

Faunal Assessment: Site Sensitivity Verification Report

**Proposed Development of Portion 3 of Farm
Aan De Valsch Rivier 186 and Farm Horeb 149 Riversdale
(Western Cape)**

Compiled for: PHS Consulting

Riversdale

March 2025



Jonathan Colville
Terrestrial Ecologist
&
Faunal Surveys



**Birding
Africa**

Report Information

Document name	Riversdale: Faunal Sensitivity Report
Number of pages:	37
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
Document version:	1.0

Citation

Colville, J.F. & Cohen, C. 2024. Faunal Sensitivity Report for the Proposed Development of Portion 3 of Farm Aan De Valsch Rivier 186 and Farm Horeb 149, Riversdale (Western Cape). 11 March 2025.

Table of Contents

Report Information.....	2
Table of Contents	3
List of Figures.....	5
Specialist Details	7
Conditions Pertaining to this Report	9
Introduction.....	10
Terms of Reference	12
Assumptions and Limitations	12
Site Sensitivity Verification.....	12
Methodology	13
Desktop Study.....	13
Site Visit	14
Results	14
Desktop Study.....	14
Bird SCC.....	17
Invertebrate SCC.....	19
Site Visit	20
Constraints Map.....	20
Conclusions.....	28
Acknowledgments	29
References	30
Appendix-1 – CV Jonathan Colville.....	32

Appendix-2 – CV Callan Cohen	37
---	-----------

DRAFT

List of Figures

Figure 1: Location of the proposed development and its regional context in the Western Cape Province.....	11
Figure 2: Selected sites that were assessed and photographed by faunal specialists.	11
Figure 3: Sensitivity map (animal species sensitivity) of the proposed development area, as classified by the National Web-based Screening Tool.....	13
Figure 4: The vegetation types found at, and bordering, the project site (SANBI, 2018; Skowno et al., 2019).....	15
Figure 5: Land cover derived terrestrial habitat change layer overlaid onto the project site (Skowno, 2020).....	16
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 Fisheries and the Environment, 2022).....	16
Figure 7: The project area (blue dot) in relation to Important Bird Area identified for South Africa (Marnewick <i>et al.</i> , 2015).	17
Figure 8: Constraints map for the project area: The upper western ridge is considered as higher sensitivity owing to the sighting of Denham's Bustard. The northern parts are considered higher sensitivity owing to the intact fynbos vegetation and the area falling within an IBA.	20
Figure 9: Faunal specialist searching for butterfly SCC at a south-western point of the project site. Several areas have been brush cut and/or previously ploughed.	21
Figure 10: Looking north-eastwards across the southern parts of the project site. Several low-lying areas are disturbed through agricultural activities and dense alien plant growth, such as along the main river that runs through the project site.	21
Figure 11: Areas on the south-eastern side of the main river are mostly disturbed as indicated by the weedy plant elements including <i>Helichrysum</i> spp; note the large stand of Black Wattle in the background.	22
Figure 12: Clearing activities of Black Wattle trees is on-going at the project site. The dense stands of these invasive trees are a major disturbance at the project site.....	22
Figure 13: Dense black wattle trees have infested the small ravines and valleys on the project site; alien plants should be removed from the project site as they are a serious threat to plant and animal SCC.....	23
Figure 14: Areas of the north-eastern parts are disturbed through brush cutting (foreground) and alien Black Wattle trees (background). Open brush cut areas are mostly dominated by weedy fynbos plants.....	23
Figure 15: Eastern areas of farm Aan De Valsch Rivier are heavily infested with Black Wattle.....	24
Figure 16: Small Black Wattle and invasive <i>Hakea</i> trees were noted in areas of brush cut fynbos of farm Aan De Valsch Rivier; this is a concern and an alien plant removal plan for the project site should be implemented.	24

Figure 17. Open brush cut slopes (note the parallel lines made by the brush cutter) on the north-eastern parts of farm Aan De Valsch Rivier. These areas may be used by Denham's bustard but would depend on the frequency of brush cutting disturbance and on the quality of the habitat related to fire cycles as the birds can be locally nomadic.....	25
Figure 18. Looking northwards into farm 149; the northern area of farm 149 borders and important bird area and has good quality fynbos habitat.	25
Figure 19. The northern areas of farm 149 are considered as medium to high sensitivity from a faunal perspective.	26
Figure 20. The area bordering the two farms is heavily disturbed with eucalyptus gums.	26
Figure 21. Western areas of farm Aan De Valsch Rivier have good quality fynbos habitat; a Denham's bustard was sighted near here on the neighbouring upper ridge area of open habitat.	27
Figure 22. Western parts of farm Aan De Valsch Rivier are considered as medium to high sensitivity from a faunal perspective, mostly for the Denham's bustard SCC.....	28
Figure 23. Open habitat such as this near the western ridge are suitable for the Denham's bustard SCC.....	28

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.com
Telephone	+27 83 256 0491
Highest Qualification	PhD Ornithology University of Cape Town 2011
Areas of Specialisation	Ornithology, Ecology, Odonata, Lepidoptera

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.

A handwritten signature in black ink that reads "J.F. Colville." The signature is written in a cursive, slightly slanted style.

Jonathan F. Colville

DRAFT

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.

Introduction

PHS Consulting has been engaged to undertake a Basic Assessment for a proposed agricultural development (orchards and farm dam) on Portion 3 of Farm Aan de Valsch Rivier 186 and Farm Horeb 149, approximately 20 km northeast of Riversdale.

An online site sensitivity report was generated by PHS 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 High sensitivity for the animal species sensitivity theme. Eight animal Species of Conservation Concern (SCC) were flagged, with possible suitable habitat for:

- Six bird species:
 - Black Harrier (*Circus maurus*): High sensitivity
 - African Marsh Harrier (*Circus ranivorus*): High sensitivity
 - Denham's Bustard (*Neotis denhami*): High sensitivity
 - Martial Eagle (*Polemaetus bellicosus*): High sensitivity
 - Crowned eagle (*Stephanoaetus coronatus*): Medium sensitivity
 - Knysna Warbler (*Bradypterus sylvaticus*): Medium sensitivity
- Two insect species:
 - Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*): Medium Sensitivity
 - Dickson's Sylph butterfly (*Tsitana dicksoni*): 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.

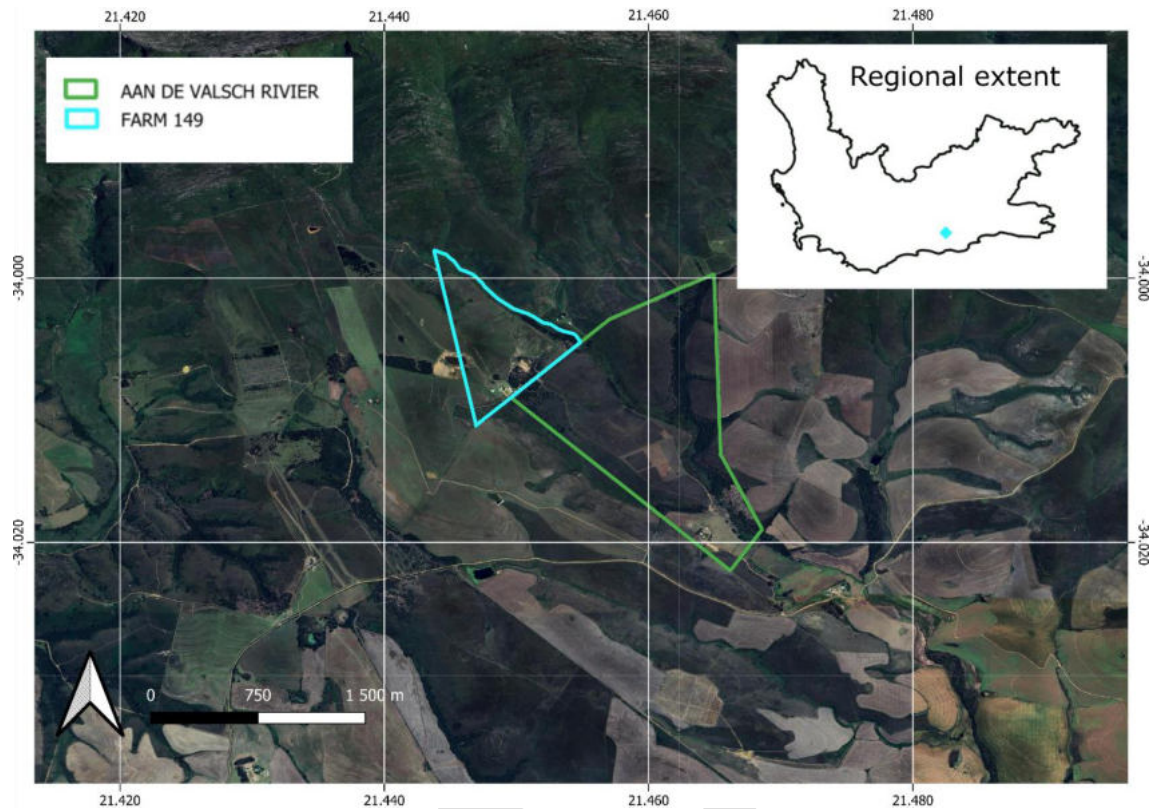


Figure 1: Location of the proposed development and its regional context in the Western Cape Province.

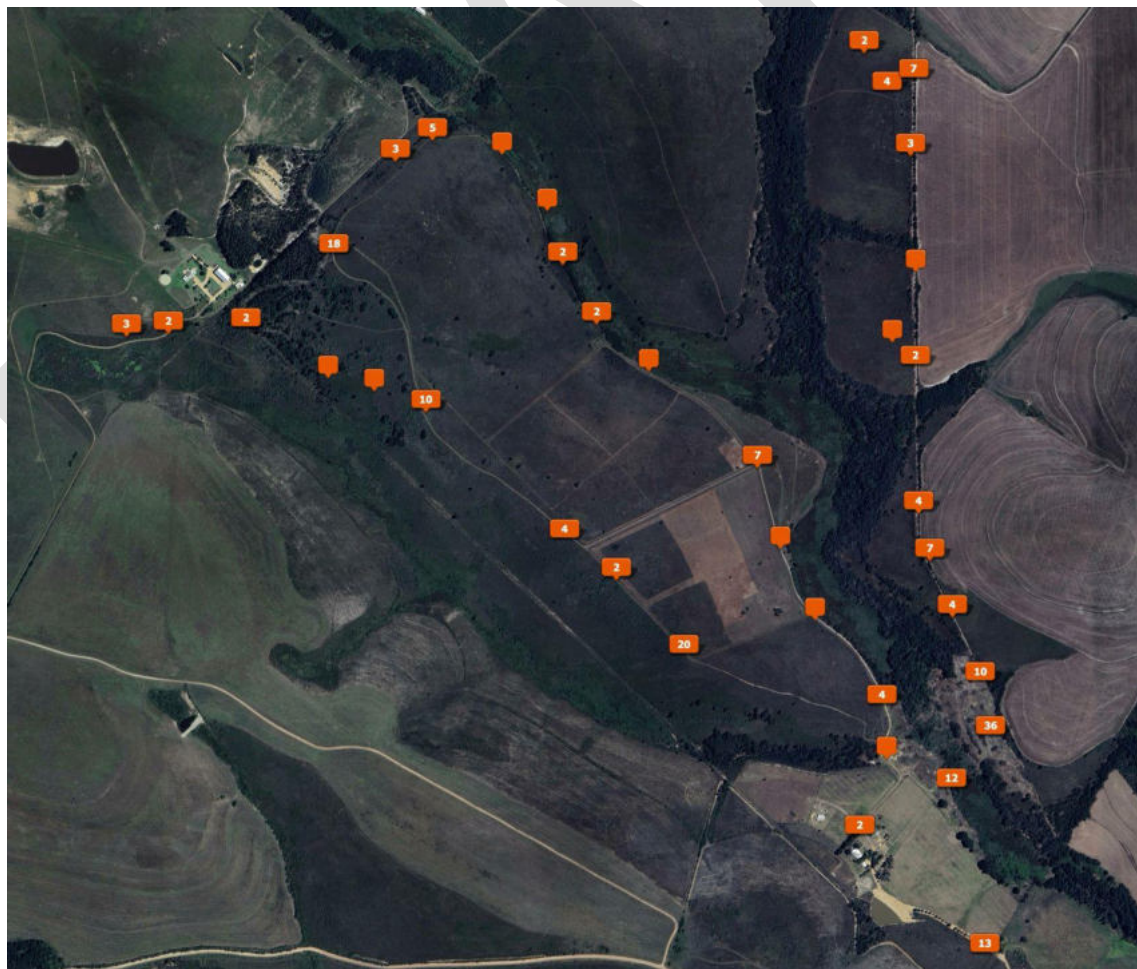


Figure 2: Selected sites that were assessed and photographed by faunal specialists.

Terms of Reference

Jonathan Colville and Callan Cohen were appointed on 19 November 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 summer (late-December 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.
- The site was visited during summer (17/18 December 2024). Undertaking a site visit in summer is an opportune time for the detection of several of the faunal SCC at the project site. For example, the flight period of the butterfly SCC flagged falls over December/January (Mecenero *et al.*, 2013). 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 scoping assessment was undertaken based on the information provided to date by PHS Consulting for the proposed development.

Site Sensitivity Verification

The screening tool indicated "High" sensitivity for the listed animal SCC. The site visit revealed that the site is in poor to good ecological condition with several areas of natural vegetation having

experienced some degree of disturbance. The nature of the site and its suitability as habitat for the listed animal SCC is discussed in the remainder of the report.

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 eladarequests@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)
High	<i>Aves-Circus ranivorus</i>
High	<i>Aves-Circus mauros</i>
High	<i>Aves-Neotis denhami</i>
High	<i>Aves-Polemaetus bellicosus</i>
Medium	<i>Aves-Circus ranivorus</i>
Medium	<i>Aves-Circus mauros</i>
Medium	<i>Aves-Staphanoaethus coronatus</i>
Medium	<i>Aves-Neotis denhami</i>
Medium	<i>Insecta-Tritana dicksoni</i>
Medium	<i>Invertebrate-Anuraphys montanus</i>

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 eladarequests@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)
High	<i>Aves-Circus ranivorus</i>
High	<i>Aves-Circus mauros</i>
High	<i>Aves-Neotis denhami</i>
High	<i>Aves-Polemaetus bellicosus</i>
Medium	<i>Aves-Circus mauros</i>
Medium	<i>Aves-Staphanoaethus coronatus</i>
Medium	<i>Aves-Neotis denhami</i>
Medium	<i>Aves-Bradypterus sylvaticus</i>
Medium	<i>Invertebrate-Anuraphys montanus</i>

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; South African National Biodiversity Institute and Department of Forestry Fisheries and the Environment, 2022).
 - 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.

- 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 km²), 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 17/18 December 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: Summer.
- 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:
 - Summer is mostly an ideal time to detect the animal 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.

Results

Desktop Study

The main vegetation types found at the project site (Figure 4) is:

- Swellendam Silcrete Fynbos (**Endangered**; 48% natural extent remaining)

Based on landcover models, the project area is classed as mostly natural vegetation (Skowno, 2020) (Figure 5). The project area falls across an modelled ecosystem type with a South African Red List of Ecosystems Status of **Endangered** (Figure 6) (South African National Biodiversity Institute

and Department of Forestry Fisheries and the Environment, 2022). However, ground-truthing during the site visit indicated that several large areas of the project site have been disturbed (agricultural activities, and dense alien invasive plants), and they have lost aspects of their original natural vegetation.

The project site falls close to Important Bird Areas (IBA) (e.g. Overberg Wheatbelt IBA) or marginally within (Langeberg Mountains IBA) (Figure 7).

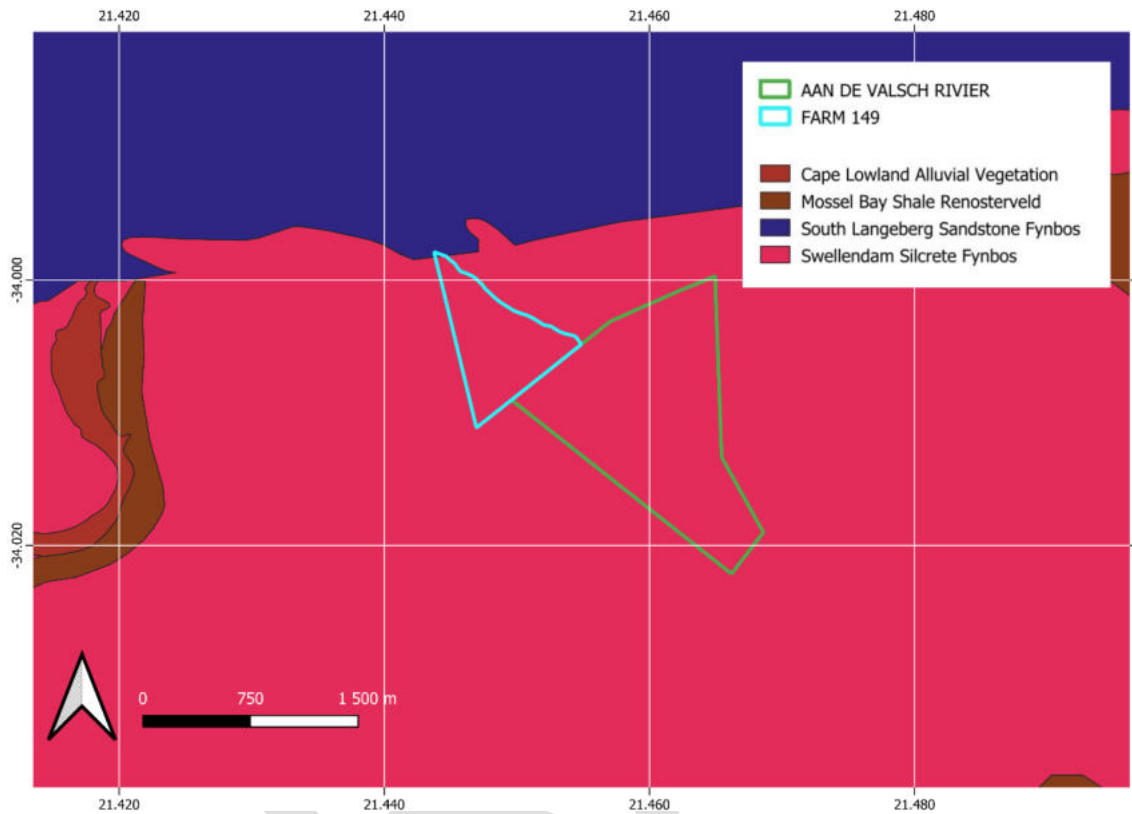


Figure 4: The vegetation types found at, and bordering, the project site (SANBI, 2018; Skowno et al., 2019).

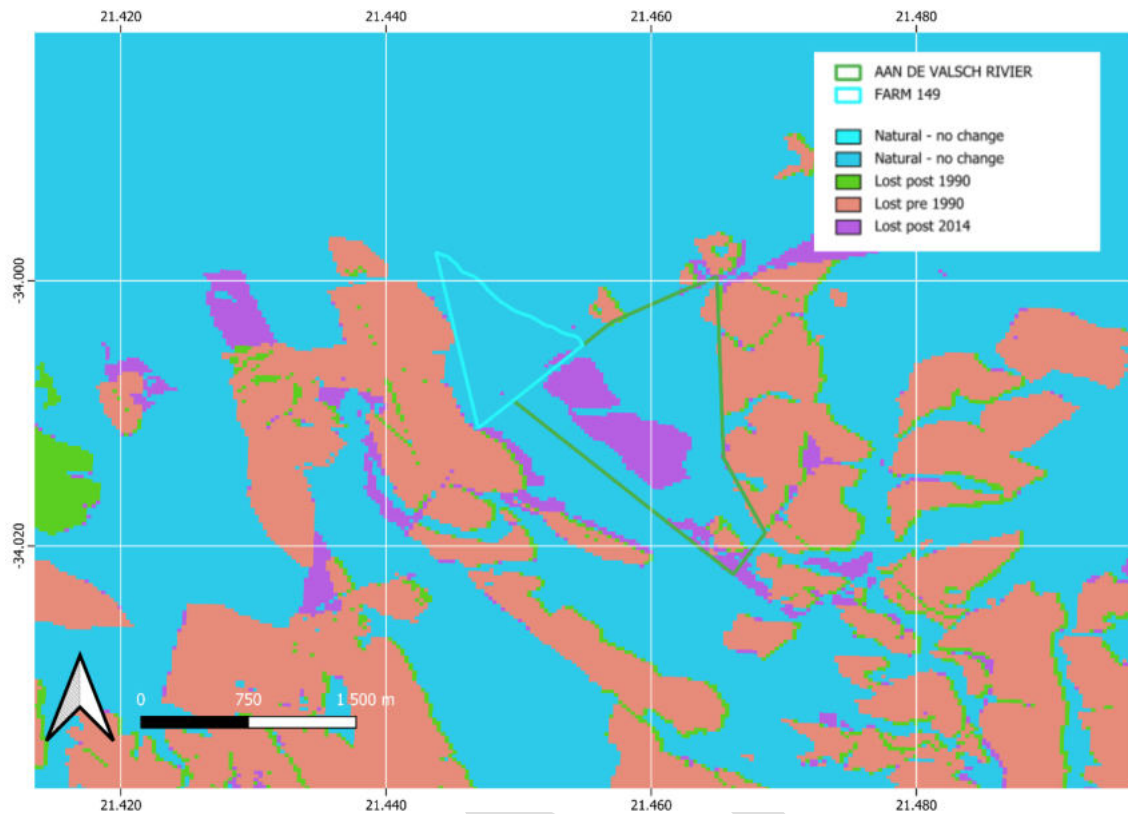


Figure 5. Land cover derived terrestrial habitat change layer overlaid onto the project site (Skowno, 2020).

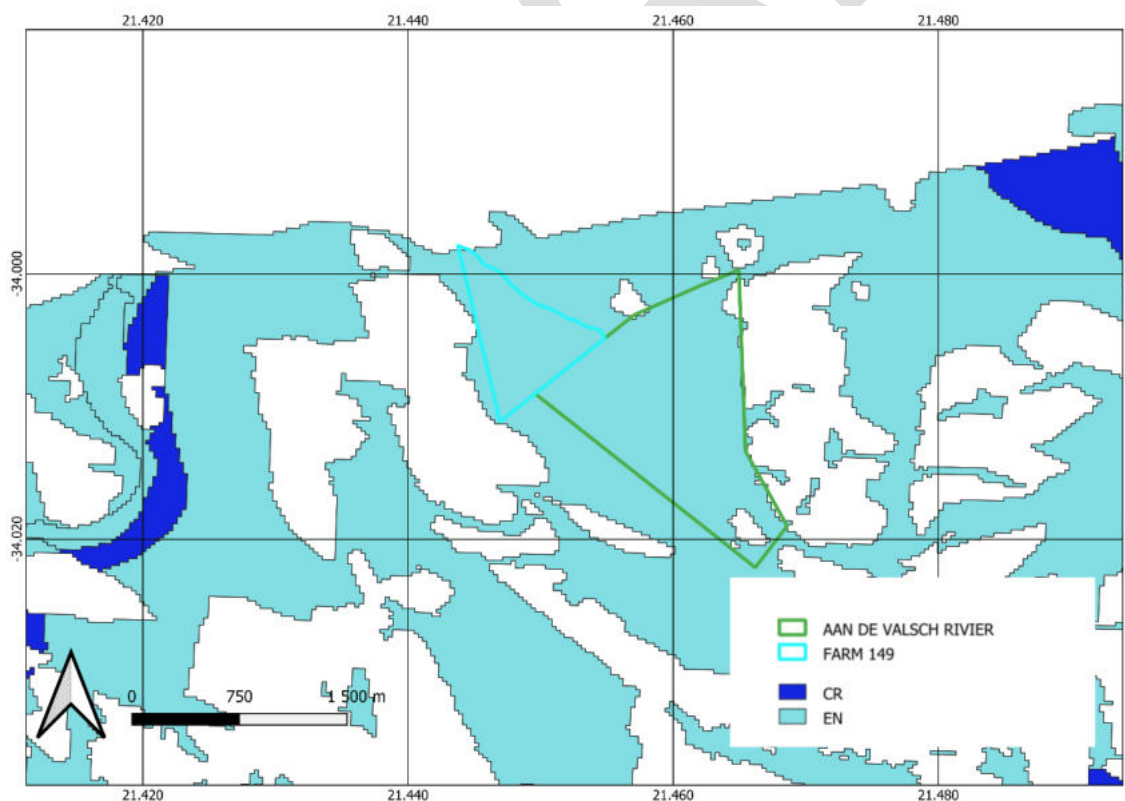


Figure 6. The project site falls over an area that is considered as natural remnants of an Endangered (EN) Red Listed Ecosystem type (South African National Biodiversity Institute and Department of Forestry Fisheries and the Environment, 2022).

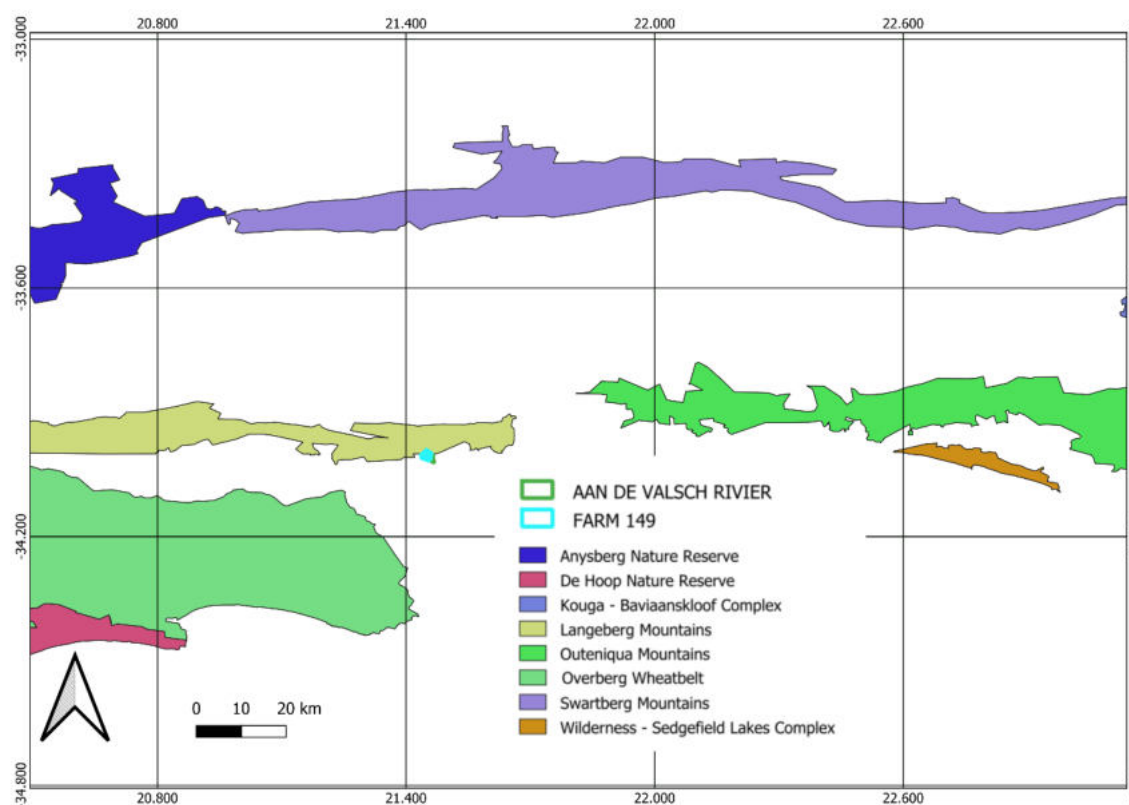


Figure 7. The project area (blue dot) in relation to Important Bird Area identified for South Africa (Marnewick *et al.*, 2015).

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.
- Even though no Black Harriers were seen on the site visit, the open, relatively undisturbed habitat at the site is suitable for this species for foraging and potentially breeding, although the wetland edge areas that might be most suitable for breeding are heavily disturbed by alien invasive vegetation.

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 small amount 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 upper ridge area of open habitat offers ideal habitat for this bird SCC, both in terms of foraging and breeding. This species was seen flying over the project site and foraging in adjacent open areas.

Polemaetus bellicosus (Heine, 1890) *Martial Eagle*

- This species of eagle 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 Endangered (Taylor, Peacock and Wanless, 2015; BirdLife International, 2022c).
- The species is wide-ranging and likely hunts over the site from time to time, but there are no known nesting sites at the project site and the site is not considered of significance for the species.

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, although it might 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 overshadowed 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 and is very localised in this area. It might occur dense forest edge tangles but the amount of habitat is not considered significant for this species on the site.

Invertebrate SCC

Grasshopper 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 91 kms north-east for a collection record from South Swartberg Sandstone Fynbos.

Butterfly SCC

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 km², and although widespread, it is considered generally 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 historically recorded relatively close to the project area; a known record is approximately 15 km south-westwards of the project site from Eastern Ruens Shale Renosterveld.

Site Visit

- Habitat characteristics and likelihood of any faunal SCC being found at the project site is given below.
- The site appears in poor to good ecological condition and some areas of the site offer habitat suitable for the bird and insect SCC.
- The sensitivity themes are considered mostly inaccurate for the animal theme assessed, with most areas considered a low sensitivity, except for three areas that are considered as higher sensitivity, owing to river and associated wetland habitat, and mostly intact fynbos habitat (see constraints map of Figure 8) (see also Botanical Sensitivity Report) and sighting of Denham's bustard on the western ridge above the project area.

Constraints Map

- Based on the faunal survey undertaken, the project area is classed as mostly Low, with two areas classed as higher faunal sensitivity, mostly based on the sighting of the Denham's Bustard, intact fynbos habitat, and falling within an IBA.
- Ideally, these areas should be excluded from the development.

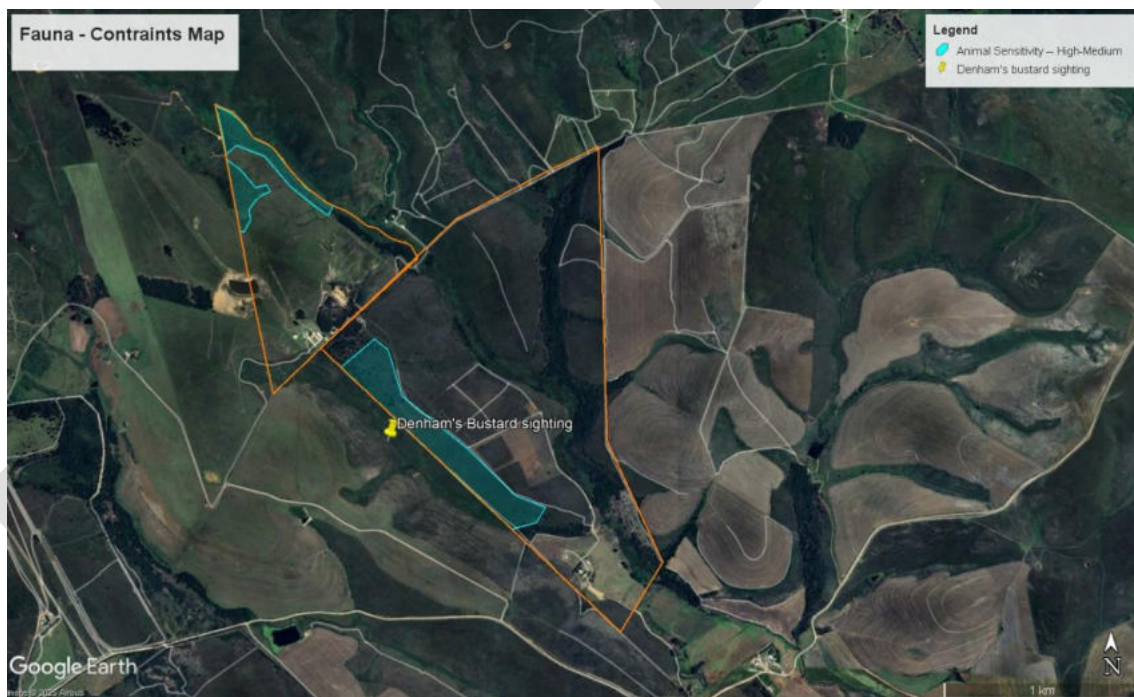


Figure 8. Constraints map for the project area: The upper western ridge is considered as higher sensitivity owing to the sighting of Denham's Bustard. The northern parts are considered higher sensitivity owing to the intact fynbos vegetation and the area falling within an IBA.



Figure 9. Faunal specialist searching for butterfly SCC at a south-western point of the project site. Several areas have been brush cut and/or previously ploughed.



Figure 10. Looking north-eastwards across the southern parts of the project site. Several low-lying areas are disturbed through agricultural activities and dense alien plant growth, such as along the main river that runs through the project site.



Figure 11. Areas on the south-eastern side of the main river are mostly disturbed as indicated by the weedy plant elements including *Helichrysum* spp; note the large stand of Black Wattle in the background.



Figure 12. Clearing activities of Black Wattle trees is on-going at the project site. The dense stands of these invasive trees are a major disturbance at the project site.



Figure 13. Dense black wattle trees have infested the small ravines and valleys on the project site; alien plants should be removed from the project site as they are a serious threat to plant and animal SCC.



Figure 14. Areas of the north-eastern parts are disturbed through brush cutting (foreground) and alien Black Wattle trees (background). Open brush cut areas are mostly dominated by weedy fynbos plants.



Figure 15. Eastern areas of farm Aan De Valsch Rivier are heavily infested with Black Wattle.



Figure 16. Small Black Wattle and invasive Hakea trees were noted in areas of brush cut fynbos of farm Aan De Valsch Rivier; this is a concern and an alien plant removal plan for the project site should be implemented.



Figure 17. Open brush cut slopes (note the parallel lines made by the brush cutter) on the north-eastern parts of farm Aan De Valsch Rivier. These areas may be used by Denham's bustard but would depend on the frequency of brush cutting disturbance and on the quality of the habitat related to fire cycles as the birds can be locally nomadic.



Figure 18. Looking northwards into farm 149; the northern area of farm 149 borders and important bird area and has good quality fynbos habitat.



Figure 19. The northern areas of farm 149 are considered as medium to high sensitivity from a faunal perspective.



Figure 20. The area bordering the two farms is heavily disturbed with eucalyptus gums.



Figure 21. Western areas of farm Aan De Valsch Rivier have good quality fynbos habitat; a Denham's bustard was sighted near here on the neighbouring upper ridge area of open habitat.



Figure 22. Western parts of farm Aan De Valsch Rivier are considered as medium to high sensitivity from a faunal perspective, mostly for the Denham's bustard SCC.



Figure 23. Open habitat such as this near the western ridge are suitable for the Denham's bustard SCC.

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.
- Based on the available species-level information for the animal, their known habitat preferences, it is considered that there is a medium to high probability of all SCC utilising some of the areas at the project site.
- The project area falls within the geographic distributions of the Yellow-winged Agile Grasshopper SCC and the project site offers suitable habitat in parts. However, considering the wide distributional range of the species, occurring across several different vegetation types, the project impact on the Yellow-winged Agile Grasshopper is considered low.
- Similarly, the Dickson's Sylph butterfly is a wide-spread species, and although is likely to occur on areas of grassy fynbos at the project area, the project impact on this butterfly SCC is considered low, especially if areas of intact fynbos habitat are excluded from the proposed agricultural development (see also the Botanical Sensitivity Report).
- The Black Harrier (*Circus maurus*) 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

and that their preferred wetland breeding habitat is degraded, it means the site is likely of low significance for this species.

- The African Marsh Harrier (*Circus ranivorus*) is largely restricted to wetland habitats; such habitat is seen at the project site and associated with the Valsrivier. The Marsh Harrier might only briefly visit on passage to other more suitable areas, and the site does not represent a viable habitat for the species.
- The Knysna Warbler might occur in the dense tangles of alien Black Wattle trees growing in the ravines; however, this is unlikely a significant area for this species.
- The two large raptors species may occasionally visit the project site, considering the large eucalyptus and Black Wattle trees that have become established in parts. However, the project area is not considered as important for them and they are not known to breed in the area.
- The vegetation of semi-intact fynbos on the western ridge appears to be utilised by Denham's Bustard and this area should be excluded from the proposed development (see Constraints Map).
- The northern areas of good quality fynbos habitat should also be excluded from the proposed development (see Constraints Map).
- Dense Black Wattle growth has become established along the river and associated wetland habitat, and within several deep ravines on the project area. These invaded areas should be cleared of alien plants.
- Areas of sensitivity include the river and associated wetland habitats – these areas need to be cleared of alien plants and restored.
- Good quality fynbos habitat on the western ridge is considered as high sensitivity and should be excluded from the development.
- Northern and eastern areas on farm 149 are also considered as high faunal sensitivity.
- Low sensitivity areas are associated with the low-lying disturbed areas (see botanical specialist report) and most eastern areas of the farm Aan De Valsch Rivier. It is suggested that any agricultural expansion be undertaken here considering the already high agricultural disturbance in this area associated with the neighbouring farm (ploughed fields).
- One concern to note, if the entire area of the two farms is developed then cumulative impacts may become high. It is recommended that development is concentrated in low sensitive areas (see botanical specialists report).
- Overall, the proposed development is unlikely to generate significant negative impacts on any of the faunal SCC flagged. It is the specialists' opinion that the proposed development will have an overall low significance on the faunal SCC flagged: on the condition that the sensitive areas (river and associated wetland habitat, western ridge and fynbos habitat, and northern fynbos areas of farm 149) are excluded and that an alien plant clearing plan be implemented.

Acknowledgments

CapeNature is thanked for collecting permits: CN44-87-20545 and CN44-59-13497.

References

- Barnes, K. N. (2000) *The Eskom Red Data Book of Birds in South Africa, Lesotho and Swaziland*, BirdLife South Africa, Johannesburg.
- Bazelet, C. S. and Naskrecki, P. (2014) *Conocephalus peringueyi*. The IUCN Red List of Threatened Species 2014: e.T20633594A43266622. Available at: <https://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T20633594A43266622.en>.
- BirdLife International (2016) *Circus ranivorus*. The IUCN Red List of Threatened Species 2016: e.T22695352A93504602.
- BirdLife International (2017) *Circus maurus*. The IUCN Red List of Threatened Species 2017: e.T22695379A118433168.
- BirdLife International (2022a) Species factsheet: *Bradypterus sylvaticus*. BirdLife International (2022) IUCN Red List for birds. Downloaded from <http://www.birdlife.org> on 31/10/2022.
- BirdLife International (2022b) Species factsheet: *Neotis denhami*. Downloaded from <http://www.birdlife.org> on 01/11/2022.
- BirdLife International (2022c) Species factsheet: *Polemaetus bellicosus*. Downloaded from <http://www.birdlife.org> on 01/11/2022.
- BirdLife International (2023) Species factsheet: *Stephanoaetus coronatus*. Downloaded from <http://www.birdlife.org> on 16/02/2023.
- Brown, H. D. (1960) 'New Grasshoppers (Acridoidea) from the Great Karroo and the South Eastern Cape Province', *Journal of the Entomological Society of South Africa*, 23, pp. 126–143.
- Hochkirch, A., Bazelet, C. S. and Danielczak, A. (2018) *Aneuryphymus montanus*. The IUCN Red List of Threatened Species 2018: e.T116114515A116116590. Available at: dx.doi.org/10.2305/IUCN.UK.2018-1.RLTS.T116114515A116116590.en.
- Kinvig, R. G. (2005) *Biotic indicators of grassland condition in Kwazulu-Natal, with management recommendations*. University of KwaZulu-Natal.
- Marnewick, M. D. et al. (2015) *South Africa's Important Bird and Biodiversity Areas Status Report 2015*. Johannesburg: BirdLife South Africa.
- Mecenero, S. et al. (2020) 'Outcomes of the Southern African Lepidoptera Conservation Assessment Outcomes of the Southern African Lepidoptera Conservation Assessment (SALCA)', *Metamorphosis*, 31(December), pp. 1–160.
- Mecenero, Silvia et al. (2013) *Conservation Assessment of Butterflies of South Africa, Lesotho and Swaziland: Red list and atlas*. Edited by S. Mecenero et al. Safronics (Pty) Ltd., Johannesburg & Animal Demography Unit, Cape Town.
- SANBI (2018) 'South African National Biodiversity Institute (2006– 2018)', in Mucina, L., Rutherford, M.C. and Powrie, L. W. (ed.) *The Vegetation Map of South Africa, Lesotho and Swaziland*. Version 20. Available at: <http://bgis.sanbi.org/SpatialDataset/Detail/18>.
- Skowno, A. L. et al. (2019) *South African National Biodiversity Assessment 2018 Technical Report Volume 1: Terrestrial Realm*. South African National Biodiversity Institute, Pretoria. <http://hdl.handle.net/20.500.12143/6370>.

Skowno, A. L. (2020) *Land cover derived terrestrial habitat change map for South Africa (1990–2018)*. National Biodiversity Assessment: Technical Report. South African National Biodiversity Institute, Pretoria, South Africa.

South African National Biodiversity Institute and Department of Forestry Fisheries and the Environment (2022) *Red List of Terrestrial Ecosystems of South Africa November 2022 – original extent spatial data*. South African National Biodiversity Institute. Pretoria, South Africa.

Taylor, M. R., Peacock, F. and Wanless, R. M. (2015) *The 2015 Eskom Red Data Book of birds of South Africa, Lesotho and Swaziland*.

DRAFT

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.
- Colville, J.F.**, Potts, A.J., Bradshaw, P.L., Measey, G.J., Snijman, D., Picker, M.D., Procheş, Ş., Bowie, R.C.K., Manning, J.C. (2014). Floristic and faunal Cape biochoria: do they exist? *In: Fynbos: Ecology, Evolution, and Conservation of a Megadiverse Region*. N. Allsopp, J.F. Colville, G.A. Verboom (Eds), Oxford University Press.
- Lach, L., Picker, M.D., **Colville, J.F.**, Allsopp, M.H., and Griffiths, C.L. (2002). Alien invertebrate animals in South Africa. *In: Biological invasions: Economic and environmental costs of alien plant, animal, and microbe species*. D. Pimentel (Ed), CRC Press, London.

Journal articles:

- Barraclough, D.A., and **Colville, J.F.** (2022). The first species of Nemestrinidae (Diptera) endemic to Madagascar: A remarkable new species of *Atriadops* Wandolleck, 1897. *Zootaxa*. 5196 (1): 145–150.
- Dombrow, H., **Colville, J.F.**, Bowie, R.C.K. (2022). Review of the genus *Amblymelanoplia* Dombrow, 2002 (Coleoptera: Scarabaeidae: Melolonthinae: Hopliini) with the description of ninety-three new species from South Africa and observations on its biogeography and phylogeny. *Zootaxa*. 5163 (1): 1–278.
- Melin, A., and **Colville, J.F.** (2022). Description of the male of *Rediviva steineri* Kuhlmann 2012 (Hymenoptera: Melittidae), an endemic oil-collecting bee species from South Africa. *African Entomology*. 30: e11178.
- Allen-Perkins, A., Magrath, 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.

- Dorchin, N.; van Munster, S.; Klak, C.; Bowie, R.C.K.; **Colville, J.F.** (2022). Hidden diversity – A new speciose gall midge genus (Diptera: Cecidomyiidae) associated with succulent Aizoaceae in South Africa. *Insects*. 13, 75. <https://doi.org/10.3390/insects13010075>
- 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.
- Krenn, H.W., Karolyi, F., Lampert, P., Melin, A., **Colville, J.F.** (2021). Nectar uptake of a long-proboscid *Prosoeca* fly (Nemestrinidae) – Proboscis morphology and flower shape. *Insects*. 12(371): 1–13.
- McLeod, L., and **Colville, J.F.** (2021). Observations on unusual feeding and mating behaviour of a monkey beetle genus *Amblymelanoplia* Dombrow (Coleoptera: Scarabaeidae: Hopliini). *African Entomology*. 29(1): 301–306.
- **Colville, J.F.**, Beale, C.M., Forest, F., Altwegg, R., Huntley, B., Cowling, R.M. (2020). Plant species richness, turnover and evolutionary diversity track gradients of stability and ecological opportunity in a megadiversity centre. *Proceedings of the National Academy of Sciences (PNAS)*. 117 (33): 20027–20037.
- Dombrow, H. & **Colville, J.F.** (2020). Review of the genus *Beckhoplia* Dombrow with the description of fifteen new species from South Africa and observations on its biogeography (Coleoptera: Scarabaeidae: Melolonthinae: Hopliini). *Zootaxa*. 4823(1): 1–64.
- Melin, A., Altwegg, R., Manning, J.C., and **Colville, J.F.** (2020). Allometric relationships shape foreleg evolution of long-legged oil bees (Melittidae: *Rediviva*). *Evolution*. <https://doi.org/10.1111/evo.14144>.
- Melin, A. & **Colville, J.F.** (2020). A nesting aggregation of *Rediviva intermixta* (Melittinae: Melittidae) with males sleeping together in nests (Namaqualand, South Africa). *The Journal of the Kansas Entomological Society*. 92 (3): 561–568.
- Melin, A., **Colville, J.F.**, Duckworth, G.D.; Altwegg, R.; Slabbert, R.; Midgley, J.J.; Rouget, M.; Donaldson, J.S. (2020). Diversity of pollen sources used by managed honeybees in variegated landscapes. *Journal of Apicultural Research*. Doi10.1080/00218839.2020.1750757.
- Melin, A., Krenn, H.W., Manning, J.C., **Colville, J.F.** (2019). The allometry of proboscis length in Melittidae (Hymenoptera: Apoidea) and an estimate of their foraging distance using museum collections. *PLoS ONE*. 14(6): e0217839.
- Melin, A. & **Colville, J.F.** (2019). A review of 250 years of Southern African bee taxonomy and exploration (Hymenoptera: Apoidea: Anthophila). *Transactions of the Royal Society of South Africa*. 74:1, 86–96. **[Featured on Cover Page]**
- Rink, A.R., Altwegg, R., Edwards, S., Bowie, R.C.K., **Colville, J.F.** (2019). Contest dynamics and assessment strategies in combatant monkey beetles (Scarabaeidae: Hopliini). *Behavioural Ecology*. 40: 713–723.
- Barraclough, D., **Colville, J.F.**, Karolyi, F., Krenn, H.W. (2018). A striking new species of *Prosoeca* Schiner, 1867 (Diptera: Nemestrinidae): An important pollinator from the Bokkeveld Plateau, Northern Cape Province, South Africa. *Zootaxa* 4497: 411–421.
- **Colville, J.F.**, Picker, M.D., Cowling, R.M. (2018). Feeding ecology and sexual dimorphism in a speciose flower beetle clade (Hopliini: Scarabaeidae). *PeerJ*: 6:e4632.
- Melin, A., Mathieu, R., **Colville, J.F.**, Midgley, J.J., Donaldson, J.S. (2018). Quantifying and evaluating distributed floral resources for managed honeybee pollination using an expanded concept of supporting ecosystem services. *PeerJ*: e5654.
- Cowling, R.M., Bradshaw, P.L., **Colville, J.F.**, Forest, F. (2017). Levyns' Law: Explaining the evolution of a remarkable longitudinal gradient in Cape plant diversity. *Transactions of the Royal Society of South Africa*. 72: 184–201.
- Treurnicht M., **Colville J.F.**, Joppa L.N., Huyser O., Manning J.C. (2017) Counting complete? Finalising the plant inventory of a global biodiversity hotspot. *PeerJ*: 5:e2984.

- Janion-Scheepers, C., Measey, G.J., Braschler, B., Chown, S.L., Coetzee, L., **Colville, J.F.**, Dames, J., Davies, A.B., *et al.* (2016). Soil biota in a megadiverse country: Current knowledge and future research directions in South Africa. *Pedobiologia*. 59: 129-174.
- Karolyi F., Hansal T., Krenn H.W., **Colville J.F.** (2016). Comparative morphology of the mouthparts of the megadiverse South African monkey beetles (Scarabaeidae: Hopliini): Feeding adaptations and guild structure. *PeerJ*: 4:e1597.
- Bradshaw, P.L., **Colville, J.F.**, Linder, H.P. (2015). Optimising regionalisation techniques: Identifying centres of endemism in the extraordinarily endemic-rich Cape Floristic Region. *PLoS ONE*. 10: e0132538.
- Cowling, R.M., Potts, A.J., Bradshaw, P.L., **Colville, J.F.**, Arianoutsou, M., Ferrier, S., Forest, F., Fyllas, N.M., Hopper, S.D., Ojeda, F., Procheş, Ş., Smith, R.J., Rundel, P.W., Vassilakis, E., Zutta, B.R. (2015). Variation in plant diversity in Mediterranean-climate ecosystems: The role of climatic and topographical stability. *Journal of Biogeography*. 42: 552-564.
- Kleijn, D., Winfree, R., Bartomeus, I., Carvalheiro, L.G., Henry, M., Isaacs, R., Klein, A-M., Kremen, C., M'Gonigle, L.K., Rader, R., Ricketts, T., Williams, N.M., Adamson, N-L, Ascher, J.S., Baldi, A., Batary, P., Benjamin, F., Biesmeijer, J.C., Blitzer, E.J., Bommarco, R., Brand, M.R., Bretagnolle, V., Button, L., Cariveau, D.P., Chifflet, R., **Colville, J.F.**, Danforth, B.N., Elle, E., Garratt, M.P.D., Herzog, F., Holzschuh, A., Howlett, B.G., Jauker, F., Jha, S., Knop, E., Krewenka, K.M., Le Feon, V., Mandelik, Y., May, E.M., Park, M.G., Pisanty, G., Reemer, M., Riedinger, V., Rollin, O., Rundlof, M., Sardinias, H.S., Scheper, J., Sciligo, A.R., Smith, H.G., Steffan-Dewenter, I., Thorp, R., Tscharrntke, T., Verhulst, J., Viana, B.F., Vaissiere, B.E., Veldtman, R., Westphal, C., Potts, S.G. (2015). Delivery of crop pollination services is an insufficient argument for wild pollinator conservation. *Nature Communications*. 6: 7414.
- Manning, J.C., Goldblatt, P., **Colville, J.F.**, Cupidoa, C.N. (2015). Hopline beetle pollination in annual *Wahlenbergia* species (Campanulaceae) from western South Africa, and the new species *W. melanops*. *South African Journal of Botany*. 100: 58-62.
- Mecenero, S., Altwegg, R., **Colville, J.F.**, Beale, C.M. (2015). Roles of spatial scale and rarity on the relationship between butterfly species richness and human density in South Africa. *PLoS ONE*. 10: e0124327.
- Forest, F., Goldblatt, P., Manning, J.C., Baker, D., **Colville, J.F.**, Devey, D.S., Jose, S., Kaye, M., Buerki, S. (2014). Pollinator shifts as trigger of speciation in painted petal irises (*Lapeirousia*: Iridaceae). *Annals of Botany*. 113: 357-71.
- Karolyi, F., **Colville, J.F.**, Handschuh, S., Metscher, B.D., Krenn, H.W. (2014). One proboscis, two tasks: Adaptations to blood-feeding and nectar-extracting in long-proboscid horse flies (Tabanidae, *Philoliche*). *Arthropod Structure & Development*. 43: 403-413.
- Karolyi, F., Morawetz, L., **Colville, J.F.**, Handschuh, S., Metscher, B.D., Krenn, H.D. (2013). Time management and nectar flow: Flower handling and suction feeding in long-proboscid flies (Nemestrinidae: *Prosoeca*). *Naturwissenschaften*. 100: 1083-1093. **[Featured on Cover Page]**
- Ryan, P.G., **Colville, J.F.**, Picker, M.D. (2013). Juvenile African Pipit feeding on monkey beetles. *Ornithological Observations*. 4: 6-8.
- 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.
- Picker, M.D., **Colville, J.F.**, Burrows, M. (2012). A cockroach that jumps. *Biology Letters*. 8: 390-392.
- **Colville, J.F.** (2009). Understanding the evolutionary radiation of the mega-diverse monkey beetle fauna (Scarabaeidae: Hopliini) of South Africa. *Frontiers in Biogeography*. 1: 24-29.
- 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.