APPENDIX H1 – BOTANICAL AND FAUNAL IMPACT ASSESSMENT

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BOTANICAL AND FAUNAL IMPACT ASSESSMENT OF VEGETATION CLEARING ON PTN 54 OF POTTEBERG ESTATES 516, MALGAS, SWELLENDAM.

Submitted to: **PHS Consulting, Hermanus**

Client: WABD Investments (Pty) Ltd.

15 Jan 2026

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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:

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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.

A selection of previous work undertaken in the region is indicated below:

- Scoping and IA for Cape Winelands Airport (PHS Consulting 2022-2024)
- Strandfontein Coastal Node IA (Infinity Environmental 2024)
- Section 24g assessment of Rem of Portion 1 of Farm Melkhoutrivier 492, Malgas (PHS Consulting 2023)
- Botanical assessment of proposed development on Ptn 29 of Farm 410 Caledon (PHS Consulting 2022)
- Macassar WWTW IA (Zutari 2023)
- Botanical assessment of proposed new infrastructure on Bokbaai farm (Bokkerivier 733; Doug Jeffery Environmental 2022)

- Botanical assessment of proposed development on Ptn 29 of Farm 410 Caledon (PHS Consulting 2022)
- Botanical assessment of Ptns 3 & 6 of Farm 563 Kleinmond (Lornay Environmental 2021)
- Botanical assessment of Ptn 9 of Farm 429 Gabrielskloof, Caledon (Infinity Environmental 2021)
- Baseline ecological assessment of Karwyderskraal 584, Caledon (Terramanzi 2021)
- Botanical impact assessment of proposed development of Ptn 29 of Farm 410, Caledon (PHS Consulting 2021)
- Biodiversity Compliance Statement - Philippi erf 1/1460 (Infinity Environmental 2020)
- Botanical assessment of Kleinmond WWTW expansion (Aurecon 2020)
- Botanical assessment of Struisbaai cemetery sites (Infinity Environmental 2020)
- Botanical assessment of MoPama development site, Swellendam (Landscape Dynamics 2020)
- Botanical assessment of Ptn of Rem of Erf 1 Caledon (Theewaterskloof Municipality 2019)
- Botanical assessment of proposed sand mine near Brandvlei Dam (PHS Consulting 2017)
- Scoping and Impact Assessment of Proposed Wind Energy Facility near Swellendam (CSIR 2010)
- Scoping Assessment of Proposed Wind Energy Facility near Bredasdorp (CSIR 2010)
- Scoping and Impact Assessment of proposed Wind Energy Facility near Caledon (Savannah Environmental 2010)
- Scoping and Impact Assessment study of Proposed Wind Energy Facility near Caledon (Arcus Gibb 2009 & 2010)
- Impact Assessment of proposed Blue Crane Signature Golf Estate, Caledon (Doug Jeffery Environmental Consultants; 2010)
- Kogelberg Biosphere Reserve corridor study (CapeNature; 2008)
- Botanical Assessment of Erf 173, Hawston (PHS Consulting; 2008)
- Botanical Assessment of Farm 587/6, Cloud's End, Hemel & Aarde (Peter Dall Consultancy; 2007).
- Botanical Scoping and Impact Assessment of proposed Romansbaai development, Danger Point (Doug Jeffery Environmental Consultants; 2006 & 2007)

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1. INTRODUCTION

This biodiversity assessment of Portion 54 of Potteberg Estates 516 was commissioned as part of the specialist input required for the Section 24g Rectification process required by the Department of Environment Affairs and Development Planning for reported unauthorised clearing of vegetation and development on this property. Judging by the available time series imagery all three assessed areas were disturbed since Nov 2023.

Three specific areas were looked at, as shown in Figure 1. As per the final SDP Footprint 1 (main house) will be retained, Footprint 2 (cleared depression in Figure 1 below) will be rehabilitated, and Footprint 3 (cleared footprint around prefab dwelling, as per Figure 1 below) will be retained.

Unlawful clearing of indigenous vegetation, excavation and development 100 m from the estuary has taken place on Portion 54 of Farm Potteberg Estates No. 516, Infanta, without the required Environmental Authorisation (EA). In total, approximately 0.4 ha of vegetation has been removed across three disturbance footprints:

- Footprint 1: Approximately 0.24 ha cleared around the existing main dwelling in the north-eastern portion of the property
- Footprint 2: Approximately 0.12 ha cleared within a floodplain saltmarsh located south-west of the main dwelling
- Footprint 3: Approximately 0.02ha of clearing undertaken in the southern portion of the property adjacent to the access road.

Prior to the unlawful clearing, the property contained an existing main dwelling, terraced structures and an associated access road network. The total disturbance footprint associated with this existing main dwelling was approximately 1443 m².
The following activities have already taken place on site and form part of this Section 24G application:

- Unlawful clearing and levelling of approximately 0.24 ha (2363 m²) around the existing main dwelling (Footprint 1) – *to be retained*.
- Unlawful clearing and soil removal of approximately 0.12 ha (1206 m²) within the floodplain saltmarsh (Footprint 2) – *to be rehabilitated*.
- Unlawful clearing of approximately 0.02 ha (267 m²) in the southern portion of the property adjacent to the access road (Footprint 3) – *200m² to be retained*.
- Construction of an approximately 64 m² double garage within Footprint 1 – *to be retained*.
- Construction of an approximately 8 m² pumproom within Footprint 1 – *to be retained*.

- Construction of an approximately 36 m² caretaker's cottage within Footprint 3 – *to be retained*.

The following activities are linked to the unlawful works on site and form part of this Section 24G application:

- Proposed additions of approximately 237 m² to the existing main dwelling within Footprint 1.
- Landscaping with primarily indigenous vegetation within all remaining disturbed portions of Footprints 1 and 3 not occupied by structures or access roads.
- Rehabilitation of the floodplain saltmarsh within Footprint 2, where unauthorised clearing occurred and where no development is proposed.

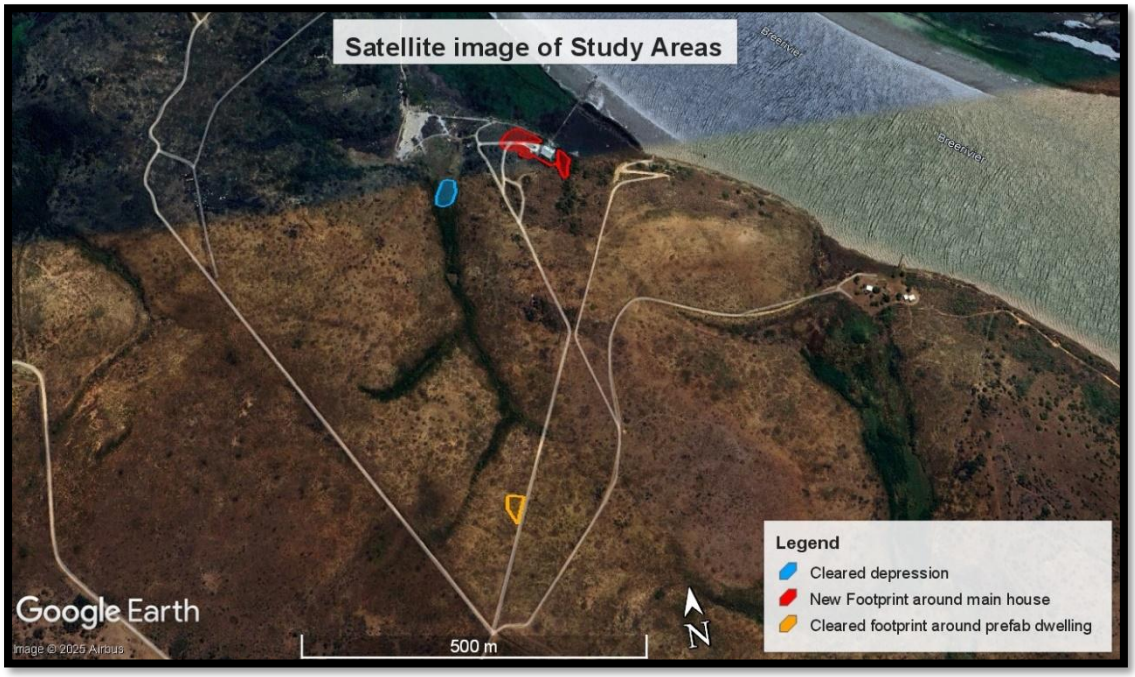

Figure 1: Google Earth image (dated Nov 2023; prior to all disturbance assessed here), showing the three study areas.

2. TERMS OF REFERENCE

The terms of reference for this study were as follows:

- Undertake a site visit to assess the impacts on vegetation and fauna on site
- Identify and describe the vegetation and fauna in the study area and place it in a regional context, including its status in terms of the CapeNature Spatial Biodiversity Plan (CBA/ESA/ONA, etc)

- Identify and locate any (likely) plant and animal Species of Conservation Concern in and around the study area, based on observation, literature and iNaturalist website review; refer to Screening Tool listings
- Provide an overview and map of the likely botanical and faunal conservation significance (sensitivity) of the site, and compare this to Screening Tool findings (Med sensitivity for plants; High for fauna; Very High for Terrestrial Biodiversity)
- Identify and assess (according to standard IA methodology) the botanical and faunal impacts and significance of the site clearing already undertaken, including impacts associated with the development and operational phases
- Provide required mitigation measures to minimise impacts and to help mitigate impacts associated with the site clearing and the proposed development
- Respond to IAP and authority comments.

3. LIMITATIONS, ASSUMPTIONS AND METHODOLOGY

The property was visited on 16 September 2025. Although this would be within the optimal winter - spring flowering season in the main winter rainfall region the study area is actually located in an area of bimodal rainfall, with peaks in autumn and early summer, and was actually very dry at the time of the site visit. Most, but not all perennial plant species were identifiable, but few of the seasonally evident bulbs and annuals were identifiable and evident. It is thus possible that certain plant Species of Conservation Concern may have been overlooked (*i.e.* were not evident) in the cleared areas and the adjacent natural areas, due to both the seasonal constraints and the recent clearing. However, the author believes that sufficient information was available to make an accurate assessment of the vegetation in both the cleared and surrounding areas and its botanical and faunal significance, and the confidence level in the accuracy of the findings is high.

All plant and animal species observed were noted in the field, and various digital photographs were taken (using a Fuji XT5 camera and a Xiaomi 14T cellphone), most of whch have been uploaded to the biodiversity website inaturalist.org. The GIS based South African National Biodiversity Institute (SANBI) vegetation map for South Africa (Mucina & Rutherford 2006 and 2018 online update) was consulted, along with the National List of Threatened Ecosystems (Government of South Africa 2022), and other relevant references noted in the text. Photographs

of particular species observed on site, including most of the SCC, have been posted to the biodiversity website inaturalist.org. Conclusions were drawn based on this documentation and professional experience in the area and the region. Faunal observations were made whilst on site, but no trapping or photography was undertaken.

Google Earth satellite imagery dated November 2023 and May 2024 was used to verify vegetation patterns, cleared areas and the chronology, and for mapping purposes. Google Earth was used to measure areas.

It is assumed that all mitigation recommendations made in this report will be included in any environmental authorisation, and that they will be adequately and timeously implemented.

4. STUDY AREA CONTEXT

The study area is located in the Lower Breede River Valley, and is within the Core Cape Subregion (CCR) of the Greater Cape Floristic Region (GCFR; Manning & Goldblatt 2012). The study area is part of the Fynbos biome. The GCFR is one of only six Floristic Regions in the world, and it is also by far the smallest floristic region. The Core Cape Subregion occupies only 0.1% of the world's land surface, and supports about 9400 plant species, almost half of all the plant species in southern Africa, and some 20% of the plant species in sub-Saharan Africa. About 68% of all the species in the CCR do not occur elsewhere, and many have very small home ranges (these are known as narrow endemics). Most 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 Red Data Book listing process undertaken for South Africa is that 67% of the threatened plant species in the country occur only in the Fynbos biome, 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. Developments in this area thus need to take this into account.

The study area could be considered to be part of the East Coast Renosterveld bioregion (Mucina & Rutherford 2006). More than 75% of this bioregion has been heavily impacted by agriculture, and consequently very little natural vegetation

remains, and virtually all remnants support large numbers of threatened plant species (Raimondo *et al* 2009).

The CapeNature Spatial Biodiversity Plan (CapeNature 2023; see Figure 2) shows that most natural vegetation areas on the property are mapped as terrestrial CBA1. Only the southernmost disturbance (the prefab house) is in a terrestrial CBA1, whilst the depression disturbance is in a CBA1 (aquatic, estuary) and the area cleared around the house is in an unmapped area, and also some CBA1 (aquatic, wetland). The latter is clearly not correct, as this is a terrestrial area on a north slope overlooking the Breede River.

CBA stands for Critical Biodiversity Area, and CBA1 is the highest priority level. CBAs are Critical Biodiversity Areas, and should not be developed, lost or impacted, as they support critical habitat and species, and appropriate land uses should be low impact and biodiversity sensitive. The CBA mapping for this site is largely supported by my site observations, except for the area behind the main house, which is not wetland.

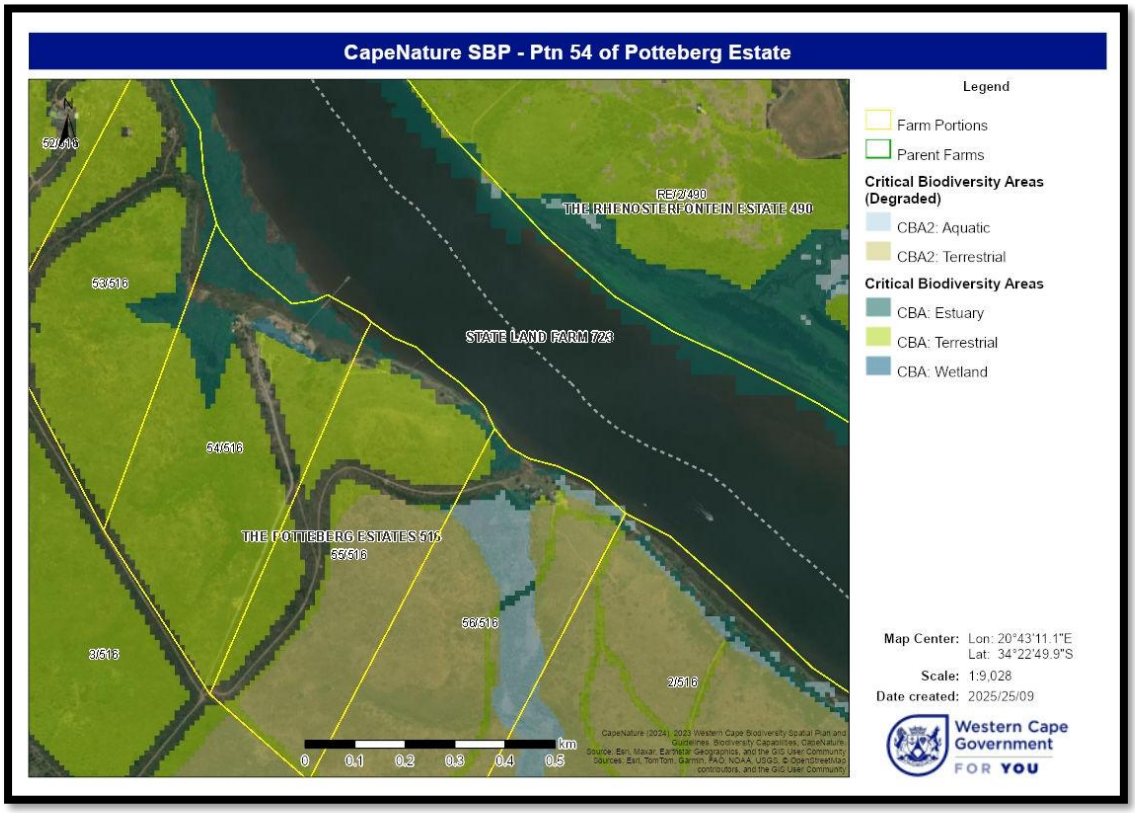

Fig 2: Extract of the CapeNature Spatial Biodiversity Plan for the property (CapeNature 2023), showing that most natural vegetation areas on the property are mapped as terrestrial CBA1. Only the southernmost disturbance (the prefab

house) is in a terrestrial CBA1, whilst the depression disturbance is in a CBA (aquatic, estuary) and the area cleared around the house is in an unmapped area, and also some CBA1 (aquatic, wetland). The latter is clearly not correct.

It is clear from this mapping that the vegetation clearance around the prefab house was in a terrestrial CBA1, that the clearing in the depression area was in a CBA1 (estuary), and that the area cleared around the house should have been mapped as CBA1 (terrestrial). As per the DEA&DP directive the proposed or actual clearing of vegetation from a mapped CBA is an Environmental Impact Assessment trigger (EIA Regulations Listing Notice 3 of 2014: Activity no.12).

5. DESCRIPTION OF THE VEGETATION IN THE STUDY AREA

5.1 Prefab house area

The SA vegetation type in this area, and on most of the property, is **Potberg Ferricrete Fynbos**. This vegetation type is listed as Critically Endangered (Government of South Africa 2022), due to its limited total extent (only around the Potberg and De Hoop area) and threatening processes (mainly alien invasive plants). Less than 60% of this vegetation type remains, only 5% is conserved (mainly in De Hoop NR) and the national conservation target is 30% (Rouget *et al* 2004). No copy of this vegetation map is included, as it adds little value.

The vegetation in the vicinity is in good condition, and was burnt in the wildfire about five years ago. Some clearing of invasive alien Port Jackson (*Acacia saligna*) has taken place, but there are still many live plants within 20m of the building, and dense stends of it to the north (yellow flowered shrubs in Plate 1). Soils in this area are sandy loams. The disturbance footprint in this area is about 267m^2.

Plate 1: View of cleared areas around prefab house (Footprint 3), looking northwest.

Indigenous plant diversity in the vicinity of the prefab house is high, and the following species were noted: *Barleria pungens, Freesia caryophyllacea, Hibiscus aethiopicus, Metalasia densa, M. pungens, Agathosma foetidissima, Aspalathus steudeliana, Cliffortia cf. perpendicularis, Osteospermum moniliferum, Themeda triandra, Aspalathus nigra, Restio triflorus, Senecio pterophorus, Hermannia lavandulifolia, H. salvifolia, H. saccifera, Ficinia* sp.*, Athanasia trifurcata, Pentameris eriostoma, Dicerothamnus rhinocerotis, Pelargonium myrrhifolium, Carpobrotus acinaciformis, Chironia baccifera, Crassula muscosa and Helichrysum rosum*.

At least 3 (possibly 4) plant SoCC (Species of Conservation Concern) were recorded in the area and are likely to have been impacted by the footprint. There is a moderate possibility of there being one or two other SoCC in the area. *Agathosma foetidissima* is a species of buchu Redlisted as Near Threatened, and is fairly common in loamy soils from Bredasdorp to Riversdale. The subpopulation lost in this area (10-15 plants) is not considered regionally significant. *Freesia caryophyllacea* is a bulb, also Redlisted as Near Threatened, and with a similar range. The subpopulation lost in this area is also not considered regionally significant (5-10 plants), with large numbers still present elsewhere on the property. *Aspalathus steudeliana* is a shrub Redlisted as Vulnerable, and is fairly common in loamy soils from Ashton to Mossel Bay. The population lost in this area (3-7 plants) is also not considered regionally significant.

Plate 2: View (looking east) of cleared areas around original house (Footprint 1), with new garages in cutaway area on the right, and grass and planted, exotic *Ficus* trees on infilled area.

Cliffortia perpendicularis is a shrub Redlisted as Data Deficient, and is only known from Potberg and Elim, and is undoubtedly rare. A couple of plants provisionally identified as this species were found near the new prefab house. The subpopulation in this area is considered regionally significant (5-10 plants), given the evident rarity of the species.

5.2 Disturbed depression area

The vegetation in this area is also mapped as Potberg Ferricrete Fynbos, although this is clearly wrong, and it should be mapped as an estuarine saltmarsh vegetation type, being within the 1:100 year flood level of the Breede River. Soils are alluvial sands and silts. The area has evidently been impacted by earthmoving machinery and livestock, but is likely to have supported estuarine saltmarsh vegetation such as that found in the adjacent area closer to the Breede River. The total disturbed area is about 1000m^2. Dense alien invasive vegetation is found south of this area, made up of both rooikrans (*Acacia cyclops*) and Port Jackson (*Acacia saligna*), and some of the latter has been recently felled (see Plate 2).

Indigenous plant diversity is low, but is typical of the vegetation unit, and includes *Salicornia perennis, Atriplex semibaccata, Disphyma crassifolium* and *Malephora* sp. No plant SoCC (Species of Conservation Concern) were recorded here and none are likely to have occurred.

Plate 3: View (looking south) of disturbed depression area (Footprint 2), with recently felled alien Port Jackson piled behind it. This area is likely to rehabilitate fairly well over the next few years, provided it is not further disturbed, and provided alien invasive vegetation is removed on an ongoing basis.

5.3 Main house platform

Judging by the time series satellite imagery the total area disturbed around the existing house that is now being refurbished amounts to about 2363m^2. This includes a cutaway area for two new garages, and an infilled area that has already been grassed (see Plate 2). The vegetation that would have been lost in this area is likely to have been a dry form of Potberg Ferricrete Fynbos, with about 20% woody alien cover (rooikrans) in the eastern part.

Typical indigenous species noted in the adjacent undisturbed areas include *Acmadenia heterophylla, Pentameris eriostoma, Euphorbia burmanii, Dicerothamnus rhinocerotis, Searsia pallens, Aloe ferox, Carpobrotus acinaciformis, Agathosma foetidissima, Pteronia incana, Euclea undulata, Osteospermum moniliferum, Chironia baccifera, Asparagus aethiopicus, A. rubicundus, Ruschia tenella, Ficinia* sp. and *Drosanthemum asperulum*.

At least 1 plant SoCC (Species of Conservation Concern) was recorded in this area, and is likely to have been impacted by the footprint. There is a moderate possibility of there being one other cryptic SoCC in the area. *Agathosma foetidissima* is a species of buchu Redlisted as Near Threatened, and is fairly common in loamy soils from Bredasdorp to Riversdale. The population lost in this area (perhaps 15-20 plants) is not considered regionally significant, and the species remains common in the property outside the footprint.

5.4 Botanical Conservation Value

The botanical conservation value of a site is a product of plant species diversity, plant community composition, rarity of habitat, degree of habitat degradation, rarity of species, ecological viability and connectivity, vulnerability to impacts, restoration potential and reversibility of threats.

The likely botanical conservation value (botanical sensitivity) in the two house footprints is **Medium to High**, whilst in the saltmarsh area it is deemed **Medium** (no SoCC).

The conservation-oriented management of the remaining natural vegetation on the greater property would materially contribute to meeting species and habitat conservation targets. This management only needs to be ongoing invasive alien plant removal, using appropriate methodology (see Martens *et al* 2021).

6. FAUNA

No significant faunal impacts are likely to have arisen as a result of the vegetation clearing on any of the three sites, largely because the noise associated with such would have caused most of the fauna to vacate the area and move to suitable nearby habitat, which is still available.

Due to the absence of freshwater in any of the three footprints no frogs are likely to have been impacted.

Two invertebrates were flagged by the Screening Tool. *Aneuryphymus montanus* (Yellow-winged Agile Grasshopper) is poorly known and seldom recorded, but seems to occur throughout the Overberg Ruens (2 observations on iNaturalist), and there is no way of saying – without a detailed survey by a specialist (capable of identifying it) in the appropriate season whether 1) the species occurs in the area and 2) whether it is likely to have been impacted by any of the development, or is likely to be impacted elsewhere on site. Given the relatively small footprint of all the impacts assessed (compared to agriculture, the dominant driver of habitat transformation in the region) the impact on this species is likely to have been Low.

Chrysoritis brooksi teari (Brooks Opal) has also been flagged by the Screening Tool, and is a butterfly restricted to the Struisbaai to Stilbaai area, and may well

occur in the study area. Its larval foodplants *Roepera* and *Zygophyllum* are present in the area, and its larvae are dependent on *Crematogaster* ants, which are also present in the area. A specialist butterfly survey would be required to confirm its presence, but given the relatively small footprint of all the impacts assessed (compared to agriculture, the dominant driver of habitat transformation in the region) the impact on this species is also likely to have been Low.

Eight bird SCC are flagged for this area by the Screening Tool (the prime driver of the High sensitivity flag), and seven of these could potentially occasionally occur in or close to the various study areas (all except *Hydroprogne caspia;* Caspian Tern), at various times, although only two these (*Circus maurus*, Black Harrier and *Afrotis afra*, Southern Korhaan) may occasionally breed within 200m of any of the study areas. None are likely to have been impacted in any significant, permanent way by the clearing activities, although had they been present at the time they would certainly have temporarily moved away. Consequently, the impact on bird SCC is likely to have been Low.

No vertebrate faunal SoCC are likely to have been permanently present (as opposed to vagrants) within 200m of the three footprints. None of the existing development footprints would need specific buffers in order to mitigate further likely negative impacts on any of the faunal SoCC, largely because all the SoCC are highly mobile and can, and essentially self-buffer, by moving to the most suitable habitats.

Faunal sensitivity in the focus areas is likely to be **Medium**, rather than the High flagged by the Screening Tool.

7. IMPACT ASSESSMENT

7.1 Identification and assessment of impacts

Botanical impacts associated with the development of an area may be both direct and indirect, with the former occurring mostly at the construction stage and the latter mostly at the operational stage. Direct impacts may be both permanent and long term. All impacts in this case are negative, although proposed/required mitigation would have notable positive impacts.

<u>Construction Phase Impacts (Direct Impacts)</u>

The primary direct impacts have already occurred, being the temporary degradation and clearing of about 1200m^2 of Potberg Ferricrete Fynbos (in

depression (1000m^2) and around the prefab house (200m^2) and permanent loss of about 2000m^2 of Potberg Ferricrete Fynbos vegetation in the various house areas.

Potberg Ferricrete Fynbos is gazetted as Critically Endangered on a national scale (Government of South Africa 2022).

Essentially most (>90%) of the vegetation clearing activity was undertaken in areas mapped as CBA1 (terrestrial and wetland/estuarine).

3 or 4 plant (2 Near Threatened, 1 Vulnerable, 1 Data Deficient) Species of Conservation Concern are likely to have been impacted in the three footprints. The impact on all three plant SoCC is deemed to be Low at a regional level, as total numbers lost (<40 for each species is relatively low in regional context, as all three have large populations both on the greater property and in the region.

Natural rehabilitation of the temporarily disturbed vegetation (depression area and around the prefab house) is likely to be good, but will require ongoing alien invasive vegetation removal.

The overall construction phase **botanical impacts** would be **Low to Medium negative**, before and after mitigation. Adequate and appropriate mitigation is only likely to be viable at the operational phase, primarily in the form of natural rehabilitation of disturbed areas and extensive alien vegetation removal on the greater property.

No animals are likely to have been permanently and negatively impacted by any of the activities, and no faunal SCC are likely to have been permanently impacted by the activities. In general the **faunal impacts** are likely to have been of **Low negative** significance, before and after mitigation. Adequate and appropriate mitigation is only likely to be viable at the operational phase, primarily in the form of natural rehabilitation of disturbed areas and extensive alien vegetation removal on the greater property.

The No Go scenario here implies ongoing invasive alien plant issues, which is one of three major issues threatening biodiversity in the region, the others being water abstraction and new cultivation. There is currently a serious problem with various invasive alien plant species on the property (and many nearby

properties), as these species crowd out the local biodiversity, increase the intensity of wildfires (and hence damage caused), and use a lot of water. Some of the wetlands in the area are also clearly being negatively impacted by dropping water tables – possibly due to large scale water abstraction, and probably in combination with dropping annual rainfall (due to climate change) and excess usage by alien invasive plants.

The required mitigation is discussed in Section 8 of this report.

Impact	**Extent of impact**	**Duration of impact**	**Intensity**	**Probability of occurrence**	**Degree of confidence**	**Significance before mitigation**	**Significance after mitigation**
2000m^2 of permanent loss in two house footprints	local	Permanent	High	Definite	High	Low to Medium -ve	Low to Medium -ve
1200m^2 of temporary disturbance in depression and prefab areas	local	1-5yrs	Low	Definite	High	Low -ve	Low -ve
Loss of footprint subpopulations of 3 or 4 plant SoCC	local	3-10yrs and permanent	Medium	Definite	High	Low to Medium -ve	Low to Medium -ve
No Go	Site	Extensive ongoing alien plant invasion	Medium	High	Medium to High	Low to Medium -ve	Not Applicable

Table 2a: Summary table for the assessed construction phase botanical impacts on the three sites. Mitigation (at the operational phase) includes undertaking appropriate, ongoing alien invasive vegetation management within 100m of all assessed areas, and also on the overall property, plus allowing natural rehabilitation to take its course in most of the cleared areas, although this will occur largely at the operation phase.

Impact	Extent of impact	Duration of impact	Intensity	Probability of occurrence	Degree of confidence	Significance before mitigation	Significance after mitigation
2000m^2 of permanent habitat loss in two house footprints	local	Permanent	High	Definite	High	Low -ve	Low -ve
1200m^2 of temporary habitat disturbance in depression and prefab areas	local	1-5yrs	Low	Definite	High	Low -ve	Low -ve
No Go	Site	Extensive ongoing alien plant invasion	Medium	High	Medium to High	Low to Medium -ve	Not Applicable

Table 2b: Summary table for the assessed construction phase faunal impacts on the various sites. Mitigation (at the operational phase) includes undertaking appropriate, ongoing alien invasive vegetation management within 100m of all assessed areas, and also on the overall property, plus allowing natural rehabilitation to take its course in most of the cleared areas, although this will occur largely at the operational phase.

Operational Phase Impacts

The primary operational phase botanical impacts are habitat fragmentation, and further invasion of alien plant species, which is facilitated by the partial soil disturbance at all three sites.

Habitat fragmentation is an issue only at the two house sites, where the significance is Low negative before mitigation, and can be largely mitigated by proper alien invasive plant management of the remaining natural areas (see Martins *et al* 2021 for required methodology). Expected significance of these impacts is **Low negative** before mitigation, and **Low positive** after mitigation.

Soil disturbance at all three sites is likely to allow for increased germination of alien invasive plant species such as rooikrans and Port Jackson, which have large seedbanks in much of the area. The impacts are likely to be of **Low negative** significance, before mitigation, and **Low positive** after mitigation.

The operational phase **faunal impacts** are likely to be of **Low negative** significance, before mitigation, and **Low positive** after mitigation. The only feasible and appropriate mitigation would be at the operational phase, and is primarily in the form of natural rehabilitation of disturbed areas and extensive alien vegetation removal on the greater property.

Impact	**Extent of impact**	**Duration of impact**	**Intensity**	**Probability of occurrence**	**Degree of confidence**	**Significance before mitigation**	**Significance after mitigation**
Habitat fragmentation	local	Permanent around buildings	Medium	Likely	High	Low -ve	Low +ve
Alien plant invasion facilitated by soil disturbance	local	Temporary to long term	Low	Likely	High	Low -ve	Low +ve
No Go	Site	Longterm	Medium	Very likely	High	Low to Medium -ve	Not Applicable

Table 3: Summary table for operational phase botanical and faunal impacts associated with the three study areas on site. The primary impacts considered are habitat fragmentation, and a local increase in alien invasive vegetation caused by soil disturbance associated with construction. Mitigation would be implementation of ongoing alien invasive plant management throughout the greater property and within 100m of all study areas, and natural (passive) rehabilitation of the recently disturbed areas.

7.2 The No Go Alternative

The No Go alternative is usually considered to mean a continuation of the status quo. Here it is likely to imply further loss of habitat to largely unmanaged alien plant invasion, and may also involve some hard to predict unauthorised development impacts. Confidence in the likelihood of impacts is high for the alien plant invasion, but low for the development impact. The No Go alternative would in this case probably not be the environmentally preferred alternative, as it may have a **Low to Medium negative** impact over time, driven mainly by the

negative ecological impacts of ongoing, unmanaged alien plant invasion (habitat loss and degradation, species loss, degradation of wetlands; see Table 3).

7.3 Cumulative Impacts

The cumulative botanical impacts are understood to be equivalent to the regional botanical and faunal impacts, in that the vegetation type and fauna impacted by the proposed development has been, and will continue to be, impacted by numerous developments (mainly agricultural and alien invasive vegetation) and other factors (the cumulative impacts) within the region. Given the relatively small scale of the impacts thus far the overall cumulative botanical and faunal impacts at a regional level are thus both likely to be **Low negative**.

8. REQUIRED MITIGATION

All mitigation noted below is regarded as feasible, reasonable and essential, and is factored into this assessment:

- All woody invasive alien vegetation (notably *Acacia cyclops* and *A. saligna*) within 100m of all footprints noted in this report (*i.e*. new houses, levelled areas, new garage, depression area, and prefab house) must be felled, using appropriate methodology (following best practise as outlined in Martens *et al* 2021). No heavy machinery may be used, and stems should be cut at close to ground level and immediately painted (not sprayed) with a suitable herbicide such as Garlon (but this not necessary for rooikrans). This must be completed within one year of the date of this report, and should be audited by CapeNature.
- A team trained in invasive alien invasive plant management (see Martens *et al* 2021) should be appointed to remove all woody alien invasive species on the on the applicant property (section of Ptn 54 of Potteberg Estate 516) over the next three years, as well as all seedlings of invasive alien *Acacia* species, such that there is less than 1% overall woody alien vegetation cover on the property. The least densely invaded areas should be cleared first, as this is the most cost and ecologically effective strategy. This must be completed within three years of the date of this report (thus at a rate of about 8ha/yr), and should be audited by CapeNature. If not adequately completed within three years the DEA&DP or similar authority should be tasked with enforcing this. The only alien trees that could be kept are a few of the larger rooikrans (*Acacia cyclops*) in the vicinity of the main house and outbuildings, which may be needed for screening or shade.

- No spraying of herbicide should be allowed anywhere where there is any natural vegetation.
- No further soil disturbance should be allowed anywhere on the property (hence no scraping by machinery), as this encourages alien plant invasion.
- All natural vegetation in moderate to good condition on the applicant property (about 23.4ha in total, excluding just the built and developed footprints) should be signed up with CapeNature's Stewardship program within one year of any authorisation, with the applicant being responsible for all costs associated with this registration, and all Stewardship site management costs going forward.
- No alien invasive kikuyu grass (*Cenchrus clandestinus*) should be planted anywhere on site.
- No grass or any other planting should be undertaken around the prefab house, and the disturbed area around this house should be allowed to rehabilitate naturally.

9. CONCLUSIONS AND RECOMMENDATIONS

- The remaining natural vegetation on the greater study area is best categorised as Potberg Ferricrete Fynbos (Critically Endangered), although unmapped estuarine saltmarsh is present in the Breede River floodplain.
- Most of the natural vegetation on the greater property is mapped as a Critical Biodiversity Area (CBA1) in the CapeNature Spatial Biodiversity Plan (terrestrial and aquatic categories).
- At least 3 or 4 different plant Species of Conservation Concern were recorded in or close to the specific study areas, with three (possibly four) around the prefab house in the southern part of the property, one in the vicinity of the main house, and none near the depression area.
- Total permanent vegetation loss is estimated to be about 2000m^2, and total temporary to long term loss is likely to be another 1200m^2 or so.
- No loss or disruption of faunal Species of Conservation Concern is likely to have taken place on site.
- Overall botanical faunal and faunal impacts of the clearing are within acceptable limits (Low to Medium negative significance), but key required mitigation is outlined in Section 8, all of which will be possible only at the operational phase.
- All mitigation noted in Section 8 must be timeously and properly implemented, in which case the post mitigation impact of the vegetation loss and disturbance could be reduced to Low positive, from Low to

Medium negative prior to mitigation. The primary driver of the reduced post mitigation impact would be reduced alien invasive plant impact on the property and CapeNature Stewardship of all remaining natural (undisturbed) areas on the 23ha property.

- Ideally locally indigenous plant species should be planted as trees and feature plants in the garden parts of the site (such as along the access road), rather than the exotic figs (*Ficus*) that have already been planted. Appropriate indigenous species include *Aloe ferox* and *Sideroxylon inerme* (milkwoods).
- The applicant/landowner (and others in the area) should note that they are legally obliged in terms of NEMA to clear all listed alien invasive vegetation from their property, using appropriate means (see Martens et al 2021). Given that no penalty/fine has been recommended in terms of this study the non-trivial costs of alien clearing on the property should thus be willingly born by the applicant.

10. REFERENCES

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