 2022). Furthermore, within the City of Cape Town Biodiversity Network (Holmes and Pugnalin 2016) this vegetation type has been subdivided into South Peninsula Granite Fynbos, which is also classified as Critically Endangered.

The one Species of Conservation Concern (SCC) that was identified in the previous survey was outside of the current area included in this assessment, and no other SCC were identified during this survey. Some opportunistic indigenous species were found throughout the site, but mostly the area is highly disturbed habitat of low ecological value. A number of non-locally indigenous garden escapee species were also found in places.

The three pipeline footprints on the eastern side of the site (sites 1, 2 and 3) were all found to be completely transformed habitat, dominated by Kikuyu (*Pennisetum clandestinum*) as well as some Red valerian (*Centranthus ruber* - NEMBA category 1b), Nasturtium (*Tropaeolum majus*), Lavender (*Lavandula sp.*) and Wild plantain (*Plantago lanceolata*), with some opportunistic Bietou (*Osteospermum moniliferum*) and Needle everlasting (*Helichrysum teretifolium*). The Bietou may be locally occurring but is equally likely to be escaped garden material, as it resembles the vigorous common garden variety not naturally occurring on the peninsula, and therefore is not considered to be an indicator of indigenous vegetation within this site.

The existing access road where a section of the pipeline is proposed does not contain any indigenous vegetation, with only some Kikuyu grass in places.

The lower part of site 4 and all of site 5 consists of felled alien vegetation, likely all Port Jackson willow (*Acacia saligna* - NEMBA category 1b). No standing vegetation was present other than some opportunistic Bietou. Around 20 metres in from the access road, some diversity of mostly large but relatively sparse shrubs of Cape starapple (*Diospyros glabra*), Ironwood (*Olea capensis*), Common Gonna (*Passerina corymbosa*), Brown sage (*Salvia lanceolata*), Blinktaaibos (*Searsia lucida*) and Bicolor curranthrus (*Searsia tomentosa*) are present, with little diversity of smaller shrubs limited to Tall flowerseed (*Anthospermum aethiopicum*), Prickly purplegorse (*Muraltia heisteria*) and Rose geranium (*Pelargonium capitatum*). In places are thick patches of Port Jackson willow and Lantana (*Lantana camara* - NEMBA category 1b), as well as a few small Rooikrans (*Acacia cyclops* - NEMBA category 1b).

Site 6 has a small footprint but bisects a thick cluster of indigenous shrubs - Bietou, Cape starapple and Blinktaaibos.

Site 7 follows the edge of existing development, and crosses a few fencelines. Much of the vegetation along this footprint consists of escaped garden material of non-locally indigenous species including Honey euryops (*Euryops virgineus*), Wood iris (*Dietes grandiflora*) and Coastal blue felicia (*Felicia amelloides*), as well as Bietou, as well as alien species including Clockweed (*Gaura lindheimeri*), Red valerian and Lavender. An area of grass and herb dominated cover consists of Kikuyu, Quaking grass (*Briza maxima*), Wild plantain and Fleabane (*Conyza sp.*). Below this area is dominated by Bluegum *Eucalyptus globulus* as well as Port Jackson willow, although in a small area are some sparse opportunistic indigenous species Septemberbush (*Polygala myrtifolia*), Common gonna and Tall flowerseed.

Sites 8 and 9 are both small in extent, but both consist of some indigenous vegetation on the edge of the road consisting of Bietou, Common gonna, Prickly purplegorse and a few common spoonfig

(*Erepsia anceps*), with Port Jackson willow in site 8 and Silky needlebush (*Hakea sericea* - NEMBA category 1b) in site 9 invading upslope.

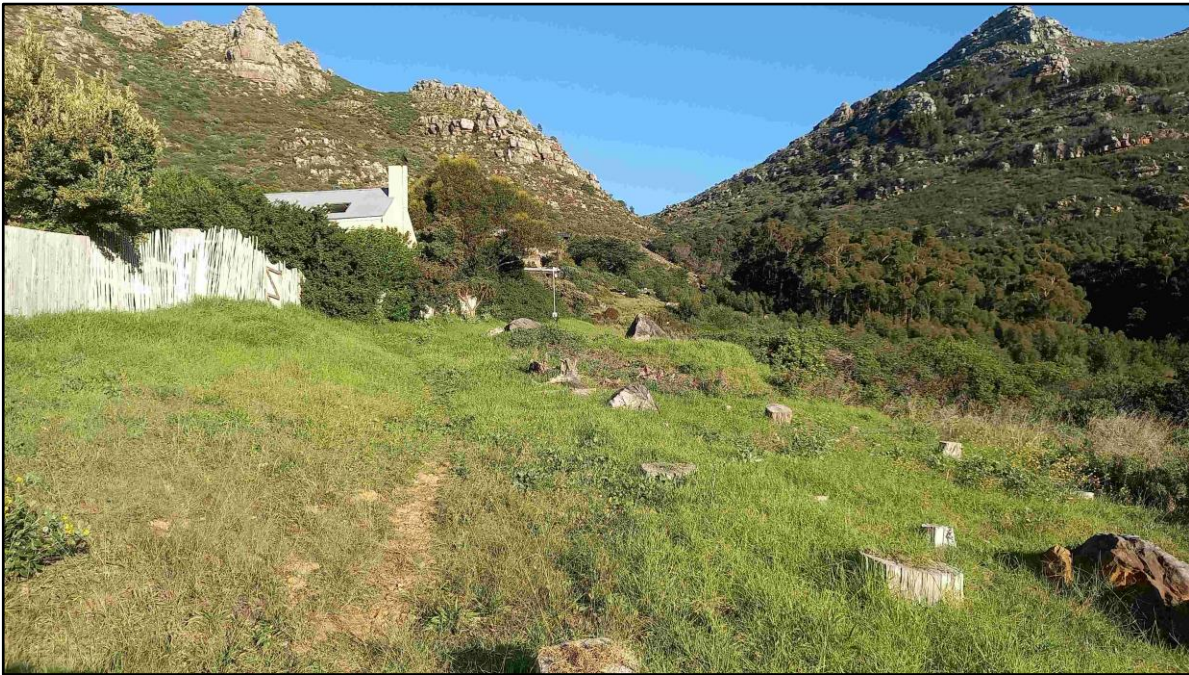


Figure 2. The habitat condition of sites 1,2 and 3, dominated by Kikuyu grass.

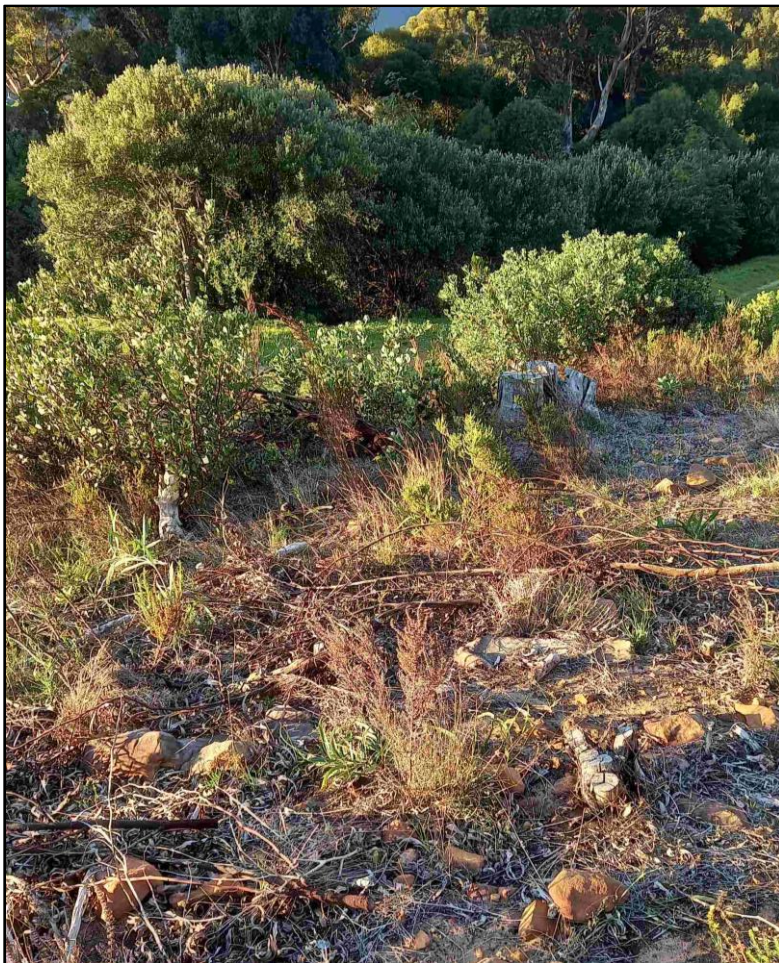


Figure 3. Little vegetation cover with recently cleared alien vegetation within site 5 and the lower part of site 4.



Figure 4. Some shrub diversity higher up along the proposed footprint of site 4.

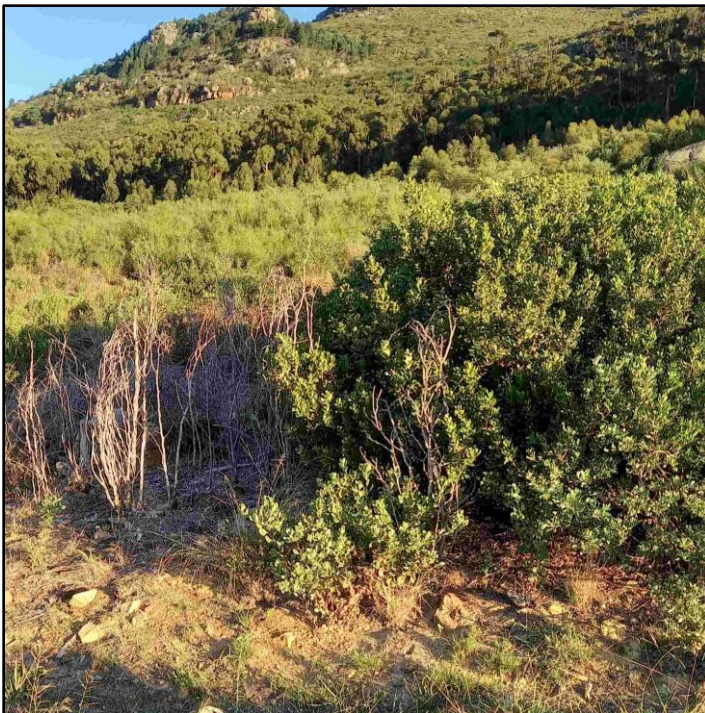


Figure 5. Cluster of indigenous shrubs in site 6.

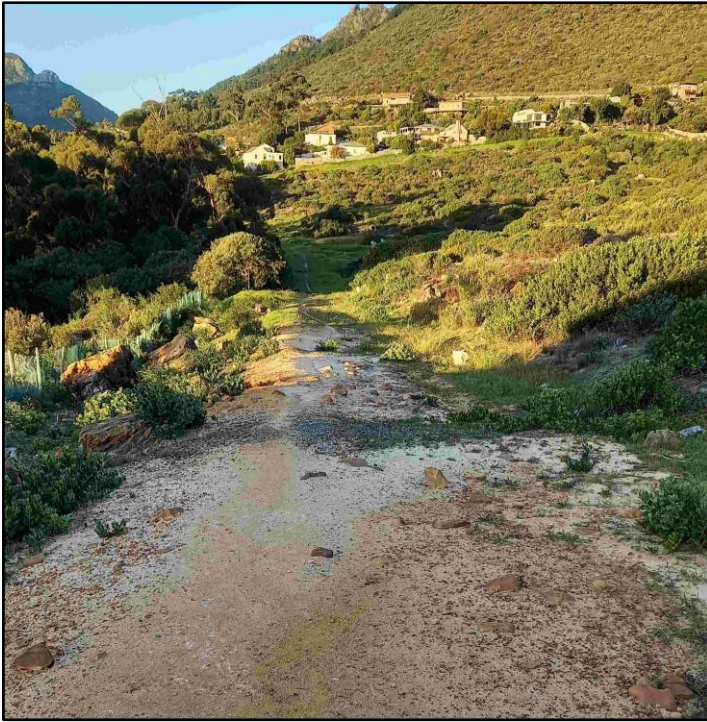


Figure 6. Pipeline footprint along the access road with no vegetation cover other than Kikuyu lower down towards the east side.



Figure 7. Footprint of site 7 with opportunistic Bietou shrubs and alien grasses, with non-locally indigenous escaped garden species further upslope.



Figure 8. Lower section of site 7 under Bluegums with some indigenous vegetation on the far end.

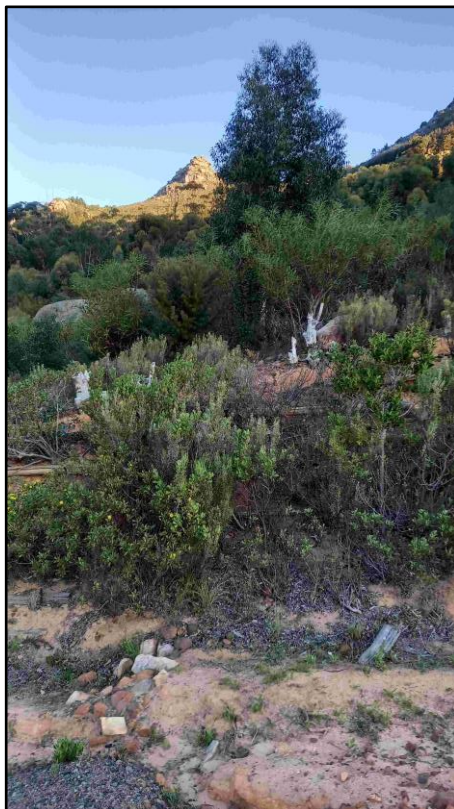


Figure 9 and 10. Sites 8 (left) and 9 (right) with some indigenous vegetation along the edge of the access road and invasive alien trees upslope.

CONCLUSION

Considering the findings of the site visit, the only footprints considered to contain indigenous vegetation include the upper 60 metres of site 4, around 5 metres of sites 6 and 8, and 10 metres in site 9. Site 7 is not considered to be indigenous vegetation since the indigenous species

present are likely to be escaped garden material, apart from a small area along the lower part of around 10m in length where a few indigenous shrub species are present. Therefore, assuming a footprint of up to 3 metres of disturbance along pipeline routes, this adds up to 270m² of impact within potentially indigenous vegetation. Therefore, this would not trigger a listed activity since less than 300m² of indigenous vegetation may be impacted. Note however that the area mapped here as indigenous vegetation is hardly representative of Cape Peninsula Granite Fynbos vegetation in terms of structure or diversity, which would historically have occurred within the site. This development is therefore supported from a botanical perspective.

Stuart Hall (Pr. Sci. Nat.)



Botanical Specialist

REFERENCES

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Holmes, P. & Pugnalin, A. 2016. The Biodiversity Network for the Cape Town Municipal Area C-PLAN & MARXAN ANALYSIS: 2016 METHODS & RESULTS. Environmental Resource Management Department (ERMD), City of Cape Town.

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- Rebelo, A.G., Boucher, C., Helme, N., Mucina, L. & Rutherford, M.C. 2006. Fynbos Biome. In: Mucina, L. & Rutherford, M.C. (eds.) The Vegetation of South Africa. Lesotho & Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
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APPENDIX 1: TERRESTRIAL PLANTS SPECIES COMPLIANCE STATEMENT

INTRODUCTION

The requirement for assessment and reporting of impacts on terrestrial plant species is in accordance with new procedures for reporting on identified environmental themes published in October 2020 (Government Gazette No. 43844, 2020). The Screening Tool used to derive the plant sensitivity (<https://screening.environment.gov.za>) assigned a Low and Medium sensitivity theme for the study site (Figure 1). Note that based on the site verification no Species of Conservation Concern (SCC) or Sensitive Species were found. Low sensitivity is deemed to be a more appropriate rating and a compliance statement is thus required. Since no SCC and only a few patches of low indigenous shrub diversity were identified as points of interest, only eight waypoints were recorded.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY

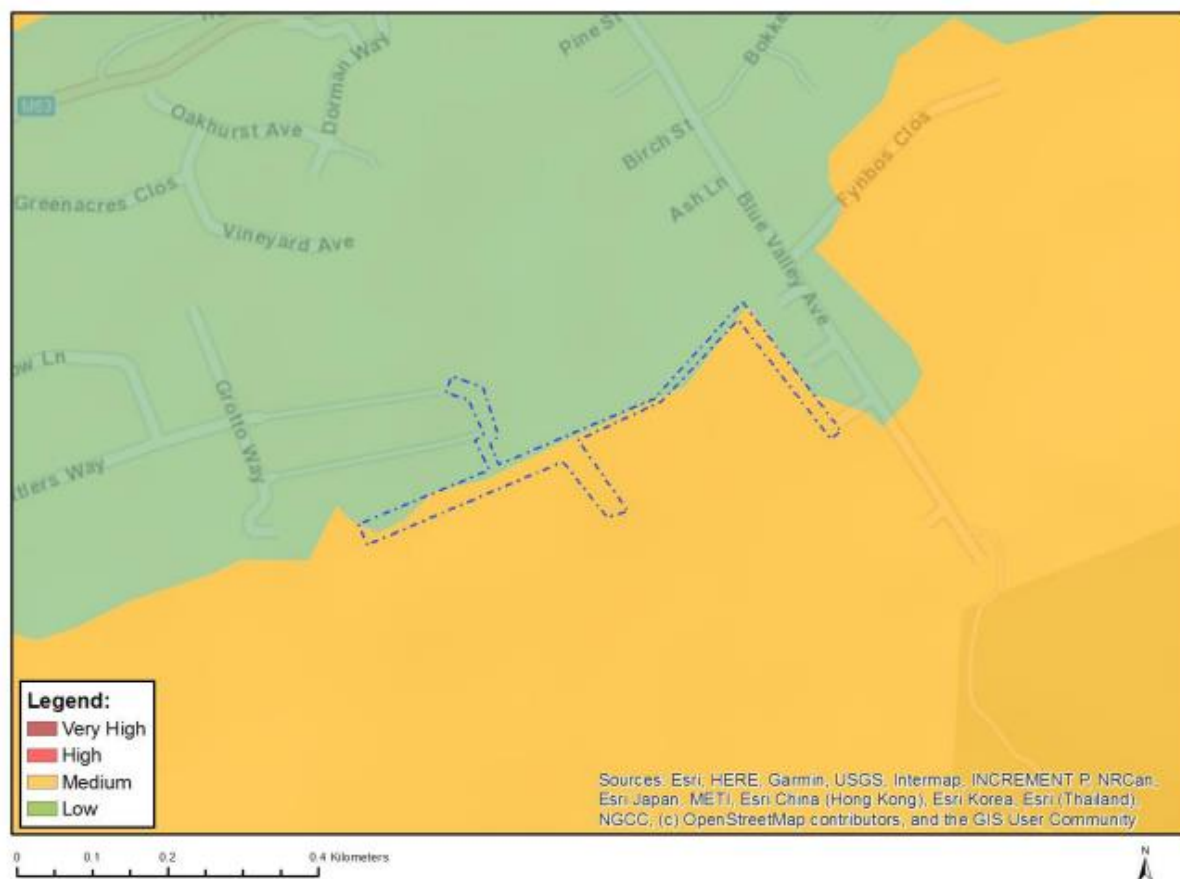


Figure 1. Map of relative plant species theme sensitivity.

Findings and Conclusions

No Species of Conservation Concern (SCC) were found within the proposed development footprint and there would therefore be no significant impact on any SCC should any development be given the go-ahead.

Additional information required for this report is provided below:

- The methodology used to compile this compliance statement is provided in the main body of this report.

Table 1. List of requirements for minimum reporting of Terrestrial Plant Species Compliance Statement

Protocol ref	Terrestrial Plant Species Compliance Statement	Section / Page
5.1.	The compliance statement must be prepared by a SACNASP registered specialist under one of the two fields of practice (Zoological Science or Ecological Science).	main body of report
5.2.	The compliance statement must:	
5.2.1.	be applicable to the study area;	Appendix 1

5.2.2.	confirm that the study area is of “low” sensitivity for terrestrial plant species; and	Appendix 1
5.3	The compliance statement must contain, as a minimum, the following information:	
5.3.1.	contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae;	Appendix 2
5.3.2.	a signed statement of independence by the specialist;	main body of report
5.3.3.	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	main body of report
5.3.4.	a description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant;	main body of report
5.3.5.	where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMP;	N/A
5.3.6.	a description of the assumptions made and any uncertainties or gaps in knowledge or data;	main body of report
5.3.7.	the mean density of observations/ number of sample sites per unit area; and	Appendix 1
5.3.8.	any conditions to which the compliance statement is subjected	N/A

APPENDIX 2: ABBREVIATED CURRICULUM VITAE: STUART HALL

Experience

- Expertise in field work in the CFR – vegetation surveys, plant identification, plant collection, ecological monitoring
- Restoration of natural habitat following degradation
- PhD thesis entitled “Restoration potential of alien-invaded Lowland Fynbos”. Graduation date: March 2018

Career History

- November 2018 – present: Independent botanical specialist
- January 2017 – present: Environmental consultant for Intaka Island Nature Reserve
- March - October 2018: Horticulturist at Stellenbosch University Botanical Garden
- April 2012 – March 2013: Pollination Biology Intern in Department of Botany and Zoology at Stellenbosch University

Education and qualifications

- Pr. Nat. Sci. (139074)
- PhD (Conservation Ecology) – Stellenbosch University (2018).
- BSc: Hons (Botany) – University of Cape Town (2010)
- BSc: Ecology - University of Cape Town (2007 – 2009)

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