

AVIFAUNAL WALK-THROUGH REPORT

PROPOSED IZIDULI EMOYENI WIND ENERGY FACILITY AND ASSOCIATED
INFRASTRUCTURE NEAR BEDFORD IN THE EASTERN CAPE PROVINCE



May 2022

AFRIMAGE Photography (Pty) Ltd t/a:

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EXECUTIVE SUMMARY

Chris van Rooyen Consulting was contracted by Nala Environmental to conduct a “walk-through” of the proposed 84MW Iziduli Emoyeni Wind Energy Facility (WEF) site on behalf of African Clean Energy Developments (Pty) Ltd (ACED) to identify any avifaunal sensitivities to be considered for the final lay-out of the turbines. ACED is purchasing the Iziduli WEF and is currently finalizing the required layouts and documentation. A layout of 29 turbines (02 June 2021) was provided by Nala for purposes of the walk-through, which was subsequently reduced by -65% to 10 on 15 May 2022.

METHODOLOGY

A site inspection was conducted on 26 - 30 March 2022 to record all avifaunal sensitivities on, and in the immediate vicinity of the project site, which could influence the lay-out of the turbines. Emphasis was placed on locating nests of priority species, particularly species of conservation concern (SCC), which may be impacted by the proposed WEF. Priority species were defined as species included on the list of priority species of the Avian Wind Farm Sensitivity Map of South Africa compiled by Birdlife South Africa (Retief et al. 2012).

RESULTS

A total of 58 species that were recorded on and around the project site during the site surveys 26 - 30 March 2022. The only confirmed priority species nest recorded is an active Secretarybird nest. The nest is 13.1km from the closest turbine and will therefore not impact on the lay-out.

RECOMMENDATIONS

The following recommendations are put forward for inclusion in the Final Environmental Management Programme (EMPr) in addition to the recommendations in the Avian Impact Assessment Report (Jenkins 2010) and the subsequent pre-construction monitoring report (Jenkins et al. 2015):

- It is recommended that a 200m turbine exclusion zone is implemented around all sources of surface water at the project site, as a pre-cautionary measure against Cape Vulture and other SCC collisions (Figure 3). The current 10 turbine lay-out has taken this into account.
- It is recommended that shutdown on demand (SDoD) be implemented for Cape Vultures at all turbines during daylight hours for a trial period of two years in the operational phase, once the wind farm commences with operations, to reduce the risk of collisions of Cape Vultures with the turbines. The need for SDoD must be evaluated by the avifaunal specialist after the two year period to see if it is necessary to continue, based on the number of shutdown events in the preceding two years. If, alternative proven mitigation measures become available during the two year trial period or anytime thereafter, the SDoD can be suspended and replaced by alternative mitigation measures, on the recommendation of the avifaunal specialist.
- It is recommended that all internal medium voltage cables are buried if technically possible.
- Those sections where the medium voltage cable should preferably not be trenched due to technical or environmental reasons, but needs run on overhead poles, the proposed pole designs must be approved by the avifaunal specialist, to ensure that the designs are raptor-friendly.

- It is recommended that bird flight diverters are fitted to all the internal overhead lines.

IMPACT STATEMENT

It is recommended that the lay-out is approved, subject to the implementation of the mitigation measures as detailed in the Environmental Management Programme (EMPr).

DETAILS OF THE SPECIALIST AND EXPERTISE TO COMPILE A WALK-THROUGH REPORT

Chris van Rooyen (Avifaunal Specialist)

Chris has decades experience in the management of wildlife interactions with electricity infrastructure. He was head of the Eskom-Endangered Wildlife Trust (EWT) Strategic Partnership from 1996 to 2007, which has received international acclaim as a model of co-operative management between industry and natural resource conservation. He is an acknowledged global expert in this field and has worked in South Africa, Namibia, Botswana, Lesotho, New Zealand, Texas, New Mexico and Florida. Chris also has extensive project management experience and has received several management awards from Eskom for his work in the Eskom-EWT Strategic Partnership. He is the author of 15 academic papers (some with co-authors), co-author of two book chapters and several research reports. He has been involved as ornithological consultant in numerous power line and wind generation projects. Chris is also co-author of the Best Practice for Avian Monitoring and Impact Mitigation at Wind Development Sites in Southern Africa, which is the industry standard. Chris also works outside the electricity industry and had done a wide range of bird impact assessment studies associated with various residential and industrial developments.

Albert Froneman (Avifaunal Specialist)

Albert has a Master of Science degree in Conservation Biology from the University of Cape Town and started his career in the natural sciences as a Geographic Information Systems (GIS) specialist at Council for Scientific and Industrial Research (CSIR). In 1998, he joined the Endangered Wildlife Trust where he headed up the Airports Company South Africa – EWT Strategic Partnership, a position he held until he resigned in 2008 to work as a private ornithological consultant. Albert's specialist field is the management of wildlife, especially bird related hazards at airports. His expertise is recognized internationally; in 2005 he was elected as Vice Chairman of the International Bird Strike Committee. Since 2010, Albert has worked closely with Chris van Rooyen in developing a protocol for pre-construction monitoring at wind energy facilities, and he is currently jointly coordinating pre-construction monitoring programmes at several wind farm facilities. Albert also works outside the electricity industry and had done a wide range of bird impact assessment studies associated with various residential and industrial developments.

Aliénor (Eleanor) Brassine (Field Specialist)

Aliénor is an Independent Wildlife Biologist and Ecologist, registered Professional Natural Scientist in the discipline of Ecological Science with South African Council for Natural Scientific Professions (SACNASP). She has a Master of Science degree in Zoology from Rhodes University and has extensive experience with avifaunal monitoring at proposed wind farms.

DECLARATION BY THE SPECIALIST

I, Chris van Rooyen, declare that –

- 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 the specialist report relevant to this application, 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 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;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Afrimage Photography t/a Chris van Rooyen Consulting

Name of Company:

31 May 2022

Date

DECLARATION BY THE SPECIALIST

I, Albert Froneman, declare that –

- 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 the specialist report relevant to this application, 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 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;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Afrimage Photography (Pty) Ltd ta Chris van Rooyen Consulting

Name of Company:

31 May 2022

Date

Expertise of Specialist

Curriculum vitae: Chris van Rooyen

Profession/Specialisation : Avifaunal Specialist
Highest Qualification : BA LLB
Nationality : South African
Years of experience : 26 years

Key Experience

Chris van Rooyen has twenty-two years' experience in the assessment of avifaunal interactions with industrial infrastructure. He was employed by the Endangered Wildlife Trust as head of the Eskom-EWT Strategic Partnership from 1996 to 2007, which has received international acclaim as a model of co-operative management between industry and natural resource conservation. He is an acknowledged global expert in this field and has consulted in South Africa, Namibia, Botswana, Lesotho, New Zealand, Texas, New Mexico and Florida. He also has extensive project management experience and he has received several management awards from Eskom for his work in the Eskom-EWT Strategic Partnership. He is the author and/or co-author of 17 conference papers, co-author of two book chapters, several research reports and the current best practice guidelines for avifaunal monitoring at wind farm sites. He has completed around 130 power line assessments; and has to date been employed as specialist avifaunal consultant on more than 50 renewable energy generation projects. He has also conducted numerous risk assessments on existing power lines infrastructure. He also works outside the electricity industry and he has done a wide range of bird impact assessment studies associated with various residential and industrial developments. He serves on the Birds and Wind Energy Specialist Group which was formed in 2011 to serve as a liaison body between the ornithological community and the wind industry.

Key Project Experience

Bird Impact Assessment Studies and avifaunal monitoring for wind-powered generation facilities:

1. Eskom Klipheuwel Experimental Wind Power Facility, Western Cape
2. Mainstream Wind Facility Jeffreys Bay, Eastern Cape (EIA and monitoring)
3. Biotherm, Swellendam, (Excelsior), Western Cape (EIA and monitoring)
4. Biotherm, Napier, (Matjieskloof), Western Cape (pre-feasibility)
5. Windcurrent SA, Jeffreys Bay, Eastern Cape (2 sites) (EIA and monitoring)
6. Caledon Wind, Caledon, Western Cape (EIA)
7. Innwind (4 sites), Western Cape (EIA)
8. Renewable Energy Systems (RES) Oyster Bay, Eastern Cape (EIA and monitoring)
9. Oelsner Group (Kerriefontein), Western Cape (EIA)
10. Oelsner Group (Langefontein), Western Cape (EIA)
11. InCa Energy, Vredendal Wind Energy Facility Western Cape (EIA)
12. Mainstream Loeriesfontein Wind Energy Facility (EIA and monitoring)
13. Mainstream Noupoot Wind Energy Facility (EIA and monitoring)
14. Biotherm Port Nolloth Wind Energy Facility (Monitoring)
15. Biotherm Laingsburg Wind Energy Facility (EIA and monitoring)
16. Langhoogte Wind Energy Facility (EIA)
17. Vleesbaai Wind Energy Facility (EIA and monitoring)
18. St. Helena Bay Wind Energy Facility (EIA and monitoring)
19. Electrawind, St Helena Bay Wind Energy Facility (EIA and monitoring)
20. Electrawind, Vredendal Wind Energy Facility (EIA)
21. SAGIT, Langhoogte and Wolseley Wind Energy facilities
22. Renosterberg Wind Energy Project – 12-month preconstruction avifaunal monitoring project
23. De Aar – North (Mulilo) Wind Energy Project – 12-month preconstruction avifaunal monitoring project
24. De Aar – South (Mulilo) Wind Energy Project – 12-month bird monitoring
25. Namies – Aggenys Wind Energy Project – 12-month bird monitoring
26. Pofadder - Wind Energy Project – 12-month bird monitoring
27. Dwarsrug Loeriesfontein - Wind Energy Project – 12-month bird monitoring
28. Waaihoek – Utrecht Wind Energy Project – 12-month bird monitoring
29. Amathole – Butterworth Utrecht Wind Energy Project – 12-month bird monitoring & EIA specialist
30. PhezukomEmaya and San Kraal Wind Energy Projects 12-month bird monitoring & EIA specialist study (Innwind)
31. Beaufort West Wind Energy Facility 12-month bird monitoring & EIA specialist study (Mainstream)
32. Leeuwdraai Wind Energy Facility 12-month bird monitoring & EIA specialist study (Mainstream)
33. Sutherland Wind Energy Facility 12-month bird monitoring (Mainstream)
34. Maralla Wind Energy Facility 12-month bird monitoring & EIA specialist study (Biotherm)
35. Esizayo Wind Energy Facility 12-month bird monitoring & EIA specialist study (Biotherm)
36. Humansdorp Wind Energy Facility 12-month bird monitoring & EIA specialist study (Cennergi)
37. Aletta Wind Energy Facility 12-month bird monitoring & EIA specialist study (Biotherm)
38. Eureka Wind Energy Facility 12-month bird monitoring & EIA specialist study (Biotherm)
39. Makambako Wind Energy Facility (Tanzania) 12-month bird monitoring & EIA specialist study (Windlab)
40. R355 Wind Energy Facility 12-month bird monitoring (Mainstream)
41. Groenekloof Wind Energy Facility 12-month bird monitoring & EIA specialist study (Mulilo)
42. Tsitsikamma Wind Energy Facility 24-months post-construction monitoring (Cennergi)
43. Noupoot Wind Energy Facility 24-months post-construction monitoring (Mainstream)
44. Kokerboom Wind Energy Facility 12-month bird monitoring & EIA specialist study (Business Venture Investments)
45. Kuruman Wind Energy Facility 12-month bird monitoring & EIA specialist study (Mulilo)
46. Dassieklop Wind Energy Facility 3 years post-construction monitoring (Biotherm)
47. Loeriesfontein 2 Wind Energy Facility 2 years post-construction monitoring (Mainstream)

48. Khobab Wind Energy Facility 2 years post-construction monitoring (Mainstream)
49. Excelsior Wind Energy Facility 18 months construction phase monitoring (Biotherm)
50. Boesmansberg Wind Energy Facility 12-months pre-construction bird monitoring (juwi)
51. Mañhica Wind Energy Facility, Mozambique, 12-months pre-construction monitoring (Windlab)
52. Kwagga Wind Energy Facility, Beaufort West, 12-months pre-construction monitoring (ABO)

53. Pienaarspoort Wind Energy Facility, Touws River, Western Cape, 12-months pre-construction monitoring (ABO).

Bird Impact Assessment Studies for Solar Energy Plants:

1. Concentrated Solar Power Plant, Upington, Northern Cape.
2. Globeleq De Aar and Droogfontein Solar PV Pre- and Post-construction avifaunal monitoring
3. JUWI Kronos PV project, Copperton, Northern Cape
4. Sand Draai CSP project, Groblershoop, Northern Cape
5. Biotherm Helena PV Project, Copperton, Northern Cape
6. Biotherm Letsiao CSP Project, Aggeneys, Northern Cape
7. Biotherm Enamandla PV Project, Aggeneys, Northern Cape
8. Biotherm Sendawo PV Project, Vryburg, North-West
9. Biotherm Tlisitseng PV Project, Lichtenburg, North-West
10. JUWI Hotazel Solar Park Project, Hotazel, Northern Cape
11. Veld Solar One Project, Aggeneys, Northern Cape
12. Brypaal Solar Power Project, Kakamas, Northern Cape
13. ABO Vryburg 1,2,3 Solar PV Project, Vryburg, North-West
14. NamPower CSP Facility near Arandis, Namibia
15. Dayson Klip PV Facility near Upington, Northern Cape
16. Geelkop PV Facility near Upington, Northern Cape

Bird Impact Assessment Studies for the following overhead line projects:

1. Chobe 33kV Distribution line
2. Athene - Umfolozi 400kV
3. Beta-Delphi 400kV
4. Cape Strengthening Scheme 765kV
5. Flurian-Louis-Trichardt 132kV
6. Ghanzi 132kV (Botswana)
7. Ikaros 400kV
8. Matimba-Witkop 400kV
9. Naboomspruit 132kV
10. Tabor-Flurian 132kV
11. Windhoek - Walvisbaai 220 kV (Namibia)
12. Witkop-Overysseel 132kV
13. Breyten 88kV
14. Adis-Phoebus 400kV
15. Dhuvu-Janus 400kV
16. Perseus-Mercury 400kV
17. Gravelotte 132kV
18. Ikaros 400 kV
19. Khanye 132kV (Botswana)
20. Moropule – Thamaga 220 kV (Botswana)
21. Parys 132kV
22. Simplon –Everest 132kV
23. Tutuka-Alpha 400kV
24. Simplon-Der Brochen 132kV
25. Big Tree 132kV
26. Mercury-Ferrum-Garona 400kV
27. Zeus-Perseus 765kV
28. Matimba B Integration Project
29. Caprivi 350kV DC (Namibia)
30. Gerus-Mururani Gate 350kV DC (Namibia)
31. Mmamabula 220kV (Botswana)
32. Steenberg-Der Brochen 132kV
33. Venetia-Paradise T 132kV
34. Burgersfort 132kV
35. Majuba-Umfolozi 765kV
36. Delta 765kV Substation
37. Braamhoek 22kV
38. Steelpoort Merensky 400kV
39. Mmamabula Delta 400kV
40. Delta Epsilon 765kV
41. Gerus-Zambezi 350kV DC Interconnector: Review of proposed avian mitigation measures for the Okavango and Kwando River crossings
42. Giyani 22kV Distribution line
43. Lihobong-Kao 132/11kV distribution power line, Lesotho
44. 132kV Leslie – Wildebeest distribution line

45. A proposed new 50 kV Spoornet feeder line between Sishen and Saldanha
46. Cairns 132kv substation extension and associated power lines
47. Pimlico 132kv substation extension and associated power lines
48. Gyani 22kV
49. Matafin 132kV
50. Nkomazi_Fig Tree 132kV
51. Pebble Rock 132kV
52. Reddersburg 132kV
53. Thaba Combine 132kV
54. Nkomati 132kV
55. Louis Trichardt – Musina 132kV
56. Endicot 44kV
57. Apollo Lepini 400kV
58. Tarlton-Spring Farms 132kV
59. Kuschke 132kV substation
60. Bendstore 66kV Substation and associated lines
61. Kuiseb 400kV (Namibia)
62. Gyani-Malamulele 132kV
63. Watershed 132kV
64. Bakone 132kV substation
65. Eerstegoud 132kV LILO lines
66. Kumba Iron Ore: SWEP - Relocation of Infrastructure
67. Kudu Gas Power Station: Associated power lines
68. Steenberg Booyensdal 132kV
69. Toulon Pumps 33kV
70. Thabatshipi 132kV
71. Witkop-Silica 132kV
72. Bakubung 132kV
73. Nelsriver 132kV
74. Rethabiseng 132kV
75. Tilburg 132kV
76. GaKgapanne 66kV
77. Knobel Gilead 132kV
78. Bochum Knobel 132kV
79. Madibeng 132kV
80. Witbank Railway Line and associated infrastructure
81. Spencer NDP phase 2 (5 lines)
82. Akanani 132kV
83. Hermes-Dominion Reefs 132kV
84. Cape Painsinsula Strengthening Project 400kV
85. Magalakwena 132kV
86. Benfiosa 132kV
87. Dithabaneng 132kV
88. Taunus Diepkloof 132kV
89. Taunus Doornkop 132kV
90. Tweedracht 132kV
91. Jane Furse 132kV
92. Majeje Sub 132kV
93. Tabor Louis Trichardt 132kV
94. Riversong 88kV
95. Mamatsekele 132kV
96. Kabokweni 132kV
97. MDPP 400kV Botswana
98. Marble Hall NDP 132kV
99. Bokmakiere 132kV Substation and LILO lines
100. Styldrift 132kV
101. Taunus – Diepkloof 132kV
102. Bighorn NDP 132kV
103. Waterkloof 88kV
104. Camden – Theta 765kV
105. Dhuva – Minerva 400kV Diversion
106. Lesedi –Grootpan 132kV
107. Waterberg NDP
108. Bulgerivier – Dorset 132kV
109. Bulgerivier – Toulon 132kV
110. Nokeng-Fluorspar 132kV
111. Mantsole 132kV
112. Tshilamba 132kV
113. Thabamooop - Tshebela – Nhlovuko 132kV
114. Arthurseat 132kV
115. Borutho 132kV MTS
116. Volspruit - Potgietersrus 132kV
117. Neotel Optic Fibre Cable Installation Project: Western Cape
117. Matla-Glockner 400kV
118. Delmas North 44kV

119. Houwhoek 11kV Refurbishment
120. Clau-Clau 132kV
121. Ngwedi-Silwerkrans 134kV
122. Nieuwehoop 400kV walk-through
123. Booyesdal 132kV Switching Station
124. Tarlton 132kV
125. Medupi - Witkop 400kV walk-through
126. Germiston Industries Substation
127. Sekgame 132kV
128. Botswana – South Africa 400kV Transfrontier Interconnector
129. Syferkuil – Rampheri 132kV
130. Queens Substation and associated 132kV powerlines
131. Oranjemond 400kV Transmission line
132. Aries – Helios – Juno walk-down
133. Kuruman Phase 1 and 2 Wind Energy facilities 132kV Grid connection
134. Transnet

Bird Impact Assessment Studies for the following residential and industrial developments:

1. Lizard Point Golf Estate
2. Lever Creek Estates
3. Leloko Lifestyle Estates
4. Vaalowers Residential Development
5. Clearwater Estates Grass Owl Impact Study
6. Sommerset Ext. Grass Owl Study
7. Proposed Three Diamonds Trading Mining Project (Portion 9 and 15 of the Farm Blesbokfontein)
8. N17 Section: Springs To Leandra –“Borrow Pit 12 And Access Road On (Section 9, 6 And 28 Of The Farm Winterhoek 314 Ir)
9. South African Police Services Gauteng Radio Communication System: Portion 136 Of The Farm 528 Jq, Lindley.
10. Report for the proposed upgrade and extension of the Zeekoegat Wastewater Treatment Works, Gauteng.
11. Bird Impact Assessment for Portion 265 (a portion of Portion 163) of the farm Rietfontein 189-JR, Gauteng.
12. Bird Impact Assessment Study for Portions 54 and 55 of the Farm Zwartkop 525 JQ, Gauteng.
13. Bird Impact Assessment Study Portions 8 and 36 of the Farm Nooitgedacht 534 JQ, Gauteng.
14. Shumba's Rest Bird Impact Assessment Study
15. Randfontein Golf Estate Bird Impact Assessment Study
16. Zilkaatsnek Wildlife Estate
17. Regenstein Communications Tower (Namibia)
18. Avifaunal Input into Richards Bay Comparative Risk Assessment Study
19. Maquasa West Open Cast Coal Mine
20. Glen Erasmia Residential Development, Kempton Park, Gauteng
21. Bird Impact Assessment Study, Weltevreden Mine, Mpumalanga
22. Bird Impact Assessment Study, Olifantsvlei Cemetery, Johannesburg
23. Camden Ash Disposal Facility, Mpumalanga
24. Lindley Estate, Lanseria, Gauteng
25. Proposed open cast iron ore mine on the farm Lylyveld 545, Northern Cape
26. Avifaunal monitoring for the Sishen Mine in the Northern Cape as part of the EMP requirements
27. Steelport CNC Bird Impact Assessment Study

Professional affiliations

I work under the supervision of and in association with Albert Froneman (MSc Conservation Biology) (SACNASP Zoological Science Registration number 400177/09) as stipulated by the Natural Scientific Professions Act 27 of 2003.



Chris van Rooyen
31 May 2022

Expertise of Specialist

Curriculum vitae: Albert Froneman (Pr.Sci.Nat Registration no: 400177/09)

Profession/Specialisation : Avifaunal Specialist
Highest Qualification : MSc (Conservation Biology)
Nationality : South African
Years of experience : 24 years

Key Qualifications

Albert Froneman (Pr.Sci.Nat) has more than 24 years' experience in the management of avifaunal interactions with industrial infrastructure. He holds a M.Sc. degree in Conservation Biology from the University of Cape Town. He managed the Airports Company South Africa (ACSA) – Endangered Wildlife Trust Strategic Partnership from 1999 to 2008 which has been internationally recognized for its achievements in addressing airport wildlife hazards in an environmentally sensitive manner at ACSA's airports across South Africa. Albert is recognized worldwide as an expert in the field of bird hazard management on airports and has worked in South Africa, Swaziland, Botswana, Namibia, Kenya, Israel, and the USA. He has served as the vice chairman of the International Bird Strike Committee and has presented various papers at international conferences and workshops. At present he is consulting to ACSA with wildlife hazard management on all their airports. He also an accomplished specialist ornithological consultant outside the aviation industry and has completed a wide range of bird impact assessment studies. He has co-authored many avifaunal specialist studies and pre-construction monitoring reports for proposed renewable energy developments across South Africa. He also has vast experience in using Geographic Information Systems to analyse and interpret avifaunal data spatially and derive meaningful conclusions. Since 2009 Albert has been a registered Professional Natural Scientist (reg. nr 400177/09) with The South African Council for Natural Scientific Professions, specialising in Zoological Science.

Key Project Experience

Renewable Energy Facilities –avifaunal monitoring projects in association with Chris van Rooyen Consulting

1. Jeffrey's Bay Wind Farm – 12-months preconstruction avifaunal monitoring project
2. Oysterbay Wind Energy Project – 12-months preconstruction avifaunal monitoring project
3. Ubuntu Wind Energy Project near Jeffrey's Bay – 12-months preconstruction avifaunal monitoring project
4. Bana-ba-Pifu Wind Energy Project near Humansdorp – 12-months preconstruction avifaunal monitoring project
5. Excelsior Wind Energy Project near Caledon – 12-months preconstruction avifaunal monitoring project
6. Laingsburg Spitskopvlakte Wind Energy Project – 12-months preconstruction avifaunal monitoring project
7. Loeriesfontein Wind Energy Project Phase 1, 2 & 3 – 12-months preconstruction avifaunal monitoring project
8. Noupoort Wind Energy Project – 12-months preconstruction avifaunal monitoring project
9. Vleesbaai Wind Energy Project – 12-months preconstruction avifaunal monitoring project
10. Port Nolloth Wind Energy Project – 12-months preconstruction avifaunal monitoring project
11. Langhoogte Caledon Wind Energy Project – 12-months preconstruction avifaunal monitoring project
12. Lunsklip – Stilbaai Wind Energy Project – 12-months preconstruction avifaunal monitoring project
13. Indwe Wind Energy Project – 12-months preconstruction avifaunal monitoring project
14. Zeeland St Helena bay Wind Energy Project – 12-months preconstruction avifaunal monitoring project
15. Wolseley Wind Energy Project – 12-months preconstruction avifaunal monitoring project
16. Renosterberg Wind Energy Project – 12-months preconstruction avifaunal monitoring project
17. De Aar – North (Mulilo) Wind Energy Project – 12-months preconstruction avifaunal monitoring project (2014)
18. De Aar – South (Mulilo) Wind Energy Project – 12-months bird monitoring
19. Namies – Aggenys Wind Energy Project – 12-months bird monitoring
20. Pofadder - Wind Energy Project – 12-months bird monitoring
21. Dwarsrug Loeriesfontein - Wind Energy Project – 12-months bird monitoring
22. Waaihoek – Utrecht Wind Energy Project – 12-months bird monitoring
23. Amathole – Butterworth Utrecht Wind Energy Project – 12-months bird monitoring & EIA specialist study
24. De Aar and Droogfontein Solar PV Pre- and Post-construction avifaunal monitoring
25. Makambako Wind Energy Facility (Tanzania) 12-month bird monitoring & EIA specialist study (Windlab)
26. R355 Wind Energy Facility 12-month bird monitoring (Mainstream)
27. Groenekloof Wind Energy Facility 12-month bird monitoring & EIA specialist study (Mulilo)
28. Tsitsikamma Wind Energy Facility 24-months post-construction monitoring (Cennergi)
29. Noupoort Wind Energy Facility 24-months post-construction monitoring (Mainstream)
30. Kokerboom Wind Energy Facility 12-month bird monitoring & EIA specialist study (Business Venture Investments)
31. Kuruman Wind Energy Facility 12-month bird monitoring & EIA specialist study (Mulilo)
32. Mañhica Wind Energy Facility 12-month bird monitoring & EIA specialist study (Windlab)
33. Kwagga Wind Energy Facility, Beaufort West, 12-months pre-construction monitoring (ABO)
34. Pienaarspoort Wind Energy Facility, Touws River, Western Cape, 12-months pre-construction monitoring (ABO).

Bird Impact Assessment studies and / or GIS analysis:

1. Aviation Bird Hazard Assessment Study for the proposed Madiba Bay Leisure Park adjacent to Port Elizabeth Airport.
2. Extension of Runway and Provision of Parallel Taxiway at Sir Seretse Khama Airport, Botswana Bird / Wildlife Hazard Management Specialist Study
3. Maun Airport Improvements Bird / Wildlife Hazard Management Specialist Study
4. Bird Impact Assessment Study - Bird Helicopter Interaction – The Bitou River, Western Cape Province South Africa
5. Proposed La Mercy Airport – Bird Aircraft interaction specialists study using bird detection radar to assess swallow flocking behaviour
6. KwaZulu Natal Power Line Vulture Mitigation Project – GIS analysis
7. Perseus-Zeus Powerline EIA – GIS Analysis

8. Southern Region Pro-active GIS Blue Crane Collision Project.
9. Specialist advisor ~ Implementation of a bird detection radar system and development of an airport wildlife hazard management and operational environmental management plan for the King Shaka International Airport
10. Matsapha International Airport – bird hazard assessment study with management recommendations
11. Evaluation of aviation bird strike risk at candidate solid waste disposal sites in the Ekurhuleni Metropolitan Municipality
12. Gateway Airport Authority Limited – Gateway International Airport, Polokwane: Bird hazard assessment; Compile a bird hazard management plan for the airport
13. Bird Specialist Study - Evaluation of aviation bird strike risk at the Mwakirunge Landfill site near Mombasa Kenya
14. Bird Impact Assessment Study - Proposed Weltevreden Open Cast Coal Mine Belfast, Mpumalanga
15. Avian biodiversity assessment for the Mafube Colliery Coal mine near Middelburg Mpumalanga
16. Avifaunal Specialist Study - SRVM Volspruit Mining project – Mokopane Limpopo Province
17. Avifaunal Impact Assessment Study (with specific reference to African Grass Owls and other Red List species) Stone Rivers Arch
18. Airport bird and wildlife hazard management plan and training to Swaziland Civil Aviation Authority (SWACAA) for Matsapha and Sikhupe International Airports
19. Avifaunal Impact Scoping & EIA Study - Renosterberg Wind Farm and Solar PV site
20. Bird Impact Assessment Study - Proposed 60 year Ash Disposal Facility near to the Kusile Power Station
21. Avifaunal pre-feasibility assessment for the proposed Montrose dam, Mpumalanga
22. Bird Impact Assessment Study – Proposed ESKOM Phantom Substation near Knysna, Western Cape
23. Habitat sensitivity map for Denham's Bustard, Blue Crane and White-bellied Korhaan in the Kouga Municipal area of the Eastern Cape Province
24. Swaziland Civil Aviation Authority – Sikhuphe International Airport – Bird hazard management assessment
25. Avifaunal monitoring – extension of Specialist Study - SRVM Volspruit Mining project – Mokopane Limpopo Province
26. Avifaunal Specialist Study – Rooikat Hydro Electric Dam – Hope Town, Northern Cape
27. The Stewards Pan Reclamation Project – Bird Impact Assessment study
28. Airports Company South Africa – Avifaunal Specialist Consultant – Airport Bird and Wildlife Hazard Mitigation

Geographic Information System analysis & maps

1. ESKOM Power line Makgalakwena EIA – GIS specialist & map production
2. ESKOM Power line Benficoso EIA – GIS specialist & map production
3. ESKOM Power line Riversong EIA – GIS specialist & map production
4. ESKOM Power line Waterberg NDP EIA – GIS specialist & map production
5. ESKOM Power line Bulge Toulon EIA – GIS specialist & map production
6. ESKOM Power line Bulge DORSET EIA – GIS specialist & map production
7. ESKOM Power lines Marblehall EIA – GIS specialist & map production
8. ESKOM Power line Grootpan Lesedi EIA – GIS specialist & map production
9. ESKOM Power line Tanga EIA – GIS specialist & map production
10. ESKOM Power line Bokmakierie EIA – GIS specialist & map production
11. ESKOM Power line Rietfontein EIA – GIS specialist & map production
12. Power line Anglo Coal EIA – GIS specialist & map production
13. ESKOM Power line Camcoll Jericho EIA – GIS specialist & map production
14. Hartbeespoort Residential Development – GIS specialist & map production
15. ESKOM Power line Mantsole EIA – GIS specialist & map production
16. ESKOM Power line Nokeng Flourspar EIA – GIS specialist & map production
17. ESKOM Power line Greenview EIA – GIS specialist & map production
18. Derdepoort Residential Development – GIS specialist & map production
19. ESKOM Power line Boynton EIA – GIS specialist & map production
20. ESKOM Power line United EIA – GIS specialist & map production
21. ESKOM Power line Gutshwa & Malelane EIA – GIS specialist & map production
22. ESKOM Power line Origstad EIA – GIS specialist & map production
23. Zilkaatsnek Development Public Participation –map production
24. Belfast – Paarde Power line - GIS specialist & map production
25. Solar Park Solar Park Integration Project Bird Impact Assessment Study – avifaunal GIS analysis.
26. Kappa-Omega-Aurora 765kV Bird Impact Assessment Report – Avifaunal GIS analysis.
27. Gamma – Kappa 2nd 765kV – Bird Impact Assessment Report – Avifaunal GIS analysis.
28. ESKOM Power line Kudu-Dorstfontein Amendment EIA – GIS specialist & map production.
29. Proposed Heilbron filling station EIA – GIS specialist & map production
30. ESKOM Lebatlhane EIA – GIS specialist & map production
31. ESKOM Pienaars River CNC EIA – GIS specialist & map production
32. ESKOM Lemara Phiring Ohrigstad EIA – GIS specialist & map production
33. ESKOM Pelly-Warmbad EIA – GIS specialist & map production
34. ESKOM Rosco-Bracken EIA – GIS specialist & map production
35. ESKOM Ermelo-Uitkoms EIA – GIS specialist & map production
36. ESKOM Wisani bridge EIA – GIS specialist & map production
37. City of Tswane – New bulkfeeder pipeline projects x3 Map production
38. ESKOM Lebohang Substation and 132kV Distribution Power Line Project Amendment GIS specialist & map production
39. ESKOM Geluk Rural Powerline GIS & Mapping
40. Eskom Kimberley Strengthening Phase 4 Project GIS & Mapping
41. ESKOM Kwaggafontein - Amandla Amendment Project GIS & Mapping
42. ESKOM Lephalale CNC – GIS Specialist & Mapping
43. ESKOM Marken CNC – GIS Specialist & Mapping
44. ESKOM Lethabong substation and powerlines – GIS Specialist & Mapping
45. ESKOM Magopela- Pitsong 132kV line and new substation – GIS Specialist & Mapping

Professional affiliations

South African Council for Natural Scientific Professions (SACNASP) registered Professional Natural Scientist (reg. nr 400177/09) – specialist field: Zoological Science. Registered since 2009.

A handwritten signature in black ink, appearing to read 'A. Honman', written in a cursive style with a horizontal line underneath.

Signature of the Specialist

1 BACKGROUND

Windlab Developments South Africa Pty Ltd (Windlab) received an Environmental Authorisation for the proposed Iziduli Emoyeni Wind Energy Facility (previously known as Amakhala Emoyeni Phase 4) on 28 August 2012 from the National Department of Environmental Affairs (DEA Ref: 12/12/20/1754/4). The proposed Wind Energy Facility (WEF) was previously part of the greater project concept known as the Amakhala Emoyeni Wind Energy Facility. The WEF was split into four phases in order to align with the Department of Energy's (DOE) Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) requirements restricting a WEF capacity size to 140MW (contracted capacity). Further amendments to the EA dated 02 July 2015, 18 May 2016, 04 October 2016, 15 November 2018 and the latest 02 June 2021 were undertaken.

2 TERMS OF REFERENCE

Chris van Rooyen Consulting was contracted by Nala Environmental to conduct a "walk-through" of the proposed 84MW Iziduli Emoyeni Wind Energy Facility (WEF) site on behalf of African Clean Energy Developments (Pty) Ltd (ACED) to identify any avifaunal sensitivities to be considered for the final lay-out of the turbines. The Iziduli Emoyeni WEF is to be constructed together with the Msenge Emoyeni WEF which has been selected as a preferred bidder project via a private off taker and is currently finalizing the required layouts and documentation in order meet financial close requirements. The authorised layout of 29 turbines (02 June 2021) was provided by Nala for purposes of the walk-through, which was subsequently reduced by -65% to 10 on 15 May 2022.

3 METHODOLOGY

A site inspection was conducted on 26 - 30 March 2022 to record all avifaunal sensitivities on, and in the immediate vicinity of the project site, which could influence the lay-out of the turbines. Emphasis was placed on locating nests of priority species, particularly species of conservation concern (SCC), which may be impacted by the proposed WEF. Priority species were defined as species included on the list of priority species of the Avian Wind Farm Sensitivity Map of South Africa compiled by Birdlife South Africa (Retief et al. 2012).

See Figure 1 for the most recent lay-out and the track log of the field specialist who conducted the walk-through.

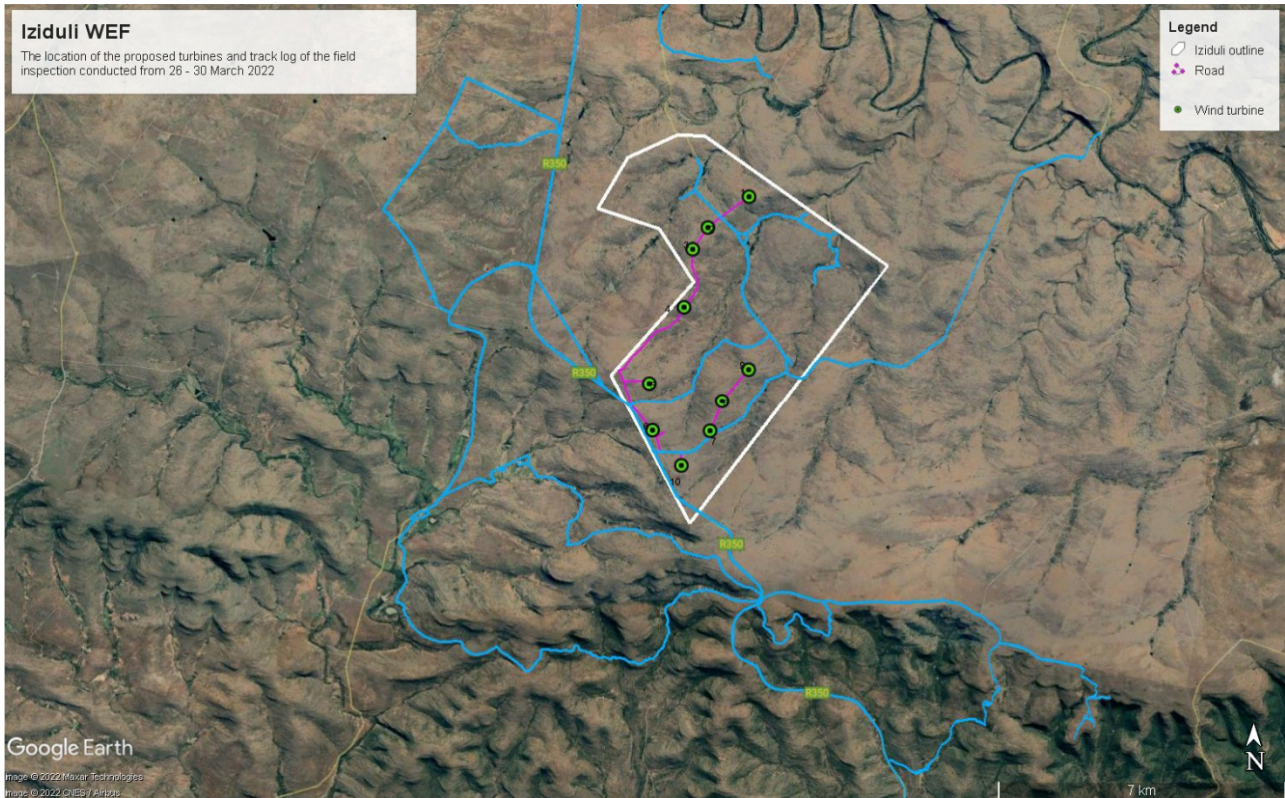


Figure 1: The proposed lay-out of 10 turbines and the tracklog of the field specialist.

4 RECEIVING ENVIRONMENT

4.1 DFFE National Screening Tool

The project site is classified as **VERY HIGH** sensitivity for avifauna according to the **Wind Theme**. The classification is linked to the following: Within 50 km of Cape Vulture colonies, within 40 km of known Cape Vulture roosts sites, areas where susceptible large terrestrial birds were found to be present.

The Animal Species Theme classifies the project site as **HIGH** and **MEDIUM**. These classifications are linked to the potential occurrence of Denham's Bustard *Neotis denhami* (Regionally Vulnerable), Black Harrier *Circus maurus* (Globally and Regionally Endangered) and Southern Black Korhaan *Afrotis afra* (Globally and Regionally Vulnerable).

The project site contains confirmed habitat for SCC as defined in the Protocol for the specialist assessment and minimum report content requirements for environmental impacts on avifaunal species by onshore wind energy generation facilities where the electricity output is 20MW or more (Government Gazette No. 43110 – 20 March 2020). It is important to note that Black Harrier *C. maurus* was only marginally recorded during the SABAP 2 atlasing period to date for the broader area (<https://sabap2.birdmap.africa>), and not during the field survey in March 2022. However this species was recorded during vantage point monitoring conducted in 2010-2011 at the project site. It was identified as a locally resident or visiting raptor, foraging in or moving through the broader area, that will be vulnerable to collision and displacement impacts associated with a development of this kind (Jenkins *et al.* 2015). Both Ludwig's Bustard *N. ludwigii* and Denham's Bustard *N. denhami* have been recorded during the SABAP 2 surveys, the latter also observed during the field surveys in March 2022. Based on these, and observations of Blue Crane *Grus paradisea*, Secretarybird *Sagittarius serpentarius*, Cape

Vulture *Gyps coprotheres*, Verreaux's Eagle *Aquila verreauxii* and Martial Eagle *Polemaetus bellicosus* made during the March 2022 surveys, the classification of **HIGH** sensitivity for avifauna in the Animal Species Theme seems to be the most appropriate for the site.

See Appendix 1 for the DFFE screening reports.

4.2 Bird habitat

The project site is located at the interface between the Albany Thicket and Sub-escarpment Grassland Bioregions (Mucina & Rutherford 2006),

Jenkins *et al.* 2015 gives an accurate description of the project site, which is still applicable: "The project site features open, hilly grassland (in many areas covered by a high density of termite mounds), grading into wooded and succulent-rich thicket vegetation along the drainage lines. The climate is mild, with mean minimum and maximum temperatures 13°C and 22°C respectively, and mean annual rainfall of about 550 mm, which falls year-round but mostly in summer. Altitude averages about 750 m above sea level, rising to nearly 900 m a.s.l. in places. Land use is predominantly stock-farming – cattle, sheep and game. There are multiple farm houses and associated outhouses within or close by the development area, which lies just east of a major thoroughfare – the R350 between Bedford and Grahamstown - and includes a network of lesser, gravel roads and farm tracks. Avian habitats within the impact zone comprise (i) extensive tracts of degraded, lightly wooded grassland, (ii) areas of thicker, thornveld or thicket, including riparian strips, and (iii) a small network of wetlands, dominated by artificial impoundments".

See Appendix 2 for images of the habitat at the project site.

5 RESULTS AND CONCLUSIONS

5.1 Avifauna

Appendix 3 lists the species Jenkins *et al.* (2015) recorded during a year of pre-construction monitoring in 2011 – 2012 (Appendix 3). The 58 species that were recorded on and around the project site during the site surveys 26 - 30 March 2022 are listed in Table 1.

Table 1: Avifauna recorded during surveys at the project site 26 – 30 March 2022. SCC are shaded.

Name		SABAP 2 Reporting Rates		Status		
Species name	Scientific name	Full protocol	Ad hoc protocol	Red List Global	Red List Regional	Endemic (SA)
Bokmakierie	<i>Telophorus zeylonus</i>	31.3	12.5.8	-	-	
Quailfinch	<i>Ortygospiza atricollis</i>	12.5	0.0	-	-	
Secretarybird	<i>Sagittarius serpentarius</i>	9.4	3.1	EN	VU	
Bar-throated Apalis	<i>Apalis thoracica</i>	15.6	3.1	-	-	
Southern Boubou	<i>Laniarius ferrugineus</i>	21.9	9.4	-	-	
Golden-breasted Bunting	<i>Emberiza flaviventris</i>	25.0	12.5	-	-	
Denham's Bustard	<i>Neotis denhami</i>	12.5	0.0	NT	VU	

Name		SABAP 2 Reporting Rates		Status		
Species name	Scientific name	Full protocol	Ad hoc protocol	Red List Global	Red List Regional	Endemic (SA)
Common Buzzard	<i>Buteo buteo</i>	6.3	6.3	-	-	
Jackal Buzzard	<i>Buteo rufofuscus</i>	18.8	9.4	-	-	x
Yellow Canary	<i>Crithagra flaviventris</i>	0.0	0.0	-	-	
Familiar Chat	<i>Oenanthe familiaris</i>	46.9	18.8	-	-	
Sickle-winged Chat	<i>Emarginata sinuata</i>	65.6	6.3	-	-	x
White-breasted Cormorant	<i>Phalacrocorax lucidus</i>	9.4	3.1	-	-	
Blue Crane	<i>Grus paradisea</i>	50.0	12.5	VU	NT	
Pied Crow	<i>Corvus albus</i>	71.9	21.9	-	-	
Jacobin Cuckoo	<i>Clamator jacobinus</i>	3.1	0.0	-	-	
Red-eyed Dove	<i>Streptopelia semitorquata</i>	25.0	25.0	-	-	
Cape Turtle Dove	<i>Streptopelia capicola</i>	68.8	37.5			
Fork-tailed Drongo	<i>Dicrurus adsimilis</i>	50.0	0.0	-	-	
White-faced Whistling Duck	<i>Dendrocygna viduata</i>	0.0	0.0	-	-	
Martial Eagle	<i>Polemaetus bellicosus</i>	3.1	0.0	EN	EN	
Verreaux's Eagle	<i>Aquila verreauxii</i>	0.0	6.3	-	VU	
Western Cattle Egret	<i>Bubulcus ibis</i>	0.0	0.0	-	-	
African Firefinch	<i>Lagonosticta rubricata</i>	3.1	0.0	-	-	
Southern Fiscal	<i>Lanius collaris</i>	50.0	9.4	-	-	
Egyptian Goose	<i>Alopochen aegyptiaca</i>	50.0	18.8	-	-	
Pale Chanting Goshawk	<i>Melierax canorus</i>	43.8	9.4	-	-	
Little Grebe	<i>Tachybaptus ruficollis</i>	25.0	6.3	-	-	
Black-headed Heron	<i>Ardea melanocephala</i>	3.1	0.0	-	-	
Grey Heron	<i>Ardea cinerea</i>	25.0	9.4	-	-	
Hadada Ibis	<i>Bostrychia hagedash</i>	46.9	21.9	-	-	
Rock Kestrel	<i>Falco rupicolus</i>	43.8	9.4	-	-	
Southern Black Korhaan	<i>Afrotis afra</i>	28.1	12.5	VU	VU	x
Blacksmith Lapwing	<i>Vanellus armatus</i>	21.9	18.8	-	-	
Crowned Lapwing	<i>Vanellus coronatus</i>	40.6	6.3	-	-	
Large-billed Lark	<i>Galerida magnirostris</i>	53.1	12.5	-	-	x
Monotonous Lark	<i>Mirafra passerina</i>	0	0			
Spike-heeled Lark	<i>Chersomanes albofasciata</i>	53.1	6.3	-	-	
Rock Martin	<i>Ptyonoprogne fuligula</i>	28.1	0.0	-	-	
Speckled Pigeon	<i>Columba guinea</i>	40.6	6.3	-	-	
African Pipit	<i>Anthus cinnamomeus</i>	87.5	31.3	-	-	
Common Quail	<i>Coturnix coturnix</i>	18.8	3.1	-	-	
South African Shelduck	<i>Tadorna cana</i>	37.5	21.9	-	-	
Red-backed Shrike	<i>Lanius collurio</i>	15.6	0.0	-	-	
African Spoonbill	<i>Platalea alba</i>	6.3	0.0	-	-	
Cape Starling	<i>Lamprotornis nitens</i>	65.6	21.9	-	-	
Pied Starling	<i>Lamprotornis bicolor</i>	46.9	18.8	-	-	x
Red-winged Starling	<i>Onychognathus morio</i>	75.0	15.6	-	-	
Greater Double-collared Sunbird	<i>Cinnyris afer</i>	12.5	9.4	-	-	x
Barn Swallow	<i>Hirundo rustica</i>	37.5	9.4	-	-	
White-rumped Swift	<i>Apus caffer</i>	25.0	12.5	-	-	
Spotted Thick-knee	<i>Burhinus capensis</i>	9.4	0.0	-	-	
Cape Rock Thrush	<i>Monticola rupestris</i>	0.0	0.0	-	-	x
Cape Vulture	<i>Gyps coprotheres</i>	3.1	3.1	EN	EN	
African Pied Wagtail	<i>Motacilla aguimp</i>	0.0	0.0			
Cape Wagtail	<i>Motacilla capensis</i>	50.0	28.1	-	-	

Name		SABAP 2 Reporting Rates		Status		
Species name	Scientific name	Full protocol	Ad hoc protocol	Red List Global	Red List Regional	Endemic (SA)
Chestnut-vented Warbler	<i>Curruca subcoerulea</i>	40.6	21.9	-	-	
Rufous-eared Warbler	<i>Malcorus pectoralis</i>	46.9	6.3	-	-	

5.2 Nests

The following nests were recorded during the site surveys from 26 – 30 March 2022:

1. N1: Pied Crow
2. N2: Pied Crow
3. N3: 2 x Pale Chanting Goshawk/Pied Crow nests
4. N4: Pied Crow
5. N5: Old raptor nest
6. N6: Old nest of Hamerkop?
7. N7: Small raptor nest?
8. N8: Small raptor nest
9. N9: Secretarybird nest (active)

The only confirmed priority species nest was nest N9, i.e. an active Secretarybird nest. The nest is 13.1km from the closest turbine and will therefore not impact on the lay-out (Figure 2).

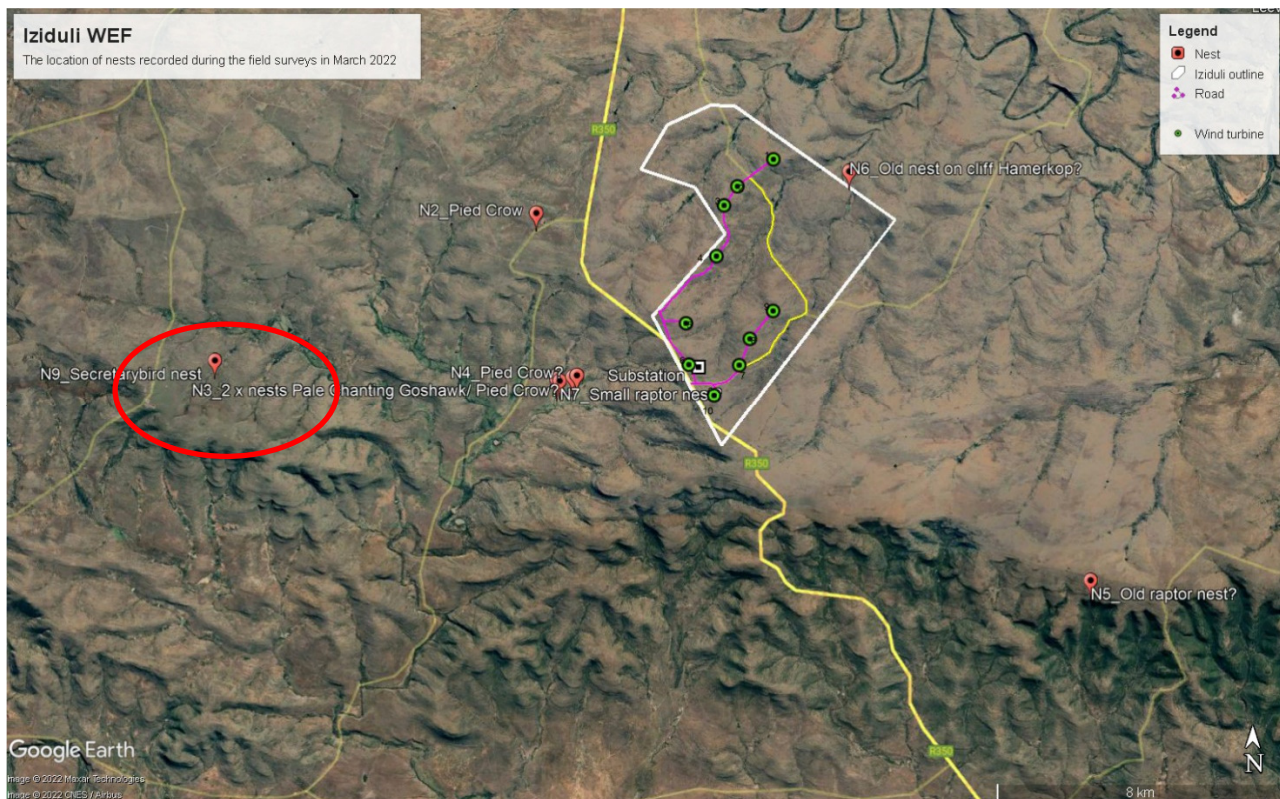


Figure 2: The nests identified during the walk-through exercise 26 - 30 March 2022.

5.3 Other sensitivities

Surface water is crucially important for priority avifauna including many SCC. It is important to leave open space with no obstructions for birds to access and leave the surface water area unhindered. Vultures in particular often congregate in large groups around dams to bath and drink. There is at least one known Cape Vulture *G. coprotheres* colony (Agieskloof) located within a 50km radius northeast of the project site. This is believed to be mainly a summer roost, used by up to 120 birds or even more in the off-season, and much depleted in the winter (from Feb-March to Sept-Oct) when most of these birds move east to breed (Boshoff et al. 2009a). Cape Vultures were observed roosting on the existing high voltage lines at then project site during the field visit in March 2022.

6 RECOMMENDATIONS

The following recommendations are put forward for inclusion in the Final Environmental Management Programme (EMPr) in addition to the recommendations in the Avian Impact Assessment Report (Jenkins 2010) and the subsequent pre-construction monitoring report (Jenkins et al. 2015):

- It is recommended that a 200m turbine exclusion zone is implemented around all sources of surface water at the project site, as a pre-cautionary measure against Cape Vulture and other SCC collisions (Figure 3). The current 10 turbine lay-out has taken this into account.
- It is recommended that shutdown on demand (SDoD) be implemented for Cape Vultures at all turbines during daylight hours for a trial period of two years in the operational phase, once the wind farm commences with operations, to reduce the risk of collisions of Cape Vultures with the turbines. The need for SDoD must be evaluated by the avifaunal specialist after the two year period to see if it is necessary to continue, based on the number of shutdown events in the preceding two years. If, alternative proven mitigation measures become available during the two year trial period or anytime thereafter, the SDoD can be suspended and replaced by alternative mitigation measures, on the recommendation of the avifaunal specialist.
- It is recommended that all internal medium voltage cables are buried if technically possible.
- Those sections where the medium voltage cable should preferably not be trenched due to technical or environmental reasons, but needs run on overhead poles, the proposed pole designs must be approved by the avifaunal specialist, to ensure that the designs are raptor-friendly.
- It is recommended that bird flight diverters are fitted to all the internal overhead lines.

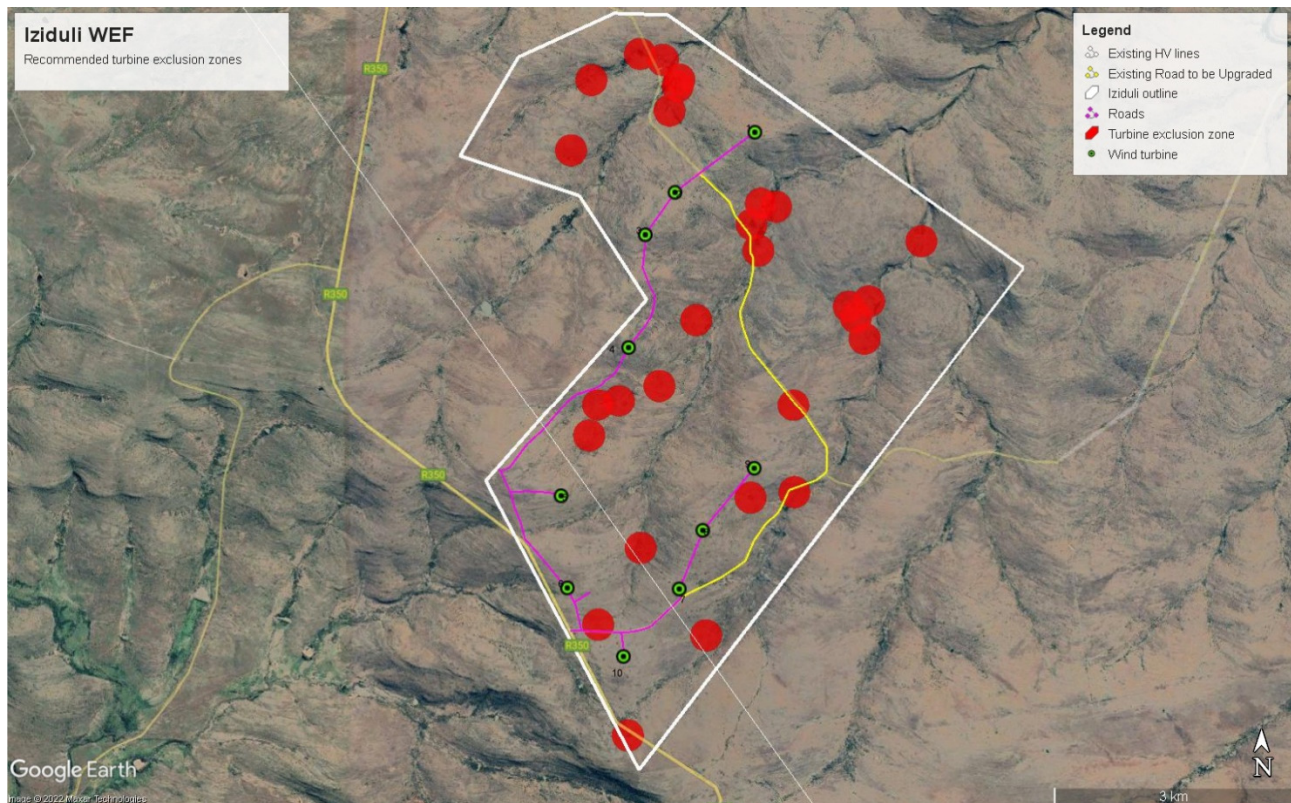


Figure 3: The 10 turbine layout with implemented buffer zones around water points

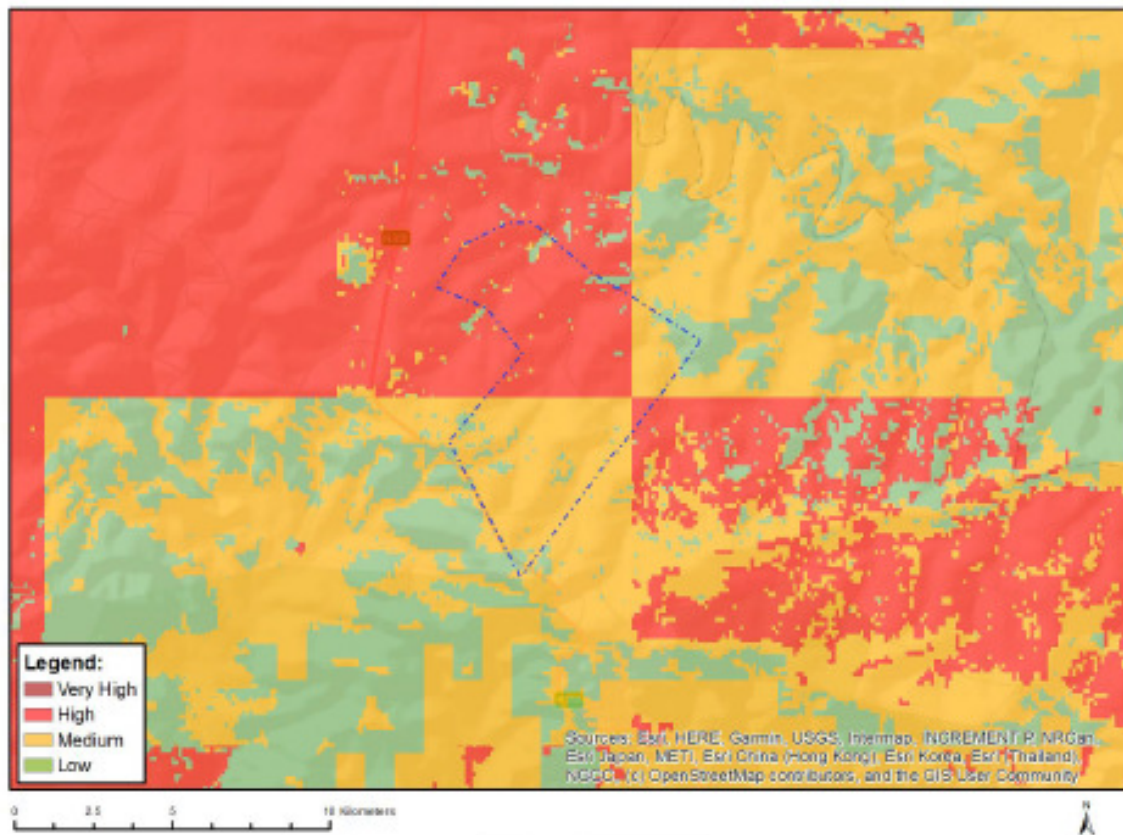
7 IMPACT STATEMENT

It is recommended that the lay-out is approved, subject to the implementation of the mitigation measures as detailed in the Environmental Management Programme (EMPr).

8 REFERENCES

- Boshoff, A., Piper, S. & Michael, M. 2009a. On the distribution and breeding status of the Cape Griffon *Gyps coprotheres* in the Eastern Cape, province, South Africa. *Ostrich* 80: 85-92.
- Jenkins, A.R. 2010. Amakhala Emoyeni Wind Energy Facility: Avian impact assessment. Report to Savannah Environmental Pty (Ltd). Avisense Consulting.
- Jenkins, A.R., Du Plessis, J., Colyn, R., & Cook, P-J. 2015. Iziduli Emoyeni Wind Energy Facility, Avian impact risk assessment and mitigation scheme. Avisense Consulting.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



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

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Circus maurus
High	Aves-Afrotis afra
Low	Subject to confirmation
Medium	Aves-Afrotis afra
Medium	Aves-Circus maurus
Medium	Aves-Neotis denhami

APPENDIX 2: BIRD HABITAT



Figure 1: Grassland habitat at the project site



Figure 1: Woodland habitat at the project site

APPENDIX 3. Annotated list of the bird species considered likely to occur within the impact zone of the proposed Iziduli Emoyeni Wind Energy Facility. Species seen during the time spent on site appear in **bold (Jenkins et al. 2015)**.

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Common Ostrich	<i>Struthio camelus</i>			X		
Grey-winged Francolin	<i>Scleroptila africanus</i>		Endemic	X		
Common Quail	<i>Coturnix coturnix</i>			X		
Helmeted Guineafowl	<i>Numida meleagris</i>			X		
Egyptian Goose	<i>Alopochen aegyptiaca</i>					X
South African Shelduck	<i>Tadorna cana</i>		Endemic			X
Spur-winged Goose	<i>Plectropterus gambensis</i>					X
White-faced Duck	<i>Dendrocygna viduata</i>					X
African Black Duck	<i>Anas sparsa</i>					X
Yellow-billed Duck	<i>Anas undulata</i>					X
Cape Shoveler	<i>Anas smithii</i>		Endemic			X
Cape Teal	<i>Anas capensis</i>					X
Red-billed Teal	<i>Anas erythrorhyncha</i>					X
Greater Honeyguide	<i>Indicator indicator</i>				X	
Lesser Honeyguide	<i>Indicator minor</i>				X	
Red-throated Wryneck	<i>Jynx ruficollis</i>				X	
Cardinal Woodpecker	<i>Dendropicos fuscescens</i>				X	
Acacia Pied Barbet	<i>Tricholaema leucomelas</i>		Near-endemic		X	
Black-collared Barbet	<i>Lybius torquatus</i>				X	

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Red-fronted Tinkerbird	<i>Pogoniulus pusillus</i>				X	
Crowned Hornbill	<i>Tockus alboterminatus</i>				X	
African Hoopoe	<i>Upupa africana</i>				X	
Green Wood-Hoopoe	<i>Phoeniculus purpureus</i>				X	
European Roller	<i>Coracias garrulus</i>			X		
Malachite Kingfisher	<i>Alcedo cristata</i>					X
Brown-hooded Kingfisher	<i>Halcyon albiventris</i>				X	
Giant Kingfisher	<i>Megaceryle maximus</i>					X
Pied Kingfisher	<i>Ceryle rudis</i>					X
European Bee-eater	<i>Merops apiaster</i>			X		
White-backed Mousebird	<i>Colius colius</i>				X	
Speckled Mousebird	<i>Colius striatus</i>				X	
Red-faced Mousebird	<i>Urocolius indicus</i>				X	
Jacobin Cuckoo	<i>Clamator jacobinus</i>				X	
Great Spotted Cuckoo	<i>Clamator glandarius</i>				X	
Red-chested Cuckoo	<i>Cuculus solitarius</i>				X	
Black Cuckoo	<i>Cuculus clamosus</i>				X	
Common Cuckoo	<i>Cuculus canorus</i>				X	
Klaas's Cuckoo	<i>Chrysococcyx klaas</i>				X	
Diderick Cuckoo	<i>Chrysococcyx caprius</i>				X	
Burchell's Coucal	<i>Centropus burchellii</i>					X
Alpine Swift	<i>Tachymarptis melba</i>			X		
Common Swift	<i>Apus apus</i>			X		

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
African Black Swift	<i>Apus barbatus</i>			X		
Little Swift	<i>Apus affinis</i>			X		
Horus Swift	<i>Apus horus</i>			X		
White-rumped Swift	<i>Apus caffer</i>			X		
Barn Owl	<i>Tyto alba</i>			X	X	
African Scops Owl	<i>Otus senegalensis</i>				X	
Cape Eagle-Owl	<i>Bubo capensis</i>			X		
Spotted Eagle-Owl	<i>Bubo africanus</i>			X	X	
Fiery-necked Nightjar	<i>Caprimulgus pectoralis</i>				X	
Rufous-cheeked Nightjar	<i>Caprimulgus rufigena</i>				X	
Rock Dove	<i>Columba livia</i>			X		
Speckled Pigeon	<i>Columba guinea</i>			X		
African Olive-Pigeon	<i>Columba arquatrix</i>				X	
Laughing Dove	<i>Streptopelia senegalensis</i>			X	X	
Cape Turtle-Dove	<i>Streptopelia capicola</i>			X	X	
Red-eyed Dove	<i>Streptopelia semitorquata</i>				X	
Namaqua Dove	<i>Oena capensis</i>			X		
Denham's Bustard	<i>Neotis denhami</i>	Vulnerable		X		
Ludwig's Bustard	<i>Neotis ludwigii</i>	Vulnerable	Near-endemic	X		
Kori Bustard	<i>Aredeotis kori</i>	Vulnerable		X		
Southern Black Korhaan	<i>Afrotis afra</i>		Endemic	X		
Karoo Korhaan	<i>Eupodotis vigorsii</i>		Endemic	X		
White-bellied Korhaan	<i>Eupodotis senegalensis</i>	Vulnerable		X		

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Blue Crane	<i>Anthropoides paradiseus</i>	Vulnerable	Endemic	X		X
African Rail	<i>Rallus caerulescens</i>					X
Black Crake	<i>Amaurornis flavirostris</i>					X
Common Moorhen	<i>Gallinula chloropus</i>					X
Red-knobbed Coot	<i>Fulica cristata</i>					X
Namaqua Sandgrouse	<i>Pterocles namaqua</i>		Near-endemic	X		
African Snipe	<i>Gallinago nigripennis</i>					X
Marsh Sandpiper	<i>Tringa stagnatilis</i>					X
Common Greenshank	<i>Tringa nebularia</i>					X
Common Sandpiper	<i>Actitis hypoleucos</i>					X
African Jacana	<i>Actophilornis africanus</i>					X
Spotted Thick-knee	<i>Burhinus capensis</i>			X		
Black-winged Stilt	<i>Himantopus himantopus</i>					X
Pied Avocet	<i>Recurvirostra avosetta</i>					X
Kittlitz's Plover	<i>Charadrius pecuarius</i>			X		X
Three-banded Plover	<i>Charadrius tricollaris</i>					X
Blacksmith Lapwing	<i>Vanellus armatus</i>					X
Crowned Lapwing	<i>Vanellus coronatus</i>			X		
Double-banded Courser	<i>Rhinoptilus africanus</i>			X		
Burchell's Courser	<i>Cursorius rufus</i>		Endemic	X		
Grey-headed Gull	<i>Larus cirrocephalus</i>					X
Whiskered Tern	<i>Chlidonias hybrida</i>					X
White-winged Tern	<i>Chlidonias leucopterus</i>					X

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Black-shouldered Kite	<i>Elanus caeruleus</i>			X	X	
Yellow-billed Kite	<i>Milvus migrans</i>			X	X	
African Fish-Eagle	<i>Haliaeetus vocifer</i>				X	X
Cape Vulture	<i>Gyps coprotheres</i>	Vulnerable	Endemic	X		
African Marsh-Harrier	<i>Circus ranivorus</i>	Vulnerable				X
Black Harrier	<i>Circus maurus</i>	Near-threatened	Endemic	X		X
Pallid Harrier	<i>Circus macrourus</i>	Near-threatened		X		
African Harrier-Hawk	<i>Polyboroides typus</i>			X	X	
Southern Pale Chanting Goshawk	<i>Melierax canorus</i>		Near-endemic	X	X	
Gabar Goshawk	<i>Melierax gabar</i>				X	
African Goshawk	<i>Accipiter tachiro</i>				X	
Little Sparrowhawk	<i>Accipiter minullus</i>				X	
Rufous-chested Sparrowhawk	<i>Accipiter rufiventris</i>			X	X	
Black Sparrowhawk	<i>Accipiter melanoleucus</i>				X	
Steppe Buzzard	<i>Buteo vulpinus</i>			X	X	
Jackal Buzzard	<i>Buteo rufofuscus</i>		Endemic	X	X	
Verreaux's Eagle	<i>Aquila verreauxii</i>			X		
Booted Eagle	<i>Aquila pennatus</i>			X		
Martial Eagle	<i>Polemaetus bellicosus</i>	Vulnerable		X	X	
Secretarybird	<i>Sagittarius serpentarius</i>	Near-threatened		X		
Lesser Kestrel	<i>Falco naumanni</i>	Vulnerable		X		
Rock Kestrel	<i>Falco rupicolus</i>			X		

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Greater Kestrel	<i>Falco rupicoloides</i>			X		
Amur Falcon	<i>Falco amurensis</i>			X		
Eurasian Hobby	<i>Falco subbuteo</i>			X	X	
Lanner Falcon	<i>Falco biarmicus</i>	Near-threatened		X		
Peregrine Falcon	<i>Falco peregrinus</i>	Near-threatened		X		
Little Grebe	<i>Tachybaptus ruficollis</i>					X
Black-necked Grebe	<i>Podiceps nigricollis</i>					X
African Darter	<i>Anhinga rufa</i>					X
Reed Cormorant	<i>Phalacrocorax africanus</i>					X
White-breasted Cormorant	<i>Phalacrocorax lucidus</i>					X
Little Egret	<i>Egretta garzetta</i>					X
Yellow-billed Egret	<i>Egretta intermedia</i>					X
Great Egret	<i>Egretta alba</i>					X
Grey Heron	<i>Ardea cinerea</i>					X
Black-headed Heron	<i>Ardea melanocephala</i>			X		X
Goliath Heron	<i>Ardea goliath</i>					X
Purple Heron	<i>Ardea purpurea</i>					X
Cattle Egret	<i>Bubulcus ibis</i>			X		X
Squacco Heron	<i>Ardeola ralloides</i>					X
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>					X
Little Bittern	<i>Ixobrychus minutus</i>					X
Hamerkop	<i>Scopus umbretta</i>					X

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Glossy Ibis	<i>Plegadis falcinellus</i>					X
Hadedda Ibis	<i>Bostrychia hagedash</i>				X	X
African Sacred Ibis	<i>Threskiornis aethiopicus</i>					X
African Spoonbill	<i>Platalea alba</i>					X
Yellow-billed Stork	<i>Mycteria ibis</i>	Near-threatened				X
Black Stork	<i>Ciconia nigra</i>	Near-threatened		X		X
White Stork	<i>Ciconia ciconia</i>			X		X
Eurasian Golden Oriole	<i>Oriolus oriolus</i>				X	
Black-headed Oriole	<i>Oriolus larvatus</i>				X	
Fork-tailed Drongo	<i>Dicrurus adsimilis</i>				X	
African Paradise-Flycatcher	<i>Terpsiphone viridis</i>				X	
Black-backed Puffback	<i>Dryoscopus cubla</i>				X	
Southern Tchagra	<i>Tchagra tchagra</i>		Endemic		X	
Southern Boubou	<i>Laniarius ferrugineus</i>		Endemic		X	
Bokmakierie	<i>Telophorus zeylonus</i>		Near-endemic		X	
Olive Bush-Shrike	<i>Telophorus olivaceus</i>		Near-endemic		X	
Cape Batis	<i>Batis capensis</i>		Endemic		X	
Chinspot Batis	<i>Batis molitor</i>				X	
Pirit Batis	<i>Batis pririt</i>		Near-endemic		X	
Cape Crow	<i>Corvus capensis</i>			X		
Pied Crow	<i>Corvus albus</i>			X	X	
White-necked Raven	<i>Corvus albicollis</i>			X		

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Red-backed Shrike	<i>Lanius collurio</i>			X	X	
Lesser Grey Shrike	<i>Lanius minor</i>			X		
Common Fiscal	<i>Lanius collaris</i>			X	X	
Cape Penduline-Tit	<i>Anthoscopus minutus</i>		Near-endemic		X	
Grey Tit	<i>Parus afer</i>		Endemic	X	X	
Southern Black Tit	<i>Parus niger</i>			X	X	
Sand Martin	<i>Riparia riparia</i>			X		X
Brown-throated Martin	<i>Riparia paludicola</i>					X
Banded Martin	<i>Riparia cincta</i>			X		X
Barn Swallow	<i>Hirundo rustica</i>			X		X
White-throated Swallow	<i>Hirundo albigularis</i>					X
Pearl-breasted Swallow	<i>Hirundo dimidiata</i>			X		X
Greater Striped Swallow	<i>Hirundo cucullata</i>			X		X
Lesser Striped Swallow	<i>Hirundo abyssinica</i>			X		X
South African Cliff-Swallow	<i>Hirundo spilodera</i>		Breeding endemic	X		
Rock Martin	<i>Hirundo fuligula</i>			X		
Common House-Martin	<i>Delichon urbicum</i>			X		X
Black Saw-wing	<i>Psalidoprocne holomelaena</i>				X	
Dark-capped Bulbul	<i>Pycnonotus tricolor</i>				X	
African Red-eyed Bulbul	<i>Pycnonotus nigricans</i>		Near-endemic		X	
Cape Bulbul	<i>Pycnonotus capensis</i>		Endemic		X	
Sombre Greenbul	<i>Andropadus importunus</i>				X	

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light Acacia woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Fairy Flycatcher	<i>Stenostira scita</i>		Endemic	X	X	
Cape Grassbird	<i>Sphenoeacus afer</i>		Endemic	X		
Long-billed Crombec	<i>Sylvietta rufescens</i>				X	
Yellow-bellied Eremomela	<i>Eremomela icteropygialis</i>				X	
Karoo Eremomela	<i>Eremomela gregalis</i>		Endemic	X		
Little Rush-Warbler	<i>Bradypterus baboecala</i>					X
African Reed-Warbler	<i>Acrocephalus baeticatus</i>					X
Lesser Swamp Warbler	<i>Acrocephalus gracilirostris</i>					X
Willow Warbler	<i>Phylloscopus trochilus</i>				X	
Layard's Tit-Babblers	<i>Parisoma layardi</i>		Endemic	X	X	
Chestnut-vented Tit-Babblers	<i>Parisoma subcaeruleum</i>		Near-endemic	X	X	
Garden Warbler	<i>Sylvia borin</i>				X	
Cape White-eye	<i>Zosterops virens</i>		Endemic		X	
Orange River White-eye	<i>Zosterops pallidus</i>		Endemic		X	
Lazy Cisticola	<i>Cisticola aberrans</i>			X		
Grey-backed Cisticola	<i>Cisticola subruficapilla</i>			X	X	
Wailing Cisticola	<i>Cisticola lais</i>				X	
Levaillant's Cisticola	<i>Cisticola tinniens</i>					X
Neddicky	<i>Cisticola fulvicapilla</i>			X		
Zitting Cisticola	<i>Cisticola juncidis</i>			X		
Desert Cisticola	<i>Cisticola aridulus</i>			X		
Cloud Cisticola	<i>Cisticola textrix</i>		Near-endemic	X		

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				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Black-chested Prinia	<i>Prinia flavicans</i>		Near-endemic		X	
Karoo Prinia	<i>Prinia maculosa</i>		Endemic	X	X	
Namaqua Warbler	<i>Phragmacia substriata</i>		Endemic		X	
Rufous-eared Warbler	<i>Malcorus pectoralis</i>		Endemic	X		
Bar-throated Apalis	<i>Apalis thoracica</i>				X	
Yellow-breasted Apalis	<i>Apalis flavida</i>				X	
Melodious Lark	<i>Mirafraga cheniana</i>	Near-threatened	Endemic	X		
Rufous-naped Lark	<i>Mirafraga africana</i>			X		
Cape Clapper Lark	<i>Mirafraga apiata</i>		Endemic	X		
Eastern Clapper Lark	<i>Mirafraga fasciolata</i>		Near-endemic	X		
Sabota Lark	<i>Calendulauda sabota</i>		Near-endemic	X		
Spike-heeled Lark	<i>Chersomanes albofasciata</i>			X		
Eastern Long-billed Lark	<i>Certhilauda semitorquata</i>		Endemic	X		
Grey-backed Sparrowlark	<i>Eremopterix verticalis</i>		Near-endemic	X		
Red-capped Lark	<i>Calandrella cinerea</i>			X		
Large-billed Lark	<i>Galerida magnirostris</i>		Endemic	X		
Cape Rock-Thrush	<i>Monticola rupestris</i>		Endemic	X		
Sentinel Rock-Thrush	<i>Monticola explorator</i>		Endemic	X		
Karoo Thrush	<i>Turdus smithi</i>		Endemic	X	X	
Chat Flycatcher	<i>Bradornis infuscatus</i>		Near-endemic	X		
Fiscal Flycatcher	<i>Sigelus silens</i>		Endemic		X	
Spotted Flycatcher	<i>Muscicapa striata</i>				X	

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
African Dusky Flycatcher	<i>Muscicapa adusta</i>				X	
Cape Robin-Chat	<i>Cossypha caffra</i>				X	
White-browed Scrub-Robin	<i>Cercotrichas leucophrys</i>				X	
Karoo Scrub-Robin	<i>Cercotrichas coryphoeus</i>		Endemic	X	X	
African Stonechat	<i>Saxicola torquatus</i>			X		
Mountain Wheatear	<i>Oenanthe monticola</i>		Near-endemic	X		
Capped Wheatear	<i>Oenanthe pileata</i>			X		
Sickle-winged Chat	<i>Cercomela sinuata</i>		Endemic	X		
Karoo Chat	<i>Cercomela schlegelii</i>		Near-endemic	X		
Familiar Chat	<i>Cercomela familiaris</i>			X		
Ant-eating Chat	<i>Myrmecocichla formicivora</i>		Endemic	X		
Mocking Cliff-Chat	<i>Thamnolaea cinnamomeiventris</i>			X		
Pale-winged Starling	<i>Onychognathus nabouroup</i>		Near-endemic	X		
Red-winged Starling	<i>Onychognathus morio</i>			X		
Cape Glossy Starling	<i>Lamprotornis nitens</i>				X	
Pied Starling	<i>Spreo bicolor</i>		Endemic	X		
Wattled Starling	<i>Creatophora cinerea</i>			X	X	
Common Starling	<i>Sturnus vulgaris</i>				X	
Amethyst Sunbird	<i>Chalcomitra amethystina</i>				X	
Malachite Sunbird	<i>Nectarinia famosa</i>			X	X	

Species	Scientific name	Conservation status	Endemism	Habitat		
				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Southern Double-collared Sunbird	<i>Cinnyris chalybeus</i>		Endemic	X	X	
Greater Double-collared Sunbird	<i>Cinnyris afer</i>		Endemic	X		
Dusky Sunbird	<i>Cinnyris fuscus</i>		Near-endemic	X		
Scaly-feathered Finch	<i>Sporopipes squamifrons</i>		Near-endemic	X		
White-browed Sparrow-Weaver	<i>Plocepasser mahali</i>			X		
Spectacled Weaver	<i>Ploceus ocularis</i>				X	
Cape Weaver	<i>Ploceus capensis</i>		Endemic	X	X	X
Southern Masked-Weaver	<i>Ploceus velatus</i>			X	X	X
Village Weaver	<i>Ploceus cucullatus</i>				X	
Red-billed Quelea	<i>Quelea quelea</i>			X		X
Yellow-crowned Bishop	<i>Euplectes afer</i>					X
Southern Red Bishop	<i>Euplectes orix</i>			X		X
Yellow Bishop	<i>Euplectes capensis</i>			X		X
Long-tailed Widowbird	<i>Euplectes progne</i>			X		X
Red-collared Widowbird	<i>Euplectes ardens</i>			X		
African Quailfinch	<i>Ortygospiza atricollis</i>			X		
Red-headed Finch	<i>Amadina erythrocephala</i>		Near-endemic	X	X	
Swee Waxbill	<i>Coccygia melanotis</i>		Endemic		X	
Common Waxbill	<i>Estrilda astrild</i>			X	X	X
Red-billed Firefinch	<i>Lagonosticta senegala</i>				X	
African Firefinch	<i>Lagonosticta rubricata</i>				X	

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				Grasslands (incl. light <i>Acacia</i> woodland)	Thicket (incl. dense riparian woodland)	Wetlands (incl. vleis, rivers and dams)
Bronze Mannikin	<i>Spermestes cucullatus</i>			X		X
Pin-tailed Whydah	<i>Vidua macroura</i>			X		
Dusky Indigobird	<i>Vidua funerea</i>				X	
House Sparrow	<i>Passer domesticus</i>			X	X	X
Cape Sparrow	<i>Passer melanurus</i>		Near-endemic	X		
Southern Grey-headed Sparrow	<i>Passer diffusus</i>			X		
Yellow-throated Petronia	<i>Petronia supercilialis</i>				X	
African Pied Wagtail	<i>Motacilla aguimp</i>					X
Cape Wagtail	<i>Motacilla capensis</i>			X		X
Yellow Wagtail	<i>Motacilla flava</i>					X
Cape Longclaw	<i>Macronyx capensis</i>		Endemic	X		
African Rock Pipit	<i>Anthus crenatus</i>		Endemic	X		
African Pipit	<i>Anthus cinnamomeus</i>			X		
Plain-backed Pipit	<i>Anthus leucophrys</i>			X		
Buffy Pipit	<i>Anthus vaalensis</i>			X		
Long-billed Pipit	<i>Anthus similis</i>			X		
Cape Canary	<i>Serinus canicollis</i>		Endemic	X	X	
Black-headed Canary	<i>Serinus alario</i>		Endemic	X		
Yellow-fronted Canary	<i>Crithagra mozambicus</i>			X	X	
Black-throated Canary	<i>Crithagra atrogularis</i>			X		
Forest Canary	<i>Crithagra scotops</i>		Endemic		X	
Yellow Canary	<i>Crithagra flaviventris</i>		Near-endemic	X		
Brimstone Canary	<i>Crithagra sulphuratus</i>			X	X	
White-throated Canary	<i>Crithagra albogularis</i>		Near-endemic	X		

Streaky-headed Seedeater	<i>Crithagra gularis</i>			X	X	
Lark-like Bunting	<i>Emberiza impetuani</i>		Near-endemic	X		
Cinnamon-breasted Bunting	<i>Emberiza tahapisi</i>			X		
Cape Bunting	<i>Emberiza capensis</i>		Near-endemic	X		
Golden-breasted Bunting	<i>Emberiza flaviventris</i>				X	