Excelsior Wind Farm: Biodiversity Action Plan V.2

Contents

1. Introduction and Project description

Excelsior Wind Energy Facility (the Project) is a 13-turbine wind energy facility with installed capacity of 32.5 MW, between Bredasdorp and Swellendam, in the Overberg Renewable Energy Development Zone (REDZ), in the Western Cape Province of South Africa. A Critical Habitat Assessment (CHA) was performed for the Project in August 2019.

Based on the results and recommendations of the Critical Habitat Assessment completed in August 2019, a Biodiversity Action Plan (BAP) was developed. For a project in critical habitat, IFC Performance Standard 6 (PS6) requires that net gain is achieved for the biodiversity values for which critical habitat was designated. If the Project is found to be in critical habitat, the BAP must further demonstrate that:

- No other viable alternatives within the region exist for development of the Project on modified or natural habitats that are not critical;
- The Project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values;
- The Project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time; and
- A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the Project's management program.

The purpose of this BAP is to set out the Project's mitigation and monitoring actions (through avoidance, minimization, restoration and – where necessary – offset of impacts) to achieve alignment with (PS6) and with other statutory or stakeholder requirements.

2. Priority biodiversity values

2.1. Natural Habitat and Modified Habitat

The Project is situated predominantly in modified habitat, with small and fragmented remnants of natural habitat. Four habitat classes are present within the Project Area of Impact (AoI)[1]:

- Agriculture: A mixture of cereal crops and pastures, which comprises the vast majority (80 - 90%) of the habitat in the AoI;
- Scrub & thicket: This comprises endangered, indigenous Renosterveld, remnants of which are mostly found along drainage lines and on steeper slopes that are unsuitable for planting. The largest contiguous area of Renosterveld in the AoI is an area of approximately 350ha;
- Farmyards: Lawns and stands of Eucalyptus which are present at homesteads; and
- Waterbodies: Mostly farm dams, and a few natural wetlands in drainage lines.

[1] In this instance, the Project AoI was delineated as the area comprising the site footprint itself and a 5km buffer drawn around the outer most wind turbines, and a 2km buffer zone around the proposed 14km long 132kV grid connection powerline running from the on-site substation to the Vryheid substation

See Figure 1 for a map of the AoI

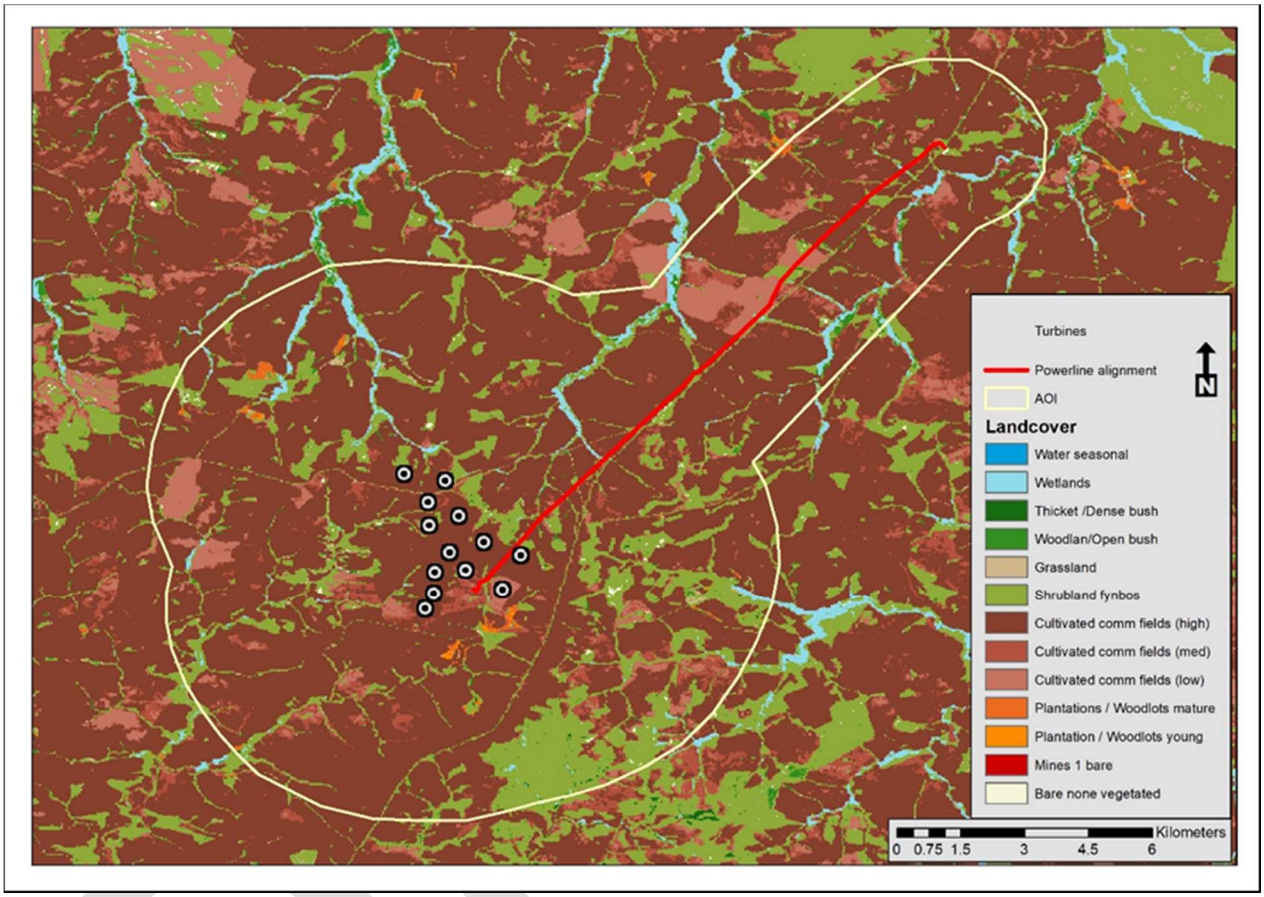

Figure 1: A map of the Area of Influence (AoI)

2.2. Critical Habitat

The CHA determined that the Project is situated in Critical Habitat for the following priority biodiversity values (see Table 1 below):

Table 1: Summary of Critical Habitat within Project Area of Influence

Feature	PS6 Criterion	Rationale	Critical Habitat
Black Harrier	Criterion 1	(a) Areas that support globally-important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥5 reproductive units of a CR or EN species).	Yes
		(c) As appropriate, areas containing important concentrations of a nationally or regionally-listed EN or CR species.	Yes
	Criterion 3	Area is known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of the species at any point of the species' lifecycle.	Yes

Cape Vulture	Criterion 1	(a) Areas that support globally-important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥5 reproductive units of a CR or EN species)[2].	Yes
		(c) As appropriate, areas containing important concentrations of a nationally or regionally-listed EN or CR species.	Yes
	Criterion 3	Area is known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of the species at any point of the species' lifecycle.	Yes
Agulhas Long-billed Lark	Criterion 2	a) Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.	Yes
Blue Crane	Criterion 3	Area is known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of the species at any point of the species' lifecycle.	Yes
Renosterveld ecosystems	Criterion 4	b) Other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning.	Yes

2.3. Protected and Internationally Recognised Areas

The Project is located in the Overberg Wheatbelt Important Bird Area (IBA) SA115, a Key Biodiversity Area which constitutes an internationally recognized area as defined in footnote 17 of Performance Standard 6 Paragraph GN20. Internationally recognized areas are defined as "UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, Key Biodiversity Areas, and wetlands designated under the Convention on Wetlands of International Importance (the Ramsar Convention). PS6 requires that projects proposed inside legally protected or internationally recognized areas should result in tangible benefits to the conservation objectives of that area, and clear conservation advantages should be gained by the presence of the project. Stakeholder engagement and consultation is required for all projects located in legally protected and internationally recognized areas.

2.4. Priority biodiversity values

- Black Harrier *Circus maurus*

The species is classified as Endangered both nationally and globally. The total population is estimated at <1,000 individuals in South Africa, Lesotho and Swaziland (Taylor et al. 2015) with only approximately 10 mature individuals outside this region (Taylor et al. 2015). Taylor et al. 2015 puts the estimated number at approximately 670 mature individuals, placed here in the range of 251-999

[2] PS6 criteria need careful application when determining Critical Habitat for wide-ranging vultures. In this case Critical Habitat is considered to be present, considering the known importance of agricultural land in the Overberg IBA as the foraging area for the Potberg Cape Vulture colony, and the presence of foraging birds at the Excelsior site.

mature individuals. The species is one of the most range-restricted harrier species in the world, with its core range located in the Fynbos Biome (which includes Renosterveld) of south-western South Africa. The species has a polarized distribution in the Fynbos Biome, with breeding birds largely restricted to the coastal strip, and inland in the mountains, where most of the remaining untransformed Fynbos (including Renosterveld) is located. Black Harriers undergo seasonal migrations during the summer, travelling as far as 1 200km inland to the Grassland Biome, returning in winter to their breeding grounds in the Fynbos Biome (Taylor et al. 2015).

The Black Harrier is expected to occur fairly regularly in the Area of Impact, but in very low numbers. The species was not recorded during the initial four seasons' pre-construction monitoring, conducted in 2011-2012. It was subsequently recorded during spring and summer 2015-2016, in low numbers, with 2 birds recorded during transect surveys, and a total of 3 minutes and 15 seconds of flying time recorded during 48 hours of flight observations. During the autumn and winter 2018 surveys, no birds were recorded. Since the weekly counts started in 2019, the species have been recorded at an average rate of one bird per week from January to May 2019. It is likely that the birds recorded at the AoI are individuals moving through the area on their way to or from coastal breeding grounds to the south of the AoI area.

- Cape Vulture *Gyps coprotheres*

The species is classified as globally and regionally Endangered. In 2006, the total population was estimated at 8,000-10,000 individuals (M. Diekmann in litt. 2006), roughly equivalent to 5,300-6,700 mature individuals. The global population estimate has been revised with an estimate of 4,700 pairs or 9,400 mature individuals (Allan 2015). The IUCN (2019) puts the population estimate at 14 100 individuals, in an assessment done in October 2016.

The Project is located approximately 35km from the Potberg Vulture Colony, which is the only breeding colony of the species in the Western Cape. In 2017, the Potberg colony consisted of 100 breeding pairs, and the total population was 316 birds. Cape Vultures have been recorded regularly in the AoI during pre-construction monitoring. During the initial 12-months pre-construction monitoring in 2011-2012, Cape Vultures were recorded flying over the site for a total of 1 hour and 19 minutes, during 288 hours of flight observations. The concentration of flight activity recorded during that survey was directly linked to a lamb carcass which the birds fed on. Vultures are specifically attracted to lambing sheep, where they feed on the placentas of lambing ewes. During the spring and summer 2015 – 2016 surveys, the species was recorded for 1 hour and 42 minutes during 48 hours of flight observations. During the autumn and winter 2018 surveys, the species was observed for a period of five hours, during 48 hours of flight observations. However, since the weekly counts started in 2019, a single individual was recorded only once from January to May 2019.

- Blue Crane *Anthropoides paradiseus*

The species is classified as globally Vulnerable. The most recent Blue Crane population estimate for South Africa is a minimum of 25,500 mature individuals with 12,100 in the Western Cape (Taylor et al. 2015). Numbers in the south and south-western Western Cape have increased as the species has

expanded into agricultural areas (Taylor et al. 2015). Current population trend is stable (IUCN 2019). The Blue Crane occurs regularly in the AoI.

- Agulhas Long-billed Lark *Certhilauda brevirostris*

The species is classified as nationally Near Threatened and globally of Least Concern. The total population is estimated at approximately 9 000 individuals all in South Africa, with an estimated extent of occurrence of 16 418 km² (Taylor et al. 2015). Although it is not of immediate conservation concern, the species has a naturally small range and population which make it vulnerable to natural or anthropogenic changes in its habitat. Agulhas Long-billed Lark is abundant in the AoI.

- Renosterveld

The remnants of the natural vegetation in the AoI are Renosterveld, which is found mostly along drainage lines and on steeper slopes that are unsuitable for planting. There is one contiguous patch of approximately 350 hectares in the south-east, which is the largest unfragmented area of natural habitat in the AoI. The AoI is situated at the interface of two Critically Endangered ecosystems, namely Central Rûens Shale Renosterveld and Eastern Rûens Shale Renosterveld (Driver et al. 2012).

3. Potential impacts on priority biodiversity values

The manner in which the Project could potentially impact on priority biodiversity values is explained below.

3.1. Black Harrier

- Collisions with the turbines

The main potential Project impact on the regionally and globally Endangered Black Harrier is mortality due to collisions with the turbines. According to the latest publicly available statistics, a total of six Black Harrier mortalities have so far been recorded at two out of twenty operational wind farms in South Africa (BLSA 2018). Given the relatively low numbers of the species recorded at the site, the limited number of turbines (n = 13), and the anticipated impact of the of the mitigation measures listed below, it is not envisaged that the potential collision related mortality will substantially reduce the critical habitat's ability to support Black Harriers and the ecological processes underpinning the existence of the species in the Area of Assessment (AoA), namely the Overberg Wheatbelt IBA.

3.2. Cape Vulture

- Collisions with the turbines

The main potential Project impact on the regionally and globally Endangered Cape Vulture is mortality due to collisions with the turbines. According to the latest published results, Cape Vultures have been killed at a rate of 0.03 vultures per turbine per year at the five operational wind farms in South Africa which overlaps with the species range (Pfeiffer & Ralston 2018). The implementation of the mitigation measures listed below should ensure that the risk to Cape Vultures will be reduced to a minimum, to such an extent that the project will not jeopardize the long-term persistence of the species in the AoA, which was defined as a 50km radius around the Potberg vulture colony.

3.3. Blue Crane

- Collisions with the turbines

The globally Vulnerable Blue Crane at the Project site may collide with the turbines. However, the observed risk of turbine collisions for Blue Cranes is relatively low. The latest figure for Blue Crane mortality at twenty operational wind farms in South Africa is eight confirmed turbine related fatalities (BLSA 2018).

- Collisions with the 132kV grid connection

Blue Cranes are highly susceptible to powerline collisions. Shaw (2009) estimated a Blue Crane collision rate of 0.25 birds/km of powerlines per year (95% CI 0.10-0.46 birds/km per year) in the Overberg Wheatbelt IBA (the AoA), corrected for biases, which means that approximately 10% (95% CI 4-18%) of the total Blue Crane population within the Overberg Wheatbelt IBA could be killed annually in power line collisions, based on 199 km of surveyed powerlines. Collisions with the 14km long 132kV grid connection powerline running from the on-site substation to the Vryheid substation could potentially be the most significant Project-related impact on this species.

- Displacement of breeding birds through disturbance

The other potential impact is displacement of breeding Blue Cranes due to the disturbance associated with the construction of the wind farm. Blue Cranes are proving to be relatively unaffected by wind farm developments in the wheat growing Overberg region as far as displacement is concerned. No significant decline has been recorded in the Blue Crane population at the similarly sized Dassieklip Wind Farm near Caledon (personal observation), which has a very similar habitat mix to the Excelsior site with Blue Cranes successfully breeding within the turbine area every year since the wind farm became operational in 2014. Nest inspections conducted at Excelsior in the breeding season between December 2018 and January 2019 did not detect any obvious impacts on breeding pairs, despite the construction activities taking place around them, possibly because Blue Cranes in the Overberg are very habituated to human activity in the form of agricultural operations.

If the mitigation measures outlined below are implemented, it can be assumed that the residual impacts of the wind farm will be minimal and it will not substantially reduce the critical habitat's ability to support Blue Cranes and the ecological processes underpinning the existence of the species in the AoA (the Overberg Wheatbelt IBA).

3.4. Agulhas Long-billed Lark

- Displacement through habitat transformation

The main potential impact on the range-restricted Agulhas Long-billed Lark is displacement due to habitat transformation. The species' habitat of choice is stony wheat-fields and pastureland, which constitutes 95% of the approximately 6 000 km² Overberg Wheatbelt IBA (Marnewick *et al.* 2015). The wind farm perimeter plus a 1km buffer zone amounts to approximately 15 km². It is therefore self-evident that even if the species were to be completely displaced from that area, which is highly

unlikely, the displacement impact due to habitat transformation will not substantially reduce the critical habitat's long-term ability to support Agulhas Long-billed Larks and ecological processes underpinning the existence of the species in the AoA, due to the small size of the project footprint[3].

3.5. Renosterveld

- Destruction through habitat transformation

The most important potential impact on the Renosterveld in the Project footprint is habitat transformation. However, care has been taken to place all turbines and supporting infrastructure (including the powerline poles) outside the remaining areas of Renosterveld. No impact on the Renosterveld in the AoA (namely the Ouka River Renosterveld Cluster, and the Eastern Rûens De Hoop Renosterveld Cluster) is therefore envisaged.

4. Avoidance, minimisation and restoration

Mitigation measures to avoid and/or minimize impacts on the priority biodiversity values in Critical Habitat are listed and discussed below.

4.1. Black Harrier

- Avoidance

The site contains no suitable breeding habitat and the closest recorded Black Harrier nest is approximately 3.8 km away from the closest planned turbine. This is more than the 3km buffer zone which is recommended around Black Harrier nests (Simmons & Ralston-Paton in prep). The turbine lay-out also avoids all areas of remaining Renosterveld, i.e. potential foraging habitat.

- Minimisation

Turbine management (shut-down on demand - SSoD) will be implemented to minimise the risk of a Black Harrier colliding with a wind turbine through the feathering the blades or shut-down on demand (i.e. stopping the rotors when a Black Harrier moves through the site). The shut-down will be triggered by human observers. It is planned to expand the current compliment of 5 environmental monitors to 10, with a supervisor, who will be responsible for a variety of environmental duties, including the implementation of SSoD. Three vantage points with a radius of 1.8km have been identified from which monitors, working in pairs and in shifts, will scan the landscape during daylight hours for approaching harriers. The radius is based on the distance at which a large bird such as a raptor or vulture can be identified reliably, with enough time for a turbine to be stopped before the bird enters the danger zone.

4.2. Cape Vulture

- Avoidance

[3] The physical footprint of the facility is approximately 11 hectares

The key mitigation measure is management of food availability at the site to avoid any attraction of vultures. The availability of food at the site is closely monitored and all available carcasses are removed without delay before they can attract vultures. This procedure is already in place as an integral part of ongoing farming operations. Since January 2019, monthly experiments are being conducted to assess the reaction time of Cape Vultures to available food (a lamb carcass). So far, no vultures have been attracted to experimental carcasses.

- Minimisation

Turbine management (shut-down on demand) will be implemented to minimise the risk of a Cape Vulture colliding with a wind turbine, through the feathering the blades or shut-down on demand (i.e. stopping the rotors when a Cape Vulture moves through the site). The shut-down will be triggered by human observers. It is planned to expand the current compliment of 5 environmental monitors to 10, with a supervisor, who will be responsible for a variety of environmental duties, including the implementation of SSoD. Three vantage points with a radius of 1.8km have been identified from which monitors, working in pairs and in shifts, will scan the landscape during daylight hours for approaching vultures. The radius is based on the distance at which a large bird such as a raptor or vulture can be identified reliably, with enough time for a turbine to be stopped before the bird enters the danger zone.

Planned satellite tagging of Cape Vultures (see section 5.2) will provide information on movements and any patterns of activity over the Project site that may assist in minimising collision risk.

4.3. Blue Crane

- Avoidance

An intensive search was conducted for Blue Crane nests during November and December 2018, and January 2019. None of the recorded nests were close enough to the construction activities to be affected.

Five environmental monitors have also been trained by an avifaunal specialist to identify the signs that indicate possible breeding by Blue Cranes. The environmental monitors make a concerted effort to look out for such breeding activities of Blue Cranes during their weekly monitoring surveys. If any Blue Cranes are confirmed to be breeding (e.g. if a nest site is found), construction activities within 200m of the breeding site must cease, and the avifaunal specialist will be contacted immediately for further assessment of the situation and instruction on how to proceed.

- Minimisation

A site-specific Construction Environmental Management Programme (CEMPr) has been implemented, which gives appropriate and detailed description of how construction activities must be conducted. All contractors have to adhere to the CEMPr and apply good environmental practice during construction. This includes the following:

  - Construction activity is restricted to the immediate footprint of the infrastructure, and in particular to the proposed road network.

- Access to the remainder of the site is strictly controlled to prevent unnecessary disturbance of breeding pairs.
- Construction of new roads is only considered if existing roads cannot be upgraded.
- Measures are implemented according to best practice to curb noise and dust.

The Contractor HSE Officer oversees activities and ensure that the CEMPr is implemented and enforced.

The high-risk sections of the 14km long 132kV grid connection powerline will be marked with Eskom approved Bird Flight Diverters (BFD's), as identified during the avifaunal powerline walk-through conducted in February 2016.

4.4. Agulhas Long-billed Lark

- Avoidance

The transformation of a limited quantity of the species' habitat (wheat fields and pastures) which will be taken up by the Project footprint, is unavoidable (see Section 3). However, this impact is expected to be negligible in proportion to the available habitat within the Overberg Wheatlands IBA.

- Minimisation

All contractors have to adhere to the CEMPr and apply good environmental practice during construction. This includes the following:

- The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths;
- No off-road driving;
- Existing roads and farm tracks should be used where possible;

- Restoration

Following construction, restoration of all disturbed areas (e.g. temporary access tracks and laydown areas) must be undertaken to restore them to their pre-construction state.

4.5. Renosterveld

- Avoidance

Care has been taken to place all turbines and supporting infrastructure (including the powerline poles) outside the remaining areas of Renosterveld. No impact on the Renosterveld in the AoA is therefore envisaged.

5. Measures designed to achieve net gain for priority biodiversity values

The measures listed below are aimed at achieving biodiversity net gain as per the requirements of PS6 for the biodiversity values for which the Critical Habitat has been designated.

5.1. Black Harrier

- Habitat enhancement outside the site

Increased habitat attractiveness outside the site can be achieved through the Overberg Renosterveld Conservation Trust's (ORCT) "Conservation Easement" programme involving landowners. This will entail assistance with implementation of Integrated Management Plans (IMPs), which include alien species clearing, watercourse restoration, erosion control (sheet and gully erosion), grazing management (through fencing) and ecological burning.

5.2. Cape Vulture

- Research to establish the status of the food supply of Cape Vultures at the Potberg Vulture Colony

This will entail a satellite tracking project to establish the foraging range and behaviour of the Cape Vultures at the Potberg Colony, inter alia to see how big a role the food provision at established vulture restaurants plays in the foraging behaviour of the birds. It will furthermore entail the investigation of land use patterns and farming practices (e.g. the timing of lambing) to see how those influence the foraging behaviour of the birds. The ultimate aim would be to establish what the critical factors are to sustain and possibly grow the colony in the long term from its current status of 100 breeding pairs, and specifically to establish if there are times when a supplementary feeding programme should be implemented to assist the birds through periods of food scarcity.

- Habitat enhancement

Implementation of a supplementary feeding programme, should the results of the research indicate a need for that.

5.3. Blue Crane

- Reduction of powerline collision risk outside the Project

A survey of all the existing powerlines in the AoI to establish a baseline for current mortality, and to identify high risk sections of powerline. High risk sections will subsequently be marked with Eskom approved bird flight diverters (BFDs). This will be followed by regular inspections to assess the effectiveness of the BFDs. This action is expected to reduce mortality of Blue Cranes on powerlines in the Overberg, and thus secure a net gain outcome for this species.

5.4. Agulhas Long-billed Lark

- Research planning

A workshop will be convened with stakeholders (e.g. Overberg Renosterveld Conservation Trust, BirdLife South Africa, CapeNature and the Percy Fitzpatrick Institute of African Ornithology) to explore avenues and budget needs for further research to enhance conservation of the species. Specific research questions that need to be answered are:

o Which agricultural practices are most beneficial to the species?

- What is the breeding success of the species through-out its range in different habitats?
- How effective are formally protected areas in conserving the species?
- What are the impacts of terrestrial predators on the breeding success in artificial pastures?

Based on the outcomes of the workshop, the Project intends to support a focused programme of agreed priority research. If this results in concrete recommendations for conservation measures, the Project will support a conservation management programme at an appropriate scale to achieve net gain for this species.

5.5. Renosterveld

- Habitat restoration

The quality of the remaining Renosterveld within the AoA will be improved at an appropriate scale through the Overberg Renosterveld Conservation Trust's (ORCT) "Conservation Easement" programme involving landowners. This will entail assistance with implementation of Integrated Management Plans (IMPs), which include alien clearing, watercourse restoration, erosion control (sheet and gully erosion), grazing management (through fencing), ecological burning, etc.

6. Monitoring

6.1. Avoidance, minimisation and restoration

A Biodiversity Monitoring and Evaluation Plan (BMEP) has already been implemented at the Project site since December 2018, at the start of the construction. Monitoring will be conducted both during the construction and the operational phases.

The construction phase monitoring consists of the following components:

- A total of 5 environmental monitors are currently conducting weekly bird surveys, and will be trained as carcass searchers and to perform various other environmental duties;
- The current construction period (18 months) is being used to investigate the feeding patterns of Cape Vultures at the site to assist with the formulation of a mitigation strategy to prevent mortality due to collision with the turbines. Elements of the mitigation strategy are outlined in section 4.2 above.
- A number of priority species' nests (including Blue Cranes) are being monitored during the construction phase of the Project in order to assess the potential impact of the construction activities on the breeding birds.

The operational phase monitoring will consist of the following components:

- The monitoring will be conducted in accordance with the latest version of *the Best practice guidelines for avian monitoring and impact mitigation at proposed wind energy development sites in southern Africa* (Jenkins et al. 2011).
- Operational monitoring will aim to answer the following questions:

    - How has the habitat available to avifauna in and around the wind farm changed?
    - How have the number of birds and species composition changed?
    - How have the movements of priority species changed?
    - How has the wind farm affected priority species' breeding success?
    - How many birds collide with the wind turbines? And are there any patterns to this?
    - How should mitigation be applied to reduce the impacts on avifauna?

- As an absolute minimum, operational monitoring will be undertaken for the first three years of operation, and then repeated again in year 5, and again every five years thereafter for the operational lifetime of the facility.
- The exact scope and nature of the operational monitoring will be informed on an ongoing basis by the results of the monitoring through a process of adaptive management (see Section 7 below).
- In order to determine if there are any impacts relating to displacement and/or disturbance, all methods used to estimate bird numbers and movements during pre-construction monitoring will be applied as far as is practically possible in the same way to operational monitoring in order to ensure maximum comparability of these two data sets. This includes sample counts of small terrestrial species, counts of large terrestrial species and raptors, focal site surveys and vantage point surveys according to the current best practice.
- The collision mortality monitoring will have three components:
    - Experimental assessment of search efficiency and scavenging rates of bird carcasses on the site through searcher detection and carcass persistence trials;
    - Regular searches in the immediate vicinity of the wind farm turbines for collision casualties;
    - Estimation of collision rates.

6.2. Net gain for priority biodiversity values

The following monitoring actions/deliverables will be implemented/produced to measure if the goal of biodiversity net gain is being achieved:

- Black Harrier
    - Monitoring of vegetation quality in the Ouka River Cluster and the Eastern Rûens De Hoop Cluster to assess the success of the measures implemented through the ORCT's Conservation Easement Programme.
    - Systematic recording of Black Harrier sightings in suitable habitat in the Ouka River Cluster and the Eastern Rûens De Hoop Cluster to see if the enhanced habitat is drawing in more foraging birds.
- Cape Vulture
    - Research report detailing findings and recommendations of the research project into the status of the food supply of Cape Vultures at the Potberg Vulture Colony.
    - Monitoring of colony numbers through regular counts, to assess the success of the supplementary feeding programme (if the research indicates the need for it).
- Blue Crane
    - Report detailing all the Eskom lines that had been surveyed, recorded carcasses and clear identification of sections to be marked.
    - Schedule for marking of all high risk Eskom lines with time frames.
    - Report detailing all the lines that had been surveyed to assess the effectiveness of the BFD's, and details of all the recorded carcasses.
- Agulhas Long-billed Lark
    - Research proposal detailing clear objectives for the planned research on the ecology of the Long-billed Lark.
    - Research paper with findings and recommendations for measures to better conserve the species.
    - Monitoring of outcomes of conservation measures implemented.
- Renosterveld
    - Monitoring of vegetation quality in the Ouka River Cluster and the Eastern Rûens De Hoop Cluster to assess the success of the measures implemented through the ORCT's Conservation Easement Programme.
    - Systematic recording of Black Harrier sightings in suitable habitat in the Ouka River Cluster and the Eastern Rûens De Hoop Cluster to see if the enhanced habitat is drawing in more foraging birds.

7. Adaptive management

Monitoring results will be used to inform refinement and improvement of mitigation measures, to ensure that these are as effective as possible.

The Project will develop a fatality threshold policy for **Black Harrier** and **Cape Vulture**, with input from relevant stakeholders. If fatality thresholds are exceeded this will trigger action to identify and implement further effective mitigation actions.

The Project will set aside a contingency mitigation budget annually, to cover additional mitigation needs if these arise.

8. Roles and responsibilities

Please see Appendix A, B and C for a breakdown of the roles and responsibilities of all relevant parties.

9. Budget

Please see Appendix A, B and C for a budget (TBD) detailing set-up costs and annual costs. The budget is broken down as follows:

- Costs of on-site mitigation measures.
- Costs of achieving biodiversity net gain for priority biodiversity values in Critical Habitat. Extend beyond the actual project footprint.
- The costs of on-site monitoring and evaluation.

See Table 2 below for a summary of the set – up and annual costs. (TBD)

Table 2: Set-up and annual costs		
	Set-up	**Annual (Year 1)**
Costs of on-site mitigation measures.	TBD	TBD
Costs of achieving biodiversity net gain	TBD	TBD
Costs of on-site monitoring and evaluation	TBD	TBD
Total	TBD	TBD

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