Faunal Assessment: Site Sensitivity Verification and Compliance Report

Proposed Woodlands WWTW and Sewer Reticulation
Woodlands, Koukamma Local Municipality, Eastern Cape Province

Compiled for: Bluepebble Sustainability Solutions

Woodlands WWTW and Sewer Reticulation

July 2025

Report Information

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Authors involved in compiling this report:	Jonathan Colville (PhD) – Terrestrial Ecologist & Faunal Surveys Callan Cohen (PhD) – Birding Africa
Authors contact details:	**Email:** jonathan.colville@gmail.com | **Phone:** +27 83 564 5050 **Email:** callan@birdingafrica.com | **Phone:** +27 83 256 0491
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Cover image: Lazy Cisticola (Cisticola aberrans) were seen in tangles of alien vegetation at the project site. In this part of their range, they are characteristic of disturbed edge habitats.

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Specialist Details

Specialist Details | Jonathan Colville -- Terrestrial Ecologist & Faunal Surveys	
Company Name	Jonathan Colville -- Terrestrial Ecologist & Faunal Surveys
Email Address	jonathan.colville@gmail.com
Telephone	+27 (0) 83 564 5050
Highest Qualification	PhD Zoology | University of Cape Town | 2009
SACNASP Reg. No.	134759
Areas of Specialisation	Terrestrial faunal ecology and conservation

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.

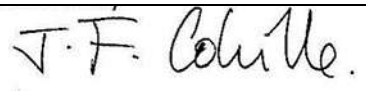
Specialist Details | Callan Cohen -- Birding Africa	
Company Name	Birding Africa
Email Address	callan@birdingafrica.con
Telephone	+27 83 256 0491
Highest Qualification	PhD Ornithology | University of Cape Town | 2011
Areas of Specialisation	Ornithology, Ecology, Odonata

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



Jonathan F. Colville

Conditions Pertaining to this Report

The content of this report is based on our 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 Bluepebble Sustainability Solutions 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.

Introduction

Bluepebble Sustainability Solutions (Bluepebble) has been engaged by SMEC South Africa (Pty) Ltd to undertake an Environmental Assessment for the proposed Woodlands WWTW and Sewer Reticulation Woodlands, Koukamma Local Municipality (Eastern Cape Province).

The proposed activities for the upgrade of bulk sewers, replacing of small-bore sanitation system at Woodlands is as follows:

- Replace Internal Sewer Reticulation of the woodlands area.
- Design new sewer infrastructure for the proposed development.
- Realign and replace the Bulk Sewer Main.
- Refurbish the existing Wastewater Treatment works.
- See the Concept and Viability Report prepared by SMEC (2024) for details about the proposed upgrade.

Terrestrial biodiversity specialists Dr Jonathan Colville and Dr Callan Cohen were appointed through Bluepebble to assess the sensitivity for animal Species of Conservation Concern (SCC), and to provide a report in compliance with GN 1150 of 2020 for the animal theme.

An online site sensitivity report was generated by Bluepebble 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 footprints as overall **High** sensitivity for the animal species sensitivity theme for six bird, three insect, and two mammal SCC, with possible suitable habitat for:

- **Birds:**
  - Denham's Bustard (*Neotis denhami*): High sensitivity
  - Black Harrier (*Circus maurus*): Medium sensitivity.
  - African Marsh Harrier (*Circus ranivorus*): Medium sensitivity.
  - Crowned eagle (*Stephanoaetus coronatus*): Medium sensitivity
  - Knysna Warbler (*Bradypterus sylvaticus*): Medium sensitivity
  - White-bellied bustard (*Eupodotis senegalensis*): Medium Sensitivity
- **Insects:**
  - Tsitsikamma Giant Copper (*Aloeides pallida juno*): Medium Sensitivity
  - Dickson's Sylph butterfly (*Tsitana dicksoni*): Medium Sensitivity
  - Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*): Medium Sensitivity
- **Mammals:**
  - Duthie's golden mole (*Chlorotalpa duthieae*): Medium sensitivity.
  - Sensitive species 8: Medium sensitivity.

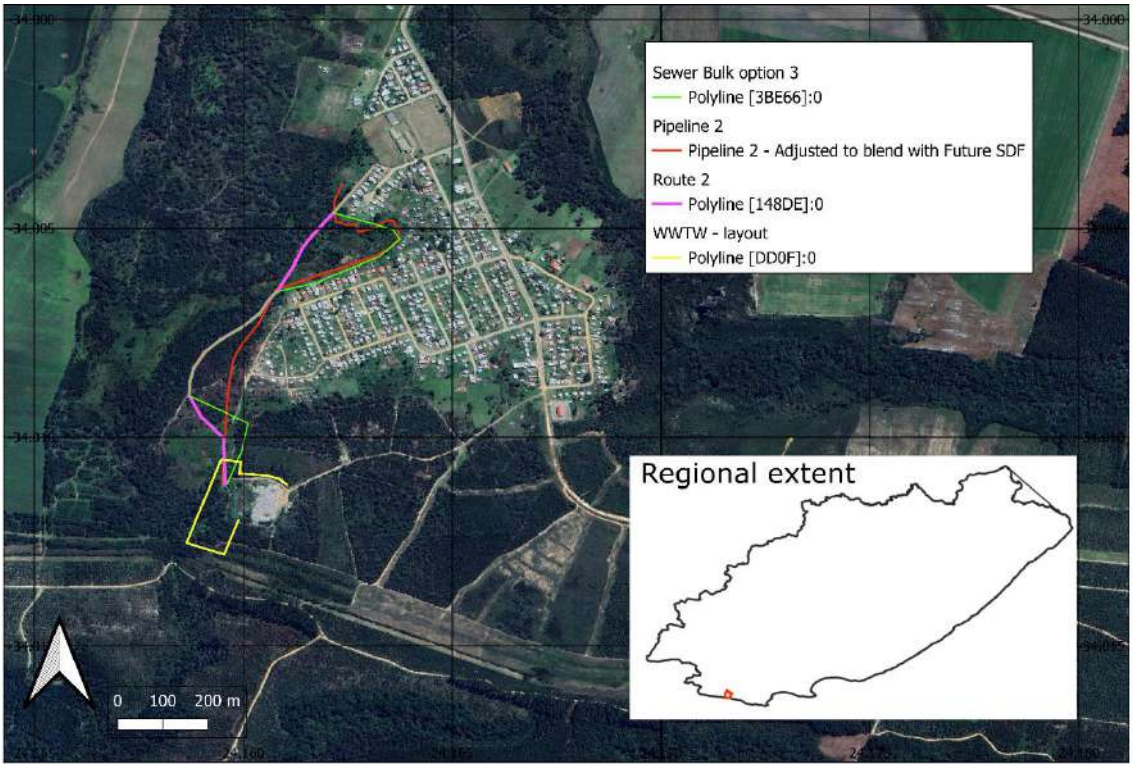


Figure 1: Location of the proposed development area (red dot) and its regional context in the Eastern Cape Province.

Terms of Reference

Jonathan Colville and Callan Cohen were appointed on 04 March 2025 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 animal 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 animal 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 animal SCC and identify any sensitive areas.
3. Prepare a site sensitivity verification report detailing the findings of the desktop study and site visit, confirming, or disputing the environmental sensitivity themes 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 (24 April 2025). Undertaking a site visit during this period can limit the detection of the insect SCC at the project site; the SCC are most active during spring and summer. However, this 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 site sensitivity assessment was undertaken based on the information provided to date by CEC for the proposed developments.

Site Sensitivity Verification

The screening tool indicated an overall "**High**" sensitivity for the listed animal SCC, mostly due to Denham's bustard. The site visit revealed that the project area is heavily disturbed and transformed and only retains some small elements of natural vegetation. Given the known habitat preferences for the listed SCC animal species, it is the opinion of the specialists that the project area is likely of **Low** to **Very Low** sensitivity for the animal theme. The nature of the sites and their suitability as habitat for the listed animal SCC are discussed in the remainder of the report.

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 (South African National Biodiversity Institute (SANBI), 2024).
    - 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).
    - The 2019 Eastern Cape Biodiversity Conservation Plan Terrestrial (Economic Development Environmental Affairs and Tourism, 2020).
    - The Garden Route Biodiversity Sector Plan for the southern regions of the Kouga and Koukamma Municipalities (Vromans *et al.*, 2010).
    - 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.
- 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.
- The Red List of Mammals of South Africa, Swaziland and Lesotho (Child *et al.*, 2017).
- IUCN Red List of Threatened Species (https://www.iucnredlist.org/) was consulted for all faunal SCC flagged for the project.
- 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 24 April 2025 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: early autumn.
- 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:
    - This period is not the most optimal time for surveying the insect SCC flagged.
    - However, 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. The high disturbance and transformed nature of the project area also reduces the importance of seasonality.

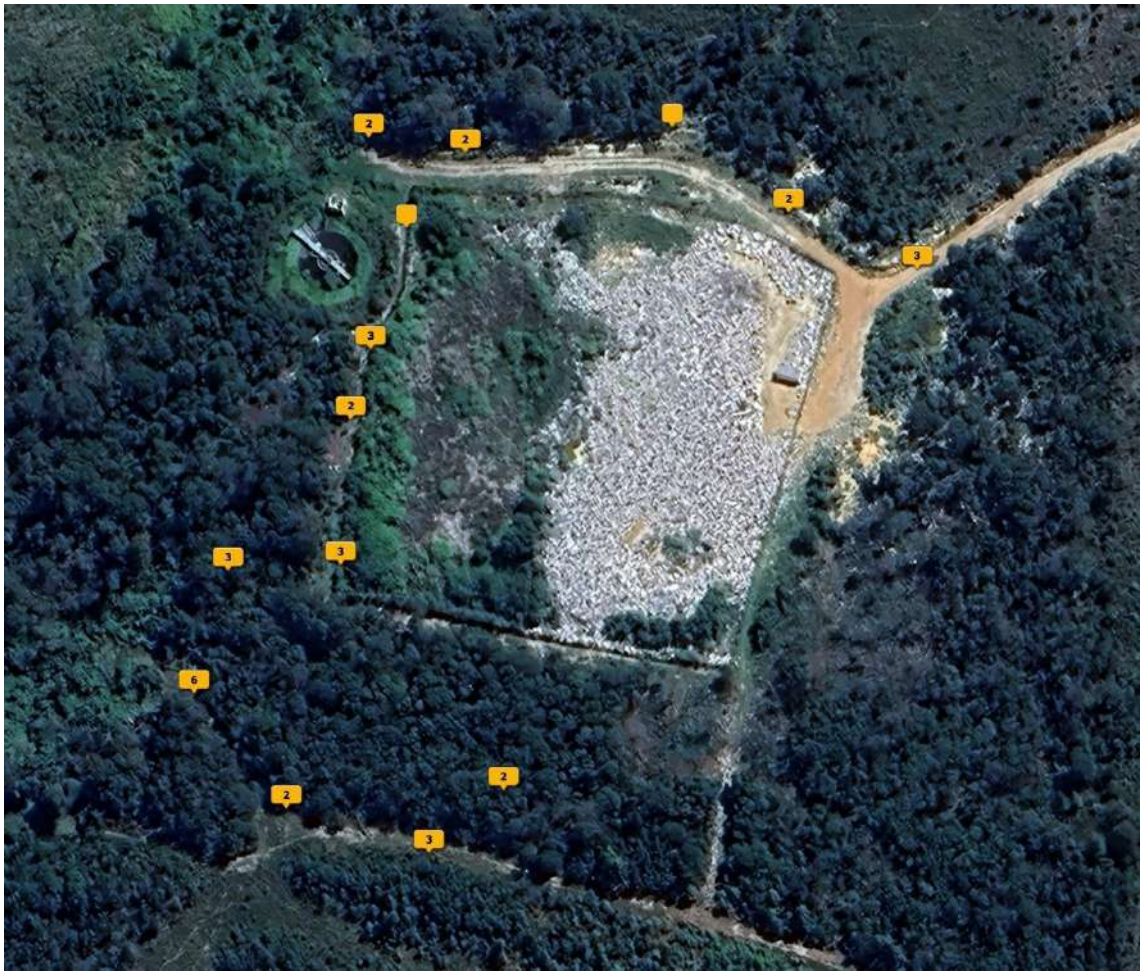


Figure 2: Selected sites that were assessed and photographed by faunal specialists.

Results

Desktop Study

The main vegetation types found at the project sites (Figure 3) are:

- Tsitsikamma Sandstone Fynbos (**Least Concern**; ~69% of natural area remaining): WWTW and sewer alignment.
- Eastern Coastal Shale Band Vegetation (**Endangered**; ~39% of natural area remaining): sewer alignment.

Based on landcover models, the main development area is classed as mostly natural vegetation, except northern areas of the sewer alignment and two of the pipeline routes (Skowno, 2020) (Figure 4). The main development area falls across a modelled ecosystem type with a South African Red List of Ecosystems (RLE) Status of Least Concern (LC); pipline route 2 falls over a small area classed as Endangered (Figure 5) (South African National Biodiversity Institute and Department of Forestry, 2021). Ground-truthing during the site visit found that the project site is heavily disturbed and transformed and only retains limited elements of natural vegetation and faunal habitat.

The project area falls close (approx. 4.5 kms southwards) to the Tsitsikamma - Plettenberg Bay Important Bird Area (Figure 6) (Marnewick *et al.*, 2015).

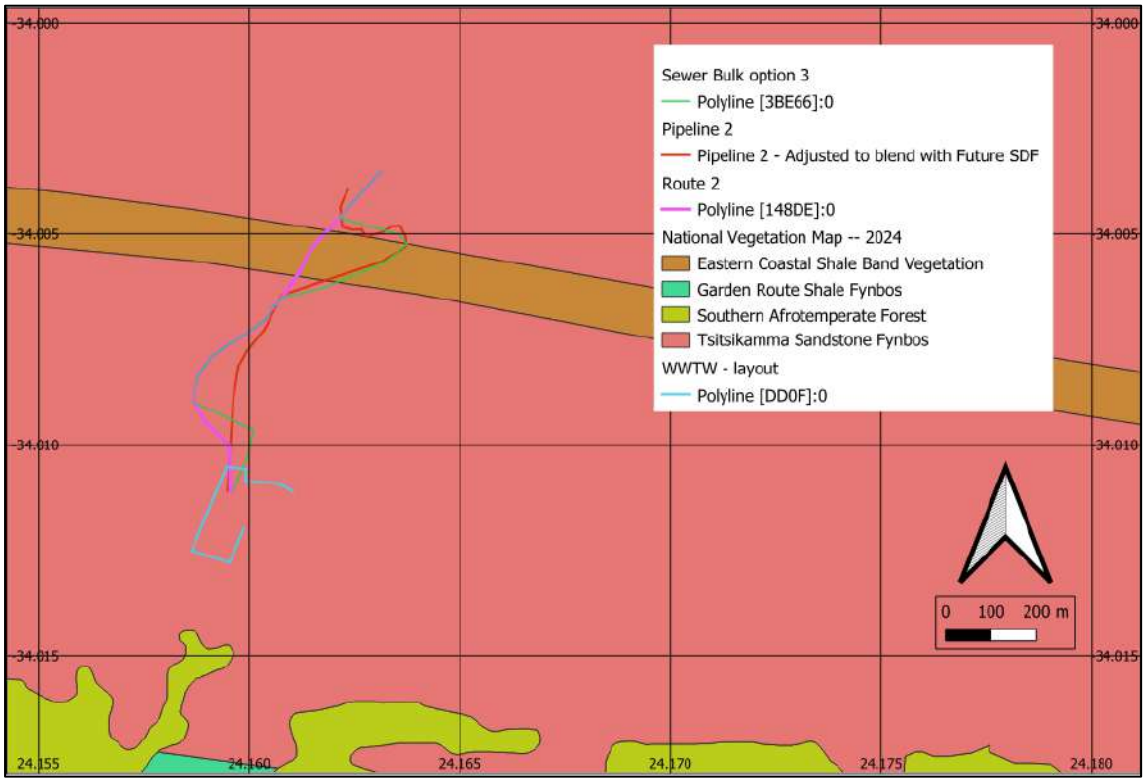


Figure 3: The vegetation types found at, and bordering, the project areas (Skowno *et al.*, 2019; South African National Biodiversity Institute (SANBI), 2024).

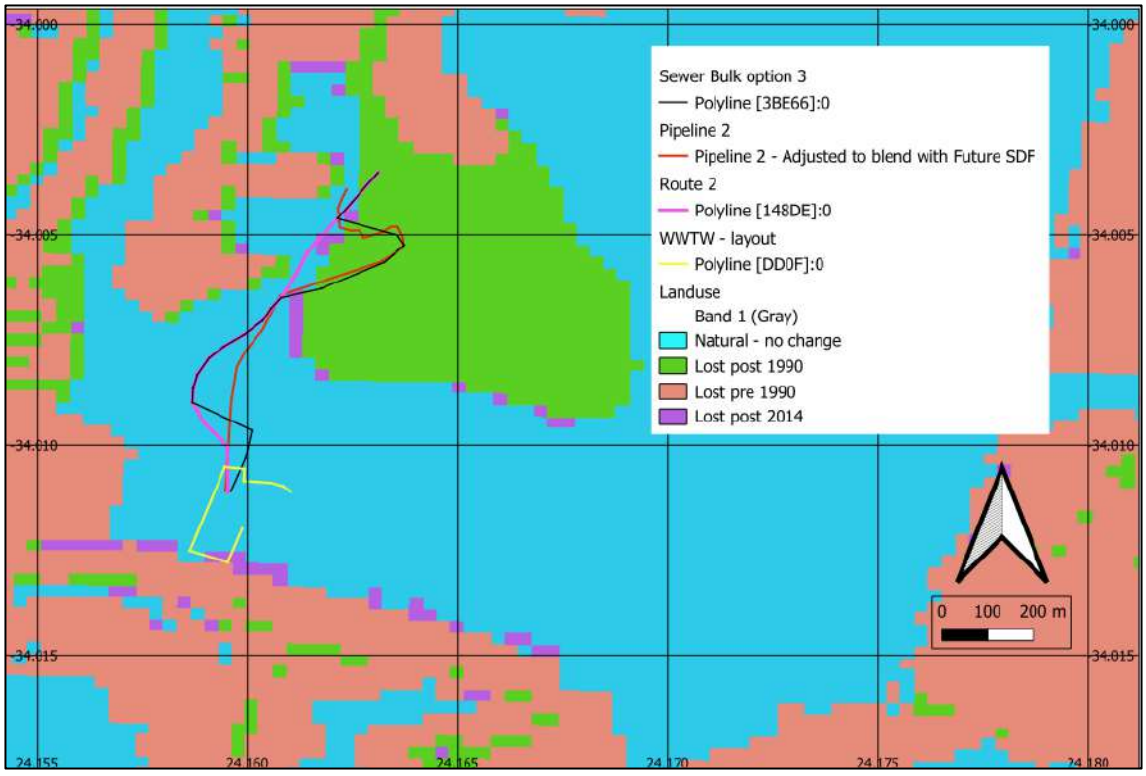


Figure 4. Land cover derived terrestrial habitat change layer for the project areas; (Skowno, 2020).

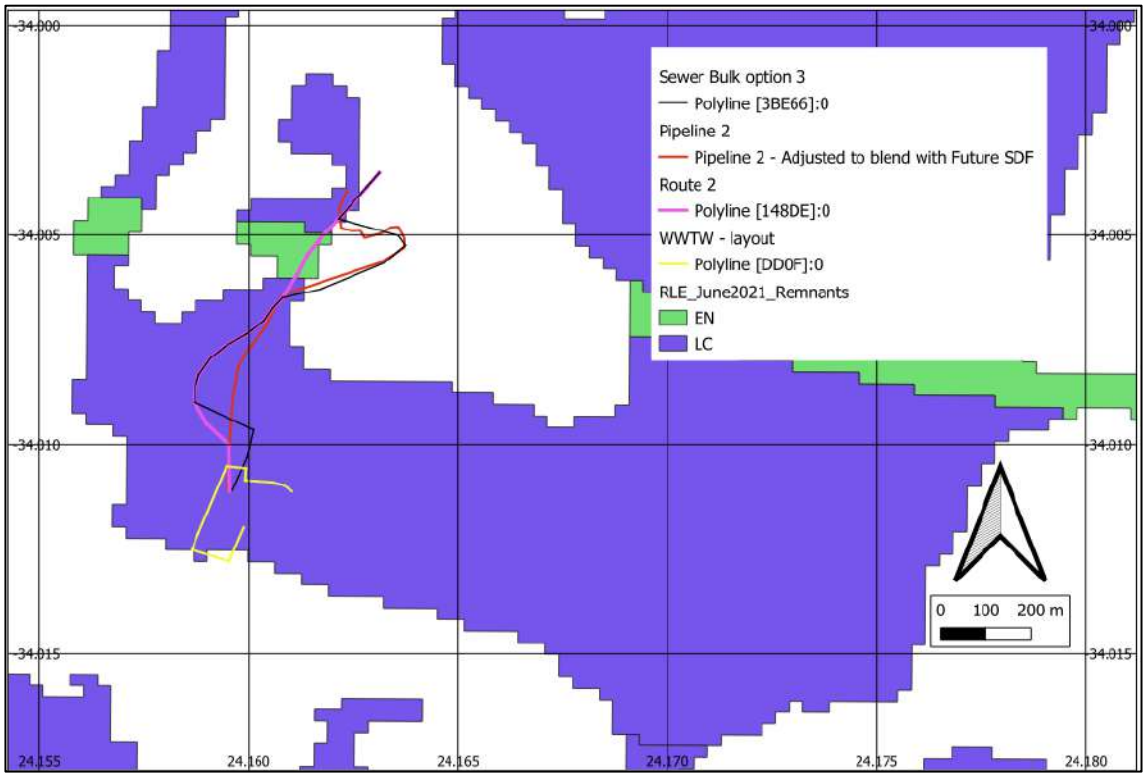


Figure 5. Modelled Red List of Ecosystems Status (RLE) for the terrestrial realm of South Africa and the current remaining natural extents (South African National Biodiversity Institute and Department of Forestry, 2021).

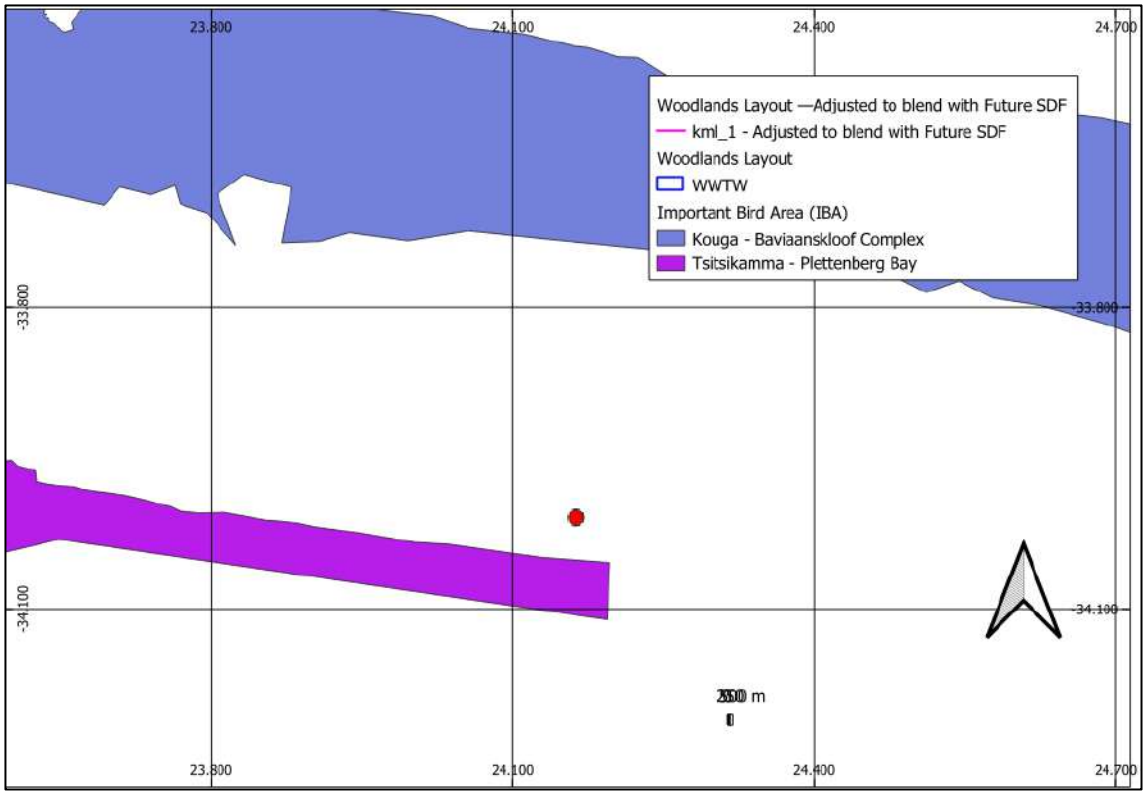


Figure 6. The project area (red dot) in relation to Important Bird Areas (IBA) identified for South Africa (Marnewick *et al.*, 2015).

Bird Species of Conservation Concern

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 project area is not suitable for this species as it is far too overgrown and has high disturbance from the town and landfill site.

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.
- 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.
- Prey is mainly rodents and birds.
- The dense and overgrown nature of the habitat of the project site is not suitable for either foraging or breeding. The high disturbance from human activity also likely precludes this bird SCC from utilising the project area.

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. Prey included rodents, as well as birds and amphibians.
- As the river corridor is overgrown and the sewerage works are small, there are no suitable wetland habitats associated with the site to support this species. The species is also unlikely to undertake occasional visits when passing through in order to feed due to the overgrown nature of the site.

Stephanoaetus coronatus (Linnaeus, 1766) Crowned eagle

- This species of raptor is widely distributed in Africa and Eurasia has an IUCN Red List Category of Near Threatened, but in South Africa its regional Red List Status is **Vulnerable** (Taylor et al., 2015; BirdLife International, 2023).
- This species is localised in the forests of the eastern and southern parts of South Africa (mostly the eastern coastal forests) and 800 adults are thought to occur (Taylor, et al. 2015).
- Natural prey is mainly mammals such as antelope, monkeys, and hyraxes (Taylor, et al. 2015), but birds such as Hadedas can also be taken (Shane McPherson, pers comm.).

- This species was not seen at the site and is not known to breed at the site (there are not really suitable nesting sites), although it might very occasionally pass through the area and use the forested parts of the site.

Bradypterus sylvaticus (Sundevall, 1860) Knysna Warbler

- This species of warbler is endemic to South Africa occurring patchily along the southern coast from Cape Town to Mbumbazi Nature Reserve, KwaZulu-Natal, and even being recorded more recently near Durban (pers. obs.).
- It has an IUCN Red List Category and Criteria of **Vulnerable** (B1ab(i,ii,iii,iv,v); C2a(i)) (Taylor, Peacock and Wanless, 2015; BirdLife International, 2022a).
- It creeps around in thick undergrowth and tangles in forest, forest edges, and coastal thickets.
- When a forest becomes overshaded by too many trees, this species will vacate the habitat as it prefers dense bush, which cannot grow in low light conditions. In recent years it has resorted to living in woodlands invaded by alien plants.
- This species was not recorded at the project area despite call playback experiments. It might however occur in the dense tangles of alien invasive trees along the riparian corridor but given the amount of riverine tangles in the area, this site is not considered significant for this species.

Eupodotis senegalensis (Vieillot, 1821) White-bellied bustard

- This species of bustard is patchily distributed from West Africa to South Africa. It has an IUCN Red List Category of Least Concern (BirdLife International, 2025), but in South Africa its regional Red List Status is **Vulnerable** A2c+3c+4c; C1 (Taylor, Peacock and Wanless, 2015).
- Within South Africa, it is most common in the Highveld regions east of Potchefstroom to southern Mpumalanga (Wakkerstroom district), as well as in north-eastern Free State and the upper districts and midlands of KwaZulu-Natal. Isolated remnant populations occur on the Polokwane Plateau and Waterberg Plateau in Limpopo.
- The White-bellied bustard preferred habitat consists of grasslands and open woodlands where they prefer open areas with tall grass and small trees but are also found in river plains and agricultural fields.
- The global population is thought to be decreasing, whereas the regional population appears to have declined over 70%.
- Main threats are related to habitat loss (e.g. invasive alien plants, overgrazing, urban development), and possibly from subsistence hunting and poaching. Collisions with powerlines do not seem to pose as serious a threat as it does to larger bustard species (see: https://speciesstatus.sanbi.org/assessment/last-assessment/3049/).
- The species will not occur at the project site due to the overgrown nature of the project area, highly disturbed habitat, and high disturbance from human activity.

Insect Species of Conservation Concern

Aloeides pallida juno (Pringle, 1994) Tsitsikamma Giant Copper

- This species of butterfly is endemic to South Africa and has an IUCN Red List Category and Criteria of **Endangered** (Mecenero *et al.*, 2020).

- It has an estimated extent of occurrence of <250 km^2, and although restricted, it can occur in numbers.
- The species is restricted to from Nature's Valley near Plettenberg Bay in the west to Kareedouw in the east occurring in a few small populations.
- The few populations have become increasingly fragmented, and the quality and extent of its habitat has declined. For example, the Nature's Valley subpopulation is likely now extinct, and the habitat of the Kareedouw subpopulation has become increasingly degradation through illegal dumping of rubble and alien invasive trees.
- Due to the reduction in sub-populations and increased threats to its habitat, its threat status has been changed from Least Concern to Endangered.
- Neither its host plant nor host ant species is known.
- The high habitat disturbance and dense alien plant infestation likely precludes this species from occurring at the project area.

Tsitana dicksoni (Evans, 1956) Dickson's Sylph

- This species of butterfly is endemic to South Africa and has an IUCN Red List Category and Criteria of **Least Concern** (Rare)(Mecenero et al., 2013, 2020).
- The species is relatively widespread and is known from the Eastern Cape and Western Cape Provinces, from Franschhoek in the west to Baviaanskloof near Patensie in the east, widespread on the Langeberg and its foothills.
- It has an estimated extent of occurrence of 50 000 km^2, and although widespread, it is considered rare.
- It favours habitat associated with grassy spots in montane fynbos vegetation.
- A species of grass is known as a larval host plant: *Pseudopentameris macrantha* (Schrad.) Conert (Poaceae).
- The species has been recorded relatively close to the project area; a collection record is known from approximately 14 km north-east of the project site from Tsitsikamma Sandstone Fynbos.
- The high habitat disturbance and dense alien plant infestation likely precludes this species from occurring at the project area. The host plant grass was not recorded.

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, Tsitsikamma Sandstone Fynbos) and "south-facing cool slopes" (Kinvig, 2005).
- It has a large estimated extent of occurrence of 172463 km^2 and its estimated geographic range overlaps the project area (Bazelet and Naskrecki, 2014).
- The species has been historically recorded from relatively near the project area, with a known collection record approximately 16 kms north-eastwards from Tsitsikamma Sandstone Fynbos.

- The high habitat disturbance and dense alien plant infestation likely precludes this grasshopper species from occurring at the project area

Mammal SCC

Sensitive species 8

- This species of mammal is endemic to Africa and has an IUCN Red List Category and Criteria of Least Concern and a South African regional red list of **Vulnerable** B2ab(ii, ii, v) + C1a(i). [****Please Note**: Citations for published literature related to this sensitive species have been withheld to protect its identity and can be requested from the author of this report if needed].
- Within South Africa, the species appears to be declining due to forest habitat loss from urban development, mining and increasing poaching and hunting with domestic dogs.
- The estimated area of occupancy (AOO) ranges from 1,415–2,858 km^2, but this SCC has very short dispersal distances (< 1km) between forest patches; habitat fragmentation is therefore a key consideration for this SCC.
- They occur predominantly within coastal forests, thickets, and dense coastal bush, but can occupy modified habitats and areas of mixed land use. They forage in open areas in forest glades but require dense underbrush to rest or take cover.
- Historical records extracted from virtual museums, and more recent records from citizen science online platforms, are known for this SCC from close to the project site.
- There is a low likelihood of this sensitive species occurring at the project site associated with the denser alien tree habitat.
- The high human activity, presence of packs of feral dogs, and likely high poaching activity should preclude this sensitive species from occurring at the project area.

Chlorotalpa duthieae (Broom, 1907) Duthie's golden mole

- This species of golden mole is endemic to South Africa and has an IUCN Red List Category and Criteria of **Vulnerable** B1ab(iii)+2ab(iii) (Bronner, 2015). It has an estimated extent of occurrence (EOO) of 14000 km^2 and an estimated area of occupancy (AOO) of 144 km^2. It occurs along an approximately 275 km narrow coastal band from Wilderness to Port Elizabeth. It's EOO overlaps the project area.
- The populations around Port Elizabeth occur in agricultural pasture fields and urban gardens. The western populations occur in Southern Afrotemperate Forests.
- The species favours sandy loam and alluvial sands and constructs shallow subsurface foraging tunnels that radiate outwards from under the roots of trees where it makes a nest. It forages at night, feeding on species feed mainly on invertebrates, especially earthworms, and other insects/larvae (Bronner, 2015; Pinheiro *et al.*, 2018)
- The species appears to be locally common in Southern Cape Afrotemperate Forest habitats, and adjacent pasturelands, cultivated lands and gardens, but no quantitative data on population numbers is currently available.
- Threats include habitat disturbance and fragmentation owing to urban and agricultural development of coastal habitats, which has led to population fragmentation. Loss of indigenous forest by plantations, timber harvesting, and predation by domestic pets are also listed as threats (Glenn, 2006; Bronner, 2015).

- Taxonomic problems within *Chlorotalpa* on the south coast obscure the certainty around the exact distribution of this species.
- There is a very low likelihood of this SCC being found at the project site due to the high disturbance and dense alien plant growth.

Site Visit

- The site visits were undertaken on an overcast and slightly cool day.
- Habitat characteristics and likelihood of any animal SCC being found at the project site is given below.
- Suitable habitat for the animal SCC listed above was not found across the project area, and the importance of the project site for the SCC is considered as low to very low due to the high disturbance and habitat transformation.

Figure 7. The current WWTW area; note the large alien invasive black wattle trees in the background.

Figure 8. The landfill site next to the sewage works. The area is heavily disturbed, even beyond the official footprint of the landfill, and likely contains toxic chemicals that are seeping into the soil and adjacent aquatic habitats.

Figure 9. Litter and rubbish are scattered widely at the project area and occur in large areas outside of the landfill site.

Figure 10. Packs of feral dogs were seen scavenging at the landfill site and roaming around the general area of the project site; these likely present a threat to any remaining wildlife, such as Sensitive species 8.

Figure 11. The project area is heavily infested with species of alien invasive plants, including black wattle, bugweed, pines, and several others.

Figure 12. The large size of the black wattle indicate that the area has experienced many years of alien plant growth which has almost completely taken over all natural vegetation.

Figure 13. Small remnant areas of natural fynbos vegetation are found at the project site (foreground) along the bulk sewer alignment route, but these areas are tiny, overshadowed and threatened from the spread of alien tree growth (background).

Figure 14. The bulk sewer alignment route (background) follows along an area, mostly along the town on Woodlands itself, that is heavily infested with large and dense alien plant growth; none of these areas are suitable for any of the faunal SCC flagged for the project.

Conclusions

- This Terrestrial Animal Species Compliance Statement is applicable to the project area shown in Figure 1, and as described in the documentation provided to date to us by Bluepebble.
- Observations from the site visit indicated that almost all the proposed area to be heavily disturbed with almost complete transformation, mostly due to dense alien plant growth.
- Based on the available species-level information for the animal SCC, their known habitat preferences, it is considered that there is a low to very low probability of the listed animal SCC utilising the project area.
- It is therefore considered that overall the proposed development with all pipeline route options is likely of Low to Very Low sensitivity from a faunal perspective.
- Overall, it is the specialists' opinion that the proposed developments are very unlikely to generate any significant negative impacts on any of the animal SCC.
- As part of the development, the local municipal authorities should urgently undertake an alien plant clearing programme as the area is heavily infested with several alien invasive plant species.

References

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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.
- Lebuhn, G., Connor, E.F., Brand, M., **Colville, J.F.**, Keday, D., Resham, B.T., Muo, K., Ravindra, K.J. (2015). Monitoring pollinators around the world. In: *Pollination services to agriculture*. B. Gemmill-Herren (Ed), Routledge.
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Journal articles:

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- Allen-Perkins, A., Magrach, A., Dainese, M., Garibaldi, L., … **Colville, J.F.**, et al. (2022). CropPol: A dynamic, open, and global database on crop pollination. *Ecology*. 103, 3, e3614.

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- Cohen, C., Liltved, W.R., **Colville, J.F**., Shuttleworth, A., Weissflog, J., Svatos, A., Bytebier, B., Johnson, S.D. (2021). Sexual deception of a beetle pollinator through floral mimicry. *Current Biology*. 31: 1–8.
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- Karolyi, F., Szucsich, N.U., **Colville, J.F.**, Krenn, H.W. (2012). Adaptations for nectar-feeding in the mouthparts of long-proboscid flies (Nemestrinidae: *Prosoeca*). *Biological Journal of the Linnean Society*. 107: 414-424.
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- Bohn, H., Picker, M.D., Klaus-Dieter, K. & **Colville, J.F.** (2010). A jumping cockroach from South Africa, *Saltoblattella montistabularis*, gen. nov., spec. nov. (Blattodea: Blattellidae). *Arthropod Systematics & Phylogeny*. 68: 53-69. **[Featured as a "Top 10 New Species discovery" by the International Institute for Species Exploration**].

- **Colville, J.F.**, Picker, M.D., Cowling, R.M. (2002). Species turnover of monkey-beetles (Scarabaeidae: Hopliini) along environmental and disturbance gradients in the Namaqualand region of the Succulent Karoo, South Africa. *Biodiversity and Conservation*. 11: 243–264.
- Picker, M.D., **Colville, J.F.**, van Noort, S. (2002). Mantophasmatodea now in South Africa. *Science*. 297: 1475.

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.
- **Colville, J.F.** (2021). Terrestrial Animal Species Specialist Assessment. Proposed Development of Solar Photo-Voltaic Renewable Energy Power Station. Prepared for Resource Management Services (RMS).
- **Colville, J.F.** & Picker, M.D. (2009-2010). *Invertebrate impact assessment – Oudekraal, Table Mountain*. Prepared for Doug Jeffery Environmental Consultants.
- Picker, M.D. & **Colville, J.F.** (2007). *Invertebrate impact assessment: Worcester Island Development*. SRK Environmental impact report for Consulting Engineers and Scientists, Cape Town.
- Picker, M.D. & **Colville, J.F.** (2006). *Baseline faunal investigation for proposed development at Altona, Worcester, Western Cape Province*. Environmental impact report for SRK Consulting Engineers and Scientists, Cape Town.
- **Colville, J.F.** & Picker, M.D. (2005). *Scoping Phase II: The impact of development of Worcester on the insect and scorpion fauna*. Environmental impact report for Chand Environmental Consultants, Cape Town.
- **Colville, J.F.** (2001) *Scoping and faunal assessment for proposed housing development, Skapenberg, Somerset West*. Prepared for Design consultants CNdV Africa.

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).

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.

Cohen, C. & Spottiswoode, C. 2000. **Essential Birding in Western South Africa: Key routes from Cape Town to the Kalahari.** Cape Town: Struik New Holland Publishers, 136 pp. Reprinted 2001.

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.

Contributed 10 species accounts in: Hockey, P.A.R., Dean, W.R.J. & Ryan, P.G. (Eds). 2005. **Roberts' Birds of Southern Africa**. Seventh edition. Cape Town: John Voelcker Bird Book Fund.

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

Mills, Michael S. L., Julian Francis, Nik Borrow, Nigel Redman, Washington Wachira and **Callan Cohen**. 2021. **English bird names in common use: a framework to achieve a stable world list despite ongoing taxonomic changes, and a call to establish a broad-based African Bird Names Committee.** Bull ABC Vol 28 No 1: 93-98.

Province of the
EASTERN CAPE
ECONOMIC DEVELOPMENT, ENVIRONMENTAL AFFAIRS & TOURISM

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST IN TERMS OF REGULATIONS 12 AND 13 OF THE AMENDMENTS TO THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 AS AMENDED.

	(For official use only)
File Reference Number:	
NEAS Reference Number:	
Date Received:	

Application for environmental authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Amendments to the Environmental Impact Assessment Regulations, 2014. This form is valid as of 6 January 2021.

PROJECT TITLE

UPGRADE OF A WASTEWATER TREATMENT WORKS AND INSTALLATION OF SMALL-BORE SEWAGE RETICULATION SYSTEM IN WOODLANDS, KOUKAMMA LOCAL MUNICIPALITY, SARAH BAARTMAN DISTRICT MUNICIPALITY , EASTERN CAPE

SPECIALIST [1]	Jonathan F. Colville - Terrestrial Ecologist & Faunal Surveys		
Contact person:	Jonathan Colville		
Postal address:	4 Willow Street, Noordhoek, Cape Town		
Postal code:	7979	Cell:	083 564 5050
Telephone:		Fax:	
E-mail:	Jonathan.colville@gmail.com		
Professional affiliation(s) (if any)	SACNASP: 134759		

Project Consultant:			
Contact person:			
Postal address:			
		Cell:	
Postal code:			
Telephone:		Fax:	
E-mail:			

4.2 The SPECIALIST

I, **Jonathan Colville** , declare that –

General declaration:

- I act as the independent Specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;

- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (**delete whichever is not applicable**)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Amendments to Environmental Impact Assessment Regulations, 2014 as amended.

Signature of the specialist:

J.F. Colville J.F. Colville.

Name of company:

Jonathan F. Colville - Terrestrial Ecologist & Faunal Surveys

Date: 04/09/2025

Signature of the Commissioner of Oaths: 72694700 Machevels

Date: 2025-09-04

Designation: C&F

[1] Curriculum Vitae (CV) attached

Official stamp (below).

SUID-AFRIKAANSE POLISIEDIENS
GEMEENSKAPDIENS SENTRUM
04 SEP 2025
COMMUNITY SERVICE CENTRE
VISHOEK / FISH HOEK K.P / C.P/
SOUTH AFRICAN POLICE SERVICE