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Uygar Wind Power Plant (WPP) Project

Critical Habitat Assessment (CHA)

June 2024

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Definitions and Abbreviations

Abbreviation	Definition
AoI	Area of Influence
AZE	Alliance for Zero Extinction
BAP	Biodiversity Action Plan
BMMP	Biodiversity Management and Monitoring Plan
CHA	Critical Habitat Assessment
CITES	Convention for the International Trade in Endangered Species of Wild Fauna and Flora
CR	Critically Endangered
CRM	Collusion Risk Model
DD	Data Deficient
EAAA	Ecologically Appropriate Area of Analysis
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EN	Endangered
EOO	Extent of Occurrence
ESIA	Environmental and Social Impact Assessment
EU	European Union
EUNIS	European Nature Information System
GN	Guidance Notes
IAoI	Indirect Area of Influence
IBA	Important Bird Area
IFC	International Finance Cooperation
IUCN	International Union for Conservation of Nature
JPM	J.P. Morgan
KBA	Key Biodiversity Area
LC	Least Concern
NT	Near Threatened
PBF	Priority Biodiversity Features
PR	Performance Requirement
PS	Performance Standard
Ramsar	Convention on Wetlands of International Importance Especially as Waterfowl Habitat
VP	Vintage Point
VU	Vulnerable
WPP	Wind Power Plant

Executive summary

Critical Habitat Assessment (CHA) for Uygar Wind Power Plant Project has been undertaken in line with IFC Performance Standard (PS) 6 and corresponding Guidance Note (GN) to identify areas which are considered as critical habitats and critical habitats triggering species. The critical habitat assessment (CHA) presents the screening of biodiversity features and threatened wildlife, and plant species identified.

This report aims to identify Critical Habitat-qualifying biodiversity associated with the Project; Natural and Modified Habitat and identify the recommended next steps for the Project, including identification of data gaps and the need for additional field surveys. Thus, based on these aims literature searches, desktop and field studies were conducted, nationally and internationally recognized areas were considered within Ecologically Appropriate Area of Analysis. In line with PS6 and corresponding GN, the critical habitats, critical habitat triggered species and important biodiversity features were determined considering that the critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes within Ecologically Appropriate Area of Analysis.

Due to a combination of uncertainties with the Project specific data and global and/or regional availability of relevant literature for some species, a high-level assessment was accomplished for the present CHA. This CHA study should be considered preliminary, as extensive additional baseline surveys have been scheduled in 2024 for flora, fauna, birds, bats and invertebrate species to enhance the baseline by addressing data quality and quantity. The CHA is expected to undergo significant revision after the data gaps have been bridged following the baseline collection.

In light of the assessment, three bird species, two plant species, ten mammal species and one reptile species were identified as PBF for a total of 16 PBF triggers. One bird species was identified as potential critical habitat trigger to be clarified in 2024 additional baseline.

1 Introduction

1.1 Project Background

EN 1 Rüzgar Enerjisi Yatırım A.Ş. has been awarded to invest 250MWe in the Balıkesir Connection Region with 250 MWe connection right from the competition took place under the within the scope of “Renewable Energy Resource Areas (YEKA) Regulation” and “Competition Announcement for the Allocation of Wind Energy Based Renewable Energy Resource Areas (YEKA) and Total Connection Capacities”¹ for Balıkesir Connection Region. Upon this award, the “Agreement on Allocation of Renewable Energy Resource Areas and Connection Capacity Based on Wind Energy in Balıkesir Connection Area” was signed between EN 1 Rüzgar Enerjisi Yatırım A.Ş. and Ministry of Energy and Natural Resources (MoENR) on 9 May 2020. Subsequently, EN 1 Rüzgar Enerjisi Yatırım A.Ş. has been merged with EnerjiSA Enerji Üretim Anonim Şirketi (“EnerjiSA Enerji Üretim” or “the Project Company”) upon the decision from Republic of Türkiye Istanbul Trade Registry Directorate dated 30 December 2022.

Uygur Wind Power Plant (WPP) Project (“the Project”) with 60 turbines and 252 MWm/250 MWe total installed power, is planned to be implemented by EnerjiSA Üretim in Balıkesir Province, Burhaniye and Savaştepe Districts, Haydar, İkizce, Büyükyenice and Taşdibi Neighbourhoods; İzmir Province, Bergama District, Oruçlar, Ürkütler, Yukarıada, İneşir, Alhatlı, Durmuşlar, Çamoba and Kozluca Neighbourhoods; Manisa Province, Soma District, Kiraz Neighbourhood. The Project is part of a nine-project wind energy investment package initiated by EnerjiSA Üretim which has a 750 MW total installed power from a total of 180 wind turbines located in Aegean Region of western Türkiye; aiming to harness the wind energy potential of the region.

1.2 Scope of the Study

This report includes Critical Habitat Assessment (CHA) for Uygur Wind Power Plant Project, that has been undertaken in line with IFC Performance Standard (PS) 6 and corresponding Guidance Note (GN) to identify areas which are considered as critical habitats.

PS6 makes several stipulations for Critical Habitat, including achievement of a net gain for Critical Habitat-qualifying biodiversity. A net gain is required for all Critical Habitat features potentially affected by the Project. Where significant residual adverse effects are not predicted, additional conservation actions supported by qualitative evidence and expert opinion may be sufficient to substantiate a net gain. If, however, after the application of feasible preventive and restorative actions in the first steps of the mitigation hierarchy (avoid, mitigate, restore), there is a potentially significant residual impact on a Critical Habitat qualifying feature then ecological compensation (offset) is required with measurable conservation outcomes at an appropriate geographical scale. In Natural Habitat, no net loss, where possible, is required. A robust project specific ESIA baseline is vital, followed by an iterative and thorough application of the mitigation hierarchy to ensure that impacts are avoided, minimized and restored as far as feasible, reducing the significance of any residual impacts and the requirement for offsetting.

This report is a living document and hence, should be updated to reflect increased understanding of Project program and design throughout construction and operation (until agreed otherwise by Project Lenders) and should also be informed by new information as it becomes available (e.g., as obtained from ongoing/pre-construction surveys or as received from pertinent stakeholders).

2 Approach

In accordance with IFC PS6, habitats are divided into modified, natural and critical habitats. Critical habitats can be either modified or natural habitats supporting high biodiversity value, including:

- Habitat of significant importance to critically endangered and/or endangered species (International Union for Conservation of Nature and Natural Resources (IUCN) Red List)
- Habitat of significant importance to endemic and/or restricted-range species
- Habitat supporting globally significant concentrations of migratory species and/or congregatory species
- Highly threatened and/or unique ecosystems
- Areas associated with key evolutionary processes

PS6 guides how to best identify three classes of area based on vegetation condition ('quality' or 'state'), and significance for biodiversity (see. Table 2-1). PS6 uses the term 'habitat' to refer to these areas, rather than the actual vegetation within them. These three area classes are (i) Modified Habitat; (ii) Natural Habitat; and (iii) Critical Habitat (with Critical Habitat a subset of Modified and Natural Habitat).

Habitat condition is classified as either Natural or Modified based on the extent of human modification of the ecosystem. Monoculture plantations, agricultural areas and urban areas are usually classed as Modified. Both Natural and Modified Habitats may contain globally important biodiversity values, thereby qualifying as Critical Habitat.

Table 2-1 Habitat Classes

Areas Identified in PS6		Condition of the Area	
		Natural	Modified
High Biodiversity Values	Present	Critical Habitat	Critical Habitat
	Absent	Natural Habitat	Modified Habitat

Since habitat destruction is recognized as a major threat to the maintenance of biodiversity and to assess likely significance of impacts, IFC PS6 requires the following depending on habitat status:

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

Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.

Performance Standard 6 applies to those areas of modified habitat that include significant biodiversity value, as determined by the risks and impacts identification process required in Performance Standard 1. The client should minimize impacts on such biodiversity and implement mitigation measures as appropriate.

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

The client will not significantly convert or degrade natural habitats, unless all of the following are demonstrated:

- No other viable alternatives within the region exist for development of the project on modified habitat;
- Consultation has established the views of stakeholders, including Affected Communities, with respect to the extent of conversion and degradation; and
- Any conversion or degradation is mitigated according to the mitigation hierarchy.

In areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible. Appropriate actions include:

- Avoiding impacts on biodiversity through the identification and protection of set asides,
- Implementing measures to minimize habitat fragmentation, such as biological corridors;
- Restoring habitats during operations and/or after operations; and
- Implementing biodiversity offsets

Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes.

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

In such cases where a client is able to meet the requirements defined above, the project's mitigation strategy will be described in a Biodiversity Action Plan and will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated.

2.1 Applicable Guidelines and Standards

2.1.1 National Requirements

The primary framework of the Turkish legislation for environmental legislation is the Environmental Law (Law No: 2872). National laws and regulations regarding protection of the habitats and species are listed in Table 2-2.

Table 2-2: National Legislation on Biodiversity

Legislation (Official Gazette Date/Number - Last Revision Date)	National Strategy Documents
Law on National Parks (11.08.1983/18132 - 09.07.2018)	National Plan on on-site Protection of Plant Genetic Diversity (1998)
Terrestrial Hunting Law (11.07.2003/25165 - 28.10.2020)	National Environmental Action Plan (1999)
Law on Animal Protection (01.07.2004/25509 - 13.12.2010)	National Forestry Program (2004)
Regulation on the Protection of Wetlands (04.04.2014/28962 - 23.06.2022)	Climate Change Action Plan (2012)
Regulation for Implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (27.12.2001/24623 - 20.07.2019)	Turkish National Action Plan against Desertification (2015)
Regulation on Protection of Wildlife and Wildlife Development Areas (08.11.2004/25637)	National Rural Development Strategy (2015)
Law on Protection of Cultural and Natural Assets (23.07.1983/18113 - 15.06.2022)	National Biological Diversity Strategy and Action Plan (2019)
Regulation on Collection, Protection and Usage of Plant Genetic Resources (19.07.2012/28358)	
Law on Fisheries (04.04.1971/ 13799 - 17.02.2021)	
The Environmental Protection Agency for Special Areas (08.07.2011/ 27988)	
Environment Law (11.08.1983 / 18132 - 15.06.2022)	
Forestry Law (08.09.1956 / 9402 - 25.12.2021)	
Law on Pasture (28.02.1998 / 23272 - 18.01.2019)	
Law on Coastal Areas Management (17.04.1990 / 20495 - 28.10.2020)	

2.1.2 International Requirements

International agreements, conventions, and protocols regarding protection of the habitats and species are listed below:

- The Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) (1981)
- The Convention on the Conservation of European Wildlife and Natural Habitats (BERN) (1984)
- United Nations Framework Convention on Climate Change (1994)
- The Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR) (1994)
- The UN Convention on Biological Diversity (1997) and Cartagena Protocol on Biosafety (2004)
- Kyoto Protocol (2009)
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1996)
- Paris Agreement (2016)

2.1.3 Project Standards

The Project, which will be realized using the planned financing provided by a group of development finance institutions and commercial lenders, jointly “Project Lenders” and with partial coverage by the German ECA Euler Hermes Aktiengesellschaft (“EH”). The Project Company intends to develop the Project in alignment with the policy and requirements of the Lenders (i.e., EP IV, IFC and EBRD standards).

The international lender standards concerning biodiversity for the Project are represented by the IFC Performance Standards (PS6) and related Guidance Notes (6), EBRD Performance Requirements (PR6) and Guidance Notes (6) as well as Equator principles IV (EP IV).

The impact assessment and critical habitat assessment are carried out in accordance with the following international requirements:

- IFC Performance Standards on Environmental and Social Sustainability,
- EBRD's Environmental and Social Policy and Performance Requirements
- International Union for Conservation of Nature (IUCN) Red List of Threatened Species
- The Birds Directive (2009/147/EC)
- The Habitats Directive (92/43/EEC10)
- Post-construction Bird and Bat Fatality Monitoring for Onshore Wind Energy Facilities in Emerging Market Countries - Good Practice Handbook (2023)

The IFC PS6 objectives can be listed as:

- To protect and conserve biodiversity,
- To maintain the benefits from ecosystem services,
- To promote the sustainable management of living natural resources through the adoption of practices that integrates conservation needs and development priorities.

Similarly, the EBRD PR6 objectives are as defined below:

- Protect and conserve biodiversity using a precautionary approach,
- Adopt the mitigation hierarchy in the design and implementation of projects with the aim of achieving no net loss, and where appropriate, a net gain of biodiversity,
- Maintain ecosystem services, and
- Promote good international practice in the sustainable management and use of living natural resources.

2.2 Data Collection

The baseline collection methodology of this CHA relies primarily on desktop components which are detailed below and the data from field surveys conducted as part of National EIA. The Consultant conducted a brief site reconnaissance visit as well.

2.2.1 Desktop Study

A desktop review of the study area comprises the major component of the present Biodiversity assessment. The desktop component was performed perusing the following:

- National EIA report (all appendices relevant to flora, fauna, ecosystem, bat and ornithology)
- Relevant publicly available peer-reviewed literature
- White and grey literature
- Public biodiversity databases
 - eBird¹,
 - iNaturalist²,
 - Tragem³,
 - Trakel⁴,

¹ URL: Ebird.org. Last accessed: 2 January 2024.

² URL: Inaturalist.org. Last accessed: 2 January 2024.

³ URL: Tragem.org. Last accessed: 2 January 2024.

⁴ URL: Trakel.org. Last accessed: 2 January 2024.

- Trakus⁵,
- Movebank⁶
- Global Invasive species database⁷
- Bizimbitkiler⁸
- Satellite imagery and maps
- Opinions of local biodiversity experts (formal / informal)
- Internationally recognized areas
 - Key Biodiversity Areas
 - Important Bird Areas
- IUCN Red List
- Nationally threatened species
- BERN convention and appendices
- EU Habitats Directive
 - Annex I habitats
 - Annex II/IV species

Baseline information on biodiversity has been collected through ecological surveys conducted within the scope of the National EIA study. Accordingly, the timings of the field studies carried out are given below;

- Nartus conducted fieldwork for the examination of the Project activity area on 9 December 2022 in Balıkesir and 12 December 2022 in Manisa. Nartus also conducted fieldworks in and around the Project area to assess the ecological structure in June 2022 over 3 days, and in February and March 2023, three days each for a total of 6 days.
- For flora, surveys were carried out in the Project area between 11 and 12 June 2022. Also two field visits, lasting three days each, were carried out in February and March 2023.
- For ornithological studies, three separate surveys were presented,
 - Study 1 was 3 days of point counts conducted on 11,12, and 13 May 2022;
 - Study 2 was point and transect counts carried out over 30 days each in Autumn 2022 (7 August – 3 October 2022) and Spring 2023 (10 March – 25 May);
 - Study 3 was a Vantage Point survey conducted over 3 days, 5-6-7 March 2023.
- For bat surveys, two separate surveys were presented,
 - Study 1 was mainly a desktop study with three days site visit were conducted in June 2022;
 - Study 2 was conducted over 5 days in May 2023.
- The observations and examinations were conducted in and around the Project area to assess the presence of honeybees in March and June 2023.
- For terrestrial fauna (non-bat mammals, amphibians, reptiles) a 5-day study in May 2023 was conducted.

⁵ URL: Trakus.org. Last accessed: 2 January 2024.

⁶ URL: movebank.org. Last accessed: 2 January 2024.

⁷ URL: iucngisd.org. Last accessed: 2 January 2024.

⁸ URL: Bizimbitkiler.org.tr. Last accessed: 2 January 2024.

2.2.2 Field Surveys

Given the limited timescale, it was not possible to undertake the biodiversity baseline surveys during appropriate season before the completion of the CHA study. It was possible to conduct a brief site visit (one day) which can be described as a site reconnaissance visit.

On 2 October 2023, the Project area was partially visited by two biodiversity consultants of Mott MacDonald. Brief point counts for birds and transect walks for flora and terrestrial fauna were conducted.

Due to the seasonality (autumn) of the day, the visit only provided an opportunity for general observations about habitat characteristics.

If some features were not observed by the Consultant during this visit, it does not necessarily indicate such features are not present and/or abundant.

2.3 Identification of Ecologically Appropriate Area of Analysis

The Project consists of all turbines and their pads, the site roads, the switchyard area and the entire length of the ETL and pylons. Although the ETL and pylons are owned and operated by TEIAS, the standards of Project Lenders include these structures, along with the site roads, in impact assessments and subsequent adaptive management and monitoring programmes.

The investigation into the region's ecology was carried out to define an "Ecologically Appropriate Area of Analysis" (EAAA), to determine the presence of features that may qualify for Critical Habitat. The EAAA was identified at a scale indirect area of influence of the Project area, considering large-scale ecological processes. This approach ensures that all potential risks within the Project footprint and surrounding vicinity are taken into consideration.

The EAAA was defined using a combination of water catchments, topographic information, and legally protected areas and/or internationally recognized areas of high biodiversity value information. Species with a very specific distribution and ecological requirements were taken into account in defining the EAAA.

For the purposes of this CHA, the EAAA for flora and terrestrial fauna (amphibians, reptiles and non-bat mammals) was designated according to the surrounding terrain and water features and encompasses an area of 1236 km² and is expanding towards the southern region in order to sample and investigate different habitat types in the region for fauna. The EAAA for flora and terrestrial fauna is shown on Figure 2-1.

For EAAA for birds and bats, the EAAA was designated to encompass the surrounding mountain slopes and the valleys. The EAAA for birds and bats encompasses an area of 4507 km² and is shown on Figure 2-2.

Within the EAAA, an Area of Influence of the Project on biodiversity values was designated. For flora species, since the main expected impact source is ground preparation during construction phase, and secondary impacts of habitat degradation during operation, the Aol was designated as extending 2 km from the Project footprint. A similar approach was taken for terrestrial fauna species (amphibians, reptiles, and non-bat mammals) however since these species are more mobile, the Aol was designated as extending 5 km from all Project components. For avifauna (birds and bats), which are highly mobile and migratory, and can utilize much larger territories, the extent of impact needs to be studied in a wider area. The primary expected impact source is due to interactions with moving and electrified Project components. Therefore, an Aol of 15 km was adopted. This Aol also ensures coverage of Project roads which are secondary sources of impact for avifauna. Project Aol for all taxa is shown on **Figure 2-3**.

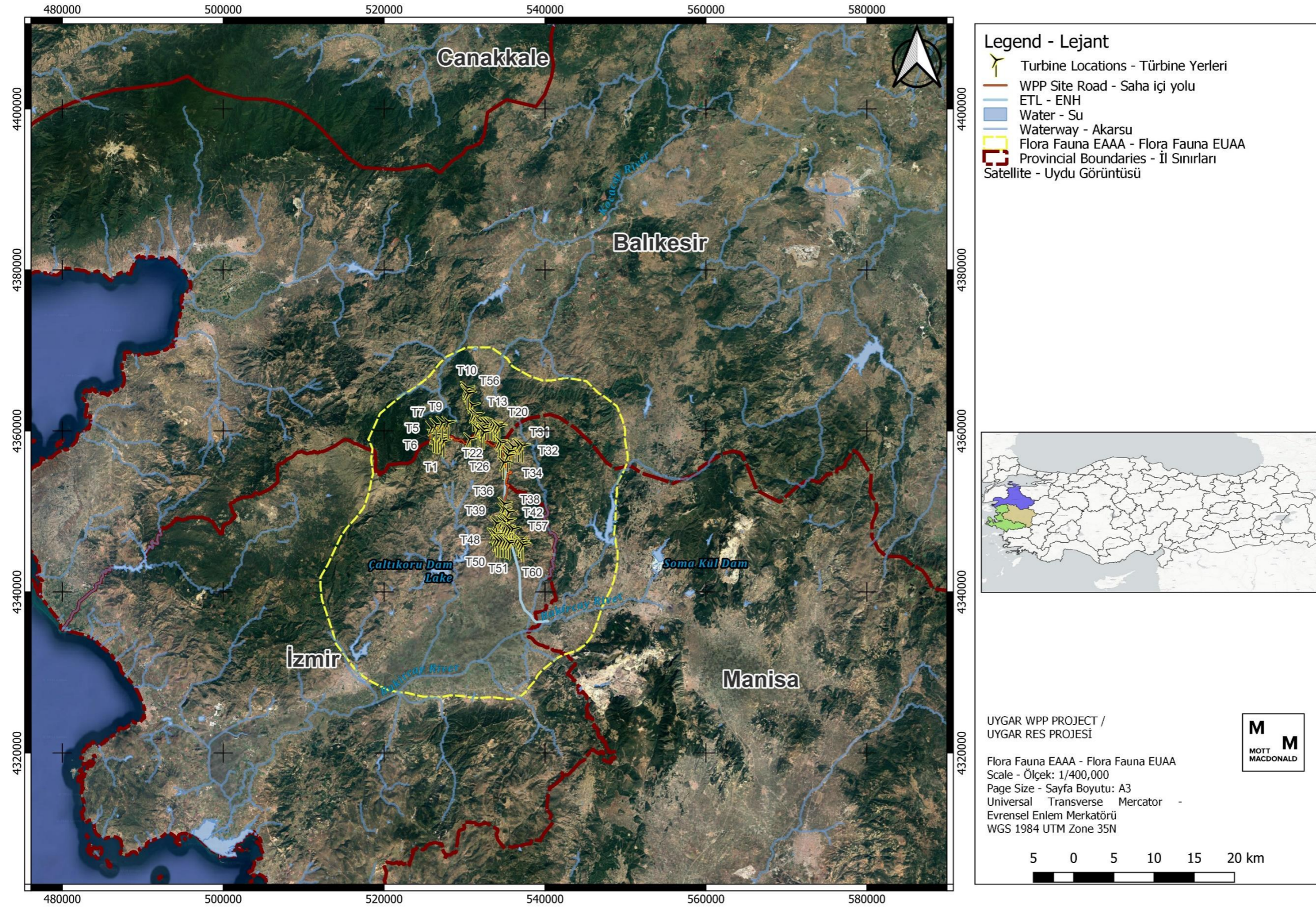


Figure 2-1: EAAA for Flora and Terrestrial Fauna for the Project.

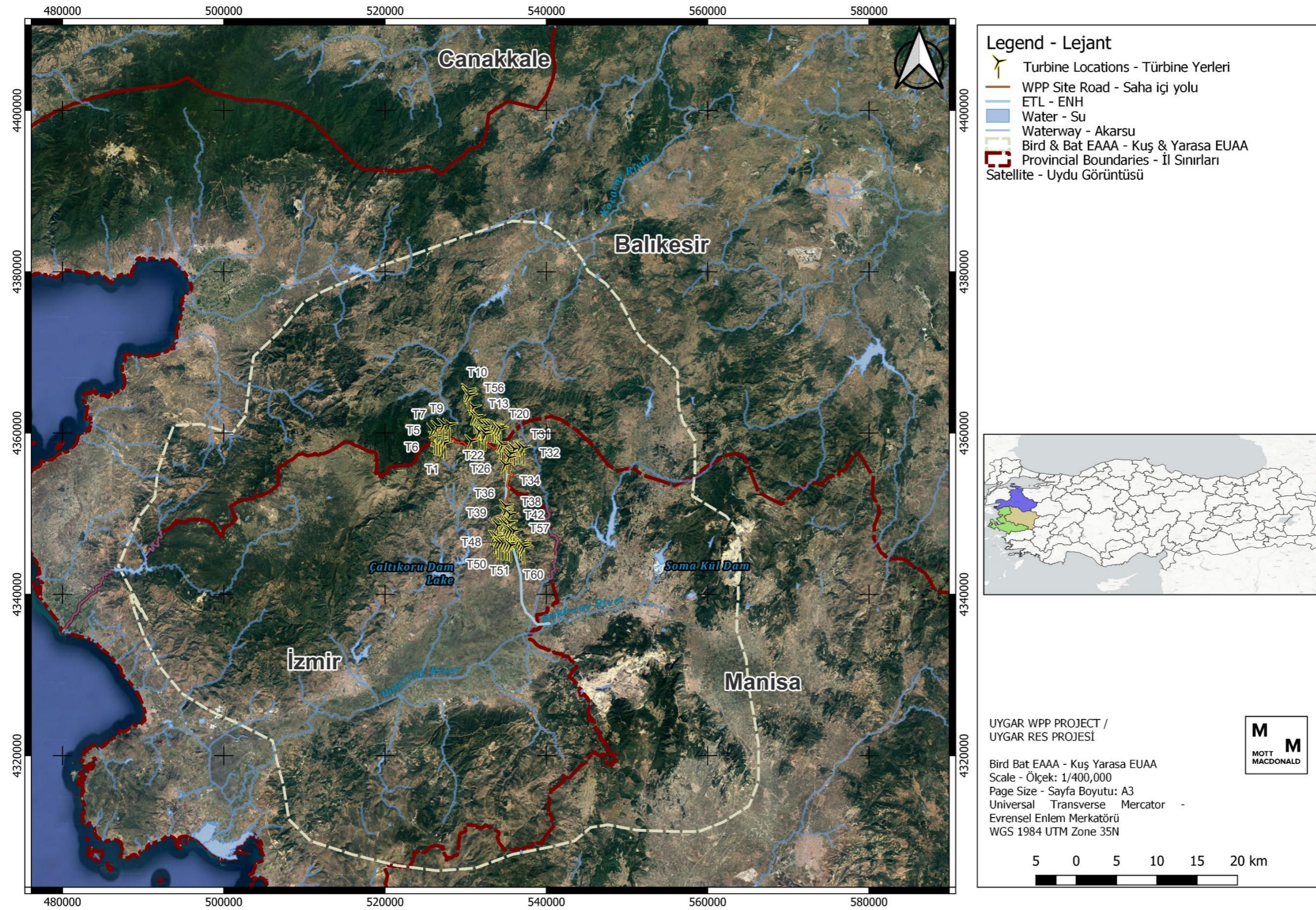


Figure 2-2: EAAA for Birds and Bats for the Project.

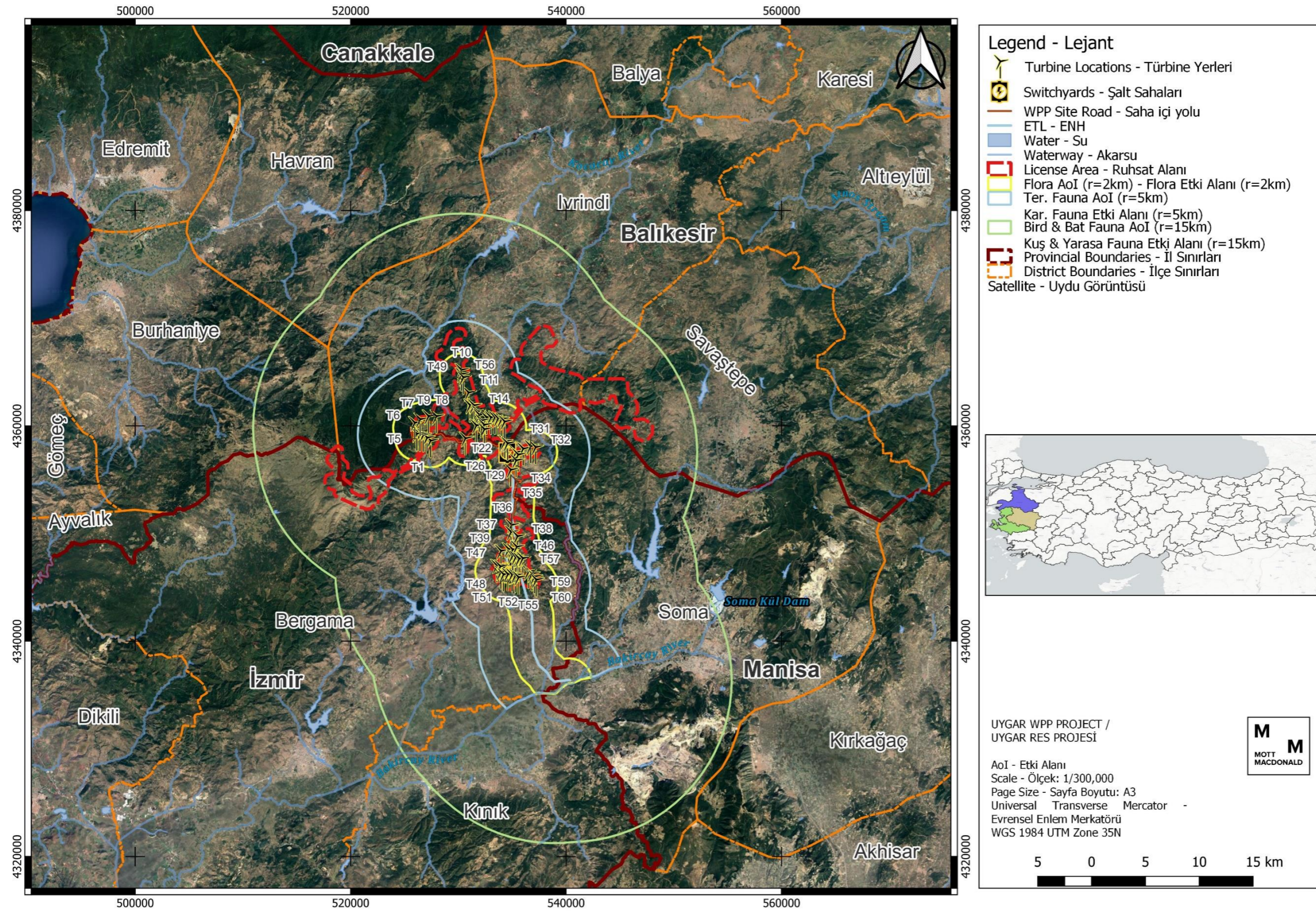


Figure 2-3: AoI for different biological taxa for the Project

2.4 Limitations and Assumptions

The Consultant undertakes the CHA study given the following important caveats and limitations:

1. **Field survey duration:** A very limited field survey was undertaken which can be described better as a field reconnaissance survey that lasted a day. Given the limited timescale, it was not possible to undertake the biodiversity baseline surveys for appropriate duration or effort before the completion of the CHA. The visit was partial due to the following reasons,
 - Site roads are only partially accessible by all terrain vehicle,
 - No time was available to cover the site on foot.
2. **Field survey season:** The season (autumn) of the reconnaissance survey was not very conducive to studying the biodiversity features of the Project. Only a general impression of the habitat characteristics was obtained.
3. **Field survey coverage:** Only a limited portion of the Project area was able to be accessed. The entirety of the Project was not visited due to lack of vehicle accessible roads and lack of time to cover the area on foot.
4. **Desktop analysis:** The desktop component relies heavily on National EIA field studies at the Project area. However, the National EIA biodiversity surveys have deficiencies in meeting lender methodology and standards. One of the most significant deficiencies was pertaining to the Vantage Point surveys and Collision Risk Model. Additionally, Bat Activity Index is not available.
5. **Critical Habitat Assessment (CHA):** Due to time constraints of the assessment process and the quality/quantity of the field data available from the National EIA study, only a high-level CHA can be conducted. Present CHA relies mainly on (1) Desktop components and (2) National EIA surveys which are only considered preliminary.
6. **Field surveys proposed:** Surveys for baseline collection in 2024 were scheduled by the Project company and will be used to update the present CHA study.

2.5 Critical Habitat Assessment Criteria

A high-level screening was undertaken to identify the likely occurrence of species and habitats that could trigger Critical Habitat using the IFC PS6 Guidance Note 6 (IFC, 2019). These species included IUCN Critically Endangered (CR) and Endangered (EN) species, restricted-range and migratory/ congregatory species that were identified with IUCN geographic ranges within the Ecologically Appropriate Area of Analysis (EAAA). Likelihood of occurrence was evaluated based on consultation with local biodiversity specialists, landcover mapping, habitat preferences of the species etc.

Critical Habitat Criteria are as follows and should form the basis of any critical habitat assessment:

- Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species
- Criterion 2: Endemic or restricted-range species
- Criterion 3: Migratory or congregatory species
- Criterion 4: Highly threatened and/or unique ecosystems
- Criterion 5: Key evolutionary processes

Projects that are located within internationally and/or nationally recognized areas of high biodiversity value may require a critical habitat assessment. Examples include the following:

- Areas that meet the criteria of the IUCN's Protected Area Categories Ia, Ib and II,
- Key Biodiversity Areas (KBAs), which encompass Important Bird and Key Biodiversity Areas (IBAs, KBAs),

- UNESCO Natural and Mixed World Heritage Sites,
- Sites that fit the designation criteria of the Alliance for Zero Extinction (AZE)

Quantitative thresholds for triggering Critical Habitat for Criteria 1-4 are described in Table 2-3.

Table 2-3: Quantitative thresholds for triggering Critical Habitat for Criteria 1-4

Criteria	Quantitative Thresholds
1. Critically Endangered (CR) / Endangered (EN) Species	(a) Areas that support globally important concentrations of an IUCN Red-listed EN or CR species ($\geq 0.5\%$ of the global population AND ≥ 5 reproductive units of a CR or EN species). (b) Areas that support globally important concentrations 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 and meet the thresholds in GN72(a). (c) As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.
2. Endemic / Restricted-range Species⁹	(a) Areas that regularly hold $\geq 10\%$ of the global population size AND ≥ 10 reproductive units of a species.
3. Migratory / Congregatory Species	(a) Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle. (b) Areas that predictably support ≥ 10 percent of the global population of a species during periods of environmental stress.
4. Highly Threatened / Unique Ecosystems	(a) Areas representing $\geq 5\%$ of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN. (b) Other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning.

Criterion 1-3: Species Biodiversity Values

In evaluating Uygur WPP biodiversity values for criterion 1-3, species demonstrated to regularly occur on site (confirmed through survey or considered likely to be present) were screened against the relevant criteria listed in the table above. Taking into consideration factors such as habitat suitability, movements patterns, foraging and breeding habits within the EAAA were assessed for each species to identify potential critical habitat triggers. Since the population size data of the species in the Project area is in the form of relative abundance for the flora species, the population data was evaluated accordingly.

Relative abundance is calculated by local abundance / dominance method using Braun-Blanquette and Pavillard cover percentage scale. The scale is given below:

- Abundant species, weak cover percentage 1
- Abundant species or cover percentage more than 5% 2
- Cover percentage between 25% and 50% 3
- Cover percentage between 50% and 75% 4
- Cover percentage between 75% and 100% 5

For bat species, since both Bat Activity Index is unavailable from the Project area (or a nearby comparable project), and population (global and regional) data are very limited, it is not feasible to undertake CHA based on population sizes and predicted impact on populations. Therefore, all available information was gathered for the species which were observed or clearly indicated

⁹ For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an extent of occurrence (EOO) less than 50,000 km²

For coastal, riverine, and other aquatic species in habitats that do not exceed 200 km width at any point (for example, rivers), restricted range is defined as having a global range of less than or equal to 500km linear geographic span (i.e., the distance between occupied locations furthest apart).

in literature for the area, and Priority Biodiversity Feature designations were made based on assigning 1 point each for the following criteria: (1) conservation status is VU or higher, (2) collision risk is high (half point for medium) and (3) species is a mid or long-distance migrant. Species which scored 2 or 3 were included as Priority biodiversity feature.

Criterion 4: Highly Threatened / Unique Ecosystems

A desk study was undertaken to identify if a formal IUCN Red List of Ecosystems assessment has been performed in the EAAA. Where no formal IUCN assessment has been undertaken, a search for national/regional level assessments, which use systematic methods, is undertaken and identified. The presence of Annex I priority habitats designated in the EU Habitats Directive was also considered in line with EBRD PR6.

Criterion 5: Key Evolutionary Processes

The structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation, as well as combinations of these variables, can influence the evolutionary processes that give rise to regional configurations of species and ecological properties such as genetically unique populations or subpopulations of plant and animal species. Maintaining these key evolutionary processes inherent in a landscape as well as the resulting species (or subpopulations of species) is important for 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, ensure the evolutionary flexibility in a system.

The determination of critical habitat for Key Evolutionary Processes is determined qualitatively on a case-by-case basis and heavily reliant on scientific knowledge (IFC, 2019); therefore, a literature review would need to be undertaken as part of a full CHA to assess if the EAAA includes sites where key evolutionary processes occur for biodiversity values.

Priority Biodiversity Features (PBF)

Priority biodiversity features have a high, but not the highest, degree of irreplaceability and/or vulnerability. Although a level below critical habitat in sensitivity, they still require careful consideration during project assessment and impact mitigation.

EBRD PR6 defines priority biodiversity features (PBF) as including:

- threatened habitats,
- vulnerable species,
- significant biodiversity features identified by a broad set of stakeholders or governments (such as Key Biodiversity Areas or Important Bird Areas), and
- ecological structure and functions needed to maintain the viability of priority biodiversity features.

3 Baseline Conditions

3.1 Internationally Recognised and Nationally Protected Areas

Uygar WPP Aol is not located within any protected or international recognized area. The external ETL (Bayramic connection) which might be built and operated by TEIAS at a future date might overlap KBAs. Although Uygar WPP might connect to this ETL for grid balancing in the future, the external ETL is not a part of the Project.

3.2 Habitats and Flora

The dominant habitat type of the project impact area consists mostly of damaged red pine-oak and damaged black pine-oak communities. Apart from these forest habitats, there are forest glades where under grazing pressure, tree plantation areas and subalpine meadows. No endangered plant species were found in Project footprint during National EIA study; however, three vulnerable plant species were identified within the impact area. Other identified endemic species are in the LC category.

The recorded habitats are listed in the Table 3-1 below, along with their wide distribution areas within the study area and Figure 3.1 shown the determined habitat types in Aol. The amount of habitat lost due to roads, turbine footprints and switchyard area are given in Table 3-2 through Table 3.6. Since a state built single carriageway with two lanes is available as access road, there's no habitat loss associated with access road.

Table 3-1: Habitat Types of the Project Aol

Broad habitat type	EUNIS Habitat Type	Extend within Project Footprint (ha)	Percentage (%)
Woodland	G1.7 Thermophilus deciduous woodland	321.4	1.6%
	G4.B Mixed mediterranean pine - thermophilous oak woodland	4472.4	22.8%
	G4.D Mixed Black pine ([Pinus nigra]) - evergreen oak woodland	2274.7	11.6%
Step	E4.4 Calcareous alpine and subalpine grassland	4509.6	23.0%
Inland unvegetated or sparsely vegetated habitats	H3.6 Weathered rock and outcrop habitats	65.4	0.3%
Agricultural Areas	I1.1 Intensive unmixed crops	3643.1	18.6%
	I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods	3923.0	20.0%
	I2.2 Small-scale ornamental and domestic garden areas	142.7	0.7%
Constructed, industrial and other artificial habitats	J1.2 Residential buildings of villages and urban peripheries	242.0	1.2%

Table 3-2 Habitat Loss on Access Roads

EUNIS	Area (ha)	Percentage
	-	-

Table 3-3 Habitat Loss on Site Roads

EUNIS	Area (ha)	Percentage
E4.4 Calcareous alpine and subalpine grassland	25.8	0.6%
G1.7 Thermophilus deciduous woodland	2.3	0.7%
G4.B Mixed mediterranean pine - thermophilous oak woodland	9.8	0.2%

G4.D Mixed Black pine ([Pinus nigra]) - evergreen oak woodland	10.9	0.5%
H3.6 Weathered rock and outcrop habitats	3.8	5.9%
I1.1 Intensive unmixed crops	5.2	0.1%
I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods	17.4	0.4%
Total	75.2	

Table 3-4 Habitat Loss on Turbine Footprint

EUNIS	Area (ha)	Percentage
E4.4 Calcareous alpine and subalpine grassland	32.9	0.7%
G1.7 Thermophilus deciduous woodland	2.7	0.8%
G4.B Mixed mediterranean pine - thermophilous oak woodland	17.1	0.4%
G4.D Mixed Black pine ([Pinus nigra]) - evergreen oak woodland	8.2	0.4%
H3.6 Weathered rock and outcrop habitats	10.2	15.6%
I1.1 Intensive unmixed crops	6.4	0.2%
I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods	11.9	0.3%
Total	89.4	

Table 3-5 Habitat Loss on Switchyard Area

EUNIS	Area	Percentage
E4.4 Calcareous alpine and subalpine grassland	6.2	0.1%
G1.7 Thermophilus deciduous woodland	0.0	0.0%
G4.B Mixed mediterranean pine - thermophilous oak woodland	0.0	0.0%
G4.D Mixed Black pine ([Pinus nigra]) - evergreen oak woodland	0.0	0.0%
H3.6 Weathered rock and outcrop habitats	0.0	0.0%
I1.1 Intensive unmixed crops	0.0	0.0%
I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods	4.1	0.1%
Total	10.3	

Table 3.6: Habitat Loss on ETL

EUNIS	Area (ha)	Percentage
E4.4 Calcareous alpine and subalpine grassland	26.7	0.6%
G4.B Mixed mediterranean pine - thermophilous oak woodland	27.8	0.6%
I1.1 Intensive unmixed crops	55.4	1.5%
I1.3 Arable land with unmixed crops grown by low-intensity agricultural methods	35.5	0.9%
I2.2 Small-scale ornamental and domestic garden areas	3.1	2.2%
Total	148.6	

A list of endemic species, based on all available information with their conservation status and whether they were encountered during field studies at the Project area is provided in National EIA. A total of 420 plant taxa were identified. The full list of species is not presented in this document, vulnerable endemic species are listed in Table 3-7. Given these species have not yet been evaluated by IUCN, national red list categories have been used.

Table 3-7 The endemic species in the Project Aol

Species	National Red List Category
<i>Carlina oligocephala subsp. pallescens</i>	VU
<i>Digitalis trojana</i>	VU
<i>Stipa cacuminis</i>	VU
<i>Ferulago trojana</i>	VU
<i>Cirsium balikesireense</i>	VU
<i>Ranunculus heterorrhizus</i>	VU

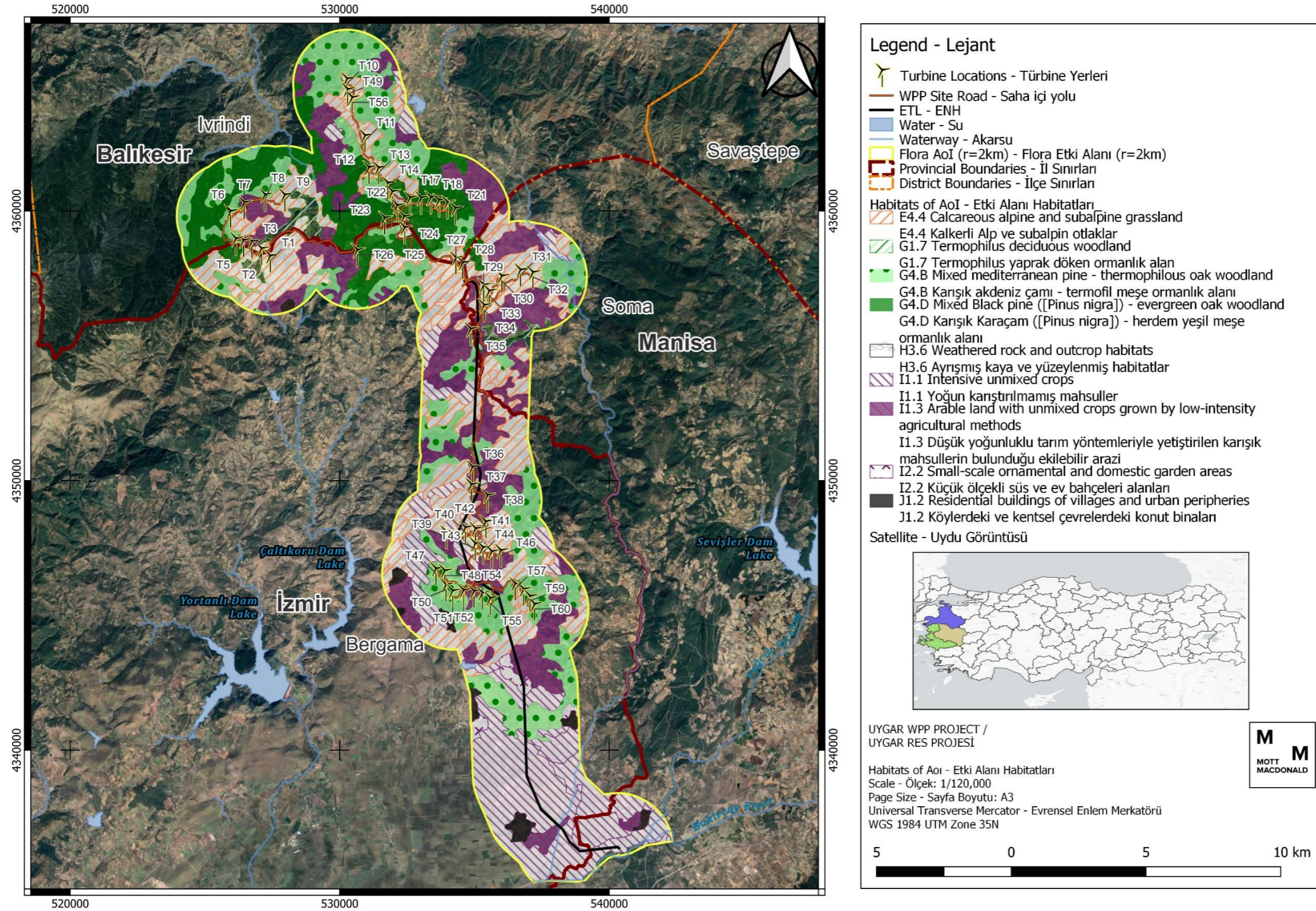


Figure 3.1: Habitat Types of the Project AoI

3.3 Birds

Three groups of bird species are specifically important for the site: (1) large soaring migratory species (storks, pelicans, eagles, buzzards, sparrowhawks, falcons, harriers, kites), (2) large soaring resident species and (3) other resident species of conservation significance. Based on the three groups identified earlier that are significant for the site, target species are provided on Table 3-8.

Table 3-8: List of significant bird species and conservation status

English name	Scientific name	IUCN	National	Bird directive	BERN	L/O*
Levant Sparrowhawk	<i>Accipiter brevipes</i>	LC	VU	Annex I	Appendix II	L
Northern Goshawk	<i>Accipiter gentilis</i>	LC	NT	-	Appendix II	O
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	LC	NT	-	Appendix II	O
Cinereous Vulture	<i>Aegypius monachus</i>	NT	EN	Annex I	Appendix II	L
Golden Eagle	<i>Aquila chrysaetos</i>	LC	-	Annex I	Appendix II	O
Imperial Eagle	<i>Aquila heliaca</i>	VU	EN	Annex I	Appendix II	O
Gray Heron	<i>Ardea cinerea</i>	LC	-	-	Appendix III	O
Purple Heron	<i>Ardea purpurea</i>	LC	VU	Annex I	Appendix II	O
Long-eared Owl	<i>Asio otus</i>	LC	LC	-	Appendix II	O
Eurasian Eagle-Owl	<i>Bubo bubo</i>	LC	-	Annex I	Appendix II	L
Common Buzzard	<i>Buteo buteo</i>	LC	-	-	Appendix II	O
Rough-legged Hawk	<i>Buteo lagopus</i>	LC	-	-	Appendix II	L
Long-legged Buzzard	<i>Buteo rufinus</i>	LC	NT	Annex I	Appendix II	O
White Stork	<i>Ciconia ciconia</i>	LC	-	Annex I	Appendix II	O
Black Stork	<i>Ciconia nigra</i>	LC	-	Annex I	Appendix II	O
Short-toed Snake-Eagle	<i>Circaetus gallicus</i>	LC	VU	Annex I	Appendix II	O
Eurasian Marsh-Harrier	<i>Circus aeruginosus</i>	LC	NT	Annex I	Appendix II	O
Hen Harrier	<i>Circus cyaneus</i>	LC	DD	Annex I	Appendix II	O
Pallid Harrier	<i>Circus macrourus</i>	NT	CR	Annex I	Appendix II	L
Montagu's Harrier	<i>Circus pygargus</i>	LC	EN	Annex I	Appendix II	O
Greater Spotted Eagle	<i>Clanga clanga</i>	VU	VU	Annex I	Appendix II	L
Lesser Spotted Eagle	<i>Clanga pomarina</i>	LC	EN	Annex I	Appendix II	L
Black-winged Kite	<i>Elanus caeruleus</i>	LC	-	Annex I	Appendix II	L
Lanner Falcon	<i>Falco biarmicus</i>	LC	VU	Annex I	Appendix II	L
Saker Falcon	<i>Falco cherrug</i>	EN	CR	Annex I	Appendix II	L
Merlin	<i>Falco columbarius</i>	LC	-	Annex I	Appendix II	O
Eleonora's Falcon	<i>Falco eleonorae</i>	LC	EN	Annex I	Appendix II	L
Lesser Kestrel	<i>Falco naumanni</i>	LC	VU	Annex I	Appendix II	L
Peregrine Falcon	<i>Falco peregrinus</i>	LC	VU	Annex I	Appendix II	O
Eurasian Hobby	<i>Falco subbuteo</i>	LC	-	-	Appendix II	O
Eurasian Kestrel	<i>Falco tinnunculus</i>	LC	-	-	Appendix II	O
Red-footed Falcon	<i>Falco vespertinus</i>	VU	-	Annex I	Appendix II	O

English name	Scientific name	IUCN	National	Bird directive	BERN	L/O*
Bearded Vulture	<i>Gypaetus barbatus</i>	NT	EN	Annex I	Appendix II	L
Eurasian Griffon	<i>Gyps fulvus</i>	LC	EN	Annex I	Appendix II	L
White-tailed Eagle	<i>Haliaeetus albicilla</i>	LC	CR	Annex I	Appendix II	L
Booted Eagle	<i>Hieraetus pennatus</i>	LC	VU	Annex I	Appendix II	O
Black Kite	<i>Milvus migrans</i>	LC	EN	Annex I	Appendix II	L
Red Kite	<i>Milvus milvus</i>	LC	DD	Annex I	Appendix II	L
Egyptian Vulture	<i>Neophron percnopterus</i>	EN	VU	Annex I	Appendix II	O
Osprey	<i>Pandion haliaetus</i>	LC	DD	Annex I	Appendix II	L
Dalmatian Pelican	<i>Pelecanus crispus</i>	NT	VU	Annex I	Appendix II	O
Great White Pelican	<i>Pelecanus onocrotalus</i>	LC	EN	Annex I	Appendix II	L
European Honey-buzzard	<i>Pernis apivorus</i>	LC	NT	Annex I	Appendix II	O
Eurasian Spoonbill	<i>Platalea leucorodia</i>	LC	EN	Annex I	Appendix II	L
Glossy Ibis	<i>Plegadis falcinellus</i>	LC	EN	Annex I	Appendix II	L
European Turtle-Dove	<i>Streptopelia turtur</i>	VU	VU	Annex II B	Appendix III	O

*L: Literature, O: Observation

3.4 Bats

A list of bat species, their conservation status, collision risk and whether they were observed in National EIA (O) or at other wind farms nearby / indicated in literature (L) are provided in Table 3-9.

Table 3-9: List of bat species, conservation status, collision risk

Common Name	Scientific Name	IUCN Global	IUCN EU	IUCN Med	BE RN	EU Habitat Directive	Collision Risk	L/O*
Western Barbastelle	<i>Barbastella barbastellus</i>	NT	VU	NT	I, II	II, IV	Medium	L
Anatolian Serotine	<i>Eptesicus anatolicus</i>	LC	-	-	I, II	IV	Medium	-
Botta's Serotine	<i>Eptesicus bottae</i>	LC	-	LC	I, II	IV	Medium	-
Serotine	<i>Eptesicus serotinus</i>	LC	-	-	II	IV	Medium	O
Savi's Pipistrelle	<i>Hypsugo savii</i>	LC	LC	LC	II	IV	High	O
Schreiber's Bent-winged Bat	<i>Miniopterus schreibersii</i>	VU	-	-	I, II	II, IV	High	O
Alcathoe Bat	<i>Myotis alcathoe</i>	DD	-	-	II	IV	Low	L
Steppe Whiskered Bat	<i>Myotis aurascens</i>	LC	LC	LC	II	IV	Low	L
Bechstein's Myotis	<i>Myotis bechsteinii</i>	NT	VU	NT	I, II	II, IV	Low	L
Lesser Mouse-eared Myotis	<i>Myotis blythii</i>	LC	NT	NT	I, II	II, IV	Low	L
Brandt's Myotis	<i>Myotis brandtii</i>	LC	-	-	II	IV	Low	-
Long-fingered Bat	<i>Myotis capaccinii</i>	VU	VU	VU	I, II	II, IV	Low	L
Daubenton's Myotis	<i>Myotis daubentonii</i>	LC	-	-	II	IV	Low	L

Geoffroy's Bat	<i>Myotis emarginatus</i>	LC	LC	LC	I, II	II, IV	Low	O
Greater Mouse-eared Bat	<i>Myotis myotis</i>	LC	LC	LC	I, II	II, IV	Low	O
Whiskered Myotis	<i>Myotis mystacinus</i>	LC	LC	LC	II	IV	Low	L
Natterer's Bat	<i>Myotis nattereri</i>	LC	-	-	II	IV	Low	L
Schaub's Myotis	<i>Myotis schaubi</i>	DD	-	DD	II	IV	Low	-
Giant Noctule	<i>Nyctalus lasiopterus</i>	VU	DD	NT	II	IV	High	L
Lesser Noctule	<i>Nyctalus leisleri</i>	LC	LC	LC	II	IV	High	O
Noctule	<i>Nyctalus noctula</i>	LC	LC	LC	II	IV	High	O
Desert Long-eared Bat	<i>Otonycteris hemprichii</i>	LC	-	-	II	IV	Unknown	-
Kuhl's Pipistrelle	<i>Pipistrellus kuhlii</i>	LC	LC	LC	II	IV	High	O
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	LC	LC	LC	II	IV	High	O
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	LC	-	-	III	IV	High	O
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	LC	LC	LC	II	IV	High	L
Brown Long-eared Bat	<i>Plecotus auritus</i>	LC	-	-	II	IV	Low	L
Grey Long-eared Bat	<i>Plecotus austriacus</i>	NT	NT	-	II	IV	Low	L
Mediterranean Long-eared Bat	<i>Plecotus kolombatovici</i>	LC	NT	LC	II	IV	Low	L

*L: Literature, O: Observation

3.5 Terrestrial fauna (non-bat mammals, reptiles, amphibians)

During the National EIA terrestrial fauna studies, 8 amphibian species, 25 reptile species and 21 non-bat mammals were either observed or were identified as relevant in desktop components. Vast majority of these species are common and widespread. None of them are endemic. A list of significant species is provided in Table 3-10.

Table 3-10: List of significant terrestrial fauna

Common Name	Scientific Name	IUCN	BERN	Habitats directive	L/O*
Common tortoise	<i>Testudo graeca</i>	VU	Appendix I-II	Appendix II-IV	O
Roe deer	<i>Capreolus capreolus</i>	LC	Appendix III	-	L
Marbled polecat	<i>Vormela peregusna</i>	VU	Appendix I-II	Appendix II-IV	L

*L: Literature, O: Observation

3.6 Invertebrates

Big-Bellied Glandular Bush-Cricket is found in forest, scrub and grassland habitats at altitudes ranging from 0 to 1,270 metres. The species inhabits steppe-like habitats dominated by xeric grasses and sparse scrub, in some areas like the Aegean coast of Anatolia it enters Mediterranean vegetation, such as sparse xerothermic oak forests or scrub or mesoxeric grass associations. The species prefers sparse vegetation cover areas in terms of forest and shrub areas. The Project Aol does not include these type of vegetation cover.

4 Critical Habitat Assessment

Evaluation against each criterion is carried out in table format which includes potential trigger species, their IUCN status, relation to the Project AoA, observation status in the AoA and summary of findings. Potential species were selected in line with the CHA Criteria from literature and survey findings. For Criterion 1 to 3, in case of the limited information to estimate numbers of individuals of potentially qualifying species within the AoA, expert opinion has been applied to evaluate the importance of the identified potential Critical Habitat in terms of global populations. The EOO of species has been applied as a surrogate for local population data. This means that a precautionary approach was applied in the evaluation against PS6 thresholds. Global EOO information was obtained from the IUCN Red List Database which covers all of the potential Critical Habitat trigger species. Local distribution of the plant species for the AoA was derived from bizimbitkiler.org and TUBIVES (Turkish Plants Data Service). In some cases, the presence of species in the AoA has been inferred based on habitat suitability and in cases where presence has been confirmed, the distribution within the species range and project AoA has been assumed. This results in a conservative Critical Habitat evaluation.

4.1 Criteria 1-3: Species Biodiversity Values

For Criterion 1, CR, EN and VU species were examined whether the Project area supports more than 0.5% globally important concentrations of these species or whether the Project could lead to a decrease in population of species categorized as VU. For this examination, both national and international categories of these species were considered. For Criterion 3, migratory species were examined whether the Project area sustains more than 1% of global population in a regular basis or whether the area supports more than 10% of the global population of the species during environmental stress period.

The global population, the extent of occurrence and the Project area were considered to estimate the global range of species in Aol to assign Critical Habitat trigger status of species based on Criterion 1 and 3. When the observed number of species was unknown or species information was obtained from literature; the global population, the extent of occurrence and the Project area were considered to estimate the global range of species in Aol to assign Critical Habitat trigger status of species based on Criterion 1 and 3.

For bat species, since both Bat Activity Index is unavailable from the Project area (or a nearby comparable project), and population (global and regional) data are very limited, it is not feasible to undertake CHA based on population sizes and predicted impact on populations. Therefore, all available information was gathered for the species which were observed or clearly indicated in literature for the area, and Priority Biodiversity Feature designations were made based on assigning one point each for the following criteria: (1) conservation status is VU or higher, (2) collision risk is high (half point for medium) and (3) species is a mid or long-distance migrant. Species which scored 2 or 3 were included as Priority Biodiversity Feature.

For plant species, since global population and population data within the Aol were not available, the Braun-Blanquet cover percentage scale data used by the flora expert in the National EIA process were used in the approach.

Table 4-1 Plant Species Critical Habitat Assessment - Criteria 1- 2

Species	IUCN Red List	National Threatened Status	EU Directive	BERN	Endemic / Restricted Range	Global Population	EOO	Field Observation	Evaluation	CH Trigger or PBF	Lit./ Obs.
<i>Ferulago trojana</i>	-	VU	-	-		Unknown	Unknown	50	<p>Pseudomaquis habitat within the AoA is proper habitats for the species.</p> <p>It is known from the provinces of Çanakkale, Balıkesir and western Turkey. The species is well-adapted to habitats and spread widely.</p> <p>The species covers an area of 75,875 km² exceeding the EOO threshold of 50,000 km².</p> <p>The species population within the EAAA are unlikely to be of significant importance to global populations of the species. Thus, it will not be considered as CH trigger or PBF species.</p>	Not trigger	O
<i>Digitalis trojana</i>	-	VU	-	-	Regional Endemic/ RR	Unknown	Unknown	50	<p>Basic and ultra-basic inland cliffs within the Area of Influence is proper habitats for the species.</p> <p>It is known from the provinces of Çanakkale, Balıkesir, Bursa and Yalova provinces in western Turkey. The species is well-adapted to habitats and spread widely.</p> <p>The total extent of occurrence is less than 29,920 km². This is below the 50,000 km² threshold used to define range restricted species.</p> <p>Conservatively, the EAAA is considered to support a regularly occurring range restricted species and the species will be considered as PBF.</p>	Priority Biodiversity Feature	O
<i>Cirsium balıkesirensense</i>	-	VU	-	-	Regional Endemic/ RR	Unknown	Unknown	200	<p>Based on its habitat preferences, Lowland to montane mediterranean Pinus woodland within the Area of Influence is considered an proper habitat for the species . It is known from Balıkesir, Bursa, Yalova and western Turkey.</p> <p>The total extent of occurrence is less than 29,920 km². This is below the 50,000 km² threshold used to define range restricted species .Conservatively the EAAA is considered to support a regularly occurring range restricted species. Thus, the species will be considered as PBF.</p>	Priority Biodiversity Feature	O
<i>Stipa cacuminis</i>	-	VU	-	-	Regional Endemic/ RR	Unknown	Unknown	100	<p>Basic and ultra-basic inland cliffs within the Area of Influence is proper habitats for the species.</p> <p>The two occurrences of <i>Stipa cacuminis</i> presently are known in between the Sandras Mountain (records from two different summits) in the SW edge of the Western Taurus and the Çamlık area in the western Central Taurus.</p> <p>There is much evidence to assume that <i>S. cacuminis</i> is a hitherto overlooked serpentinophyte with a much wider distribution in the Taurus range and even occurrences outside Turkey.</p> <p>The species covers an area of 95,258 km² in western Turkey, exceeding the EOO threshold of 50,000 km².</p> <p>The species population within the EAAA are unlikely to be of significant importance to global populations of the species. Thus, it will not be considered as CH trigger or PBF species.</p>	Not trigger	O
<i>Ranunculus heterorrhizus</i>	-	VU	-	-	Regional Endemic/ RR	Unknown	Unknown	300	<p>Basic and ultra-basic inland cliffs within the Area of Influence is proper habitats for the species.</p> <p>The species covers an area of 83,629 km² , exceeding the EOO threshold of 50,000 km²</p>	Not trigger	O

Table 4.2: Critical Habitat Assessment for Bird Species depends on Criteria 1-3

Common Name	Scientific name	IUCN	Nat. Red List	Bird Directive	BERN	L/O	Global Population	Population Status	Estimated Extent of occurrence (EOO) (km2)	Estimated birds/year	Cr 1,3 %Global Range in AoA	Evaluation	CH Trigger / PBF
Northern Goshawk	<i>Accipiter gentilis</i>	LC	NT	-	II	O	1000000-2499999	Unknown	113000000	40	0.00	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 40. For Cr3, the Project AoA should support 10000 individuals, so the species does not qualify for this criteria.	Not trigger
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	LC	NT	-	II	O	2000000-3200000	Stable	54400000	166	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 166. For Cr3, the Project AoA should support 20000 individuals, so the species does not qualify for this criteria.	Not trigger
Golden Eagle	<i>Aquila chrysaetos</i>	LC	-	I	II	O	85000-160000	Stable	139000000	3	0.00	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 3. For Cr3, the Project AoA should support 850 individuals, so the species does not qualify for this criteria. Though there were 43 contacts documented in National EIA, it is expected that these are repeat contacts from resident birds. It is more likely that 1-2 breeding pairs are present within the EAAA as estimated. 2024 baseline is expected to clarify present CHA.	Not trigger
Gray Heron	<i>Ardea cinerea</i>	LC	-	-	III	O	500000-2500000	Unknown	136000000	17	0.00	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 17. For Cr3, the Project AoA should support 5000 individuals, so the species does not qualify for this criteria. Though there were 71 contacts documented in National EIA, it is expected that there might be repeat contacts from resident birds.	Not trigger
Purple Heron	<i>Ardea purpurea</i>	LC	VU	I	II	O	180000-380000	Decreasing	109000000	8	0.00	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 8. For Cr3, the Project AoA should support 1800 individuals, so the species does not qualify for this criteria. Though there were 40 contacts documented in National EIA, it is expected that there might be repeat contacts from resident birds.	Not trigger
Long-eared Owl	<i>Asio otus</i>	LC	-	-	II	O	2200000-3700000	Decreasing	80000000	124	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 124. For Cr3, the Project AoA should support 22000 individuals, so the species does not qualify for this criteria. Though the estimated number of birds for a roughly 4000 km2 EAAA is 124, and based on territory sizes up to 200, in reality the species needs both dense vegetation to roost and nest, and open areas to hunt as habitat preference and such a habitat configuration is not present throughout the entire EAAA. In reality, the number of individuals supported by the EAAA is expected to be less. In either case, the species is still well below threshold for critical habitat designation.	Not trigger
Common Buzzard	<i>Buteo buteo</i>	LC	-	-	II	O	2000000-3500000	Increasing	33500000	270	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 270. For Cr3, the Project AoA should support 20000 individuals, so the species does not qualify for this criteria. Though there were 270 contacts documented in National EIA, it is expected that there might be repeat contacts from resident birds.	Not trigger
Long-legged Buzzard	<i>Buteo rufinus</i>	LC	NT	I	II	O	100000-499999	Stable	32300000	14	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 14. For Cr3, the Project AoA should support 1000 individuals, so the species does not qualify for this criteria. Though there were 40 contacts documented in National EIA, it is expected that there might be repeat contacts from resident birds.	Not trigger
White Stork	<i>Ciconia ciconia</i>	LC	-	I	II	O	700000-704000	Increasing	52700000	60	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 60. For Cr3, the Project AoA should support 7000 individuals, so the species does not qualify for this criteria. The results of the National EIA might represent a high count. eBird activity for the EAAA is low, but does not indicate a high level of migratory activity for the species. It is unlikely that the EAAA supports 7000 individuals regularly, but the species will be carefully re-evaluated following 2024 baseline results.	Not trigger

Black Stork	<i>Ciconia nigra</i>	LC	-	I	II	O	24000-44000	Unknown	25100000	5	0.02	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 5, however, since the National EIA study was very limited in scope, primary findings of the 2024 baseline was brought into the CH assessment. Within one field visit, the reservoir and the surrounding fields on the northern end of the EAAA between Buyuk Yenice and Kobaklar Village was found to support 33 individuals. More such suitable habitat which was not covered during the field visit is available within the EAAA, which would approx. quadruple the recorded number of individuals to 132, which itself would raise the % value to 0.6%. The EAAA supporting 240 individuals and therefore triggering Cr3 is within expectation. Species is designated PBF and is expected to qualify for Cr3 following 2024 baseline clarifications.	PBF / Potential Cr3
Short-toed Snake-Eagle	<i>Circaetus gallicus</i>	LC	VU	I	II	O	50000-99999	Stable	48800000	5	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 5. For Cr3, the Project AoA should support 500 individuals, so the species does not qualify for this criteria. Though there were 40 contacts documented in National EIA, it is expected that there might be repeat contacts from resident birds. Extent of migratory activity will be clarified in 2024 baseline.	Not trigger
Eurasian Marsh-Harrier	<i>Circus aeruginosus</i>	LC	NT	I	II	O	60000-110000	Stable	24800000	110	0.02	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 110. For Cr3, the Project AoA should support 6000 individuals, so the species does not qualify for this criteria.	Not trigger
Hen Harrier	<i>Circus cyaneus</i>	LC	DD	I	II	O	330000-512000	Decreasing	34800000	43	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 43. For Cr3, the Project AoA should support 3300 individuals, so the species does not qualify for this criteria.	Not trigger
Montagu's Harrier	<i>Circus pygargus</i>	LC	EN	I	II	O	300000-550000	Decreasing	18000000	76	0.03	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 76. For Cr3, the Project AoA should support 3000 individuals, so the species does not qualify for this criteria.	Not trigger
Merlin	<i>Falco columbarius</i>	LC	-	I	II	O	250000-320000	Stable	103000000	11	0.00	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 11. For Cr3, the Project AoA should support 2500 individuals, so the species does not qualify for this criteria.	Not trigger
Peregrine Falcon	<i>Falco peregrinus</i>	LC	VU	I	II	O	100000-499999	Increasing	413000000	20	0.02	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 20. For Cr3, the Project AoA should support 1000 individuals, so the species does not qualify for this criteria. Though there were 37 contacts documented in National EIA, it is expected that there might be repeat contacts from resident birds. Based on known territory sizes and suitability of habitat within the EAAA, up to 10 breeding pairs might be present.	Not trigger
Eurasian Hobby	<i>Falco subbuteo</i>	LC	-	-	II	O	900000-1500000	Decreasing	49300000	83	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 83. For Cr3, the Project AoA should support 9000 individuals, so the species does not qualify for this criteria.	Not trigger
Eurasian Kestrel	<i>Falco tinnunculus</i>	LC	-	-	II	O	4300000-6700000	Decreasing	106000000	184	0.00	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 184. For Cr3, the Project AoA should support 43000 individuals, so the species does not qualify for this criteria.	Not trigger
Red-footed Falcon	<i>Falco vespertinus</i>	VU	-	I	II	O	287500-400000	Decreasing	3360000	387	0.13	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 387. For Cr3, the Project AoA should support 2875 individuals, so the species does not qualify for this criteria. PBF was designated due to conservation status, however the species is a broad front migrant and is not expected to be encountered in high numbers. Designation will be re-evaluated following 2024 baseline.	PBF
Booted Eagle	<i>Hieraetus pennatus</i>	LC	VU	I	II	O	150000-195000	Stable	62000000	11	0.01	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 11. For Cr3, the Project AoA should support 1500 individuals, so the species does not qualify for this criteria.	Not trigger
European Honey-buzzard	<i>Pernis apivorus</i>	LC	NT	I	II	O	290000-430000	Stable	18200000	72	0.02	The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout	Not trigger

the year is 72. For Cr3, the Project AoA should support 2900 individuals, so the species does not qualify for this criteria.

European Turtle-Dove	<i>Streptopelia turtur</i>	VU	VU	II B	III	O	12800000-47600000	Decreasing	7080000	8165	0.06						The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 8165. For Cr3, the Project AoA should support 128000 individuals, so the species does not qualify for this criteria. PBF was designated due to conservation status.	PBF
Northern Goshawk	<i>Accipiter gentilis</i>	LC	NT	-	II	O	1000000-2499999	Unknown	113000000	40	0.00						The Project EAAA should support at least 1 percent of global population of species to have Critical Habitat trigger species based on Criteria 3. Estimated number of individuals supported throughout the year is 40. For Cr3, the Project AoA should support 10000 individuals, so the species does not qualify for this criteria.	Not trigger

Table 4.3: Critical Habitat Assessment for Bat Species depends on Criteria 1-3

Common Name	Scientific Name	IUCN Global	IUCN EU	IUCN Med	BERN	EU Habitat Directive	L / O	Collision Risk	Migratory status	Population Status	Global Population	Estimated Extent of occurrence (EOO)(km ²)	Cr 1,3 %Global Range in Aol	Score	CH Trigger or Not
Western Barbastelle	<i>Barbastella barbastellus</i>	NT	VU	NT	I, II	II, IV	L	Medium	Mostly sedentary	Declining	Unknown	12455378	-	0.5	Not trigger
Serotine	<i>Eptesicus serotinus</i>	LC	-	-	I, II	IV	O	Medium	mostly sedentary	Stable	Unknown	Unknown	-	0.5	Not trigger
Savi's Pipistrelle	<i>Hypsugo savii</i>	LC	LC	LC	II	IV	O	High	Probably migrant	Stable	Unknown	15658670	-	2	PBF
Schreiber's Bent-winged Bat	<i>Miniopterus schreibersii</i>	VU	-	-	I, II	II, IV	O	High	Mid and long range migrant	Declining	Unknown	19946710	-	3	PBF
Alcathoe Bat	<i>Myotis alcathoe</i>	DD	-	-	I, II	IV	L	Low	-	Unknown	Unknown	2860473	-	0	Not trigger
Steppe Whiskered Bat	<i>Myotis auraszens</i>	LC	LC	LC	I, II	IV	L	Low	-	Stable	Unknown	4766158	-	0	Not trigger
Bechstein's Myotis	<i>Myotis bechsteinii</i>	NT	VU	NT	I, II	II, IV	L	Low	mostly sedentary	Declining	Unknown	6640673	-	0	Not trigger
Lesser Mouse-eared Myotis	<i>Myotis blythii</i>	LC	NT	NT	II	II, IV	L	Low	mostly sedentary	Declining	Unknown	23471950	-	0	Not trigger
Long-fingered Bat	<i>Myotis capaccinii</i>	VU	VU	VU	II	II, IV	L	Low	Mid-range seasonal migrant	Declining	Unknown	5387022	-	2	PBF
Daubenton's Myotis	<i>Myotis daubentonii</i>	LC	-	-	II	IV	L	Low	Facultative migrant	Stable	Unknown	Unknown	-	1	Not trigger
Geoffroy's Bat	<i>Myotis emarginatus</i>	LC	LC	LC	II	II, IV	O	Low	mostly sedentary	Stable	Unknown	15654608	-	0	Not trigger
Greater Mouse-eared Bat	<i>Myotis myotis</i>	LC	LC	LC	III	II, IV	O	Low	Mid-range migrant	Stable	Unknown	7071111	-	1	Not trigger
Whiskered Myotis	<i>Myotis mystacinus</i>	LC	LC	LC	II	IV	L	Low	mostly sedentary	Unknown	Unknown	13823224	-	0	Not trigger

¹⁰ Hutterer, Rainer & Ivanova, T. & Meyer-Cords, C.H. & Rodrigues, Luisa. (2005). Bat migration in europe. A review of banding data and literature. Federal Agency for Nature Conservation

Common Name	Scientific Name	IUCN Global	IUCN Eu	IUCN Med	BERN	EU Habitat Directive	L/O	Collision Risk	Migratory status	Population Status	Global Population	Estimated Extent of occurrence (EOO)(km ²)	Cr 1,3 %Global Range in Aol	Score	CH Trigger or Not
Natterer's Bat	<i>Myotis nattereri</i>	LC	-	-	II	IV	L	Low	Facultative migrant	Stable	Unknown	16030693	-	1	Not trigger
Giant Noctule	<i>Nyctalus lasiopterus</i>	VU	DD	NT	I, II	IV	L	High	Long distance migrant	Declining	0-9999	8955906	-	3	PBF
Lesser Noctule	<i>Nyctalus leisleri</i>	LC	LC	LC	I, II	IV	O	High	Long distance migrant	Unknown	Unknown	20171114	-	2	PBF
Noctule	<i>Nyctalus noctula</i>	LC	LC	LC	I, II	IV	O	High	Long distance migrant	Unknown	Unknown	24101079	-	2	PBF
Kuhl's Pipistrelle	<i>Pipistrellus kuhlii</i>	LC	LC	LC	II	IV	O	High	Sedentary	Unknown	Unknown	51385949	-	1	Not trigger
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	LC	LC	LC	II	IV	O	High	Long distance migrant	Unknown	Unknown	11175990	-	2	PBF
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	LC	-	-	II	IV	O	High	Long distance migrant	Stable	Unknown	Unknown	-	2	PBF
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	LC	LC	LC	II	IV	L	High	Probably migrant	Unknown	Unknown	10673041	-	2	PBF
Brown Long-eared Bat	<i>Plecotus auritus</i>	LC	-	-	II	IV	L	Low	Sedentary	Stable	Unknown	12039091	-	0	Not trigger
Gray Long-eared Bat	<i>Plecotus austriacus</i>	NT	NT	0	II	IV	L	Low	Sedentary	Declining	Unknown	6047987	-	0	Not trigger
Mediterranean Long-eared Bat	<i>Plecotus kolombatovi</i>	LC	NT	LC	II	IV	L	Low	Sedentary	Declining	Unknown	Unknown	-	0	Not trigger

Table 4.4: Critical Habitat Assessment for Terrestrial Fauna Species depends on Criteria 1-3

Common Name	Scientific Name	IUCN	BERN	Habitats directive	L/O	Global Population	Population Status	Estimated Extent of occurrence (EOO)(km ²)	Cr 1,3 %Global Range in Aol	Evaluation	CH Trigger or Not
Common tortoise	<i>Testudo graeca</i>	VU	Appendix I-II	Appendix II-IV	O	Unknown	Unknown	Unknown	-	Due to the lack of information on the population status of the species, it is difficult to provide an assessment of whether the species critical habitat trigger or not. Since the IUCN category is VU, it has been evaluated as a priority biodiversity feature under Criterion 1b.	PBF
Marbled Polecat	<i>Vormela peregusna</i>	VU	Appendix II	II, IV	L	Unknown	Decreasing	>20,000	-	Due to the lack of information on the population status of the species, it is difficult to provide an assessment of whether the species critical habitat trigger or not. Since the IUCN category is VU and population status is decreasing, it has been evaluated as a priority biodiversity feature under Criterion 1b.	PBF

Table 4.5: Critical Habitat Assessment for Invertebrate Species depends on Criteria 1-3

Common Name	Scientific Name	IUCN	BERN	Habitats directive	L/O	Global Population	Population Status	Estimated Extent of occurrence (EOO)(km ²)	Cr 1,3 %Global Range in Aol	Evaluation	CH Trigger or Not
Big-Bellied Glandular Bush-Cricket	<i>Bradyporus macrogaster</i>	EN	-	-	L	Unknown	Decreasing	200000	-	<p>Big-Bellied Glandular Bush-Cricket is found in forest, scrub and grassland habitats at altitudes ranging from 0 to 1,270 metres.</p> <p>The species inhabits steppe-like habitats dominated by xeric grasses and sparse scrub, in some areas like the Aegean coast of Anatolia it enters Mediterranean vegetation, such as sparse xerothermic oak forests or scrub or mesoxeric grass associations.</p> <p>The species prefers sparse vegetation cover areas in terms of forest and shrub areas. The Project Aol does not include these type of habitats.</p> <p>Thus, the species is not considered as critical habitat trigger species.</p>	Not Trigger

4.2 Criteria 4 Highly Threatened / Unique Ecosystems Assessment

Based on EUNIS level 3, 12 habitat types were determined based on desk study and field observation.

Table 4-6 Criterion 4 Highly Threatened / Unique Ecosystems Assessment

EUNIS Habitat Type	EU Habitat Directive Annex I	IUCN	CH/PBF
C1.2-Surface standing waters	-	-	No
E5.3-Pteridium aquilinum fields	-	-	No
E1.3-Mediterranean xeric grassland	-	-	No
F5.3-Pseudomaquis	-	-	No
G3.5-Pinus nigra woodland	-	-	No
G3.7-Lowland to montane mediterranean Pinus woodland	-	-	No
G3.F-Highly artificial coniferous plantations	-	-	No
G2.9-Evergreen orchards and groves	-	-	No
H3.2-Basic and ultra-basic inland cliffs	(8210) Not Priority	-	No
I1.2-Mixed crops of market gardens and horticulture	-	-	No
J1.2-Residential buildings of villages and urban peripheries	-	-	No

4.3 Criterion 5 Key evolutionary processes

The Project is not substantially different from the surrounding landscape in terms of elevation or moisture gradients, or any other geological, ecological, or evolutionary factors that would suggest that the area is vital for sustaining unique or distinctive evolutionary processes. There is no isolation, spatial heterogeneity, and wealth of environmental gradients. Therefore, the Project does not trigger Criterion 5

5 CONCLUSION

The present CHA results are presented below. Due to gaps in both white and grey literature, and Project specific baseline, it was evaluated that not enough data exists in order to safely conclude or rule out Critical Habitat triggers. The CHA is therefore preliminary and high level. The biodiversity values that were identified as sensitive are presented below as PBF triggers, with the recommendation that further baseline collection is carried out in 2024. According to the results of enhanced baseline, accurate identification of CH trigger species will be possible. As such, the present CHA study is expected to be significantly revised with robust, Project specific data.

Based on the data available for the Critical Habitat Assessment, potential Critical Habitat trigger species are given in **Table 5-1** and priority biodiversity features are listed in Table 5-2.

Table 5-1 Critical Habitat Trigger Species

Scientific Name	IUCN	CH Trigger Criterion	Source
Bird			
<i>Ciconia nigra</i>		Potential Cr3	Observation

Table 5-2 Priority Biodiversity Features

Scientific Name / Habitat Type	IUCN	Source
Plant		
<i>Digitalis trojana</i>	VU	Observation
<i>Cirsium balikesireense</i>	VU	Observation
Bird		
<i>Ciconia nigra</i>	LC	Observation
<i>Falco vespertinus</i>	VU	Observation
<i>Streptopelia turtur</i>	VU	Observation
Mammal		
<i>Hypsugo savii</i>	LC	Observation
<i>Miniopterus schreibersii</i>	VU	Observation
<i>Myotis capaccinii</i>	VU	Literature
<i>Nyctalus lasiopterus</i>	VU	Literature
<i>Nyctalus leisleri</i>	LC	Observation
<i>Nyctalus noctula</i>	LC	Observation
<i>Pipistrellus nathusii</i>	LC	Observation
<i>Pipistrellus pipistrellus</i>	LC	Observation
<i>Pipistrellus pygmaeus</i>	LC	Literature
<i>Vormela peregusna</i>	VU	Literature
Reptile		
<i>Testudo graeca</i>	VU	Observation

