# Bash 500MW Wind Farm
# Uzbekistan

## Critical Habitat Assessment
## Stage 1

Prepared for:

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5 Capitals Environmental and Management Consulting
Principal office: PO Box 119899 Sheikh Zayed Road, Dubai, UAE
☏+971 4 343 5955 🖷+971 4 343 9366

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# LIST OF ABBREVIATIONS

| ABBREVIATION | MEANING |
|---|---|
| ADB | Asian Development Bank |
| AoI | Area of Influence |
| AZE | Alliance for Zero Extinction |
| CHA | Critical Habitat Assessment |
| CO | Collapsed, IUCN Red List of Ecosystems Category |
| CR | Critically Endangered, IUCN Red List of Threatened Species Category |
| DD | Data Deficient, IUCN Red List of Threatened Species Category |
| EAAA | Ecologically Appropriate Area of Analysis |
| EBRD | European Bank for Reconstruction and Development |
| EOO | Extent of Occurrence |
| EN | Endangered, IUCN Red List of Threatened Species Category |
| IBA | Important Bird Areas |
| IFC | International Finance Corporation |
| IUCN | International Union for Conservation of Nature |
| KBA | Key Biodiversity Areas |
| LC | Least Concern, IUCN Red List of Threatened Species Category |
| NT | Near Threatened, IUCN Red List of Threatened Species Category |
| OHTL | Overhead Transmission Line |
| SAC | Special Areas of Conservation |
| SPA | Special Protection Areas |
| VP | Vantage Point |
| VU | Vulnerable, IUCN Red List of Threatened Species Category |

# 1 INTRODUCTION

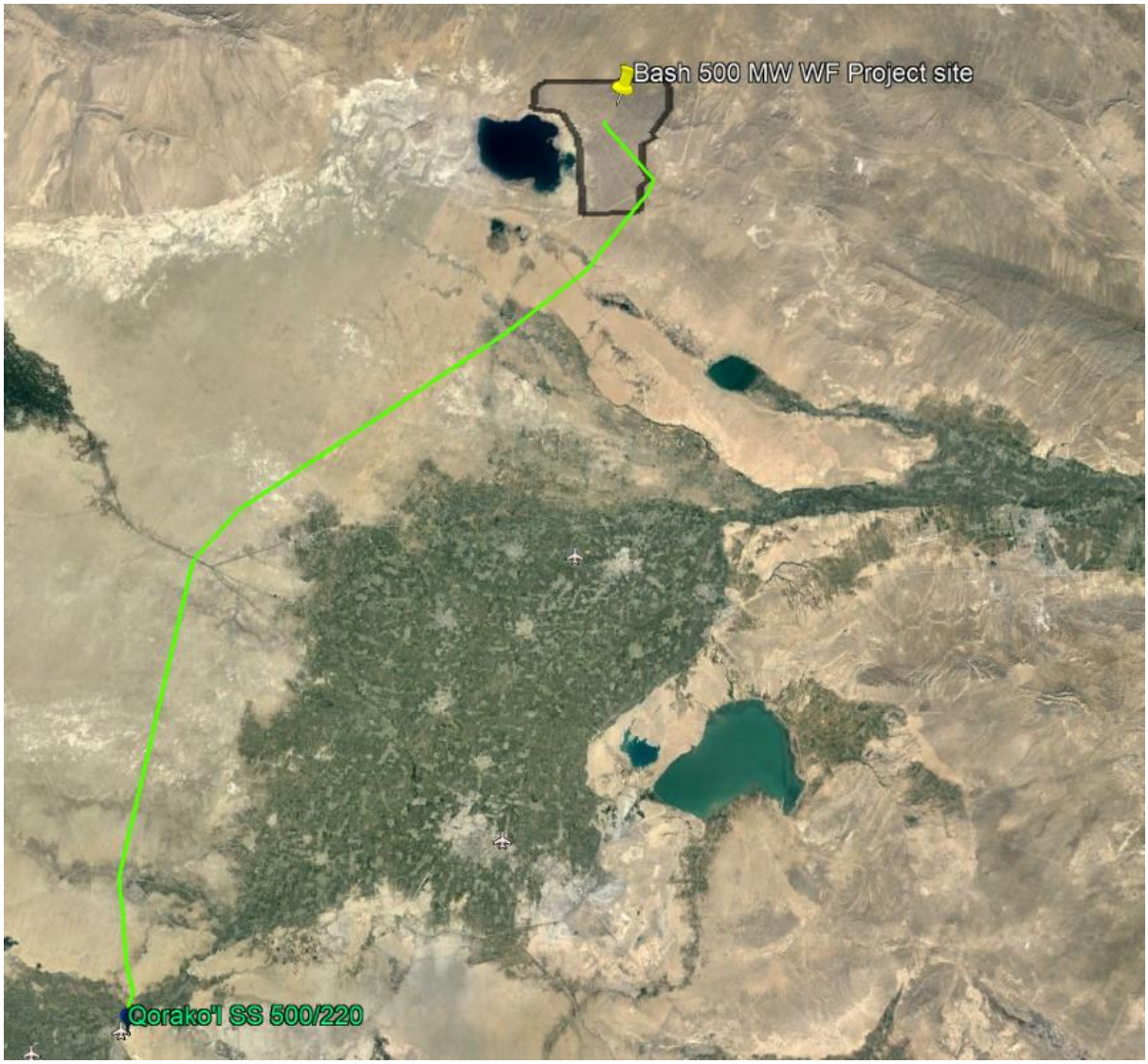
## 1.1 Background

As part of the Uzbekistan 2030 Energy Strategy, ACWA Power has signed an implementation agreement with the Ministry of Energy in Uzbekistan for developing, building and operating 500MW wind farm in Bash. ACWA Power has since established a Project Company 'FE ACWA Power Bash Wind LLC' registered in the Republic of Uzbekistan with registration number 839862. ACWA Power Bash Wind LLC has entered into a 25-year Power Purchase Agreement (PPA) with JSC 'National Electric Grids of Uzbekistan', which is based on the ultimate operations of the Project.

The Project includes the development, financing, construction, operation and maintenance of the Wind Farm including the Wind Farm electrical substation. In addition, it will also include development, financing, construction and transfer of Purchase Electrical Facilities (OHTL and common electrical facilities shared with Dzhankeldy 500MW Wind Farm), switchyard (with transformers) or 500/220kV pooling station.

This Report constitutes the CHA Stage 1 Report which has been prepared in support of the Environmental and Social Impact Assessment (ESIA). Further information is provided in the following subsections.

**Figure 1-1 Project location and 140km Bash – Karakul OHTL**




## 1.2 Critical Habitat Assessment

'Critical Habitat' is a concept applicable to several international financial lending institutions, designed to enable the identification of areas of high biodiversity value in which development would be particularly sensitive and require special attention. The concept has been developed in consultation with numerous international conservation organisations and thus considers many pre-existing conservation approaches, such as Key Biodiversity Areas, Important Bird Areas, and Alliance for Zero Extinction Sites.

The concept is further defined in the following documents:

- European Bank for Reconstruction and Development (EBRD) Performance Requirement 6 (PR6) Biodiversity Conservation and Sustainable Management of Living Natural Resources

- International Finance Corporation (IFC) IFC Performance Standard 6 (PS6) on Biodiversity Conservation and Sustainable Management of Living Resources.
- A number of multilateral banks have policies closely aligned with PS6, and more than 75 private banks signed up to the Equator Principles have an implicit commitment to PS6.
- Asian Development Bank (ADB) Safeguard Policy Statement (SPS) 2009, ADB Environment Safeguards A Good Practice Sourcebook Draft Working Document

The objective of undertaking a Critical Habitat Assessment (CHA) is to arrive at definitive conclusions regarding whether the area that will be influenced by a proposed development meets the definitions of a Critical Habitat, per the classifications set out in *EBRD PR6*, and the *ADB Safeguards* following the criteria and processes for CHA described therein.

### 1.2.1 CHA Criteria

The CHA at its essence is an exercise undertaken to determine whether the habitat(s) present within the study area -inclusive of the project site, Area of Influence (AoI) and/or Ecologically Appropriate Area of Analysis (EAAA)- are to be considered as 'critical' or as a 'priority biodiversity feature', for which one of several criteria must be met.

There are several international lending organizations that have produced varying criterion for which critical habitat is defined by. The below provides an overview of all applicable criteria as per EBRD, IFC, and ADB:

- EBRD PR6 Criterion(i): Highly threatened or unique ecosystems /// IFC PS6 Criterion 4: Highly Threatened or Unique Ecosystems
- EBRD PR6 Criterion (ii): Habitats of significant importance to endangered or critically endangered species /// IFC PS6 Criterion 1: Critically Endangered and Endangered Species /// ADB criterion "habitat required for the survival of critically endangered or endangered species";
- EBRD PR6 Criterion (iii) Habitats of significant importance to endemic or geographically restricted species and sub-species /// IFC PS6 Criterion 2: Endemic and Restricted-range Species /// ADB criterion "areas with special significance for endemic or restricted-range species";
- EBRD PR6 Criterion (iv) Habitats supporting globally significant concentrations of migratory or congregatory species /// IFC PS6 Criterion 3: Migratory and Congregatory Species /// ADB criteria "sites that are critical for the survival of migratory species" and "areas supporting globally significant concentrations or numbers of individuals of congregatory species";
- EBRD PR6 Criterion (v) Areas associated with key evolutionary processes /// IFC PS6 Criterion 5: Key Evolutionary Processes /// ADB criterion "areas with unique assemblages of species that are associated with key evolutionary processes or provide key ecosystem services";

- EBRD PR6 Criterion (vi) Ecological functions that are vital to maintaining the viability of critical biodiversity features;
- ADB criterion "areas with biodiversity that has significant social, cultural or economic importance to local communities"; and

### 1.2.2 PBF Criteria

Some features of the study area that may be affected by the project may be considered "priority biodiversity features". Priority biodiversity features (PBF) are defined by the EBRD as a sub-set of biodiversity that is particularly irreplaceable or vulnerable, but at a lower priority level than critical habitats. These features as identified as species or issue that do not merit critical status but remain a concern from a conservation perspective and require careful consideration during project assessment and impact mitigation.

EBRD have outlined several applicable criteria for the classification of a PBH:

- PBF Criterion (i): Threatened habitats
- PBF Criterion (ii): Vulnerable species
- PBF Criterion (iii): Significant biodiversity features identified by a broad set of stakeholders or governments (such as Key Biodiversity Areas or Important Bird Areas)
- PBF Criterion (iv): Ecological structure and functions needed to maintain the viability of priority biodiversity features

## 1.3 Need For a CHA

As per the European Bank for Reconstruction and Development's Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (v. January 1, 2020), projects must review biodiversity and ecosystem services in the project area, assess impacts on them, propose mitigating measures, and implement practical monitoring and evaluation programs that inform management decisions throughout the life of the planned development.

A Critical Habitat Assessment is one of the four principal steps of the biodiversity baseline study that is required to understand biodiversity and ecosystem services in the area that may be affected by a project/ EAAA. This is an assessment of the context in which the development is proposed and therefore does not consider specific impacts at this stage of analysis. It answers the basic question, "How important is the study area for conservation and what PR6 requirements will apply?"

The initial step is a high-level CHA Screening exercise, which identifies all possible biodiversity elements that could trigger criticality, that are relevant for the project area.

CHA Screening found that the distribution of the Critically Endangered Southern Even-fingered Gecko overlapped with the project boundaries. Therefore, the requirement to undertake a CHA for the project as part of the overall Environmental and Social Impact Assessment (ESIA) process has been triggered.

## 1.4 Overview of CHA Process

The CHA process will include a three-stage approach:

- Stage 1 – Desktop Assessment and Stakeholder Engagement
- Stage 2 – Field Surveys and Data Collection
- Stage 3 – Assessment of Findings against Critical Habitat criteria

The findings of the CHA process will feed into and further inform the overall project ESIA and subsequent environmental management and monitoring programmes.

## 1.5 Purpose/Scope of Report

This report represents the Stage 1 Desktop Assessment of the CHA. The desktop assessment includes the following:

- Review of existing information from platforms including but not limited to:
  - International Union for Conservation of Nature;
  - Birdlife International;
  - Edge of Existence Priority Species List
  - World Database on Protected Areas;
  - Global Critical Habitat Screening Layer;
  - Integrated Biodiversity Assessment Tool;
  - Global Biodiversity Information Facility;
  - World Database of Key Biodiversity Areas;
  - Global Invasive Species Database;
  - Grey literature and published research articles;
  - National Biodiversity Strategy;
  - Action Plan(s), regional Red List(s);
  - Citizen science reports; and
  - Other relevant and verifiable documents.
- Consultation with relevant stakeholders and experts for purposes of data and information gathering.

The purpose of this report is to determine the extent of field surveys required to fulfil any knowledge gaps that are relevant in determining if the habitats that will be affected by the project can be considered as critical habitat.

# 2 METHODOLOGY

The methodology that was utilized to undertake the CHA Stage 1 is detailed in the subsequent sections.

The approach will follow the "*Good Practices for the Collection of Biodiversity Baseline Data*" (prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross Sector Biodiversity Initiative, released July 2015). This is directly referenced in EBRD's PR6 and details the iterative process for conducting a comprehensive Biodiversity Baseline Study.

The full methodology for the CHA process has been previously provided in a separate document, "Critical Habitat Assessment Methodology".

## 2.1 Desktop Review

### 2.1.1 Spatial Context

The spatial context of the project has been set by an examination of the migratory flyways, habitats and land use/cover that can be determined from satellite imagery, as well as a compilation of all known conservation areas (such as protected areas, IBAs, KBAs. AZE sites, Ramsar sites, and any other nationally and internationally recognized areas of conservation concern).

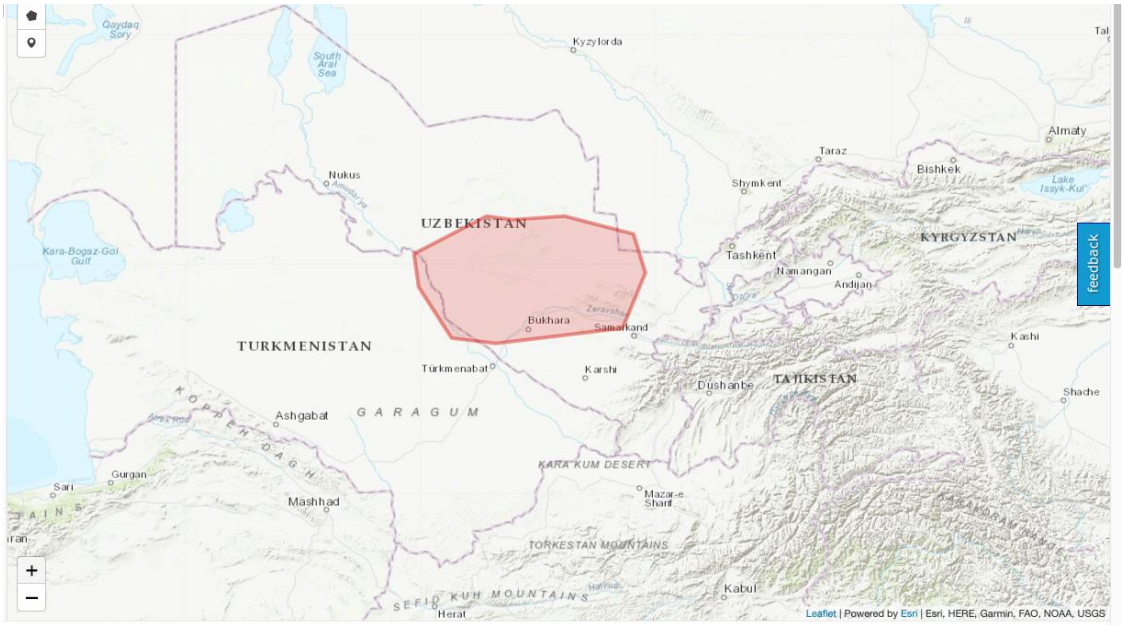
### 2.1.2 Potential species

The potential species that may be present within the project site has been compiled based on available data including Uzbekistan Red Data Book and the IUCN Red List of Threatened Species.

A spatial query has been run on the public database platform encompassing a polygon of 50,000 km2. The polygon was defined to include a region large enough to encompass a 150km buffer around the project area to ensure that any potential species that might have overlapping distributions were captured.

Aquatic species were not included within the search, since species such as freshwater fish are not anticipated to be impacted by the development activities associated with the wind farm.

**Figure 2-1 Polygon Boundary for Species Query**




## 2.2 Stakeholder Engagement

Stakeholder engagement included contact with a variety of public, private and citizen organizations and individual experts by means of letters, email, telephonic and where applicable, in-person interviews.

Letters that have already been sent out are attached in Appendix A. It is noted that no response has been received to date but this currently being followed up via emails and telephone calls.

**Table 2-1 Stakeholder Mapping & Engagement**

| Stakeholder Group | Stakeholder Bodies | Relevance to Project | Agenda for Consultations and Methods |
|---|---|---|---|
| **State Committees** | State committee of the Republic of Uzbekistan on Ecology and Environmental protection | National environmental policy and protection standards. Responsible for approval national EIA. | May have specific requirements for the project in relation to the IBA &KBA site. Telephone calls, letters and bilateral meetings. |
| **Research Institutions** | Faculty of Biology, Bukhara State University | These faculties are involved in research and data collection in different regions of Uzbekistan. | Request for data, publications, comments on the project area/region. Email, telephone calls, letters. |
| | Faculty of Biology, National University | | |

| Stakeholder Group | Stakeholder Bodies | Relevance to project | Agenda for consultations and Methods |
|---|---|---|---|
| **Experts** | Yulia Mitropolskaya: Mammalian expert | These experts have knowledge of the project site region and have been involved in past surveys and research. | Request for available data for the project area/region.<br>Email, telephone calls, letters. |
| | John Burnside: Houbara Bustard specialist | | |
| | Anna Ten: Ornithologist | | |
| | Maxim Mitropolsky: Ornithologist | | |
| | Roman Nazarov Herpetologist | | |
| | Luiza Mardonova Chief Specialist, Dept. of State Cadastre & Monitoring of Flora & Fauna, State Committee for Ecology and Environment Protection | | |
| | Jakhangir Talipov Head of Department, State Committee for Ecology and Environment Protection | | |
| | Nodir Azimov Specialist Institute of Zoology, Institute of Gene Pool of Plant and Animals of Academy of Sciences of Republic Uzbekistan | | |
| **National Agencies** | Uzbekistan Society for the protection of birds | These agencies are involved in research and data collection in different regions of Uzbekistan. | Request for data, publications, comments on the project area/region.<br>Telephone calls, letters and bilateral meetings. |
| | Institute of Botany of the Academy of | | |

| Stakeholder Group | Stakeholder Bodies | Relevance to project | Agenda for consultations and Methods |
|---|---|---|---|
| | Sciences of the Republic of Uzbekistan | | |
| | Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan | | |
| **NGOs** | Emirates Center for Conservation of Bustard Beauty | Actively involved in conservation efforts and have been involved in releasing captive bred Asian bustards in the Navoi region. | Request for data, information on the avifauna in the project region<br>Email, telephone calls, letters. |
| | Other NGOs at a global level | No specific global NGOs have been identified but it is recognized that there may potentially be interest in the development of the project near an IBA & KBA area. | To be determined on a case-to-case basis. |
| **International Organizations** | IUCN Specialist Group and Experts | IUCN has a data base of the project region relating to the species and their conservation importance. | Request for data, information on the flora, fauna, avifauna in the project region<br>Email, telephone calls, letters (where possible). |
| | Bird Life International | Their data base includes information on lake A Ayakagytma which is an IBA site. | Request for data, information on the flora, fauna, avifauna in the project region and project area<br>**Email, telephone calls, letters** |
| **Financial institutions** | EBRD/ADB/IFC (and possibly others) | Providing finance for the Project and also have experts who have knowledge of | On-going dialogue throughout the process to ensure EBRD Performance Requirements, IFC Performance Standards and ADB Safeguards are met. |

| Stakeholder Group | Stakeholder Bodies | Relevance to project | Agenda for consultations and Methods |
|---|---|---|---|
| | | the region and project area. | |

## 2.3 Gap Analysis

The gap analysis will be undertaken to compare the information required for criterion thresholds against the available data to highlight any gaps that need to be filled.

### 2.3.1 Criterion Thresholds for Critical Habitat

Habitat will be determined to be critical if the minimum thresholds of any single criterion are met. The below are as per EBRD PR 6 and associated Guidance Note 6.

Thresholds for Criterion i (Highly threatened or unique ecosystems) are the following:

a) EAAA that is ≥5% of global extent of an ecosystem type with IUCN status of Endangered (EN) or Critically Endangered (CR)

b) EAAA that is an ecosystem determined to be of high priority for conservation by national or regional systematic conservation planning

Thresholds for Criterion ii (Habitats of significant importance to endangered or critically endangered species) are the following:

a) Areas that support globally important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species)

b) Areas that support globally significant population of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR, meets the threshold (b) above

c) EAAA that contains important concentrations of a nationally or regionally listed EN or CR species

Thresholds for Criterion iii (Habitats of significant importance to endemic or geographically restricted species and sub-species) is the following:

a) EAAA that regularly holds ≥ 10% of global population AND ≥ 10 reproductive units of a species

Thresholds for Criterion iv (Habitats supporting globally significant concentrations of migratory or congregatory species) are the following:

a) EAAA that sustains, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population at any point of the species' lifecycle

b) EAAA that predictably supports ≥10 percent of global population during periods of environmental stress

Thresholds for Criterion v (Areas associated with key evolutionary processes) is the following:

a) Areas with landscape features that might be associated with particular evolutionary processes evolutionary processes or populations of species that are especially distinct and may be of special conservation concern given their distinct evolutionary history. For example:

- Isolated lakes or mountaintops
- Populations of species listed as priorities by the Edge of Existence Programme.

Thresholds for Criterion vi (Ecological functions that are vital to maintaining the viability of biodiversity features) is the following:

a) Ecological functions without which critical biodiversity features could not exist. For example:

- Riparian zones and rivers
- Dispersal or migration corridors
- Hydrological regimes
- Seasonal refuges or food sources
- Keystone or habitat-forming species

EBRD Critical habitat criterion v and vi (evolutionary processes and ecological functions), IFC Criterion 5 (Evolutionary Processes) and additional criterion developed by ADB and do not have quantitative thresholds. As per EBRD PR6 GN6, the assessment for these criteria must rely upon expert judgement.

### 2.3.2 Criterion Thresholds for Priority Biodiversity Features

Habitat will be determined to be a PBF if the minimum thresholds of any single criterion are met. The below are as per EBRD PR 6 and associated Guidance Note 6.

Thresholds for PBF criterion i (Threatened habitats) are the following:

a) EAAA that is < 5% of the global extent of an ecosystem type with IUCN status of CR or EN

Thresholds for PBF criterion ii (Vulnerable species) are the following:

a) EAAA that supports < 0.5% of global population OR < 5 reproductive units of a CR or EN species.
b) EAAA supports a VU species
c) EAAA that supports regularly occurring nationally or regionally listed EN or CR species
d) EAAA that holds regularly occurring range-restricted species
e) EAAA identified as per recognized national or international process as important for migratory birds (esp. wetlands)

PBF Criterion iii and iv do not have quantitative thresholds. As per EBRD PR6 GN6, the assessment for these criteria must rely upon expert judgement.

### 2.3.3 Report Outcome

The outcome of the review of available information and stakeholder inputs will answer the following questions:

- What biodiversity elements are possibly present that may trigger criticality?
- What biodiversity elements are possibly present that may be classified as a priority biodiversity feature (PBF)?
- What field surveys are needed to validate assumptions and/or fill data gaps in order to allow the determination of criticality?

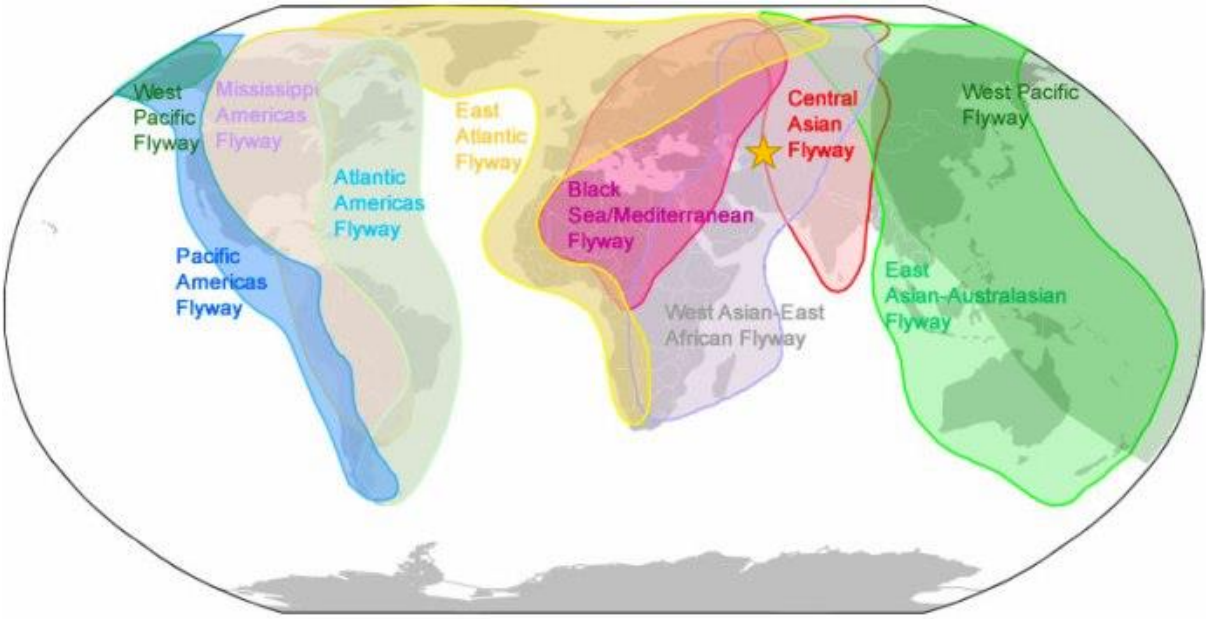
# 3 SPATIAL CONTEXT & CONSIDERATIONS

The below subsections provide preliminary spatial analysis regarding the present habitats, migratory corridors, and conservation areas (protected areas, IBAs, KBAs, etc) within the project's area of influence (AoI).

## 3.1 Flyways

The project site is located within the convergence of two major migratory flyways; the Central Asian Flyway and the West Asian/East African Flyway.

**Figure 3-1 Project location in relation to global migratory bird flyways**




An assessment of the landforms surrounding the project site enables us to predict a general flight path of migratory birds*, which typically avoid expanses of flat desert, and mountain features, and follows along coastlines or river deltas to wetland staging areas and stopover sites. (**migratory flight path prediction is an imperfect science. Migration pathways vary by type of birds, species, age, and even individuals year by year. However, very broad, general patterns can be made based on these behavioural assumptions.)*

The following figures showcase the likely pathways that migrating birds may follow when heading south towards wintering grounds during early autumn. (*Spring migration is not shown as based on the type of analysis used, would presumably show the reverse direction*).

**Figure 3-2 Predicted flight path analysis for migratory birds (1)**

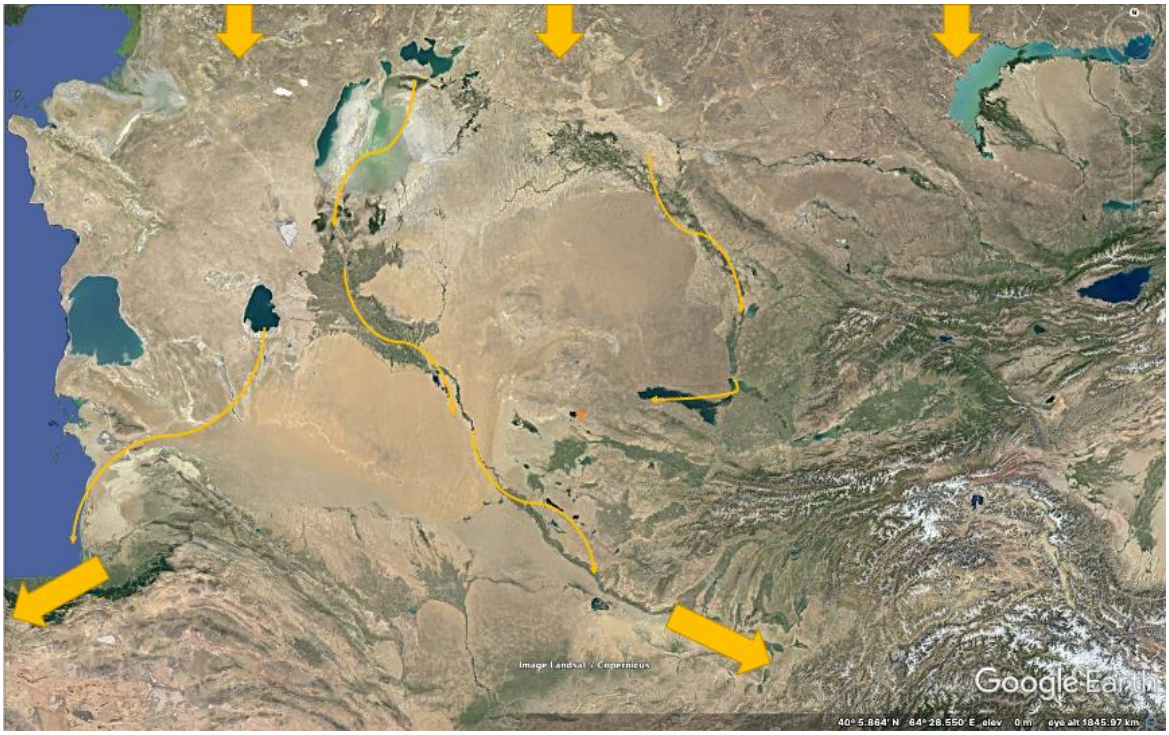
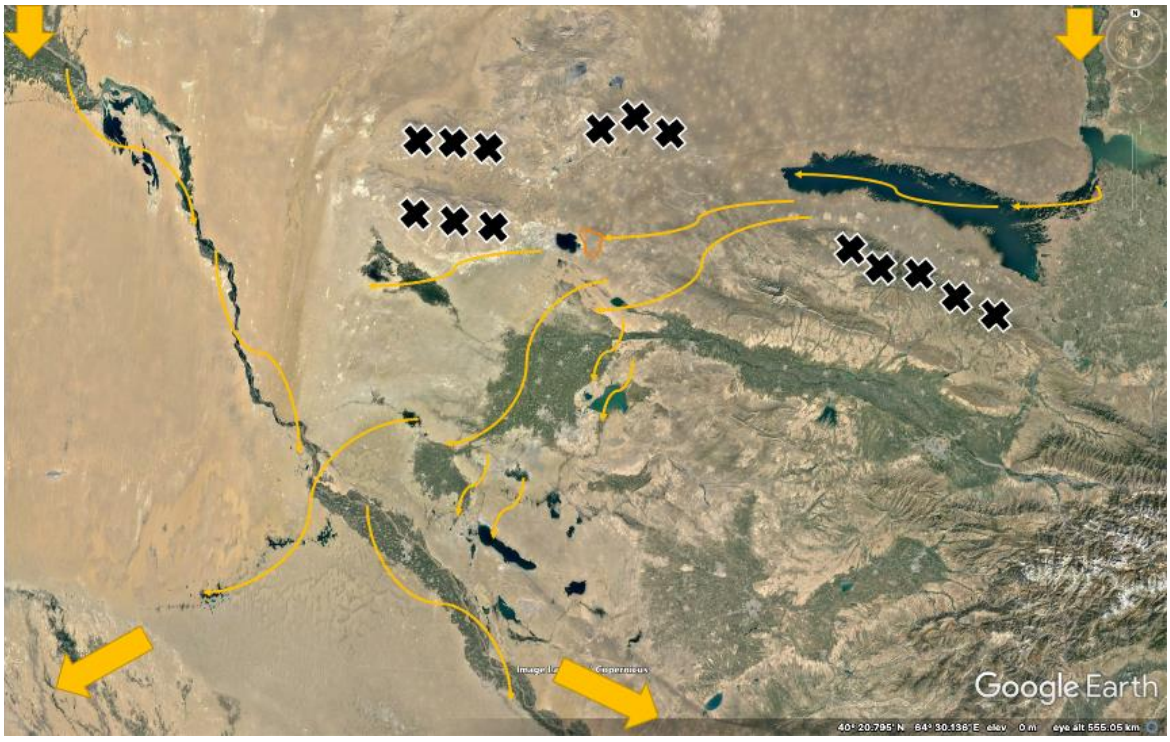
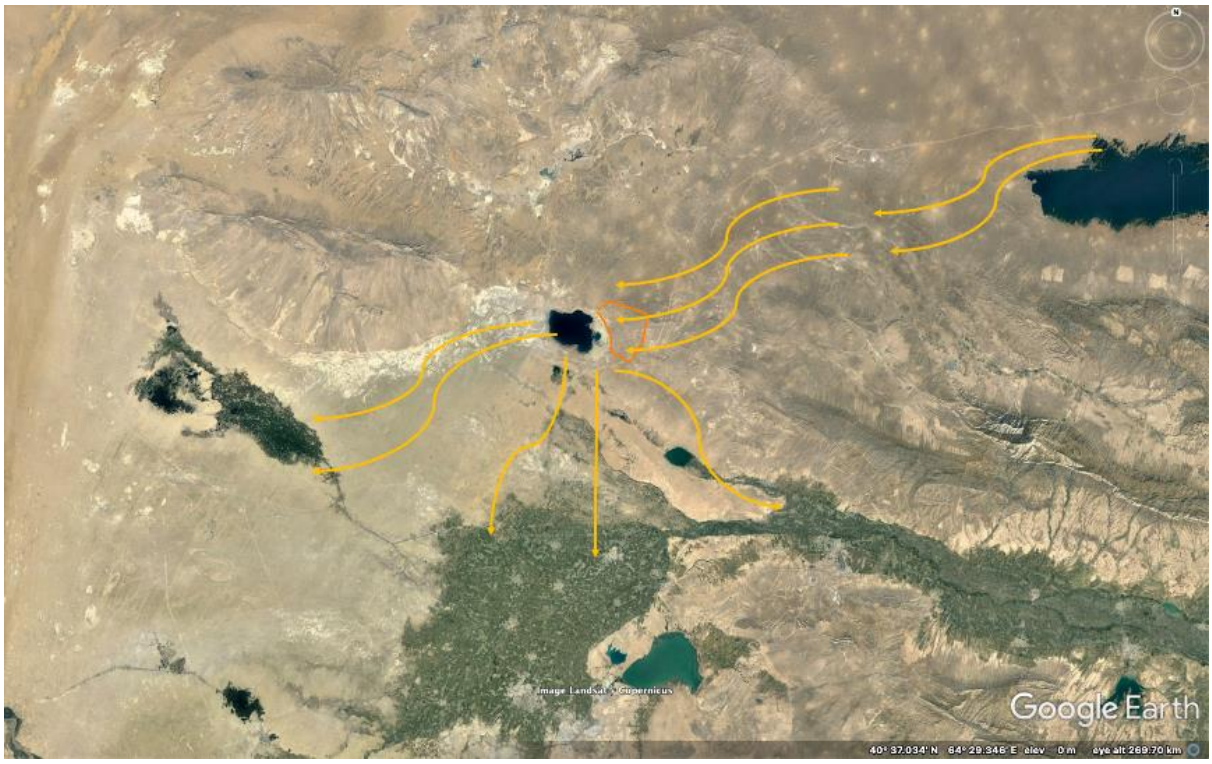



**Figure 3-3 Predicted flight path analysis for migratory birds (2)**




Based on the location of Aydarkul Lake, and the mountain landforms to the north and west of the project site, it is likely that autumn migratory birds would cross the site from the northeast heading towards Ayakagytma Lake or further south.

**Figure 3-4 Predicted flight path analysis for migratory birds (3)**

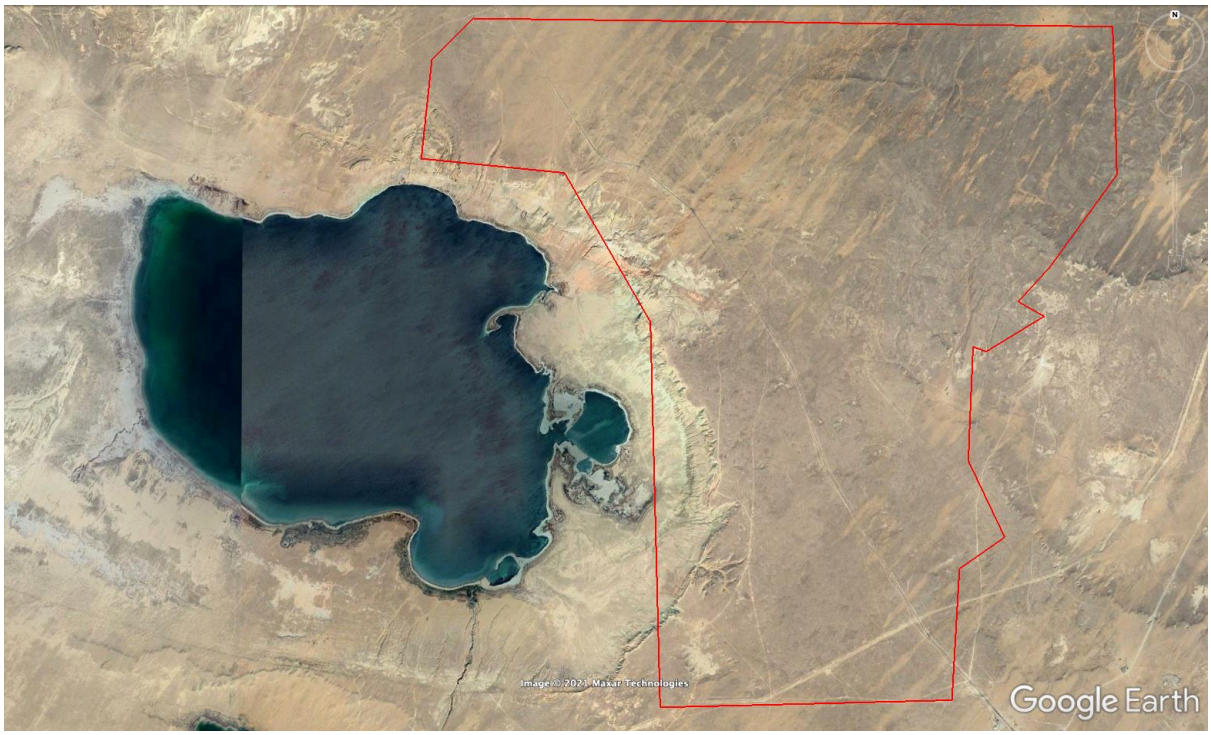



The predicted migratory flight paths anticipate high levels of flight activity occurring in the project site airspace during migration seasons.

## 3.2 Habitat Features and Connectivity

The proposed wind farm project boundaries cover an area of 215 km2. The site is located directly east to Lake Ayakagytma, with the nearest boundary to the lake shore edge being a distance of 500m away.

**Figure 3-5 Project Site Features**




A wall of short cliffs sits between the lake and the open steppe habitat where the wind farm boundaries are located.

**Figure 3-6 Project Site Features**


The open steppe habitat is relatively unfragmented other than by an existing railroad track and power transmission lines that run through the project's boundaries.

The Lake and the cliffs are considered to be features of conservation importance as they provide foraging, shelter and breeding opportunities for a variety of fauna including birds and bats.

The Bash-Karakul OHTL begins at the Bash switching station within the wind farm site and ends at the Karakul Substation 145 Km away. Majority of the OHTL route passes the open desert habitat with the exception of agricultural fields at Atabuzuk 18km south of Lake Ayakagytma and 2 km northeast of the substation.

**Figure 3-7 Bash-Karakul OHTL Site Features**


**Figure 3-8 Bash-Karakul OHTL Site Features**

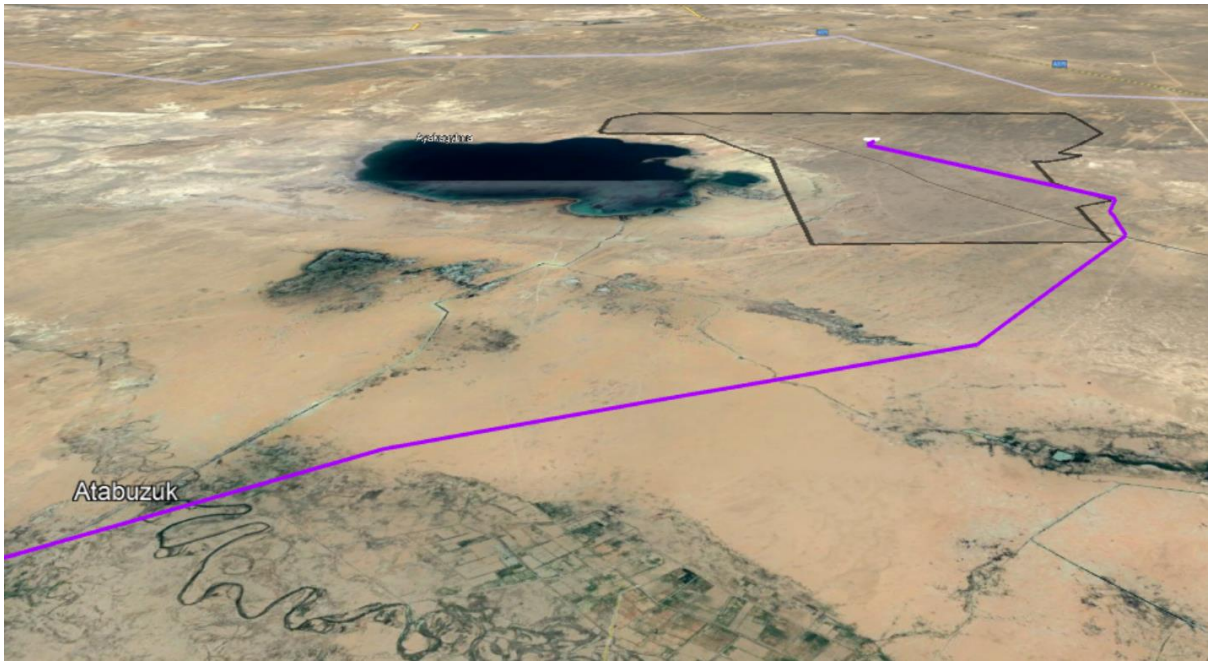


**Figure 3-9 Bash-Karakul OHTL Site Features**

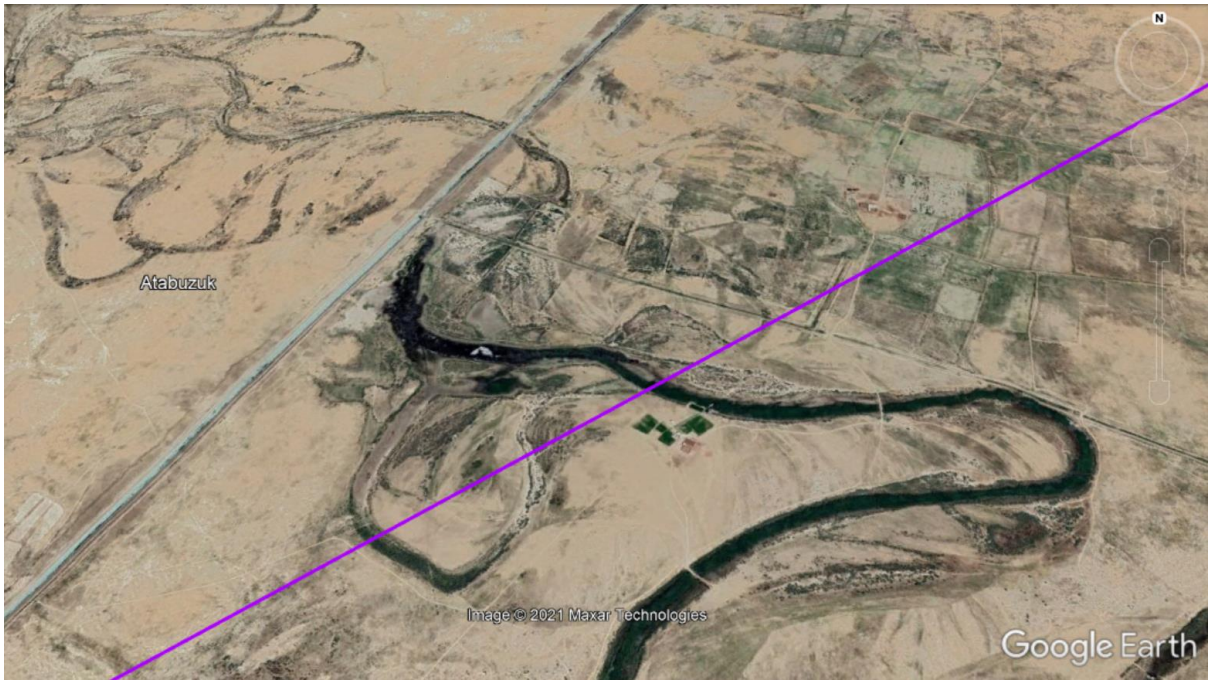
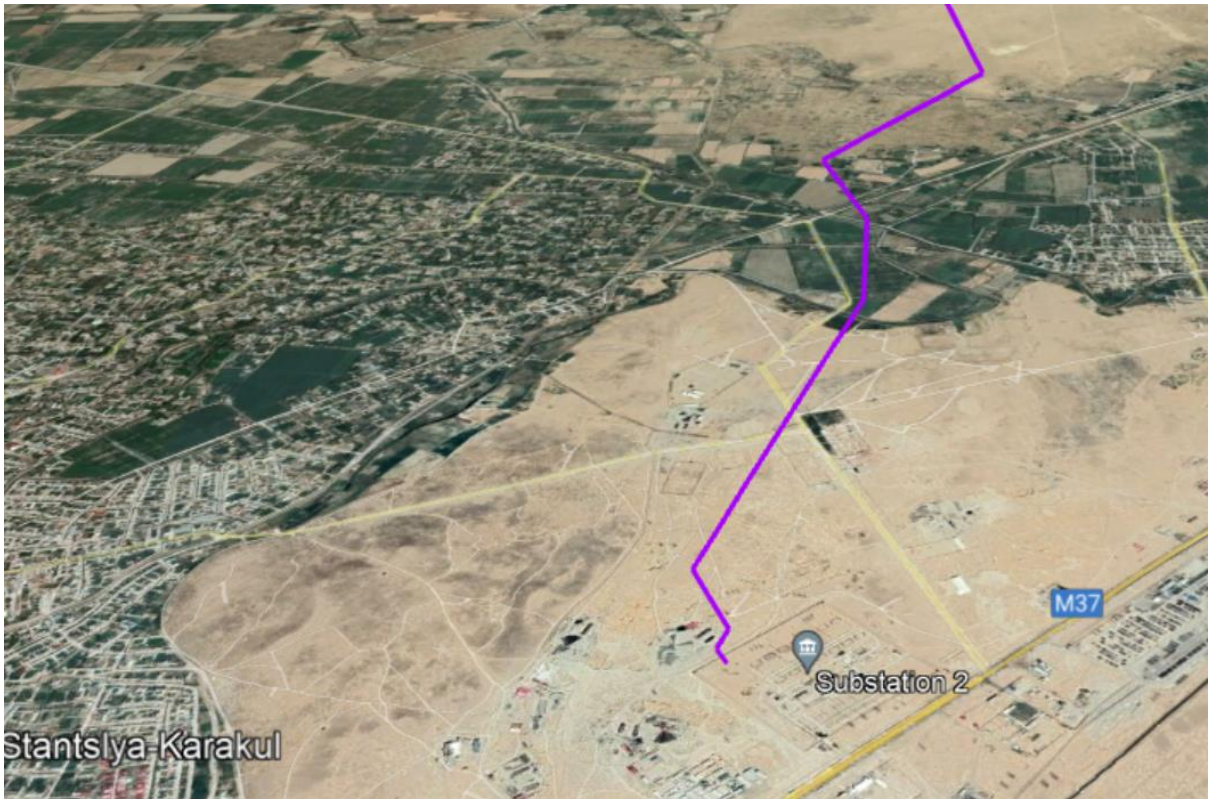



**Figure 3-10 Bash-Karakul OHTL Site Features**



## 3.3 Conservation Areas

The compilation of conservation areas included a review of the following databases:

- Protected Areas designated on World Database of Protected Areas (protectedplanet.net)
- Important Bird Areas (IBA) and Endemic Bird Areas (EBA) designated by Birdlife International (birdlife.org)
- Key Biodiversity Areas (KBAs) designated by the KBA Partnership (keybiodiversityareas.org)
- Wetlands of International Importance (Ramsar Sites) designated by Ramsar, none of which were found in the study area;
- Biosphere Reserves designated by UNESCO, none of which were found in the study area; and
- AZE Sites designated by the Alliance for Zero Extinction, none of which were found in the study area; none of which were found in the study area.

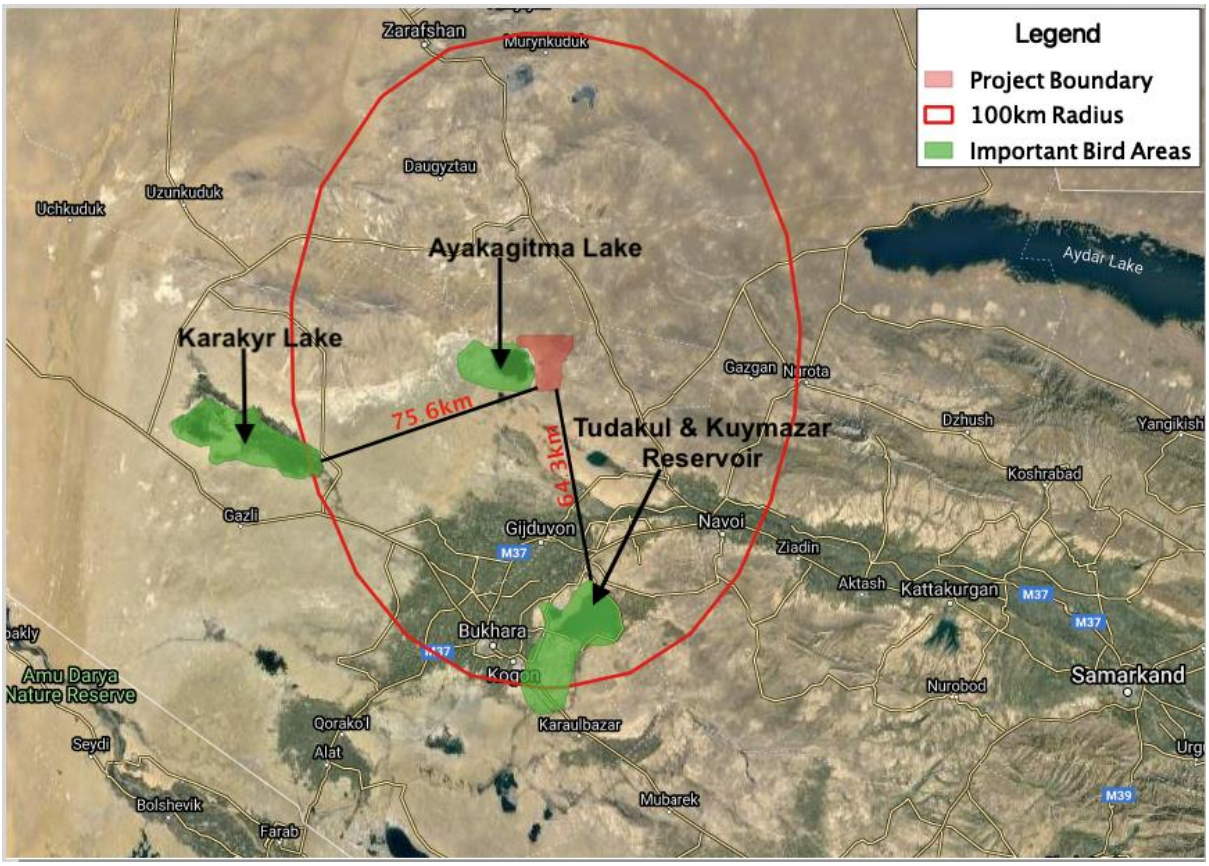
The below table summarizes all conservation areas within 100km of the project site, along with details on the size and type of conservation area. The most relevant is the IBA and KBA of Ayakagytma Lake, which lies directly adjacent to the project Wind Farm site.

**Table 3-1 Conservation Areas within 100km of Project Boundaries**

| NAME | SIZE | DESIGNATION | HABITATS | NOTABLE SPECIES | PROXIMITY TO PROJECT AREA |
|---|---|---|---|---|---|
| Ayakagytma Lake | 11000 ha | • Important Bird Area (Birdlife),<br>• Key Biodiversity Area (KBA Partnership) | Due to having a rich food supply and remaining unfrozen in winter, Ayakagytma Lake is of international significance for wintering waterfowl; extensive salt marshes adjacent to the lake attract many shorebirds. | The loess cliffs bordering the depression are good for nesting birds of prey (Egyptian Vulture, Long-legged Buzzard, Common Kestrel, Saker Falcon, Eagle Owl, Little Owl) and other cliff-nesting species. | adjacent |
| Kara-Kir - state wildlife sanctuary / Karakyr Lakes | 62610 ha | • Terrestrial Protected Area (Protected Planet),<br>• Important Bird Area (Birdlife),<br>• Key Biodiversity Area (KBA Partnership) | Forest, Shrubland, Desert, Wetlands (inland), Rocky areas (inland cliffs, mountain peaks, Artificial/Terrestrial | Greylag Goose, Common Pochard, Pygmy Cormorant, Red-crested Pochard,White-headed Duck | 75.6 km |

| Name | Size | Designation | Habitats | Notable Species | Proximity to Project Area |
|---|---|---|---|---|---|
| Tudakul & Kuymazar Reservoirs | 32576 ha | • Important Bird Area (Birdlife),<br>• Key Biodiversity Area (KBA Partnership)<br>• Ramsar Wetland of International Importance | Water storage/reservoir in the arid desert and xeric shrubland / Shrubland, Desert, Wetlands (inland), Artificial/Terrestrial | White-headed Duck, Goitered Gazelle, Amu Darya shovelnose sturgeon; Marbled Teal, Pygmy Cormorant, Red-creased Pochard, White-headed Duck, Dalmatian Pelican | 64.3 km |

**Figure 3-11 Conservation Areas within 100km of Project Area**




## 3.4 Ayakagytma Lake

Ayakagytma Lake is a designated IBA and KBA. The following is noted on the IBA description[1] for the site:

[1] BirdLife International (2021) Important Bird Areas factsheet: Ayakaghytma lake and surrounding desert. Downloaded from http://www.birdlife.org on 28/04/2021.

- Ayakagytma is a drainage lake covering about 11000 hectares and is located at the bottom of the Ayakagytma depression to the south-east of the Kuljuktau ridge.
- The lake is surrounded by cliffs, up to 60 m high, which are closest to the shore in the north.
- Water is supplied through the drainage canal flowing into the lake from the south. The water level in the lake is not stable, the water is brackish and it does not freeze in winter.
- The shoreline vegetation is poorly developed and consists of scattered patches of reed and tamarisk.
- The territory adjacent to the lake consists of extensive salt marshes in the west and east, and sandy desert with fixed dunes and clayey-gravelly desert in the east.
- The loess cliffs bordering the Ayakagytma depression are good for nesting birds of prey (Egyptian Vulture, Long-legged Buzzard, Common Kestrel, Saker Falcon, Eagle Owl, Little Owl) and other cliff-nesting species.
- Due to having a rich food supply and remaining unfrozen in winter, Ayakagytma Lake is of international significance for wintering waterfowl (in accordance with the Ramsar criteria).
- The extensive salt marshes adjacent to the lake attract many shorebirds. Together these make the lake of great value as a resting place for migratory wetland birds.
- According to the results of the winter aerial census by IWC on 10.01.2000, the lake held 23281 birds of 23 species.

The below provide information relating to the triggers for IBA criteria.

## Figure 3-12 Lake Ayakagytma IBA Trigger Criteria

**Populations of IBA trigger species**

| Species | Current IUCN Red List Category | Season | Year(s) of estimate | Population estimate | IBA Criteria Triggered |
|---|---|---|---|---|---|
| White-headed Duck *Oxyura leucocephala* | EN | winter | 2009 | 4 individuals | A1 |
| Red-crested Pochard *Netta rufina* | LC | winter | 2000 | 4,016 individuals | A4i |
| Great White Egret *Ardea alba* | LC | winter | 2000 | 451 individuals | A4i |
| Dalmatian Pelican *Pelecanus crispus* | NT | passage | 2011 | 1-130 individuals | A1, A4i |
| Great White Pelican *Pelecanus onocrotalus* | LC | passage | 2011 | 28-452 individuals | A4i |
| Pygmy Cormorant *Microcarbo pygmaeus* | LC | winter | 2000 | 827 individuals | A4i |
| Greater Sandplover *Charadrius leschenaultii* | LC | breeding | 2006-2011 | 4-35 individuals | A3 |
| Egyptian Vulture *Neophron percnopterus* | EN | breeding | 2011 | 3-4 breeding pairs | A1 |
| Sykes's Warbler *Iduna rama* | LC | breeding | 2006-2008 | min 14 individuals | A3 |
| Streaked Scrub-warbler *Scotocerca inquieta* | LC | breeding | 2011 | min 1 individuals | A3 |
| Asian Desert Warbler *Sylvia nana* | LC | breeding | 2008 | min 14 individuals | A3 |
| Desert Finch *Rhodospiza obsoleta* | LC | breeding | 2008-2011 | 3-23 individuals | A3 |
| A4iii *Species group - waterbirds* | n/a | winter | 2000 | 23,281 individuals | A4iii |

A survey undertaken in 2011[2] for the Lake resulted in the records summarized in the following extract.

[2] Report on research on Ayakagytma Lake, April 2011. Tashkent 2011

**Figure 3-13 Extract from 2011 Study**

**Table 3.** International IBA criteria and relevant avian species at Ayakaghytma lake and surrounding desert, Uzbekistan. Range of numbers eg 1–130 is the minimum and maximum daily count during the survey period.

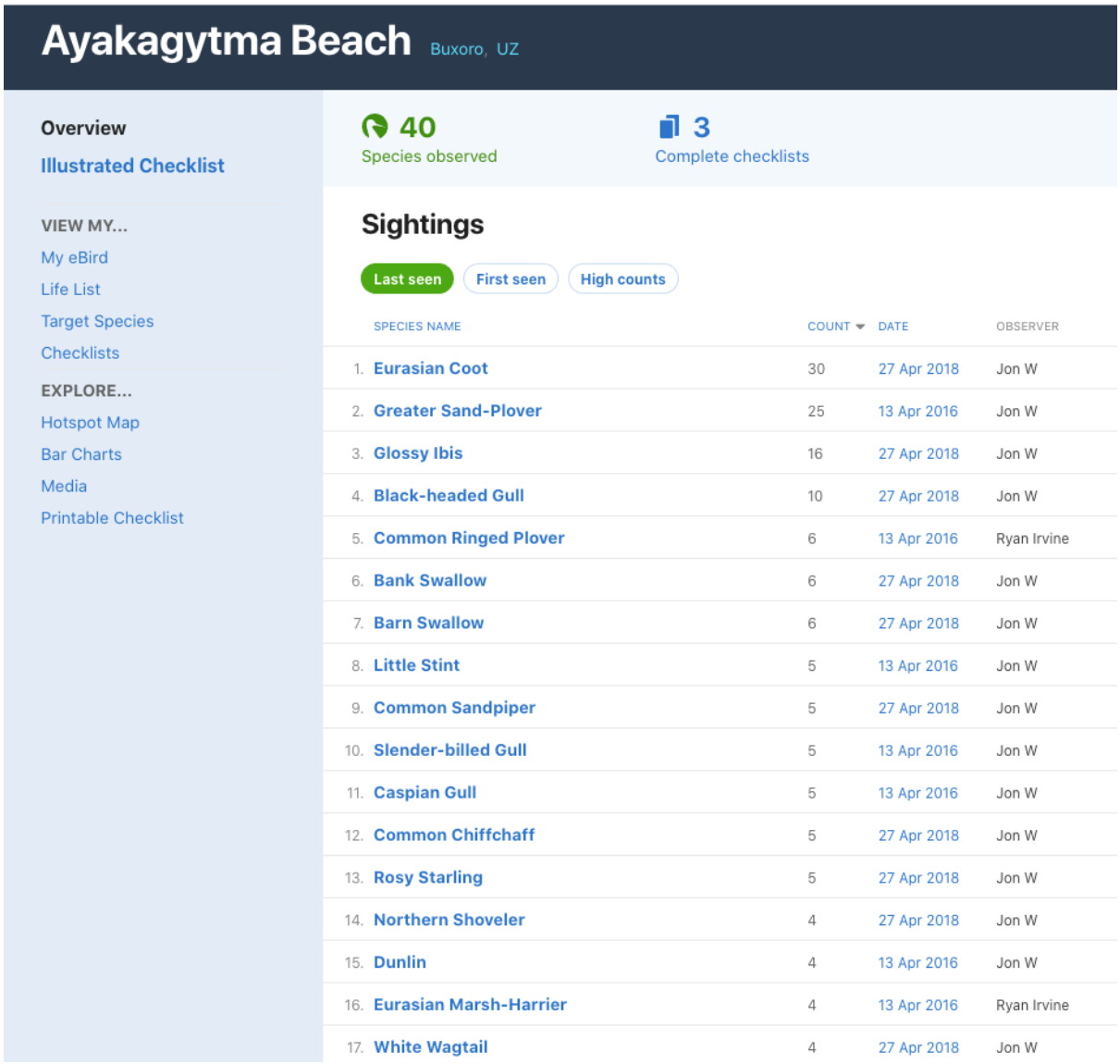
| Key species | Notes | |
|---|---|---|
| | Breeding spp | Passage/wintering |
| A1 Globally threatened species | | |
| Dalmatian Pelican *Pelecanus crispus*[1,2] | | 1–130 (2011); common |
| White-headed Duck *Oxyura leucocephala*[1,2] | | 4 (2009); rare |
| Egyptian Vulture *Neophron percnopterus*[1] | 3–4 pairs (2011); common | |
| A3 Biome-restricted species of Eurasian deserts and semi-deserts | | |
| Greater Sand Plover *Charadrius leschenaultii* | 35 (2006) | |
| Asian Short-toed Lark *Calandrella (rufescens) cheleensis* | 14 (2008) | |
| Sykes's Warbler *Iduna rama* | 2–14 (2011) | |
| Asian Desert Warbler *Sylvia nana* | 14 (2008); common | |
| Scrub Warbler *Scotocerca inquieta* | 1 (2011); rare | |
| Desert Finch *Rhodospiza obsoleta* | 3–90 (2011); common | |
| A4i >1% of a biogeographic population of a congregatory waterbird species | | |
| Red-crested Pochard *Netta rufina* | | 4016 (2000) |
| Western Great Egret *Ardea alba* | | 451 (2000) |
| Pygmy Cormorant *Microcarbo pygmeus*[2] | 31 (2006) | 827 (2000) |
| Great White Pelican *Pelecanus onocrotalus*[2] | | 28–482 (2011); common |
| Dalmatian Pelican *Pelecanus crispus*[1,2] | | 1–130 (2011); common |
| A4iii >20 000 waterbirds of one or more species | | |
| waterbirds | | 23 281 (2000) |
| Rare species | | |
| Mute Swan *Cygnus olor*[2] | 36 (2006) | 8–16 (2008–2011) |
| Whooper Swan *Cygnus cygnus*[2] | | 1–2 (2008, 2011) |
| Ferruginous Duck *Aythya nyroca*[1,2] | 2 (2006) | 3 (May 2007), 1 (2011) |
| Greater Flamingo *Phoenicopterus roseus*[2] | | 20–115 (2011) |
| Black Stork *Ciconia nigra*[2] | | 2 (2008) |
| Glossy Ibis *Plegadis falcinellus*[2] | | 30–106 (2007) |
| Eurasian Spoonbill *Platalea leucorodia*[2] | | 2–4 (2008, 2011) |
| Little Egret *Egretta garzetta*[2] | 3 (2006) | 1–13 (2011) |
| Western Osprey *Pandion haliaetus*[2] | | single birds (2007–2011) |
| Eurasian Griffon Vulture *Gyps fulvus*[2] | | 1 (2008) |
| Short-toed Snake Eagle *Circaetus gallicus*[2] | | 1 (2011) |
| Pallid Harrier *Circus macrourus* [1,2] | | 2 single encounters (2008, 2011) |
| Steppe Eagle *Aquila nipalensis*[2] | | 8 (2008), 6 (2011) |
| Saker Falcon *Falco cherrug*[1,2] | 1 pair (2011); rare | |
| Peregrine Falcon *Falco peregrinus*[1,2] | | 1 (2008) |
| Macqueen's Bustard *Chlamydotis macqueenii*[1,2] | 1 (2008); rare | |
| Black-tailed Godwit *Limosa limosa*[1] | | 17–36 (2011); common |
| Eurasian Curlew *Numenius arquata*[1] | | 1–93 (2011); common |
| Black-winged Pratincole *Glareola nordmanni*[1,2] | | 3 (2007) |
| Great Black-headed Gull *Larus ichthyaetus*[2] | 8 (2006) | 2 (2011) |

[1]Species listed in the IUCN Red List.

[2]Species listed in the UZ RDB.

The following records have been uploaded onto Ebird.

**Figure 3-14 Extract from Ebird**



# Ayakagytma Beach Buxoro, UZ

**Overview**

**Illustrated Checklist**

VIEW MY...

My eBird

Life List

Target Species

Checklists

EXPLORE...

Hotspot Map

Bar Charts

Media

Printable Checklist

**40** Species observed

**3** Complete checklists

## Sightings

Last seen | First seen | High counts

| | SPECIES NAME | COUNT | DATE | OBSERVER |
|---|---|---|---|---|
| 1. | Eurasian Coot | 30 | 27 Apr 2018 | Jon W |
| 2. | Greater Sand-Plover | 25 | 13 Apr 2016 | Jon W |
| 3. | Glossy Ibis | 16 | 27 Apr 2018 | Jon W |
| 4. | Black-headed Gull | 10 | 27 Apr 2018 | Jon W |
| 5. | Common Ringed Plover | 6 | 13 Apr 2016 | Ryan Irvine |
| 6. | Bank Swallow | 6 | 27 Apr 2018 | Jon W |
| 7. | Barn Swallow | 6 | 27 Apr 2018 | Jon W |
| 8. | Little Stint | 5 | 13 Apr 2016 | Jon W |
| 9. | Common Sandpiper | 5 | 27 Apr 2018 | Jon W |
| 10. | Slender-billed Gull | 5 | 13 Apr 2016 | Jon W |
| 11. | Caspian Gull | 5 | 13 Apr 2016 | Jon W |
| 12. | Common Chiffchaff | 5 | 27 Apr 2018 | Jon W |
| 13. | Rosy Starling | 5 | 27 Apr 2018 | Jon W |
| 14. | Northern Shoveler | 4 | 27 Apr 2018 | Jon W |
| 15. | Dunlin | 4 | 13 Apr 2016 | Jon W |
| 16. | Eurasian Marsh-Harrier | 4 | 13 Apr 2016 | Ryan Irvine |
| 17. | White Wagtail | 4 | 27 Apr 2018 | Jon W |

**Figure 3-15 Extract from Ebird (cont.)**

| | | | | |
|---|---|---|---|---|
| 18. | Ruddy Shelduck | 3 | 27 Apr 2018 | Jon W |
| 19. | Lesser Black-backed Gull | 3 | 27 Apr 2018 | Jon W |
| 20. | Western Yellow Wagtail | 3 | 27 Apr 2018 | Jon W |
| 21. | Red-crested Pochard | 2 | 13 Apr 2016 | Ryan Irvine |
| 22. | Great Crested Grebe | 2 | 13 Apr 2016 | Jon W |
| 23. | Eurasian Curlew | 2 | 13 Apr 2016 | Jon W |
| 24. | Green Sandpiper | 2 | 13 Apr 2016 | Ryan Irvine |
| 25. | Little Tern | 2 | 27 Apr 2018 | Jon W |
| 26. | Great Cormorant | 2 | 27 Apr 2018 | Jon W |
| 27. | Osprey | 2 | 13 Apr 2016 | Jon W |
| 28. | Black-winged Stilt | 1 | 13 Apr 2016 | Ryan Irvine |
| 29. | Pied Avocet | 1 | 13 Apr 2016 | Jon W |
| 30. | Kentish Plover | 1 | 27 Apr 2018 | Jon W |
| 31. | Little Ringed Plover | 1 | 13 Apr 2016 | Ryan Irvine |
| 32. | Hen Harrier | 1 | 13 Apr 2016 | Ryan Irvine |
| 33. | Eurasian Hoopoe | 1 | 13 Apr 2016 | Jon W |
| 34. | Citrine Wagtail | 1 | 27 Apr 2018 | Jon W |
| 35. | Desert Finch | 1 | 27 Apr 2018 | Jon W |
| 36. | Mallard | X | 13 Apr 2016 | Ryan Irvine |
| 37. | Gray Heron | X | 13 Apr 2016 | Ryan Irvine |
| 38. | Common Myna | X | 13 Apr 2016 | Ryan Irvine |
| 39. | House Sparrow | X | 13 Apr 2016 | Ryan Irvine |
| 40. | Red-throated Pipit | X | 13 Apr 2016 | Ryan Irvine |

It Is important to note that survey records with extremely high numbers of waterbirds (>20k) occurred in 2000.

A review of historical imagery finds that the lake's conditions may have changed from 2000 to present day. It appears that much of the lakeshore vegetation has been removed or otherwise lost.

**Figure 3-16 Lakeshore Vegetation - October 2006 vs. September 2018**

# 4 POTENTIAL BIODIVERSITY VALUES

The following subsections provides a compilation of biodiversity values that are anticipated to be present, along with input provided by relevant stakeholders.

*Distribution maps are sourced from IUCN Red List or Birdlife International, and ecology and population estimates are sourced from IUCN Red List.*

## 4.1 Threatened Species

EN and CR listed species whose spatial distribution overlaps with the site include Sociable Lapwing (*Vanellus gregarious*), Egyptian Vulture (*Neophron percnopterus*), Steppe Eagle (*Aquila nipalensis)*, Saker Falcon (*Falco cherrug*), White-headed Duck (*Oxyura leucocephala*), Pallas's Fish-eagle (*Haliaeetus leucoryphus*), and Southern Even-fingered Gecko (*Alsophylax laevis*).

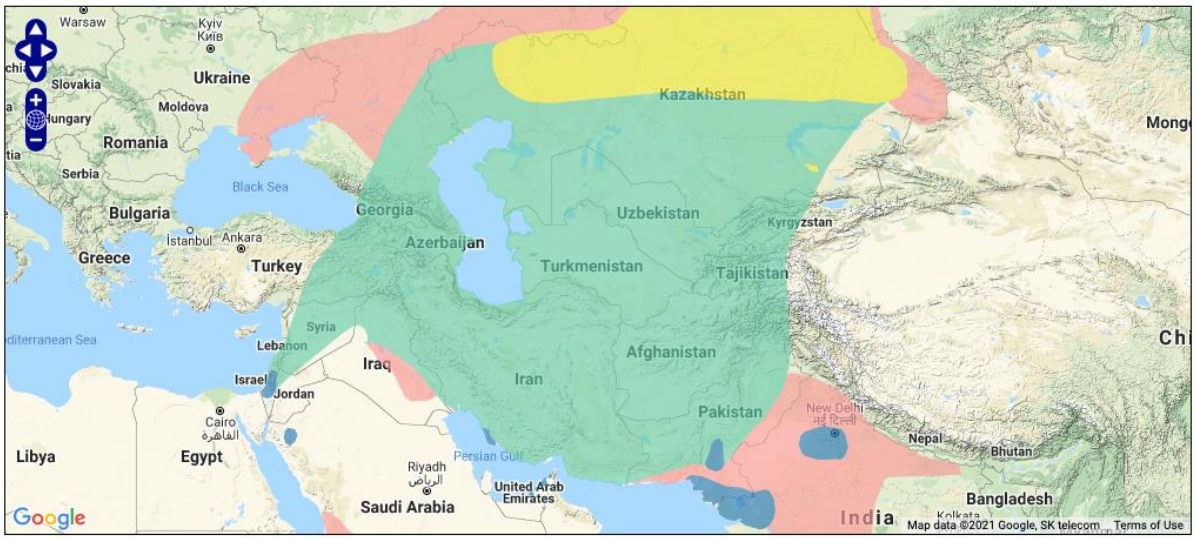
### 4.1.1 Sociable Lapwing (*Vanellus gregarious*)

The Sociable Lapwing is listed as Critically Endangered on the IUCN Red List, due to rapid population decline thought to be driven by hunting pressures.

It is a passage migrant through Uzbekistan, crossing southbound in the autumn months and returning northbound in the spring months to breed in Northern Kazakhstan and Russian in the summer months.

**Figure 4-1 Sociable Lapwing Distribution**

**Figure 4-2 Sociable Lapwing Distribution (cont.)**



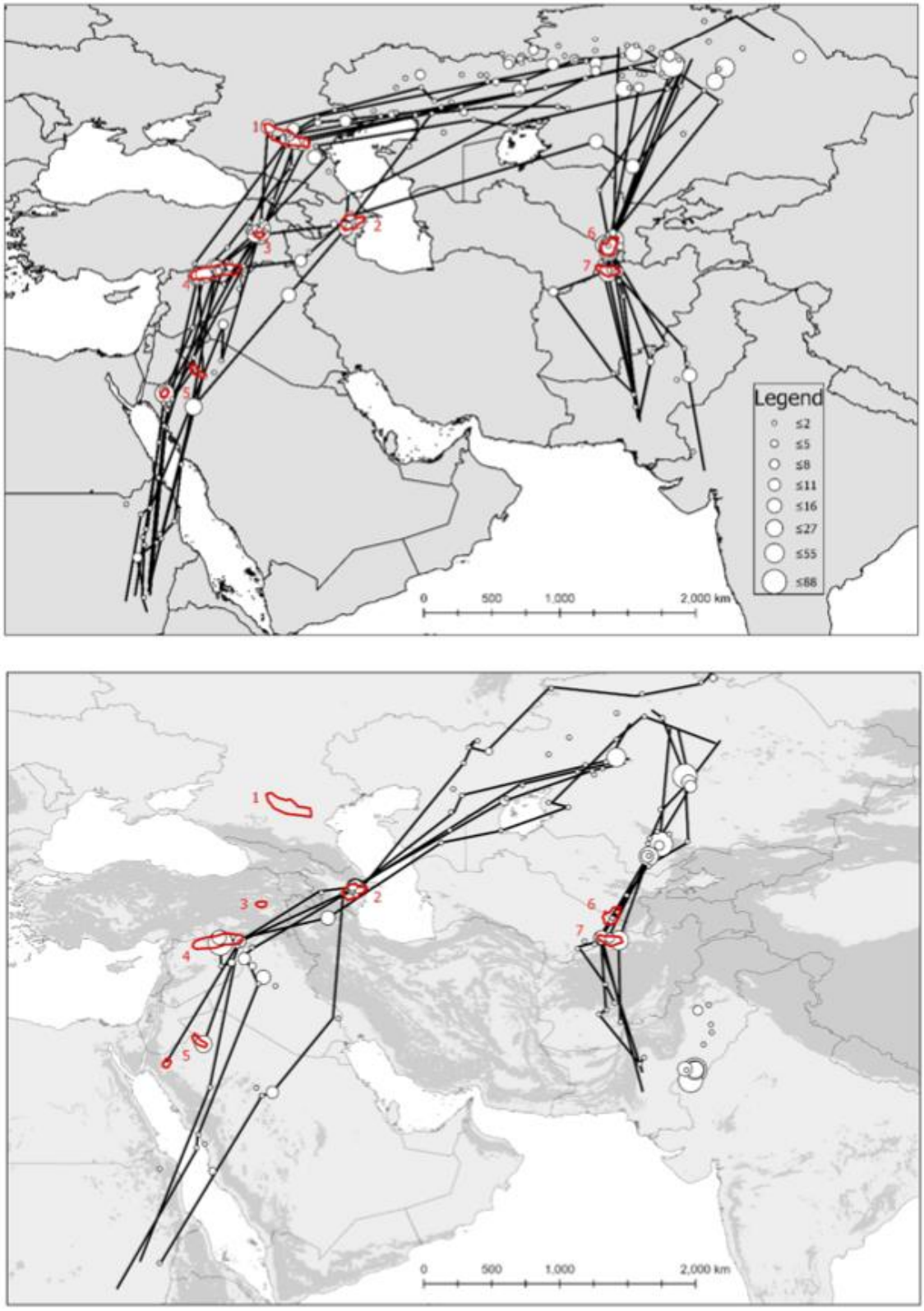

Preferred habitat during migration is typically sandy plains with short grass, dry meadows, fallow land and cultivated fields. The primary threat is presumed to be illegal hunting during migration and on wintering grounds, resulting in low adult survival.

Current estimations calculate a possible total population size of 5,600 breeding pairs, i.e. 11,200 mature individuals, roughly equivalent to 16,000-17,000 individuals in total.

Recent research[3] indicates that the species generally follows one of two migratory pathways, the eastern pathway which upon initial inspection may pass near the project site.

[3] Migration strategy, site fidelity and population size of the globally threatened Sociable Lapwing *Vanellus gregarius*

**Figure 4-3 Sociable Lapwing Migratory Routes**

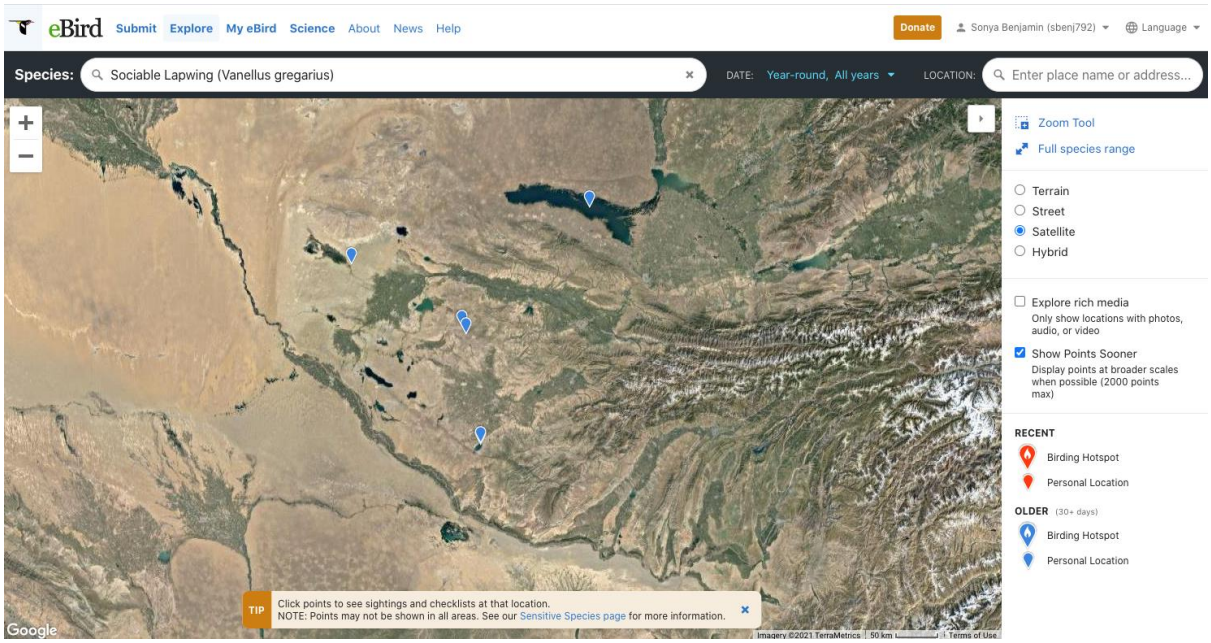



The eastern migratory pathway cuts through eastern Uzbekistan, and includes Talimardzhan (shown in the figure as No. 6) which is a known important staging area. This is located 250km to the south of the project site.

**Figure 4-4 Sociable Lapwing Staging Areas**


The following records are available on *Ebird*, documenting Sociable Lapwing in localities 80km and 150km away from the project site.

**Figure 4-5 Sociable Lapwing Ebird Records**



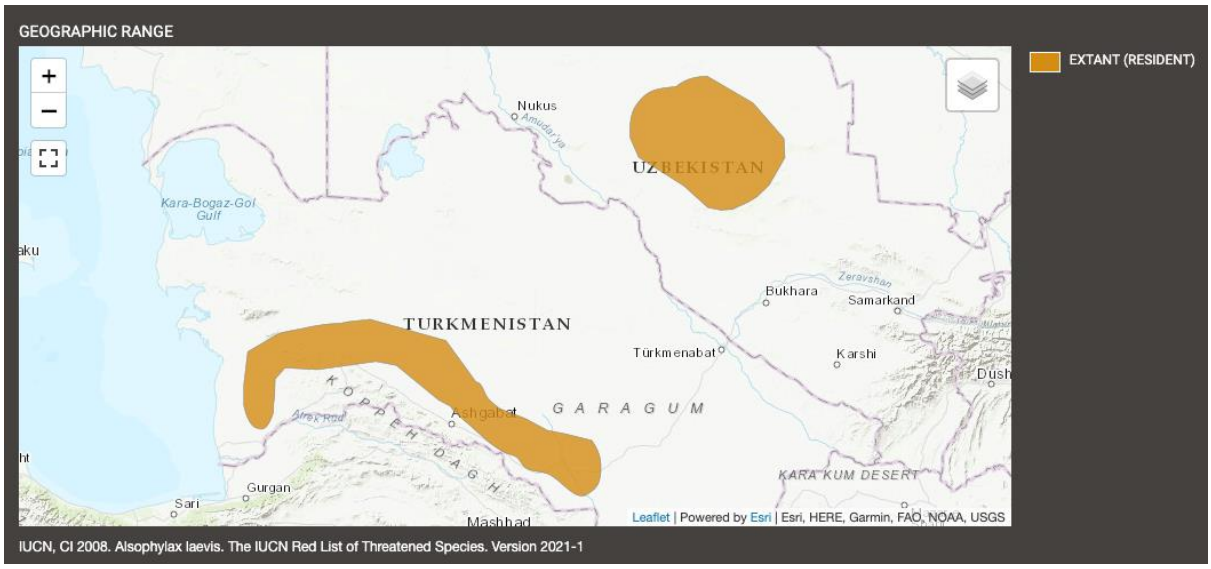

Studies on Lake Ayakaghytma from 2000 through 2011 were compiled and no record of Sociable Lapwing was reported throughout that timeframe.

The recorded migratory period for the eastern migratory route, runs from early September to mid-November (autumn migration) and early March to mid-April.

### 4.1.2 Southern Even-fingered Gecko

The Southern Even-fingered Gecko (*Alsophylax laevis)* is listed as Critically Endangered on the IUCN Red List, due to a historic population crash and low numbers of sightings in the past 20-30 years.

**Figure 4-6 Southern Even-fingered Gecko Distribution**




The species occurs in "takyrs", which are bare, flat clay areas free from vegetation. Significant habitat loss is ongoing through ploughing and irrigation of this habitat for crop cultivation.

There is no reliable global population estimate as no robust population studies have been undertaken in recent years.

The species has in the past been identified within the region[4]. The following excerpt provides the known data in regards to the species presence in Uzbekistan:

[4] Showler, D.A. "A Checklist of the Amphibians and Reptiles of the Republic of Uzbekistan with a review and summary of species distribution". Self-published (2018).

**Figure 4-7 Extracts on Southern Even-fingered Gecko Records**

- Smooth even-fingered gecko *Alsophylax laevis* Nilosky, 1907

**Synonyms:** *Alsophylax kashkarovi, Alsophylax pipiens.*
**Distribution**: Endemic to Uzbekistan and S/SW Turkmenistan.
**Distribution in Uzbekistan**: Very local in the N and C Kyzylkum, and S Surkhandarya. In the Kyzylkum there appear only six documented localities, three in N Bukhara province (W to E): 'Shuruk settlement [40°41' 63°47E'] on the southern train [periphery] of the Kuldjuktau Mauntains [Mountains]'; '30 km W of Ayakagytma'; and 'Ayakagytma' [village located at 40°40' 64°29E'] (Szczerbak & Golubev 1996); and three in Navoi province (N to S): Buzaubay IBA (41°46'N 62°39'E; BirdLife 2018a); 'Mynbulak Hollow' [Mingbulak depression takyrs; recorded prior to 1976, perhaps now extirpated], and 'Karakatta Hollow' [36 km N of Ayakagytma; approx. 41°00' 64°29E'] (Szczerbak & Golubev 1996). Much further south, recorded at one locality in S Surkhandarya, 'Karasu [a stream] around Termez' (Szczerbak & Golubev 1996: Fig. 30 [mapped just E of the Surkhan Darya river, at very approximately 37°21'N 67°27'E, about 15 km NE of Termez city]).

Areas inhabited by *A. laevis* (takyrs in the sand desert zone) are said to be at elevations between 200-250 m asl (Szczerbak & Golubev 1996). However, altitudinal limits are probably a little broader as Ayakagytma village lies at 170 m [takyr habitat in vicinity estimated at from 152 to 190 m; DS pers. obs. 2013], terrain around Termez lies at its lowest at about 290 m, and Shuruk village is situated at approx. 315-320 m asl (but perhaps potentially suitable habitat near Shuruk, falls within 200-250 m).
**Red List Category:** Critically Endangered (IUCN 2018; last assessed 2008). Vulnerable, RDB of Uzbekistan (Azimov et al. 2009); extirpated from many former known areas and in others sharply declining, this attributed to habitat loss due to irrigation projects and agricultural encroachment, ploughing of desert takyrs considered particularly damaging.
**Ssp:** Monotypic.
**Remarks:** Year of holotype description sometimes given as 1905.

### 4.1.3 Egyptian Vulture

The Egyptian Vulture (*Neophron percnopterus*) is listed as Endangered on the IUCN Red List, due to rapid decline proposed to be caused by secondary poisoning (after consumption of livestock carcasses treated with the veterinary drug diclofenac). However, general disturbance and habitat loss are also listed as threats of concern, along with the risk for power line electrocution and wind turbine collision.

It is a listed as a native breeder through much of Uzbekistan during the summer season. Although the migration strategy of the Egyptian Vulture differs between regions and sometimes between birds, the majority that breed in the project area can be expected to migrate southwards towards India or Africa to overwinter in warmer locales.

**Figure 4-8 Egyptian Vulture Distribution**

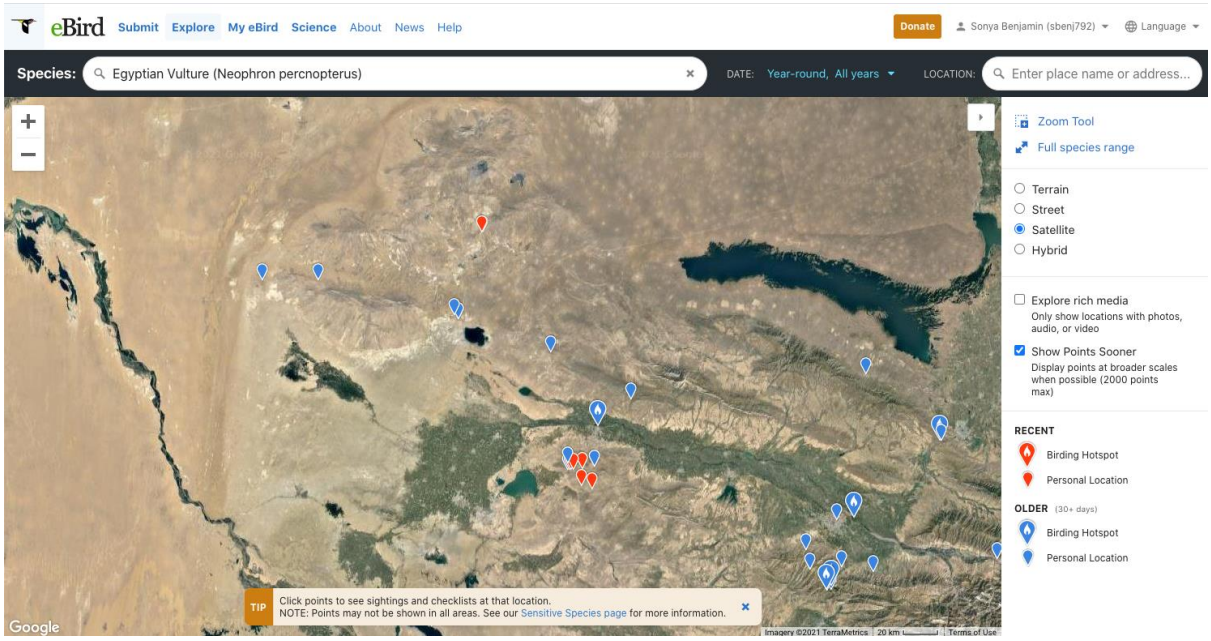

Preferred habitat includes lowland and montane regions over open, often arid, country, but this species also scavenges at human settlements.

The most recent estimate of the global population size is 18,000-57,000 individuals, roughly equivalent to 12,000-38,000 mature individuals.

This species has been recorded to occur within the area, both by citizen scientists as well as researchers. A total of 3-4 breeding pairs were found nesting in the adjacent cliffs in 2011.

The following map provides locations of sightings uploaded to *Ebird* by citizen scientists, documenting Egyptian Vulture in localities within 5km away from the project site.

**Figure 4-9 Egyptian Vulture Ebird Records**

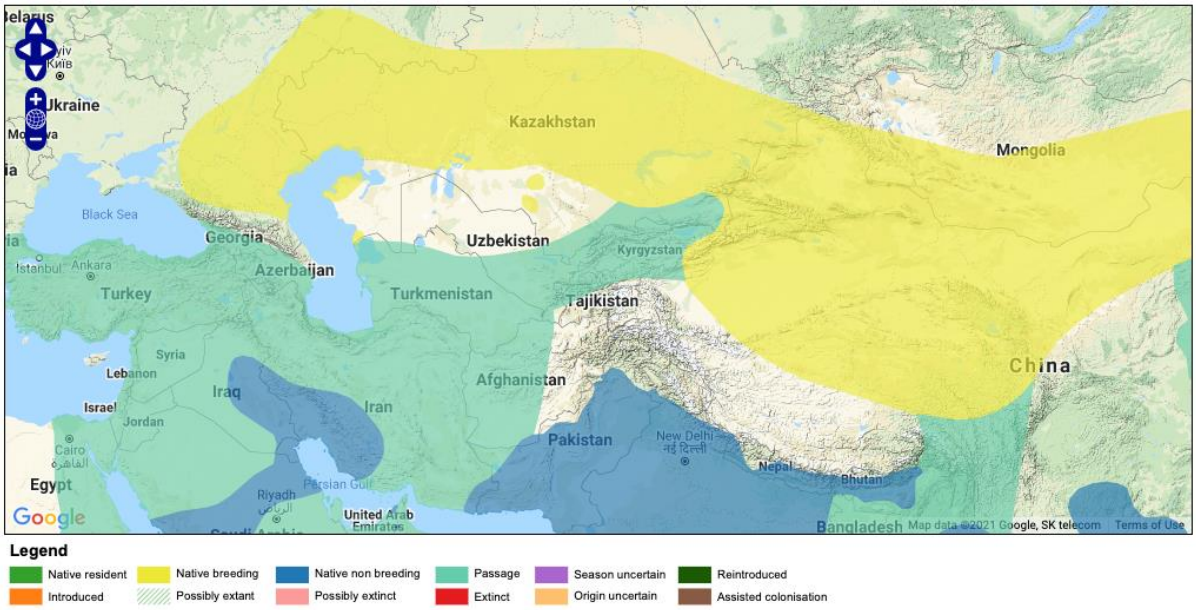



## 4.1.4 Steppe Eagle

The Steppe Eagle (*Aquila nipalensis)* is listed as Endangered on the IUCN Red List, due to rapid population decline across much of its global range.

It is a passage migrant through Uzbekistan, crossing southbound in the autumn months and returning northbound in the spring months to breed in the summer months. Migrants leave their breeding grounds between August and October/November, returning between January and May. It avoids sea crossings and thus forms large concentrations at bottleneck sites.

**Figure 4-10 Steppe Eagle Distribution**



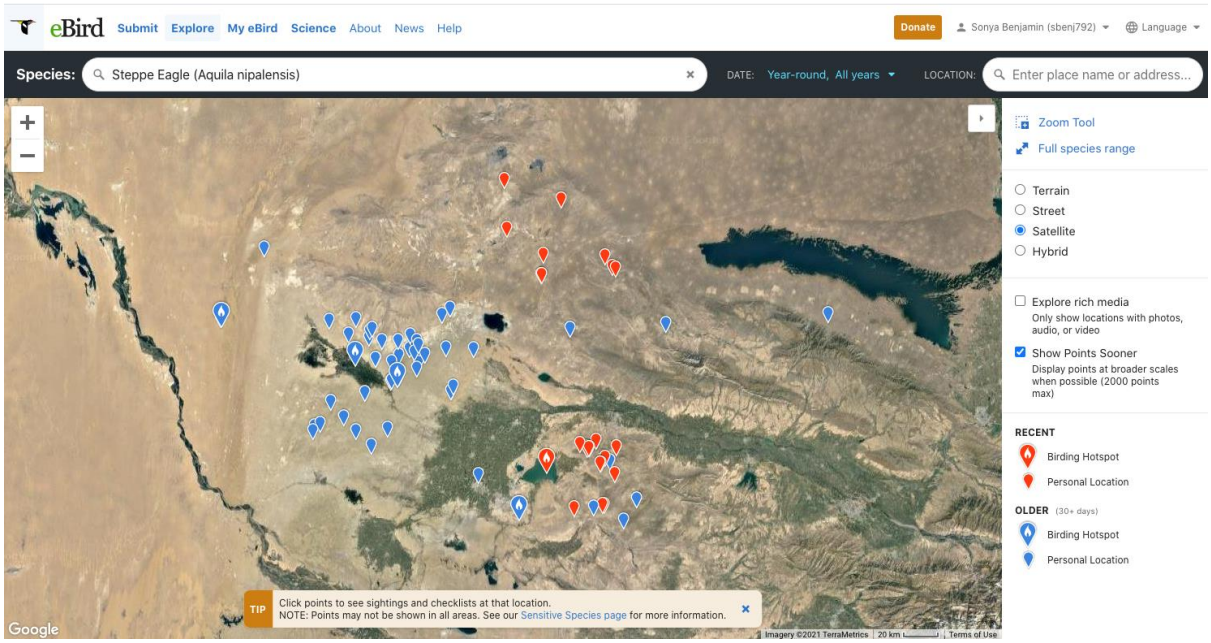
It inhabits steppe and semi-desert and breeds in mountainous regions. Diet varies regionally but mainly is formed by small mammals such as susliks.

The species is considered to be highly vulnerable to wind farms and power line impacts.

The global population is assumed to be below 37,000 pairs.

Less than 10 individual migrants were recorded at the lake in 2008 and 2011. The following records are available on Ebird, documenting Steppe Eagle in localities within 15km away from the project site.

**Figure 4-11 Steppe Eagle Ebird Records**




The below showcases satellite tracking data[5] on multiple individuals whose recorded flight paths were adjacent to or within the project's airspace.

[5] http://rrrcn.ru/en/migration/se2018

**Figure 4-12 Steppe Eagle Migration Flight Paths**

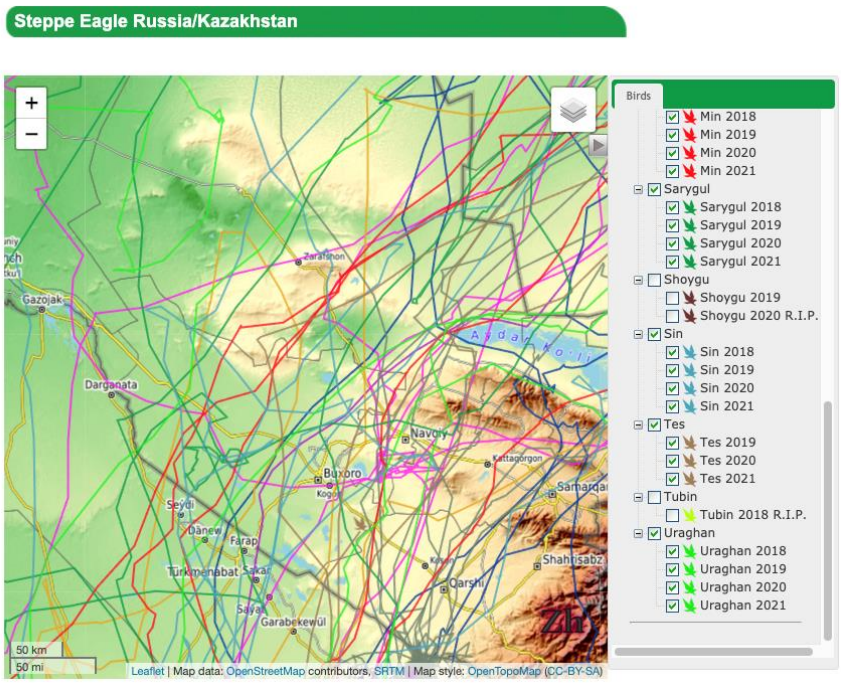
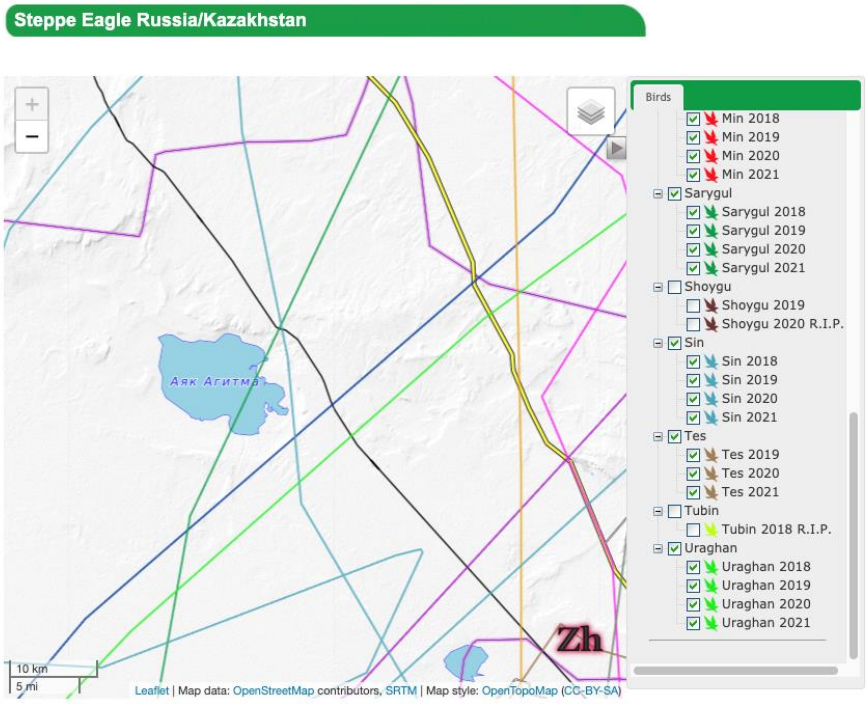



**Figure 4-13 Steppe Eagle Migration Flight Paths (near project area)**

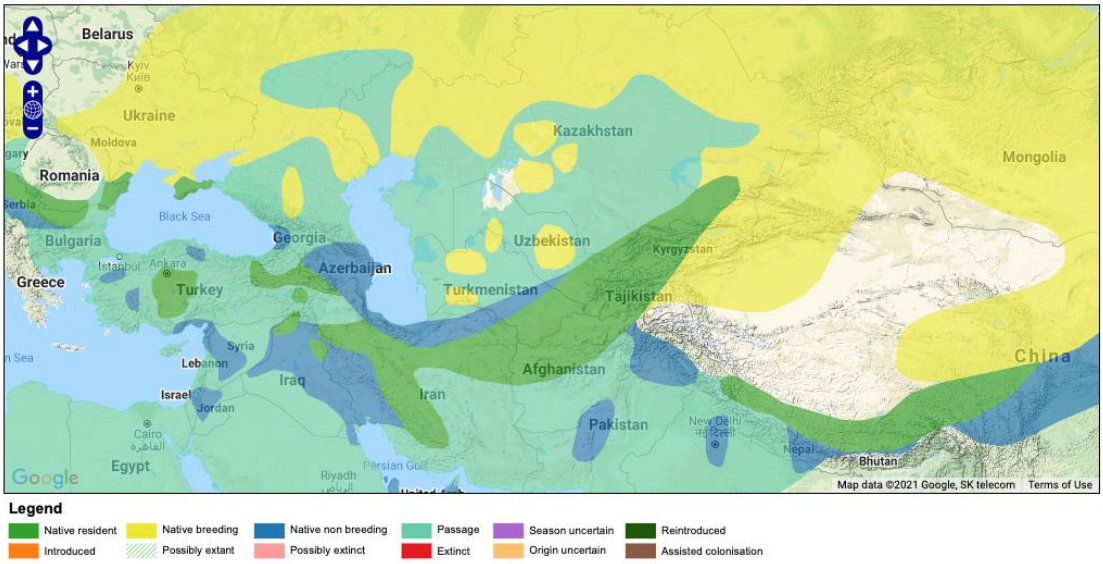



### 4.1.5 Saker Falcon

The Saker Falcon (*Falco cherrug*) is listed as Endangered on the IUCN Red List, due to a rapid population decline.

It is a potential summer breeder and sometime passage migrant through Uzbekistan, going southbound in the autumn months and returning northbound in the spring months to breed in the summer months. Migrant birds generally leave their breeding grounds in September and October, returning between February and May.

**Figure 4-14 Saker Falcon Distribution**




Saker Falcon hunts close to the ground in open terrain, combining rapid acceleration with high manoeuvrability, thus specialising on mid-sized diurnal terrestrial rodents (especially ground squirrels *Spermophilus*) of open grassy landscapes such as desert edge, semi-desert, steppes, agricultural and arid montane areas.

It uses copses or cliffs for nest sites and often occupies the old nests of other birds.

Major threats include:

- Electrocution on power lines
- Decreased prey availability due to habitat loss
- Offtake for falconry

The global population is estimated at c.12,200-29,800 mature individuals.

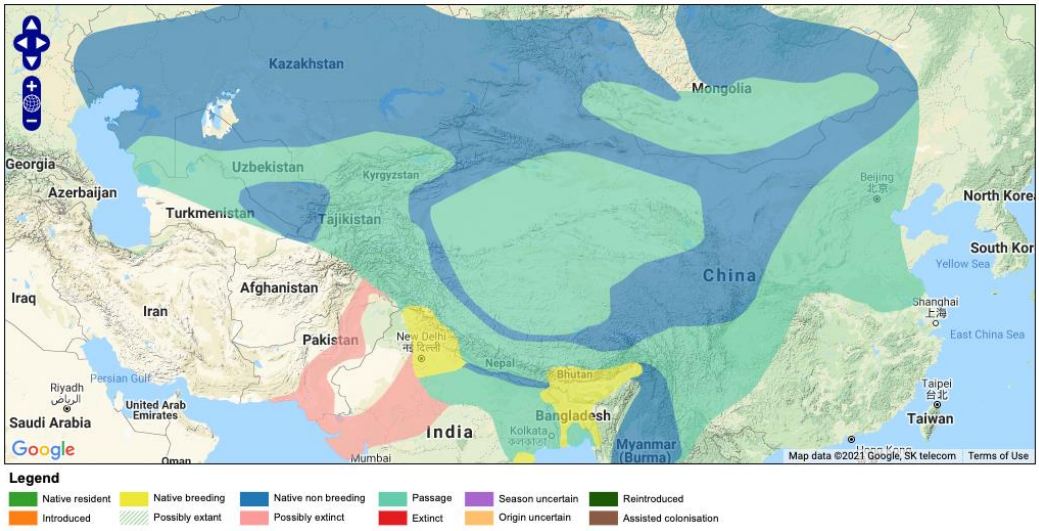
A single pair were recorded breeding in the cliffs adjacent to the project site in 2011.

### 4.1.6 Pallas's Fish-eagle

The Pallas's Fish-eagle (*Haliaeetus leucoryphus*) is listed as Endangered on the IUCN Red List, due to a small, declining population as a result of the widespread loss, degradation and disturbance of wetlands and breeding sites throughout its range.

It is a passage migrant and summer visitor through Uzbekistan, crossing southbound in the autumn months and returning northbound in the spring months. Three satellite-tracked birds recently provided evidence that the species undertakes extensive, seasonal migrations of over 4,000 km from India to Mongolia and Russia. Breeding takes place from August-February In India, Myanmar and Bangladesh.

**Figure 4-15 Pallas's Fish-eagle Distribution**




Tracked individuals also demonstrated a previously unknown capability to fly directly over the Himalayas at altitudes exceeding 6,000 m.

Preferred habitat consists of wetlands, principally large lakes and rivers, from the lowlands to 5,000 m.

Key threats are habitat loss, degradation and disturbance. The felling of large trees near wetlands has reduced the availability of nest and roost sites.

Global population is placed in the band of 1,000–2,499 mature individuals, which is considered to consist of a single migratory population.

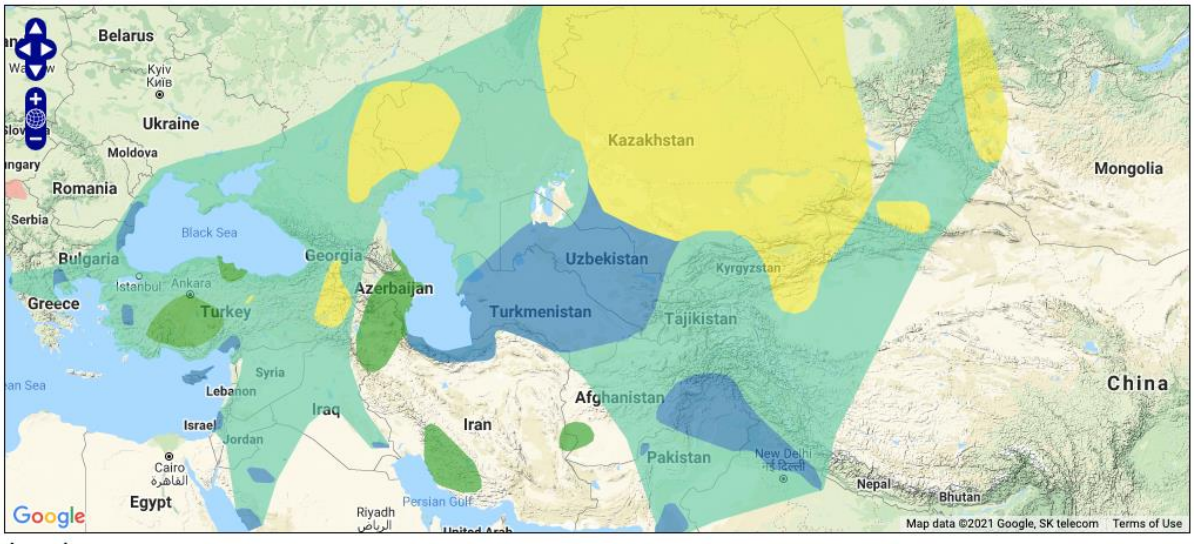
This species was recorded in 2012 to be present in Dengizkul Lake, 160km to the south of the project area. No other records exist in the public literature for the project region.

### 4.1.7 White-headed Duck

The White-headed Duck (*Oxyura leucocephala*) is listed as Endangered on the IUCN Red List, due to suspected population decline.

It is a passage migrant and potential winter visitor in Uzbekistan. It begins the migration to its wintering grounds in late August and generally arrives September-October. Birds depart in February and arrive back in the breeding range by early May.

**Figure 4-16 White-headed Duck Distribution**

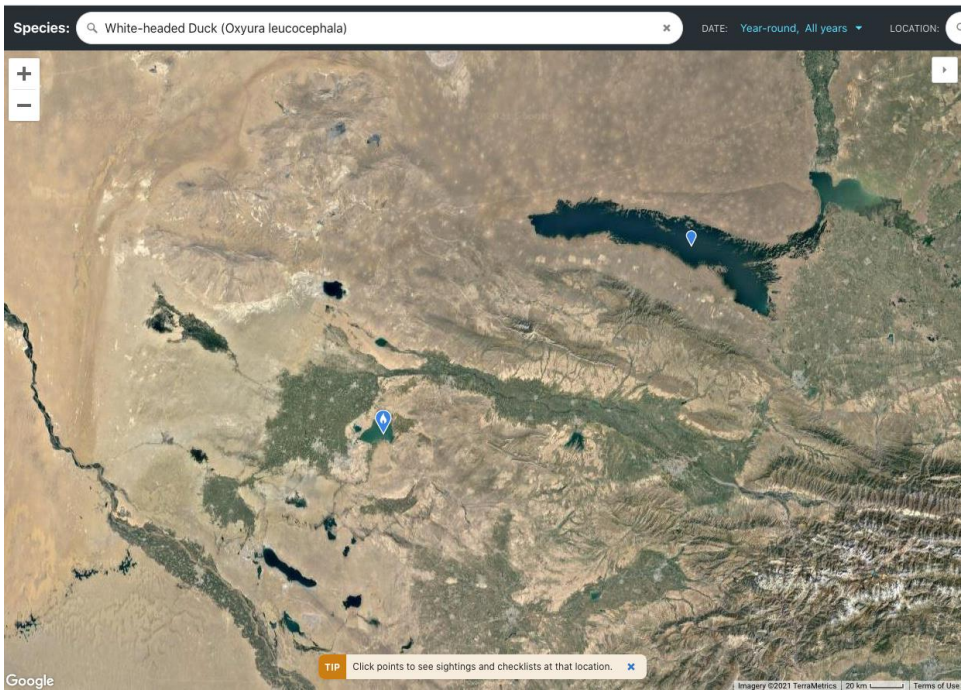



The species is highly gregarious outside of the breeding season with more than 10,000 gathering at some winter sites. During the winter the species inhabits larger, deeper alkaline or saline waters.

The greatest long-term threat to the species survival is thought to be competition and introgressive hybridisation with the North American Ruddy Duck *Oxyura jamaicensis*.

The following records are available on Ebird, documenting White-headed Duck in localities over 80km away from the project site.

**Figure 4-17 White-headed Duck Ebird Records**




A total of 4 individuals were recorded on the lake during the winter period in 2009.

The following extract[6] discusses the seasonal timeframe within which the White-headed Duck Is anticipated to be present in Uzbekistan.

> *"In the Central Asian breeding grounds, White-headed Ducks are one of the last waterbird species to arrive, having been observed in passage between late April and early May, and in breeding sites from mid-May (Dementiev and Gladkov 1952, Gordienko et al. 1986). The main northward (spring) passage in Kazakhstan occurs from 29 April to 5 May, and by mid-May, the movement is complete even for the west Siberian breeders (Dementiev and Gladkov 1952, Johansen 1959). Birds arrive on the Russian breeding grounds already paired (Dementiev and Gladkov 1952). They leave in late August (Gordienko et al. 1986); southward (autumn) departure begins in late September and northern breeding areas are deserted by mid-October. Concentrations on the east Caspian Sea grow during the second half of October and November. In Uzbekistan, the major southward passage through the Amu Darya Delta occurs in October (Kreuzberg-Mukhina and Lanovenko 2000)."*

### 4.1.8 Vulnerable Species

Although the CHA specifically refers to endangered and critically endangered species, there exists the risk of species becoming up listed from VU to EN. Species whose distribution overlaps with the project site and are listed as Vulnerable with declining populations are listed and discussed in the following sub-sections.

**Goitered Gazelle (*Gazella subgutturosa*)**

This gazelle inhabits a wide range of semi-desert and desert habitats. The spatial distribution covers a large portion of Uzbekistan.

The main threats to this species are illegal hunting (for meat and to a lesser extent for trophies) and habitat loss.

**Marbled Polecat (*Vormela peregusna*)**

This mammal inhabits a wide range of semi-desert and desert habitats; its spatial distribution covers a majority of Uzbekistan.

It is a specialised predator, feeding mainly on desert and steppe rodents such as gerbils, and ground squirrels.

The major threat to Marbled Polecat is the loss of natural steppe and desert habitats.

**Russian Tortoise (*Testudo horsfieldii*)**

[6] Wei, David Li Zuo, and Taej Mundkur. *Status overview and recommendations for conservation of the White-headed Duck Oxyura leucocephala in Central Asia*. Wetlands International, 2003.

The spatial distribution of this species is not mapped, however, it has been recorded to occur in Afghanistan; Armenia; Azerbaijan; China; Iran, Islamic Republic of; Kazakhstan; Kyrgyzstan; Pakistan; Russian Federation; Tajikistan; Turkmenistan; and Uzbekistan.

Little published information is available regarding the ecology or conservation of this species.

**Greater Spotted Eagle (*Clanga clanga*)**

The Greater Spotted Eagle is a passage migrant through Uzbekistan. Birds leave their breeding grounds in October and November and return in February and March.

It occurs in lowland forests near wetlands, and on small mammals, waterbirds, frogs and snakes, hunting over swamps and wet meadows; birds soar to c.100 m high when hunting.

Birds migrate on a broad front, tending to pass in singles, twos and threes; they do not concentrate at bottleneck sites to the extent of many other raptors. The below showcases the migratory route of a single individual which was tracked from 2014 through 2018[7]. The zoomed-in map shows that the individual passed within 10-15km of the project site.

**Figure 4-18 Greater Spotted Eagle Satellite Tracking**

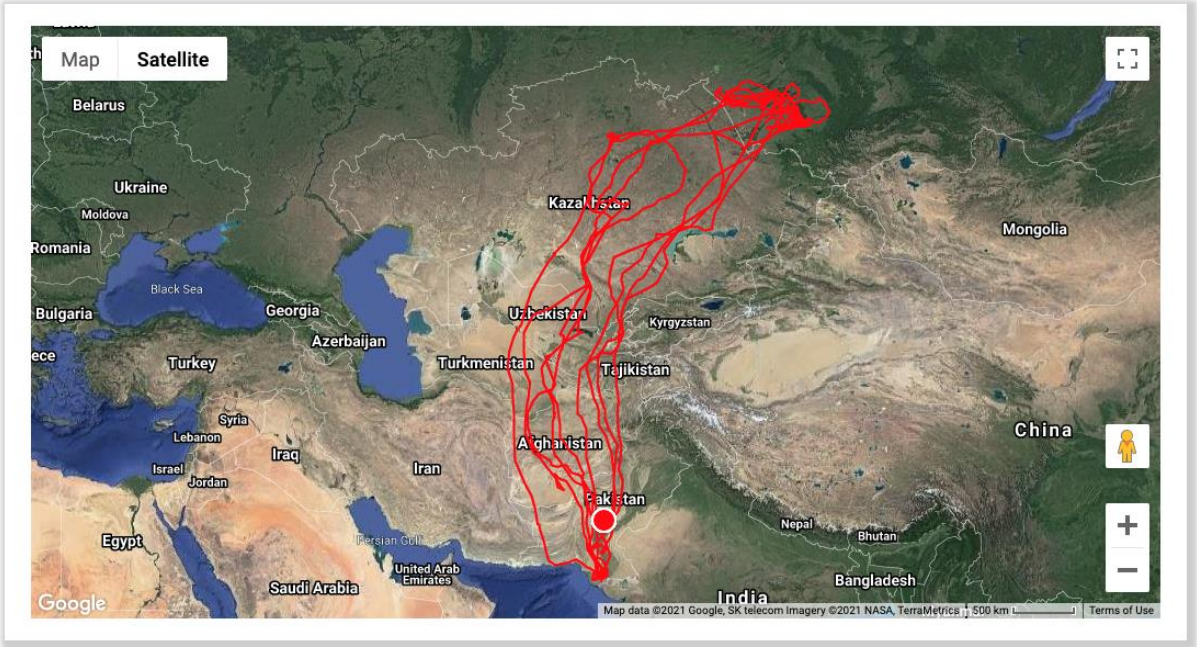
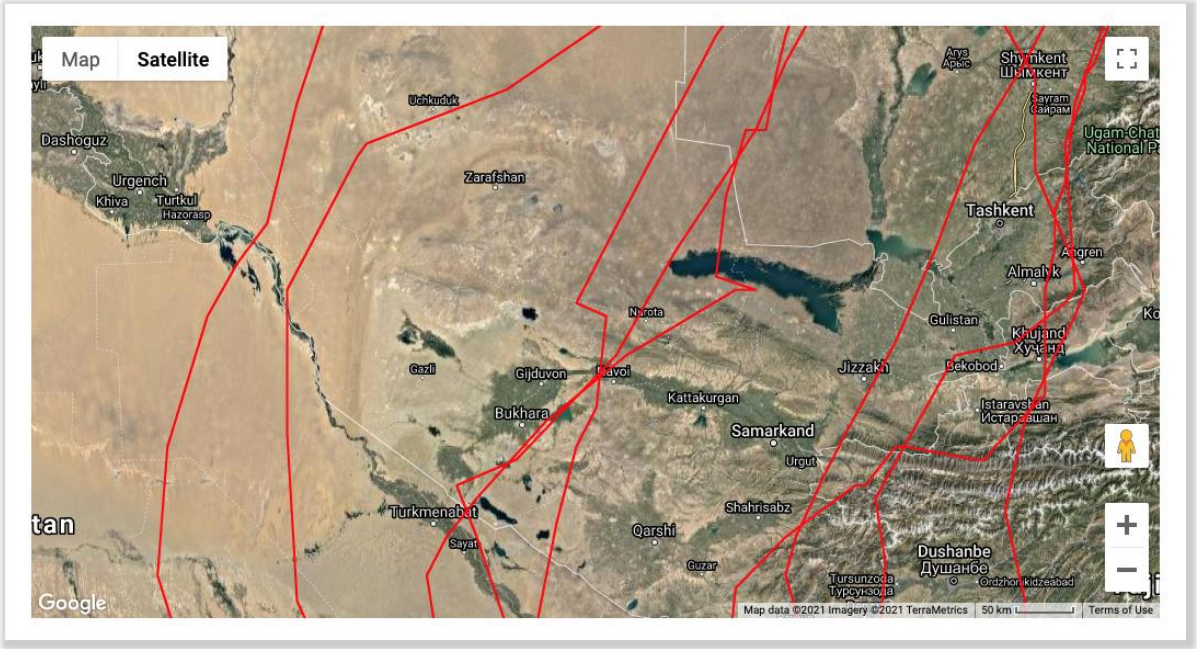



**Figure 4-19 Greater Spotted Eagle Satellite Tracking (project region)**

[7] https://www.satellitetracking.eu/




Threats include electrocution, poaching, shooting, disturbance, and habitat loss.

**Eastern Imperial Eagle (*Aquila heliaca*)**

The Eastern Imperial Eagle is a summer breeder and passage migrant through Uzbekistan.

It occurs in steppe, lowland and riverine forests and semi-deserts. It breeds in forests up to 1,000 m and also in steppe and agricultural areas with large trees, and on electricity pylons.

Southward migration between September and November, and birds migrate to the summer grounds between February and May. Birds are usually seen singly or in pairs.

Main threats include loss of breeding trees, disturbance, habitat loss, and electrocution.

The following depicts the satellite tracked flight paths of several Eastern Imperial Eagles which show that some individuals[8] may pass through the project area on autumn and spring migrations.

[8] Meyburg B.-U., Meyburg C. Report presented on the II International Scientific and Practical Conference 'Eagles of Palearctic: Study and Conservation" (http://rrrcn.ru/en/conference-2018)

**Figure 4-20 Eastern Imperial Eagle Satellite Tracking**

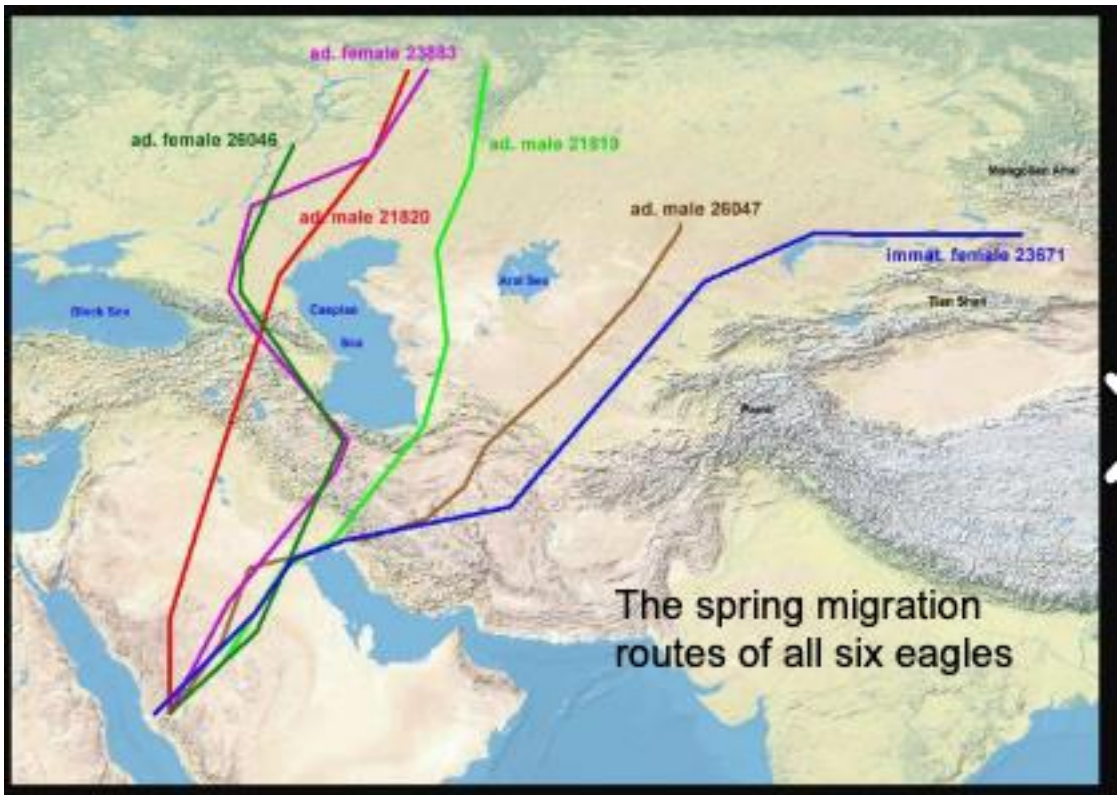



**Figure 4-21 Eastern Imperial Eagle Satellite Tracking (cont.)**

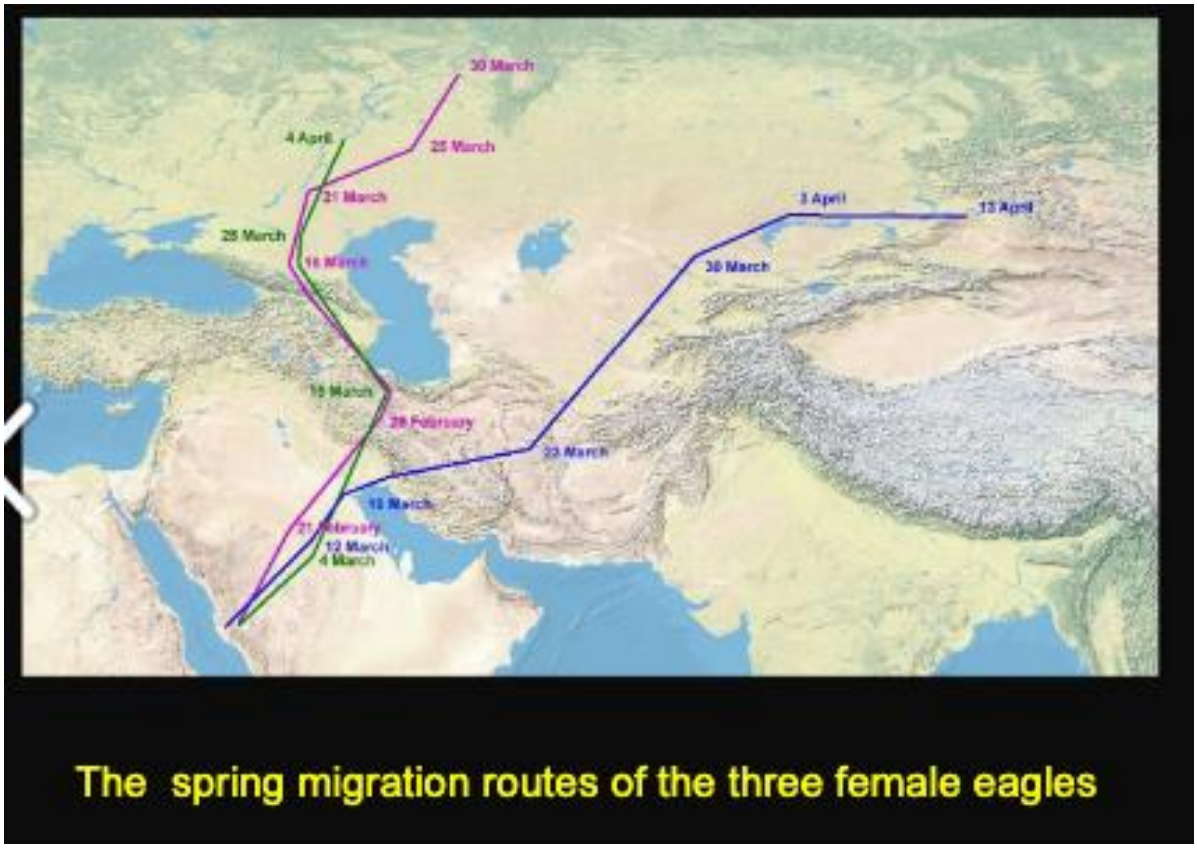
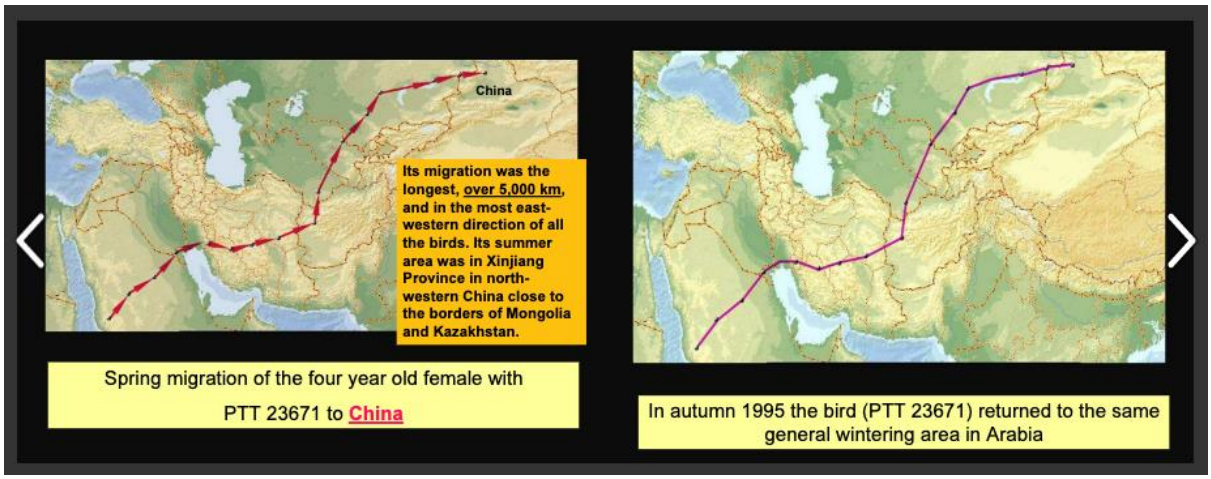


**Figure 4-22 Eastern Imperial Eagle Satellite Tracking (cont.)**




**Marbled Teal *(Marmaronetta angustirostris)***

This species is a resident, potential breeder and sometimes passage migrant through Uzbekistan.

It inhabits fairly dry, steppe-like areas on shallow freshwater, brackish or alkaline ponds with well vegetated shorelines.

It has very nomadic tendencies, dispersing in search of suitable habitat in response to changing conditions; and is also highly gregarious.

Major threats include hunting, polluted and loss of suitable habitat, and accidental entanglement in fishing gear.

**Lesser White-fronted Goose (*Anser erythropus*)**

This species is a passage migrant throughout Uzbekistan. Southbound migration begins in August/September. Northbound migration begins in late February and return to breeding grounds occur in May/June.

During winter and on migration, this species frequents open short grassland in the steppe and semi-arid zones; winter roosting colonies are also formed on large lakes and rivers.

This species is highly gregarious outside of the breeding season.

Major threats include illegal poaching and accidental shooting, breeding disturbances, and climate change (as tundra habitat is required for breeding).

**Common Pochard (*Aythya ferina*),**

This species is a potential breeder in Uzbekistan. Breeding begins in April/May.

Breeds in habitat such as large lakes, slow-flowing rivers, reservoirs, brackish waters, marshes, weirs.

Major threats include nest predation from introduced mammals, habitat loss and disturbance, hunting, and decline in water quality.

**Great Bustard (*Otis tarda*),**

This species is a passage migrant through Uzbekistan.

Preferred habitat is open, flat or somewhat rolling landscapes, usually with a mixture of crops and grasslands/steppe.

Major threats include habitat loss, fragmentation and disturbance; as well as collision with powerlines and wind turbines.

**Asian Houbara (*Chlamydotis macqueenii*),**

This species is a breeding resident in Uzbekistan.

Preferred habitat is open, arid and sparsely vegetated steppe and semi-desert.

Major threats include habitat loss, fragmentation and disturbance; collision with powerlines; and hunting (falconry) or offtake (for falconry training).

A conservation program exists for this species within Uzbekistan, founded by the Emirates Bird Breeding Center for Conservation (EBBCC). A breeding center was created in the Bukhara District of Uzbekistan in 2006, in cooperation with the State Nature Committee of Uzbekistan. The first captive-bred Houbara were released in 2010.

**European Turtle Dove (*Streptopelia turtur*);**

This species is a breeding resident in Uzbekistan.

The species uses a variety of woodland types, as well as steppe and semi-desert and frequents agricultural land for feeding. It may use hedges, borders of forest, groves, spinneys, coppices, young tree plantations, scrubby wasteland, woody marshes, scrub and garigue.

Breeding commences in April and can last until September. The nest is a small platform of twigs lined with plant material and placed in the lowest parts of trees (Tucker and Heath 1994) and in shrubs and hedges.

Main threats include habitat loss, loss of resources due to agricultural practices (chemical herbicides), illegal hunting, parasite infections, and competition with generalist species with expanding populations such as Eurasian Collared Dove and Common Myna.

**Yellow-eyed Pigeon (*Columba eversmanni*)**

This species is a breeding resident in Uzbekistan.

It breeds in holes in trees, buildings, cliffs, earth banks, and potentially on power lines in semi-arid and desert areas, including around human settlement and in woodland. In winter, it

occurs in open areas with scattered trees, often with agricultural crops, and in areas with suitable fruiting trees, where it roosts and feeds gregariously.

Hunting in both its breeding and wintering grounds has been the primary cause of its decline and continues to be a major threat; loss of suitable woodland habitat is also a contributing factor.

### 4.1.9 National Red Data Book of Uzbekistan

In some cases, species are listed as higher status at the national level due to local population trends or cultural significance. Aside from species already described in the previous subsections, the following species are listed as EN or CR in the Uzbekistan Red Data Book (which have some potential to occur as per global distribution data):

- Eurasian Otter *Lutra Lutra* is listed as EN due to the presence of a locally distributed subspecies. It is not expected to be present in the project area as recent data indicates it is only found in the upper flood-lands of the Amudarya River and Western Parmie-Alay.
- Bokhara Whiskered Bat *Myotis bucharensis* is listed as CR and thought to potentially be extinct.
- Striped Hyaena, *Hyaena hyaena* is listed as CR due to the presence of a locally distributed subspecies. Recent records show the presence is in the far south of Uzbekistan near the country's borders; however, this is a far-ranging species so the possibility that it will occur has not been discounted.
- Turken Caracal (Desert Lynx), *Caracal caracal* is listed as CR due to the presence of a locally distributed subspecies. It has been recorded throughout a majority of Uzbekistan[9] and its presence in the project area is considered to be likely.
- Tarim Red Deer, *Cervus hangul* is listed as EN due to the presence of a locally distributed subspecies. It occupies the flood-land of Amudarya River and is known to make migratory movements.
- Dalmatian Pelican, *Pelecanus crispus* is listed as EN as it is a nesting and migratory species which has declined regionally due to water regime changes in the Aral region.

[9] Gritsina, Mariya Alexeevna. "The Caracal Caracal caracal Schreber, 1776 (Mammalia: Carnivora: Felidae) in Uzbekistan." *Journal of Threatened Taxa* 11.4 (2019): 13470-13477

## 4.2 Endemic and Regionally Restricted

Restricted range refers to a limited extent of occurrence (EOO). For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an EOO less than 50,000 square kilometers (km2).

### 4.2.1 Vertebrates

There are no known (or suspected) endemic mammal or bird species in Uzbekistan.

The subspecies *Teratoscincus scincus rustamowii*, a type of Plate-tailed/Frog-eyed/Wonder Gecko, is considered to be regionally endemic. However, the genetic differentiation with *Teratoscincus scincus* is not well-defined and the species has not been assessed separately by the IUCN.

### 4.2.2 Invertebrates

Several species of endemic moths have been recorded within Uzbekistan. Further, ongoing research continues to identify new species of invertebrates. It is considered highly likely that range-restricted invertebrates may be present within the project site.

Butterflies known only from Uzbekistan include[10]:

*Hyponephele murzini, Karanasa hoffmanni, Paralasa styx*, and *Melitaea permute*.

Other endemic insects include:

- grasshopper *Conophyma turkestanicum*;
- a longhorned beetle *Neoplocaederus danilevskyi*
- the click beetles *Melanotus mamillanus* and *Reitterelater kovalenkoi*
- an earth-boring dung beetle *Lethrus marakandicus*
- a jewel beetle *Acmaeoderella zeravshanica*
- a soft-winged flower beetle *Hypebaeina andreevae*
- an ant *Alloformica flavicornis*
- a wasp *Dinetus rakhimovi*
- jumping spiders *Logunyllus tamdybulak* and *Logunyllus bucharensis*

[10] http://Intreasures.com/uzbekistan.html

- a tree trunk spider *Hersiliola esyunini*
- a wolf spider *Zyuzicosa gigantea*
- the scorpions *Orthochirus feti*
- and *Mesobuthus nenilini*
- a harvestman *Phalangium gromovi*
- a cave-dwelling copepod *Bryocyclops jankowskajae*
- the snails *Levantina longinqua* and *Armiger khoresmicus*
- the Arkhangelsk Spring Snail *Valvatamnicola archangelskii*
- and the Kokand Freshwater Clam *Colletopterum kokandicum*
- A family of termite nest inhabiting woodlice, the Turanoniscidae consists of a single species known only from Uzbekistan

### 4.2.3 Flora

A high number of regional endemics are known to occur in the Planatae kingdom. The Central Asian Mountains Ecoregion has been confirmed to include 9520 species of higher plants, 20% of which are endemic species, belonging to 138 families and 1176 genera[11].

The mountainous regions of the Central Asian steppe and semi-desert include a large number of Tulipa, a genera of family Liliaceae. Further, a number of nationally- endemic Apiaceae are potential present in this habitat type[12].

Uzbekistan has been recorded to have (69 national endemics, 320 taxa in total) of vascular plant specices from the Tian-Shan Mountain region alone[13].

About 350 vascular plant species are unique to Uzbekistan including *Iris magnifica* and *Iris hippolyti*, *Tulipa intermedia*, *Tulipa butkovii*, *Allium marmoratum*, *Dionysia hissarica, Dianthus uzbekistanicus, Salvia korolkovii, Lagochilus olgae ), Acantholimon nuratavicum, Astragalus zaaminensis, Dracocephalum nuratavicum, Paraeremostachys anisochila , Otostegia*

[11] Yuanming Zhang, Daoyuan Zhang, Wenjun Li, Yaoming Li, Chi Zhang, Kaiyun Guan, Borong Pan, Characteristics and utilization of plant diversity and resources in Central Asia, Regional Sustainability, Volume 1, Issue 1, 2020, Pages 1-10, ISSN 2666-660X.
[12] Tojibaev, K.Sh & Beshko, Natalya & Turginov, O.T. & Lyskov, Dmitry & UKRAINSKAJA, ULIANA & KLJUYKOV, EUGENE. (2020). An annotated checklist of the endemic Apiaceae of Uzbekistan. Phytotaxa. 455. 70-94. 10.11646/phytotaxa.455.2.2.
[13] An Annotated Checklist of Endemic Vascular Plants of the Tian-Shan Mountains in Central Asian Countries

*bucharica, Cousinia Adenophora, Plocama alshehbazii, Echinops babatagensis, Primula hissarica, Hedysarum nuratense,* and *Astragalus nuratensis.*

Endemic genera include *Calispepla, Kamelinia*, and *Kuramosciadium*.

Fungi known only from Uzbekistan include *Rigidoporus juniperinus* and *Subantrodia uzbekistanica.*

## 4.3 Migratory and Congregating Species

Migratory species are defined in EBRD PR 6 as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem).

Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis.

Examples include the following:

- Species that form colonies.
- Species that form colonies for breeding purposes and/or where large numbers of individuals of a species gather at the same time for non-breeding purposes (for example, foraging and roosting).
- Species that utilize a bottleneck site where significant numbers of individuals of a species occur in a concentrated period of time (for example, for migration).
- Species with large but clumped distributions where a large number of individuals may be concentrated in a single or a few sites while the rest of the species is largely dispersed (for example, wildebeest distributions).
- Source populations where certain sites hold populations of species that make an inordinate contribution to recruitment of the species elsewhere (especially important for marine species).

This section will focus on species not already identified in the threatened species section.

### 4.3.1 Terrestrial Mammals

Terrestrial mammals that may migrate seasonally within or through the project area include Goitered Gazelle *Gazella subgutturosa* and Tarmin Red Deer *Cervus hangul*. Generally, migration of these herd mammals is a result of shift in diet, based on seasonal vegetation changes.

### 4.3.2 Bats

Many bat species and population are known to migrate, although research and knowledge around bat migration lags far behind that of bird migration. The following table[14] provides an overview of the known chioptera families within which migratory behaviour has been recorded. Migratory barriers are thought to be increasing as development across Central Asia expands.

[14] Popa-Lisseanu, Ana G., and Christian C. Voigt. "Bats on the move." *Journal of Mammalogy* 90.6 (2009): 1283-1289.

**Figure 4-23 Known Families of Migratory Bats**

| Family | Genus | Representative species | References |
|---|---|---|---|
| Pteropodidae | *Pteropus* | *P. poliocephalus* | Tidemann and Nelson 2004 |
| | | *P. alecto* | Palmer and Woinarski 1999 |
| | | *P. scapulatus* | Sinclair et al. 1996 |
| | *Eidolon* | *E. helvum* | Richter and Cumming 2006 |
| | *Myonycteris* | *M. torquata* | Thomas 1983 |
| | *Nanonycteris* | *N. veldkampii* | Thomas 1983 |
| Molossidae | *Tadarida* | *T. brasiliensis* | Russell et al. 2005 |
| Phyllostomidae | *Leptonycteris* | *L. curasoae* | Rojas-Martínez et al. 1999 |
| | | *L. nivalis* | Moreno-Valdez et al. 2000 |
| | *Choeronycteris* | *C. mexicana* | Arroyo-Cabrales et al. 1987 |
| | *Platalina* | *P. genovensium* | Sahley and Baraybar 1996 |
| Vespertilionidae | *Lasiurus* | *L. cinereus* | Cryan 2003 |
| | | *L. borealis* | Cryan 2003 |
| | | *L. blossevillii* | Cryan 2003 |
| | *Lasionycteris* | *L. noctivagans* | Cryan 2003 |
| | *Myotis* | *M. grisescens* | Tuttle 1976 |
| | | *M. lucifugus* | Humphrey and Cope 1976 |
| | | *M. sodalis* | Thomson 1982 |
| | *Miniopterus* | *M. schreibersii* | Hutterer et al. 2005 |
| | *Nyctalus* | *N. leisleri* | Hutterer et al. 2005 |
| | | *N. noctula* | Hutterer et al. 2005 |
| | | *N. lasiopterus* | Strelkov 1969 |
| | *Pipistrellus* | *P. nathusii* | Hutterer et al. 2005 |
| | | *P. pipistrellus* and/or *P. pygmaeus* | Hutterer et al. 2005 |
| | *Vespertilio* | *V. murinus* | Hutterer et al. 2005 |

According to the literature data on bats of Uzbekistan (Bogdanov, 1953; Benda et al., 2011; Gritsina et al., 2013) and semi-arid ecosystems, 9 species of bats are most likely to inhabit Navoi Bash project area: *Rhinolophus bocharicus, Eptesicus bottae, Eptesicus gobiensis, Eptesicus serotinus, Hypsugo savii, Myotis davidii, Nyctalus noctula, Pipistrellus pipistrellus, Vespertilio murinus.*

Another 13 species known for Uzbekistan and neighboring countries may be found in Navoi Bash also (Benda et al., 2011; Benda et al., 2012; Dietz, Kiefer, 2016): *Eptesicus ognevi, Myotis nipalensis, Rhinolophus ferrumequinum, Rhinolophus hipposideros, Myotis bucharensis, Myotis emarginatus, Myotis blythii, Myotis capaccinii, Barbastella caspica, Pipistrellus kuhlii, Pipistrellus Aladdin, Otonycteris leucophaea, Tadarida teniotis.*

**Table 4-1 Potential Bat Species in the Project Area**

| NAME | LATIN | FAMILY | IUCN RED LIST | RED BOOK OF THE REPUBLIC OF UZBEKISTAN (2019) | BASIC FLIGHT INFORMATION (FLIGHT HEIGHT; PRESENCE OF MIGRATIONS) | LEVEL OF COLLISION RISK (RODRIGUES ET AL., 2015) |
|---|---|---|---|---|---|---|
| Asian barbastelle | *Barbastella caspica (Barbastella leucomelas)* | Vespertilionidae | LC | N/A | Probably low height; probably sedentary | medium |
| Botta's serotine | *Eptesicus bottae* | Vespertilionidae | LC | N/A | E. bottae ranks among small- to medium-sized bats hunting its prey; mostly in a slow hawking flight (Benda et al., 2012); probably sedentary. | medium |
| Gobi big brown bat | *Eptesicus gobiensis* | Vespertilionidae | LC | N/A | no data | medium |
| Ognev's Serotine | *Eptesicus ognevi* | Vespertilionidae | LC | N/A | no data | medium |
| Common serotine | *Eptesicus serotinus* | Vespertilionidae | LC | N/A | Medium height (Roemer et al., 2017); usually sedentary (Dietz, Kiefer, 2016) | medium |

| Name | Latin | Family | IUCN Red List | Red Book of the Republic of Uzbekistan (2019) | Basic flight information (flight height; presence of migrations) | Level of collision risk (Rodrigues et al., 2015) |
|---|---|---|---|---|---|---|
| Savi's pipistrelle | *Hypsugo savii* | Vespertilionidae | LC | N/A | Medium height (Roemer et al., 2017); no data on migration (Dietz, Kiefer, 2016) | high |
| Lesser mouse-eared bat | *Myotis blythii* | Vespertilionidae | LC | N/A | Low height (Wellig et al., 2018); sedentary (Dietz, Kiefer, 2016) | low |
| Bokhara Whiskered bat | *Myotis bucharensis* | Vespertilionidae | DD (data deficient) | Critically Endangered 1(CR) | Low height (Roemer et al., 2017); probably sedentary | low |
| long-fingered bat | *Myotis capaccinii (?)* | Vespertilionidae | VU (vulnerable) | N/A | Low height; **short to middle-range migrant** (Dietz, Kiefer, 2016) | low |
| David's myotis | *Myotis davidii* | Vespertilionidae | LC | N/A | Low height (Roemer et al., 2017); probably sedentary | low |
| Geoffroy's bat | *Myotis emarginatus* | Vespertilionidae | LC | N/A | Low height (Roemer et al., 2017); sedentary (Dietz, Kiefer, 2016) | low |
| Nepal Myotis | *Myotis nipalensis* | Vespertilionidae | LC | N/A | unconfirmed | unconfirmed, likely low |
| Common noctule | *Nyctalus noctula* | Vespertilionidae | LC | N/A | High height (Roemer et al., 2017); **migrate** (Dietz, Kiefer, 2016) | high |

| Name | Latin | Family | IUCN Red List | Red Book of the Republic of Uzbekistan (2019) | Basic flight information (flight height; presence of migrations) | Level of collision risk (Rodrigues et al., 2015) |
|---|---|---|---|---|---|---|
| Turkestani long-eared bat | *Otonycteris leucophaea* | Vespertilionidae | DD | Vulnerable, naturally rare 2(VU:R) | Low height (Benda et al., 2012), probably sedentary | unknown |
| Turkestan Pipstrelle | *Pipistrellus aladdin* | Vespertilionidae | DD | N/A | unconfirmed | unconfirmed, likely high |
| Kuhl's pipistrelle | *Pipistrellus kuhlii* | Vespertilionidae | LC | N/A | Low height (Roemer et al., 2017); sedentary (Dietz, Kiefer, 2016) | high |
| Common Pipistrelle | *Pipistrellus pipistrellus* | Vespertilionidae | LC | N/A | Medium height (Roemer et al., 2017; Wellig et al., 2018); sedentary (Bogdanov, 1953; Dietz, Kiefer, 2016) | high |
| Bokhara horseshoe bat | *Rhinolophus bocharicus* | Rhinolophidae | LC (Least concern) | N/A | Most likely, R. bocharicus is a sedentary species, foraging low from the ground (like other horseshoe bats (Bogdanov, 1953; Rodrigues et al., 2015)). | low |
| Greater horseshoe bat | *Rhinolophus ferrumequinum* | Rhinolophidae | LC | N/A | Low height (Roemer et al., 2017); sedentary (Dietz, Kiefer, 2016) | low |
| Lesser horseshoe bat | *Rhinolophus hipposideros* | Rhinolophidae | LC | Vulnerable, declining 2(VU:D) | Low height (Roemer et al., 2017); sedentary (Dietz, Kiefer, 2016) | low |

| Name | Latin | Family | IUCN Red List | Red Book of the Republic of Uzbekistan (2019) | Basic flight information (flight height; presence of migrations) | Level of collision risk (Rodrigues et al., 2015) |
|---|---|---|---|---|---|---|
| European free-tailed bat | *Tadarida teniotis* | Molossidae | LC | Vulnerable, naturally rare 2(VU:R) | High height (Wellig et al., 2018); no seasonal migration, **foraging area up to 100 km distant from summer roost** (Dietz, Kiefer, 2016) | high |
| Parti-coloured bat or rearmouse | *Vespertilio murinus* | Vespertilionidae | LC | N/A | High height (Roemer et al., 2017); **usually migrate** (Dietz, Kiefer, 2016) | high |

Of the 22 bat species, 4 are known to be migratory, whilst others are suspected to be sedentary: the migratory species being *Myotis capaccinii, Nyctalus noctule, Tadarida teniotis,* and *Vespertilio murinus*; which belong to the families Molossidae and Vespertilionidae.

Bats also commonly display congregatory behaviour. Colonies can form in suitable caves and other shelters; roosting is common during hibernation and breeding; and some species display flocking tendencies during foraging.

### 4.3.3 Birds

Birds are highly migratory through Uzbekistan, as evidenced by the review of known flyways and presence of passage migrants in the project area and surrounding region.

Threatened species of VU status and higher as per the IUCN Global Red List have already been discussed at length; however, a total of 226 additional bird species may occur within the project area, the majority of which are considered migratory.

Furthermore, birds are highly congregatory, especially certain gregarious species, which tend to roost, flock and in some cases migrate or breed in large numbers. In general, waterbirds and waterfowl typically form gregarious flocks. Species (other than threatened species previously discussed) that may be congregatory include those presented in the following table.

**Table 4-2 Potential Migratory and Congregatory Bird Species (non-threatened)**

| Common Name | Latin Name | Global Trend | IUCN Global Red List Category | EU Red List Category | Uzbekistan Red Book Category |
|---|---|---|---|---|---|
| Ruddy Shelduck | *Tadorna ferruginea* | Unknown | Least Concern | Least Concern | Not applicable |
| Red-crested Pochard | *Netta rufina* | Unknown | Least Concern | Least Concern | Not applicable |

| Common Name | Latin Name | Global Trend | IUCN Global Red List Category | EU Red List Category | Uzbekistan Red Book Category |
|---|---|---|---|---|---|
| Garganey | *Spatula querquedula* | Decreasing | Least Concern | Least Concern | Not applicable |
| Gadwall | *Mareca strepera* | Increasing | Least Concern | Least Concern | Not applicable |
| Greylag Goose | *Anser anser* | Increasing | Least Concern | Least Concern | Not applicable |
| Goosander | *Mergus merganser* | Unknown | Least Concern | Least Concern | Not applicable |
| **Ferruginous Duck** | ***Aythya nyroca*** | **Decreasing** | **Near Threatened** | **Least Concern** | **Vulnerable** |
| Northern Shoveler | *Spatula clypeata* | Decreasing | Least Concern | Least Concern | Not applicable |
| Northern Pintail | *Anas acuta* | Decreasing | Least Concern | Not applicable | Not applicable |
| Common Shelduck | *Tadorna tadorna* | Increasing | Least Concern | Least Concern | Not applicable |
| Mallard | *Anas platyrhynchos* | Increasing | Least Concern | Least Concern | Not applicable |
| Common Teal | *Anas crecca* | Unknown | Least Concern | Not applicable | Not applicable |
| Eurasian Bittern | *Botaurus stellaris* | Decreasing | Least Concern | Least Concern | Not applicable |
| **Little Egret** | ***Egretta garzetta*** | **Increasing** | **Least Concern** | **Least Concern** | **Vulnerable** |
| **Squacco Pond Heron** | ***Ardeola ralloides*** | **Unknown** | **Least Concern** | **Least Concern** | **Vulnerable** |
| Grey Heron | *Ardea cinerea* | Unknown | Least Concern | Least Concern | Not applicable |
| Purple Heron | *Ardea purpurea* | Decreasing | Least Concern | Least Concern | Not applicable |
| Great White Egret | *Ardea alba* | Unknown | Least Concern | Least Concern | Not applicable |
| Common Little Bittern | *Ixobrychus minutus* | Decreasing | Least Concern | Least Concern | Not applicable |
| Black-crowned Night-heron | *Nycticorax nycticorax* | Decreasing | Least Concern | Least Concern | Not applicable |
| Eurasian Thick-knee | *Burhinus oedicnemus* | Decreasing | Least Concern | Least Concern | Not applicable |
| Caspian Plover | *Charadrius asiaticus* | Decreasing | Least Concern | Regionally Extinct | Not applicable |
| White-tailed Lapwing | *Vanellus leucurus* | Unknown | Least Concern | Least Concern | Not applicable |
| Greater Sandplover | *Charadrius leschenaultii* | Decreasing | Least Concern | Vulnerable | Not applicable |
| Kentish Plover | *Charadrius alexandrinus* | Decreasing | Least Concern | Least Concern | Not applicable |
| Little Ringed Plover | *Charadrius dubius* | Stable | Least Concern | Least Concern | Not applicable |
| White Stork | *Ciconia ciconia* | Increasing | Least Concern | Least Concern | Near Threatened |
| Black Stork | *Ciconia nigra* | Unknown | Least Concern | Least Concern | Vulnerable |
| Red-billed Chough | *Pyrrhocorax pyrrhocorax* | Decreasing | Least Concern | Least Concern | Not applicable |

| Common Name | Latin Name | Global Trend | IUCN Global Red List Category | EU Red List Category | Uzbekistan Red Book Category |
|---|---|---|---|---|---|
| Yellow-billed Chough | *Pyrrhocorax graculus* | Stable | Least Concern | Least Concern | Not applicable |
| Turkestan Ground-jay | *Podoces panderi* | Decreasing | Least Concern | Not applicable | Not applicable |
| Eurasian Magpie | *Pica pica* | Stable | Least Concern | Least Concern | Not applicable |
| Rook | *Corvus frugilegus* | Decreasing | Least Concern | Least Concern | Not applicable |
| Brown-necked Raven | *Corvus ruficollis* | Increasing | Least Concern | Not applicable | Not applicable |
| Carrion Crow | *Corvus corone* | Increasing | Least Concern | Least Concern | Not applicable |
| Eurasian Jackdaw | *Corvus monedula* | Stable | Least Concern | Least Concern | Not applicable |
| Demoiselle Crane | *Anthropoides virgo* | Increasing | Least Concern | Least Concern | Not applicable |
| **Eurasian Oystercatcher** | ***Haematopus ostralegus*** | **Decreasing** | **Near Threatened** | **Near Threatened** | Not applicable |
| Whiskered Tern | *Chlidonias hybrida* | Stable | Least Concern | Least Concern | Not applicable |
| Caspian Gull | *Larus cachinnans* | Increasing | Least Concern | Least Concern | Not applicable |
| Common Gull-billed Tern | *Gelochelidon nilotica* | Decreasing | Least Concern | Least Concern | Not applicable |
| Slender-billed Gull | *Larus genei* | Unknown | Least Concern | Least Concern | Not applicable |
| Little Tern | *Sternula albifrons* | Decreasing | Least Concern | Least Concern | Not applicable |
| Caspian Tern | *Hydroprogne caspia* | Increasing | Least Concern | Least Concern | Not applicable |
| Common Tern | *Sterna hirundo* | Unknown | Least Concern | Least Concern | Not applicable |
| Lesser Black-backed Gull | *Larus fuscus* | Increasing | Least Concern | Least Concern | Not applicable |
| **Great Black-headed Gull (Pallas's Gull)** | ***Larus ichthyaetus*** | **Increasing** | **Least Concern** | **Least Concern** | **Vulnerable** |
| **Dalmatian Pelican** | ***Pelecanus crispus*** | **Decreasing** | **Near Threatened** | **Least Concern** | **Endangered** |
| Great Cormorant | *Phalacrocorax carbo* | Increasing | Least Concern | Least Concern | Not applicable |
| Pygmy Cormorant | *Microcarbo pygmaeus* | Increasing | Least Concern | Least Concern | Not applicable |
| Pallas's Sandgrouse | *Syrrhaptes paradoxus* | Stable | Least Concern | Endangered | Not applicable |
| Black-bellied Sandgrouse | *Pterocles orientalis* | Decreasing | Least Concern | Endangered | Not applicable |
| Pin-tailed Sandgrouse | *Pterocles alchata* | Stable | Least Concern | Vulnerable | Not applicable |
| Baillon's Crake | *Zapornia pusilla* | Unknown | Least Concern | Least Concern | Not applicable |
| Common Coot | *Fulica atra* | Increasing | Least Concern | Near Threatened | Not applicable |
| Common Moorhen | *Gallinula chloropus* | Stable | Least Concern | Least Concern | Not applicable |

| Common Name | Latin Name | Global Trend | IUCN Global Red List Category | EU Red List Category | Uzbekistan Red Book Category |
|---|---|---|---|---|---|
| Black-winged Stilt | *Himantopus himantopus* | Increasing | Least Concern | Least Concern | Not applicable |
| Common Sandpiper | *Actitis hypoleucos* | Decreasing | Least Concern | Least Concern | Not applicable |
| Common Redshank | *Tringa totanus* | Unknown | Least Concern | Least Concern | Not applicable |
| Solitary Snipe | *Gallinago solitaria* | Stable | Least Concern | Not applicable | Not applicable |
| **Great Snipe** | ***Gallinago media*** | **Decreasing** | **Near Threatened** | **Least Concern** | Not applicable |
| **Black-tailed Godwit** | ***Limosa limosa*** | **Decreasing** | **Near Threatened** | **Vulnerable** | **Vulnerable** |
| **Eurasian Curlew** | ***Numenius arquata*** | **Decreasing** | **Near Threatened** | **Vulnerable** | **Vulnerable** |
| Common Snipe | *Gallinago gallinago* | Decreasing | Least Concern | Least Concern | Not applicable |
| **White/Eurasian Spoonbill** | ***Platalea leucorodia*** | **Unknown** | **Least Concern** | **Least Concern** | **Vulnerable** |
| **Glossy Ibis** | ***Plegadis falcinellus*** | **Decreasing** | **Least Concern** | **Least Concern** | **Vulnerable** |

In particular, the below species are listed as IBA triggers for the Ayakagytma Lake IBA, based on the congregatory criterion.

| | | |
|---|---|---|
| **A4i >1% of a biogeographic population of a congregatory waterbird species** | | |
| Red-crested Pochard *Netta rufina* | | 4016 (2000) |
| Western Great Egret *Ardea alba* | | 451 (2000) |
| Pygmy Cormorant *Microcarbo pygmeus*[2] | 31 (2006) | 827 (2000) |
| Great White Pelican *Pelecanus onocrotalus*[2] | | 28–482 (2011); common |
| Dalmatian Pelican *Pelecanus crispus*[1,2] | | 1–130 (2011); common |
| **A4iii >20 000 waterbirds of one or more species** | | |
| waterbirds | | 23 281 (2000) |

### 4.3.4 Herptiles

No herptiles that are anticipated to occur showcase migratory nor congregatory behaviour.

### 4.3.5 Invertebrates

Butterflies and caddisflies are known to migrate, but generally the known migratory species are high in abundance and common. Congregatory behaviour occurs often in many flying invertebrates, but no species anticipated for the project site are believed to congregate in numbers relevant to a global scale.

No invertebrates that are anticipated to occur showcase migratory nor congregatory behaviour to the scale wherein which 1% of a global population might be captured in one area.

## 4.4 Ecosystems and Evolutionary Processes

Uzbekistan only has a single ecosystem which is assessed to date under the Red List of Ecosystems, the Aral Sea. The following extracts[15] discusses the relevant points:

- The Aral Sea ecosystem is classified under IUCN Habitats Classification Scheme (Version 3.0): 5. Wetlands (inland) / 5.14 Permanent Saline, Brackish or Alkaline Lakes
- It is categorized as CO, collapsed.
- Historically, extensive reedbeds dominated by *Phragmites australis* lined hundreds of kilometers of the Aral Sea shoreline and were extensive in the river deltas, particularly in the south. The reedbeds, together with tugay woodlands in the river deltas and lower floodplains, provided breeding and foraging habitats for a diverse assemblage of birds.

It is notable that Ayakagitma Lake is a brackish, alkaline lake with lakeshore vegetation and reedbeds similar to the historic Aral Sea ecosystem.

### 4.4.1 Criterion V: Key Evolutionary Processes

The structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation, and combinations of these variables, can influence the evolutionary processes that give rise to regional configurations of species and ecological properties. In some cases, spatial features that are unique or idiosyncratic of the landscape have been associated with genetically unique populations or subpopulations of plant and animal species. Physical or spatial features have been described as surrogates or spatial catalysts for evolutionary and ecological processes, and such features are often associated with species diversification. Maintaining these key evolutionary processes inherent in a landscape as well as the resulting species (or subpopulations of species) has become a major focus of biodiversity conservation in recent decades, particularly the conservation of genetic diversity. By conserving species diversity within a landscape, the processes that drive speciation, as well as the genetic diversity within species, ensures the evolutionary flexibility in a system, which is especially important in a rapidly changing climate.

For illustrative purposes, some potential examples of spatial features associated with evolutionary processes are as follows:

- Landscapes with high spatial heterogeneity are a driving force in speciation, as species are naturally selected based on their ability to adapt and diversify.

[15] https://iucnrle.org/static/media/uploads/assessments/5_keith_2013_aral_sea.pdf

- Environmental gradients, also known as ecotones, produce transitional habitat, which has been associated with the process of speciation and high species and genetic diversity.
- Edaphic interfaces are specific juxtapositions of soil types (for example, serpentine outcrops, limestone, and gypsum deposits), which have led to the formation of unique plant communities characterized by both rarity and endemism.
- Connectivity between habitats (for example, biological corridors) ensures species migration and gene flow, which is especially important in fragmented habitats and for the conservation of metapopulations. This also includes biological corridors across altitudinal and climatic gradients and from "crest to coast."
- Sites of demonstrated importance to climate change adaptation for either species or ecosystems are also included within this criterion.

Although data is admittedly lacking, the landscape and relative habitat connectivity of the open steppes likely does not lend itself to high levels of genetic isolation and speciation.

## 4.5 Keystone Species

Keystone species are an additional Critical Habitat trigger. Keystone species typically include predators, ecosystem engineers, and mutualists that provide ecological functions vital to maintaining the viability of biodiversity features. Many mammal species can be considered predators and ecosystem engineers.

Rodents such as the dominant and abundant Great Gerbil (*Rhombomys opimus*) and other burrowing species play an important role in soil aeration and in providing shelter for other fauna.

Apex predators such as Grey Wolf (*Canis lupus*) are a known keystone species due to top-down control of prey populations. Additionally, insectivorous bats may play a large role in invertebrate control, which is thought to be of great importance for agricultural crop protection.

# 5 BASELINE SURVEYS

The baseline surveys will be undertaken based on the methodology previously prepared, appended to the CHA Methodology document.

## 5.1 Determining Ecologically Appropriate Area of Analysis (EAAA)

An integral part of the CHA is the appropriate delineation of study area boundaries. As the project in question is for a wind farm, it was deemed prudent to acknowledge a large area of influence (AoI) for birds and bats, with consideration of Important Bird Areas within 20km during initial screening, as well as the known migratory flyways of the region.

For all other biodiversity elements, it was considered adequate to consider the physical project boundaries as well as up to a 1km buffer zone. Thus, the Ecologically Appropriate Area of Analysis (EAAA) has been developed by assuming the AoI is no further than the 1km boundary for all WF and OHTL corridor biodiversity elements except for birds and bats.

## 5.2 Bird Surveying

A number of bird species potentially occur within the project AoI which can trigger CH; particularly, threatened species, and migratory/congregatory species. Additionally, birds are particularly sensitive to wind farm development (collision risk).

Seasonal Vantage Point surveys are being undertaken in accordance with Scottish Natural Heritage (now NatureScot) guidelines. A total of 36 hours per Vantage Point is being susrveyed, per season.

Additionally, waterbird surveying of the lake and nesting searches in the cliff habitat adjacent to the site have been, and are being undertaken.

Specialized breeding surveys of Houbara Bustard are also being undertaken.

**COMPLETE:**

- 2020 Spring (March to May) Bird VP Survey
    - March, May Water Birds Lake Survey
    - May Raptor Nest Cliff Survey
- 2020 Summer (May to Aug) Bird VP Survey
    - August Water Birds Lake Survey
    - August Raptor Nest Cliff Survey

- 2020 Autumn (Sept to Nov) Bird VP Survey
- 2021 January Rapid Winter Bird Survey
- 2021 April Houbara Breeding Survey
- 2021 May-September OHTL VP Survey
- 2021October OHTL VP Survey
- 2021 November OHTL VP Survey
- 2021/22 Winter Water Birds Lake Survey
- 2021/22 Winter Bird VP Survey

## 5.3 Bat Surveying

Although no globally listed threatened bat species are anticipated to occur, bats are known to be migratory and congregatory; additionally, bats are sensitive to wind farm development (collision risk).

Bat surveys is being undertaken via the deployment of static acoustic detectors.

- **Complete**:
    - 2020 Summer/Autumn: July, August, October Bat (static detector) Survey
    - 2021 Spring/Summer (static detector) Survey
    - April Roost Search, June Roost Search (breeding season)
    - 2021 Autumn (static detector) Survey

## 5.4 Habitats & Flora

Endemic and range-restricted flora species are anticipated to be possible.

- **Complete**: 2021 Spring Botany Survey (habitats & flora), 2021 Summer Botany Survey (habitats & flora) & 2021 Bash-Dzhankeldy OHTL Survey
- A specialist will undertake a walkover for 3 days in mid-April and 3 days in early-June to broadly categorise the habitat types of the Bash site and compile flora species lists.
- The timeline is optimal for this region, the phenological rhythm of the vegetation of the desert zone of Central Asia has 3 seasonal aspects - spring (March-April, the aspect of ephemera and ephemeroids), summer (May-June, the aspect of xerophilic perennials), and autumn (August-September, the aspect of more common wormwood

and salt marsh). Therefore, spring and summer are the required for the species of greater concern.

## 5.5 Mammals

Terrestrial mammals that could trigger criticality include migratory herd species as well as keystone species.

- **Complete**: 2021 Spring Survey (transects, daytime & nocturnal) and Camera Trap Deployment, 2021 Summer Survey (transects, daytime & nocturnal) and Camera Trap & 2021 Bash-Dzhankeldy OHTL Survey

## 5.6 Reptiles

The reptile species of highest concern is the Southern Even-fingered Gecko which could potentially trigger criticality.

April is a period of the highest activity of amphibians and reptiles in Uzbekistan's climate conditions. This activity is associated with active nutrition after hibernation, the beginning of the breeding season and the abundance of food supply associated with intensive vegetation in April. In summer Russian tortoise and a number of other species go back to hibernation.

- **Complete**: 2021 Spring Survey transects, both diurnal and nocturnal & 2021 Bash-Dzhankeldy OHTL Survey

## 5.7 Invertebrates

Invertebrates may include endemic or range-restricted species. Mid-spring is the best time to survey for the majority of invertebrate species based on population growth after post-hibernation, taking advantage of available vegetation.

- **Complete**: 2021 Spring Survey transects and trapping, both diurnal and nocturnal & 2021 Bash-Dzhankeldy OHTL Survey

# 6 CONCLUSION

The main risks of criticality are related to the potential presence of threatened, endemic and migratory species. A series of surveys have been commissioned which should provide sufficient data to determine the criticality of the habitat within the EAAA.

The table below provides the cross-referencing of survey efforts against the biodiversity elements of concern.

**Table 6-1 Survey Effort Undertaken for Biodiversity Elements of Concern**

| BIODIVERSITY ELEMENT | CRITERION | INFORMATION REQUIRED | APPLICABLE SURVEY EFFORT |
|---|---|---|---|
| **Sociable Lapwing** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season | 2020 Seasonal VP Surveys, 2021 Rapid Winter Bird Survey, 2021 May, September OHTL VP Surveys<br>2021 October-November OHTL VP Survey, 2021/22 Waterbird Surveys of Lake, 2021/22 Winter Bird VP Survey |
| **Southern Even-fingered Gecko** | Threatened Species | Degree of presence within project site and buffer zone | Herpetology Nocturnal Survey (Spring/Summer) and OHTL Survey |
| **Egyptian Vulture** | Threatened Species | Degree of presence and confirmation of breeding within project site and surroundings | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Raptor Nesting Cliff Surveys<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey |
| **Steppe Eagle** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Raptor Nesting Cliff Surveys<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey |
| **Saker Falcon** | Threatened Species | Degree of presence and confirmation of breeding within project site and surroundings | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Raptor Nesting Cliff Surveys<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey |
| **Pallas's Fish Eagle** | Threatened Species | Degree of presence in project site and surroundings during | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), |

| Biodiversity Element | Criterion | Information Required | Applicable Survey Effort |
|---|---|---|---|
| | | passage migratory season and/or winter | 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |
| **White-headed Duck** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season and/or winter | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |
| **Goitored Gazelle** | Threatened Species | Degree of presence within project site and buffer zone | Seasonal Mammals Surveys & OHTL Survey |
| **Marbeled Polecat** | Threatened Species | Degree of presence within project site and buffer zone | Seasonal Mammals Surveys & OHTL Survey |
| **Russian Tortoise** | Threatened Species | Degree of presence within project site and buffer zone | Herpetology Survey (Spring/Summer) & OHTL Survey |
| **Greater Spotted Eagle** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey |
| **Eastern Imperial Eagle** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey |
| **Marbled Teal** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season and/or winter | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |

| Biodiversity Element | Criterion | Information Required | Applicable Survey Effort |
|---|---|---|---|
| **Lesser White-fronted Goose** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season and/or winter | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |
| **Common Pochard** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season and/or winter | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |
| **Great Bustard** | Threatened Species | Degree of presence in project site and surroundings during passage migratory season | 2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |
| **Asian Houbara** | Threatened Species | Degree of presence within project site and buffer zone | Breeding Houbara Survey |
| **European Turtle-dove** | Threatened Species | Degree of presence within project site and buffer zone | The habitat is deemed to be unsuitable due to a lack of wooded areas |
| **Yellow-eyed Pigeon** | Threatened Species | Degree of presence within project site and buffer zone | |
| **Bokhara Whiskered Bat *Myotis bucharensis*** | Threatened Species | Degree of presence within project site and buffer zone | Bat acoustic monitoring- Spring, Summer Autumn<br>OHTL Route Survey<br>Bat roost searches |
| **Striped Hyaena, *Hyaena hyaena*** | Threatened Species | Degree of presence within project site and buffer zone | Seasonal Mammals Surveys (Spring, Summer) & OHTL Survey |
| **Turken Caracal (Desert Lynx), *Caracal caracal*** | Threatened Species | Degree of presence within project site and buffer zone | Seasonal Mammals Surveys (Spring, Summer) & OHTL Survey |

| Biodiversity Element | Criterion | Information Required | Applicable Survey Effort |
|---|---|---|---|
| **Tarim Red Deer, *Cervus*** | Threatened Species | Degree of presence within project site and buffer zone | Seasonal Mammals Surveys (Spring, Summer) & OHTL Survey |
| **Dalmatian Pelican, *Pelecanus*** | Threatened Species (EN in Uzbekistan Red Book) | Degree of presence in project site and surroundings during passage migratory season and winter | S2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake |
| ***Teratoscincus scincus rustamowii*** | Endemic and Range-restricted Species | Degree of presence within project site and buffer zone | Herpetology Nocturnal Survey (Spring/Summer) |
| **Endemic Flora** | Endemic and Range-restricted Species | Degree of presence within project site and buffer zone | Seasonal Botany Surveys (Spring, Summer), OHTL Survey and habitat mapping |
| **Endemic Invertebrates** | Endemic and Range-restricted Species | Degree of presence within project site and buffer zone | Invertebrate Survey & OHTL Survey |
| **Birds and Bats (Migrations, Colonies, Roosts and Flocks)** | Migratory / Congregatatory Species | Degree of presence within project site and nearby features (cliffs, lake) | S2020 Seasonal VP Surveys (Spring, Summer, Autumn), 2021 May -September OHTL VP Surveys<br>Winter Rapid Survey<br>2021 October-November OHTL VP Survey, 2021/22 Winter Bird VP Survey, 2021/22 Winter Waterbird Surveys of Lake<br>Bat acoustic monitoring-Spring, Summer Autumn<br>Bat acoustic monitoring-Autumn<br>Bat roost searches |
| **Keystone Species (mammals)** | n/a | Degree of presence within project site and buffer zone | Seasonal Mammals Surveys & OHTL Survey (Spring, Summer) |
| **Ecosystems** | n/a | Understanding of ecosystems, habitats on site | Seasonal Botany Surveys (Spring, Summer), OHTL Survey and habitat mapping |

It has been concluded that the total survey effort for the project has been developed to adequately meet the baseline information needs in order to assess criticality in alignment with EBRD, IFC and ADB. Additionally, these surveys provide sufficient and robust baseline information which will feed into the ESIA and associated environmental assessments and management documents during Project implementation.

# APPENDIX A – STAKEHOLDER ENGAGEMENT
## (LETTERS)

# Consultation letters regarding CHA for Bash WF

# Consultation letters with Roman Nazarov

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-89**
**12.04.2021**

**To Roman Nazarov**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-89**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

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| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
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| 4492662.15 | 646074.46 |
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| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-89**
**12.04.2021**
**Preferred OHTL allotment**

**Expert opinion on the state of the smooth gecko population in Central Uzbekistan.**

According to our data obtained during a recent National Geographic funded study conducted by an international group of scientists from Uzbekistan, Russia, China and the United States in 2019, the population of the Southern Even-fingered Gecko in Central Kyzyl Kum will be dhttps://www.nfl.com/news/jaguars-have-discussed-adding-tim-tebow-as-tight-end-after-workoutirectly impacted by this project (Dzhankeldy Wind Farm). Additionally, the situation is further complicated by our results from the DNA analysis of this population that indicates this population unique and distinct from all others in the area. Based on these data, the status of the population inhabiting Central Kyzylqum will be revised and described as a new locally endemic species to Uzbekistan.

The feasibility and economic viability of this project raises many questions even for non-energy specialists. The lack of well-established communication between government agencies responsible for the design and management of these types of projects makes their impact on the area incalculable both from an economic and environmental standpoint. The development of technologies of renewable energy sources is designed primarily to minimize the negative environment impact on nature, however in this case, the implementation of this project can adversely affect this endemic population and could be irreparable. Construction work in the very core of the population of an endemic species will undoubtedly have an impact on the available suitable habitat in the area for this population and very likely lead this species to the complete extinction of this endemic lineage.

We strongly recommended considering the possibility of making significant changes to the plan of this project in accordance with a carefully developed detailed outline for the conservation of this endemic species in Uzbekistan. We recommend that all actions for the implementation of this project need be coordinated with international species experts.

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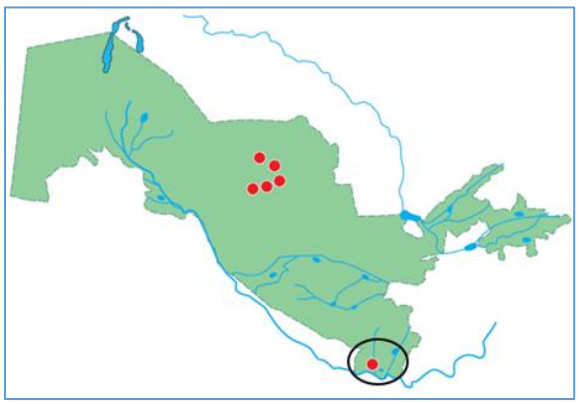
**Species information**

## Smooth Even-fingered Gecko



Species Name: *Alsophylax laevis* Nikolsky, 1907

| English Name | Uzbek Name | Russian Name |
|---|---|---|
| Southern Even-fingered Gecko | Силлиқ гекконча | Гладкий геккончик |

**Size**. The adult body size of this species does not exceed 4 cm, with its tail approximately equal to the length of the body.

**Identifying Features.** The Smooth even-fingered gecko is morphologically similar to *Alsophylax pipiens*, but can be separated by the absence of enlarged tubercles on the dorsal surface of the body and males having 8–13 cloacal pores.

**Colouration**. The colour of the dorsal surface of the body is from light grey to sandy-buffy. There is a wide dark brown stripe that extends from the tip of the muzzle, through the eye and above the ear opening, closing on the back of the head, forming a horseshoe shape. On the dorsal surface of the body there are four to seven transverse dark bands, and the intervals between these bands are usually less than the width of the dark bands themselves. Up to 11 transverse bands occur on the tail and the upper surface of the limbs have an indistinct dark pattern. Lastly, the ventral surface of the body is immaculate white.

**Distribution and Subspecies**. The range of the species consists of two isolated areas in Uzbekistan and Turkmenistan. Within Uzbekistan there are only two isolated populations in the Central Kizilqum Desert and in South Uzbekistan along the border of Afghanistan. Only a few specimens are known from Surkhandarya, from the Karasu riverbank near Termez.

**Preferred Habitat.** This species avoids saline areas and occurs on flat areas practically devoid of vegetation (takir). Deep cracks in the ground and insect holes serve as refuge. However, in the Uchquduk region it is found under small flat rocks on the slopes of low clay hills.

**Ecology.** *Diet* comprises small arthropods. *Activity.* These geckos are nocturnal, and leave their shelters at dusk, with a peak in activity between 22-23 hours. There is a sharp decline in activity after midnight. Like other members of the genus, *A. laevis* have acoustic communication. The territorial signal consists of a series of individual clicks, which can be restarted approximately up to 30 m. *Reproduction.* The females lay eggs from late May to early July, possibly producing two or three clutches during the season, each consisting of one or two eggs. The first record of a juvenile, with body size is 1.5–2 cm, was observed on the beginning of August. Sexual maturity is probably reached at one year old.

**Threatened Status.** IUCN Red List Status - CR, URDB (2019) classifies the gecko as VU. The URDB indicates an outlier distribution record that is within the Project EAA but was last recorded there over 40 years ago. Philip Bowles, chair of the IUCN Snake and Lizard Group (SLG) explained that *A. laevis* has been listed as CR on the IUCN Red List due to its population decline primarily within Turkmenistan. There appears to be a sharp downward trend and an increased focus of attention on this species is urgently needed to prevent its possible disappearance.

**Known Threats and Conservation.** The main threat to the southern even-fingered gecko is habitat loss, with over half its historical habitat having disappeared in the last 20 to 30 years. The species does not occur within any protected areas so the creation of a special reserve would be beneficial (Edge of Existence website) to this species but also all the others in the area. Recommended conservation actions (Table 2) include (i) creating of a special reserve in the southeast of Turkmenistan (IUCN Red List), (ii) developing methods to estimate the abundance for this secretive and nocturnal species and (iii) clarification of the taxonomic status of isolated populations (URDB).

**Current Research.** The natural history of *A. laevis* has been studied and described in several previous studies (Bogdanov,1968; Szczerbak and Golobev, 1986). Numerous specimens of this species were collected during 1960's to 1980's but were not assessed based on DNA analysis. Despite intensive survey efforts to update the taxonomy of *A. laevis* in recent years, only a few specimens of have been collected in Central Uzbekistan, which may be a result of decline in the

population density, its elusive behavior, habitat destruction, or a combination of all of these issues. An international group of scientists from Uzbekistan, Russia, China and USA funded by National Geographic, conducted a joint study on the current status of several populations of the *A. laevis* in Central and South Uzbekistan. Dr. Roman Nazarov, an Uzbekistan-based herpetologist, is the coordinator of this scientific group and an invited expert of the SLG. Dr. Nazarov's results on the taxonomic and conservation status of *A. laevis* are in the process of being published. Preliminary genetic and anatomical data reveal that the population within Central Uzbekistan is a new species and deserves a critically endangered status. However, no data is available for the population in southern Uzbekistan (within the Project EAA) and the taxonomy there is not well understood. Studies for the southern population are currently being planned for thSpring of 2021 and 2022.

# Consultation letters with Maxim Mitropolsky

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-86**
**12.04.2021**

**To "Bezopasnost' i Kontrol" LLC**
**Maxim Mitropolsky**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-86**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

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**Response from Maxim Mitropolskiy was received on 31.08.2021 at 10 a.m.**

The creation of power plants using alternative energy sources is a promising direction in the 21st century. However, there are several basic principles that we must follow when choosing a location and operating facilities.

Undoubtedly, the choice of a place for a wind power plant depends on the speed and constancy of the wind. In this regard, the choice of a place on the hills of the Ayak-Agitma depression is very perspective.

However, it should be remembered that the lake Ayak-agitma plays an important role for birds during migration and wintering. Up to 35,000 birds gather here in winter, and during the migration period (especially in autumn) up to 115,000 birds fly by. Thus, the use of wind generators can pose a significant threat to migratory birds.

Monitoring is necessary throughout the year to determine the direction of the arrival routes and departure to and from the lake, for technological solutions for installing turbines.

I can say that the monitoring of the bird fauna of the lake has been conducted since 2005, but it was not carried out in 2011-2015. Currently, the lake is included in the List of the most important ornithological territories of Uzbekistan.

Maxim Mitropolskiy,

Chairman of the Coordination Committee

Ramsar Regional Initiative of Central Asia

# Consultation letters with Maxim Koshkin

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-87**
**12.04.2021**

**To Maxim Koshkin**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

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3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-87**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

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**Annex 2**
**To the letter JEC-OUT-21-87**
**12.04.2021**
**Preferred OHTL allotment**

Dear Victoria,

i apologize for a delay with this, was snowed down with work after my return from fieldwork. If not too late, below are my brief answers to the questions provided in the letters you have previously sent:

1. I am only aware of Asian Houbara *Chlamydotis macqueenii* annual population surveys and migration studies which have been conducted by the University of East Anglia' team since 2012. I have also heard about some Egyptian Vultures and Saker Falcon surveys conducted by UzSPB staff in the area.

2. Although i was part of the Asian Houbara survey team on different occasions, i am not able to share the data with you. As far as i know you have been in touch with some of the current team members, so i hope they will be able to help.

3. Yes, i would be willing to attend a virtual interview, if still needed. I have been working in the area in 2012, 2013, 2014 and 2021 and familiar with both sites and surrounding area.

4. For Uzbekistan, i have personal knowledge of the threats to biodivercity mostly for Bukhara and Karakalpakstan regions. In both cases, the main concern for biodiversity as a whole, i think, is the development of various infrastructure - for gas, oil and other mineral extractions, as well as overhead power lines, roads and railway roads. Such infrastructure has direct and indirect effects on biodiversity. Among direct ones can name electrocution of birds of prey, power line collisions for many other species (including bustards), fragmentation of habitat for smaller species (unable or unwilling to cross raised roads or railways), frequent road kills - particularly involving mammals and reptiles, etc.  Indirect effects - habitat destruction (even if within limited areas), disturbance during construction and through increased presence of humans due to improved accessibility of the area, disruption of migration by created barriers etc.

5. Being, first of all, an ornithologist, i will focus on globally threatened birds here:

*Sociable Lapwing:*

I think the risk to this species from the planned power plants is minimal, as although there is a very important staging area for the species located further south in Kashkadarja region, according to satellite data, birds arriving there do not seem to stop within Bukhara region for any prolonged periods of time. However, this does not mean there is no risk for some individuals from being hit by wind turbines or hitting the overhead power lines, as both will be on their way from and to breeding grounds in Kazakhstan further north.

*Asian Houbara:*

Some individuals are breeding within the polygons specified and will unfortunately be displaced during the construction work. For the birds breeding in adjacent territories and migrating through, a larger threat will be from the overhead powerlines than from the turbines themselves, as the latter occupy smaller areas which is less likely to be

crossed by large number of birds. However risk of collision for birds could be at least minimized by adding some markers on lines to help birds see them.

*Egyptian Vulture:*

These birds are known to be breeding in close proximity to the Bash site (and possibly Dzhankeldy) and turbines themselves will possibly have more of an effect on them than power lines (as larger poles seem to safer for birds of prey than some smaller powerline supporting poles).

*Saker Falcon:*

This species is known to breed and migrate through Kyzylkum and there is a potential threat for  some migrants to be electrocuted on power lines or hit by turbine rotors.

General recommendations:

1. Construction works, particularly during the first year, at both site should ideally start outside nesting period of Asian Houbara (Mid March-end of May), so no nests or young chicks are destroyed.

2. Smaller power lines should be equipped with bird perches and goof insulation close to supporting poles.

3. Large overhead power lines should be equipped with markers

I hope this was useful and hopefully this information will be taken into account. I will be happy to answer any further questions and provide links to publications where possible.

kind regards

Maxim

# Consultation letters with Jakhongir Talipov

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-100**
**20.04.2021**

**Ekologiya va atrof-muhitni muhofaza qilish Davlat Qo'mitasi**
**Bo'lim boshlig'i Jahongir Talipovga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. Siz Loyiha maydoni yaqinida yoki maydon chegarasidan 5 km radius oralig`ida amalga oshirilgan biologik xilma-xillikni o`rganish tadqiqotlari haqida ma'lumot bera olasizmi? Xususan, so'nggi besh yil davomida flora turlari, sut emizuvchilar/yarasalar (ko'rshapalaklar), qushlar, sudraluvchilar, amfibiyalar yoki hasharotlar va ularning yashash joylari bo'yicha olib borilgan tadqiqotlar haqida ma'lumot bera olasizmi?
2. Agar shunday tadqiqotlar olib borilgan bo'lsa, atrof-muhit va ijtimoiy ta'sirni baholash loyihasiga tegishli bo'lgan ma'lumotlarni taqdim eta olasizmi?
3. Agar loyihaga tegishli bo'lgan ma'lumotlarga ega bo'lsangiz, loyiha obyekti va uning atrofidagi maydonning umumiy ekologik holati haqida fikr-mulohaza bildirish maqsadida so'rovnomada ishtirok eta olasizmi?
4. Bugungi kunda O'zbekistonda yo'qolib ketish xavfi ostidagi turlar (ayniqsa, mutaxassisligingiz doirasida) yuzasidan dolzarb masalalar bo'yicha Sizning fikringiz?
5. Tajribangizdan kelib chiqib, loyiha ta`sir etishi mumkin bo'lgan loyiha maydonidagi bioxilma-xillik holati yoki elementlari bilan bog'liq bo'lgan birlamchi izohingiz?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlaringizni mamnuniyat bilan kutib qolamiz.

**Yordamingiz uchun tashakkur va biz sizning javobingizni kutib qolamiz.**

**Hurmat bilan,**

**Direktor** **J.Yakubov**

Ijrochi
Viktoriya Filatova
Tel. +99871 202 04 40
+998 93 549 62 04

JEC-OUT-21-100 xatiga
1-ilova
20.04.2021


**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
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**JEC-OUT-21-100 xatiga**
**2-ilova**
**20.04.2021**
**Afzal ko'rilgan elektr havo uzatish tarmog'i**

# Consultation letters with Igor Karakin

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-155**
**08.06.2021**

**Игорю Карякину**

В соответствии с Указом Президента Республики Узбекистан № 5003 от 23.02.2021 года "О мерах по реализации инвестиционного проекта по строительству ветроэлектростанции мощностью 500 МВт в Гиждувонском районе Бухарской области", ООО "ACWA Power Bash Wind" (Ташкент) заключило 25-летний договор купли-продажи электроэнергии с АО "Национальные электрические сети Узбекистана". Настоящее соглашение вступило в силу 24 января 2021 года для развития, финансирования, строительства и эксплуатации ветропарка мощностью 500 МВт в Гиждувонском районе Бухарской области (см. Приложение 1).

Проект также включает в себя разработку Воздушной линии электропередачи (ЛЭП) протяженностью около 250 км с номинальной мощностью 500 кВ в одной цепи. Этот OHTL будет разделен между ветроэлектростанцией ACWA Power Bash мощностью 500 МВт и ветроэлектростанцией ACWA Power Dzhankeldy мощностью 500 МВт, которая находится примерно в 94 км к северо-западу от площадки ветроэлектростанции Bash. Согласование ЛЭП дорабатывается АО "Национальные электрические сети Узбекистана" и будет подключено к существующей подстанции в Каракуле с площадки ветроэлектростанции Bash (см. Приложение 2).

В рамках Оценки экологического и социального воздействия (ОЭСВ) Juru Energy консультируется с различными специалистами в области биоразнообразия, экологии и охраны природы, чтобы запросить любые данные или комментарии, которые будут иметь отношение к подготовке Проекта ОЭСВ. Нас направил к вам Роб Шелдон, эксперт по кречётке, который проинформировал нас о вашей работе с Российским Сибирским экоцентром.
Мы были бы признательны, если бы вы могли поделиться с нами какой-либо информацией о Степных орлах, особенно о тех, которые были помечены спутниками и проходят через Узбекистан и, в частности, регион/район проекта. Это облегчит нашу критическую оценку среды обитания территории проекта и обеспечит оценку всех рисков.
Мы также приветствуем любые дополнительные комментарии в отношении проекта.

Благодарим вас за вашу помощь, и с нетерпением ждем вашего ответа.

С Уважением,

**Директор** **Ж.Якубов**

JURU ENERGY CONSULTING

Исполнитель:
Виктория Филатова
Моб.: +998 93 549 62 04

**Приложение 1**
**К письму JEC-OUT-21-155**
**От 08.06.2021**


**Проект расположен в Гиждувонском районе Бухарской области**

**Координаты проекта**

| Северная широта | Восточная долгота |
|---|---|
| **Территория проекта ACWA Power 500MW** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Приложение 2**
**К письму JEC-OUT-21-155**
**От 08.06.2021**
**Предпочитаемый участок ЛЭП**

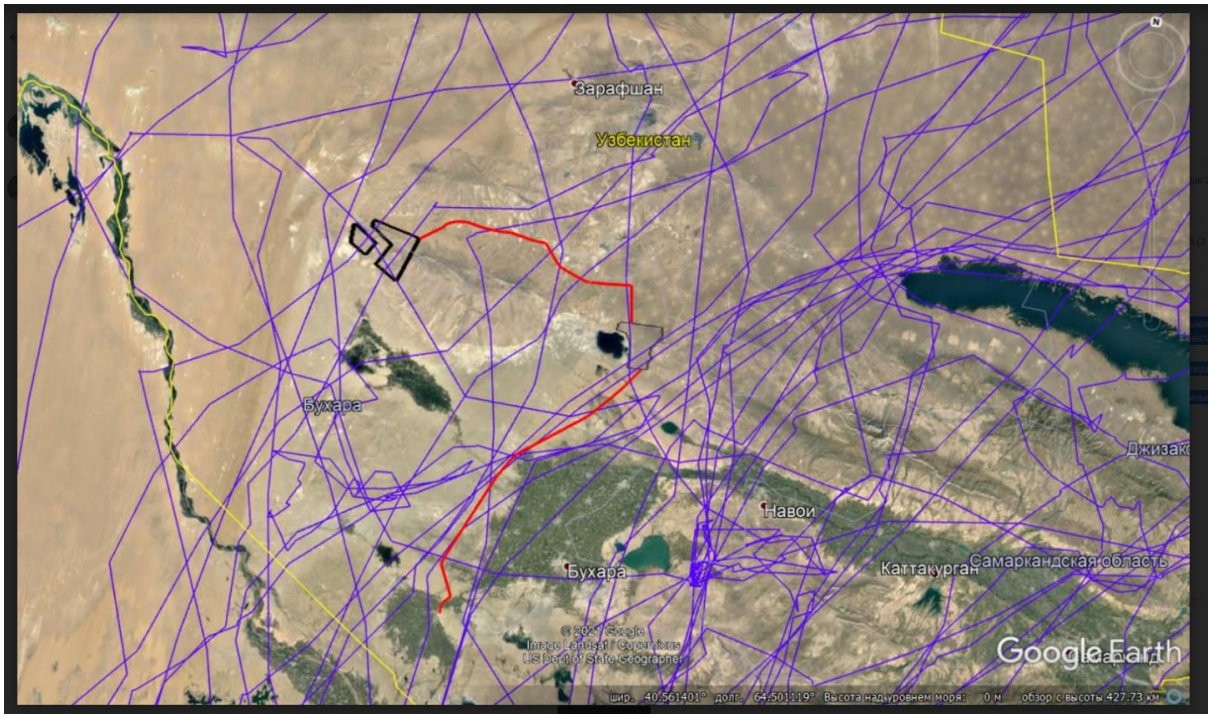
**Response of Igor Karakin.**

В приложении вы найдёте схему перемещений 14 степных орлов с трекерами относительно проектируемых ВЭС. Площадки выделенные под ВЭС лежат в западной части миграционного коридора орлов, соединяющего места гнездования в Центральном и Восточном Казахстане, Западной Монголии и Алтае-Саянском регионе России и места зимовки в Африке, на Аравийском полуострове, в Иране и бассейне Инда. По этому коридору проходит ежегодно не менее 30 тыс. степных орлов из 2-х самых стабильных популяций. Участок Баш создаст для орлов больше проблем, чем участок Джанкельды, так как лежит фактически на краю русла пролёта, которое лежит как раз между участком Баш и Нуратой.
Чтобы рассчитать возможный ущерб надо проанализировать высоты пересечения орлами выделенных участков и знать высоту мачт. Но очевидно что ущерб будет высокий, если будут стоять лопастные турбины. Возможно проблемной будет ЛЭП, соединяющая участки Баш и Джанкельды, так как она проектируется поперёк русла пролёта. Её надо будет в обязательном порядке оснащать шарами и флагами, чтобы птицы не бились о провода.
Но вообще территория выбрана не очень удачная и эта ВЭС будет уничтожать значительное количество хищных птиц, в особенности коршунов, канюков и осоедов, которых здесь летит на порядок больше, чем степных орлов. Гораздо менее проблемными были бы окрестности Зарафшана.
Если вам интересно, я готов сделать более детальный анализ возможного ущерба, но не сейчас, а осенью, так как сейчас я в горах и на очень плохой связи.

**Unofficial translation**

In the appendix you will find a diagram of the movements of 14 steppe eagles with trackers relative to the projected wind farms. The sites allocated for the wind farm are located in the western part of the eagle migration corridor, connecting nesting sites in Central and Eastern Kazakhstan, Western Mongolia and the Altai-Sayan region of Russia and wintering sites in Africa, the Arabian Peninsula, Iran and the Indu river.
At least 30 thousand Steppe Eagles from the 2 most stable populations pass through this corridor every year.
The Bash section will create more problems for the eagles than the Dzhankeldy section, since it actually lies on the edge of the channel of the span, which lies just between the Bash and Nurata.
To estimate the possible harm, it is necessary to analyze the height of the crossing of the selected sections by the eagles and to know the height of the mastsBut it is obvious that the damage will be high if there are blade turbines.
It is possible that the OHTL connecting the Bash and Dzhankeldy sections will be problematic, since it is designed across the channel of the span. It will be necessary to equip it with balloons and flags, so that the birds do not collide against the wires.
But in general, the territory chosen is not very successful and this wind farm will destroy a significant number of birds of prey, especially vultures, hawks and wasps, which fly here an order of importance more than steppe eagles. The surroundings of Zarafshan would be much less problematic.

If you are interested, I am ready to make a more detailed analysis of possible damage, but not now, but in the fall, since I am currently in the mountains and on very poor communication.


Зарафшан
Узбекистан
Бухара
Навои
Бухара
Каттакурган
Самаркандская область
Google Earth

# Consultation letters with Anna Ten

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-85**
**12.04.2021**

**To Anna Ten**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-85**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
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| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
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| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-85**
**12.04.2021**
**Preferred OHTL allotment**

To JURU Energy Consulting LLC

Anna Ten, Junior researcher of the
Institute of Zoology

**Ressponse to the letters JEC-OUT-21-69 odated 9.04.2021 and JEC-OUT-21-85 dated 12.04.2021**

In the letters two Project areas of WFs in Peshku and Gijduvon districts of Bukhara region and the layout of 250 km OHTLs with the rating of 500kVwere indicated.


Fig.1. Project areas

In 2018, we conducted research on the CADI Fellowship program “The approbation of actual methods for monitoring of rare species on example of Egyptian vulture Neophron percnopterus and Saker Falcon Falco cherrug survey in Central part of Kyzylkum Desert”. The studyparticipants were Valentin Soldatov, Timur Abduraupov and Maria Gritsyna. As part of the study, our target species were vulture, saker falcon, golden eagle, black vulture, and barrow. We also observed all rare birds of predator during the research from March to August 2018.

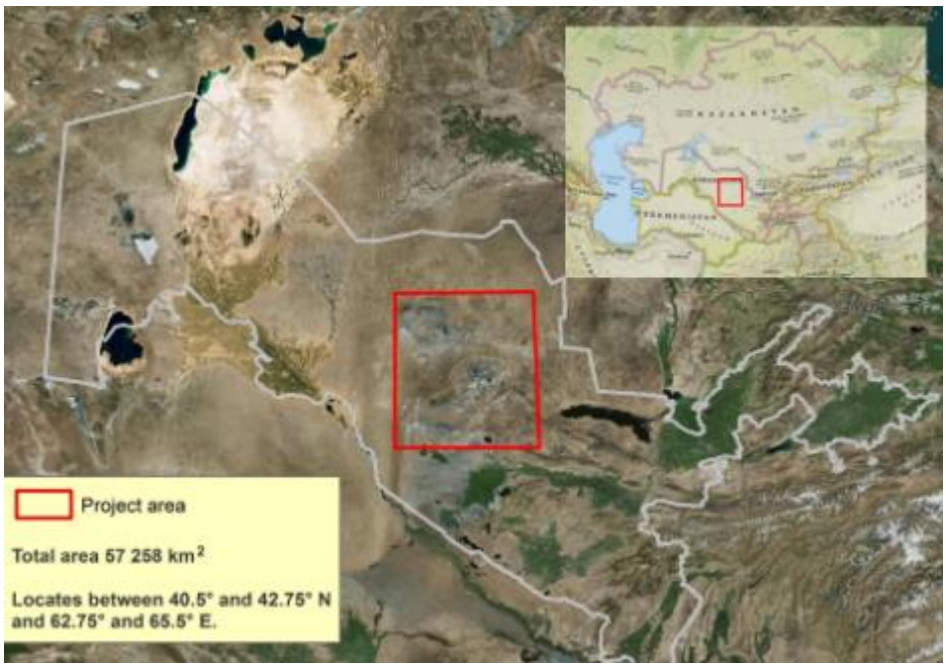


Fig.2 Project area of 5 725 377 ha located in central part of Kyzul Kum.

Two sites "Ayakagytma" and "Kuldzhuktau-Guzhumdy", which fell into the area of our research, are located closest to the territories of the wind farms Dzhankeldy and Bash.

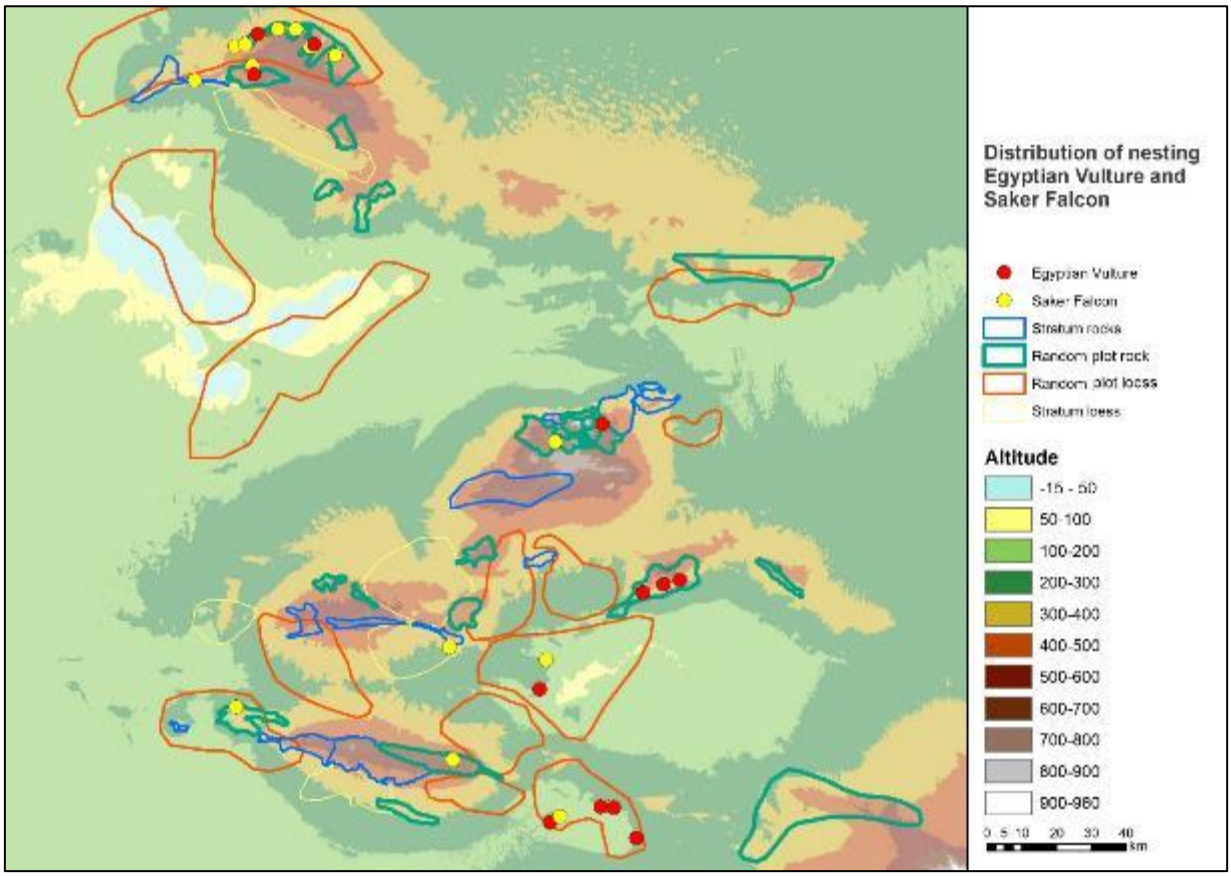


Fig.3. The project area was divided into breeding sites according to the biotope, from which the sites for research were randomly selected.

Table 1. The density of vulture and saker falcon in the sections "Ayakagytma" and "Kuldzhuktau-Guzhumdy".

| Id | Plot's name | Area of plot ($km^2$) | Area of random plot ($km^2$) | Saker falcon nest/nesting pair | Egyptian vulture nest/nesting pair |
|---|---|---|---|---|---|
| *1* | Kuldzhuktau_Guzhumdy | 125 | 125 | 1 | 0 |
| *2* | Ayakagytma | 38 | 38 | 3 | 4 |

Data on the distribution of birds of predator

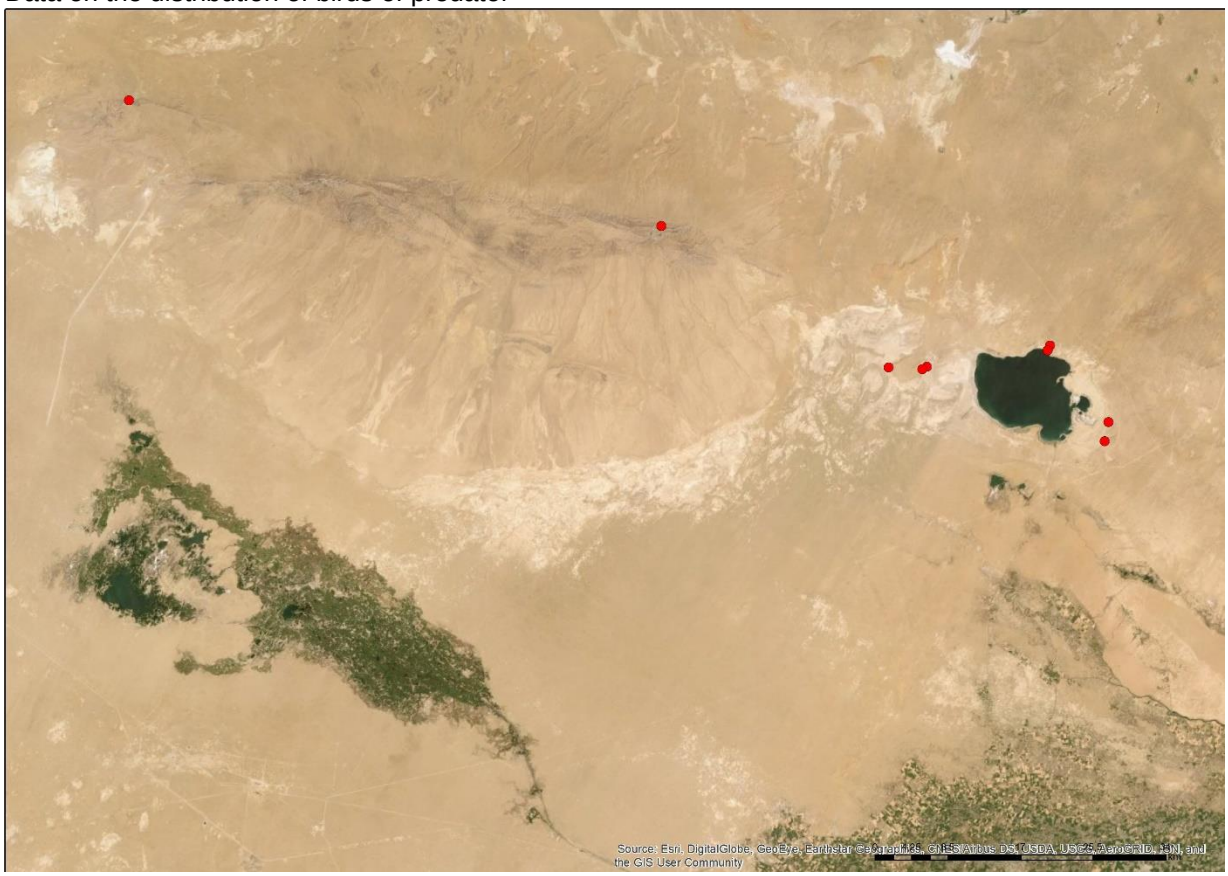


Fig. 4 Saker falcon observed areas in 2018.

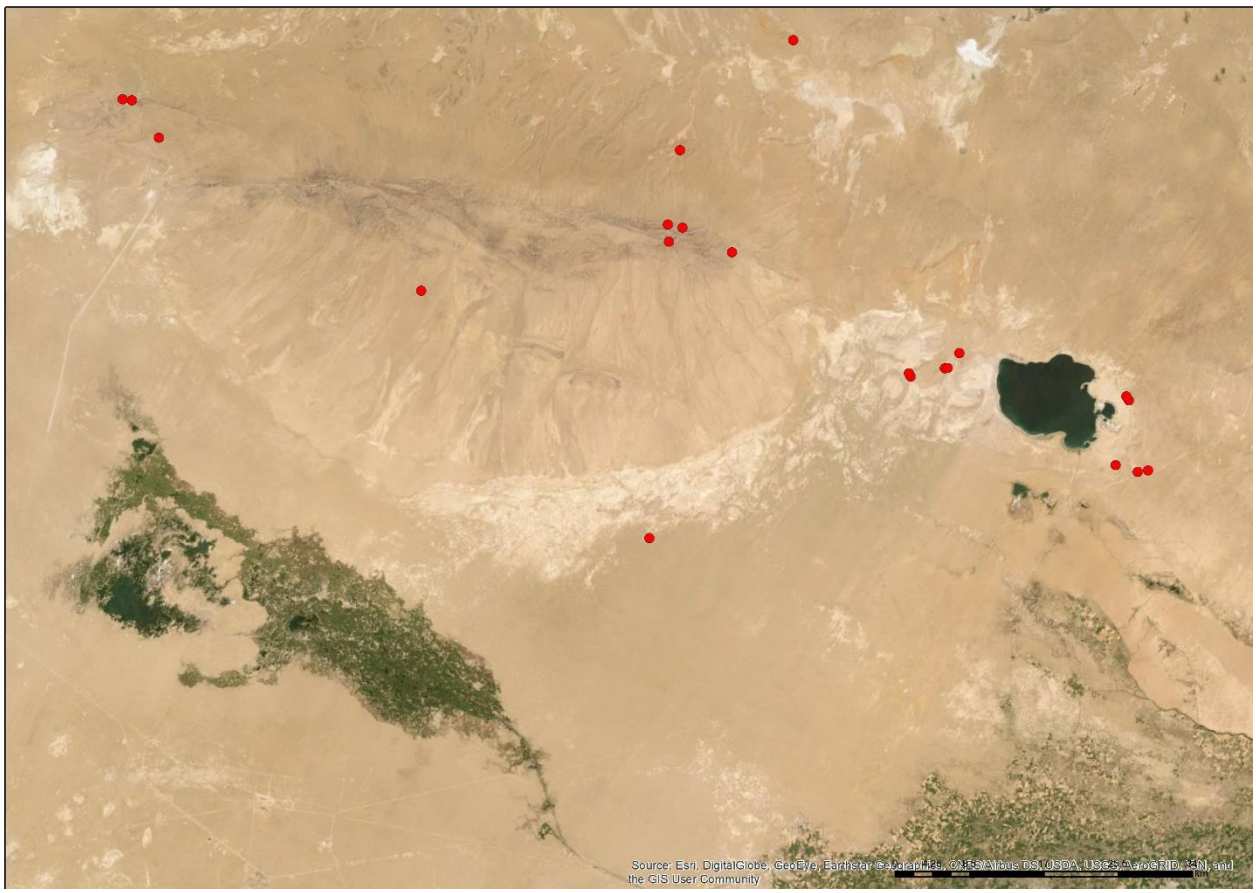


Fig. 5 Golden eagle observed areas on 2018

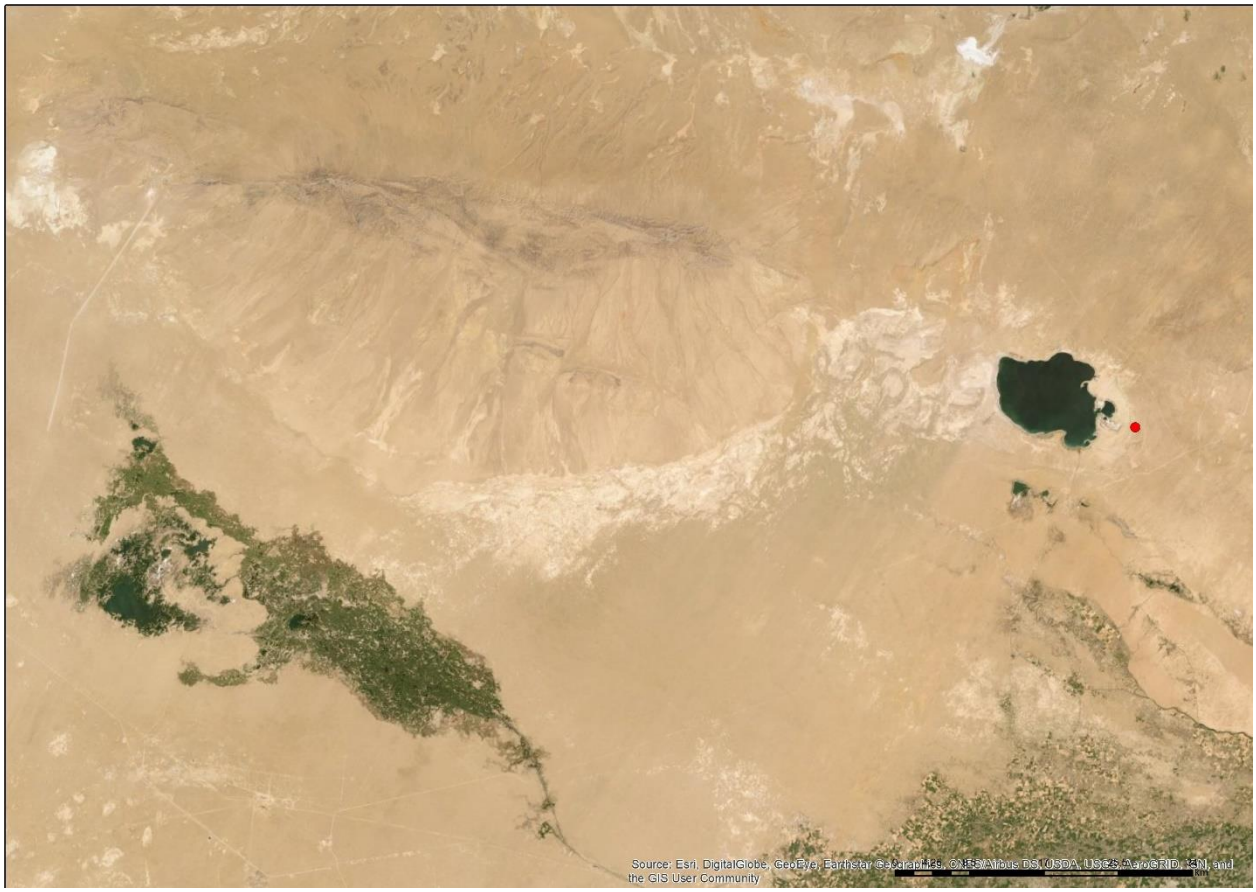


Fig. 6 Short-toed snake eagle observed areas in 2018

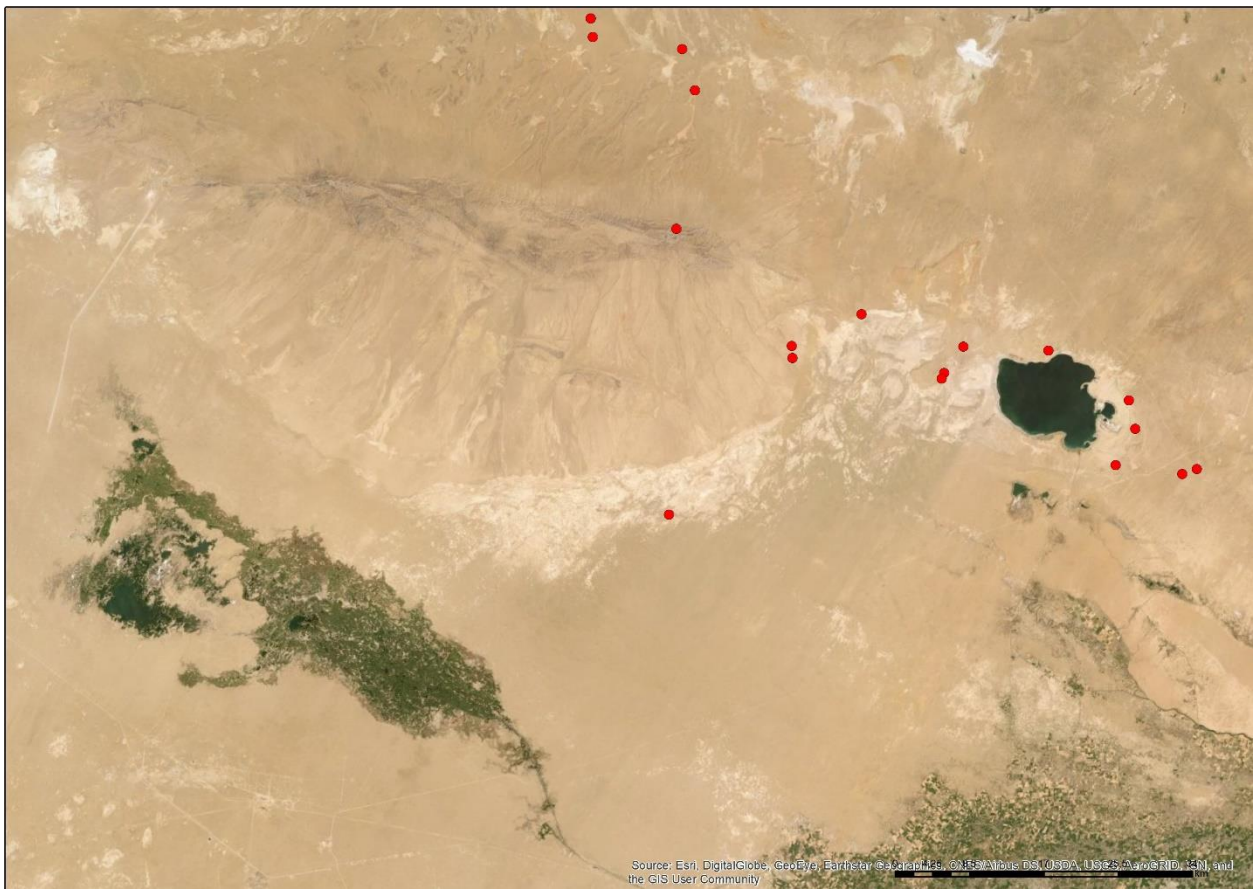


Fig. 7 Long-legged buzzard observed areas in 2018

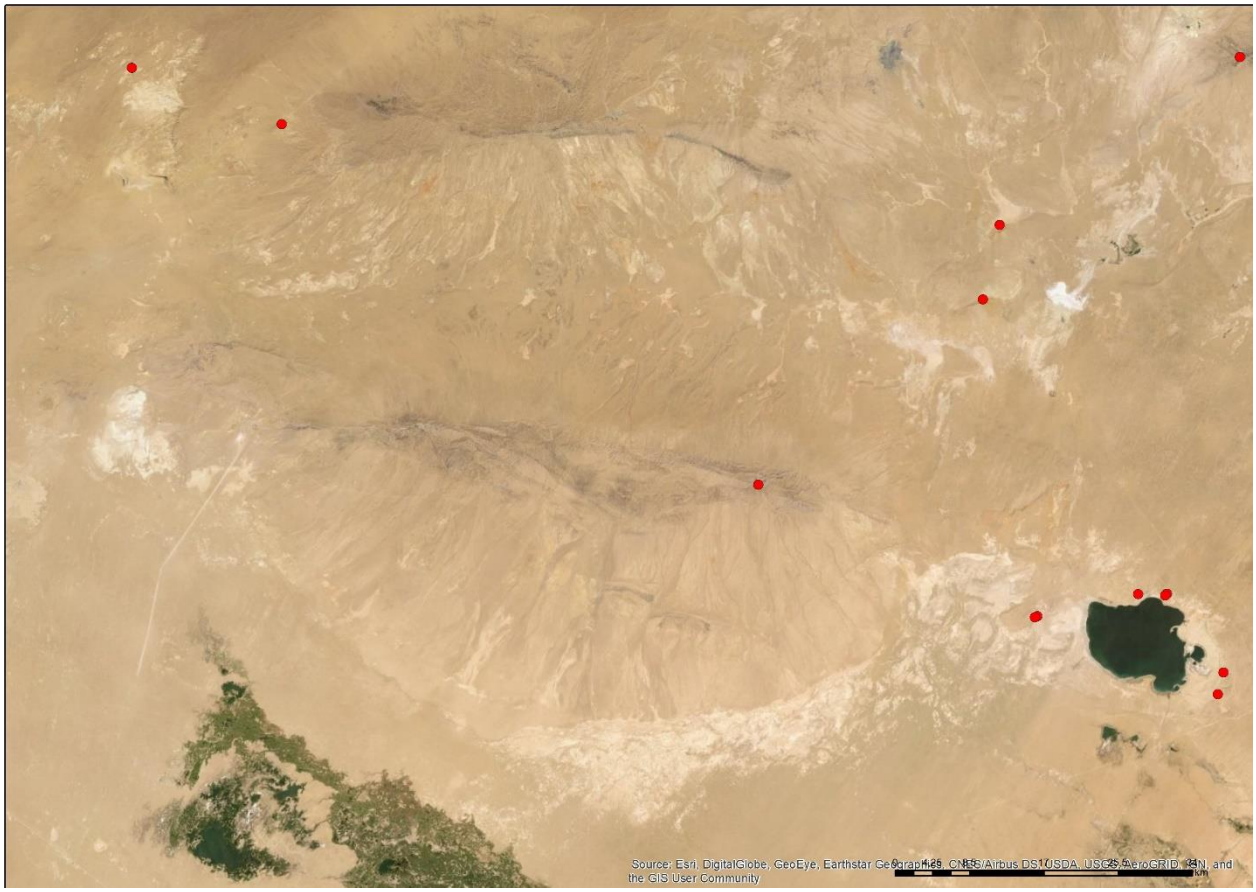


Fig. 8 Egyptian vulture observed areas in 2018

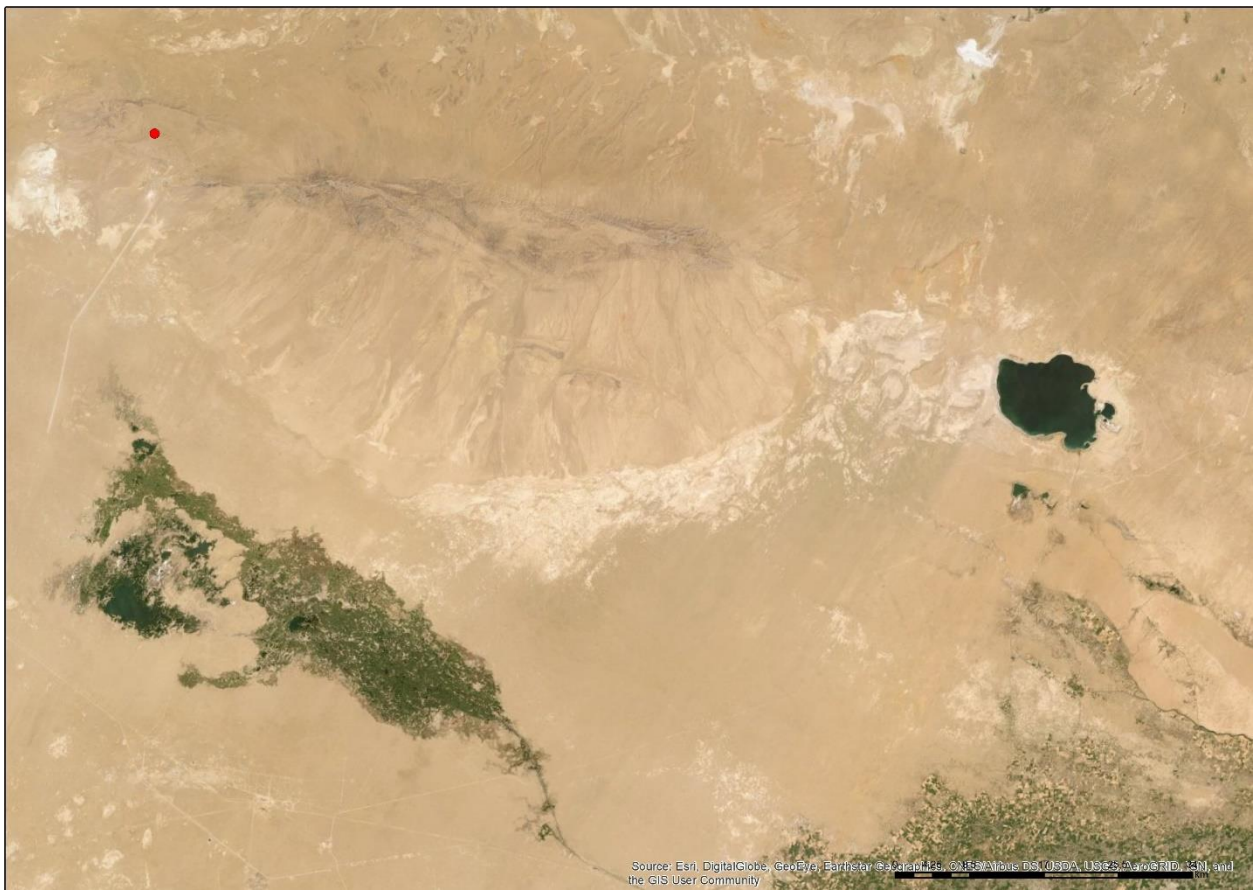


Fig. 9 Cinereous vulture observed areas in 2018

In addition, during the the accounting of the Houbara bustard in March 2021, in the area of the southern slopes of Kuldzhuktau, we observed the following species: peregrine falcon, steppe harrier, steppe eagle, burial ground, vulture, houbara bustard, strepet, in the Ayakagitma district-curly pelican.

I worked at Lake Ayakagitma in 2011 in the Society for the Protection of Birds of Uzbekistan as part of the Conservation Leadership Program (CLP) project - "Survey of 3 potential Important Bird Areas in collaboration with students in Uzbekistan", we conducted research on Ayakagitma. Then, from April 9 to 28, 2011, 145 species of birds were recorded in Ayakagytma and the adjacent territory, among which 20 rare species, 17 of them included in the Red Book of Uzbekistan and 8 globally threatened species: *Cygnus olor*. Aythya nyroca, Phoenicopterus roseus, Platalea leucorodia, *Plegadis falcinellus, Egretta garzetta, Pelecanus onocrotalus, Pelecanus crispus, Microcarbo pygmeus, Pandion haliaetus, Neophron percnopterus, Circaetus gallicus,Circus macrourus,* Aquila clanga, Aquila nipalensis, Falco cherrug, Falco peregrinus, Limosa limosa, Numenius arquata, *Larus ichthyaetus.*

Table 2. IBA criteria Lake Ayakagytma and the adjacent desert Критерии IBA (Ten et al. 2012)

| Key types | Comments | |
|---|---|---|
| | Nesting | Migration |
| A1 – globally threatened species | | |
| *Pelecanus crispus*[1/2] | | from 1 to 130 (2011); ordinary |
| *Oxyura leucocephala*[1/2] | | 4 ( 2009); rare |
| *Neophron percnopterus*[1] | from 3 to 4 pairs (2011); ordinary | |
| A3 – Biome species "Eurasian desert and semi-desert" | | |
| *Charadrius leschenaultia* | 35 (2006) | |
| *Calandrella (rufescens) cheleensis* | 14 (2008) | |
| *Iduna rama* | from 2 to 14 (2011) | |
| *Sylvia nana* | 14 (2008); ordinary | |

| | | |
|---|---|---|
| *Scotocerca inquieta* | 1 (2011); rare | |
| *Rhodospiza obsolete* | from 3 to 90 (2011); ordinary | |
| A4i - >1% biogeographic population of nearwater and waterfowls | | |
| *Netta rufina* | | 4016 (2000) |
| *Ardea alba* | | 451 (2000) |
| *Microcarbo pygmeus* | 31 (2006) | 827 (2000) |
| *Pelecanus onocrotalus*[2] | | from 28 to 482 (2011); ordinary |
| *Pelecanus crispus*[1/2] | | from 1 to 130 (2011); ordinary |
| A4iii – >20 000 waterfowl and near-water birds | | |
| waterfowl and near-water birds | | 23281 (2000) |
| Rare species | | |
| *Cygnus olor*[2] | 36 (2006) | от 8 до 16 (2008-2011) |
| *Cygnus cygnus*[2] | | 2 (20078 and 2011) |
| Ferruginous Duck *Aythya nyroca*[1/2] | 2 (2006) | 3 (May 2007) and 1 (2011) |
| *Phoenicopterus roseus*[2] | | from 20 to 115 (2011) |
| *Ciconia nigra*[2] | | 2 (2008) |
| *Plegadis falcinellus*[2] | | from 30 to 106 (2007) |
| *Platalea leucorodia*[2] | | from 2 to 4 (2008 and 2011) |
| *Egretta garzetta*[2] | 3 (2006) | from 1 to 13 (2011) |
| *Pandion haliaetus*[2] | | Single birds (2007-2011) |
| *Gyps fulvus*[2] | | 1 (2008) |
| *Circaetus gallicus*[2] | | 1 (2011) |
| *Circus macrourus* [½] | | 2 single birds (2008 and 2011) |
| *Aquila nipalensis*[2] | | 8 (2008) and 6 (2011) |
| *Falco cherrug*[1/2] | 1 pair (2011); rare | |
| *Falco peregrinus*[12] | | 1 (2008) |
| *Chlamydotis macqueenii*[1/2] | 1 (2008); rare | |
| *Limosa limosa*[1] | | from 17 to 36 (2011); ordinary |
| *Numenius arquata*[1] | | from 1 to 93 (2011); ordinary |
| *Glareola nordmanni*[1/2] | | 3 (2007) |
| *Larus ichthyaetus*[2] | 8 (2006) | 2 (2011) |

Notes: [1]- Species included in the IUCN Red List of Species

[2]- Species included in the Red Book of Uzbekistan (2009)

Both territories (Kuldzhuktau and Ayakagitma), as well as the territory where the power line is planned, are of great importance for migratory bird species.

- The geographical location of Dzhangeldy between the western edge of the Kuldzhuktau ridge (at its highest point) and the Beltau rock formations create a kind of gateway for migrating species. Probably, all birds of predator, especially those that hunt during the flight, primarily harriers, buzzards, and falcons, will use the flight along the landscape depression.
- In turn, Ayakagitma is rich not only in birds of predator, but also in waterfowl and near-water birds. The air corridors along which waterfowl fly have not been studied. The IBA criteria are shown in Table 2.

2. In 2018, we found 4 pairs of vultures. But in 2021, during a summer expedition, we recorded 5 pairs of vultures on IBA Ayakagytma, which indicates the global importance of this territory for the conservation of this species.

Probably, both territories will be sensitive to this project. Unfortunately, there is not enough data on how the wind farm will affect these birds. Some of the data presented in this letter has not been published, please coordinate their distribution.

Anna Ten

1.09.2021

# Consultation letters with Nodir Azimov

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-101**
**20.04.2021**

**Zoologiya Instituti mutaxassisi Nodir Azimovga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. Siz Loyiha maydoni yaqinida yoki maydon chegarasidan 5 km radius oralig`ida amalga oshirilgan biologik xilma-xillikni o`rganish tadqiqotlari haqida ma'lumot bera olasizmi? Xususan, so'nggi besh yil davomida flora turlari, sut emizuvchilar/yarasalar (ko'rshapalaklar), qushlar, sudraluvchilar, amfibiyalar yoki hasharotlar va ularning yashash joylari bo'yicha olib borilgan tadqiqotlar haqida ma'lumot bera olasizmi?
2. Agar shunday tadqiqotlar olib borilgan bo'lsa, atrof-muhit va ijtimoiy ta'sirni baholash loyihasiga tegishli bo'lgan ma'lumotlarni taqdim eta olasizmi?
3. Agar loyihaga tegishli bo'lgan ma'lumotlarga ega bo'lsangiz, loyiha obyekti va uning atrofidagi maydonning umumiy ekologik holati haqida fikr-mulohaza bildirish maqsadida so'rovnomada ishtirok eta olasizmi?
4. Bugungi kunda O'zbekistonda yo'qolib ketish xavfi ostidagi turlar (ayniqsa, mutaxassisligingiz doirasida) yuzasidan dolzarb masalalar bo'yicha Sizning fikringiz?
5. Tajribangizdan kelib chiqib, loyiha ta`sir etishi mumkin bo'lgan loyiha maydonidagi bioxilma-xillik holati yoki elementlari bilan bog'liq bo'lgan birlamchi izohingiz?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlaringizni mamnuniyat bilan kutib qolamiz.

**Yordamingiz uchun tashakkur va biz sizning javobingizni kutib qolamiz.**

**Hurmat bilan,**

**Direktor** **J.Yakubov**

Ijrochi:
Viktoriya Filatova
Tel: +998 71 202 04 40
+998 93 549 62 04

JEC-OUT-21-101 xatiga
1-ilova
20.04.2021


**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**JEC-OUT-21-101 xatiga**
**2-ilova**
**20.04.2021**
**Afzal ko'rilgan elektr havo uzatish tarmog'i**

# Consultation letters with Rob Sheldon

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-88**
**12.04.2021**

**To Rob Sheldon**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-88**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
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| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-88**
**12.04.2021**
**Preferred OHTL allotment**

# Consultation letters with John Burnside

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-84**
**12.04.2021**

**Dr Robert J. Burnside, Research Fellow, University of East Anglia**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-84**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
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| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-84**
**12.04.2021**
**Preferred OHTL allotment**

# Consultation letters with Bukhara State University

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-81**
**12.04.2021**

**Buxoro davlat universiteti**
**Biologiya fakultetiga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. Biologiya fakulteti Loyiha maydoni yaqinida yoki maydon chegarasidan 5 km radius oralig`ida amalga oshirilgan biologik xilma-xillikni o`rganish tadqiqotlari haqida ma'lumot bera oladimi? Xususan, so'nggi besh yil davomida flora turlari, sut emizuvchilar/yarasalar (ko'rshapalaklar), qushlar, sudraluvchilar, amfibiyalar yoki hasharotlar va ularning yashash joylari bo'yicha olib borilgan tadqiqotlar haqida ma'lumot taqdim eta oladimi?
2. Agar shunday tadqiqotlar olib borilgan bo'lsa, Biologiya fakulteti bizga atrof-muhit va ijtimoiy ta'sirni baholash loyihasiga tegishli bo'lgan ma'lumotlarni taqdim eta oladimi?
3. Biologiya fakulteti loyiha maydonida va/yoki uning atrofidagi maydonning umumiy ekologik holati bilan tanish bo'lsa, uning umumiy ekologik holati haqida fikr-mulohaza bildirish uchun fakultet vakili intervyuda ishtirok eta oladimi?
4. Biologiya fakulteti bugungi kunda O'zbekistonda yo'qolib ketish xavfi ostidagi turlar (ayniqsa, biologik xilma-xillik, olib borilayotgan ekologik tadqiqotlar) yuzasidan dolzarb masalalar bo'yicha ma'lumot bera oladimi?
5. Biologiya fakultetining ekologik tajribasiga ko'ra loyiha ta'sir etishi mumkin bo'lgan ma'lum biologik xilma-xillik xususiyati yoki elementlari haqida dastlabki fikr-mulohazalari bormi?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlaringizni mamnuniyat bilan kutib qolamiz.

**Direktor** **J.Yakubov**

JURU ENERGY CONSULTING

Ijrochi:
Viktoriya Filatova
Tel: +99871 202 04 40
+998 93 549 62 04

**JEC-OUT-21-81**
**12.04.2021 xatiga**
**1-ilova**


**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
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| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**JEC-OUT-21-81**
**12.04.2021 xatiga**
**2-ilova**
**Afzal ko'rilgan Havo elektr uzatish tarmog'i**

O'ZBEKISTON RESPUBLIKASI
OLIY VA O'RTA MAXSUS TA'LIM
VAZIRLIGI

BUXORO DAVLAT
UNIVERSITETI

200117, Buxoro, M.Iqbol,11
tel: 0 (365) 221-29-14 faks: 0 (365) 221-26-12
E-mail: buxdu_rektor@buxdu.uz

THE REPUBLIC OF UZBEKISTAN
MINISTRY OF HIGHER AND
SECONDARY SPECIAL EDUCATION

BUKHARA STATE
UNIVERSITY

200117, Bukhara, M.Ikbol str, 11
tel: 0 (365) 221-29-14 fax: 0 (365) 221-27-07
E-mail: buxdu_rektor@buxdu.uz

№ 01-02-1933

30 - 04 2021 yil

**"JURU ENERGY CONSULTING" МЧЖ**
**директори Ж. Якубовга**

Сизнинг 2021 йил 9 апрелдаги JEC-OUT-21-65 сонли ва 12 апрелдаги JEC-OUT-21-81 сонли хатларингизга жавобан Бухоро давлат университети Агрономия ва биотехнология факультети Биология кафедраси ходимлари хатда белгиланган лойиҳа майдончаси яқинида ёки майдон чегарасидан 5 км радусда биохилма-хилликни ўрганиш бўйича махсус тадқиқотлар олиб борилмаган ва мазкур ҳудуднинг биохилма-хиллигини ҳозирги ҳолати бўйича маълумотларга эга эмас. Шунинг учун мазкур ҳудуднинг ўсимлик ва ҳайвонот оламининг хилма-хиллиги (сутэмизувчилари, кўршапалаклар, қушлар, судралиб юрувчилар, амфибиялилар, ҳашаротлар ва ўсимликлар дунёсини) тур таркиби, тарқалиши ва уларга бўлаётган экологик таъсирлар ҳақидаги маълумотларга эга бўлиш учун ҳудудда йил мавсумлари давомида махсус тадқиқотларни олиб боришни талаб этади.

Лойиҳа ҳудудига яқин районларда жумладан Жанубий Қизилқум чўлида Ўзбекистон ва Халқаро "Қизил китоб"ларига киритилган ўсимликлар ва ҳайвонот олами вакилларининг тарқалиши ҳакидаги маълумотлар илмий тадқиқотларимизда ўрганилган.

Агарда ушбу масалага ойдинлик киритиш зарурати бўлса университет ва Juru Energy ўртасида шартнома лойиҳаси имзоланиб бу масалани тадқиқ қилиш учун университетимизнинг Биология кафедрасида илмий салоҳият етарлилигини билдирамиз.

**Проректор** **М. Даминов**

Ижрочи: P.F Жумаев
Тел: (65) 221-29-03

Unofficial translation

**No. 01-02-1933**
**30.04.2021**

**To the director of "Juru Energy Consulting" LLC J.Yakubov**

In response to your letters dated No. JEC-OUT-21-65 April 9, and JEC-OUT-21-81 dated April 12, 2021, the Faculty of Agronomy and Biotechnology of Bukhara State University informs that no special research on the study of biodiversity has been conducted and there is no information about the current state of biodiversity in this region near or within the boundaries of the project territory, as well as within a radius of 5 km specified in the letter. In order to obtain more information regarding ecological impacts on flora and fauna (habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects) of this region special studies during the seasons of the year should be conducted.

In our scientific research, we studied about the distribution of plants and the animal world species listed in the Uzbek and International Red Books in the Southern Kyzylkum steppe, as well as surroundings of the project territory.

We would like to inform you that If it is needful to clarify this issue, Biology faculty of our university has sufficient experience to conduct studies and we can sign an agreement between the university and Juru Energy.

Pro-rector signature M. Daminov

**For further information please contact:** R.G. Jumayev
**Tel:** 65 221 29 03

# Consultation letters with Institute of Botany

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-79**
**12.04.2021**

**O'zbekiston Respublikasi Fanlar**
**Akademiyasi huzuridagi Botanika institutiga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. Botanika Instituti Loyiha maydoni yaqinida yoki maydon chegarasidan 5 km radius oralig`ida amalga oshirilgan biologik xilma-xillikni o`rganish tadqiqotlari haqida ma'lumot bera oladimi? Xususan, so'nggi besh yil davomida flora turlari, sut emizuvchilar/yarasalar (ko'rshapalaklar), qushlar, sudraluvchilar, amfibiyalar yoki hasharotlar va ularning yashash joylari bo'yicha olib borilgan tadqiqotlar haqida ma'lumot taqdim eta oladimi?
2. Agar shunday tadqiqotlar olib borilgan bo'lsa, Botanika Instituti bizga atrof-muhit va ijtimoiy ta'sirni baholash loyihasiga tegishli bo'lgan ma'lumotlarni taqdim eta oladimi?
3. Botanika instituti loyiha maydonida va/yoki uning atrofidagi maydonning umumiy ekologik holati bilan tanish bo'lsa, uning umumiy ekologik holati haqida fikr-mulohaza bildirish uchun intervyuda ishtirok eta oladimi?
4. Botanika instituti bugungi kunda O'zbekistonda yo'qolib ketish xavfi ostidagi turlar (ayniqsa, biologik xilma-xillik, olib borilayotgan ekologik tadqiqotlar) yuzasidan dolzarb masalalar bo'yicha ma'lumot bera oladimi?
5. Botanika institutining ekologik tajribasiga ko'ra loyiha ta'sir etishi mumkin bo'lgan ma'lum biologik xilma-xillik xususiyati yoki elementlari haqida dastlabki fikr-mulohazalari bormi?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlaringizni mamnuniyat bilan kutib qolamiz.

**Direktor** **J.Yakubov**

Ijrochi:
Viktoriya Filatova
Tel: +99871 202 04 40
+998 93 549 62 04

JEC-OUT-21-79
12.04.2021 xatiga
1-ilova


**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
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| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**JEC-OUT-21-79**
**12.04.2021 xatiga**
**2-ilova**
**Afzal ko'rilgan Havo elektr uzatish tarmog'i**

**O`ZBEKISTON RESPUBLIKASI**
**FANLAR AKADEMIYASI**
**BOTANIKA INSTITUTI**
100125, Toshkent sh. Do'rmon yoli ko'chasi, 32 uy.Hisob-kitob raqami № 23402000300100001010, MFO 00014, Markaziy bank Toshkent shahar bosh boshqarmasi hisob-kitob kassa markazi, STIR: 305079736 OKED: 72190
Tel.: 262 37 95, 262 37 97 Fax.: 262 79 38
E-mail: botany@academy.uz http://www.botany.uz

**ACADEMY OF SCIENCES**
**REPUBLIC OF UZBEKISTAN**
**INSTITUTE OF BOTANY**
100125. Tashkent, Do'rmon yoli str. 32, Account № 23402000300100001010, MFO 00014, JSICB Central account casses of general department of Tashkent Central bank INN 305079736 OKONX: 72190
Tel.: 262 37 95, 262 37 97 Fax.: 262 79 38
E-mail: botany @academy.uz http://www. botany.uz

№269
«19» 04 2021 й.

**Ўзбекистон Республикаси**
**Фанлар академиясига**

*Маъсулияти чекланган жамият JURU ENERGY CONSULTING томонидан 2021 йил 12 апрелдаги JEC-OUT-21-79-сонли хатига жавобан*

Ўзбекистон Республикаси Фанлар академияси Ботаника институти томонидан Бухоро вилояти ўсимликлар кадастри монографияси нашр этилган.

Монографияда Бухоро вилояти флорасида тарқалган 67 оила, 340 туркумга мансуб 765 турдаги юксак ўсимликлар кадастр рўйхати, камёб ва йўқолиш хавфи остидаги ўсимликларнинг ҳаётий шакли, экологияси, тарқалиши, хўжаликдаги аҳамияти, муҳофазага эҳтиёжи кўрсаткичи геоахборот тизимидаги (ГАТ) хариталари ҳамда рангли фотосуратлари келтирилган.

Ушбу монографиядан институтга мурожаат этиб олишингиз мумкинлигини маълум қиламан.

**Директор в.в.б.** **Дехқонов Д.Б.**

Ижрочи: *Эсанкулов А.С. 98 261-61-01*

Unofficial translation

**To Academy Sciences of the Republic of Uzbekistan**

*Response to the letter sent by JURU Energy Consulting LLC*
*No.JEC-OUT-21-79 dated 12.04.2021*

The Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan published a monograph of the cadastre of plants of Bukhara region.

The monograph contains a cadastral list of 675 species of plants belonging to 340 genera of 67 families distributed in the flora of the Bukhara region. The monograph includes maps and colour photographs of rare and endangered plants in the geographic information system, indicating their life form, ecology, distribution, importance in the farm, and the need for protection.

This monograph can be obtained by contacting the Institute.

Acting director seal/signature Dekhkonov D.B.

**For further information please contact:**
**Esankulov A.S.**
**Phone: +99898 261 61 01**

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-119**
**03.05.2021**

**O'zbekiston Respublikasi Fanlar**
**Akademiyasi huzuridagi Botanika institutiga**

2021-yil 29-apreldagi № 269 va № 271 sonli xatlarimizga Buxoro viloyatining Bash va Dzhankeldy shamol elektr stansiyalari joylashgan hududlaridan topilgan o'simlik turlari bilan bog'liq mavjud ekologik ma'lumotlar keltirilgan javob xatingiz uchun minnatdorchilik bildiramiz.

Institutingizdan jamoamizga Buxoro viloyatidagi kamyob va yo'qolib borayotgan o'simliklarni ko'rsatib beruvchi monografiyani taqdim etishni iltimos qilamiz. Bu monografiya shamol elektr stansiyalarining ekologik va ijtimoiy ta'sirini baholash loyihasini tayyorlashda qo'llaniladi.

**Hurmat bilan,**

**Direktor** **J.Yakubov**

JURU ENERGY CONSULTING

**Ijrochi:**
Viktoria Filatova
**Tel.**: +998 93 549 62 04

# Consultation letters with Institute of Zoology and Yulia Mitropolskaya

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-80**
**12.04.2021**

**O'zbekiston Respublikasi**
**Fanlar Akademiyasi**
**Zoologiya institutiga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. Zoologiya Instituti Loyiha maydoni yaqinida yoki maydon chegarasidan 5 km radius oralig`ida amalga oshirilgan biologik xilma-xillikni o`rganish tadqiqotlari haqida ma'lumot bera oladimi? Xususan, so'nggi besh yil davomida flora turlari, sut emizuvchilar/yarasalar (ko'rshapalaklar), qushlar, sudraluvchilar, amfibiyalar yoki hasharotlar va ularning yashash joylari bo'yicha olib borilgan tadqiqotlar haqida ma'lumot taqdim eta oladimi?
2. Agar shunday tadqiqotlar olib borilgan bo'lsa, Zoologiya Instituti bizga atrof-muhit va ijtimoiy ta'sirni baholash loyihasiga tegishli bo'lgan ma'lumotlarni taqdim eta oladimi?
3. Zoologiya instituti loyiha maydonida va/yoki uning atrofidagi maydonning umumiy ekologik holati bilan tanish bo'lsa, uning umumiy ekologik holati haqida fikr-mulohaza bildirish uchun intervyuda ishtirok eta oladimi?
4. Zoologiya instituti bugungi kunda O'zbekistonda yo'qolib ketish xavfi ostidagi turlar (ayniqsa, biologik xilma-xillik, olib borilayotgan ekologik tadqiqotlar) yuzasidan dolzarb masalalar bo'yicha ma'lumot bera oladimi?
5. Zoologiya institutining ekologik tajribasiga ko'ra loyiha ta'sir etishi mumkin bo'lgan ma'lum biologik xilma-xillik xususiyati yoki elementlari haqida dastlabki fikr-mulohazalari bormi?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlaringizni mamnuniyat bilan kutib qolamiz.

**Direktor** **J.Yakubov**

Ijrochi:
Viktoriya Filatova
Tel: +99871 202 04 40
+998 93 549 62 04

**JEC-OUT-21-80**
**12.04.2021 xatiga**
**1-Ilova**


**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
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| 4498671.77 | 646323.63 |
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| 4499538.02 | 648248.52 |
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| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**JEC-OUT-21-80**
**12.04.2021 xatiga**
**2-Ilova**
**Afzal ko'rilgan Havo elektr uzatish tarmog'i**

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-83**
**12.04.2021**

**To Senior Researcher, Yulia Mitropolskaya, Ph.D.**
**Institute of Zoology of the Academy of Sciences**
**of the Republic of Uzbekistan**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-83**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
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| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-83**
**12.04.2021**
**Preferred OHTL allotment**

**O‘ZBEKISTON RESPUBLIKASI FANLAR AKADEMIYASI ZOOLOGIYA INSTITUTI**
100053, Toshkent sh. Bog’ishamol ko’chasi, 232 b uy.
Tel.: (998-71) 289 04 65 Fax.:(998-71) 289-10-60
E-mail: zoology@academy.uz http://www.zoology.uz

**INSTITUTE OF ZOOLOGY UZBEKISTAN ACADEMY OF SCIENCES**
232b, Bagishamal str., 100053. Tashkent,
Phone: +998712890465 Fax.: +998712891060
E-mail: zoology@academy.uz http://www. zoology.uz

№ 01-09/281
«21» may 2021 yil

**Академии наук**
**Республики Узбекистан**

*В ответ на письмо ООО JURU ENERGY CONSULTING*
*№ EC-OUT-21-83 от 12.04.2021*

При этом сообщаем следующее: Развитие альтернативных источников энергии, в частности, использование ветровой энергии, является очень актуальным для энергетической отрасли как в мировом масштабе, так и на территории Узбекистана. Особенно продуктивно этот ресурс может быть использован в пустыне Кызылкум.

На поставленные Вами вопросы можем сообщить следующее. Согласно информации, содержащейся в Вашем письме и Приложениях 1 и 2, проектируемая ветроэлектростанция состоит из двух участков и воздушной линии электропередач высокой мощности. Первый участок - Ветропарк - Баш планируется расположить на восточном берегу озера Агитма. Данный водоем является важным местом для остановки многих видов птиц, в том числе редких и угрожаемых, в период миграции и зимовки. Второй участок - ветропарк Джангельды – находится на низкогорном хребте Кульджуктау, который является местом гнездования хищных птиц и пролета многих других представителей орнитофауны. Соответственно, необходимо провести современные исследования пролетных путей на весенней и осенней миграциях и расположение потенциальных мест гнездования на этих участках.

Следует также отметить, что обрывы впадины Агитма и склоны низкогорного хребта Кульджуктау, являются местами обитания летучих мышей, среди которых предположительно есть редкие краснокнижные виды. Как показывает мировая практика, вышеперечисленные группы животных в первую очередь подвергаются негативным воздействиям ветровых генераторов. Исходя из этого, в рамках проводимой Вами оценки экологического и социального воздействия (ОЭСВ) рекомендуем Вашим экспертам обратить пристальное внимание на возможные риски гибели птиц на путях подлета к водоему Агитма и в местах сужения пролетных путей на хребте Кульджуктау. Также рекомендуем изучить фауну, территориальное распространение и пути перемещения летучих мышей на проектной территории.

**Директор института** **Б.Р. Холматов**

Исп.: Ю.О. Митропольская
Тел.: 71 289-04-65

**Institute of Zoology, Uzbekistan Academy of Sciences**

**No. 01-09/281**
**21.05.2021**

**Response to the letters of JURU ENERGY CONSULTING LLC**
**No. JEC-OUT-21-83**

At the same time, we inform the following: The development of alternative energy sources, in particular, the use of wind energy, is very topical for the energy industry both on a global scale and on the territory of Uzbekistan. This productively can be used in the Kyzylkum desert.

In response to your questions, we can provide the following information. According to the information contained in your letter and Appendices (1 and 2), the projected wind farm consists of two sections and an overhead high-power transmission line. The first project site-the Wind Farm Bash is planned to be located on the eastern shore of Lake Agitma. This reservoir is an important stopover for many bird species, including rare and threatened ones, during migration and wintering. The second project site-the Dzhankeldy Wind Farm is located on the low-mountain ridge of Kuldzhuktau, which is a nesting place for birds of prey and the passage of many other representatives of avifauna.

Accordingly, it is necessary to conduct up-to-date studies of the flyways on spring and autumn migrations and the location of potential nesting sites on these sites.

It should also be noted that the cliffs of the Agitma depression and the slopes of the low-mountain range of Kuldzhuktau are habitats of bats, among which there are presumably rare red book species.

As world practice shows, the above-mentioned groups of animals are primarily exposed to the negative impacts of wind generators. Based on this, as part of your Environmental and social impact Assessment (ESIA), we recommend that your experts pay close attention to the possible risks of bird death on the approach routes to the Agitma reservoir and in the narrowing of the flyways on the Kuldzhuktau ridge. We also recommend to study the fauna, territorial distribution and ways of movement of bats in the project sites.

**Director of the Institute** **signature** **B.R.Kholmatov**

For further information please contact:
Y. Mitropolskaya
Tel: 71 289 04 65

# Consultation letters with State Committee on Ecological and Environmental Protection and Luiza Mardonova

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-77**
**15.04.2021**

**O'zbekiston Respublikasi**
**Ekologiya va atrof muhitni**
**muhofaza qilish davlat qo'mitasiga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi loyiha maydonchasi yaqinida yoki maydon chegaralaridan 5 km radiusda o'tkazilgan bioxilma-xillik bo'yicha tadqiqotlar o'tkazilganligi to'g'risida xabardormi? Xususan, so'nggi besh yil ichida yashash joylari, flora turlari, sutemizuvchilar/ko'rshapalaklar, qushlar, sudralib yuruvchilar, amfibiyalar yoki hashoratlar bo'yicha tadqiqotlar o'tkazilganmi?
2. Tadqiqotlar o'tkazilgan bo'lsa, O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi bizga mavjud ma'lumotlarni, loyihaning atrof muhit va ijtimoiy ta'sirni baholash hujjatini tayyorlash uchun taqdim eta oladimi?
3. Agar O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi loyiha maydonchasining va/yoki uning atrofidagi maydonning umumiy ekologik holati bilan tanish bo'lsa, Loyiha maydonchasi va uning atrofidagi maydonning umumiy ekologik holati to'g'risida fikr-mulohaza bildirish uchun qo'mita vakilini intervyuda ishtirok etish tayinlay oladimi?
4. O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi bugungi kunda yo'qolib ketish xavfi ostida bo'lgan turlari bo'yicha (ayniqsa biologik xilma-xillikni o'rganish bo'yicha olib borilayotgan tadqiqotlar bo'yicha) maslahat bera oladimi?
5. O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasining ekologik tajribasiga ko'ra loyiha ta'sir etishi mumkin bo'lgan ma'lum biologik xilma-xillik xususiyati yoki elementlari haqida dastlabki fikr-mulohazalari bormi?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlarni mamnuniyat bilan qabul qilamiz.

**Direktor** **J.Yakubov**

Ijrochi:
Viktoriya Filatova
Tel: +99871 202 04 40
+998 93 549 62 04

**JEC-OUT-21-77**
**15.04.2021 xatiga**
**1-Ilova**


**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**JEC-OUT-21-77**
**15.04.2021 xatiga**
**1-Ilova**
**Afzal ko'rilgan havo elektr uzatish tarmog'i**

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-97**
**20.04.2021**

**To Luiza Mardonova**
**Chief Specialist, Dept. of State Cadastre & Monitoring of Flora & Fauna,**
**State Committee for Ecology and Environment Protection National Focal Point**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-97**
**20.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
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| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-97**
**20.04.2021**
**Preferred OHTL allotment**

**O‘ZBEKISTON RESPUBLIKASI EKOLOGIYA VA ATROF-MUHITNI MUHOFAZA QILISH DAVLAT QO‘MITASI**

100032, Toshkent sh., Mirzo Ulug‘bek t., Sayram ko‘chasi, 15-uy. tel.: 71-207-11-02, 71-207-11-03, faks: 71-236-02-32 veb-sahifa: http://www.eco.gov.uz, elektron pochta: info@uznature.uz

2021-yil “30” 04 03-03/1-252 son Toshkent sh.

**«JURU ENERGY CONSULTING» МЧЖ**

Давлат экология қўмитаси Сизнинг 2021 йил 15 апрелдаги “Бухоро вилояти Ғиждувон ва Пешку туманларида шамол электр станцияси қуриш лойиҳасини амалга ошириш” юзасидан JEC-OUT-21-77 ва JEC-OUT-21-сон хатларингизни ўрганиб чиқиб, қуйидагиларни маълум қилади.

Ўзбекистон Республикасининг “Ўсимлик дунёсини муҳофаза қилиш ва ундан фойдаланиш тўғрисида»ги 2016 йил 21 сентябрдаги 409-сон Қонунига мувофиқ, камёб ва йўқолиб кетиш хавфи остида турган ёввойи ҳолда ўсувчи ўсимликлар турларининг сони камайиб кетишига ёки уларнинг ўсадиган муҳити бузилишига олиб келиши мумкин бўлган ҳаракатларга (ҳаракатсизликка) йўл қўйилмайди.

Ўсимлик дунёсини муҳофаза қилиш ва ундан фойдаланишга оид талабларга жавоб бермайдиган ишлаб чиқариш объектларини ишга тушириш ҳамда технологияларни қўллаш тақиқланади.

Ўзбекистон Республикасининг “Ҳайвонот дунёсини муҳофаза қилиш ва ундан фойдаланиш тўғрисида»ги 2016 йил 19 сентябрдаги 408-сон Қонунига мувофиқ, саноат корхоналари объектларни жойлаштириш, лойиҳалаштириш ва қуриш чоғида ёввойи ҳайвонларнинг яшаш муҳитини, урчиш жойларини ва кўчиб ўтиш йўлларини сақлаб қолиш тадбирлари назарда тутилиши ҳамда амалга оширилиши, шунингдек ёввойи ҳайвонларнинг яшаш муҳити сифатида алоҳида қимматга эга бўлган участкаларнинг даҳлсизлиги таъминланиши лозим.

Таъкидлаш жоизки, барча турдаги қурилишлар учун ер участкаларини танлаш материаллари, амалга оширилиши ўсимлик ва ҳайвонот дунёсининг ҳолатига ёки унинг ўсадиган муҳитига, яшаш муҳитига, урчиш жойларига ва кўчиб ўтиш йўлларига зарарли таъсир кўрсатиши мумкин бўлган режадан олдинги, лойиҳадан олдинги ва лойиҳа ҳужжатлари давлат экологик экспертизасидан ўтказилиши лозим.

Мазкур ҳудуд қушларнинг кўчиб ўтиши учун муҳим жой эканлиги, шамол электр станцияси ва электр узатиш линиялари (жаҳон ва миллий амалиёт шуни кўрсатадики) ушбу систематик гуруҳга катта хавф туғдиради

(парракларга урилиши ва электр токи уриши) сабабли, хавфни баҳолаш ва иншоотларнинг жойлашишини танлашга батафсил ёндашиш керак.

Атроф-муҳитга таъсирни баҳолаш (ОВОС) доирасида биологик хилма-хилликка потенциал салбий таъсирини аниқлаш зарур.

Экологик экспертизанинг ижобий хулосаси олингандан сўнг:

иншоотларни қуриш ва улардан фойдаланиш жараёнида биологик хилма-хилликни сақлаш ва улардан барқарор фойдаланиш бўйича тадбирлар режасини ишлаб чиқиш;

биохилма-хилликни мониторинг қилиш дастурни ишлаб чиқиш ва Ўзбекистон Республикаси Экология ва атроф-муҳитни муҳофаза қилиш давлат қўмитаси билан келишиш;

мониторинг дастурига мувофиқ салбий таъсирларни аниқлаш ва юмшатиш чораларини ўз вақтида ишлаб чиқиш мақсадида биохилма-хилликнинг доимий мониторингини олиб бориш зарур.

Лойиҳа ҳудудларининг биохилма-хиллиги ҳақидаги маълумотлар илова қилинмоқда.

Илова:____варақда

**Раис ўринбосари** **Ж. Казбеков**

Ижр.: Л.Мардонова
Тел.: 71-207-24 24 (1008#)

*Приложение*

***Озеро Аякагытма*** и прилежащая пустыня является Важнейшей орнитологической территорией (IBA) и имеет международное значение для зимовки водоплавающих птиц.

Растительность очень редкая и состоит в основном из пустынных и полупустынных видов. Здесь встречаются отдельные группы саксаула и Ammodendron canolyi, распространены кусты Calligonum, а пески закреплены травянистой растительностью, такой как Carex arenaria и мятлик.

Лёссовые скалы, граничащие с впадиной Аякагытма, хороши для гнездования хищных птиц: стервятник, обыкновенная пустельга, балобан, филин и других видов, гнездящихся на скалах.

Прилегающие к озеру обширные солончаки привлекают множество куликов. Это делает озеро очень ценным местом отдыха перелетных птиц водно-болотных угодий.

Всего на озере зарегистрировано около 200 видов птиц, 22 из которых занесены в Красную книгу Узбекистана, а 11 в красный список МСОП.

Подробно исследования проводились в рамках описания Важнейших орнитологические территорий Узбекистана, внесенные в международный список IBA, результаты которых доступны по ссылке http://datazone.birdlife.org/site/factsheet/ayakaghytma-lake-and-surrounding-desert-iba-uzbekistan.

**Озера Каракыр** являются Важнейшей орнитологической территорией, часть территории охраняется государственным заказником «Каракыр», часть территории является охотничье-рыболовным хозяйством.

Озера имеют открытые акватории, окружены плотными зарослями тростников, в некоторых местах - рогоза Typha latifolia. По берегам каналов и озер значительные площади заняты зарослями гребенщика с примесью янтака Alhagi pseudalhagi и солянок. Здесь распространены белый саксаул, несколько видов джузгуна Calligonum, к которому примешиваются черкез, песчаная акация и астрагал.

Здесь отмечается около 200 видов птиц, из них 122 - водоплавающие и околоводные. Для пустыни, находящейся вокруг озера, наиболее характерны Burhinus oedicnemus, Pterocles orientalis, Caprimulgus aegyptius, Merops persicus, Galerida cristata, Podoces panderi, Rhodopechys obsoletus. Здесь гнездится Chlamydotis macqueenii.

Из рептилий здесь обитает Varanus griseus и Testudo horsfieldi (VU). Из редких млекопитающих встречается Gazella subgutturosa.

Подробно исследования проводились в рамках описания Важнейших орнитологические территорий Узбекистана, внесенные в международный

список IBA, результаты которых доступны по ссылке http://datazone.birdlife.org/site/factsheet/karakyr-lakes-iba-uzbekistan.

Однако приведенные данные 20ти летней давности, поэтому рекомендуем совместно с высокоспециализированными специалистами организовать работу по сбору актуальной информации современного состояния биоразнообразия в рамках подготовки документации по оценке воздействия на окружающую среду (ОВОС).

Unofficial translation

**30/04/2021**
**No.03-03/1-252**
**Tashkent**
**“To Juru Energy Consulting” LLC**

State Committee on Ecology as a response to your letters JEC-OUT-21-77 and JEC-OUT-21- dated 15.04.2021 regarding “Implementation of construction Wind Farms in Gijduvon and Peshku districts of Bukhara region” informs you on followings.

In accordance with the law of the Republic of Uzbekistan "On protection and use of the plant world" dated September 21, 2016 № 409, the number of species of plants growing in the wild, which are at risk of extinction, will not be allowed to decrease or cause a violation of their growing habitats.

It is forbidden to use technologies to launch production facilities that do not meet the requirements for the protection and use of the plant world.

In accordance with the Law of the Republic of Uzbekistan "On the Protection and Use of Wildlife" dated September 19, 2016 No. 408, when placing, developing and building industrial facilities, measures must be taken to preserve the habitat, pairing places and migration routes of wild animals, as well as to ensure the inviolability of wildlife objects.

It should be noted that the materials for the selection of land plots for all types of construction, the implementation of which can have a detrimental effect on the condition of modality and the state of the animal world or on the growing environment, habitat, places of mating and migration routes, pre-draft and draft documents should be examined by the State Committee on Ecology.

Since this area is an important location for migratory birds, wind farms and power lines (international and national practice shows that) pose a high risk for this systematic group (bird power line collision and electrocution), it is necessary to assess the risk and to choose the location of the structures in detail.

It is necessary to determine the potential negative impact on Biological Diversity within the framework of Environmental Impact Assessment (EIA).

After receiving positive feedback from the environmental expertise, it is necessary to:

- development of an action plan for the conservation and sustainable use of biological diversity in the construction and use of facilities;
- development of a program for monitoring biodiversity and coordination with the State Committee on Ecology and Environmental Protection of the Republic of Uzbekistan;
- carry out continuous monitoring of biodiversity in order to timely develop measures to identify and mitigate adverse effects in accordance with the monitoring program.

Information regarding biodiversity of the Project sites is attached as an annex.

**Deputy Chairman signature J.Kazbekov**

**For further information please contact: L. Mardonova**
**Tel: 71 207 2424**

**Annex 1**

Lake Ayakagytma and the surrounding desert is an Important Ornithological Area (IBA) and is of international importance for wintering waterfowls.

The vegetation is very sparse and consists mainly of desert and semi-desert species. Separate groups of saxaul and Ammodendron canolyi are found here, Calligonum bushes are common, and the sands are anchored by grassy vegetation such as Carex arenaria and bluegrass.

Loess rocks bordering the Ayakagytma depression are good for nesting birds of prey; vulture, common kestrel, saker falcon, owl and other species that nest on the rocks.

The extensive salt marshes adjacent to the lake attract many waders. This makes the lake a very valuable resting place for the migratory birds of the wetlands.

In total, about 200 bird species have been recorded on the lake, 22 of which are listed in the Red Book of Uzbekistan, and 11 in the IUCN Red List.

The detailed research was carried out within the framework of the description of the Most Important ornithological Territories of Uzbekistan included in the international IBA list, the results of which are available via the link http://datazone.birdlife.org/site/factsheet/ayakaghvtma-lake-and-surrounding-desert-iba-uzbekistan.

Karakyr lakes are the most important ornithological territory, part of the territory is protected by the state sanctuary "Karakyr", part of the territory is a hunting and fishing farm.

The lakes have open water areas, surrounded by dense thickets of reeds, in some places - cattail Typha latifolia. Significant areas along the shoreline of the lakes and along the banks of canals and lakes are occupied by tamarisk bushes together with amber Alhagi pseudalhagi and saltwort. There are common white saxaul, several species of Calligonum in association with aboreal saltwort, sand acacia and astragalus species.

The aviafauna includes about 200 species, of which 122 species are waterbirds. The desert surrounding the lake is most characterized by Burhinus oedicnemus, Pterocles orientalis, Caprimulgus aegyptius, Merops persicus, Galerida cristata, Podoces panderi, and Rhodopechys obsoletus. Chlamydotis macqueenii nesting here.

Among the reptiles, Varanus griseus and Testudo horsfieldi (VU) live here. Of the rare mammals, Gazella subgutturosa is found.

Detailed research was carried out within the framework of the description of the Most Important ornithological Territories of Uzbekistan included in the international IBA list, the results of which are available via the link http://datazone.birdlife.org/site/factsheet/karakyr-lakes-iba-uzbekistan.

However, these data are 20 years old, so we recommend to organize together with highly specialized specialists work to collect up-to-date information on the current state of biodiversity in the preparation of documentation on environmental impact assessment (EIA).

**In addition to this letter Luiza Mardonova sent us the following e-mail:**

On Mon, 3 May 2021 at 17:10, Luiza Mardonova <mardonova.luiza@mail.ru> wrote:

> Это очень хорошо, что такие масштабные исследования проводятся. Так и должно быть при планировании строительства подобных объектов. Очень надеюсь, что по их окончанию, мы (Госкомэкологии) получим результаты этих исследований, как по птицам, так и по остальному биоразнообразию.
> Что касается зимних учетов, то, действительно в январе-феврале 2021 года были проведены учеты околоводных и водоплавающих птиц на водоемах Республики Узбекистан, в том числе и на Аякагытме. Но хочу отметить, что в период учета водоем практически полностью был подо льдом и данные скудные. Но в любом случае это результат. Если Вам необходимо получить результаты учетов, то необходимо официально обратиться в Госкомэкологии.
>
> Что касается ответа, то в первую очередь — это официальный ответ Госкомэкологии — как Вы могли заметить, он с подписью руководства и на бланке организации. Но так как исполнителем являюсь я, то можете его расценивать и как мой ответ.
>
> С уважением,
>
> Луиза

**Unofficial translation**

**It is very good that such large-scale research is being conducted. This is how it should be when planning the construction of such facilities. I really hope that when they are finished, we (the State Committee of Ecology) will receive the results of these studies, both on birds and on the rest of the biodiversity.**
**As for the winter records, it is true that in January-February 2021, records of near-water and waterfowl were carried out on the reservoirs of the Republic of Uzbekistan, including on the Ayakagytm. But I want to note that during the accounting period, the reservoir was almost completely under ice and the data is scarce. But in any case, this is the result. If you need to get the results of the accounting, then you need to officially contact the State Committee of Ecology.**

**As for the answer, first of all — this is the official response of the State Committee of Ecology — as you may have noticed, it is signed by the management and on the letterhead of the organization. But since I am the performer, you can also consider it as my answer.**

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-131**
**06.05.2021**

**Государственному комитету Республики Узбекистан**
**по экологии и охране окружающей среды**

"Мы подтверждаем получение вашего письма и благодарим вас за ваш ответ. Экологические исследования, связанные с проектом, в настоящее время проводятся в рамках Оценки экологического и социального воздействия (ОЭСВ).

Поскольку эти проекты будут финансироваться международными финансовыми учреждениями, ACWA Power будет публично раскрывать проекты ОЭСВ, которые будут включать результаты экологических исследований на своем веб-сайте и во время общественных консультаций.

Мы сообщим вам, как только документы касательно ОЭСВ будут загружены на веб-сайт ACWA Power."

С Уважением,

**Директор** **Ж.Якубов**

Исполнитель:
Виктория Филатова
Моб.: +998 93 549 62 04

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-134**
**12.05.2021**

**Государственному комитету Республики Узбекистан**
**по экологии и охране окружающей среды**

Благодарим вас за ответное письмо от 30 апреля 2021 года № 03-03/1-252 касательно имеющихся экологических данных по исследованиям биоразнообразия, которые были проведены в Бухарской области, где планируется строительство ветропарков Bash и Dzhankeldy.

В дополнение к нашему предыдущему письму (от 6 мая 2021 года), мы хотели бы попросить Комитет предоставить нашей команде следующее:

1. Результаты учета исследований, проведенных на водохранилищах Республики Узбекистан, в том числе на Аякагытме, по околоводным и водоплавающим птицам в январе-феврале 2021 года.
2. Предоставьте пожалуйста более подробную информацию о требованиях к мониторингу и планах действий, которые вы упомянули в своем ответном письме от 30 апреля 2021 года № 03-03/1-252?
3. Не могли бы Вы уточнить, какие растения Комитет рассматривает как находящиеся под угрозой исчезновения, т. е. все категории растений, включенные в красную книгу Узбекистана? Или просто критические/ исчезающие виды?

Благодарим вас за ваше содействие и с нетерпением ждем вашего ответа.

С Уважением,

**Директор** **Ж.Якубов**

Исполнитель:
Виктория Филатова
Моб.: +998 93 549 62 04

**O‘ZBEKISTON RESPUBLIKASI EKOLOGIYA VA ATROF-MUHITNI MUHOFAZA QILISH DAVLAT QO‘MITASI**

100032, Toshkent sh., Mirzo Ulug‘bek t., Sayram ko‘chasi, 15-uy. tel.: 71-207-11-02, 71-207-11-03, faks: 71-236-02-32 veb-sahifa: http://www.eco.gov.uz, elektron pochta: info@uznature.uz

2021-yil “24” 05 03-06-239 - son Toshkent sh.

**ООО «JURU ENERGY CONSULTING»**

В ответ на Ваше письмо № JEC-OUT-21-134 от 12.05.2021 касательно дополнительной информации о биоразнообразии проектной территории и экологических требованиях при реализации сооружения ветряных электростанций и воздушных линий электропередач, Госкомэкологии РУз сообщает следующее.

1. Результаты зимних учетов околоводных и водоплавающих птиц на Аякагытме в 2021 смотрите в приложении.

2. Согласно Постановлению Кабинета Министров Республики Узбекистан «О совершенствовании системы мониторинга окружающей природной среды в Республике Узбекистан» №737 от 05.09.2019 года, хозяйствующими субъектами высокого и среднего риска воздействия на окружающую среду, деятельность которых приводит или может привести к ухудшению состояния окружающей природной среды, в обязательном порядке проводится производственный мониторинг окружающей природной среды.

Для качественного проведения мониторинга биоразнообразия согласовывается и утверждается Госкомэкологии РУз, программа биотического мониторинга, направленного на оценку биологического разнообразия растительного и животного мира по основным биомам и типам экосистем участков (на которых производится деятельность хозяйствующего субъекта), их текущего состояния и тенденций под влиянием природных и антропогенных факторов. Биотический мониторинг должен охватывать следующие задачи:

-Определение географических координат постоянных пунктов наблюдений;

-Определение наиболее оптимальных сроков проведения ежегодного мониторинга;

-Орнитологический мониторинг в период миграций птиц (весной и осенью ежегодно);

-Мониторинг млекопитающих и рептилий;

-Мониторинг за состоянием растительного покрова;

-Мониторинг гибели птиц от ветряных электростанций и ЛЭП;

-Мониторинг состояния мест обитания.

По результатам мониторинга анализируется воздействие сооружений на биоразнообразие и даются рекомендации по ликвидации или смягчению выявленных воздействий.

Что касается Плана действий, то на первом этапе он должен быть направлен на смягчение потенциального негативного воздействия во время строительства ветропарков. Мероприятия Плана формируются исходя из результатов оценки воздействия на окружающую среду (ОВОС) и могут дополнятся в будущем (уже при эксплуатации) исходя из результатов ежегодного мониторинга.

Главным образом это могут быть разработанные меры по предотвращению столкновений птиц с ветряными электростанциями, восстановление растительного и почвенного покрова и т.д.

3. Согласно Постановлению Кабинета Министров Республики Узбекистан «О мерах по организации подготовки, издания и ведения Красной книги Республики Узбекистан» №1034 от 19.12.2018 года, виды, занесенные в Красную книгу, исходя из статуса редкости и угрозы исчезновения видов, делятся на категории от 0 до 5. Виды находящиеся под угрозой исчезновения имеют категорию 1 и являются, видами с количеством, близким к критическому уровню, и близкие к исчезновению. При этом нужно отметить, что все виды растений, а также животных, вне зависимости от статуса угрозы, являются охраняемыми объектами.

*Приложение на __л*

**Начальник Главного управления биоразнообразия и охраняемых природных территорий** **А. Садиков**

*Приложение*

## Результаты зимних учетов околоводных и водоплавающих птиц на Аякагытме в 2021

| Научное наименование вида | Наименование вида на русском языке | Наименование вида на государственном языке | Месяц | Год | Количество особей |
|---|---|---|---|---|---|
| *Haliaeetus albicilla* | Орлан-белохвост | Оқ думли сувбургут | 1 | 2021 | 35 |
| *Fulica atra Linnaeus* | Лысуха | Қашқалдоқ | 1 | 2021 | 174 |
| *Tadorna ferruginea* | Огарь | Анғирт, Қизил ўрдак | 1 | 2021 | 11 |
| *Anas platyrhynchos* | Кряква | Ёввойи ўрдак | 1 | 2021 | 160 |
| *Cygnus cygnus* | Лебедь-кликун | Бақироқ оққуш | 1 | 2021 | 71 |
| *Cygnus olor* | Лебедь-шипун | Вишилдоқ оққуш | 1 | 2021 | 536 |
| *Aythya fuligula* | Хохлатая чернеть | Ҳайдаркокил | 1 | 2021 | 30 |
| *Mergellus albellus* | Луток | Ёмон чераг | 1 | 2021 | 4 |
| *Mergus merganser* | Большой крохаль | Катта чераг | 1 | 2021 | 14 |
| *Circus aeruginosus* | Болотный лунь | Соз бўктаргиси | 1 | 2021 | 1 |
| *Circus cyaneus* | Полевой лунь | Дала бўктаргиси | 1 | 2021 | 2 |
| *Netta rufina* | Красноносый нырок | Олмабош | 1 | 2021 | 123 |
| *Calandrella rufescens* | Серый жаворонок | Кулранг тўрғай | 1 | 2021 | массовый |
| *Panurus biarmicus* | Усатая синица | Муйлабдор читтак | 1 | 2021 | 50-70 |
| *Scotocerca inquieta* | Скотоцерка | Жиқ-жиқ | 1 | 2021 | 2 |
| *Schoeniclus schoeniclus* | Камышовая овсянка | Тўқай деҳқончумчуғи | 1 | 2021 | 1 |
| *Prunella atrogularis* | Черногорлая завирушка | Қоратомоқли завирушка | 1 | 2021 | 1 |
| *Bucephala clangula* | Гоголь | Хитой ўрдаги | 1 | 2021 | 2 |
| *Anas strepera* | Серая утка | Қўнғир ўрдак | 1 | 2021 | 1 |
| *Melanocorypha leucoptera* | Белокрылый жаворонок | Оқ қанотли тўрғай | 1 | 2021 | 1 |
| *Falco tinnunculus* | Пустельга | Миққий | 1 | 2021 | 1 |

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-152**
**28.05.2021**

**Государственному комитету Республики Узбекистан**
**по экологии и охране окружающей среды**

Благодарим Вас за Ваше ответное письмо от 24 мая 2021 года № 03-06/239 относительно результатов околоводных и водоплавающих исследований, проведенных на водохранилищах Республики Узбекистан, в том числе на озере Аякагытма, где будет расположена ветроэлектростанция Bash мощностью 500 МВт.

В дополнение к нашему предыдущему письму (от 12 мая 2021 года, № JEC-OUT-21-134) мы хотели бы просить Комитет предоставить нашей команде следующую дополнительную информацию:
1) Методологию, использованную для зимних исследований на озере Аякагытма, т. е. количество наблюдательных точек, часы мониторинга на каждую наблюдательную точку и т.д.
2) Подробную информацию о том, сколько времени потребовалось для проведения исследований (т.е. дни, недели и т.д.).

Благодарим вас за ваше содействие и с нетерпением ждем вашего ответа.

С Уважением,

**Директор** **Ж.Якубов**

Исполнитель:
Виктория Филатова
Моб.: +998 93 549 62 04

**O‘ZBEKISTON RESPUBLIKASI EKOLOGIYA VA ATROF-MUHITNI MUHOFAZA QILISH DAVLAT QO‘MITASI**

100032, Toshkent sh., Mirzo Ulug‘bek t., Sayram ko‘chasi, 15-uy. tel.: 71-207-11-02, 71-207-11-03,
faks: 71-236-02-32 veb-sahifa: http://www.eco.gov.uz, elektron pochta: info@uznature.uz

2021-yil “ 3 ” 06 03-06-276 - son Toshkent sh.

**ООО «JURU ENERGY CONSULTING»**

В ответ на Ваше письмо № JEC-OUT-21-152 от 28.05.2021 касательно методологии, использованной для зимних исследований на озере Аякагытма Госкомэкологии РУз сообщает следующее.

Зимние учеты водоплавающих птиц на водоемах Республики Узбекистан проводились согласно «Методическому руководству по ведению государственного учета и мониторинга позвоночных животных Республики Узбекистан», которое было утверждено Государственным комитетом Республики Узбекистан в 2020 году.

**Начальник Главного управления биоразнообразия и охраняемых природных территорий** **А. Садиков**

Unofficial translation

**STATE COMMITTEE ON ECOLOGY AND ENVIRONMENTAL PROTECTION OF THE REPUBLIC OF UZBEKISTAN**

3.06.2021 No.03-06-276 Tashkent

**To "JURU ENERGY CONSULTING" LLC**

In response to your letter No. JEC-OUT-21-152 dated 28.05.2021 regarding the methodology used for winter research on Lake Ayakagytma, the State Committee of Ecology of the Republic of Uzbekistan informs the following.

Winter records of waterfowls in the reservoirs of the Republic of Uzbekistan were conducted in accordance with the" Methodological Guidelines for state accounting and monitoring of vertebrates of the Republic of Uzbekistan", which was approved by the State Committee of the Republic of Uzbekistan in 2020.

**Head of the Main Department of Biodiversity and Protected Natural Areas** **signature** **A.Sadikov**

# Consultation letters with National University

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-82**
**15.04.2021**

**Mirzo Ulug'bek nomidagi**
**O'zbekiston milliy universiteti**
**Biologiya fakultetiga**

O'zbekiston Respublikasi Prezidentining 23.02.2021-yildagi "Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasi qurish loyihasini amalga oshirish chora-tadbirlari to'g'risida"gi 5003-sonli qarori bilan "ACWA Power Bash Wind" MCHJ (Toshkent) XKsi O'zbekiston milliy elektr tarmoqlari AJ bilan 25 yillik elektr sotib olish shartnomasini tuzdi. Ushbu shartnoma Buxoro viloyati G'ijduvon tumanida 500MVt shamol elektr stansiyasini rivojlantirish, moliyalashtirish, qurish va ekspluatatsiya qilish maqsadida 2021-yilning 24- yanvarida kuchga kirdi. (1-ilova).

Shuningdek, loyiha, taxminan 250 km uzunlikdagi 500 kV kuchlanishli havo elektr uzatish tarmoqi qurilishini ham o'z ichiga oladi. Ushbu elektr uzatish tarmog'i Bash 500MVt ACWA Power shamol elektr stantsiyasi va ACWA Power Dzhankeldy 500MVt shamol elektr stantsiyasi o'rtasida bo'linadi. Hozirgi paytda elektr uzatish tarmog'i yo'nalishi "O'zbekiston Milliy elektr tarmoqlari" AJ tomonidan ishlab chiqilmoqda va bu tarmoq Qorako'ldagi mavjud podstansiyaga ulanishi kutilmoqda (2-ilova).

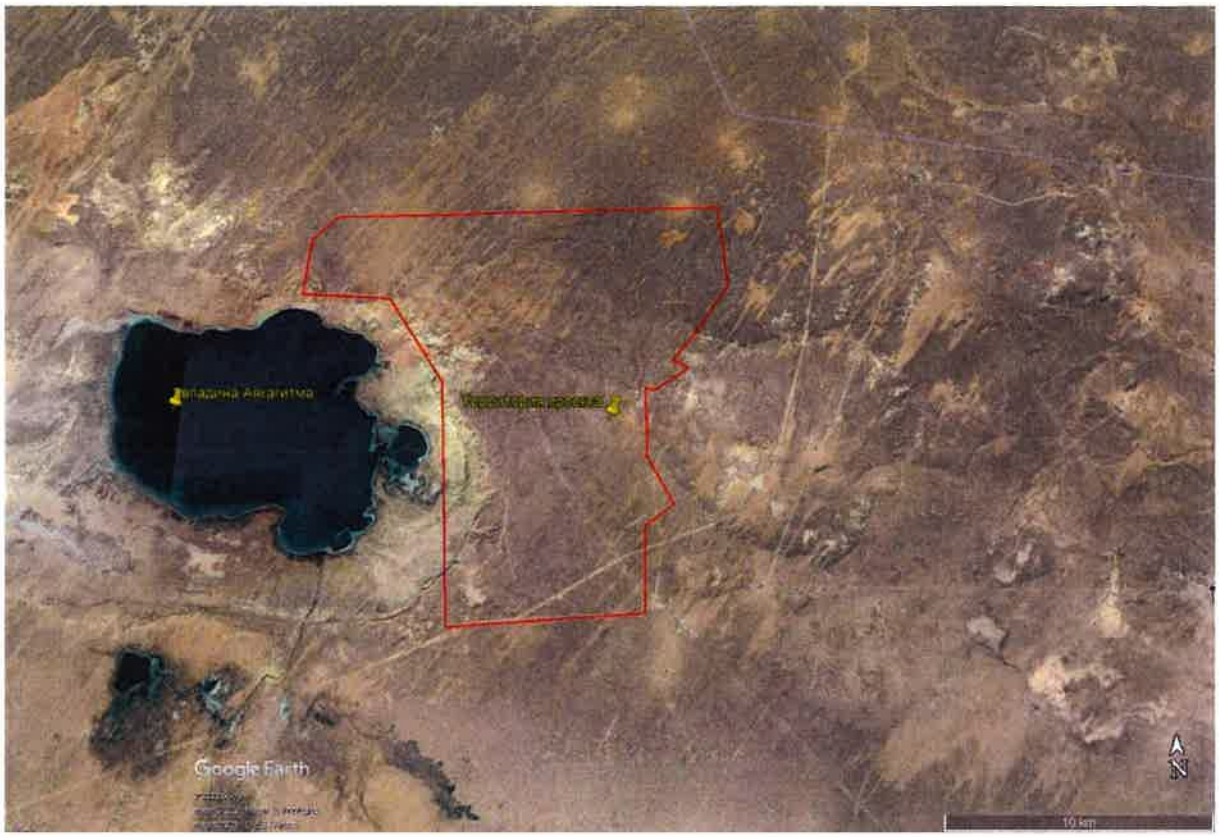
Atrof-muhit va ijtimoiy ta'sirni baholash loyihasini tayyorlash va bu jarayonga tegishli bo'lgan ma'lumotlarni olish uchun, Juru Energy bioxilma-xillik, ekologiya va tabiatni muhofaza qilish sohasidagi turli mutaxassislar bilan maslahatlashuvlar olib bormoqda. Shuningdek, Juru Energy quyida keltirilgan savollarga tegishli ma'lumotlarni olishda sizning yordamingizni so'raydi:

1. Biologiya fakulteti Loyiha maydoni yaqinida yoki maydon chegarasidan 5 km radius oralig`ida amalga oshirilgan biologik xilma-xillikni o`rganish tadqiqotlari haqida ma'lumot bera oladimi? Xususan, so'nggi besh yil davomida flora turlari, sut emizuvchilar/yarasalar (ko'rshapalaklar), qushlar, sudraluvchilar, amfibiyalar yoki hasharotlar va ularning yashash joylari bo'yicha olib borilgan tadqiqotlar haqida ma'lumot taqdim eta oladimi?
2. Agar shunday tadqiqotlar olib borilgan bo'lsa, Biologiya fakulteti bizga atrof-muhit va ijtimoiy ta'sirni baholash loyihasiga tegishli bo'lgan ma'lumotlarni taqdim eta oladimi?
3. Biologiya fakulteti loyiha maydonida va/yoki uning atrofidagi maydonning umumiy ekologik holati bilan tanish bo'lsa, uning umumiy ekologik holati haqida fikr-mulohaza bildirish uchun intervyuda ishtirok eta oladimi?
4. Biologiya fakulteti bugungi kunda O'zbekistonda yo'qolib ketish xavfi ostidagi turlar (ayniqsa, biologik xilma-xillik, olib borilayotgan ekologik tadqiqotlar) yuzasidan dolzarb masalalar bo'yicha ma'lumot bera oladimi?
5. Biologiya fakultetining ekologik tajribasiga ko'ra loyiha ta'sir etishi mumkin bo'lgan ma'lum biologik xilma-xillik xususiyati yoki elementlari haqida dastlabki fikr-mulohazalari bormi?
6. Loyihaga tegishli bo'lgan har qanday qo'shimcha izohlaringizni mamnuniyat bilan kutib qolamiz.

**Direktor** **J.Yakubov**

Ijrochi:
Viktoriya Filatova
Tel: +99871 202 04 40
+998 93 549 62 04

JEC-OUT-21-82
15.04.2021xatiga
1-ilova




**Loyiha Buxoro viloyati G'ijduvon tumanida joylashgan**

**Loyiha koordinatalari**

| SHIMOLIY KENGLIK | SHARQIY UZUNLIK |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**JEC-OUT-21-82**
**15.04.2021xatiga**
**2-ilova**
**Afzal ko'rilgan Havo elektr uzatish tarmog'i**

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ
ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ
ВАЗИРЛИГИ

МИРЗО УЛУҒБЕК НОМИДАГИ
ЎЗБЕКИСТОН МИЛЛИЙ УНИВЕРСИТЕТИ

100174, Тошкент, Университет кўчаси 4 уй,
Тел.: 998-71-227-12-24, факс 998-71-246-53-21, 246-02-24
e-mail: rector@nuu.uz

REPUBLIC OF UZBEKISTAN
MINISTRY OF HIGHER AND
SECONDARY SPECIAL EDUCATION

NATIONAL UNIVERSITY OF UZBEKISTAN
NAMED AFTER MIRZO ULUGBEK

100174, University street,4. Tashkent,
Tel.: 998-71-227-12-24, Fax: 998-71-246-53-21, 246-02-24
e-mail: rector@nuu.uz

03.05.2021 № 02/1-11-2401

_____ дати № _____ га

**"JURU ENERGY CONSULTING"**
**масъулияти чекланган жамияти**
**директори Ж.Якубовга**

Сизнинг 2021 йил 15 апрелдаги JEC-OUT-21-82-сонли хатингизга жавобан Бухоро вилояти Гиждувон туманида қуввати 500 MVt бўлган шамол электр станция қуриш лойиҳасини амалга ошириш ҳамда мазкур ҳудудда атроф-муҳит ва ижтимоий таъсирни баҳолаш юзасидан Ўзбекистон Миллий университети Биология ва Экология факультетларининг мутахассислари томонидан ўрганиб чиқилди ва хулосалар иловага мувофик тақдим этилмоқда.

Иловада: __ бет.

**Проректор** **Р.Мусурманов**

Ижрочи: Х.Бойматов.
Тел.: (+99871) 227-13-08.

**“JURU ENERGY CONSULTING” масъуляти чекланган жамиятининг 2021 йил 15 апреллаги хати бўйича Ўзбекистон Миллий университети Экология ва Биология факультетларининг**

**ХУЛОСАЛАРИ**

JURU ENERGY CONSULTING масъулияти чекланган жамияти томонидан Бухоро вилоятининг Ғиждувон туманида лойҳалаштирилаётган шамол электр станцияси қурилиш ҳудудлари ҳамда майдон чегарасидан 5 км радиус кенгликда Ўзбекистон Миллий университети Экология ва Биология факультетларининг профессор – ўқитувчилари ва изланувчилари томонидан мазкур ҳудуд ва унга туташ ҳудудларда биологик хилма-хилликни ўрганишга доир илмий тадқиқотлар олиб борилмаган.

Unofficial translation

**3.05.2021**
**No. 02/1-11-2401**

We would like to inform you that your letter No. JEC-OUT-21-82 dated 15.04.2021 regarding construction of 500 MW Wind Farm and ESIA in Gijduvon district of Bukhara region was studied by experts of Biology and Ecology faculties of National university and a response is attached as an annex.

Pro-rector signature R. Musurmanov

**For further information please contact: H. Boymatov**
**Tel: 71 2271308**

**Annex 1**

Response letter of Biology and Ecology faculties of National University to the letter of Juru Energy Consulting LLC dated 15.04.2021.

Faculties of Biology and Ecology of National University in response to the letter Juru Energy consulting LLC regarding construction of 500 MW Wind Farm and ESIA in Gijduvon district of Bukhara region inform you that not any biodiversity studies have been undertaken near the project site, or within a 5km radius of the site boundaries by the professors/researchers of the university.

**MAS'ULIYATI CHEKLANGAN JAMIYAT**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-135**
**12.05.2021**

**Mirzo Ulug'bek nomidagi**
**O'zbekiston milliy universiteti**
**Biologiya fakultetiga**

Sizning Buxoro viloyatida qurilishi rejalashtirilayotgan Bash va Dzhankeldy shamol elektr stansiyalari loyihlari maydonida flora va fauna turlari bo'yicha o'tkazilgan izlanishlar bo'yicha so'ralgan ekologik ma'lumotlar bo'yicha 2021-yil 3-maydagi No.02/1-11-24-01 va No.02/1-11-24-02 taqdim qilgan javob xatlaringiz uchun minnatdorchilik bildiramiz.

Universitetingizdan shamol elektr stansiyalarining ekologiyaga ta'sirini baholash jarayonida foydalanish uchun Buxoro viloyatida bioxilma-xillik, ekologiya va tabiatni muhofaza qilish doirasida olib borilgan tadqiqotlar (agar mavjud bo'lsa) natijalarini jamoamizga taqdim etishingizni iltimos qilamiz.

Hurmat bilan,

**Direktor** **J.Yakubov**

JURU ENERGY CONSULTING

Ijrochi:
Viktoriya Filatova
Tel: +998 93 549 62 04

# Consultation letters with UzSPB

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-78**
**12.04.2021**

**To Uzbekistan Society for the Protection of Birds**
**Representative of Bird Life International in Uzbekistan**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various institutions to request any data or comments that will be relevant to the preparation of the Project ESIA particularly in regards to biodiversity, ecology, and conservation. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Is the Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan aware of any biodiversity studies that have been undertaken near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would the Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan provide us with the available data, studies which will inform the project ESIA?
3. If the Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan is familiar with the overall ecological status of the project site and/or the surrounding region, could a representative be appointed from the Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region?
4. Could the Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan advise on the leading issues facing threatened species (especially in regards to biodiversity research studies undertaken) of Uzbekistan today?
5. Are there any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per the Uzbekistan Society for the Protection of Birds Representative of Bird Life International in Uzbekistan experience with the ecology of the region?
6. Please, kindly provide any additional comments in relation to the Project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-78**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-78**
**12.04.2021**
**Preferred OHTL allotment**

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-130**
**06.05.2021**

**Обществу охраны птиц Узбекистана,**
**Официальному представителю Bird Life International в Узбекистане**

"Мы подтверждаем получение вашего письма и благодарим вас за ваш ответ. Экологические исследования, связанные с проектом, в настоящее время проводятся в рамках Оценки экологического и социального воздействия (ОЭСВ).

Поскольку эти проекты будут финансироваться международными финансовыми учреждениями, ACWA Power будет публично раскрывать проекты ОЭСВ, которые будут включать результаты экологических исследований на своем веб-сайте и во время общественных консультаций.

Мы сообщим вам, как только документы касательно ОЭСВ будут загружены на веб-сайт ACWA Power."

С Уважением,

**Директор** **Ж.Якубов**

Исполнитель:
Виктория Филатова
Моб.: +998 93 549 62 04

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-151**
**26.05.2021**

**To Uzbekistan Society for the Protection of Birds**

Under Presidential Decree of the Republic of Uzbekistan No.5001 and No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon and Peshku districts in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent) and FE 'ACWA Power Dzhankeldy Wind' LLC (Tashkent) have entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered into on 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farms in Gijduvon and Peshku districts of Bukhara region).

The project also includes the development of an Overhead Transmission Line (OHTL) with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l.

As a part of the ESIA, Juru Energy is consulting with Uzbekistan Society for the protection of birds to request for the provision of the coordinates of the Key Biodiversity Area designated along the cliffs of Lake Ayagitma (See annex 1). This will facilitate in the assessment of project impacts as part of the ESIA and the siting of project facilities.

In case UzSPB does not have these coordinates, would you please advise which organization/agency Juru Energy should contact to get this information?

Thank you very much and we look forward to your response.

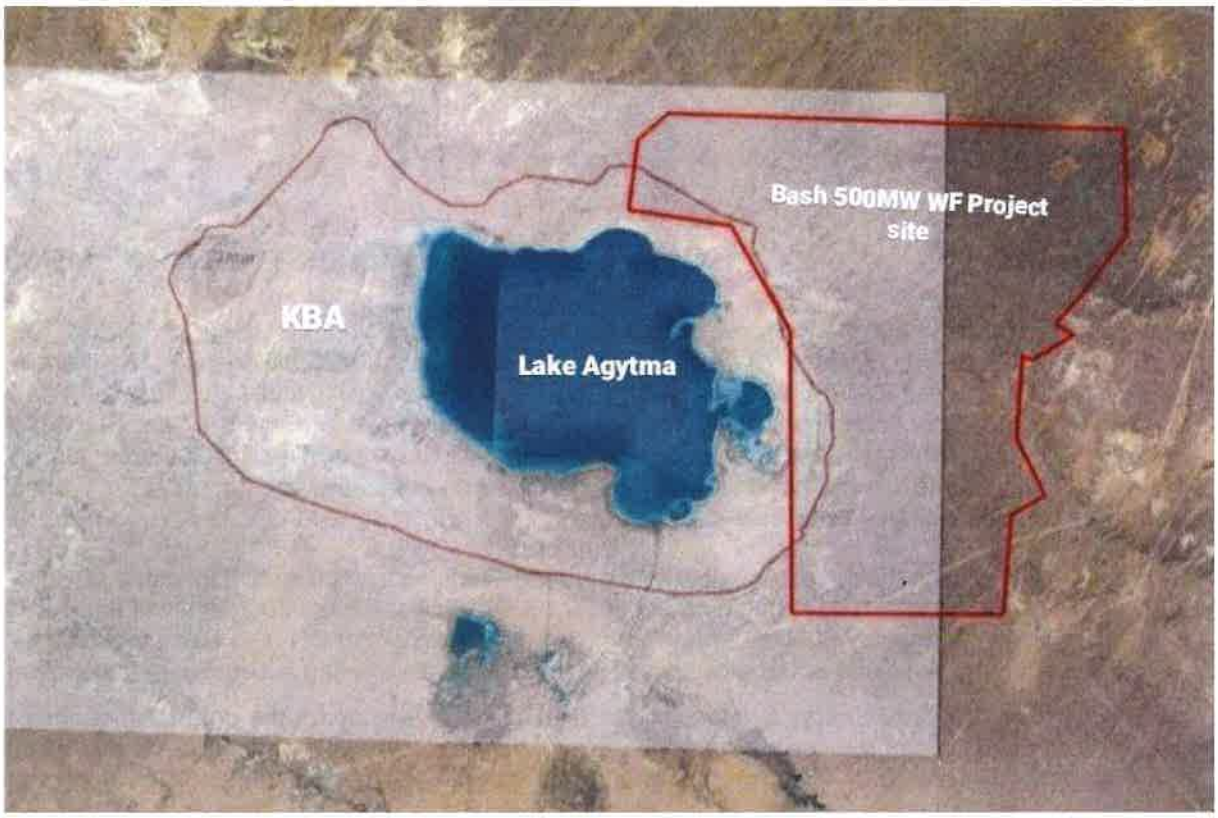
Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova
Mob.: +998 93 549 62 04

**Annex 1 to the letter JEC-OUT-21-151**
**Dated 26.05.2021**
**KBA and Project site**



# Consultation letters with Emirates Center for Conservation of Houbara Bustard

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-90**
**12.04.2021**

**To Emirates Center for Conservation of Bustard Beauty**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various institutions to request any data or comments that will be relevant to the preparation of the Project ESIA particularly in regards to biodiversity, ecology, and conservation. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Is the Emirates Center for Conservation of Bustard Beauty aware of any biodiversity studies that have been undertaken near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would the Emirates Center for Conservation of Bustard Beauty provide us with the available data, studies which will inform the project ESIA?
3. If the Emirates Center for Conservation of Bustard Beauty is familiar with the overall ecological status of the project site and/or the surrounding region, could a representative be appointed from the Emirates Center for Conservation of Bustard Beauty to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region?
4. Could the Emirates Center for Conservation of Bustard Beauty advise on the leading issues facing threatened species (especially in regards to biodiversity research studies undertaken) of Uzbekistan today?
5. Are there any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per the Emirates Center for Conservation of Bustard Beauty experience with the ecology of the region?
6. Please, kindly provide any additional comments in relation to the Project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-90**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
| 4489065.00 | 645911.20 |
| 4492662.15 | 646074.46 |
| 4493476.69 | 647325.10 |
| 4495585.81 | 646194.93 |
| 4498671.77 | 646323.63 |
| 4498528.88 | 646690.97 |
| 4499538.02 | 648248.52 |
| 4500867.54 | 648351.79 |
| 4503425.70 | 650137.28 |
| 4507450.24 | 649969.59 |
| 4507264.73 | 632532.51 |
| 4506189.41 | 631394.22 |
| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-90**
**12.04.2021**
**Preferred OHTL allotment**

# Consultation letters with IUCN

**ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ**
**JURU ENERGY CONSULTING**

100077, Tashkent, M.Ulugbek region, Chust Street, house # 10.
TIN: 303454532, BIC: 00974 Bank: «Kapitalbank» A/N: 20208000600502375001

**JEC-OUT-21-91**
**12.04.2021**

**To Muhammad Zaheer Khan**
**IUCN CEM Central Asia regional chair**

Under Presidential Decree of the Republic of Uzbekistan No.5003 dated 23.02.2021 "On measures to implement the investment of the Project on construction of a 500MW wind power plant in Gijduvon district in Bukhara region", FE 'ACWA Power Bash Wind' LLC (Tashkent)' has entered into a 25-year Power Purchase Agreement with JSC National Electric Networks of Uzbekistan. This agreement was entered on force 24th January 2021 for the development, financing, construction and operation of a 500MW Wind Farm in Gijduvon district of Bukhara region (See Annex 1).

The project also includes the development of an Overhead Transmission Line (OHTL) approximately 250km in length with a rating of 500kV single circuit. This OHTL will be shared between ACWA Power's Bash 500MW Wind Farm and the ACWA Power Dzhankeldy 500MW Wind Farm which is approximately 94km north west of the Bash Wind Farm site. The alignment of the OHTL is being finalised by JSC National Electric Networks of Uzbekistan and will connect to an existing substation in Qurako'l from the Bash Wind Farm site (see Annex 2).

As a part of the Environmental & Social Impact Assessment (ESIA), Juru Energy is consulting with various specialists in the fields of biodiversity, ecology, and conservation, to request any data or comments that will be relevant to the preparation of the Project ESIA. In particular, any information on the below would be considered relevant and applicable, and would be gratefully received:

1. Are you aware of any biodiversity studies that have taken place near the project site, or within a 5km radius of the site boundaries? In particular, surveys undertaken within the last five years, on habitats, flora species, mammals/bats, birds, reptiles, amphibians, or insects?
2. If so, would you please provide us with the available data, studies which will inform the project ESIA?
3. Would you be willing to attend an interview to provide feedback on the overall ecological status of the project site and surrounding region, if you are familiar with it?
4. What, in your expert opinion, are the leading issues facing threatened species (especially in regards to your specialty) of Uzbekistan today?
5. Do you have any initial feedback relating to a known biodiversity feature or element that may be affected by the project as per your experience with the ecology of the region?
6. We welcome any additional comments in relation to the project.

Thank you very much for your assistance and we look forward to your response.

Yours Sincerely,

**Director** **J.Yakubov**

JURU ENERGY CONSULTING

For the further information please contact:
Victoria Filatova

Phone: +99871 202 04 40
Mob.: +998 93 549 62 04

**Annex 1**
**To the letter JEC-OUT-21-91**
**12.04.2021**


**Project is located in Gijduvon district of Bukhara region**

**Project Coordinates (based on preliminary co-ordinates)**

| NORTHING | EASTING |
|---|---|
| **ACWA Power 500MW Project Site** | |
| 4488709.16 | 637987.39 |
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| 4503502.14 | 631176.63 |
| 4503073.76 | 635108.38 |
| 4499198.71 | 637482.55 |

**Annex 2**
**To the letter JEC-OUT-21-91**
**12.04.2021**
**Preferred OHTL allotment**