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Akköy Wind Power Plant (WPP) Project

Critical Habitat Assessment (CHA)

June 2024

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Definitions and Abbreviations

Abbreviation	Definition
AoA	Area of Analysis
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
RAMSARr	Convention on Wetlands of International Importance Especially as Waterfowl Habitat
VP	Vintage Point
VU	Vulnerable
WPP	Wind Power Plant

Executive summary

CHA for Akköy WPP Project has been undertaken in line with IFC PS6 and corresponding GN to identify areas which are considered as critical habitats and critical habitats triggering species. The 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 EAAA. 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 CR and/or EN 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 EAAA.

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, one plant species, three bird species, seven mammal species and one reptile were identified as PBF for a total of 12 PBF triggers. One bird species was identified as potential critical habitat species to be clarified in 2024 baseline.

1 Introduction

1.1 Project Background

Enerjisa Üretim Santralleri Anonim Şirketi has been awarded to invest in the Aydın Connection Region on 30 May 2019 within the scope of “Renewable Energy Resource Areas (YEKA) Regulation” and “Allocation of Wind Energy Based Renewable Energy Resource Areas (YEKA) and Total Connection Capacities”¹. Upon this award, a “YEKA Use Rights Agreement” was signed between Enerjisa Üretim Santralleri Anonim Şirketi and Ministry of Energy and Natural Resources (MoENR) on 09 March 2020. Subsequently, the “YEKA Use Rights Agreement” signed by Enerjisa Üretim Santralleri Anonim Şirketi for the Aydın Connection Region was transferred to Enerjisa Enerji Üretim Anonim Şirketi (“Enerjisa Üretim or “the Project Company”) with the transfer agreements signed on 03 June 2021.

Akköy WPP Project (“the Project”) with six turbines and 25.2 MW_m/25.2 MW_e total installed power, is planned to be established by Enerjisa Üretim in Aydın Province, Didim District, Akköy and Yeniköy Villages. The Project components consist of six turbines, a switchyard, Project roads (i.e., access and site roads) and an energy transmission line (ETL) as a Project associated facility. 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 and Marmara Regions of western Turkey; aiming to evaluate and utilize the wind energy potential of the region and contribute to the national strategy and regional economy.

1.2 Scope of the Study

This report includes CHA for Akköy WPP Project, that has been undertaken in line with IFC PS6 and corresponding 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 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).

¹ Published in the Official Gazette Date/No: 07.11.2018/30588

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 CR and/or EN species (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.

PS6 applies to those areas of modified habitat that include significant biodiversity value, as determined by the risks and impacts identification process required in PS1. 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 CR and/or EN 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 CR or EN 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 BAP 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 EN 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)
- RAMSAR (1994)
- The UN Convention on Biological Diversity (1997) and Cartagena Protocol on Biosafety (2004)
- Kyoto Protocol (2009)
- The Convention on International Trade in EN 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 PS6 and related GN6, EBRD PR6 and GN6 as well as Equator Principles IV (EP IV).

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

- IFC PSs on Environmental and Social Sustainability,
- EBRD's Environmental and Social Policy and PRs
- 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 the CHA relies primarily on desktop components which are detailed below and the data from field surveys conducted as part of National EIA.

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 (Flora and Fauna section)
- Relevant publicly available peer-reviewed literature
- White and grey literature
- Public biodiversity databases
 - eBird²,
 - iNaturalist³,
 - Tragem⁴,
 - Trakel⁵,
 - Trakus⁶,

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

³ URL: Inaturalist.org. Last accessed: 4 January 2024.

⁴ URL: Tragem.org. Last accessed: 4 January 2024.

⁵ URL: Trakel.org. Last accessed: 4 January 2024.

⁶ URL: Trakus.org. Last accessed: 4 January 2024.

- Movebank⁷
- European Breeding Bird Atlas⁸
- Global Invasive species database⁹
- Bizimbitkiler¹⁰
- Satellite imagery and maps
- Opinions of local biodiversity experts (formal / informal)
- Internationally recognized areas
 - KBAs
 - IBAs
- IUCN Red List
- Nationally threatened species
- BERN convention and appendices
- EU Habitats Directive
 - Annex I habitats
 - Annex II/IV species

Baseline information 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;

- National EIA Appendix 18 Report on Honeybees and Beekeeping, field surveys were conducted on 20 March 2022
- National EIA Appendix 24 Report on Flora and Fauna, field surveys were conducted three times, on 15 April 2022, 19 April 2022 and 13 May 2022.
- National EIA Appendix 25 Report on Bats, field surveys were conducted on 5 August 2021, 15-16-17 August 2021, and 27-28 August 2021, for 6 day/nights.
- National EIA Appendix 26 Report on Ornithology, field surveys were conducted August – November 2021 and March – May 2022.

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.

2.3 Identification of Ecologically Appropriate Area of Analysis

The Project consists of 6 turbines and their pads, the site and access 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 and access roads, in impact assessments and subsequent adaptive management and monitoring programmes.

The investigation into the region's ecology was carried out to define an EAAA, to determine the presence of features that may qualify for Critical Habitat. The EAAA was identified at a scale IAoI of the Project area, considering large-scale ecological processes. This approach ensures

⁷ URL: movebank.org. Last accessed: 4 January 2024.

⁸ Retrieved November 28, 2023, from ebba2.info

⁹ URL: iucngisd.org. Last accessed: 4 January 2024.

¹⁰ URL: [Bizimbitkiler.org.tr](https://bizimbitkiler.org.tr). Last accessed: 4 January 2024.

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 surrounding terrain, habitats and water features, extends up to Buyuk Menderes River on the northern side, and is bordered by Bafa Lake and the Aegean coast. The EAAA for flora and fauna encompasses an area of 322 km². 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 entirety of Buyuk Menderes Delta KBA and Bafa Lake KBA, and the EAAA extends out from the shoreline to include Akbuk Bay. The EAAA for birds and bats encompasses an area of 914 km² and is shown on Figure 2-2.

Within the EAAA, an Aol 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.

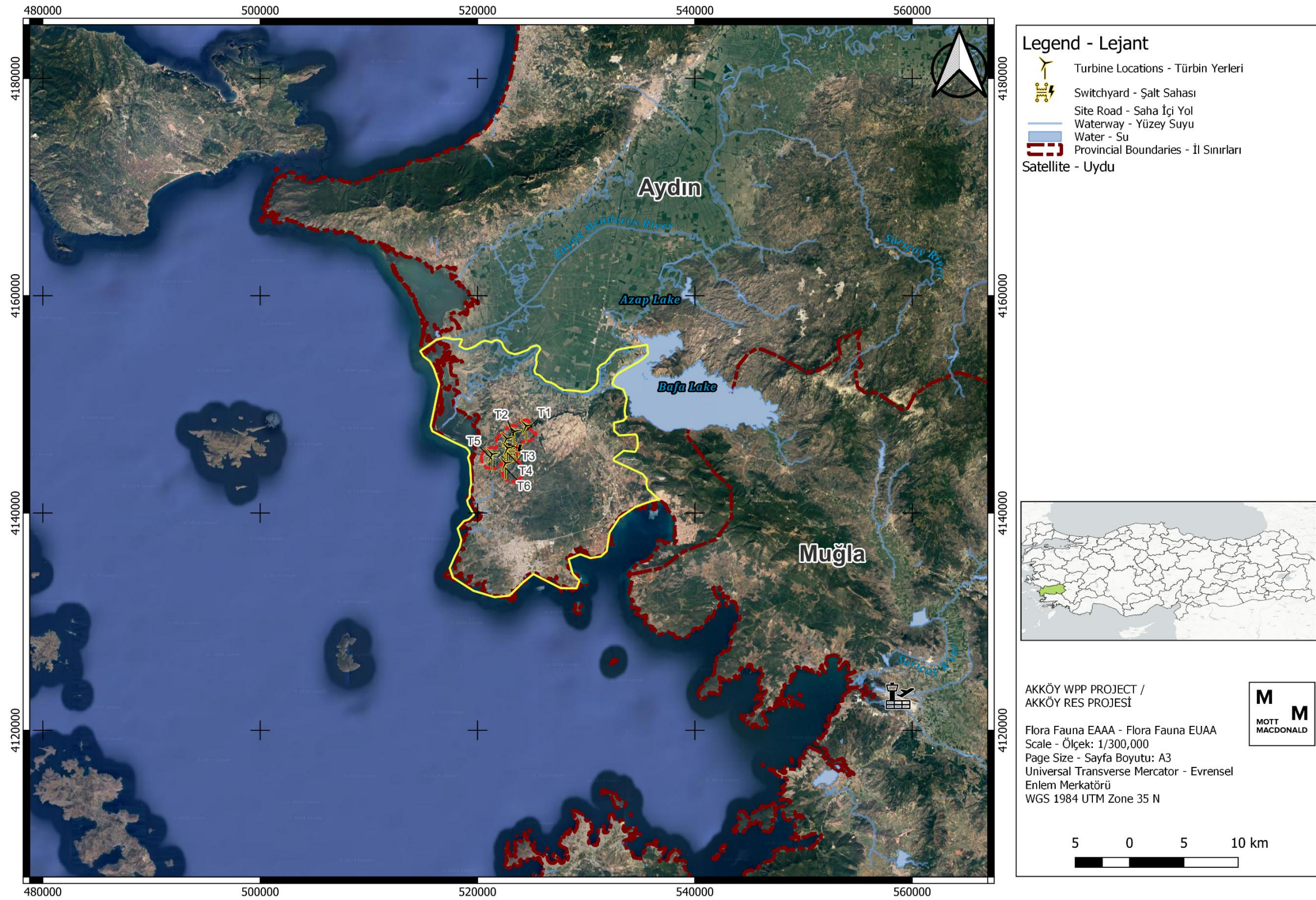


Figure 2-1 EAAA for Flora and Terrestrial for Fauna for the Project

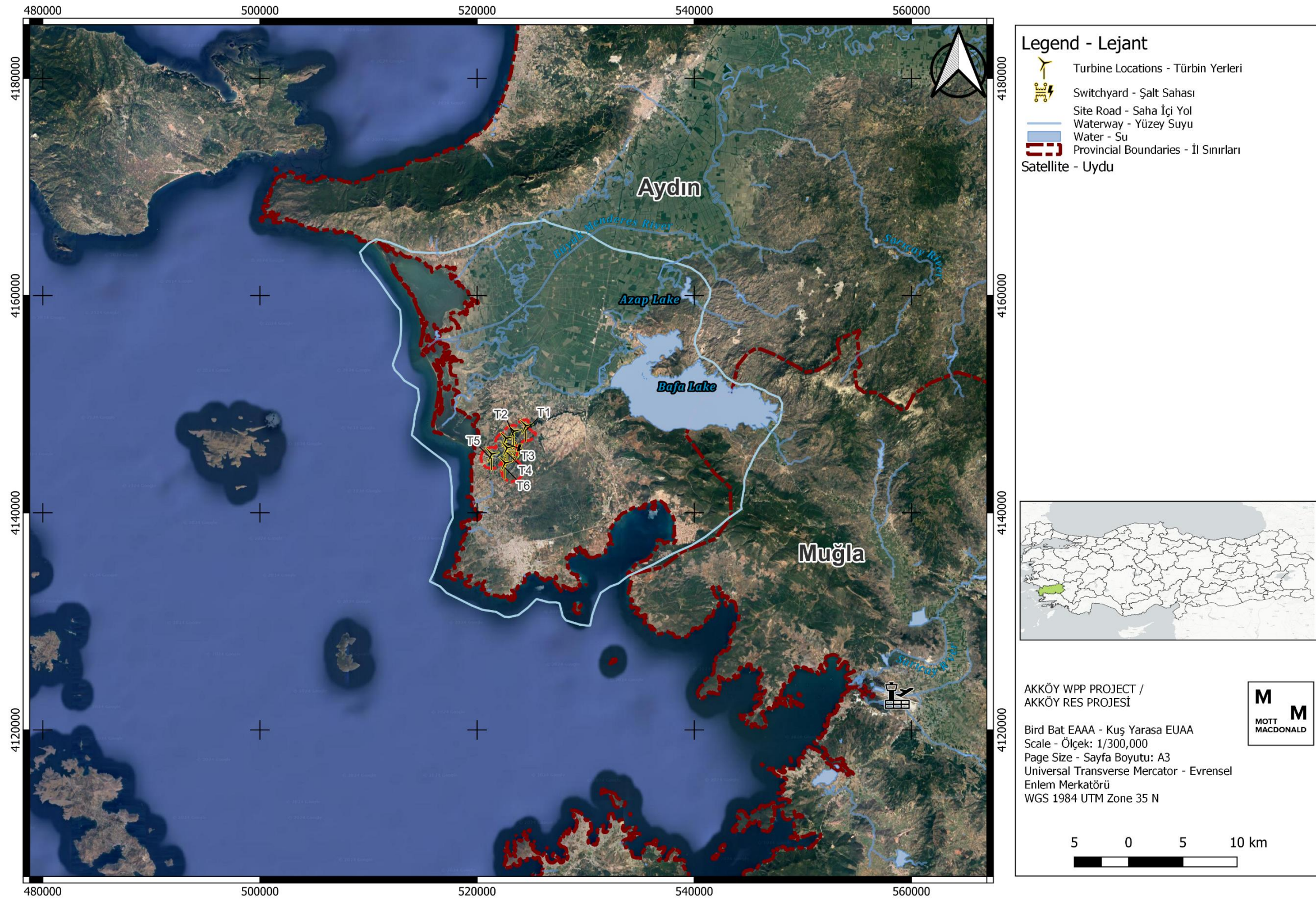


Figure 2-2 EAAA for Birds and Bats for the Project

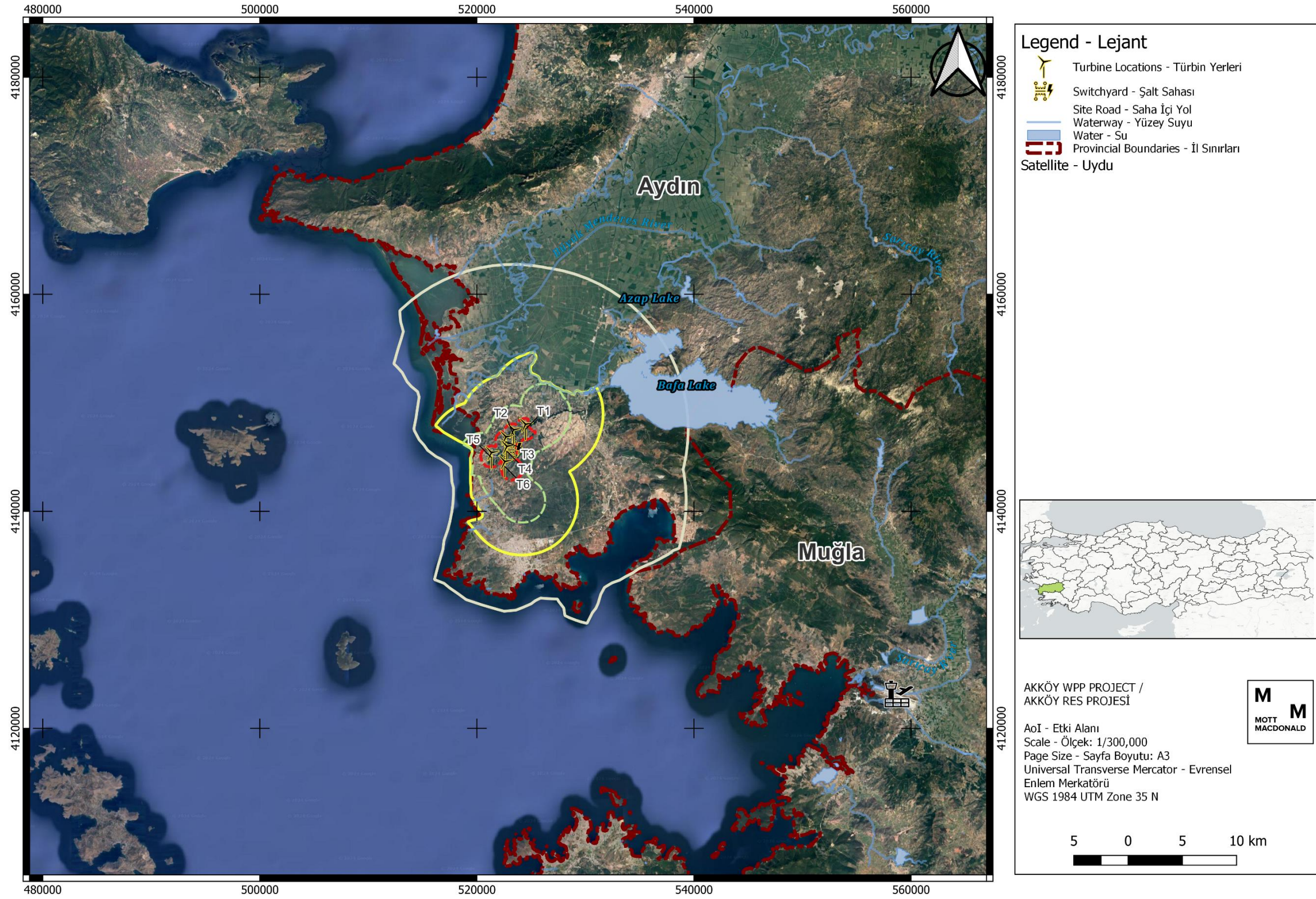


Figure 2-3 Aol for different biological taxa for the Project

2.4 Limitations and Assumptions

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

1. **Field survey:** Present CHA does not involve a field survey component carried out directly by the Consultant.
2. **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.
3. **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.
4. **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 GN6 (IFC, 2019). These species included IUCN CR and EN species, restricted-range and migratory/ congregatory species that were identified with IUCN geographic ranges within the 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 CHA

- Criterion 1: CR and/or 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 CHA. Examples include the following:

- Areas that meet the criteria of the IUCN's Protected Area Categories Ia, Ib and II,
- KBAs, which encompass IBAs and KBAs,
- UNESCO Natural and Mixed World Heritage Sites,
- Sites that fit the designation criteria of the 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. CR / 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 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).

Criteria	Quantitative Thresholds
	(c) As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.
2. Endemic / Restricted-range Species¹¹	(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 Akköy 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 in literature for the area, and PBF 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 PBF.

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.

¹¹ For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an 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).

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 (PBFs)

PBFs 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 PBF as including:

- threatened habitats,
- VU species,
- significant biodiversity features identified by a broad set of stakeholders or governments (such as KBAs and IBAs), and
- ecological structure and functions needed to maintain the viability of PBFs.

3 Baseline Conditions

3.1 Internationally Recognised and Nationally Protected Areas

The Project Aol overlaps Buyuk Menderes KBA and National Park and the IAol overlaps Lake Bafa KBA and Nature Reserve. These KBAs were both designated with bird species in focus, specifically breeding and wintering waterfowl and shorebirds. Lake Bafa KBA is an important breeding area for the nationally threatened species Bonelli’s Eagle (*Aquila fasciata*) which is obscured from public records due to conservation concerns. Development of wind energy in the region was designated a threat to the KBA integrity.

3.2 Habitats and Flora

The recorded habitats are listed in the Table 3-1 below, along with their wide distribution areas within the study area shown on Figure 3.1. The amount of habitat lost due to roads, turbine footprints and switchyard area are given in Table 3-1: Habitat Types of the Project AolTable 3-2 through Table 3.6.

Table 3-1: Habitat Types of the Project Aol

Broad habitat type	EUNIS Habitat Type	Extend within Project Footprint (ha)	Percentage (%)
Maquis	F5.2 Maquis	2421.65389	35.884%
	J1.2 Residential buildings of villages and urban peripheries	127.9471404	1.896%
Constructed, industrial and other artificial habitats	J4.2 Road networks	21.96589451	0.325%
	J4.5 Hard-surfaced areas of ports	0.375344245	0.006%
Regularly or recently cultivated agricultural, horticultural and domestic habitats	I1.2 Mixed crops of market gardens and horticulture	4176.530364	61.889%

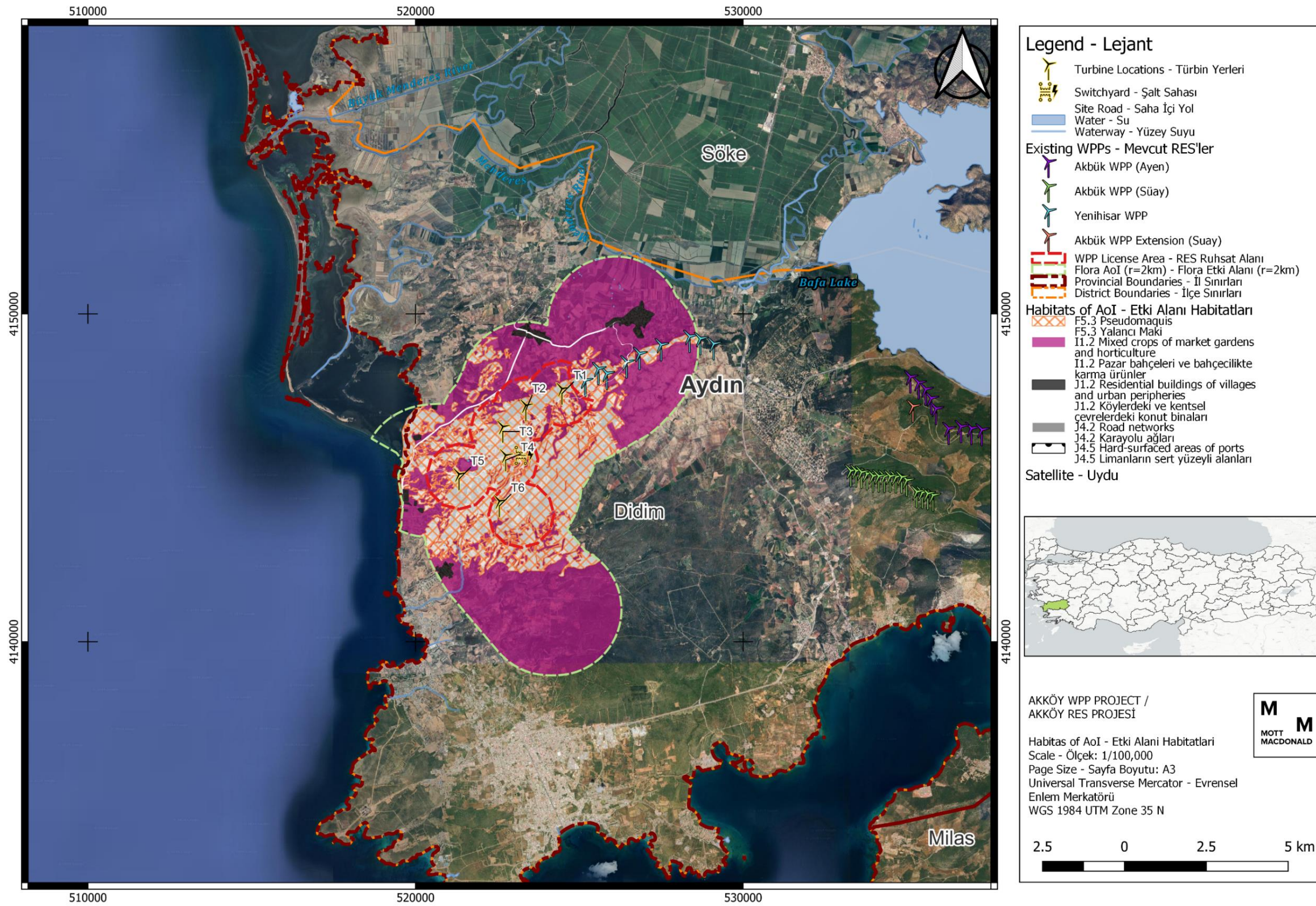


Figure 3-1: EUNIS Habitat Classification of the Project AoI

Table 3-2: Habitat Loss on Site Roads

EUNIS	Area (ha)	Percentage
F5.3 Pseudomaquis	10.11	0.41748%
J1.2 Residential buildings of villages and urban peripheries	0.17	0.13209%
J4.2 Road networks	0.13	0.58272%
I1.2 Mixed crops of market gardens and horticulture	4.93	0.11804%
Total	15.34	

Table 3-3: Habitat Loss on Turbine Footprint

EUNIS	Area (ha)	Percentage
F5.3 Pseudomaquis	9.09	0.4%
J1.2 Residential buildings of villages and urban peripheries	0.0	0.0%
J4.2 Road networks	0.0	0.0%
I1.2 Mixed crops of market gardens and horticulture	0.0	0.0%
Total	9.09	

Table 3-4: Habitat Loss on Switchyard Area

EUNIS	Area (ha)	Percentage
F5.3 Pseudomaquis	0.67	0.027%
J1.2 Residential buildings of villages and urban peripheries	0.0	0.0%
J4.2 Road networks	0.0	0.0%
I1.2 Mixed crops of market gardens and horticulture	0.0	0.0%
Total	0.67	

Table 3-5: Habitat Loss on ETL

EUNIS	Area (ha)	Percentage
F5.3 Pseudomaquis	46.16	1.90619%
J1.2 Residential buildings of villages and urban peripheries	0.0	0.0%
J4.2 Road networks	0.0	0.0%
I1.2 Mixed crops of market gardens and horticulture	21.45	0.51356%
Total	67.61	

National EIA flora surveys were conducted between 15 April-13 May 2022. 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. A total of 136 plant taxa were identified. The full list of species is not presented in this document, endemic species are listed with National Red List categories in Table 3-6. Given these species have not yet been evaluated by IUCN, national categories have been used. Accordingly, there is one VU and 2 LC endemic plant species in the Project impact area. In addition, 3 plant species with limited populations, although not endemic, were identified during National EIA field study.

Table 3-6: The endemic species in the Project area and their coordinates

Taxon	IUCN	L/O
Regional Endemic Species		
1 <i>Veronica donii</i>	VU	O
Widespread Endemic Species		
2 <i>Peucedanum chryseum</i>	LC	L
3 <i>Centaurea polyclada</i>	LC	L
Non-Endemic Rare Species		
4 <i>Globularia alypum</i>	-	O
52 <i>Ophrys speculum subsp. speculum</i>	-	O
6 <i>Ophrys holoserica subsp. heterochila</i>	-	O

3.3 Birds

Three groups of bird species are specifically important for the Project area: (1) large soaring migratory species (storks, pelicans, eagles, buzzards, sparrowhawks, falcons, harriers, kites), (2) large soaring resident species and (3) wintering and breeding species which are of conservation concern and/or KBA features. Target species are provided on Table 3-7:

Table 3-7. List of significant bird species, conservation status

Common Name	Scientific Name	IUCN	National	Bird directive	BERN	KBA trigger	L/O*
Levant Sparrowhawk	<i>Accipiter brevipes</i>	LC	VU	I	II	No	O
Northern Goshawk	<i>Accipiter gentilis</i>	LC	NT	-	II	No	O
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	LC	NT	-	II	No	O
Cinereous Vulture	<i>Aegypius monachus</i>	NT	EN	I	II	No	L
Demoiselle Crane	<i>Anthropoides virgo</i>	LC	CR	-	III	No	L
Golden Eagle	<i>Aquila chrysaetos</i>	LC	-	I	II	No	L
Bonelli's Eagle	<i>Aquila fasciata</i>	LC	EN	I	II	No	L
Imperial Eagle	<i>Aquila heliaca</i>	VU	EN	I	II	No	L
Steppe Eagle	<i>Aquila nipalensis</i>	EN	CR	-	II	No	L
Gray Heron	<i>Ardea alba</i>	LC	EN	I	II	No	L
Purple Heron	<i>Ardea purpurea</i>	LC	VU	I	II	No	L
Common Pochard	<i>Aythya ferina</i>	VU	-	II A, III B	III	Yes	L
Eurasian Eagle-Owl	<i>Bubo bubo</i>	LC	-	I	II	No	L
Common Buzzard	<i>Buteo buteo</i>	LC	-	-	II	No	O
Rough-legged Hawk	<i>Buteo lagopus</i>	LC	-	-	II	No	L
Long-legged Buzzard	<i>Buteo rufinus</i>	LC	NT	I	II	No	O

Common Name	Scientific Name	IUCN	National	Bird directive	BERN	KBA trigger	L/O*
Kentish Plover	<i>Charadrius alexandrinus</i>	LC	VU	I	II	Yes	L
White Stork	<i>Ciconia ciconia</i>	LC	-	I	II	No	O
Black Stork	<i>Ciconia nigra</i>	LC	-	I	II	No	O
Short-toed Snake-Eagle	<i>Circaetus gallicus</i>	LC	VU	I	II	No	O
Eurasian Marsh-Harrier	<i>Circus aeruginosus</i>	LC	NT	I	II	No	O
Hen Harrier	<i>Circus cyaneus</i>	LC	DD	I	II	No	L
Pallid Harrier	<i>Circus macrourus</i>	NT	CR	I	II	No	L
Montagu's Harrier	<i>Circus pygargus</i>	LC	EN	I	II	No	L
Greater Spotted Eagle	<i>Clanga clanga</i>	VU	VU	I	II	No	L
Lesser Spotted Eagle	<i>Clanga pomarina</i>	LC	EN	I	II	No	L
Lanner Falcon	<i>Falco biarmicus</i>	LC	VU	I	II	No	L
Saker Falcon	<i>Falco cherrug</i>	EN	CR	I	II	No	L
Merlin	<i>Falco columbarius</i>	LC	-	I	II	No	L
Eleonora's Falcon	<i>Falco eleonora</i>	LC	EN	I	II	No	L
Lesser Kestrel	<i>Falco naumanni</i>	LC	VU	I	II	No	L
Peregrine Falcon	<i>Falco peregrinus</i>	LC	VU	I	II	No	L
Eurasian Hobby	<i>Falco subbuteo</i>	LC	-	-	II	No	L
Eurasian Kestrel	<i>Falco tinnunculus</i>	LC	-	-	II	No	O
Red-footed Falcon	<i>Falco vespertinus</i>	VU	-	I	II	No	L
Common Coot	<i>Fulica atra</i>	LC	-	II A, III B	III	Yes	L
Collared Pratincole	<i>Glareola pratincola</i>	LC	VU	I	II	Yes	O
Common Crane	<i>Grus grus</i>	LC	EN	I	III	No	L
Bearded Vulture	<i>Gypaetus barbatus</i>	NT	EN	I	II	No	L
Eurasian Griffon	<i>Gyps fulvus</i>	LC	EN	I	II	No	L
White-tailed Eagle	<i>Haliaeetus albicilla</i>	LC	CR	I	II	No	L
Booted Eagle	<i>Hieraaetus pennatus</i>	LC	VU	I	II	No	O
Caspian Tern	<i>Hydroprogne caspia</i>	LC	VU	I	II	Yes	L
Eurasian Wigeon	<i>Mareca penelope</i>	LC	-	II A, III B	III	Yes	L
Gadwall	<i>Mareca strepera</i>	LC	VU	II A	III	Yes	L
Black Kite	<i>Milvus migrans</i>	LC	EN	I	II	No	L
Red Kite	<i>Milvus milvus</i>	LC	DD	I	II	No	O
Egyptian Vulture	<i>Neophron percnopterus</i>	EN	VU	I	II	No	L
Osprey	<i>Pandion haliaetus</i>	LC	DD	I	II	No	O
Dalmatian Pelican	<i>Pelecanus crispus</i>	NT	VU	I	II	No	O
Great White Pelican	<i>Pelecanus onocrotalus</i>	LC	EN	I	II	No	O
European Honey-buzzard	<i>Pernis apivorus</i>	LC	NT	I	II	No	O
Great Cormorant	<i>Phalacrocorax carbo</i>	LC	-	-	II	Yes	O
Pygmy Cormorant	<i>Phalacrocorax pygmeus</i>	LC	-	I	III	Yes	L
Greater Flamingo	<i>Phoenicopterus roseus</i>	LC	EN	I	II	Yes	L
Glossy Ibis	<i>Plegadis falcinellus</i>	LC	EN	I	II	No	O

Common Name	Scientific Name	IUCN	National	Bird directive	BERN	KBA trigger	L/O*
Pied Avocet	<i>Recurvirostra avosetta</i>	LC	VU	I	II	Yes	L
European Turtle-Dove	<i>Streptopelia turtur</i>	VU	VU	II B	III	No	O
Ruddy Shelduck	<i>Tadorna ferruginea</i>	LC	-	I	II	Yes	L
Spur-winged Lapwing	<i>Vanellus spinosus</i>	LC	VU	I	II	Yes	L

*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 3-8.

Table 3-8: List of bat species for the Project area and conservation status.

Common Name	Scientific Name	Status	IUCN Global	IUCN EU	IUCN Med	BE RN	EU Directive	Habitat	Collision Risk	L/O*
Anatolian Serotine	<i>Eptesicus anatolicus</i>	Unknown	LC	-	-	I, II	IV		Medium	L
Serotine	<i>Eptesicus serotinus</i>	Stable	LC	-	-	II	IV		Medium	L
Savi's Pipistrelle	<i>Hypsugo savii</i>	Stable	LC	LC	LC	II	IV		High	L
Schreiber's Bent-winged Bat	<i>Miniopterus schreibersii</i>	Declining	VU	-	-	I, II	II, IV		High	L
Steppe Whiskered Bat	<i>Myotis aurascens</i>	Stable	LC	LC	LC	II	IV		Low	L
Lesser Mouse-eared Myotis	<i>Myotis blythii</i>	Declining	LC	NT	NT	I, II	II, IV		Low	L
Long-fingered Bat	<i>Myotis capaccinii</i>	Declining	VU	VU	VU	I, II	II, IV		Low	L
Geoffroy's Bat	<i>Myotis emarginatus</i>	Stable	LC	LC	LC	I, II	II, IV		Low	L
Greater Mouse-eared Bat	<i>Myotis myotis</i>	Stable	LC	LC	LC	I, II	II, IV		Low	L
Whiskered Myotis	<i>Myotis mystacinus</i>	Unknown	LC	LC	LC	II	IV		Low	L
Noctule	<i>Nyctalus noctula</i>	Unknown	LC	LC	LC	II	IV		High	L
Kuhl's Pipistrelle	<i>Pipistrellus kuhlii</i>	Unknown	LC	LC	LC	II	IV		High	O
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	Unknown	LC	LC	LC	II	IV		High	O
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Stable	LC	-	-	III	IV		High	O
Mediterranean Long-eared Bat	<i>Plecotus kolombatovici</i>	Declining	LC	NT	LC	II	IV		Low	L
Blasius's Horseshoe Bat	<i>Rhinolophus blasii</i>	Declining	LC	VU	NT	I, II	II, IV		Low	L
Mediterranean Horseshoe Bat	<i>Rhinolophus euryale</i>	Declining	NT	VU	VU	I, II	II, IV		Low	L
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>	Declining	LC	NT	NT	I, II	II, IV		Low	L
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	Declining	LC	NT	NT	I, II	II, IV		Low	L
Mehely's Horseshoe Bat	<i>Rhinolophus mehelyi</i>	Declining	VU	VU	VU	I, II	II, IV		Low	L
European Free-tailed Bat	<i>Tadarida teniotis</i>	Unknown	LC	LC	LC	II	IV		High	L

Common Name	Scientific Name	Status	IUCN Global	IUCN EU	IUCN Med	BE RN	EU Directive	Habitat	Collision Risk	L/O*
Particoloured Bat	<i>Vespertilio murinus</i>	Stable	LC	LC	-	II	IV		High	L

*L: Literature, O: Observation

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

During the National EIA terrestrial fauna studies, 9 amphibian species, 34 reptile species and 36 non-bat mammals were either observed or were identified as relevant in desktop components. Vast majority of these species are common and widespread. A list of significant species is provided in Table 3-9.

Table 3-9. List of significant terrestrial fauna for the Project area

Common Name	Scientific Name	IUCN	BERN	Habitats directive	L/O*
European Pond Turtle	<i>Emys orbicularis</i>	NT	Appendix I-II	Appendix I	L
Common tortoise	<i>Testudo graeca</i>	VU	Appendix I-II	Appendix II-IV	O
Four-lined Snake	<i>Elaphe quatuorlineata</i>	NT	Appendix I-II	Appendix II-IV	L
Brandt's Hamster	<i>Mesocricetus brandti</i>	NT	-	-	L
Leopard	<i>Panthera pardus</i>	VU	Appendix I-II	-	L
Anatolian Ground Squirrel	<i>Spermophilus xanthopyrnus</i>	NT	-	-	L
Marbled polecat	<i>Vormela peregusna</i>	VU	Appendix I-II	Appendix II-IV	L
Eurasian Otter	<i>Lutra lutra</i>	NT	Appendix I-II	Appendix II-IV	L
Striped hyaena	<i>Hyaena hyaena</i>	NT	-	-	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 this 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 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 EOO and the Project area were considered to estimate the global range of species in AoA 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 EOO and the Project area were considered to estimate the global range of species in AoA 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 PBF 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 PBF.

For plant species, since global population and population data within the AoA 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 CHA based on Criteria 1 and 2

Species	IUCN Red List	National Threatened Status	EU Directive	BERN	Endemic / Restricted Range	Global Population	EOO	Field Observation	Evaluation	CH Trigger /PBF	Lit./ Obs.
<i>Centaurea polyclada</i>	-	VU	-	-	Endemic	Unknown	Unknown	50	Woodlands and maquis habitat within the AoA are proper habitats for the species. It is known from the provinces of Balıkesir, Çanakkale and İzmir in western Turkey. The species covers an area of 90,685 km ² in western Turkey, exceeding the EOO threshold of 50,000 km ² . 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.	Not	O
<i>Veronica donii</i>	-	VU	-	-	Endemic	Unknown	Unknown	200	Maquis habitat within the AoA is proper for the species preference. It is known from Aydın, Denizli, Muğla and western Turkey. The species covers an area of 75,847 km ² in western Turkey, exceeding the EOO threshold of 50,000 km ² . 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.	Not	O
<i>Globularia alypum</i>	LC	VU	-	-	Rare restricted	Unknown	Unknown	50	Maquis habitat within the AoA is proper for the species preference. It is known from İzmir in western Turkey. Total distribution area of the species in Turkey is 45,926 km ² . The population of this species within the Study Area was 50. Thus, considering the conservation status of the species (VU), expert opinion, and the species range close to restricted specie, it will be qualified as PBFs under PBF Criterion 2.	PBF	O

Table 4-2 CHA for Terrestrial Fauna based on Criterion 1

Species	IUCN Red List	EU Directives	BERN	Endemic / Restricted Range	Global Population	EOO	10% of EOO	EAAA	EAAA is ≥ 10% of EOO	Evaluation	CH Trigger or PBF	Lit./ Obs.
Reptile												
<i>Testudo graeca</i>	VU	-	-	-	Unknown	Unknown	-	500	-	Arslan et al 2021 assumes a population size of 5.7 individuals per ha in the Gediz Delta, Turkey (Aegean) which is comparable to the only other studied population in Muğla, Turkey. It is also paralel with other population estimates in Donana, Spain, Jebilet, Morroco and elsewhere in southern Mediterranean basin. The population within the EAAA are unlikely to be of significant importance to global populations of the species. As precaution, the species will be considered as PBF under Criteria 1b.	PBF	O

Table 4-3 CHA for Bird Species based on Criteria 1 and 3

Common Name	Scientific name	IUCN	Nat. Red List	Bird Directive	BERN	L/O	Global Population	Population Status	Estimated EOO (km2)	Estimated birds/year	Cr 1,3 %Global Range in EAAA	Evaluation	CH Trigger / PBF
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	LC	NT	-	II	O	2000000-3200000	Stable	54400000	34	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 34. For Cr3, the Project AoA should support 20000 individuals, so the species does not qualify for this criterion.	Not trigger
Gray Heron	<i>Ardea cinerea</i>	LC	-	-	III	O	500000-2500000	Unknown	136000000	82	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 82. For Cr3, the Project AoA should support 5000 individuals, so the species does not qualify for this criteria. Since eBird data from the EAAA is available, a high count from the last 10 years was brought into the assessment.	Not trigger
Common Buzzard	<i>Buteo buteo</i>	LC	-	-	II	O	2000000-3500000	Increasing	33500000	55	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 55. For Cr3, the Project AoA should support 20000 individuals, so the species does not qualify for this criteria.	Not trigger
Long-legged Buzzard	<i>Buteo rufinus</i>	LC	NT	I	II	O	100000-499999	Stable	32300000	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 1000 individuals, so the species does not qualify for this criteria.	Not trigger
White Stork	<i>Ciconia ciconia</i>	LC	-	I	II	O	700000-704000	Increasing	52700000	13	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 13. For Cr3, the Project AoA should support 7000 individuals, so the species does not qualify for this criteria.	Not trigger
Black Stork	<i>Ciconia nigra</i>	LC	-	I	II	O	24000-44000	Unknown	25100000	1	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 1. For Cr3, the Project AoA should support 240 individuals, so the species does not qualify for this criteria.	Not trigger
Short-toed Snake-Eagle	<i>Circaetus gallicus</i>	LC	VU	I	II	O	50000-99999	Stable	48800000	1	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 1. For Cr3, the Project AoA should support 500 individuals, so the species does not qualify for this criteria.	Not trigger
Eurasian Marsh-Harrier	<i>Circus aeruginosus</i>	LC	NT	I	II	O	600000-1100000	Stable	24800000	23	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 23. For Cr3, the Project AoA should support 6000 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	16	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 16. For Cr3, the Project AoA should support 3000 individuals, so the species does not qualify for this criteria.	Not trigger
Eurasian Hobby	<i>Falco subbuteo</i>	LC	-	-	II	O	900000-1500000	Decreasing	49300000	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 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	38	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 38. For Cr3, the Project AoA should support 43000 individuals, so the species does not qualify for this criteria.	Not trigger
Black Kite	<i>Milvus migrans</i>	LC	EN	I	II	O	4000000-5700000	Stable	115653659	32	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 32. For Cr3, the Project AoA should support 40000 individuals, so the species does not qualify for this criteria.	Not trigger
Dalmatian Pelican	<i>Pelecanus crispus</i>	NT	VU	I	II	O	11400-13400	Decreasing	12600000	200	1.75	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 200. For Cr3, the Project AoA should support 114 individuals, so the species qualifies for this	PBF / Potential Cr3

												criteria. Recent counts between 150-250 are available from Buyuk Menderes Delta and Bafa Lake on eBird. A maximum of 400 wintering birds and a minimum of 42 breeding pairs for Buyuk Menderes Delta, and up to 200 wintering individuals from Bafa Lake were reported by BirdLife Turkiye. The EAAA is a significant breeding and wintering habitat for the species.	
Great White Pelican	<i>Pelecanus onocrotalus</i>	LC	EN	I	II	O	265000-295000	Unknown	51200000	32	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 32. For Cr3, the Project AoA should support 2650 individuals, so the species does not qualify for this criteria. Since eBird data from the EAAA is available, a high count from 2020 was brought into the assessment.	Not trigger
Great Cormorant	<i>Phalacrocorax carbo</i>	LC	-	-	II	O	1400000-2100000	Increasing	312000000	1660	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 1660. For Cr3, the Project AoA should support 140000 individuals, so the species does not qualify for this criteria. 1660 individuals is a high count available from 2019 mid-winter bird counts from the EAAA available on eBird and represents a maximum expected count supported by the EAAA.	Not trigger
Glossy Ibis	<i>Plegadis falcinellus</i>	LC	EN	I	II	O	230000-2220000	Decreasing	199000000	2	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 2. For Cr3, the Project AoA should support 2300 individuals, so the species does not qualify for this criteria.	Not trigger
European Turtle-dove	<i>Streptopelia turtur</i>	VU		II B	III	L	12800000-47600000	Decreasing	7080000			The present Turkish population size and trend is not known but was estimated in 2004 at being 300,000 – 900,000 and decreasing. Kirwan et al. (2008) describes it as a widespread and common summer visitor. 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.	Not trigger
Bonelli's Eagle	<i>Aquila fasciata</i>	LC	EN	I	II	L	20000-49999	Decreasing	38400000	2	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 2. For Cr3, the Project AoA should support 200 individuals, so the species does not qualify for this criteria. PBF designation was made since the species is of national conservation concern, and a pair continues to breed in Bafa Lake within the EAAA.	PBF
Collared Pratincole	<i>Glareola pratincola</i>	LC	VU	I	II	O	160000-600000	Decreasing	21300000	Presence	-	Species is a KBA trigger, and a sizable breeding population is present within the EAAA therefore PBF was designated.	PBF

Table 4-4 CHA for Bat Species based on Criteria 1 and 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 EOO (km ²)	Cr 1,3 %Global Range in EAAA	Score	CH/PBF
Anatolian Serotine	<i>Eptesicus anatolicus</i>	LC	-	-	I, II	IV	L	Medium	Sedentary	Unknown	Unknown	Unknown	-	0.5	Not trigger
Serotine	<i>Eptesicus serotinus</i>	LC	-	-	I, II	IV	L	Medium	mostly sedentary	Stable	Unknown	Unknown	-	0.5	Not trigger
Savi's Pipistrelle	<i>Hypsugo savii</i>	LC	LC	LC	II	IV	L	High	Probably migrant	Stable	Unknown	15658670	-	2	PBF
Schreiber's Bent-winged Bat	<i>Miniopterus schreibersii</i>	VU	-	-	I, II	II, IV	L	High	Mid and long range migrant	Declining	Unknown	19946710	-	3	PBF
Steppe Whiskered Bat	<i>Myotis aurascens</i>	LC	LC	LC	I, II	IV	L	Low	-	Stable	Unknown	4766158	-	0	Not trigger
Lesser Mouse-eared Myotis	<i>Myotis blythii</i>	LC	NT	NT	I, II	II, IV	L	Low	mostly sedentary	Declining	Unknown	23471950	-	0	Not trigger
Long-fingered Bat	<i>Myotis capaccinii</i>	VU	VU	VU	I, II	II, IV	L	Low	Mid-range seasonal migrant	Declining	Unknown	5387022	-	2	PBF
Geoffroy's Bat	<i>Myotis emarginatus</i>	LC	LC	LC	II	II, IV	L	Low	mostly sedentary	Stable	Unknown	15654608	-	0	Not trigger
Greater Mouse-eared Bat	<i>Myotis myotis</i>	LC	LC	LC	II	II, IV	L	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
Noctule	<i>Nyctalus noctula</i>	LC	LC	LC	II	IV	L	High	Long distance migrant	Unknown	Unknown	24101079	-	2	PBF
Kuhl's Pipistrelle	<i>Pipistrellus kuhlii</i>	LC	LC	LC	III	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
Mediterranean Long-eared Bat	<i>Plecotus kolombatovici</i>	LC	NT	LC	I, II	IV	L	Low	Sedentary	Declining	Unknown	Unknown	-	0	Not trigger
Blasius's Horseshoe Bat	<i>Rhinolophus blasii</i>	LC	VU	NT	I, II	II, IV	L	Low	Mostly sedentary	Declining	Unknown	8849478	-	0	Not trigger
Mediterranean Horseshoe Bat	<i>Rhinolophus euryale</i>	NT	VU	VU	I, II	II, IV	L	Low	Sedentary	Declining	Unknown	10858126	-	0	Not trigger
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>	LC	NT	NT	II	II, IV	L	Low	Mostly sedentary	Declining	Unknown	Unknown	-	0	Not trigger
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	LC	NT	NT	II	II, IV	L	Low	Mostly sedentary	Declining	Unknown	22157273	-	0	Not trigger
Mehely's Horseshoe Bat	<i>Rhinolophus mehelyi</i>	VU	VU	VU	II	II, IV	L	Low	mostly sedentary	Declining	Unknown	18885688	-	1	Not trigger
European Free-tailed Bat	<i>Tadarida teniotis</i>	LC	LC	LC	II	IV	L	High	probably sedentary	Unknown	Unknown	18885688	-	1	Not trigger
Particoloured Bat	<i>Vespertilio murinus</i>	LC	LC	-	II	IV	L	High	Long distance migrant	Stable	Unknown	25697109	-	2	PBF

Table 4.5: CHA for Invertebrate Species depends on Criteria 1-3

Common Name	Scientific Name	IUCN	BERN	Habitats directive	L/O	Global Population	Population Status	Estimated EOO (km ²)	Cr 1,3 %Global Range in Aol	Evaluation	CH Trigger or Not
Ottoman's Copper	<i>Lycaena ottomana</i>	LC	-	-	L	Unknown	Stable	Unknown	-	Species is common and populations are robust in Türkiye and the Mediterranean. Located on a mountain ridge, Project Aol does not overlap the preferred habitat of the species.	Not trigger
Big-Bellied Glandular Bush-Cricket	<i>Bradyporus macrogaster</i>	EN	-	-	L	Unknown	Decreasing	200000	-	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 types of habitats. Thus, the species is not considered as critical habitat trigger species.	Not Trigger

4.2 Criteria 4: Highly Threatened / Unique Ecosystems

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

EUNIS Habitat Type	EU Habitat Directive Annex I	IUCN	CH/PBF	Percentage	Extend within Aol (ha)
F5.2-Maquis	-	-	No	3%	132,31
F5.6-Thermo-Mediterranean scrub	-	-	No	7%	339,37
F6.2-Eastern garrigues	-	-	No	7%	373,87
G2.9-Evergreen orchards and groves	-	-	No	69%	3561,4
I1.2-Mixed crops of market gardens and horticulture	-	-	No	12%	619,1
J4.2-Road networks	-	-	No	0	4,59
J2.3-Rural industrial and commercial sites still in active use	-	-	No	0	19
J6.2-Household waste and landfill sites	-	-	No	1%	28,3
J1.2-Residential buildings of villages and urban peripheries	-	-	No	1%	60,06

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 CHA, *Pelecanus crispus* (NT) species evaluated as potential Criterion 3 trigger species (Table 5-1), and PBFs are listed in Table 5-2.

Table 5-1 Critical Habitat Trigger Species

Scientific Name	IUCN	CH Trigger Criterion	Source
Bird			
<i>Pelecanus crispus</i>		Potential Cr3	Observation

Table 5-2 PBFs

Scientific Name	IUCN	Source
Plant		
<i>Globularia alypum</i>	LC/VU(Nat.)	Literature
Bird		
<i>Aquila fasciata</i>	LC	Literature
<i>Glareola pratincola</i>	LC	Observation
<i>Pelecanus crispus</i>	NT	Literature
Bats		
<i>Hypsugo savii</i>	LC	Literature
<i>Miniopterus schreibersii</i>	VU	Literature
<i>Myotis capaccini</i>	VU	Literature
<i>Nyctalus noctula</i>	LC	Literature
<i>Pipistrellus nathusii</i>	LC	Observation
<i>Pipistrellus pipistrellus</i>	LC	Observation
<i>Vespertilio murinus</i>	LC	Literature
Reptile		
<i>Testudo graeca</i>	VU	Observation

