Lekela North Ras Gharib 250 MW Project: Critical Habitat Assessment

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Report date: October 2018

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Recommended citation: Serckx, A., Pollard, E., Wilson, D., Katariya, V. and Pilgrim J. (2018). *Lekela North Ras Gharib 250 MW Project: Critical Habitat Assessment.* The Biodiversity Consultancy Ltd, Cambridge, UK.

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Executive summary

This report is the Critical Habitat Assessment (CHA) for the Lekela Build Own Operate (BOO) North Ras Gharib 250 MW Project (the Project), a wind farm under development by Lekela Power near the Gulf of Suez (Egypt). The Project is seeking to align with IFC Performance Standard 6 (PS6) and EBRD Performance Requirement 6 (PR6).

This assessment of Critical Habitat, Priority Biodiversity Features and Natural Habitat considers a broader area than just the direct Project footprint, to ensure all Project risks are taken into consideration. For migratory birds, we assessed the potential presence of Critical Habitat in the entire migratory bird flyway corridor within Egypt (Section 2.1.2).

Globally-important concentrations of eight bird species migrate over the area (Section 3.2.4). Further, the Gebel El Zeit Important Bird Area – designated for migratory soaring birds – is less than 12 km from the Project concession at its nearest point (Section 6). The area is clearly of critical importance to migratory birds, and the Project will need to carefully mitigate potential impacts – which may otherwise have disproportionate effects on the global population. There is, however, no evidence from surveys that these species regularly use the area as a stop-over site in normal circumstances, or that this area is a particular bottleneck within the already-restricted flyway. It is thus **not appropriate to consider the Project area to be Critical Habitat for migratory species** in the context of an extensive flyway that would (for a considerable distance) likewise meet Critical Habitat thresholds. **The Project area does not qualify as Critical Habitat** for any other criteria.

The area appears to broadly be Natural Habitat (Section 4), albeit highly degraded in some areas. **One reptile and 11 migratory bird species are considered to be Priority Biodiversity Features** (Table 1), as they are of stakeholder concern and are representative of the region's natural environment.

Table 1: Species precautionarily considered to be Priority Biodiversity Features

Species	IUCN
Accipiter brevipes (Levant Sparrowhawk)	LC
Neophron percnopterus (Egyptian Vulture)	EN
Aquila nipalensis (Steppe Eagle)	EN
Clanga clanga (Greater Spotted Eagle)	VU
Aquila heliaca (Eastern Imperial Eagle)	VU
Falco concolor (Sooty Falcon)	VU
Buteo buteo (Eurasian Buzzard)	LC
Pernis apivorus (European Honey-buzzard)	LC

Ciconia ciconia (White Stork)	LC
Ciconia nigra (Black Stork)	LC
Pelecanus onocratalus (White Pelican)	LC
Uromastyx aegyptia (Egyptian Spiny–tailed Lizard)	VU

Since the Project is located in an area which seasonally sees globally-important concentrations of migratory soaring birds, contains Priority Biodiversity Features and is broadly Natural Habitat, the Project should proceed with caution. This CHA and an analysis of potential cumulative effects to biodiversity will feed into a Biodiversity Action Plan, which will (i) summarise any significant impacts on Priority Biodiversity, Natural Habitat and Valued Environmental Components, and (ii) outline project mitigation to address significant impacts. **The Project will need to achieve at least no net loss for the Egyptian Spiny-tailed Lizard, the eleven priority bird species, and Natural Habitat**, and to demonstrate this achievement through a robust monitoring and adaptive management programme.

Demonstrating good practice through sound biodiversity management will offer the Lekela North Ras Gharib 250 MW Project an opportunity to lead practice in the region, minimising risks of association with any poor practice at other wind farm projects.

1 Introduction

1.1 Purpose of this report

This report is the Critical Habitat Assessment (CHA) for the Lekela Build Own Operate (BOO) North Ras Gharib 250 MW Project (the Project), a wind farm located near the Gulf of Suez (Egypt) under development by Lekela Power. The Project is seeking funding from the International Finance Corporation (IFC) and/or European Bank for Reconstruction and Development (EBRD) for this development and will need to align with IFC Performance Standard 6 (PS6) and/or EBRD Performance Requirement 6 (PR6) for Biodiversity Conservation and Sustainable Management of Living Natural Resources.

The aim of this report is to:

(1) Identify Critical Habitat-qualifying biodiversity, Priority Biodiversity Features and Natural Habitat associated with the Project;

(2) Outline the implications of the outcome of the CHA for the Project; and

(3) Identify the recommended next steps for the Project.

1.2 Project background

The Project is in the eastern desert by the Red Sea coast, near the Gulf of Suez (Egypt), approximately 28 km north of the coastal town of Ras Ghareb (also frequently transliterated as Ras Gharib) (Figure 1). It has been designated by the Egyptian New and Renewable Energy Authority (NREA) for wind farm development, while the main nearby land uses are for the petroleum industry. NREA has acquired this land from the Government of Egypt and identified five clusters of individual wind farm plots within the area. Developers will lease these plots directly from NREA. Lekela Power has acquired six plots in Cluster 5, to develop a 250 MW wind plant:

- Plot 2-5 acquired first under a feed-in tariff (FiT) regime but now build, own and operate (BOO), followed by;
- Plots 3-5, 4-5, 5-5, 6-5 and 7-5 acquired later under the BOO regime.

Figure 1: Lekela North Ras Gharib Project location in the Gulf of Suez.

The Project area is on the edge of the Red Sea/Rift Valley flyway for migratory soaring birds. The Red Sea / Rift Valley flyway is used during the spring and autumn migrations by 37 species of migratory soaring birds, numbering over 1.5 million individuals, along with a suite of migratory passerines. The flyway links breeding areas in the Europe or Western and Central Asia and wintering grounds throughout eastern and southern Africa, via the Middle East (Figure 2). Egypt is of strategic importance in this flyway, as the Gulf of Suez is one of the two main points for crossing the Red Sea: the other crossing point is at the southern end of the Red Sea, between Yemen and Djibouti (Porter 2005). These sites are the shortest sea crossings between Africa and the Middle East.

The importance of the Gulf of Suez appears to be seasonal, with many more individuals recorded during the northbound spring compared to the autumn migration, when most migration occurs southward down the Arabian Peninsula. Five bottleneck sites occur in Egypt, at Ain Sukhna, and Suez at the northern Red Sea, and the El Qa plain, Ras Mohammed National Park and Gebel el Zeit at the southern end of the Red Sea (Porter 2005) (Figure 5). At these sites geographic features, usually lines of hills, cliffs or coastline, constrict the migration options concentrating the birds in relatively small areas.

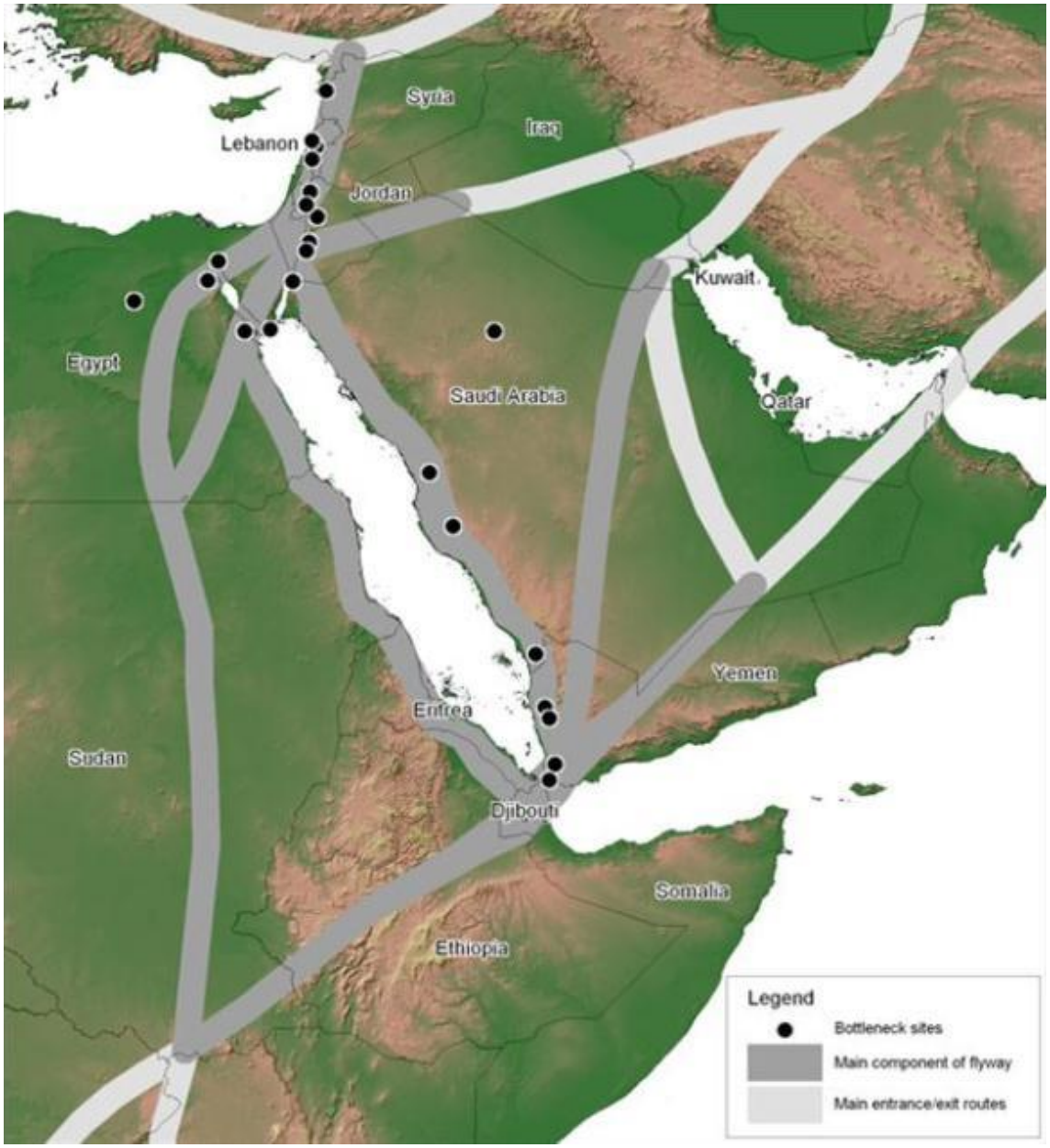

Figure 2: Map of the main elements of the Rift Valley/Red Sea flyway showing key bottleneck sites (source BirdLife International)

As a potentially high-risk biodiversity area for migratory birds, the development site is already included in the strategic and operational framework protocol for evaluation of environmental impacts of wind turbines, bird monitoring and a proposed active turbine monitoring programme (ATMP), currently being coordinated by the Regional Center for Renewable Energy and Energy Efficiency (RCREEE) [1]. The ATMP is intended to become a single system through which the risk to migratory soaring birds across all wind farms in the Gulf of Suez can be managed via centrally-

[1] http://www.rcreee.org/content/rcreee-launches-first-strategic-and-operational-framework-protocol-evaluation-environmental

controlled turbine shutdown. Survey works have been undertaken under the RCREEE programme since 2016. Lekela Power commissioned separate site-specific studies of migratory birds to ensure data are available to support project-specific mitigation planning for the Lekela Cluster 5 plots. These studies were carried out by Environics, in association with Nature Conservation Egypt. Data are available for the FiT plot 2-5 from autumn 2015 to spring 2017. In spring and autumn 2017, the same monitoring approach was rolled out for plot 2-5 plus the other five BOO plots, using the same Environics team.

A floral description for the Project wider area was undertaken in August 2014, results indicating that the vegetation of the area is sparse with low species diversity. Fauna has also been described, based on literature review and surveys of the Project area, identifying the presence of some reptiles, a few mammals and, of course, migratory birds (Environics 2018).

1.3 Lender standards

1.3.1 IFC PS6

The objectives of PS6 are to: protect and conserve biodiversity; maintain the benefits from ecosystem services; and promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.

PS6 identifies three classes of area based on (i) ecosystem condition ('quality' or 'state') and (ii) significance for biodiversity (Table 2). PS6 uses the term 'habitat' to refer to these areas, rather than the actual ecosystems within them. These classes are:

- Modified Habitat;
- Natural Habitat; and
- Critical Habitat. Critical Habitat is a subset of Modified and Natural Habitat.

Area condition is classified as either **Natural** or **Modified** based on the extent of human modification of the ecosystem. Arable fields and urban areas show "substantial modification" and would be classed as Modified; even heavily grazed arid regions usually retain most original species and ecological processes and so would in most cases still be considered Natural Habitat.

Areas of **high biodiversity value** are termed **Critical Habitat** by the IFC PS6. These consider the principles of threat (vulnerability) and geographic rarity (irreplaceability). Critical Habitat Assessment (CHA), therefore, is a process for identifying significant biodiversity risks associated with the Project.

Identification of Critical Habitat is independent of the state of the habitat: Critical Habitat-qualifying biodiversity may be present even in Modified Habitat, such as rare frogs in human modified landscapes in Europe.

Further details on application and implications of PS6 are given in Appendix 1.

Table 2: Summary of the PS6 scheme for classifying areas

Three classes of area identified in PS6		Condition of the area	
		Natural	**Modified**
Significant types or quantities of biodiversity (Critical Habitat-qualifying features)	**Present**	Critical Habitat	Critical Habitat
	Absent	Natural Habitat	Modified Habitat

1.3.2 EBRD PR6

The objectives of PR6 are to protect and conserve biodiversity; maintain core ecological functions of ecosystem services and biodiversity they support; adapt the mitigation hierarchy approach; and promote the sustainable management of living natural resources through the adoption of good international practices.

PR6 identifies two classes of important biodiversity, likewise based on the principles of threat (vulnerability) and geographic rarity (irreplaceability):

- Priority Biodiversity Features; and
- Critical Habitat.

Areas with Priority Biodiversity Features generally equate to the more important areas of Natural Habitat within the IFC PS6 classification. PR6 more explicitly considers ecological that support Priority Biodiversity Features or Critical Habitat-qualifying biodiversity.

Further details on application and implications of PR6 are given in Appendix 1.

2 Approach to assessment

Identification of features which potentially meet thresholds for Critical Habitat was carried out through the following steps (IFC 2012a; EBRD 2014a):

1. Identification of an appropriate scale for assessment:
    - To undertake the analysis for biodiversity;
2. Collection and verification of available information on biodiversity:
    - From the Strategic and Cumulative Environmental and Social Assessment, the ESIA, baseline surveys, literature review, specialist consultation and analysis; and
3. Assessment against IFC and EBRD criteria and thresholds for species and ecosystems:
    - To identify which biodiversity features may qualify the area as Critical Habitat.

2.1 Scale of assessment

CHA is usually carried out at the landscape scale, using ecologically and/or administratively coherent units for determining the presence or absence of Critical Habitat-qualifying features

under PS6 criteria 1 – 3 and PR6 Criteria ii – iv. IFC refers to the concept of Discrete Management Units (DMUs) which are *'areas with a definable boundary within which the character of biological communities and/or management issues have more in common with each other than they do with those in adjacent areas*, which are used for determining Critical Habitat in certain circumstances. PR6 requires that *the study area is clearly defined and mapped and includes the area of influence and a consideration of broader landscape*. We use the term 'study area' for this assessment. Both definitions have similar meaning, implying that the delineations of DMUs/study areas should be informed by the biodiversity features of concern and their ecological requirements. They are identified at a landscape scale, considering large-scale ecological processes where appropriate, and are therefore often much larger than the project concession or lease area itself.

The current Project is unusual in being likely to have few terrestrial impacts beyond its concession boundary, and in having most potential impacts in the context of a lengthy flyway for migratory soaring birds. Two different approaches were thus taken to defining the scale of the study area.

2.1.1 Main study area

Since most Project impacts are unlikely to extend far beyond the Project concession, this assessment considered the concession and a 1 km area all around it (Figure 3). The total area of this study area is 69.3 km^2.

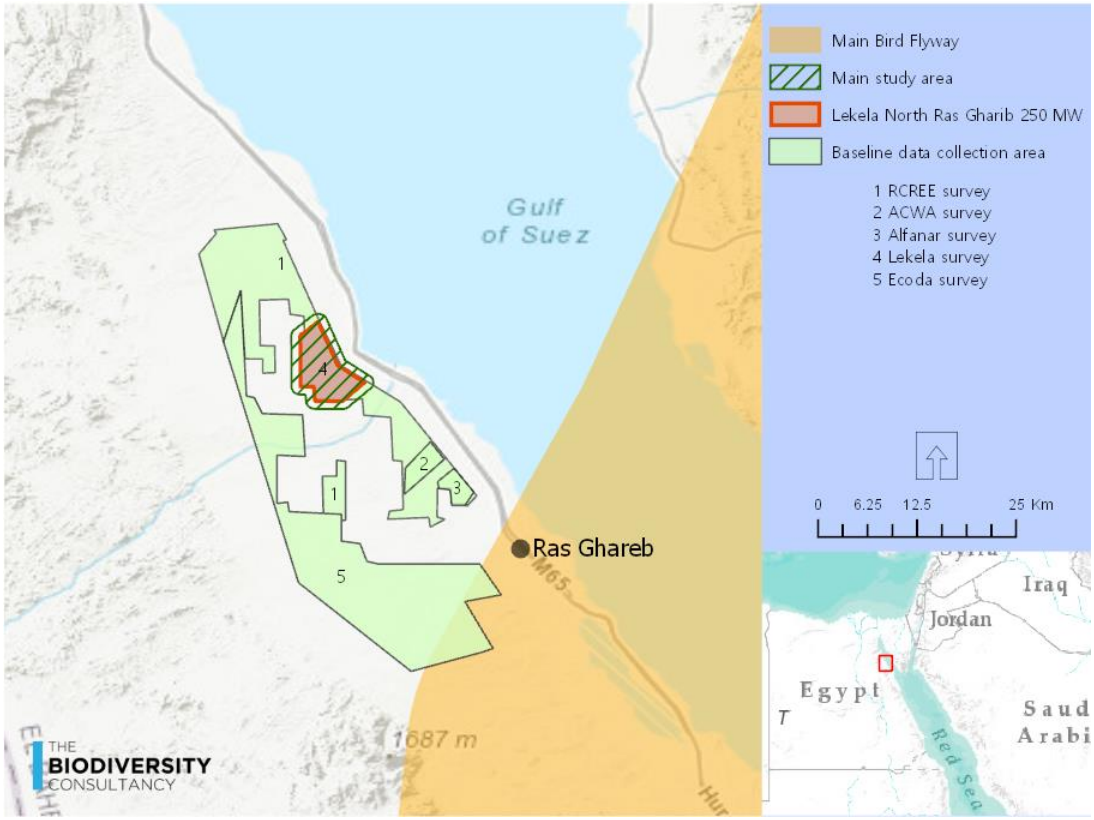

Figure 3: Main study area for this Critical Habitat Assessment

2.1.2 Study area for migratory soaring birds

Delineation of a study area *sensu* PS6 for migratory soaring birds is challenging. IFC PS6 (Para. 9) specifies that (critical) habitats are defined as, among others, '*airways that supports assemblage of living organisms*'. For migratory soaring birds we assessed the potential presence of Critical Habitat in the entire flyway corridor within Egypt. This is an arbitrary section of the whole flyway, but one that is sufficiently extensive to be precautionary. More detailed assessment was possible for the Project area, given data availability from baseline surveys.

A review of bird migration patterns based on publicly availably satellite telemetry data (Feltrup-Azafzaf *et al.* 2016; Dagys & Zydelis 2018; Nagy *et al.* 2018) and published literature (Buechley *et al.* 2018) indicated that there are two main branches of the Asia-East Africa flyway in the Gulf of Suez region. The majority of birds pass down the Sinai Peninsula and cross the Gulf of Suez at its southern extreme. A significant minority, however, travel down the west coast of the Gulf of Suez along the coastal plain, a belt 35-40 km wide. The flyway along the western Gulf of Suez is not a broad, poorly defined, front, but rather a concentrated corridor. It is not possible, however, to map precise boundaries to such flyways, since they depend on the varying routes of individual migratory birds from year-to-year.

2.2 Available information

This assessment is based on existing documentation and interpretation of global and regional datasets. Spatial analysis of global databases (accessed through the IBAT portal) produced a candidate list of relevant features which may occur within the study areas (e.g., those with a distribution intersecting the study areas). All species classified as Critically Endangered, Endangered, Vulnerable or Data Deficient in the IUCN Red List were screened, as well as all species mapped by IUCN which could be considered restricted-range. Data on potential protected areas and internationally recognised areas were also extracted from the Integrated Biodiversity Assessment Tool (IBAT).

Additional data were obtained from:

- The Project ESIA (Environics 2018);
- Project autumn 2015, spring 2016, spring 2017 and autumn 2016 baseline bird studies (Environics 2016a, 2016b, 2017a, 2017b);
- RCREEE Strategic and Cumulative Environmental and Social Assessment Active Turbine Management Program (ATMP) for Wind Power Projects in the Gulf of Suez (RCREEE 2018);
- The ESIA of the survey area located at the west of the Lekela North Ras Gharib Project area (Ecoda 2013);
- The ESIA of Alfa Wind Project (EcoConServ 2016);
- Alliance for Zero Extinction sites;
- Important Plant Area;
- The Edge of Existence Programme; and
- BirdLife International Migratory Soaring Birds Project.

Information about Key Biodiversity Areas is from the BirdLife International Data Zone and Protected Area information is from the World Database on Protected Areas (WDPA). Both of these datasets were accessed under licence from IBAT.

2.3 Robustness of this assessment

This assessment was conducted using the best available information. However, it is acknowledged that new information may change the conservation status of a species and therefore change the assessment.

Baseline surveys were mostly focused on diurnal bird species. Since many reptile and mammal species living in desert are nocturnal and small species such as arachnids and insects were not the focus of surveys, their presence might not have been recorded during surveys. This is unlikely to affect the assessment since there is currently no indication of any threatened or restricted-range species in such groups likely to occur in the area.

While further research may affect individual species currently identified as reaching Critical Habitat thresholds, the overall assessment of importance of the area is unlikely to change. The proximity of the IBA to the Project is alone sufficient to demonstrate Critical Habitat values in the vicinity, and thus the need for well-considered mitigation plans and measures.

3 Critical Habitat

3.1 Method of assessment against PR6 and PS6 criteria for Critical Habitat

3.1.1 Criterion i (PR6)/4 (PS6) - Highly threatened and/or unique ecosystems

Highly threatened and/or unique ecosystems are defined in IFC GN6 (paragraph GN90) and EBRD Guidance note (EBRD 2014b; Table 11 in Appendix 1.2.1) as:

- Those at risk of significantly decreasing in area or quality;
- Those with a small spatial extent; and/or
- Those containing unique assemblages of species including assemblages or concentrations of biome-restricted species[2].

Areas determined to be irreplaceable or of high priority/significance based on systematic conservation planning techniques carried out at the landscape and/or regional scale by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally-recognized NGOs) or that are recognized as such in existing regional or national plans, such as the National Biodiversity Strategy and Action Plan

[2] Such ecosystems/assemblages are usually considered at a relatively fine scale.

(NBSAP), also qualify as Critical Habitat per Criterion i/4 (IFC 2012b, paragraph GN90; EBRD 2014b; Table 11 in Appendix 1.2.1).

IFC and EBRD do not provide quantitative thresholds for assessment under this criterion. The EBRD Guidance Note (EBRD 2014b: Table 11 in Appendix 1.2.1) and IFC GN6 recommend the use of the criteria and thresholds developed for the new IUCN Red List of Threatened Ecosystems[3]. This assessment has been guided by those criteria/thresholds (Rodríguez-Clark *et al.* 2015), for the two categories which can be considered 'highly threatened': Critically Endangered (CR) and Endangered (EN). More detail on these categories is given in Table 11 in Appendix 1.2.1.

All ecosystems[4] known from the main study area were screened against the EBRD and IFC definition of highly threatened and unique ecosystems, and the Red List of Threatened Ecosystems criteria, considering the entire extent of an ecosystem, together with areas in the wider landscape that are needed to maintain that ecosystem in a viable condition.

3.1.2 Criterion ii (PR6)/1 (PS6) - Critically Endangered and Endangered species

Quantitative data for the list of candidate species (Section 2.2) in the study areas was screened against PS6 thresholds (IFC 2012b) (the same thresholds being applied in PR6; EBRD 2014b). The screening is based on the proportion of a species' population in a given area. Assessment also considered any subspecies and populations that have been individually assessed on the IUCN Red List.

Although identification of Critical Habitat is largely based on global conservation priorities, Criterion ii/1 also considers the presence of nationally-important populations of Critically Endangered and Endangered species (Criterion e; Table 11 in Appendix 1.2.1).

Critical Habitat can also apply for 'habitat of significant importance' (IFC 2012a) for wide-ranging species. On a flyway used by migratory Critically Endangered or Endangered species this indicator is interpreted to refer to stop-over sites with particular geographic features, or other bottlenecks. For this analysis the location of migratory bottlenecks has been informed by the IBA dataset produced by BirdLife. IBAs were identified in a national directory in 1999 (Baha El Din 1999) and updated in an Africa-wide compendium (Fishpool & Evans 2001). We used the most up-to-date data on IBAs, available from IBAT.

[3] IUCN Red List of Ecosystems

[4] The Red List of Threatened Ecosystems guidance notes that other terms [in addition to 'ecosystem'] applied in conservation assessments – such as ecological communities, habitats, biotopes, and (largely in the terrestrial context) vegetation types – are regarded as operational synonyms of ecosystem type, providing they are adequately defined in accordance with the procedures described in the assessment process (Rodríguez-Clark *et al.* 2015)

3.1.3 Criterion iii (PR6)/2 (PS6) - Endemic and/or restricted-range species

Terrestrial restricted-range species[5] are those with a range (extent of occurrence) or less than 50,000 km^2. The study areas were screened for overlap with restricted-range species based on data from the IUCN red list. Any which potentially occur were compared with the recommended thresholds for Criterion iii/2 (IFC 2012b). These range thresholds are given in Table 11 in Appendix 1.2.1. As for Endangered/Critically Endangered species, the screening is based on the proportion of a species' population in a given area.

3.1.4 Criterion iv (PR6)/3 (PS6) – Migratory or Congregatory species

Although large swathes of a narrow migratory flyway may meet Critical Habitat thresholds, to designate large parts of a flyway as Critical Habitat is unlikely to be useful and would be misaligned with other approaches to identification of sites of global conservation importance. For example, the global standard for identification of Key Biodiversity Areas (KBAs) states that '*Along migratory corridors, KBAs should be identified for stop-over or bottleneck sites rather than for the entire corridor*'. Much of the western coast of the Gulf of Suez could be considered a bottleneck within the whole migratory flyway. However, given the KBA guidance, areas were only considered Critical Habitat if they showed evidence of being stop-over sites or bottlenecks (or areas of low flight where birds may interact significantly with a wind farm) within this already narrow migratory corridor.

This Critical Habitat Assessment thus required an approach for migratory soaring birds that differed from many other CHAs. As stated in Section 2.1.2, the starting point for this assessment was to assess the potential presence of Critical Habitat in the entire flyway corridor within Egypt. The best source of data for such an exercise is the pre-existing IBA dataset produced by BirdLife. IBAs were identified in a national directory in 1999 (Baha El Din 1999) and updated in an Africa-wide compendium (Fishpool & Evans 2001). We used the most up-to-date data on IBAs, available from IBAT.

A more detailed approach was possible in the vicinity of the Project, given baseline data availability. To assess the importance of migratory bird counts here, a precautionary approach was taken. The percentage of the global population was based on the lowest estimate of the global population published by Birdlife International (most bird population estimates have substantial confidence margins). For some species, this figure may actually significantly underestimate the real global population size. This is definitely the case for Levant Sparrowhawk, for which the numbers of individuals observed migrating through the Gebel El Zeit IBA (i.e., 30,134 individuals, in El-Gebaly & Al-Hassani 2017) exceeds the lowest estimate of the global population published by Birdlife International (i.e. 7,400 mature individuals, or approximately 11,100 mature and immature individuals). . In such a case, the assessment of the species made here is likely to need modification when an updated estimate of the global population is available.

[5] Definitions of restricted-range for other taxa are given in Appendix 1.2.1

Data from field surveys in the vicinity of the Project were assessed for evidence of significant concentrations of migratory species (no congregatory or non-soaring migratory species were considered likely to meet thresholds, based on available data). These field surveys included:

- RCREEE Strategic and Cumulative Environmental and Social Assessment (RCREEE 2018);
- Lekela North Ras Gharib Project surveys (Environics 2016a, 2016b, 2017b, 2017a); and
- Western survey area (Ecoda 2013).

Point counts are grouped into independent survey areas crossing the flyway, i.e.: Lekela survey area (Environics 2016a, 2016b, 2017b, 2017a), ACWA survey, Alfanar survey, Northern survey (RCREEE 2018) and Western area survey (Ecoda 2013). Each independent survey area uses a methodology that avoids the risk of double-counts within each survey area (no observations were done simultaneously in several vantage points). For each species, the total count observed during each independent survey was compiled and compared to the global population, but counts across survey areas were not summed together. For several species the IUCN Red List reports the estimated number of mature individuals only. The baseline data however report total numbers and do not differentiate between mature and immature birds. For species where total population size was not reported, we developed an adjustment factor based on the number of mature individuals for those species. This ensures that the likely number of mature individuals passing in the vicinity of the Project, and not the larger number of mature and immature birds, was compared to the global estimate. This adjustment factor was based on the ratio of mature individuals to total individuals for related taxa as reported in the relevant Birdlife International species factsheets. We used Peregrine Falcon *Falco peregrinus* (93,300 mature individuals and 140,000 total individuals: ratio of 0.67), Taita Falcon *F. fasciinucha* (500-1,000 mature individuals and 750-1,500 total individuals: ratio of 0.67) and Greater Spotted Eagle *Clanga clanga* (3,300-8,800 mature individuals and 5,000-13,200 total individuals: ratio of 0.67) and Steppe Eagle *Aquila nipalensis* (62,744 mature individuals and 94,116 total individuals: ratio of 0.67) to derive an averaged ratio of 0.67 to be applied for all raptors.

3.1.5 Criterion v (PR6)/5 (PS 6) - Areas associated with key evolutionary processes

Guidance Note 6 (IFC 2012b), notes that the two key factors defining this criterion are *'the physical features of a landscape'* and *'subpopulations of species that are phylogenetically or morpho-genetically distinct'*. Although key evolutionary processes may operate at various spatial scales, in the sense of PS6 these are usually considered at a relatively fine scale rather than broad biogeographic regions (e.g. an individual mountain that may have acted as a glacial refugium and thus hosted the evolution of a suite of endemic species). PR6 applies the same definition. No quantitative significance thresholds exist for this criterion, so there is a reliance on expert opinion and qualitative value judgement.

3.1.6 Criterion vi (PR6) – Ecological functions vital to maintaining the viability of CH-qualifying features

PR6 Guidance Note (EBRD 2014b - Table 11 in Appendix 1.2.1) notes that '*ecological functions without which critical biodiversity features could not persist*' can be defined as areas that are essential for CH-qualifying feature survival, such as riparian zones and rivers, dispersal and migration corridors, hydrological regimes, seasonal refuges or food sources, keystone or habitat-forming species. As for Criterion v/5, no quantitative significance thresholds exist for this criterion, so there is a reliance on expert opinion and qualitative value judgement. No specific equivalent of this criterion exists in PS6, although the intent is similar.

3.2 CHA findings

Globally-important concentrations of eight bird species migrate over the area. Further, the Gebel El Zeit Important Bird Area – designated for migratory soaring birds – is less than 12 km from the Project concession at its nearest point. The area is clearly of high importance to migratory birds. There is, however, no evidence from surveys that these species regularly use the area as a stop-over site in normal circumstances, or that this area is a particular bottleneck within the already-restricted flyway. **It is thus not appropriate to consider the Project area to be Critical Habitat for migratory species.**

3.2.1 Criterion i/4: Highly threatened and/or unique ecosystems

A qualitative evaluation of landcover across the Red Sea coast[6] shows a largely desert area with no or minimal vegetation. Small patches of sparse shrubs are present along the sea and in a very small extent within the desert. Urban areas are developed in few locations along the Red Sea coast. Some trees have been recorded during field surveys (Ecoda 2013; RCREEE 2018), but canopy cover is almost non-existent in this region. Two wadis (Wadi Um Tinassib and Wadi al-Hawwahiyyah) and their tributaries are present in the vicinity of the Project, but these sections of wadi are almost completely barren (RCREEE 2018).

The west side of the Gulf of Suez is dominated by the Red Sea coastal desert ecoregion[7] (Figure 4). The ecoregion covers 21,700km^2 and its status is Vulnerable (i.e., not highly threatened). No detailed information is available but nothing suggests that this ecoregion covers particularly unique or threatened ecosystems.

This high-level qualitative evaluation of the primary habitats across Red Sea suggests that there are none that meet Criterion i/4, and has also been reviewed against definitions for Criterion i/4 and relevant Red List of Threatened Ecosystem categories (i.e. CR, EN) (Table 3). **The Project area thus does not qualify for Criterion i/4**.

[6] World Land Cover ESA 2010

[7] As described in the WWF Ecoregions assessment

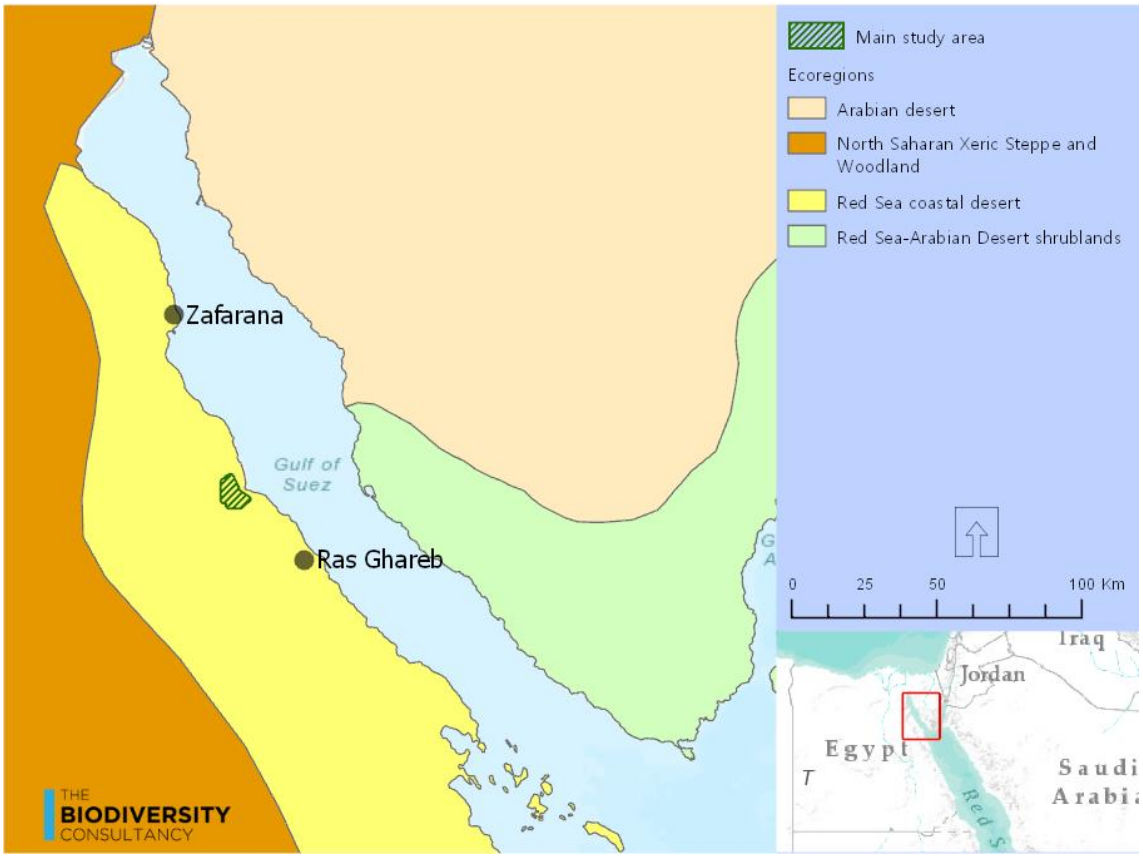

Figure 4: WWF ecoregions in the vicinity of the Project area

Table 3: High-level qualitative assessment of habitats in the Project study area against Criterion i/4

Habitat		Assessment
Vegetation type	Summary description	
Sparse shrub	• Vegetation restricted to sparse patches within drainage channels (wadis) and present in low density • Vegetation assemblages are composed of a low number of species that are widely distributed within the Arabian desert, coastal plains of Red Sea and Sinai Peninsula (RCREEE 2018) • Some species are used by Bedouins for medicine purpose, but no specific threats have been identified for this vegetation type	IFC GN6 definitions: • **Risk of significantly decreasing in area or quality** No – the industrial development in the region might decrease the extent and the quality of some shrub patches, but, given the wide distribution of this vegetation type, it is not currently considered to be at significant risk • **Small spatial extent;** No – widespread habitat type • **Containing unique assemblages of species including assemblages or concentrations of biome-restricted species (fine scale)** No – this vegetation is not known to support particularly unique assemblages of species Red List of Threatened Ecosystems • **Reduction in geographic distribution** No – there is no current evidence to suggest a significant reduction in distribution • **Restricted geographic distribution** No – widespread habitat type • **Environmental degradation** No – the development of wind farms and oil & gas facilities might degrade this habitat type in the location of individual projects but this will not lead to a broad-scale degradation of the ecosystem • **Disruption of biotic processes or interactions** No – there is no evidence of this • **Quantitative analysis that estimates the probability of ecosystem collapse** Not possible using currently available data Conclusion: • **Unlikely to meet Criterion i/4**

3.2.2 Criterion ii/1: Critically Endangered and/or Endangered species

No species meets the threshold for Criterion ii/1. Data indicate that potentially globally significant numbers of Steppe Eagle fly through the study area each year. However, no bottlenecks, or stop-over locations are known from the study area. In addition, the species does not form temporal concentrations but migrates through the study area as individuals.

Steppe Eagle are more appropriately assessed under criterion iv/3, since their population is not concentrated in the area at any one point in time but during each whole migratory season. **The Project area thus does not qualify for Criterion ii/1.**

3.2.3 Criterion iii/2: Endemic and/or restricted-range species

No species meet the endemic/restricted-range definition (e.g., 50,000km^2 for terrestrial vertebrates, see Table 11 in Appendix 1.2.1 for more details about definition). **The Project area thus does not qualify for Criterion iii/2**.

3.2.4 Criterion iv/3: Migratory species and/or congregatory species

Other than migratory soaring birds, no migratory or congregatory species were found likely to meet PR6/PS6 thresholds in the project area. As discussed in Section 3.1.4, migratory soaring birds were assessed in more detail – at both a flyway scale (Section 3.2.4.1) and in more detail for the Project area given data availability (Section 3.2.4.2).

3.2.4.1 Migratory soaring birds: at a flyway scale within Egypt

There are 34 identified Important Bird Areas (IBAs) in Egypt, of which five were identified for (at least in part) congregations of birds (

Table 4; Figure 5). These sites are all considered bottlenecks for migratory soaring birds, and considered among the six most important sites on the flyway within the Middle East and North Africa (of about 24 such sites in that region: Porter 2005). This is because these "land-bridge" sites are located next to the shortest sea crossings between two land masses and so genuinely concentrate migratory soaring birds (which have difficult migrating over water). A review of literature and expert consideration of other potential bottleneck sites in the flyway did not reveal any other likely candidate sites not yet identified as IBAs.

All five of these Important Bird Areas should be considered Critical Habitat, because they represent the most important bottleneck sites for migratory soaring birds in the flyway and – in most cases – involve regular low flight/stop-over of these birds, which may lead to interactions with projects on the ground.

Table 4: Important Bird Areas for migratory soaring birds in Egypt

Important Bird Area	IBA Criteria*	Bottleneck?	Low flight?	Stop-over area?
Ain Sukhna	A1, A3, A4iv	Yes	Regularly	Regularly
El Qa plain	A1, A4iv	Yes	Regularly	No
Gebel El Zeit	A1, A4iv	Yes	Regularly	Regularly
Ras Mohammed National Park	A1, A4iv	Yes	Regularly	Regularly
Suez	A1, A4iv	Yes	Occasionally	Occasionally

* A1 highlights importance for threatened species; A3 for biome-restricted species; and A4iv for bottlenecks of migratory soaring birds

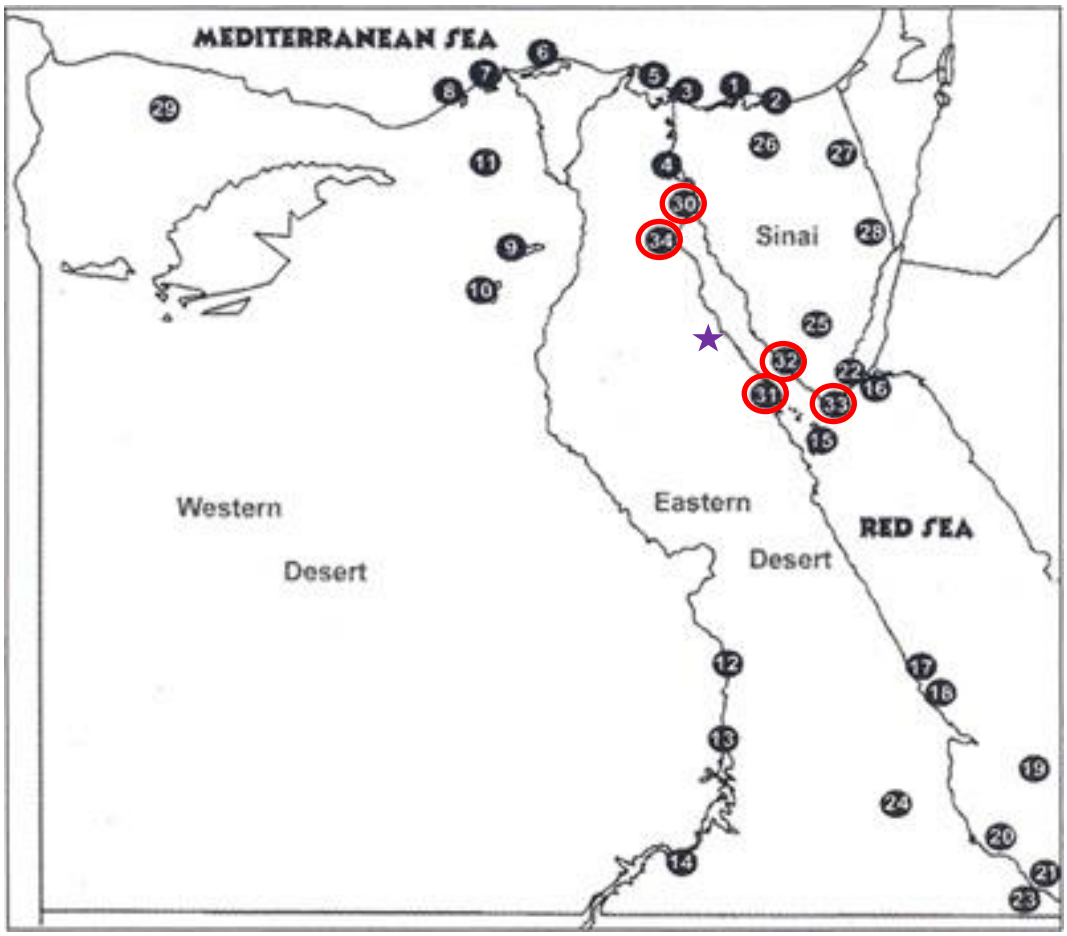

Figure 5: Important Bird Areas of Egypt. IBAs important for migratory soaring birds are circled in red. Ain Sukhna = 34, El Qa plain = 32, Gebel El Zeit = 31, Ras Mohammed National Park = 33, Suez = 30). Approximate project location marked with star. (map source: Egyptian Environmental Affairs Agency)

3.2.4.2 Migratory soaring birds: in the Project area

Available data show that **globally-important concentrations of eight migratory soaring bird species migrate over the area** in the vicinity of the Project, at levels equating to Tier 2 thresholds for Critical Habitat under Criteria iv/3 (PR6/PS6) (Table 5).

Table 5: Species reaching the threshold of Criterion iv/3 Tier 2

Taxa	Species	IUCN
Birds	*Accipiter brevipes* (Levant Sparrowhawk)	LC
	Aquila nipalensis (Steppe Eagle)	EN
	Clanga clanga (Greater Spotted Eagle)	VU
	Buteo buteo (Eurasian Buzzard)	LC
	Pernis apivorus (European Honey-buzzard)	LC
	Ciconia ciconia (White Stork)	LC
	Ciconia nigra (Black Stork)	LC
	Pelecanus onocratalus (White Pelican)	LC

The Project area is (at nearest point) just over 11 km distant from the Gebel El Zeit IBA, which is considered Critical Habitat (Section 6). However, there is no evidence from field surveys (Ecoda 2013; Environics 2016a, 2016b, 2017a, 2017b; RCREEE 2018) of regular low flight or that the study area is used as a stop-over during migration (and the vegetation in the vicinity of the Project does not suggest that the area might be a stop-over area in normal circumstances). There is also no evidence from surveys or topographic/geographic features that this area is a particular bottleneck within an already-restricted flyway. There is thus no indication that the area meets the criteria for KBA designation, and all identified KBAs for migratory soaring birds fall outside the Project area. Further, these birds do not appear to have any regular significant interaction with features on the ground, and thus the planned Project. Given this, and that it is part of a more extensive flyway of similar importance for a substantial distance**, it is not appropriate to consider the Project area to be Critical Habitat for migratory soaring birds**.

Nonetheless, the study area is clearly of global importance to these eight species. **Wind farm developments in this narrow migratory corridor present a risk to these species and should aim to mitigate potential impacts to at least no net loss**. They may otherwise have disproportionate effects on the global population.

Species	*Accipiter brevipes* – Levant Sparrowhawk	
Status (IUCN)	Least Concern (LC)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv
Discussion	The Levant Sparrowhawk breeds from East Europe to Russia and Kazakhstan to the east and Iran to the south. The species is a migrant, likely wintering in sub-Saharan Africa. Birds leave their breeding grounds in September, returning in April and May. It is usually solitary, but may hunt in pairs, and travels in flocks on migration which become especially large at certain bottlenecks. It is sometimes active at twilight, and frequently migrates at night using flapping flight. The global population is estimated at 7,400-18,400 mature individuals. The population is suspected to be stable. No substantial threats are known for the species except that it is highly vulnerable to the impacts of potential wind energy development (BirdLife International 2016a). More than 1% of the global population is estimated to use the flyway passing over the Lekela North Ras Gharib Project (Ecoda 2013; Environics 2017b; RCREEE 2018). The highest count was in the Lekela North Ras Gharib Project area itself, where 1,326 birds – which when taking into account immature birds may represent approximately 12% of the global population – were observed in spring 2017 (Environics 2017b). Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.	

Species	*Aquila nipalensis* – Steppe Eagle	
Status (IUCN)	Endangered (EN)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv

Discussion	Steppe Eagle nests in areas of steppe and semi-desert east of 43°E in European Russia from the Republic of Kalmykia, across Kazakhstan into Kyrgyzstan, China and Mongolia. A small breeding population has also been recorded in Turkey. The species is migratory, with birds wintering in south-east Africa and southern Asia. Migrants leave their breeding grounds between August and October, returning between January and May. It avoids sea crossings and thus forms large concentrations at bottleneck sites. Steppe Eagle has a wide distribution but the population is undergoing rapid decline due to habitat degradation, persecution and collisions with power lines. Hence, it has recently been upgraded to Endangered. Recent studies have shown that the species is very highly vulnerable to the impacts of potential wind energy developments. The global population is estimated to number 25,000-37,500 pairs (BirdLife International 2017a). More than 1% of the global population use this part of the flyway (Ecoda 2013; Environics 2016a, 2017b; RCREEE 2018). The highest count over the Lekela North Ras Gharib Project area was of 2,550 birds during spring 2017, representing approximately 3% of the global population when adjusted for immature birds (Environics 2017b); the highest count in the vicinity of the Project was of 4,918 birds in Spring 2017, about 6% of the global population (RCREEE 2018). Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.

Species	*Clanga clanga* (synonym: *Aquila clanga*) – Greater Spotted Eagle	
Status (IUCN)	Vulnerable (VU)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv
Discussion	The Spotted Eagle occupies a fragmented range, breeding in lowland forests near wetlands from Estonia, Poland, Belarus, Russia, Ukraine, Kazakhstan, China, Mongolia, Pakistan and north-west India. It is a migratory species, with birds leaving their breeding grounds in October and November to winter in southern Europe, southern Asia and north-east Africa. They usually return in February and March. Birds migrate on a broad front, tending to pass in singles, twos and threes with the occasional larger group.	

	The global population is estimated at 5,000-13,200 individuals (IUCN 2018). The species has undergone a decline as a result of habitat loss and degradation throughout its breeding and wintering ranges. The European population (25-49% of the global range) is estimated to have decreased by 50-79% in three generations (c. 50 years). Beside habitat destruction and disturbance (the species being intolerant to human presence in their territories), poaching and electrocution are considered as important threats. Hybridization with the Lesser Spotted Eagle have been observed but it remains unclear if this is of conservation concern (BirdLife International 2017b). Up to 63 birds, around 1% of the global population (when immature birds are taken into account), have been observed passing over areas in the vicinity of the Project during a season, in spring 2013 (Ecoda 2013). Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.

Species	*Buteo buteo* – Eurasian Buzzard	
Status (IUCN)	Least Concern (LC)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv
Discussion	The Eurasian Buzzard has an extremely large range and lives in a wide variety of habitats. Populations in Scandinavia and most of the former Soviet Union are migratory, wintering in Africa and southern Asia. Those elsewhere are resident. Migrants move south between August and November and make the return journey between February and May. Birds tend to occur singly or in pairs, sometimes forming small family groups at roosts. However, they can migrate in groups, and as birds avoid sea crossings (and even freshwater bodies) as far as possible, they form huge concentrations at peninsulas and narrow straits. Migration is strictly diurnal, and also often follows mountain ranges and ridges. The global population is estimated to 2,170,000-3,690,000 mature individuals, with 75% of the population living in Europe. The overall population trend is stable. The most important historical threat though has been from persecution, including through poisoned bait traps, with pesticides and habitat loss also causing some declines. It is highly vulnerable to the impacts of potential wind	

	energy developments. Ingestion of lead shot may also be a threat (BirdLife International 2017c). Approximately 1% of the global population use the flyway passing over the Lekela North Ras Gharib Project. 33,160 birds were recorded in the area surveyed for RCREEE in spring 2017 (RCREEE 2018). When the potential proportion of immature birds is taken into account this represents about 1% of the global population. Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.

Species	*Pernis apivorus* – European Honey-buzzard	
Status (IUCN)	Least Concern (LC)	
Relevant Critical Habitat criterion	PS6 • Criterion 3	PR6 • Criterion iv
Discussion	The European Honey Buzzard has an extremely large range, from Europe to Russia, and South Africa to the south. This is a migratory species, wintering in in tropical Africa. It leaves its breeding grounds in August and September, returning between April and June. Birds are mostly solitary except on migration, when they flock throughout, gathering in large numbers at preferred crossing points as well as roosting socially. They fly chiefly by soaring, although are able to cross wide stretches of water with flapping flight. It is a forest species, breeding in temperate and boreal woods; it is recorded up to 2,000 m. It feeds mainly on wasps and hornets, also being noted to take flying termites and locusts in Africa. The global population is estimated to 280,000-420,000 individuals. The overall population trend is decreasing. The species is threatened by deforestation, forest conversion and shooting. Human disturbance is also a threat. It is very highly vulnerable to the effects of potential wind energy development (BirdLife International 2016b). More than 1% of the global population use the flyway passing over the Lekela North Ras Gharib Project (Ecoda 2013; Environics 2016b; RCREEE 2018). The highest count in the vicinity of the Project was of 20,621 birds, approximately 5% of the global population, in spring 2013 (Ecoda 2013). Over the Lekela North Ras Gharib Project area alone 5,992 birds, approximately 1.5% of the global	

	population, were recorded in autumn 2015 (Environics 2016b). Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.

Species	*Ciconia ciconia* – White Stork	
Status (IUCN)	Least Concern (LC)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv
Discussion	The White Stork is a Palearctic migrant that travels with the assistance of thermal updrafts, the occurrence of which restricts the migratory routes the species can take. The main departure from the European breeding grounds occurs in August with the species travelling in large flocks of many thousands of individuals, generally arriving in Africa by early-October. Once within Africa the species becomes considerably nomadic in response to changing abundances of food (e.g. locust swarms). It forages singly, in small groups of 10-50 individuals, or in large flocks if prey is abundant and on its wintering grounds it may gather in large numbers (hundreds or thousands of individuals) at abundant food sources (e.g. locust swarms or grass fires). The global population is estimated at 700,000-704,000 individuals. The overall population trend is increasing, although some populations are decreasing or stable. The species is threatened by habitat alteration across its distribution range. During the winter in Africa, there may be high rates of mortality due to changes in feeding conditions owing to drought, desertification and the control of locust populations by insecticides. On migration and in its winter quarters, the species might also be hunted for food and sport (BirdLife International 2016c). More than 1% of the global population use the flyway passing over the Lekela North Ras Gharib Project, with counts above this threshold coming from eight surveys (Ecoda 2013; Environics 2016a, 2017b; RCREEE 2018). The maximum count is of 142,715, approximately 20% of the global population, in spring 2013 (Ecoda 2013). In the Lekela North Ras Gharib Project area itself, 23,714 birds, about 3.4% of the global population, were recorded in spring 2017 (Environics 2017b). Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical**	

	Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss.

Species	*Ciconia nigra* – Black Stork	
Status (IUCN)	Least Concern (LC)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv
Discussion	Most populations of this species are fully migratory and travel on a narrow front along well-defined routes. Some breeding populations (e.g. in Spain) are also sedentary, and southern African breeding birds disperse locally after breeding. On migration the species may travel singly or in small of up to 100 individuals, and on its wintering grounds it is normally observed singly or in small groups of less than 30 individuals. The species inhabits old, undisturbed, open forests from sea-level up to mountainous regions (e.g. 2,000-2,500 m in altitude). It forages in shallow streams, pools, marshes, swampy patches, damp meadows, flood-plains, pools in dry riverbeds and occasionally grasslands. It generally avoids large bodies of water and dense forest. The global population is estimated at 24,000-44,000 individuals. The overall population trend is unknown. The species is threatened by habitat degradation across its distribution range. The species is also occasionally killed by collisions with power-lines and overhead cables, and hunting in southern Europe and tropical Asia (especially during migration) have caused population declines (BirdLife International 2017d). More than 1% of the global population use the flyway passing over the Lekela North Ras Gharib Project, with counts above this threshold coming from six surveys (Ecoda 2013; Environics 2016a, 2016b; RCREEE 2018). The highest count in the vicinity of the Project was of 1,302 birds, about 5.4% of the global population, in spring 2013 (Ecoda 2013). However, the Lekela North Ras Gharib Project area alone recorded 1,000 birds (c. 4% of the global population) in autumn 2015. Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.	

Species	*Pelecanus onocrotalus* – White Pelican	
Status (IUCN)	Least Concern (LC)	
Relevant Critical Habitat criterion	PS6 • Criterion 3 (Tier 2)	PR6 • Criterion iv
Discussion	The White Pelican has an extremely large range, with a patchy distribution from East Europe to Russia and Kazakhstan to the east and Myanmar and India to the south. It is also found in many countries of sub-saharian Africa plus in Egypt, Sudan and Saudi Arabia. The species is associated with lakes, lagoons, marshes, broad rivers, deltas, estuaries and coasts of landlocked seas. Northern populations of this species are fully migratory and travel via important stop-over sites. Other populations are sedentary, dispersive or nomadic, flying over land to seek suitable feeding locations. The species nests in large colonies of 200 to 40,000 pairs, breeding in all months of the year in Africa. It migrates in large flocks of 50-500 individuals. The species regularly flies long distances from breeding or roosting colonies to feed, mostly fishing in the early-morning and early-evening. The global population is estimated to 265,000-295,000 individuals. The overall population trend is uncertain, with some populations increasing and others decreasing. The species is threatened by habitat destruction, persecution and hunting for sport. It also suffers mortality due to collisions with electric powerlines during migration, dispersal or on its wintering grounds and is often found drowned in fishing nets. In Egypt, adults of this species are hunted and sold for food at markets (BirdLife International 2016d). More than 1% of the global population use the flyway passing over the Lekela North Ras Gharib Project, with counts above this threshold coming from three surveys (Ecoda 2013; RCREEE 2018). The highest count in the vicinity of the Project was of 6,242 birds, over 2% of the global population, in the ACWA area in spring 2016 (RCREEE 2018). Because the Project area does not represent a particular bottleneck or stop-over area, **this species does not qualify the Project area as Critical Habitat, but the Project should aim to avoid all impacts in order to achieve no net loss**.	

3.2.5 Criterion v/5: Areas associated with key evolutionary processes

This criterion is defined by the physical features of a landscape that might be associated with particular evolutionary processes, and/or subpopulations of species that are phylogenetically or morpho-genetically distinct and may be of special conservation concern given their distinct evolutionary history (IFC 2012b, paragraph GN95).

Although key evolutionary processes may operate at various spatial scales, in the sense of PR6/PS6 these are usually considered at a relatively fine scale rather than broad biogeographic regions (e.g. an individual mountain that may have acted as a glacial refugium and thus hosted the evolution of a suite of endemic species). No quantitative significance thresholds exist for this criterion, so there is a reliance on expert opinion and qualitative value judgement. Areas associated with key evolutionary processes were screened using expert advice.

Given the very sparse vegetation, composed mainly of widespread desert plant species with limited evidence of local endemism, and the low density of animal species, it is very unlikely that any key evolutionary processes could occur in the Project area. **Therefore, the Project area does not qualify for Criterion v/5.**

3.2.6 PR6 CH Criterion vi

PR6 requires that ecological functions that are vital to maintaining the viability of Critical Habitat-qualifying features are also qualifying as Critical Habitat. It might include specific habitat features such as riparian zones and river, dispersal or migration corridors, hydrological regimes, seasonal regimes or food sources, keystone or habitat-forming species (EBRD 2014b; section 3.7), that are essential for the long-term survival of the species.

In the context of this Project, only migratory species meet thresholds for Critical Habitat. Habitat essential for the long-term survival of these species are breeding areas, stop-over points along the migratory corridor and wintering areas. The Project is located within the migratory corridor and is crossed by high numbers of migratory birds. However, there is no mention, in the field surveys (Ecoda 2013; Environics 2016a, 2016b, 2017a, 2017b; RCREEE 2018), that the Project area is used as a stop-over during the migration (and the vegetation in the vicinity of the Project does not suggest that the area might be a stop-over under normal circumstances). This means that, even if the Project area is essential for the migration of the birds, it does not include ecological functions that are essential for the migration of the birds. **Therefore, the Project area does not qualify for Criterion vi**.

4 Natural Habitat and Modified Habitat

IFC GN6 defines Natural Habitats as '*areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition*'.

IFC GN6 defines Modified Habitats as '*areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition*'.

The scope of this assessment did not include detailed field surveys or mapping of Natural and Modified Habitats. They have, however, been coarsely mapped in the vicinity of the Project based on the classification of recent satellite imagery for terrestrial habitat (World Land Cover ESA 2010). This (Figure 6) shows that the area encompasses mostly Natural Habitat - particularly desert areas classified as barren areas with no or minimal vegetation. Small patches of sparse shrubs are present along the sea and in a very small extent within the desert. Modified Habitats are urban areas present in few locations along the Red Sea and small patches of agriculture.

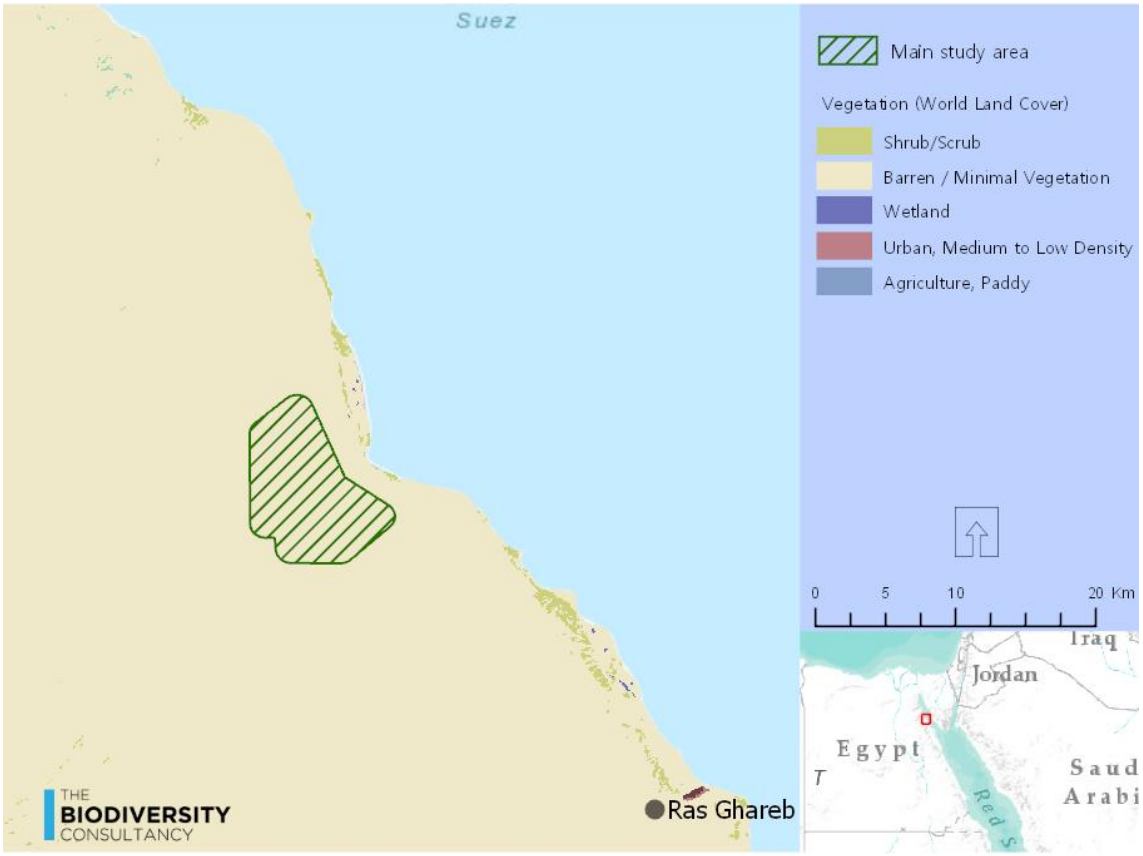

Figure 6: Vegetation cover in the vicinity of the Project

5 Priority Biodiversity

Both PS6 and PR6 consider other biodiversity as a priority for conservation, and thus a priority to consider in mitigation planning. Both PS6 and PR6 require No Net Loss, and preferably a Net Gain, for priority biodiversity. This biodiversity comprises those features that are of high irreplaceability and/or vulnerability, but not sufficient to qualify an area as Critical Habitat. These particularly include species which are important components of the natural environment, including any flyway. PR6 has a more extensively-defined approach to identifying priority biodiversity – called 'Priority Biodiversity Features' (PBFs) – than PS6. We therefore follow PR6 PBF criteria to identify priority biodiversity present in and around the study area.

As discussed in more depth in Section 5.1, to ensure that risks to migratory soaring birds are managed appropriately, 12 species have been precautionarily identified as Priority Biodiversity (Table 6)[8].

Table 6: Priority biodiversity in the North Ras Gharib study area

Taxa	Species	IUCN	PBF Criterion
Reptile	*Uromastyx aegyptia* (Egyptian Spiny-tailed Lizard)	VU	ii
Birds	*Accipiter brevipes* (Levant Sparrowhawk)	LC	iii
	Neophron percnopterus (Egyptian Vulture)	EN	iii
	Aquila nipalensis (Steppe Eagle)	EN	iii
	Clanga clanga (Greater Spotted Eagle)	VU	iii
	Aquila heliaca (Eastern Imperial Eagle)	VU	iii
	Falco concolor (Sooty Falcon)	VU	iii
	Buteo buteo (Eurasian Buzzard)	LC	iii
	Pernis apivorus (European Honey-buzzard)	LC	iii
	Ciconia ciconia (White Stork)	LC	iii
	Ciconia nigra (Black Stork)	LC	iii
	Pelecanus onocratalus (White Pelican)	LC	iii

[8] The globally Endangered Saker Falcon (*Falco churrug*) have been observed in the area in very low numbers. The small number of individuals observed in the Study Area are not significant enough to qualify as CH or PBF. However, this species is of high cultural and economic interest in the Arab world and may be of concern to local stakeholders.

5.1 Priority Biodiversity Features

PR6 defines four criteria for the identification of PBFs (Table 7). As PR6 does not define quantitative thresholds for identifying PBFs, this assessment has been qualitative using expert opinion.

Table 7: PR6 criteria for Priority Biodiversity Features

Features	PR6
Threatened habitat	Criterion i
Vulnerable species	Criterion ii
Significant biodiversity features identified by a broad set of stakeholders or governments	Criterion iii
Ecological structure and functions that are vital to maintaining the viability of biodiversity features described in [PR6 paragraph 12]	Criterion iv

5.1.1 PBF Criterion i: Threatened habitat

Earlier assessment did not identify any vegetation or ecosystems present in the vicinity of the Project that might be threatened (Section 3.2.1). Therefore, no vegetation type qualifies for Criterion i under Priority Biodiversity Features.

5.1.2 PBF Criterion ii: Vulnerable species

One globally Vulnerable reptile species has a significant presence in the Project area and is thus identified as a Priority Biodiversity Feature – *Uromastyx aegyptia* (Egyptian Spiny-tailed Lizard). Three globally Vulnerable, and two Endangered migratory soaring birds are seasonally present in the Project area in notable numbers. These species are more appropriately discussed in section 5.1.3 as they do not form temporal or spatial concentrations.

Species	*Uromastyx aegyptia* - Egyptian Spiny–tailed Lizard
Status (IUCN)	Vulnerable (VU)
Relevant PBF criterion	Criterion ii
Discussion	The Egyptian Spiny–tailed Lizard has a patchy distribution from Egypt (east of the Nile), eastwards into Israel, Jordan, southern Syria, Iraq and Iran and southwards into the Arabian Peninsula. It occurs in open, flat, gravelly, stony and rocky areas, and it is infrequently seen in sandy areas. Animals forage on low vegetation close to their burrows, where it lives in loose colonies.

	There is no information about the global population but the species is generally uncommon and declining throughout its range in Egypt. The species is threatened by habitat loss due to over-grazing, quarries and agricultural expansion, and pet and medicinal trade (some of them being illegal). The species is protected by Egyptian legislation (Wilms *et al.* 2012), implying that it cannot been killed or captured in any protected area. In autumn 2016, the species was recorded in the Lekela BOO Project area (Environics 2018). It has also been recorded in the western and the northern survey areas (Ecoda 2013; RCREEE 2018). Despite its broad distribution, the **Egyptian Spiny-tailed Lizard is Vulnerable, declining throughout its range, and poorly-known, and thus precautionarily considered a Priority Biodiversity Feature**.

5.1.3 PBF Criterion iii: Significant biodiversity features identified by a broad set of stakeholders or governments

Available data show that globally-important concentrations of eight migratory soaring bird species migrate over the area in the vicinity of the Project (Table 5). The analysis in section 3.2.4.2 shows that the area does not qualify as Critical Habitat because these birds do not engage in regular low flight in the area or use it as a stop-over during migration, and the project area is not a bottleneck in the flyway corridor. However, the concentrations of these species are of significant interest to national and international conservation stakeholders. For example, they are characteristic species of the Rift Valley / Red Sea flyway. In addition, three globally threatened migratory species pass through the study area in large numbers (but below the numerical thresholds for Critical Habitat): Egyptian Vulture (Endangered), Sooty Falcon (Vulnerable) and Eastern Imperial Eagle (Vulnerable). The threatened status of these latter species is an indication of their interest to conservation stakeholders.

While they do not meet the threshold for Critical Habitat these 11 species (Table 8) have been identified as important to stakeholders and present potential risks to the project. They are therefore precautionarily considered to be PBFs.

Table 8: Priority Biodiversity Features of significant stakeholder interest

Species	IUCN
Accipiter brevipes (Levant Sparrowhawk)*	LC
Neophron percnopterus (Egyptian Vulture)	EN
Aquila nipalensis (Steppe Eagle)*	EN
Clanga clanga (Greater Spotted Eagle)*	VU
Aquila heliaca (Eastern Imperial Eagle)	VU

Falco concolor (Sooty Falcon)	VU
Buteo buteo (Eurasian Buzzard)*	LC
Pernis apivorus (European Honey-buzzard)*	LC
Ciconia ciconia (White Stork)*	LC
Ciconia nigra (Black Stork)*	LC
Pelecanus onocratalus (White Pelican)*	LC

* = species profiled in section 3.2.4.2

Species profiles for the three additional species are presented below.

Species	*Neophron percnopterus* – Egyptian Vulture
Status (IUCN)	Endangered (EN)
Description	Resident populations of Egyptian Vulture occur in Ethiopia and East Africa, Arabia, the Indian Subcontinent and Saharan and Sahelian parts of Africa (Algeria, Niger, northernmost Cameroon, Chad and northern Sudan). Migratory birds breed in northernmost Africa (Morocco, Algeria, Tunisia, Libya, Egypt), southern Europe (from Spain to Turkey), and from central Asia to Nepal**.** These birds winter within the resident range, and in addition throughout the Sahel region of Africa. Northern breeders conduct long-distance intercontinental migrations, flying over land and often utilising the narrowest part of the Strait of Gibraltar or the Bosphorus and Dardanelles on their way to Africa. The species exhibits high site fidelity, particularly in males. Egyptian Vulture has a wide distribution but the population is undergoing rapid decline due to disturbance, direct and indirect poisoning, electrocution by powerlines and collisions with wind turbines, reduced food availability and habitat change. The global population is estimated at 18,000-57,000 individuals with populations having declined by >90% in India in the last decade (presumably resulting from poisoning by the veterinary drug diclofenac) and by 50-79% in Europe over the last three generations (BirdLife International 2017e). Hence, it was upgraded to Endangered in 2017. The species is known to be resident in Egypt. 0.7% of the global population has passed over the study area (Ecoda 2013).

Species	*Aquila heliaca* – Eastern Imperial Eagle
Status (IUCN)	Vulnerable (VU)
Description	The Eastern Imperial Eagle is a lowland species, breeding in forests up to 1,000m, lowland and riverine forests, steppes, agriculture areas or semi-deserts in Europe and from Russia to Kazakhstan. Eastern populations are migratory, wintering in the Middle East, East Africa south to Tanzania, the Arabian Peninsula, the Indian Subcontinent and south and east Asia. These birds make their southward migration between September and November, returning between February and May. Birds are usually seen singly or in pairs, with small groups sometimes forming on migration or at sources of food or water. In exceptional cases large groups of up to 200 have been known to form on autumn migration. It apparently prefers wetlands when wintering. Adults in central Europe, the Balkan peninsula, Turkey and the Caucasus are usually residents. The global population is estimated at 3,750-15,000 individuals. The European population (c. 30% of the global range) is estimated to be stable while the population from Russia to Kazakhstan might still be decreasing due to habitat loss and exploitation (notably intensive forestry) across its range. The population is also threatened by alteration of feeding habitats, shortages of prey species, nest robbing and illegal trade, shooting, poisoning, electrocution by powerlines and collisions with vehicles (BirdLife International 2017f). The species does not meet the CH threshold for migratory species, as 'only' 0.5% of the global population has been recorded in the AoA during a season (RCREEE 2018).

Species	*Falco concolor* – Sooty Falcon
Status (IUCN)	Vulnerable (VU)
Justification	The Sooty Falcon breeds colonially in hot and arid environments, using on cliffs, small rocky islands and rugged desert mountains. Breeding occurs in a discontinuously range including Libya, eastwards through Egypt to the Red Sea islands off Sudan, Djibouti and Ethiopia, islands and coasts of Saudi Arabia, Yemen, Israel, Jordan and Bahrain, as well as islands in the Persian

	Gulf. Breeding is timed to coincide with the autumn migration of small birds on which it feeds. Its nest is a shallow depression dug into the ground. It is a migratory species, with birds arriving in their wintering grounds in Madagascar (and in a few extant in costal Mozambique and eastern South Africa) from late October and returning to breeding sites in April. Migrants generally travel singly, or in pairs or small flocks. The global population is estimated at 2,800-4,000 mature individuals. The species has undergone a decline, which seems to be due to pressures in wintering grounds or on migration, although precise drivers of the decline remain unclear (BirdLife International 2017g). Hence, it was upgraded to Vulnerable in 2016. The species is known to breed in Egypt. It does not meet the CH threshold for migratory species as 'only' 0.7% of the global population has been observed in the AoA during a season (RCREEE 2018).

5.1.4 PBF Criterion iv: Ecological structure and functions needed to maintain the viability of priority biodiversity features

As for Critical Habitat, PR6 requires that ecological functions that are vital to maintaining the viability of Priority Biodiversity Features also qualify as Priority Biodiversity Features.

As is the case for migratory birds reaching Critical Habitat thresholds, migratory birds qualifying as Priority Biodiversity Features do not do appear to stop over within the Project area (see Section 3.2.6). Therefore, the Project area does not include ecological functions essential for the viability of the migratory bird species and does not qualify under Criterion iv.

Regarding the Egyptian Spiny-tailed Lizard, several burrows have been recorded in the vicinity of the Project, but nothing suggests that the area contains specific ecological functions that are vital for the species. Therefore, the main study area does not qualify under Criterion iv.

6 Protected areas and internationally recognised areas

The main study area does not overlap any protected areas or internationally recognised areas. Details of nearby protected areas and internationally recognised areas are outlined below for context.

The Project concession is located, at its closest point, <12 km from Gebel El Zeit Important Bird Area (IBA) (Figure 7). This internationally recognised area is *de facto* also a Key Biodiversity Area. This IBA is a 100 km-long strip extending from Ras Ghareb to the bay of Ghubbet El Gemsa, along the Gulf of Suez. The Gebel El Zeit area is a very important migration corridor and stop off point for soaring migrants, particularly birds of prey and storks. It is the narrowest point in the

southern part of the Gulf of Suez. Over 250,000 White Storks and many other migrant soaring birds are funnelled through this stretch of coast on both spring and autumn journeys. Birds of prey, storks and pelicans migrate through and usually land, rest or roost near the coastline and on the surrounding desert plains and hills. The IBA is classified under criteria A1 (site regularly holding significant numbers of globally threatened species) and A4 (site known to hold congregations of more than 1% of the global population of a species).

Malahet Ras Shukeir is a small area (107 km^2) located 40 km south of Ras Ghareb town that has been proposed as a National Protected Area in 1999. El-Galala El-Qebalya is a proposed protected area to the north of the Project. Details on the proposed area are scant. No wind farm developments are planned in the area, and the Lekela North Ras Gharib is 16 km from the proposed area.

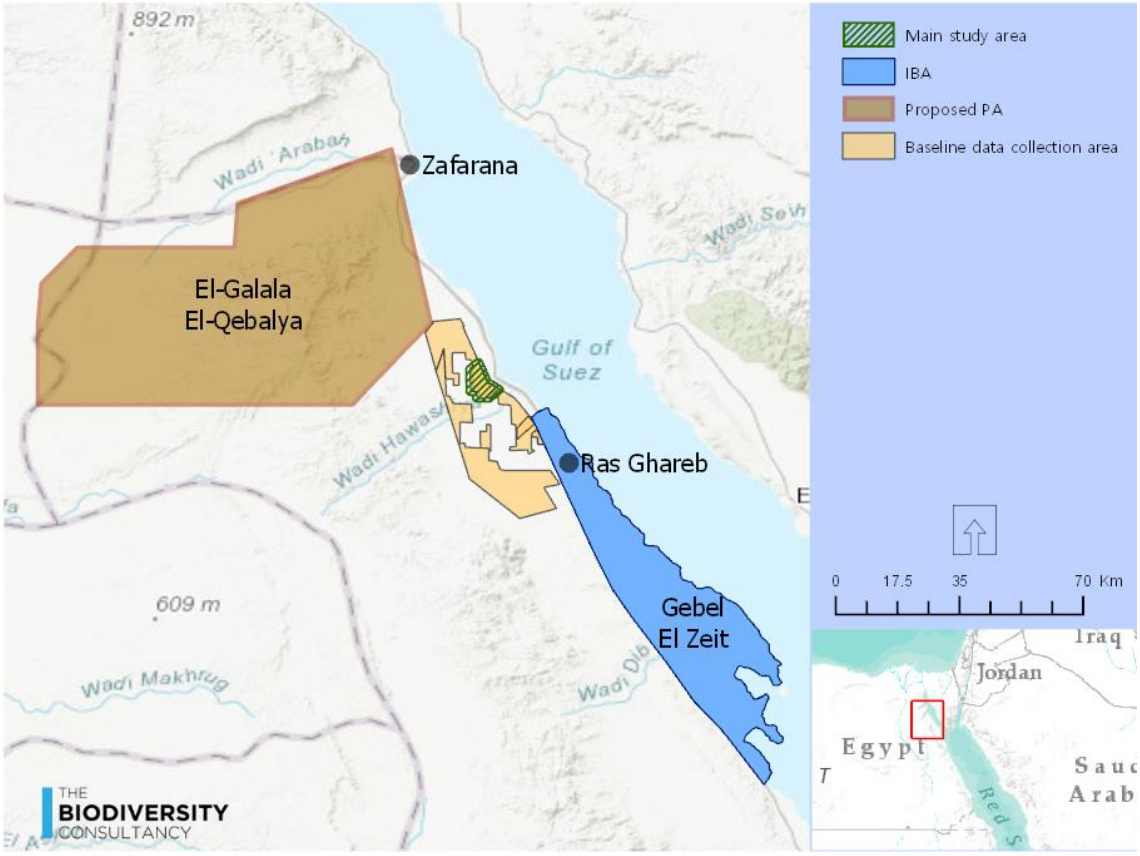

Figure 7: IBAs and PAs in the vicinity of the Project

7 Implications and next steps

The Project does not occur in Critical Habitat. Nonetheless, it is close to an area of Critical Habitat (Gebel El Zeit IBA) and **globally important numbers of migratory soaring birds pass over the Project area**. This recognition of biodiversity importance is based on the biodiversity values and *not* the potential impacts associated with the Project. However, wind farm developments in this narrow migratory corridor present a *risk* to these species, as they have the potential for disproportionate impacts on the global population. This means the Project will

need to **pay special attention to management of biodiversity impacts, particularly to avoid collisions of migratory soaring birds** and highlights the **priority biodiversity that the Project needs to consider during more detailed mitigation planning**.

Where significant adverse impacts are predicted to occur, lender standards require projects to **carefully follow the mitigation hierarchy**. **In Natural Habitat, no net loss is required where feasible. No net loss is required, and preferably a net gain, for priority biodiversity.** On a precautionary basis, the Project should also aim to avoid all impacts on – and thus achieve no net loss for – the eight migratory bird species passing over the Project area in globally important numbers, and the three globally threatened bird species passing over in notable numbers. As the Egyptian Spiny-tailed Lizard is a Priority Biodiversity Feature, efforts should be made to avoid and minimise on-site impacts in order to ensure no significant adverse impacts on this species.

Given that many wind projects are in preparation or in development along the west side of Gulf of Suez, an analysis of cumulative effects to biodiversity is being prepared (as of September 2018) to identify priority bird Valued Environmental Components (VECs), document potential impacts of wind farm projects and to propose potential actions that can be undertaken to minimise these impacts. Thirteen bird species have been identified as priority VECs (Table 9).

Table 9: Summary of PBFs and VECs for the Lekela North Ras Gharib project

Species	Scientific name	PBF	VEC
Egyptian Spiny-tailed Lizard	*Uromastyx aegyptia*	✓	potential
Levant Sparrowhawk	*Accipiter brevipes*	✓	✓
Egyptian Vulture	*Neophron percnopterus*	✓	✓
Steppe Eagle	*Aquila nipalensis*	✓	✓
Greater Spotted Eagle	*Clanga clanga*	✓	✓
Eastern Imperial Eagle	*Aquila heliaca*	✓	
Sooty Falcon	*Falco concolor*	✓	
Eurasian Buzzard	*Buteo buteo*	✓	✓
European Honey-buzzard	*Pernis apivorus*	✓	✓
White Stork	*Ciconia ciconia*	✓	✓
Black Stork	*Ciconia nigra*	✓	✓
White Pelican	*Pelecanus onocratalus*	✓	✓
Booted Eagle	*Hieraaetus pennatus*		✓
Common Crane	*Grus grus*		✓
Pallid Harrier	*Circus macrourus*		✓
Black Kite	*Milvus migrans*		✓

The cumulative effects and residual impact assessments will provide necessary information for the development of a **Biodiversity Action Plan** (BAP). The BAP should demonstrate how the Project will apply the mitigation hierarchy to address significant direct and indirect impacts, and **evaluate how the Project will achieve at least no net loss for priority biodiversity, Natural Habitat and VECs** (i.e. the species listed in Table 9). This would include a review of collision risk models to determine what, if any, residual impacts remain after the application of mitigation actions (primarily shut-down on demand). If collision risk models indicate that impacts may remain, this will also need to include a plan for additional measures to address residual impacts on priority biodiversity. We currently believe a good shut-down on demand programme has the potential to reduce impacts to negligible levels, but this assumption needs validation through a **robust long-term monitoring, evaluation and adaptive management plan**. In a worst-case scenario, where significant impacts are found cost-effective offsets could be applied for most migratory soaring birds based on methods which have been applied successfully elsewhere for raptors suffering collision mortality (through retro-fitting of mitigation measures to non-Project powerlines that are also killing these birds). There is, substantial opportunity for similar approaches in Egypt.

Following this step-by-step approach and developing these biodiversity documents will enable the Project to follow industry good-practice standards for biodiversity (IFC and EBRD). Demonstrating good practice through such biodiversity management will offer the Lekela North Ras Gharib Project an opportunity to lead practice in the region, minimising risks of association with any poor practice at other wind farm projects.

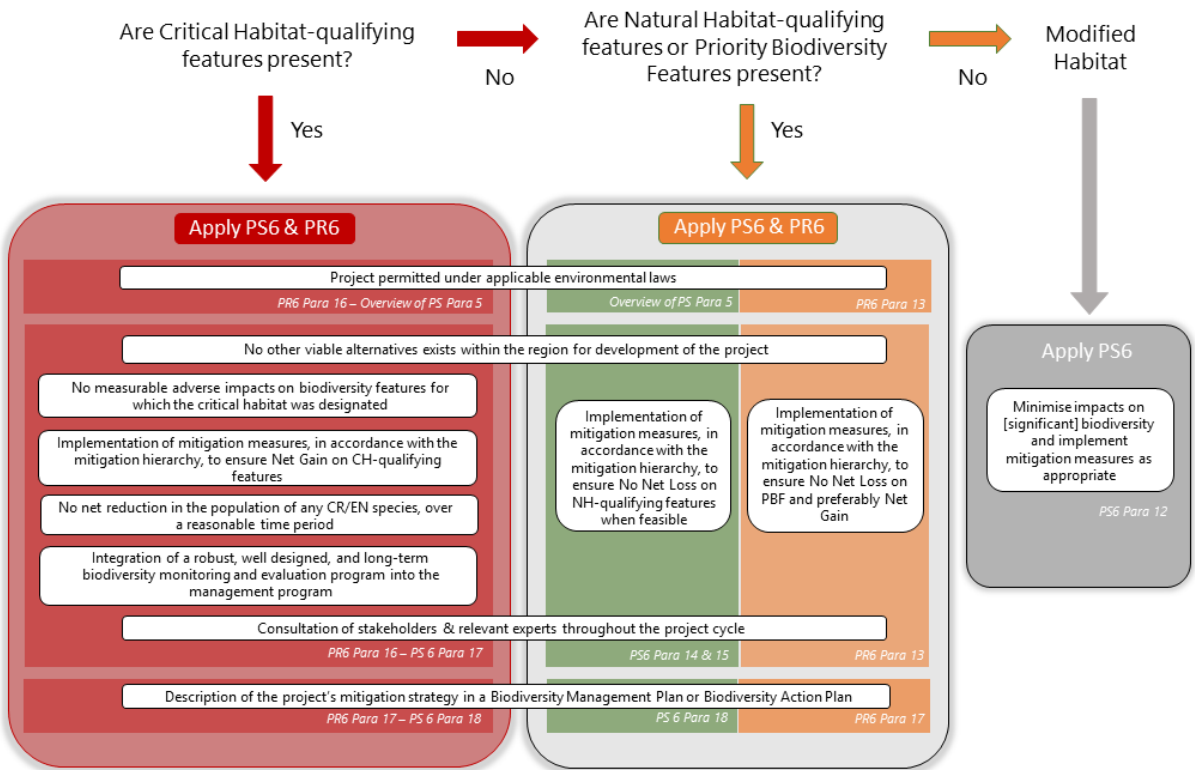

Figure 8: Key PS6 and PR6 requirements for operating in Critical, Natural or Modified Habitats, or having Priority Biodiversity Features.

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Appendix 1 IFC and EBRD identification of biodiversity risks

Appendix 1.1 The CHA process

Appendix 1.1.1 Approach to assessing biodiversity features following PS6 and PR6 standards

IFC and EBRD standards follow a slightly different approach to define the value of biodiversity features (IFC defining Habitat based on the vegetation condition while EBRD is more focused on the ecological functions of the ecosystems), but their approach to identify CH-qualifying features is very similar and uses the same thresholds.

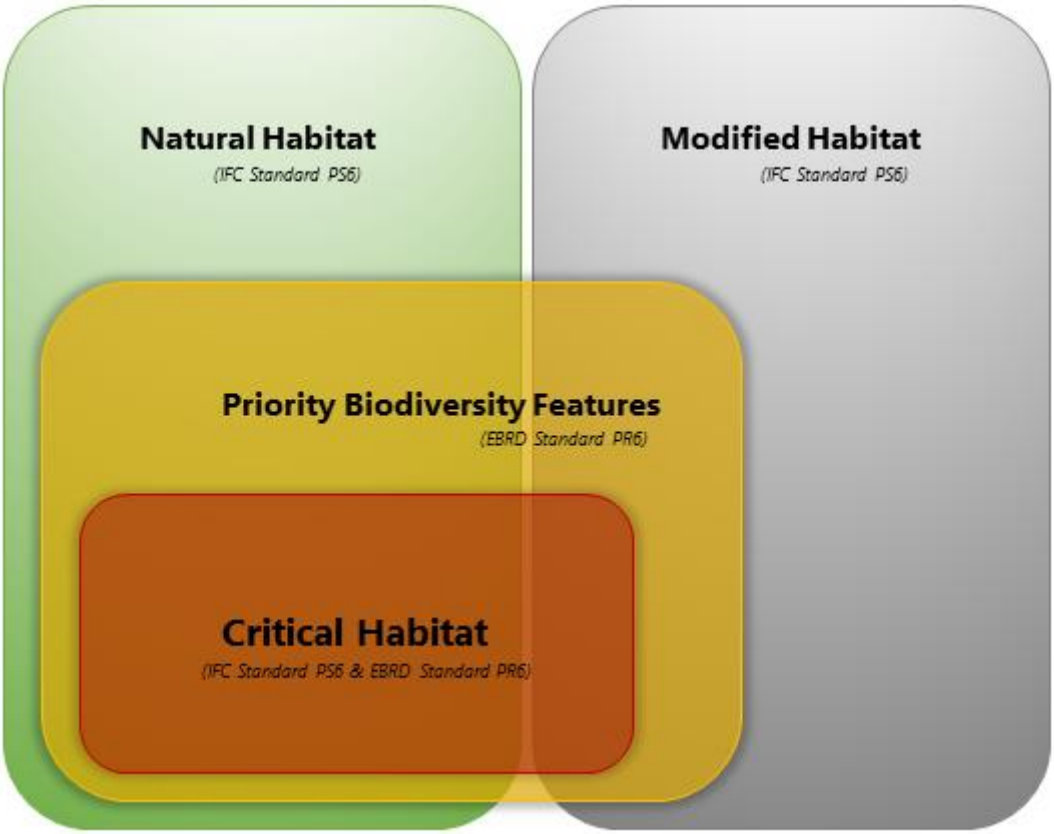

Figure 9: Classification of biodiversity features following PS6 and PR6 standards

Appendix 1.2 Criteria for biodiversity features

Appendix 1.2.1 Identifying Critical Habitat

Criteria for the identification of potential Critical Habitat in PR6 and PS6 are defined in Paragraph 14 of PR6 and Paragraph 16 of PS6. They are listed in Table 11 and in Figure 10.

Table 10: PR6 and PS6 Criteria for Critical Habitat

Features	PR6	PS6
Highly threatened or unique ecosystems	Criterion i	Criterion 4
Critically Endangered and Endangered species	Criterion ii	Criterion 1
Endemic or geographically restricted species	Criterion iii	Criterion 2
Globally significant migratory or congregatory species	Criterion iv	Criterion 3
Areas associated with key evolutionary processes	Criterion v	Criterion 5
Ecological functions that are vital to maintaining the viability of biodiversity features described in [PR6 paragraph 14]	Criterion vi	n/a

PR6 and PS6 have three criteria for which quantitative thresholds have been defined (both standards following the same threshold; EBRD referring to IFC thresholds in the guidance note for its standard – EBRD 2014a - section 3.7):

- Criterion ii (PR6)/1 (PS6): Critically Endangered and Endangered species;
- Criterion iii (PR6)/2 (PS6): Endemic/Restricted Range Species; and
- Criterion iv (PR6)/3 (PS6): Migratory/Congregatory Species.

Each criterion has two tiers defined by quantitative thresholds expressed as percentages of global and national population sizes, or of proportions of known species ranges or distributions. Tier 1 Critical Habitat contains a greater proportion of a qualifying species' population or range than Tier 2 Critical Habitat, and so is consequently more important for that species.

There are also three qualitative criteria (these criteria have one level only – they are not tiered):

- Criterion i (PR6)/4 (PS6): Highly Threatened and/or Unique Ecosystems;
- Criterion v (PR6)/5 (PS6): Key Evolutionary Processes; and
- Criterion vi (PR6) (this criterion is not present in IFC PS6): Ecological functions that are vital to maintaining the viability of biodiversity features described in [PR6 paragraph 14].

PS6 and PR6 also make provision for Legally Protected and Internationally Recognised Areas as Critical Habitat (PR6 paragraph 19-20 and PS6 paragraph 20), including UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, Key Biodiversity Areas, Important Bird Areas, Important Plant Area, Alliance for Zero Extinction Sites and wetlands designated under the Convention on Wetlands of International Importance ('the Ramsar Convention'). Other areas of high biodiversity value (such as areas of primary/old growth forest, or areas required for the reintroduction of threatened species) may also qualify, as determined on a case-by-case basis by specialists.

Thresholds and definitions for Critical Habitat criteria are summarised in below.

Table 11: Critical Habitat thresholds used in this assessment

Criteria	Tier 1	Tier 2
Criterion 1 (Criterion ii of PR6): Critically Endangered (CR)/ Endangered (EN) Species	(a) Habitat required to sustain ≥ 10 percent of the global population of a CR or EN species/subspecies where there are known, regular occurrences of the species and where that habitat could be considered a discrete management unit for that species. (b) Habitat with known, regular occurrences of CR or EN species where that habitat is one of 10 or fewer discrete management sites globally for that species.	(c) Habitat that supports the regular occurrence of a single individual of a CR species and/or habitat containing regionally- important concentrations of a Red-listed EN species where that habitat could be considered a discrete management unit for that species/ subspecies. (d) Habitat of significant importance to CR or EN species that are wide-ranging and/or whose population distribution is not well understood and where the loss of such a habitat could potentially impact the long-term survivability of the species. (e) As appropriate, habitat containing nationally/regionally important concentrations of an EN, CR or equivalent national/regional listing.
Criterion 2 (Criterion iii of PR6): Endemic/ Restricted Range Species	(a) Habitat known to sustain ≥ 95 percent of the global population of an endemic or restricted-range species where that habitat could be considered a discrete management unit for that species (e.g., a single-site endemic).	(b) Habitat known to sustain ≥ 1 percent but < 95 percent of the global population of an endemic or restricted-range species where that habitat could be considered a discrete management unit for that species, where data are available and/or based on expert judgment.

	IFC GN6 provides the following guidance on Criterion 2:
	• An endemic species is defined as one that has ≥ 95 percent of its global range inside the country or region of analysis
	• A restricted-range species is defined as:
	  ○ **For terrestrial vertebrates**, extent of occurrence of 50,000 km^2 or less.
	  ○ **For marine systems**, extent of occurrence of 100,000 km^2 or less.	

	○ **For freshwater systems**, standardized thresholds have not been set at the global level. However, an IUCN study of African freshwater biodiversity applied thresholds of 20,000 km^2 for crabs, fish, and molluscs and 50,000 km^2 for odonates (dragonflies and damselflies). These can be taken as approximate guidance, although the extent to which they are applicable to other taxa and in other regions is not yet known. ○ **For plants**, restricted-range species may be listed as part of national legislation. Plants are more commonly referred to as "endemic," and the definition provided in paragraph GN79 would apply. Particular attention should therefore be paid to endemic plants of smaller countries which are likely, by definition, to be globally rarer and therefore of higher overall priority	
Criterion 3 (Criterion iv of PR6): Migratory/ Congregatory Species	(a) Habitat known to sustain, on a cyclical or otherwise regular basis, ≥ 95 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle where that habitat could be considered a discrete management unit for that species.	(b) Habitat known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent but < 95 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle and where that habitat could be considered a discrete management unit for that species, where adequate data are available and/or based on expert judgment. (c) For birds, habitat that meets BirdLife International's Criterion A4 for congregations and/or Ramsar Criteria 5 or 6 for Identifying Wetlands of International Importance. (d) For species with large but clumped distributions, a provisional threshold is set at ≥5 percent of the global population for both terrestrial and marine species. (e) Source sites that contribute ≥ 1 percent of the global population of recruits.
Criterion 4 (Criterion i of PR6): Highly Threatened	IFC GN6 (paragraph 90-93): • Those at risk of significantly decreasing in area or quality; • Those with a small spatial extent; and/or • Those containing unique assemblages of species including assemblages or concentrations of biome-restricted species.	

and/or Unique Ecosystems	• Areas determined to be irreplaceable or of high priority/significance based on systematic conservation planning techniques carried out at the landscape and/or regional scale by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally-recognized NGOs) or that are recognized as such in existing regional or national plans, such as the National Biodiversity Strategy and Action Plan (NBSAP), also qualify as critical habitat per Criterion 4 (IFC 2012b, paragraph GN90).
	IUCN Red List of Threatened Ecosystems: • Two relevant criteria: ○ **Critically Endangered (CR):** An ecosystem is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered. It is therefore considered to be at an extremely high risk of collapse. ○ **Endangered (EN):** An ecosystem is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered. It is therefore considered to be at a very high risk of collapse • Methodology for applying these criteria is given in Rodríguez-Clark *et al.* (2015). To determine the appropriate category, the following factors are considered: A) Reduction in geographic distribution B) Restricted geographic distribution C) Environmental degradation D) Disruption of biotic processes or interactions and E) Quantitative analysis that estimates the probability of ecosystem collapse
Criterion 5 (Criterion v of PR6): Key evolutionary processes	This criterion is defined by the physical features of a landscape that might be associated with particular evolutionary processes, and/or subpopulations of species that are phylogenetically or morpho-genetically distinct and may be of special conservation concern given their distinct evolutionary history (IFC 2012b, paragraph GN95). Although in West Africa, the presence of evolutionarily important forest refugia has been postulated for humid mountainous zones, it is unlikely in the lower regions where the Project is located. Therefore, no features qualifying under Criterion 5 have been identified for the Project.

Appendix 1.2.2 Identifying Natural and Modified Habitats (PS6)

IFC GN6 defines Natural Habitats as '*areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition*'. Modified Habitats are defined as '*areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition*'.

IFC does not mention specific rules to identify Natural and Modified Habitats and there is no quantitative threshold. Their identification is usually done based on most detailed available vegetation maps and expert knowledge of the area.

Appendix 1.2.3 Identifying Priority Biodiversity Features (PR6)

PR6 requires that a Project identifies Priority Biodiversity Features present in the Project area (PR6 paragraph 12). This concept replaces the previous definition of Natural Habitat that was used by EBRD, in order to adopt a more criterion-based approach and to focus on the most important areas of Natural Habitat – rather than extensive areas that are natural but not necessarily of global conservation value. Criteria are listed in Table 12 and in Figure 10. In current practice, such features are often identified as species or issues that do not merit Critical Habitat status but remain of concern from a conservation perspective. Natural Habitats, as defined by the IFC, are likely to include Priority Biodiversity Features.

PR6 does not define quantitative thresholds for identifying Priority Biodiversity Features; assessment is therefore done based on expert opinion.

Table 12: PR6 criteria for Priority Biodiversity Features

Features	PR6
Threatened habitat	Criterion i
Vulnerable species	Criterion ii
Significant biodiversity features identified by a broad set of stakeholders or governments	Criterion iii
Ecological structure and functions that are vital to maintaining the viability of biodiversity features described in [PR6 paragraph 12]	Criterion iv

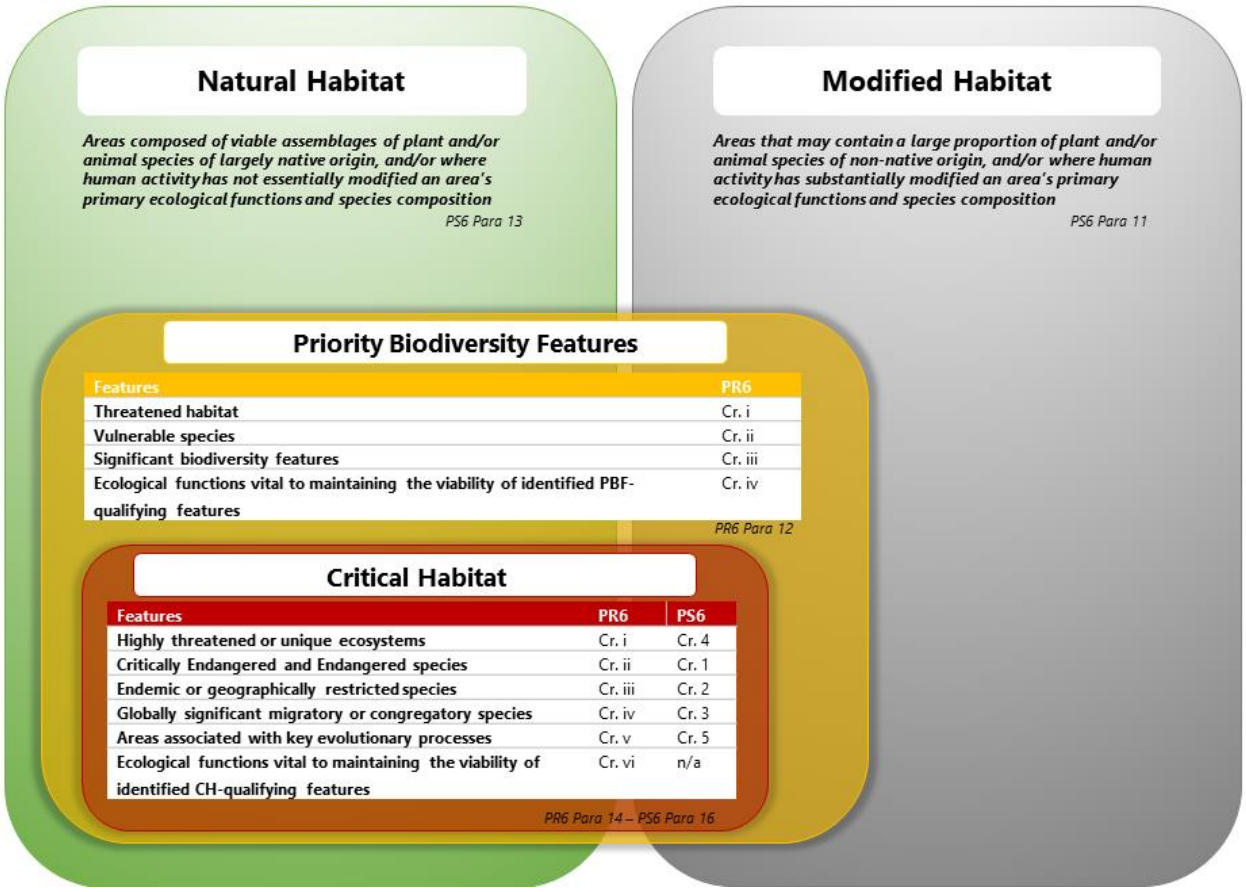

Figure 10: Criteria for assessing biodiversity features following PR6 and PS6 standards

Appendix 1.3 Implications of project overlap with Critical, Natural or Modified Habitat

Appendix 1.3.1 Implications of Critical Habitat

Being within Critical Habitat means that a project needs to pay special attention to management of biodiversity impacts and highlights the biodiversity features and processes that a project needs to consider. Table 13 shows the requirements of PR6 paragraph 16 and 17 and PS6 paragraph 17 and 18, with respect to Critical Habitat.

Table 13: EBRD PR6 paragraphs 16 and 17 and IFC PS6 paragraphs 17 and 18 on Critical Habitat

PR6/PS6 reference	Requirement
PR6 paragraph 16 PS overview – paragraph 5	The project is **permitted under applicable environmental laws** *(PS6 is more general and indicates that the project must comply with applicable national law, including laws implementing host country obligations under international law)*
PR6 paragraph 16 PS6 paragraph 17	In areas of critical habitat, the Project will not implement any project activities unless all of the following are demonstrated: • **No other viable alternatives** in the region exist for development of the project in 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; • A robust, appropriately designed, and **long-term biodiversity monitoring and evaluation program** is integrated into the client's management program.
PR6 paragraph 16	**Stakeholders are consulted** in accordance with PR6 paragraph 10 (Project that could impact Indigenous Peoples and local communities) *(PS6 requires stakeholder consultation to obtain an understanding of the biodiversity within the landscape (GN67))*
PR6 paragraph 17 PS6 paragraph 18	When the Project meets CH-qualifying criteria, the Project's mitigation strategy will be described in a **Biodiversity Action Plan (BAP)** and will be designed to achieve **net gains** of those biodiversity values for which the Critical Habitat was designated.

Appendix 1.3.2 Implications of Natural Habitat and Priority Biodiversity Features

When in Natural Habitat or with Priority Biodiversity Features, a project will also need to pay special attention to management of biodiversity impacts. Actions to be undertaken are on the same kinds than for Critical Habitat-qualifying features but the overreaching goal is to achieve no net loss (no requirement to achieve net gains). Table 14 shows the requirements of PR6 paragraphs 13 and 17 and PS6 paragraphs 14, 15 and 18, with respect to Priority Biodiversity Features and Natural Habitat, respectively.

Table 14: EBRD PR6 paragraphs 13 and 17 on Priority Biodiversity Features and IFC PS6 paragraphs 14, 15 and 18 on Natural Habitat

PR6/PS6 reference	Requirement
PR6 paragraph 13 PS overview – paragraph 5	The project is **permitted under applicable environmental laws** *(PS6 is more general and indicates that the project must comply with applicable national law, including laws implementing host country obligations under international law)*
PR6 paragraph 13 PS6 paragraphs 14 & 15	In areas of natural habitat/with Priority Biodiversity Features, the Project will not implement any project activities unless all of the following are demonstrated: • **No other viable alternatives** in the region exist for development of the project in habitats that are not Natural/with Priority Biodiversity Features; • Overall Project **benefits outweigh project impacts** on biodiversity.
PR6 paragraph 16	**Stakeholders are consulted** in accordance with PR6 paragraph 10 (Project that could impact Indigenous Peoples and local communities) *(PS6 requires stakeholder consultation to obtain an understanding of the biodiversity within the landscape (GN67))*
PR6 paragraph 17 PS6 paragraph 18	When the Project meets Priority Biodiversity Features/Natural Habitat criteria, the Project's mitigation strategy will be described in a **Biodiversity Action Plan (BAP)** and will be designed to achieve **no net loss** of those biodiversity values for which the Natural Habitat/Priority Biodiversity Features was designated.

Appendix 1.3.3 Implications of Modified Habitat

A project in Modified Habitat will be required to follow PS6 paragraph 12, which specifies that project should minimise impacts on such biodiversity and implement mitigation measures as appropriate.

Appendix 1.4 Approach to aligning with PS6 and PR6

Error! Reference source not found. summarises broadly how this Project can approach alignment with PR paragraphs 13, 16 and 17 and PS paragraphs 14, 15, 17 and 18. The Project will need to set out mitigation measures in line with the mitigation hierarchy (CSBI & TBC 2015) that can reasonably be expected to achieve these requirements.

Table 15: Approach to alignment with PR6 and PS6 for Critical Habitat, Natural Habitat and Priority Biodiversity Features

PS6 requirement	Project responsibility
No measurable adverse impacts	Ensure that ESHIA demonstrates: the application/ implementation of mitigation measures; no net reduction in Critically Endangered or Endangered species, no net loss of Natural Habitat and Priority Biodiversity Features, and that impacts on significant biodiversity in areas of Modified Habitat have been minimized according to the mitigation hierarchy.
No net reduction of Critically Endangered or Endangered species' populations	
No net loss of Natural Habitat/Priority Biodiversity Features	
Minimize impacts on significant biodiversity values in areas of Modified Habitat	
BAP	Ensure that ESHIA demonstrates, through application of the mitigation hierarchy, that the Project will achieve at least no net loss for Natural Habitat and Priority Biodiversity Features, that there is a BAP in place to implement this, and that there is a monitoring, evaluation and adaptive management plan in place to track progress. A standalone Biodiversity Management Plan (BMP) is not necessary, given limited construction risks.
Robust monitoring & evaluation plan	

Critical Habitat designation is an assessment of biodiversity importance of an area, based on the biodiversity values and *not* the potential impacts associated with a Project. The presence of Critical Habitat does not necessarily imply an impact from the Project and does not necessarily mean that any specific mitigation will be required. Where significant adverse impacts do occur, PR6 and PS6 require Projects to fully exercise the mitigation hierarchy.