Faunal Sensitivity Report

Proposed Development on Portion 40 of Farm 711 Romansbaai (Gansbaai, Western Cape)

Compiled for: PHS Consulting

Applicant: Danger Point Ecological Development Company (Pty) Ltd

Romansbaai

July 2024



Report Information

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Jonathan Colville of Terrestrial Ecologist & Faunal Surveys has over fourteen years post-PhD experience in the fields of terrestrial ecology, including investigating the spatial patterns of South Africa's animal and plant diversity. Between 2009 and 2019, Jonathan was involved with the South African National Biodiversity Institute's (SANBI) Biodiversity, Research, Assessment and Monitoring Division (BRAM) undertaking ecological research on South Africa's animal and plant diversity. Since 2020 Jonathan has been operating as a specialist faunal consultant for EIAs and conservation projects. An abridged CV is provided below in Appendix 1.

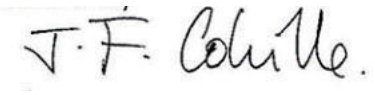
Specialist Details | Callan Cohen -- Birding Africa	
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Callan Cohen (Director of Birding Africa) has extensive knowledge of Cape birds and is a recognised international expert on African birds. He has a PhD in Ornithology from the University of Cape Town where he is a Research Associate of the Fitzpatrick Institute of African Ornithology. He has co-authored two books on South African birds and contributed to five others, including the Red Data Book of Birds of South Africa, Lesotho, and Swaziland (Barnes, 2000). He has also published several books, articles, and reports on Odonata, Lepidoptera, Herpetology, and Botany. He has over 30 years of experience of bird field surveys. An abridged CV is provided below in Appendix 2.

Signed Statement of Independence:
In terms of Chapter 5 of the National Environmental Management Act of 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014, specialists involved in Environment Assessment Processes must declare their independence and provide their contact details, relevant experience, and a curriculum vitae. I, Jonathan F. Colville, as the appointed independent specialists, do hereby declare that I am financially and otherwise independent of the client and their EAP, and that all opinions expressed

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in this document are my own and based on my scientific and professional knowledge, and available information.



Jonathan F. Colville

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Conditions Pertaining to this Report

The content of this report is based on my best scientific and professional knowledge, and available information. Jonathan Colville and Callan Cohen reserve the right to modify the report in any way deemed fit should new, relevant, or previously unavailable or undisclosed information becomes known to them from on-going research or further work in this field, or pertaining to this investigation, and they will inform PHS Consulting accordingly. This report must not be altered or added to without the prior written consent of Jonathan Colville/Callan Cohen. This also refers to electronic copies of the report, which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must refer to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

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Introduction

PHS Consulting has been engaged to undertake a Basic Assessment for a proposed subdivision and residential development on Portion 40 of Farm 711 Romansbaai near Gansbaai. The proposed development falls within the urban edge and within the currently on-going Romansbaai Beach and Fynbos Estate development.

An online site sensitivity report was generated using the National Web based Environmental Screening Tool (https://screening.environment.gov.za/screeningtool/). The screening tool uses faunal species data provided by the South African National Biodiversity Institute (SANBI).

The Screening Tool rated the development footprint of the above project as overall Medium sensitivity for the animal species sensitivity theme. Six animal Species of Conservation Concern (SCC) were flagged, with possible suitable habitat for:

- Four bird species:
    - Black Harrier (*Circus maurus*): Medium sensitivity
    - African Marsh Harrier (*Circus ranivorus*): Medium sensitivity
    - Denham's Bustard (*Neotis denhami*): Medium sensitivity
    - Southern Black Korhaan (*Afrotis afra*): Medium sensitivity
- Two insect species:
    - Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*): Medium Sensitivity
    - Mute Winter Katydid (*Brinckiella aptera*): Medium sensitivity

Jonathan Colville and Callan Cohen were appointed through PHS Consulting to assess the faunal sensitivity and provide a report in compliance with GN 1150 of 2020 for the animal theme.

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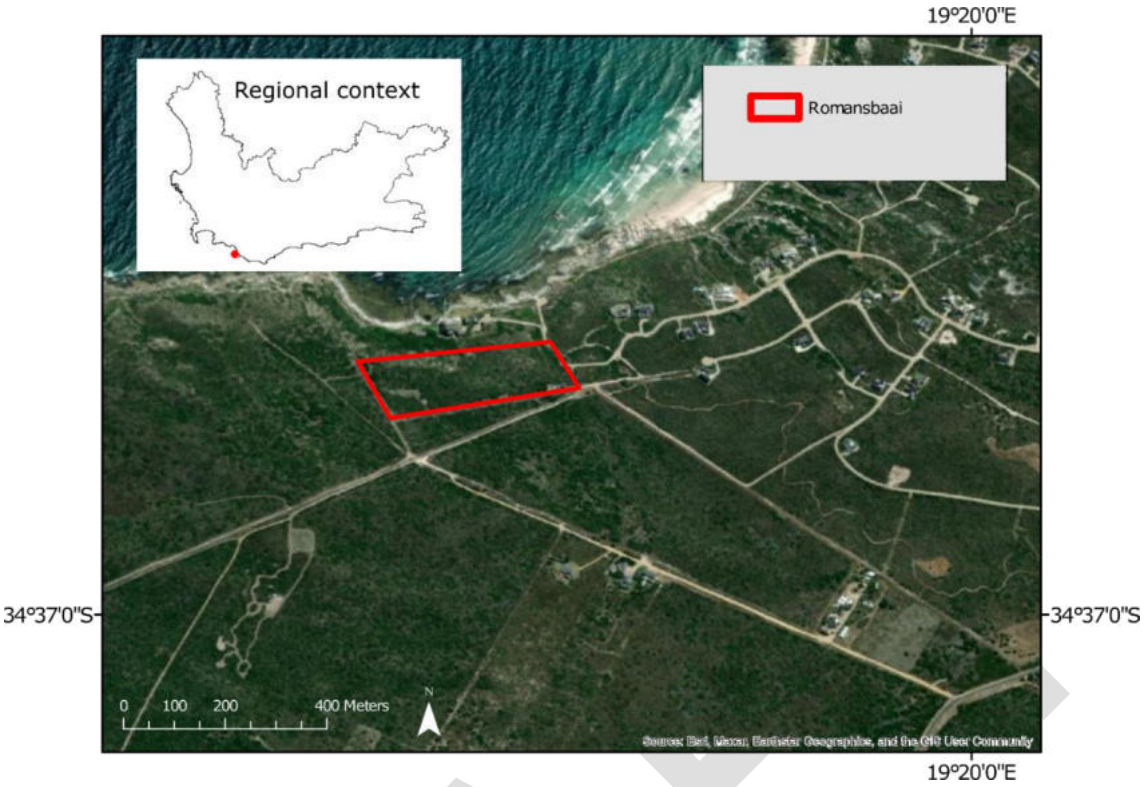


Figure 1: Location of the proposed development and its regional context in the Western Cape Province.



Figure 2: Selected sites that were assessed and photographed by faunal specialists.

Terms of Reference

Jonathan Colville and Callan Cohen were appointed on 17 May 2024 to conduct a Site Sensitivity Report, including a desktop study and a site visit to assess the site sensitivity and the possibility of suitable available habitat for the faunal SCC at the project area. Based on the information obtained from these two phases, either a Terrestrial Animal Species Compliance Statement would then be issued, or a Terrestrial Animal Species Specialist Assessment would subsequently be required, as stipulated in the Government Gazette, No. 43855 (Published in Government Notice No. 1150) of 30 October 2020: "Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Animal Species".

1. Carry out a desktop study to determine if the faunal SCC have been recorded at or near the project area and to ascertain the habitat requirements of the SCC.
2. Conduct a site visit of the project area to assess the physical and biological characteristics of the site with regards to habitat suitability for the faunal SCC and identify any sensitive areas.
3. Prepare a report detailing the findings of the desktop study and site visit, confirming, or disputing the environmental sensitivity theme as identified by the screening tool, and the issuing of a Terrestrial Animal Species Compliance Statement or a recommendation that a Terrestrial Animal Species Specialist Assessment would be required.

Assumptions and Limitations

The following limitations and assumptions apply to this assessment:

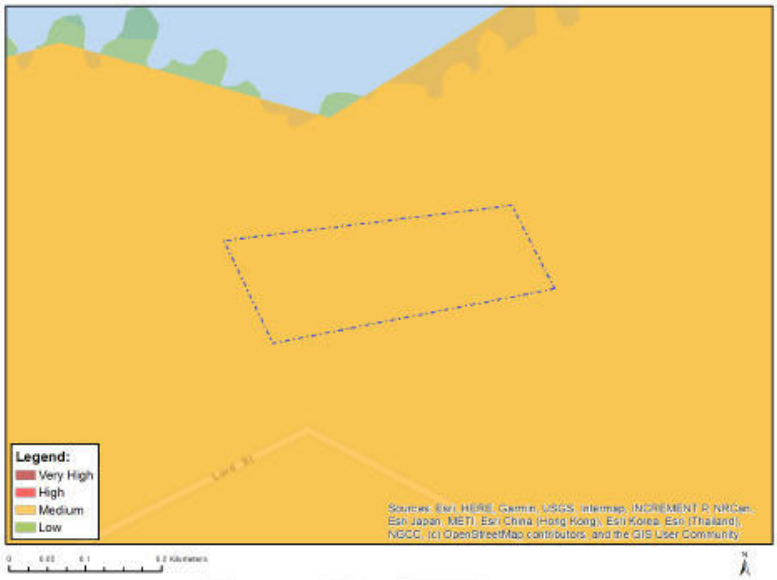
- It is assumed that all third-party information used (e.g. GIS data and species historical records) was correct at the time of generating this report.
- The site was visited during autumn (late-May 2024). Seasonality is not considered as important as this site sensitivity assessment relied on surveying and assessing broad habitat features and utilising ecosystem-level data, such as intact vegetation type, and known habitat and distributional records for the faunal SCC.
- This scoping assessment was undertaken based on the information provided to date by PHS Consultingfor the proposed development.

Site Sensitivity Verification

The screening tool indicated "Medium" sensitivity for the listed SCC species. The site visit revealed that the site is in very good ecological condition with intact natural vegetation of Overberg Dune Strandveld. The nature of the site and its suitability as habitat for the listed species is discussed in the remainder of the report.

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MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		x	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Aves-Circus ranivorus
Medium	Aves-Circus maurus
Medium	Aves-Neotis denhami
Medium	Aves-Afrotis afra
Medium	Invertebrate-Brinckiella aptera
Medium	Invertebrate-Aneuryphymus montanus

Figure 3: Sensitivity map (animal species sensitivity) of the proposed development area, as classified by the National Web-based Screening Tool.

Methodology

The methodology used in this report, including a background desktop study and site visit, is outlined in the subsections below.

Desktop Study

- Ecosystem-level data and broad-scale habitat was assessed using the following resources:
  - Vegetation Map of South Africa (SANBI, 2018; Skowno et al., 2019).
  - Land cover based habitat modification (Skowno, 2020).
  - Ecosystem Threat Status and Protection level of South Africa's ecosystems (Skowno *et al.*, 2019; Department of Forestry, Fisheries and the Environment, 2023).

    - Western Cape Biodiversity Spatial Plan (CapeNature, 2017; Pool-Stanvliet *et al.*, 2017).
    - Maps generated by overlaying the project site onto GIS files were carefully examined to compare to what was observed in the field.
- Distributional records for insect SCC were extracted from digitized databases of several South African museums (e.g., Iziko Museum of South Africa, Ditsong National Museum of Natural History, South African National Collections of Insects).
- Online resources, such as the Orthoptera Species File Online (http://orthoptera.speciesfile.org/HomePage/Orthoptera/HomePage.aspx), the Atlas of African Lepidoptera (https://vmus.adu.org.za/), GBIF (https://www.gbif.org/), and iNaturalist (https://www.inaturalist.org/) were also consulted for information on geographic distributions of invertebrate and other faunal SCC.
- The Virtual Museum of Reptiles (https://vmus.adu.org.za/), GBIF (https://www.gbif.org/), and iNaturalist (https://www.inaturalist.org/) was consulted for distributional records for South Africa's reptiles.
- IUCN Red List of Threatened Species (https://www.iucnredlist.org/) was consulted for all faunal SCC flagged for the project.
- Distributional records from the Southern African Bird Atlas Project (SABAP2 data (http://sabap2.birdmap.africa/)) for the bird SCC were examined.
- Taylor, Peacock and Wanless (2015) and online resources, such as BirdLife International (https://www.birdlife.org/projects/iucn-red-list/), were consulted for information on the conservation status of bird SCC.
- A map of South Africa's Important Bird Areas (IBA) (Marnewick *et al.*, 2015) was overlaid onto the project area. IBAs are selected using the presence of globally threatened species, groups of species with a restricted range (<50 000 km^2), species assemblages confined to a single biome, and congregations of one or more species.
- Published information on all faunal SCC were investigated to further assess their distribution range, ecology, habitat, and any life history requirements.

Site Visit

- The project site (Figure 1) was surveyed 22 May 2024 to assess habitat quality, in terms of the type and amount of natural vegetation remaining. The extent of disturbance that the project area has experienced, in terms of changes to its vegetation and physical properties (e.g. soil) was also considered.
- Season: Autumn/early-winter.
- Areas at and around selected points were investigated by the specialists across the project area.
- At certain points the surrounding habitat was characterised and the likelihood of any of the SCC being present was assessed.
- Seasonal Relevance:
    - It must be noted that this site sensitivity report focussed primarily on surveying the state of the habitat quality at the project area and its connectivity to surrounding natural vegetation and to areas of known biodiversity and conservation importance. Seasonality need only be considered for surveys of animal SCC species should the required habitat be present.

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Results

Desktop Study

The main vegetation types found at the project site (Figure 2) is:

- Overberg Dune Strandveld (**Endangered**)

Based on landcover models, the project area is classed as natural vegetation (Skowno, 2020) (Figure 3). The site visit confirmed that the project site still retains almost all its original natural vegetation. The project area falls across an ecosystem type with a South African Red List of Ecosystems Status of **Endangered** (Figure 4) (South African National Biodiversity Institute and Department of Forestry, 2021).

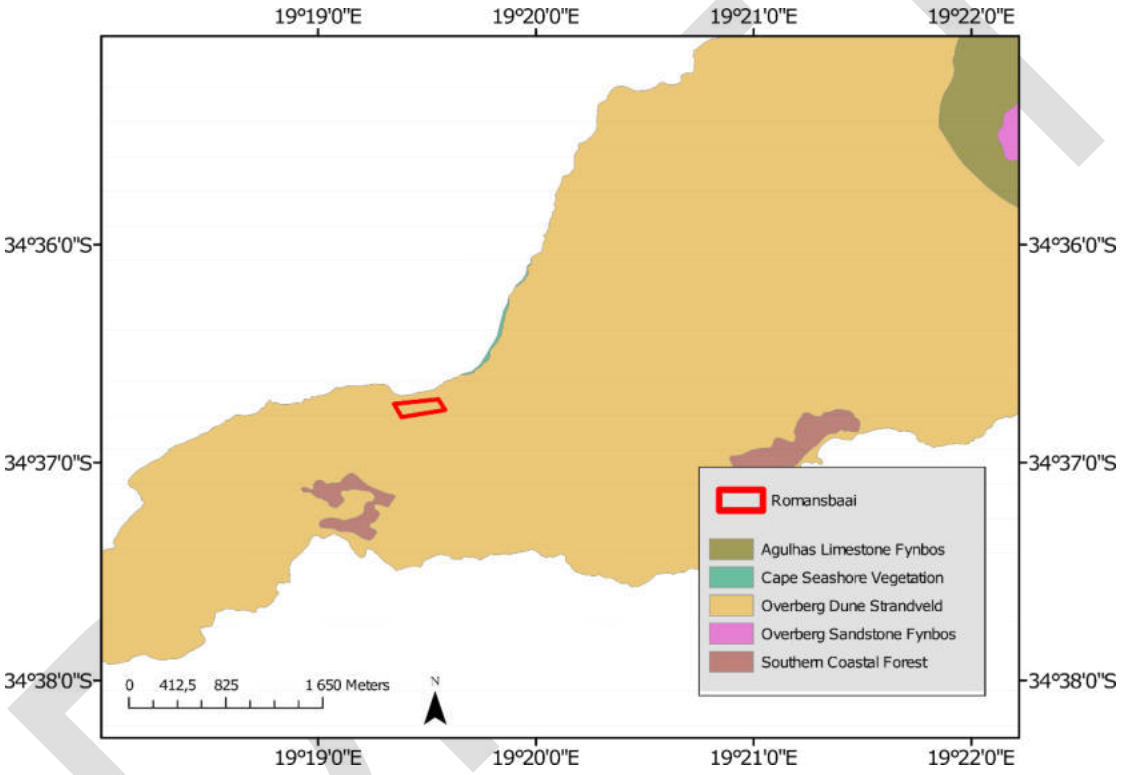


Figure 4: The vegetation types found at, and bordering, the project site (SANBI, 2018; Skowno et al., 2019).

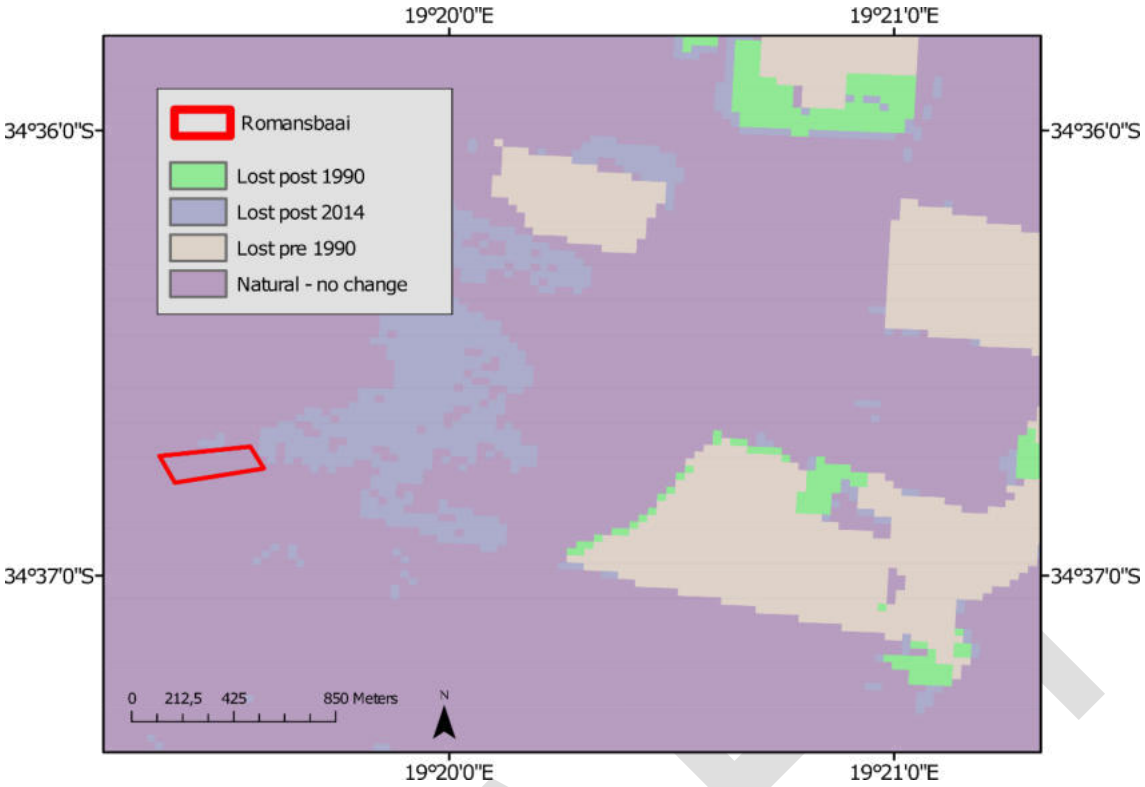


Figure 5. Land cover derived terrestrial habitat change layer showing that the project site consists of natural vegetation (Skowno, 2020).

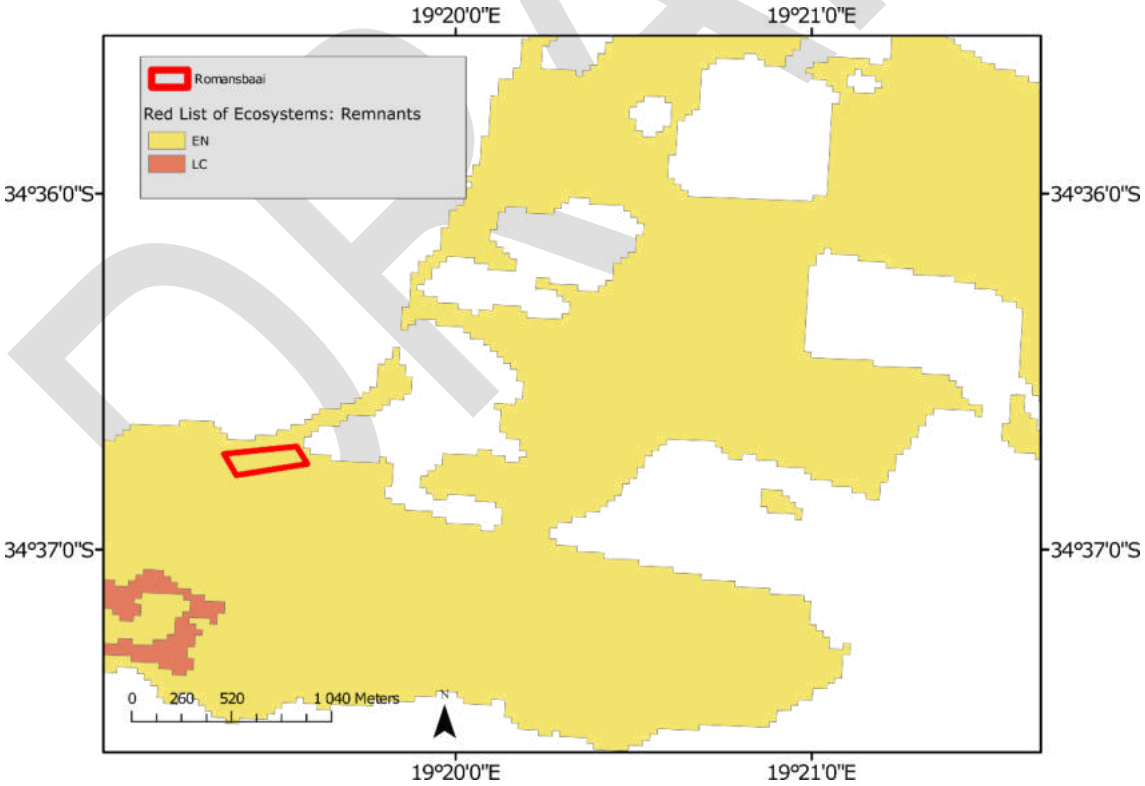


Figure 6. The project site falls over an area that is considered as natural remnants of an Endangered (EN) Red Listed Ecosystem type (South African National Biodiversity Institute and Department of Forestry, 2021).

Bird SCC

Circus maurus (Temminck 1828) Black Harrier

- This species of harrier is endemic to southern Africa and has an IUCN Red List Category and Criteria of **Endangered** C2a(ii) (Taylor, Peacock and Wanless, 2015; BirdLife International, 2017).
- This species occurs widely in South Africa, but fewer than 1000 birds are thought to occur, and habitat transformation is a major threat (Taylor et al. 2015).
- This species breeds on the ground in low, shrubby vegetation in spring, mainly in the Western Cape, before undertaking complex and variable post breeding movements that can take birds to the Drakensberg (Taylor et al. 2015).
- Prey is mainly rodents and birds.
- The open, relatively undisturbed habitat at the site is suitable for this species for foraging and potentially breeding although there is no wetland habitat that is preferred by this species for breeding.

Circus ranivorus (Daudin 1800) African Marsh Harrier

- This species of harrier is endemic to Africa and has an IUCN Red List Category and Criteria of Least Concern (Taylor, Peacock and Wanless, 2015; BirdLife International, 2016).
- This species is associated with aquatic habitats and often nests in extensive marshes (Taylor et al. 2015). Prey included rodents, as well as birds and amphibians.
- Although this species occurs in the general region, the lack of wetland habitats associated with this site mean that it is not an important site for this species.

Neotis denhami (Children & Vigors, 1826) Denham's bustard

- This species of bustard is endemic to Africa and has an Regional Red List Status of Vulnerable however in the global context an IUCN Red List Category and Criteria of Near-Threatened (Taylor, Peacock and Wanless, 2015; BirdLife International, 2022b).
- This species inhabits and breeds in open vegetation types in this area of the South Coast (Taylor et al., 2015). It can also occur in recovering vegetation that has been previously disturbed. Denham's Bustard shows local movements and are more common as breeders after fires have made the vegetation more open.
- The vegetation at the site is too dense for Denham's Bustard and it would not occur there except for brief periods are large fires.

Afrotis afra (Linnaeus, 1758) Southern Black Korhaan

- This species of bustard is endemic to South Africa and has an IUCN Red List Category and Criteria of **Least Concern** (BirdLife International (2016); but a South African Regional Status as **Vulnerable** (Taylor et al., 2015).
- It occurs mainly in Strandveld and Renosterveld of the West Coast and just inland, as well as in the Overberg, and is able to utilise degraded habitats in some settings (Taylor et al., 2015)
- It does not occur at the site.

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Turnix hottentottus (Temminck 1815) Fynbos Buttonquail

- This species was not flagged for the project site by the screening tool; however; the faunal assessment for the neighbouring Romansbaai Estate suggested that this sensitive bird species is likely to occur in the area (Burger, Harrison and Van Noort, 2006).
- This species of buttonquail is endemic to South Africa and has an IUCN Red List Category and Criteria of Endangered C2a(i) and decreasing (Taylor, Peacock and Wanless, 2015; BirdLife International, 2022a). This listing is likely to change to Vulnerable (see Lee, Reeves and Wright, 2019).
- The global population size is estimated at less than 1000 mature individuals (Taylor et al., 2015). The global range is 1 600 km^2 which includes the project area. SABAP2 data indicates a presence in a neighbouring pentad.
- It occurs in restionaceous coastal and Montane Fynbos. It especially favours areas of vegetation between 20-40 cm in height, which is typical of a 4–5-year fire interval.
- The species is nomadic moving between areas of suitable habitat (Hockey, Dean and Ryan, 2005).
- The species might occur in the more open parts of the site, but the denser areas of milkwood and other thicket are not suitable for it, and as such this isn't a high priority site for this species.

Invertebrate SCC

Orthoptera SCC

Aneuryphymus montanus (Brown 1960) Yellow-winged Agile Grasshopper

- This species of grasshopper is endemic to South Africa and has an IUCN Red List Category and Criteria of Vulnerable B2ab (iii,v) (Hochkirch, Bazelet and Danielczak, 2018).
- Within South Africa, the species has a broad distribution occurring across mountainous habitats of the "Cape Region" from the north-western winter-rainfall areas near Clanwilliam, eastwards until just before East London (Brown, 1960). The species appears to be associated with several fynbos vegetation types (e.g., Leipoldtville Sand Fynbos, Kogelberg Sandstone Fynbos) and "south-facing cool slopes" (Kinvig, 2005).
- It has a large estimated extent of occurrence of 172463km2 and its estimated geographic range overlaps the project area (Bazelet and Naskrecki, 2014).
- The species has not been historically recorded from near the project area; the closest known record is approximately 50 kms northwards for a collection record from Kogelberg Sandstone Fynbos.

Brinckiella aptera (Naskrecki & Bazelet 2009) Mute Winter Katydid

- This species of flightless katydid is endemic to South Africa and has an IUCN Red List Category and Criteria of Vulnerable B1ab(iii) and is known from four localities within the Fynbos and Succulent Karoo biomes (Naskrecki and Bazelet, 2009; Bazelet, 2014).
- This species appears to have a broad distribution, extending from the south-western Fynbos biome near Bredasdorp, northwards into southern Namaqualand. It is associated with fynbos vegetation habitats, e.g., Bokkeveld Sandstone Fynbos, and Succulent Karoo vegetation, e.g., Namaqualand Spinescent Grassland. According to Bazelt (2014), the species is considered to

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have a very narrow range of host plants and appears to occur primarily on low, herbaceous shrubs.
- The Mute Winter Katydid feeds and stridulates (calls) at night.
- The species has an estimated extent of occurrence of 12593 km^2 and the far southern extent of its estimated geographic range falls within the project area (Bazelet and Naskrecki, 2014).
- The species has not been recorded from the project site; the closest known record is approximately 15 kms south-eastwards for a specimen collected in the same Overberg Dune Strandveld habitat as the project site.

Reptile SCC

Bitis armata (Smith, 1826) Southern Adder

- Although this species was not flagged by the screening tool for the project site, it is known to occur from coastal fynbos in the Gansbaai area (see Tolley *et al.*, 2023).
- This small species of adder is endemic to the Western Cape Province and has a global red listing **Vulnerable B1ab(i,iii,iv,v)** (Tolley *et al.*, 2023).
- It has a restricted range (EOO = 17,770 km^2) and an estimated area of occupancy (AOO) of 830 km^2 (Turner, 2017; Tolley *et al.*, 2023).
- It is mainly found in coastal low-lying fynbos associated with limestone geology and within 300 m above sea level where it is found sheltering under limestone slabs between dense shrubs.
- Three small disjunct sub-populations are found across its range; these sub-populations are considered severely fragmented and isolated and therefore not connected through migration corridors. Furthermore, they are also considered to be declining.
- Main threats include urbanisation of coastal habitats, including residential and other developments, invasive plant species, and illegal collection for the pet trade.

Site Visit

- Habitat characteristics and likelihood of any faunal SCC being found at the project site is given below.
- Possible suitable habitat for the faunal SCC listed above was found at the project area.
- The site appears in good ecological condition and areas of the site offer habitat suitable for the bird, reptile, and insect SCC.

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Figure 7. Looking westwards across the project site; the entire project is Overberg Dune Strandveld vegetation in pristine condition.



Figure 8. Looking westwards along the southern boundary of the project site; currently the site forms part of a large area of natural veld with good ecological connection from several sides.



Figure 9. Looking eastwards only the southern boundary of the project site; the site is currently connected to large areas of natural vegetation on its southern boundary.



Figure 10. Faunal specialist searching for Southern Adders on the upper parts of the eastern side of the site.



Figure 11. Faunal specialists assessing Southern Adder habitat near the southern part of the site; the site offers areas of ideal habitat for this small species of adder.



Figure 12. Limestone outcrops are considered as key habitat for the Southern Adder.



Figure 13. Faunal specialists using a butterfly ID app to document butterfly species seen at the project site.



Figure 14. Zebra blue butterfly (*Leptotes pirithous*) (Lycaenidae) was found at the project site.



Figure 15. Several arboreal ant nests of *Crematogaster peringueyi* were found at the project site; these nests are important for species of Cape endemic butterflies in the family Lycaenidae.





Figure 16. Boundary fences need to be permeable to allow the unrestricted passing of small mammals (e.g. mongooses and hares) and reptiles (including tortoises). Such fences need special modifications at ground level for this purpose. The use of barbwire along the base of the fence, as in the left picture, would hinder faunal movement.



Figure 17. Cross-marked Grass Snake (*Psammophis crucifer*) found on site.



Figure 18. Karoo prinia (*Prinia maculosa*) a common warbler found in fynbos.



Figure 19. The invasive Manatoka tree (*Myoporum insulare*) was seen at the project site; all alien plants should be removed from the site.

Conclusions

- The information in this report is applicable to the project area shown in Figure 1, and as described in the documentation provided to date to us by PHS Consulting.
- Observations from the site visit indicated the project area consists of natural habitat in pristine ecological condition.
- Based on the available species-level information for the faunal SCC, their known habitat preferences, the intact natural habitat of the project site, it is considered that some of the animal SCC flagged for this project are likely to occur at the project site.
- The project area falls within the geographic distributions of the two flagged Orthopteran SCC and the project site offers suitable habitat. However, considering the wide distributional range of these two species, occurring across several different vegetation types, the project impact on these two species is considered low, particularly if areas of natural vegetation are retained at the project site; no further investigation for these species is required at this stage.
- The African Marsh Harrier (*Circus ranivorus*) is largely restricted to wetland sites and areas linking wetlands; the lack of these habitats at the site means that this raptor might only briefly visit on passage to other more suitable areas, and the site does not represent a viable habitat for the species.

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- The Black Harrier (*Circus maurus*) is the most significant avian species for the site and does occur in the general area and vegetation type of the project site. The project area represents high-quality foraging habitat, and possibly breeding habitat. However, given the wide range of the species in that area, the small size of the site, that their preferred wetland breeding habitat is not present, it means the site is likely of low significance for this species.
- The vegetation on the site is too dense for Denham's Bustard and is not believed to occur at the site.
- Southern Black Korhaan is not believed to occur at the site.
- The project site likely also represents suitable habitat for the Southern Adder; areas of limestone outcrops, particularly on the eastern side of the site that link with outcrops on the Romansbaai Estate (see Appendix 4), and the area of the "Conservation Usage Erf (7)" below the proposed residential zone (see Appendix 4), are likely to be utilised by the adder. The botanical assessment done by Nick Helme flags an area to the east of the site as high sensitivity; this area would likely also represent suitable habitat for the Southern Adder. If the development footprints of the residential houses are kept to an absolute minimum, without gardens, and a large amount of natural vegetation is retained, including linking the development site into ecological corridors of the neighbouring Romansbaai Estate (Appendix 5), and no cats or dogs are allowed, then the project impact on the adder is considered likely to be low.
- Burger et al. (2006) and Harrison (2006) in their faunal assessments for the neighbouring Romansbaai Estate listed a number of practical and detailed conservation and mitigation measures: These must be considered and undertaken for the proposed development on portion 40 of Farm 711. [See Appendix 6 & 7]
- Two additional measures:
    - A search-and-rescue operation for the Southern Adder to be undertaken prior to construction beginning.
    - The effect of Artificial light at night (ALAN) pollution can have negative impacts on local insect fauna (Owens *et al.*, 2020; Deichmann *et al.*, 2021; Stewart, 2021). The Mute Winter Katydid flagged as a SCC for this project could potentially be most at risk from ALAN owing to its nocturnal habit.
    - There are several mitigation options to consider to reduce the impact and attraction of artificial lights on insects:
        - Fixtures on lights to cover the light bulb and direct the light to where it is needed.
        - Use timers and sensors to control when lights are on and to make lights motion activated.
        - Use coloured lights, such as long wavelength amber and red lights. Yellow illumination lights have also been shown to attract less moth specimens (Verovnik et al., 2015). Deichmann et al. (2021) recommend filtered amber LED lamps with no blue and minimal green light content to be used for outdoor lighted areas.
        - An outdoor lighting plan should be considered that includes an overall reduction of nocturnal lighting.

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- Overall, the proposed development on portion 40 of Farm 711 is unlikely to generate significant negative impacts on any of the faunal SCC flagged once mitigation is followed. It is the specialists' opinion that the proposed development will have an overall low significance on the faunal SCC flagged: largely on the condition that the highly sensible and easily implementable mitigation measures suggested by Burger et al. (2006) and Harrison (2006), as well as those mentioned above, are followed.

Acknowledgments

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Appendix-1 – CV Jonathan Colville

CURRICULUM VITAE – JONATHAN F. COLVILLE

EDUCATION

PhD (Zoology): University of Cape Town, 2009. Thesis title: "*Understanding the evolutionary radiation of the megadiverse monkey beetle fauna (Scarabaeidae: Hopliini) of South Africa*".

Postdoctoral research fellowship: South African National Biodiversity Institute, 2009-2010.

PRIOR EMPLOYMENT

National Research Foundation Research Career Advancement Fellow: South African National Biodiversity Institute (2014-2019).

Researcher, South African National Biodiversity Institute, GEF/UNEP/FAO Global Pollination Project – South Africa (2010-2014).

PUBLICATIONS

Books edited:

- Allsopp, N., **Colville, J.F.**, Verboom, G.T. (2014). *Fynbos: Ecology, Evolution, and Conservation of a Megadiverse Region* (16 chapters; pp 1-377). Oxford University Press.

Book chapters:

- Forest F., **Colville J.F.**, Cowling R.M. (2018). Evolutionary diversity patterns in the Cape Flora of South Africa. In: *Phylogenetic Diversity: Applications and challenges in biodiversity science*. R. Scherson, D. Faith (Eds), Springer International Publishing.
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Technical reports:

- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Grace Rock Equestrian Farm. Prepared for Delta Ecology and Legacy Environmental Management Consulting.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Dana Bay Access Road. Prepared for Sharples Environmental Services cc (SES).
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Biodiversity Specialist Assessment. Duyker Eiland Prospecting Rights. Prepared for Elemental Sustainability (Pty) Ltd.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Proposed mixed use housing development. Prepared for EcoSense CC.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Proposed agricultural development. Prepared for McGregor Environmental Services.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Blue Sky's Project Prepared for Doug Jeffery – Environmental Consultants.
- **Colville, J.F.**, and Cohen, C. (2022). Terrestrial Animal Species Specialist Assessment. Proposed Expansion of Nature's View Dam near Citrusdal. Prepared for Earth Grace Environmental Consultancy.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Proposed enlargement of existing Kleigat Dam. Prepared for Earth Grace Environmental Consultancy.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Moorreesburg Wastewater Treatment Works Upgrade Project. Prepared for Zutari (Pty) Ltd.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Maxnau Citrus Development. Prepared for Charl de Villiers Environmental Consulting.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Gletwyn Estate Mixed Use Development. Prepared for Johan Neethling Environmental Services cc.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Moorreesburg Wastewater Treatment Works Upgrade Project. Prepared for Zutari (Pty) Ltd.
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- **Colville, J.F.** (2001) *Scoping and faunal assessment for proposed housing development, Skapenberg, Somerset West*. Prepared for Design consultants CNdV Africa.

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MEMBERSHIPS/RESEARCH ASSOCIATE

- Membership of Entomological Society of Southern Africa (2007-current).
- Membership of Lepidopterists Society of Southern Africa (2014-current).
- Honorary Research Associate (HRA), Statistics in Ecology, Environment and Conservation (SEEC), Department of Statistical Sciences, UCT (2014-current).
- SACNASP registration for Ecological Science (Professional Natural Scientist) (member#: 134759).

PROFESSIONAL SERVICES

- Editorial board *African Entomology* (2010-current).
- Editorial board *Metamorphosis* (2017-current).
- Editorial board *PeerJ* (2019-current).
- CAPE Invasive Alien Animal (IAA) Working Group (2016-2018).

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Appendix-2 – CV Callan Cohen

ABRIDGED CURRICULUM VITAE DR CALLAN COHEN

Education

PhD in Ornithology (Zoology), University of Cape Town, 2011.

Positions held:

Director: Birding Africa. 1997 – present.

Research Associate: FitzPatrick Institute of African Ornithology, Department of Biological Sciences, University of Cape Town. 2012 – present.

Experience

Acknowledged expert on African birds, based on over 1000 field trips, research studies and surveys from 1990 to present, in over 25 African countries, but focused largely across South Africa. First author of 2 books on African birds, and contributor to almost 10 others. Also publications and reports on Odonata, Lepidoptera, Herpetology and Botany.

Selected Books

Cohen, C., Spottiswoode, C. & Rossouw, J. 2006. **Southern African Birdfinder: where to find 1400 species in southern Africa and Madagascar**. Cape Town: Struik New Holland Publishers, 456 pp. Reprinted 2007, 2012, 2022.

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Klaas-Douwe B. Dijkstra & **Callan Cohen**. 2021. **Dragonflies and Damselflies of Madagascar and the western Indian Ocean Islands**. Association Vahatra Antananarivo, Madagascar. 198 pages.

Contributed 20 species accounts in: Harrison, J.A., Allan, D.G., Underhill, L.G., Herremans, M., Tree, A.J., Parker, V. & Brown, C.J. (Eds). 1997. **The Atlas of Southern African Birds**. Johannesburg: BirdLife South Africa.

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Contributor to Red Data Book on Birds: BARNES, K.N. (ed.) 2000. **Threatened Birds of South Africa, Lesotho and Swaziland**. Johannesburg: BirdLife South Africa.

Species account written: African Marsh Harrier

Other Publications

About 100 journal articles and over 50 reports, e.g. most recent:

Cohen, C. 2021. **Deciphering South Africa's first Crested Honey Buzzard**. African Birdlife 9(4): 26-29.

Cohen, C., N. J. Collar, A. Dagnee, L. D. C. Fishpool, S. J. Marsden, C. N. Spottiswoode & S. R. Wotton. 2021. **Status of Taita Falcon Falco fasciinucha in Ethiopia and the identification problem posed by African Hobby F. cuvierii**. Bull ABC Vol 28 No 2: 225-233

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Appendix-3 – eBird List

16 Species Observed 52 individuals

1	African Oystercatcher
1	Whimbrel
3	Hartlaub's Gull
20	Kelp Gull
5	Crowned Cormorant
1	African Sacred Ibis
5	Speckled Mousebird
1	Southern Tchagra
2	Bokmakierie
1	Southern Fiscal
1	Cape Grassbird
2	Bar-throated Apalis
2	Karoo Prinia
4	Cape Bulbul
2	Cape Wagtail
1	Brimstone Canary

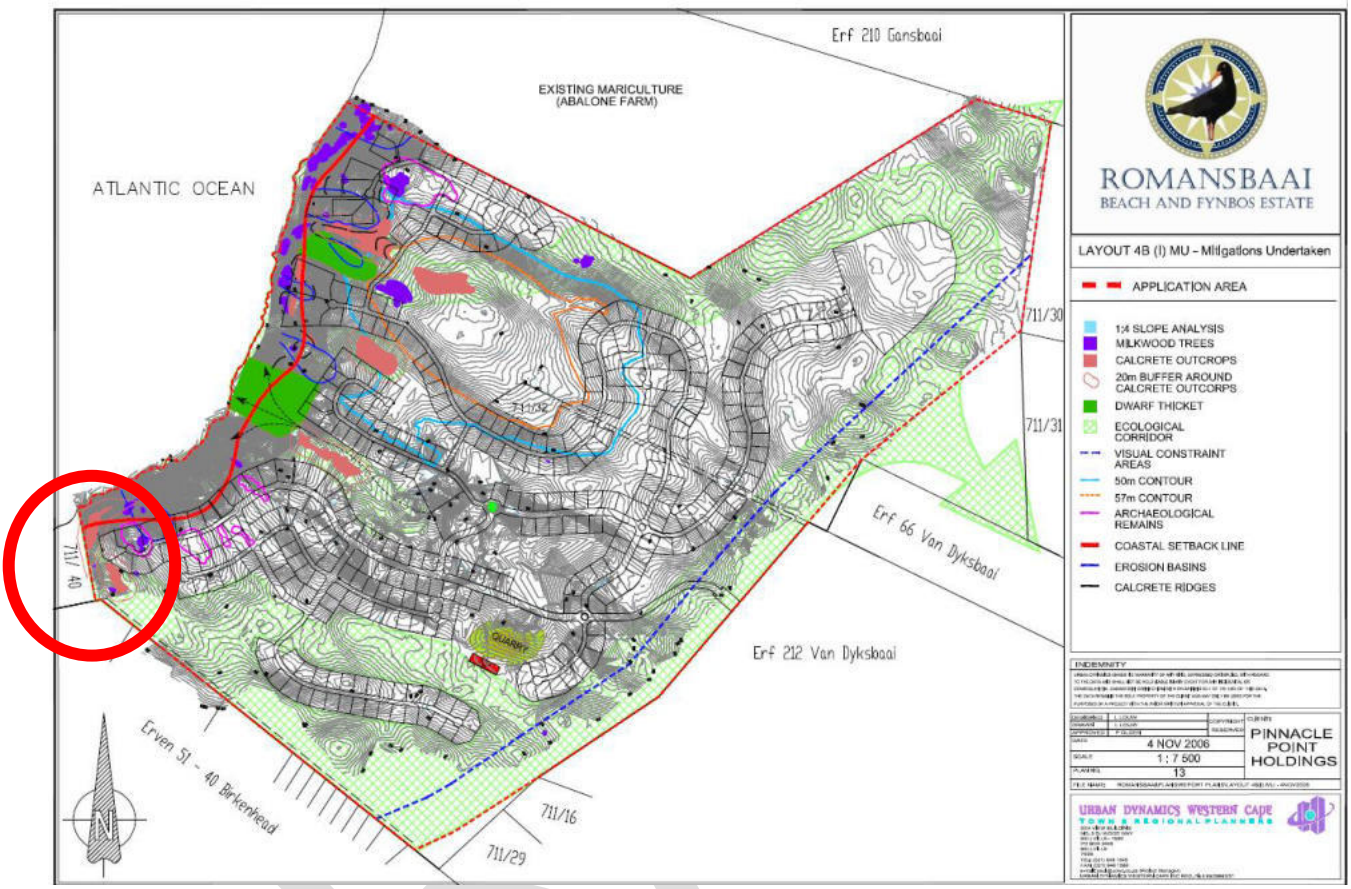
Appendix-4 – Proposed Development on Portion 40 of Farm 711



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Appendix-5 – Romansbaai Estate SDP

**Red circle indicates the important limestone outcrops ("calcrete outcrops" shaded pale red and identified as sensitive areas during the Romansbaai EIA) that border and link the project site with the Romansbaai Estate. These areas are likely to be high sensitive areas for the Southern Adder.



Appendix-6 – Conservation & Mitigation measures – Burger et al. (2006)

**Recommended conservation and mitigation measures for the Romansbaai Estate as taken from Burger et al. (2006):

"CONSERVATION ISSUES

1. Corridors (large scale): The possible to probable occurrence of a number of Red Data and regionally endemic species on site (see above) necessitates setting aside patches of suitable habitat, including a coastal corridor, and to create other corridors which link all natural zones with all others. It is desirable that corridors on the development site be designed to also link the natural areas of the site to neighbouring properties (including the Danger Point Conservancy) so that the largest possible area remain integrated for the movement of wild animals. The details of a suitable corridor network were discussed in consultation with Doug Jeffery and Nick Helme (botanist). The corridor plan will be presented in the botanical report. In essence it needs to encompass a coastal corridor (for movement along the peninsula), at least two major coast-to-inland corridors (across the peninsula), and a corridor along the eastern limits of Romansbaai (along the peninsula). The coastal corridor is the most vulnerable sector and needs special consideration, more than merely limiting the developments to outside of this corridor.

2. Corridors (small scale): Special attention and care should be devoted to the preservation of all drainage lines and wetlands, however small, should these be present.

3. Sources of freshwater: As a general principal, all natural sources of freshwater, including seasonal pans and watercourses, and especially seeps and springs near the coast (see above) need to be identified and given high priority for protection. In addition, all such freshwater sources should become the foci for protected public open spaces and corridors. No sources of fresh water were, however, noted during the site visits, and none may in fact be present.

4. Preservation of limestone outcrops: Limestone outcrops in this region are important because they support a different community of plants and thereby enhance the overall biodiversity of the region. Because these outcrops are isolated and sparsely distributed, they have high conservation importance. Major outcrops must not come under development. Minor outcrops must be incorporated into the gardens of the erven, thus the houses must be positioned to avoid destroying such outcrops.

5. The coastal road: An existing coastal road encroaches on the splash zone. This road needs to be downgraded to a footpath with rehabilitation of the majority of the road's original footprint. In its present form, the road is destructive of the sensitive, narrow splash zone, it degrades potential water resources in the splash zone (see above), it poses a disturbance risk to shore birds, and it provides easy access to the coast for poachers. The access road closest to the coast must be behind the first row of erven.

6. Coastal erven: It appears from the original concept plans that the erven closest to the shore are in fact too close to the shore. It is important that erven must not encroach on the splash zone at all, nor should they be so close to the splash zone (or fore dunes) as to cause disturbance to the birdlife breeding and roosting in this zone. There is also the need to consider the probable future impact of rising sea levels and a dynamic coastline.

7. Development footprints: The residential erven themselves can greatly contribute to the preservation of natural habitats and the creation of corridors if the development footprints of houses and their gardens are kept to a minimum. The scoping report mentions a maximum footprint of 10% per erf (page

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14, Table 1). If this were increased to 20% with the inclusion of all lawns and gardens, it would leave 80% of each erf under natural vegetation. This is an acceptable and desirable planning concept which would go a long way towards minimizing the negative environmental impacts of development.

8. Boundary walls and fences: Barriers can severely undermine the benefits mentioned in the previous point. Doing away with all barriers would be a major benefit to animal movements. Where this option is not viable (e.g. for security reasons), boundary fences need to be permeable to allow the unrestricted passing of small mammals (e.g. mongooses and hares) and reptiles (including tortoises). Such fences need special modifications at ground level for this purpose.

9. Fire management: Fynbos requires fire as periodic rejuvenating events. If fires are prevented in the long term, this vegetation type becomes senescent and biodiversity declines. The design of protect public open space must take into account the need to carry out controlled burns, at intervals recommended by plant ecologists. In addition, corridors must be wide enough to incorporate fire breaks for the protection of private property.

11. Alien vegetation: Alien vegetation, including kikuyu grass, degrades habitats. Kikuyu grass is especially damaging to moist habitats. Kikuyu can easily spread from domestic gardens, and efforts must be made to prevent its use in gardens. Alien shrubs and trees out-compete indigenous species and intensify the threat of wildfires.

12. Disturbance: The addition of many residences on site will inevitably increase the levels of disturbance to wildlife. However, if building footprints are 9 minimized, adequate areas of natural public open space are set aside, and access is managed by the creation of footpaths and appropriate signage, such disturbance can be minimized in the areas of greatest sensitivity. Such careful management of access and walkways is especially important in the splash zone along rocky shores.

13. Domestic dogs and cats: These animals have the potential to create more disturbance and do greater damage than their human owners. Cats must be completely banned as pets and any feral cats on site must be aggressively eliminated. Dogs too can be a problem with respect to hunting of animals and disturbing breeding birds. Some dog are 'fauna-friendly', and could be kept with no concern to the environment. It becomes, however, somewhat of a contentious issue when homeowners are being prescribed to in terms what kind of dogs they may or may not keep. Nevertheless, in the spirit of establishing an 'eco-friendly' village, homeowners should embrace the principles of this development and follow a prescribed Domestic Animal Etiquette. In this instance it would be not to keep cats at all, and to keep only such dogs that are non-threatening to the local fauna. The ideal scenario would be a no dogs policy, and this might in fact be the better recommendation, particularly since the homes will not be fenced in. The number of dogs per household must be strictly limited (suggested maximum of two) and they must not be allowed to wander, especially not in the coastal zone.

RECOMMENDED MITIGATION MEASURES

1. Remove alien vegetation (including Kikuyu Grass Pennisetum clandestinum), with regular follow-up to remove regrowth.

2. No artificial plantings in public open space – regeneration of locally indigenous vegetation only.

3. Restrict grass plantings in public open space, and in private gardens, to Buffalo Turf Grass Stenotaphrum secundatum, and other suitable indigenous species only.

4. Drainage lines (if present) must to be kept open and naturally vegetated as corridors through development site. Under no circumstances must such drainages be canalized or piped. Relevant drainage lines to have a buffer of no less than 10 m wide on both sides of drainage midpoint.

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5. Set aside a coastal corridor, above the spring high-tide mark, of at least 50 m width. No erven should encroach on this corridor. Roads must be restricted to nodal access points from which carefully planned and surfaced footpaths can radiate.

6. Create corridors, roughly at right angles to the coast, to link the coastal corridor to areas of natural public open space in the interior of the development. Extend these corridors further inland to link the development site to neighbouring properties (details in botanical report).

7. Create footpaths and erect signage to manage public access to sensitive areas, especially the coastal strip.

8. Limit development footprints (buildings plus lawns and gardens) to no more than 20% of total area of each erf. Ensure that the remaining 80% is not disturbed, and that alien vegetation is removed.

9. Instate a complete ban on domestic cats and eliminate feral cats. Impose strict controls on dogs.

10. Develop a management plan for natural habitats that includes controlled burning of fynbos on a rotational basis.

11. Coastal thicket should be protected from fire because, in the long term, it has the potential to develop into a type of low forest. Appropriate firebreaks must be created.

12. Appoint a permanent Environmental Control Officer (ECO), with support staff, to manage natural areas and to monitor and enforce the environmental regulations of the estate."

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Appendix-7 – Guidelines & Mitigation measures – Harrison (2007)

**Recommended guidelines and mitigation measures for the Romansbaai Estate as taken from Harrison (2007):

"8.2 Additional recommended guidelines and mitigations
The following relatively minor considerations can be built into the development guidelines without too much trouble, and they would collectively make a substantive contribution to reducing the overall negative impact of the development. Some of these may already be regarded as implicit in the plan, but they should be made explicit.

• Formal gardens on erven, including lawns, should be limited in size and there will be a strict "indigenous only" policy with regard to plantings.

• The definition of "indigenous plants" should be limited to the south coast of the Western Cape province, not the whole of South Africa.

• The use of Kikuyu Grass *Pennisetum clandestinum* in lawns must be strictly forbidden. This is a pernicious invader species that is very difficult to eradicate once established, and therefore great care must be taken not to deliberately or accidentally introduce it with other lawn grasses.

• Where barriers are absolutely necessary, e.g., around the perimeter of the estate, they must be fences of a railing type that will allow small creatures to pass through easily, and should NOT be electrified, except at the top, and only in such a way that will not affect perching birds.

• Swimming pools must be of the kind that have edges that slope gently down to below water level. These are much safer for children as well as for wild creatures that may wander into them, because they allow them to scramble out with relative ease. Pools with sheer edges are death traps and should not be allowed.

• All structures for drainage (e.g., gutters, drains, sumps, ditches) must be designed such that they do not act as pitfall traps for small creatures, i.e., they should either have gently sloping edges or be adequately covered to prevent creatures from falling into them. This is especially important for structures, such as sumps, located at the end of structures that tend to guide small animals towards them, e.g., steep-sided gutters.

• All roads should be designed and signposted to discourage speeding and to encourage responsible awareness of animals that cross the road.

• Domestic cats must be prohibited on the estate. The reason for this is that the prevailing cultural practice is to let domestic cats roam freely, and this inevitably leads to cats becoming additional predators on wildlife. The predatory pressure put on certain species can be severe and therefore there can be knock-on ecological effects. These negative impacts become much worse when cats become feral. All feral cats must be aggressively eliminated from the estate.

• Domestic dogs should be limited in number, size and freedom. It is recommended that

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not more than two dogs per household be allowed, and that no dogs larger than 5 kg be allowed. Although dog owners are relatively accepting of the need to control their animals, the fact that there will be no perimeter fencing around erven means that it will be relatively difficult to prevent interactions between dogs and wildlife, as well as dogs and neighbours. To minimize negative impacts on wildlife, dogs should be relatively small, and they should not be allowed to roam freely.

• An Environmental Management Plan (EMP) must be put in place to guide the management of natural areas and to minimize construction-phase and operationalphase impacts on natural areas. Special attention will be given to ongoing control of alien vegetation, with regular follow-up operations to remove regrowth.

• Efforts should be made to develop collaborative relationships with neighbouring property owners such that a common understanding is reached on appropriate environmental management for the larger area.

• The conservation status of the natural areas on the estate should be clarified and that status should be legally ensured in the long term."

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