



Critical Habitat Assessment for the Voltalia 140 MW Karavasta Solar park, Albania

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Front cover image is of the Divjaka-Karavasta National Park © [Julien Maury](#) via Flickr.

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1 Executive Summary

This Critical Habitat Assessment (CHA) for the Valtalia 140 MW Karavasta Solar Park, Albania, was completed to provide a better understanding of the biodiversity features which potentially trigger IFC's Performance Standard 6 (PS6) and EBRD's Performance Requirement 6 (PR6). The analysis is based on interpretation of global and regional datasets, available literature and field data from Project Environmental and Social Impact Assessments (Abkons 2021). Criteria and thresholds for Critical Habitat (CH) determination were applied separately for terrestrial and aquatic scoping areas.

This assessment confirms:

- PS6 / PR6 are applicable to five species that meet the CH thresholds for Criteria 1-3 / Criteria ii-iv (Table 1).
- Wetland and aquatic habitats within the PV plant and along the transmission line route are CH for four fish species and the Albanian Water Frog.
- The remainder of the Project area meets the IFC definition of modified habitat – with the exception of a small area of *Salix alba* and *Populus alba* galleries along the Semani River between pylons 10-15 of the transmission line.
- Two habitats and 49 species are identified as Priority Biodiversity Features (PBFs), as defined by EBRD PR6; and,
- The Project footprint overlaps with an internationally-recognised area (Karavasta KBA). The KBA also meets the EBRD definition of PBF.

These findings mean that the Project will need to implement appropriate mitigation and demonstrate net gain (NG) for species which qualify as CH for the Project, and no net loss for PBFs.

For aquatic species, available data suggests that drainage ditches in the Project area have suitable habitat for the Albanian Water Frog, and the four CH fish species. It is therefore recommended that the Project develops:

- A Biodiversity Management Plan (BMP) that details the mitigation and monitoring measures that will be implemented during construction and operation phases of the Project to avoid, minimise and restore biodiversity values on-site and verify the levels of impacts occurring; and,
- A Biodiversity Action Plan (BAP) that quantifies the residual impacts to identified priority species and proposes conservation actions that would support the Project meet its NG commitments for CH-qualifying species and NNL commitments for PBFs, and promotes the conservation aims and effective management of the Karavasta KBA.

2 Introduction

2.1 Purpose of this document

This report is the Critical Habitat Assessment (CHA) for the Valtalia 140 MW Karavasta Solar Park (the Project) in Albania. In order to manage risk and meet lender requirements, the Project intends to implement good international practices by aligning with International Finance Corporation (IFC) Performance Standards (PS), including PS6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources (IFC 2012, 2019) and European Bank for Reconstruction and Development (EBRD) Performance Requirements (PR), including PR6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources (EBRD 2014a, 2014b).

The Project has completed an Environmental and Social Impact Assessment (ESIA) (Abkons 2021) that was informed by a suite of baseline field surveys, including surveys in August 2020, November 2020 and May 2021 for bats and other mammals, reptiles and amphibians and flora. Following comments from the IFC, Valtalia Ltd. commissioned The Biodiversity Consultancy to update the previous Critical Habitat Assessment completed by Abkons in July 2021.

The CHA is a key component of full alignment with both IFC PS6 and EBRD PR6 and forms an integral part of the Project's overall framework for managing biodiversity risk. This report:

- Identifies Critical Habitat as defined by IFC PS6 and EBRD PR6;
- Identifies Priority Biodiversity Features (PBF) as defined by EBRD PR6;
- Identifies natural and modified habitats as defined by IFC PS6;
- Outlines the implications of the findings of the CHA for the Project; and
- Identifies the recommended next steps for the Project.

2.2 Project overview

The Project consists of the 140 MW Solar Power Plant (SPP), located in the Divjaka and Fier municipalities of Albania, and a 220 kV overhead transmission line (Figure 1). The footprint of the solar power plant will cover 185 ha of land between the villages of Adriatik and Metaj to the southeast and Ndërmenas and Hasturkas to the east. An overhead transmission line will connect the SPP to the national grid via a 20 km route running south-east from the SPP to a substation near the town of Fier.

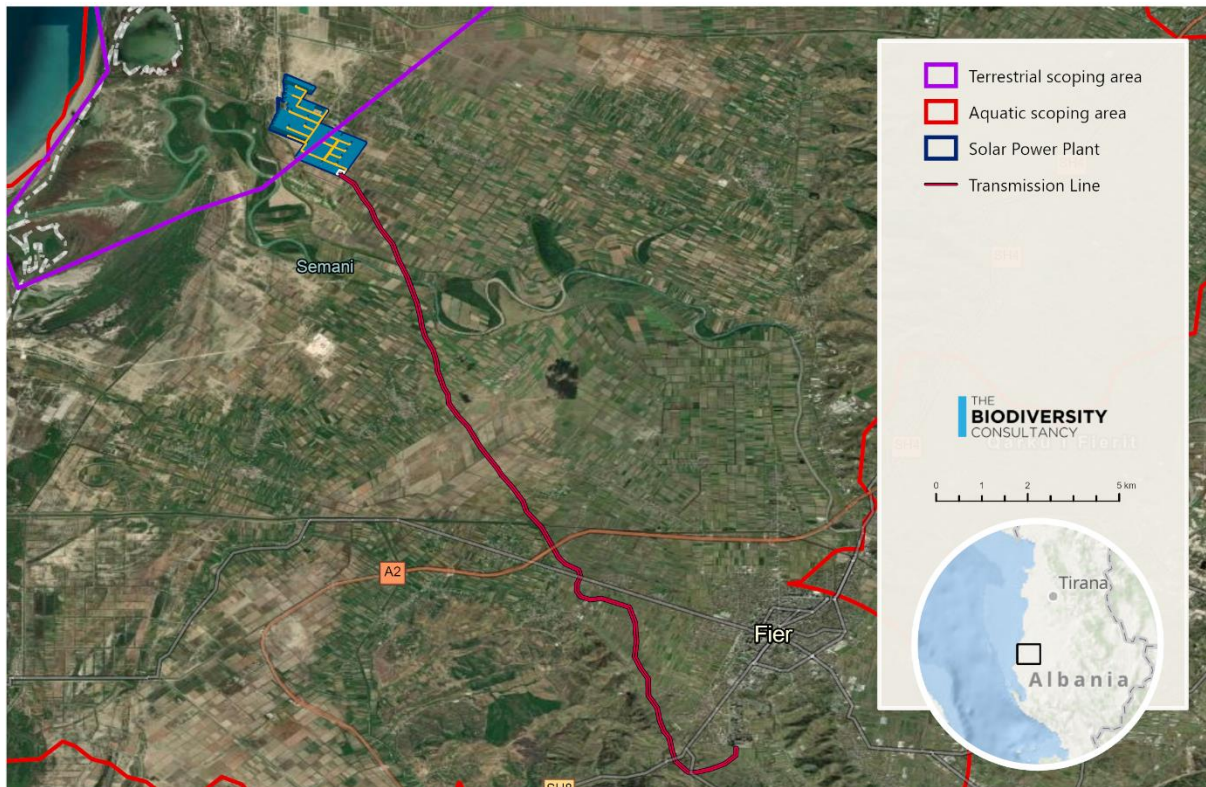


Figure 1. Project infrastructure and location within Albania.

2.3 Definition of habitats and PBFs

PS6 identifies three categories of habitat: critical habitat (CH), natural habitat (NH) and modified habitat (MH). These categories are based on (i) habitat condition (or 'quality' or 'state') and (ii) significance for biodiversity. PS6 purposely provides a broad definition of habitats as geographical units (that include marine and freshwater aquatic areas, as well as airway passages). Modified, natural and critical habitat refers to the biodiversity value of the area as determined by species, ecosystems, and ecological processes. (PS6 Guidance Note (GN) 26: IFC 2019). PR6 further identifies Priority Biodiversity Features (PBFs) as those features which require consideration during project impact assessment and mitigation, but of lower sensitivity than features which are CH-qualifying (EBRD 2014b, 2014a).

2.3.1 Critical Habitat

Areas of "high biodiversity value" are termed CH by both the IFC and EBRD. There are five main criteria by which CH is defined (IFC / EBRD):

- Criterion 1 / Criterion ii: Areas of importance to Critically Endangered and/or Endangered species;
- Criterion 2 / Criterion iii: Areas of significant importance to endemic and/or restricted-range species;

- Criterion 3 / Criterion iv: Area supporting globally significant concentrations of migratory species and/or congregatory species;
- Criterion 4 / Criterion i: Highly threatened and/or unique ecosystems; and
- Criterion 5 / Criterion v: Areas associated with key evolutionary processes.

Criteria 1-3 (IFC) are species-specific and assessed against quantitative thresholds, further details of which are provided in [Appendix 1](#). EBRD has not defined thresholds for Criteria ii-iv, and in practice the equivalent PS6 criterion threshold is usually applied. For this assessment the same criteria have been used to identify CH according to both IFC PS6 and EBRD PR6. Criteria 4 and 5 / Criterion i and v are assessed qualitatively based on expert opinion, though quantitative criteria for ecosystems (Keith *et al.* 2013) can be used as a guide for Criterion 4 / Criterion i. EBRD also define CH with a sixth criteria - (vi) Ecological functions that are vital to maintaining the viability of biodiversity features described as critical habitat features (e.g. riparian zones and rivers, dispersal or migration corridors, hydrological regimes, seasonal refuges or food sources, keystone or habitat-forming species). For the purposes of this CHA, this criterion has been combined within the assessment under Criteria 1-3 / ii-iv).

2.3.2 Natural and Modified Habitat

Natural and modified habitats exist on a continuum that ranges from largely untouched, pristine natural habitats to intensively managed, modified habitats. IFC's classification of areas as either natural or modified habitat is based on the extent of human modification. The threshold for classifying a habitat as modified rather than natural is high – only the most heavily disturbed and converted ecosystems would be classified as modified, as opposed to degraded natural habitat. Monoculture forestry plantations, agricultural areas and urban areas showing “substantial modification” would be classed as modified; whereas selectively logged forests or pasture usually retain most of the original species and ecological processes and so would in most cases still be considered natural habitat. EBRD has replaced the concept of natural habitat definition with Priority Biodiversity Features (PBFs) – See [Section 2.3.3](#).

2.3.3 Priority Biodiversity Features

In addition to CH values, EBRD also considers a suite of PBFs which are of lower concern, but still important for a project to consider. PBFs include: (i) threatened habitats (e.g. natural and priority habitats identified under the EU Habitats Directive - Annex 1); (ii) vulnerable species; (iii) significant biodiversity features identified by a broad set of stakeholders or governments (such as Key Biodiversity Areas or Important Bird Areas); and (iv) ecological structure and functions needed to maintain the viability of priority biodiversity features (EBRD 2014a, paragraph 12). EBRD have not defined thresholds for these categories.

2.4 Scope and limitations of this Critical Habitat Assessment

The scope of the CHA is focused on determining the biodiversity values for which the area within which the Project is located qualifies as CH, as well as providing additional information on PBFs. The CHA does not assess impacts to biodiversity, as this is provided by the Project ESIA. However, guidance

on the next steps needed to meet IFC PS6 and EBRD PR6 requirements for biodiversity risk management, including addressing any significant impacts, are presented in [Section 5](#).

The CHA has been completed using data from previous baseline surveys undertaken for the Project as part of its ESIA (Abkons 2021), supported by global biodiversity datasets and published literature to determine biodiversity significance. The ESIA field surveys covered the Project area and its immediate surrounds. There is limited field-derived information available beyond the ESIA surveys completed within Project footprint. Therefore, additional secondary data has been obtained from scientific literature and consultation with biodiversity specialists¹ on plants and invertebrates to interpret the results and provide expert opinions.

3 Assessment approach

CH determination was based on the following steps:

1. Identification of appropriate scoping areas which contain the entire Project;
2. Collection and verification of available biodiversity information from Project reports, literature review, and expert opinion;
3. Identification of appropriate ecologically appropriate areas for analysis (EAAAs); and
4. Completion of assessments against PS6 and PR6 criteria for species and ecosystems to identify which biodiversity features meet the relevant thresholds for CH.

The methodology of each of these steps is presented in more detail below.

3.1 Identify the scoping area for the Project

Relatively broad landscape and seascape units may be initially scoped to determine if they are likely to support species or habitats that qualify as critical habitat. However, the scoping area does not necessarily represent the spatial scope for the assessment of impacts to biodiversity, nor the application of mitigation or offset measures. For this CHA, two initial scoping areas were defined, one for terrestrial species (all mammals, birds, reptiles, insects and plants) and one for aquatic species (all fish and amphibians).

¹ Zoltán Barina (plants) and Tamás Németh (invertebrates) from the Hungarian Natural History Museum.



Figure 2. Project layout and scoping areas used in the assessment.

3.1.1 Terrestrial scoping area

The terrestrial scoping area included the Karavasta Key Biodiversity Area (KBA)² (as shown in Figure 2). This area constitutes a common area with overlapping distribution of multiple biodiversity features, including a congregatory area supporting populations of each species during a particular period in their life-cycle that is associated with the KBA.

3.1.2 Aquatic scoping area

The aquatic scoping area (shown in Figure 2) for this assessment comprises:

- The full extent of three main catchments within which most of the Project infrastructure occurs;
- A 5 km buffer around the small portion of transmission line which extends beyond the southernmost of the three main catchments; and,

² The selection of the KBA as the scoping area for terrestrial species followed direction from the IFC biodiversity specialist.

- The Divjaka-Karavasta National Park, where this extends north beyond the northern catchment.

This area is justified on the basis that it represents a series of ecological units (catchments) relevant to the scale of the Project and supports multiple aquatic species relevant to this CHA.

3.2 Collect and verify available biodiversity information

A long-list of species predicted to occur within each of the terrestrial and aquatic scoping areas was compiled from a spatial analysis of the IUCN Red List³, global distribution data on biodiversity, Project reports and additional scientific literature.

Previous evaluations of the potential presence of critical habitat for this Project were referred to for this assessment, as were baseline surveys of biodiversity carried out as part of the Project's ESIA, which have made a significant contribution to biodiversity knowledge for the Project area.

3.3 Assess candidate biodiversity against PS6 and PR6 criteria

An initial screening of the species identified as present in the relevant scoping areas was completed to identify a list of candidate species ([Appendix 2](#)) for assessment against IFC PS6 criteria for CH. This initial screening discounted Least Concern and Near Threatened species (for Criterion 1), non range-restricted species (for Criterion 2) and non-migratory / congregatory species (for Criterion 3). PBFs identified during the previous CHA (completed as part of the ESIA) were cross-checked against this biodiversity list to confirm their presence in the relevant scoping area.

3.3.1 IFC PS6 criteria

3.3.1.1 IFC Criteria 1, 2 and 3 (EBRD Criteria ii, iii and iv): threatened, restricted-range and migratory/congregatory species

The steps taken to determine if the respective scoping area contained features which would qualify as CH based on Criteria 1-3 / Criteria ii-iv for species were:

1. Determine whether CH thresholds are exceeded for each species ([Appendix 1](#)), based on a combination of their threat status, size of population, percent of species global/national range within the relevant scoping area, or the estimated known number of sites; and
2. Use of expert opinion and professional knowledge, where necessary, to interpret the results.

³ IUCN range maps are not available for all species, subspecies and populations (especially plants), and the IUCN Red List is not an exhaustive list; many species, subspecies and populations have not been assessed under IUCN Red List criteria.

3.3.1.2 IFC Criterion 1c – Species of national importance:

Although CH is largely based on global conservation priorities, IFC sub-Criterion 1c considers important populations of nationally or regionally-listed Endangered and Critically Endangered species. Species identified as present in field surveys were compared against the 2013 national Albanian Red List assessment (Government of Albania 2013) to develop a final list for consideration under this criterion.

3.3.1.3 IFC Criterion 4 (EBRD Criterion i) – Highly threatened and/or unique ecosystems

Ecosystems present in the relevant scoping areas were identified using Copernicus (2018) and the descriptions of habitat provided in the ESIA (Abkons 2021), which were compared with information and threat status in the Red List of Ecosystems assessment for Europe (European Commission 2016). Note that this was done qualitatively, as the categories used in the three habitat-classification systems differ (See Table 2 for a comparison of habitat classification).

3.3.1.4 IFC Criterion 5 (EBRD Criterion v) – Areas associated with key evolutionary processes

Guidance Note 82 (IFC 2019) offers a number of examples of areas associated with key evolutionary processes. Landcover, habitat mapping and geographical features were considered for this Criteria. No quantitative significance thresholds exist for this Criterion.

3.4 Defining an Ecologically Appropriate Areas of Analysis

The assessment of critical habitat under IFC PS6 criteria 1-3 relies on defining appropriate EAAAs, taking into account the distribution of species or ecosystems (within and sometimes extending beyond the project's area of influence) and the ecological patterns, processes, features, and functions that are necessary for maintaining them. For species which were determined likely to exceed the relevant CH threshold(s) (Criteria 1-3) within the scoping area, their key habitat associations were identified. These habitats were then used to define the EAAA for each species within each scoping area. Where the relevant CH thresholds are exceeded, the EAAA is confirmed as CH.

Where there was insufficient information available to make a definitive conclusion, a precautionary approach was taken whereby a species was assumed present in numbers to qualify the relevant scoping area as CH. Three levels of certainty are used when determining CH-status of a species in the relevant EAAA:

- **Confirmed**, when the species has been recorded in sufficient numbers to exceed the relevant threshold;
- **Likely**, when the balance of evidence suggests threshold exceedance – however population counts or estimates are not available;
- **Possible**, when there is an indication that a threshold may be exceeded, however more evidence is required to make a determination.

For many species, population estimates were not available at either the global or local level. In this case, species-range was used as a proxy for population (i.e. 10% of the range would contain 10% of the population).

4 CHA findings

4.1 Critical Habitat-qualifying biodiversity

4.1.1 Criteria 1-3 / Criteria ii-iv

In total, seven species qualify, or potentially qualify, as CH under IFC PS6 Criteria 1, 2 or 3, with some species qualifying under more than one Criterion. These species consist of one amphibian, two birds and four fish (Table 1). Wetland habitats within the Karavasta KBA are CH for Dalmatian Pelican and Pygmy Cormorant, as they likely support $\geq 1.5\%$ of the species' global populations. However, there is no overlap between the Project area and the EAAA for these species and therefore PS6 / PR6 CH requirements are not applicable for either Dalmatian Pelican or Pygmy Cormorant. However, the wetland and aquatic habitats that support the Albanian Water Frog and the four fish species do overlap the Project area and therefore PS6 / PR6 CH requirements apply to these species.

Table 1 CH-qualifying species

Scientific name	English name	IUCN / National status ¹	IFC PS6 Criteria ²	CH qualification ⁴	Habitats	Critical Habitat	Justification
Amphibians							
<i>Pelophylax shqipericus</i>	Albanian Water Frog / Albanian Pool Frog	VU / -	1c, 2a	Confirmed	Vegetated aquatic areas, temporary and permanent water bodies, edges of lakes and slow-flowing rivers	Wetland and aquatic habitats	This IUCN Vulnerable restricted-range species (estimated extent of occurrence: 10,387 km ²) occurs in western Albania and southern Montenegro at elevations below 500 m asl (IUCN 2019). Almost 10% of its global range overlaps with the aquatic scoping area and the ESIA noted that drainage channels intersecting the OHL route were important breeding and feeding grounds for this species (Abkons 2021). Thus, it is likely that the aquatic EAAA supports ≥10% of the global population of this species, and contains a nationally-important population, and therefore qualifies the aquatic EAAA as CH under Criteria 1c and 2a.
Birds							
<i>Pelecanus crispus</i>	Dalmatian Pelican	NT / CR	1c, 3a	Confirmed	Freshwater and brackish wetlands. Breeds on islands in freshwater lakes or in thick aquatic vegetation	Wetland and aquatic habitats	This nationally Critically Endangered (Government of Albania 2013) and globally Near Threatened congregatory species is a trigger species for the Karavasta Lagoon KBA, where 85 breeding pairs (170 individuals) were reported in 2020 (Abkons 2021). With an estimated global population of 11,400-13,400 (BirdLife International 2022a) this count represents ≥1.5% of the global population, and qualifies the terrestrial EAAA as CH under both Criteria 1c and 3a.

⁴ **Confirmed**, when the species has been recorded in the relevant EAAA in sufficient numbers to exceed the relevant threshold; **Likely**, when the balance of evidence suggests that threshold exceedance – either due to the area of overlap between a species range and the relevant EAAA or due to the species being recorded on site – however counts or population estimates are not available; **Possible**, when there is an indication that a threshold may be exceeded, however more evidence is required to make a determination.

Scientific name	English name	IUCN / National status ¹	IFC PS6 Criteria ²	CH qualification ⁴	Habitats	Critical Habitat	Justification
<i>Microcarbo pygmaeus</i>	Pygmy Cormorant	LC / CR	1c, 3a	Confirmed	Reedbeds and the shorelines along rivers, freshwater lakes and coastal wetlands	Wetland and aquatic habitats	This nationally Critically Endangered (Government of Albania 2013) and globally Least Concern congregatory and partial migratory species is a trigger species for the Karavasta Lagoon KBA, where ≥700 breeding pairs (1400 mature individuals) have been reported (Abkons 2021). With an estimated global population of 45,000-139,999 (BirdLife International 2022b), the terrestrial EAAA supports ≥1.5% of the global population and qualifies as CH under Criteria 1c and 3a.
Fish							
<i>Barbus prespensis</i>	Prespa barbel	LC / LR	3a	Confirmed	Freshwater and brackish lakes and streams	Wetland and aquatic habitats	This is a small size barbel (<300 mm) that spends most of its life in lakes except during reproduction (late April-July) when it migrates into tributaries to spawn. It has a range overlap of 2.5% with the aquatic scoping area and was recorded at multiple survey locations in both the SPP area and along the OHL route in May 2021. Given the species' confirmed presence and level of range overlap with the aquatic EAAA, the aquatic EAAA is considered likely to support >1% of the global population and therefore qualifies the EAAA as CH under criterion 3a.
<i>Acipenser naccarii</i>	Adriatic sturgeon	CR / EN	1a, 1c	Possible	Large freshwater rivers, after a juvenile period in nearshore marine habitats	Wetland and aquatic habitats	This globally Critically Endangered migratory species has a range overlap of 0.47% with the aquatic scoping area. The species is restricted to the Adriatic Sea area where it occurs from the Po River, Italy, to the Buna River, Albania, but previously occurred further south along the Adriatic coast into Greece. It was last recorded from Albania in 1997 in the Buna River, however due to its rarity and lack of focused surveys, it is possible low numbers are present in the aquatic EAAA – in which case the aquatic EAAA would qualify as CH under both criteria 1a and 1c.
<i>Anguilla anguilla</i>	European Eel	CR / -	1a, 1c, 3a	Confirmed	Small streams to large rivers and lakes, in estuaries, lagoons and coastal waters	Wetland and aquatic habitats	This globally critically Endangered migratory species has a range overlap of 0.01% with the aquatic scoping area, but has been recorded at multiple survey locations in both the SPP area and along the OHL route, and the Karavasta lagoon is important habitat at a National level for the species (Government of Albania 2019). The species is therefore confirmed to qualify under Criterion 1c and may also qualify under 1a and 3a.
<i>Alburnus scoranza</i>	Bleak	LC / -	3a	Confirmed	Freshwater lakes and streams	Wetland and aquatic habitats	This migratory species is not mapped as present in the aquatic scoping area according to IUCN Red List data, however was historically present in the Vjosë river (Bogutskaya & Ahnelt 2019, record from 1894) and was reported at three ESIA survey locations in both the SPP area and along the OHL route. Assuming that the species identification

Scientific name	English name	IUCN / National status ¹	IFC PS6 Criteria ²	CH qualification ⁴	Habitats	Critical Habitat	Justification
							of the ESIA surveys is correct, the aquatic EAAA would likely contain >1% of the global population, and the aquatic EAAA would qualify as CH under Criterion 3a.

¹**CR** = Critically Endangered, **EN** = Endangered, **NT** = Near Threatened, **VU** = Vulnerable, **LC** = Least Concern, **NE** = Not Evaluated

²IFC PS6 species **Criterion 1**: Critically Endangered and/or Endangered species, **Criterion 2**: Endemic and/or Restricted-range species, **Criterion 3**: Migratory and/or congregatory species. See [Appendix 1](#) for further details on PS6 criteria.

4.1.2 Criterion 4 / Criteria i: Highly threatened and/or unique ecosystems

No ecosystem or habitat identified as present in the immediate Project area meets the threshold for this criterion (Table 2).

Determination under Criterion 4 was made by comparing the habitat descriptions from the ESIA (Abkons 2021) with the habitat descriptions in the IUCN Red List of Ecosystems Assessment for Europe (European Commission 2016). Consideration of this criterion outside of the area covered by the ESIA was not possible, as the only available spatial land cover layer for either scoping area does not use the same classifications as either the ESIA or European Red List Assessment (Table 2).

4.1.3 Criterion 5 / Criteria v: Areas associated with key evolutionary processes

Review of existing information did not identify spatial features likely to be associated with key evolutionary processes, and along with the general lack of restricted range species occurring within either scoping area, suggests neither scoping area would qualify as CH under Criterion 5.

4.2 Priority Biodiversity Features

The ESIA Critical Habitat Assessment (Abkons 2021) determined the following species as PBFs for the Project (for full details see [Appendix 3](#)):

- Seven species of plants;
- Two species of mammal;
- Thirty-five species of bird; and,
- Five aquatic species.

None of these species have been determined as CH values.

The ESIA identified two habitats as present in the immediate Project area that are listed on Annex I of the EU Habitats Directive: '1310 *Salicornia* and other annuals colonizing mud and sand', and '92A0. *Salix alba* and *Populus alba* galleries'⁵. Small areas of the former saltmarsh habitat are naturally rehabilitating within the PV plant, following abandonment of agricultural cultivation. The '92A0. *Salix alba* and *Populus alba* galleries occur between pylons 10-15. As Annex I habitats, these habitats also meet EBRD's definition of 'threatened habitat' and are considered PBFs.

However, neither of these habitats have been determined to be threatened by the IUCN Red List of Ecosystems Assessment for Europe and therefore do not meet the IFC / EBRD definition of CH.

⁵ The ESIA identifies a third habitat, 1150 Coastal Lagoons, listed on Annex 1 as present in the wider area, but with its closest extent c. 2.2 km from the Project footprint.

Additional Annex I habitats have not been identified as present in the scoping areas, in part as there is not full alignment between the available landcover spatial layers and Annex I categories (Table 2). Therefore, it is possible that further habitats listed on Annex I may be present in either scoping area beyond the Project area.

In addition, EBRD includes significant biodiversity features identified by a broad set of stakeholders and governments (e.g. KBA / IBA) as PBFs. These are identified in [Section 4.2.1](#) below.

4.2.1 Protected Areas / Internationally Recognized Areas of high biodiversity value

A number of Protected Areas (PA) or otherwise Internationally-Recognised Area (IRA) occur within the two scoping areas (Figure 3, Figure 4, Figure 5). There is overlap between Project infrastructure and the Karavasta Lagoon KBA / IBA and therefore Paragraph 20 of IFC PS6 is triggered. PAs and IRAs in the scoping areas include:

- Divjaka-Karavasta National Park, which spans an area of 22,230 ha between the Adriatic coast, Shkumbini River in the north and Semani River in the south. The Park consists of four lagoons, the largest being the Karavasta Lagoon which is separated from the Adriatic Sea by a large sand bar which is covered with planted coastal coniferous forests. As the largest lagoon of its kind in the Mediterranean Sea, it has been recognised as a wetland of international importance under the Ramsar Convention. The area is designated as a KBA/IBA (as the Karavasta Lagoon KBA) due to its outstanding value for globally threatened bird species, wintering and breeding waterbirds (BirdLife International 2022c), as well as the Albanian Water Frog. Two of these avian trigger species, Dalmatian Pelican and Pygmy Cormorant, also qualify wetlands within this area as Critical Habitat (Table 1). The area is also a candidate Emerald site. The boundaries for each of these designations are slightly different. The proposed Project footprint overlaps with the KBA, but not the National Park, Ramsar or candidate Emerald site ([Figures 3-5](#));
- Levan Managed Nature Reserve (IUCN Category IV), to the south-west of Fier and the proposed OHL alignment, which is a remnant of previously more widespread oak forests;
- Kurora E Lumit Te Vjeter, Seman (Libofshe-Adriatik) Nature Monument (IUCN Category III), to the east of the OHL alignment. This area represents a remnant of old riparian forest along Semani River. The proposed Project footprint does not overlap with the PA;
- Pishë Poro Nature Monument (IUCN Category IV), which is a coastal wetland area containing primarily salt marshes, sand dunes, and planted coastal coniferous forest in the far south-west of the aquatic scoping area. The proposed Project footprint does not overlap with the PA; and,
- Vjose-Narta Protected Landscape (IUCN Category V), also in the far south-west of the aquatic scoping area, designated for its wetlands and relic habitats. This area is also a candidate Emerald site and a Key Biodiversity Area. The proposed Project footprint does not overlap with the PA / IRA.

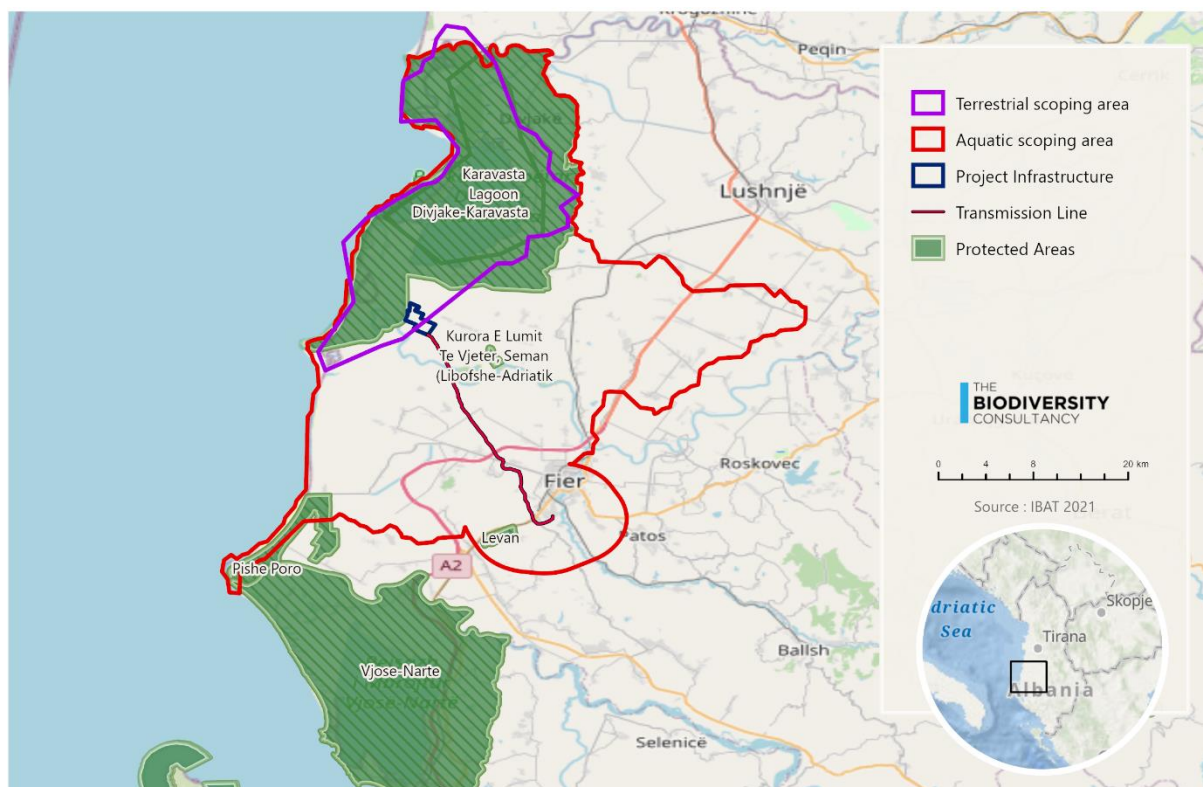


Figure 3. Overlap between Protected Area, the two scoping areas and Project infrastructure.

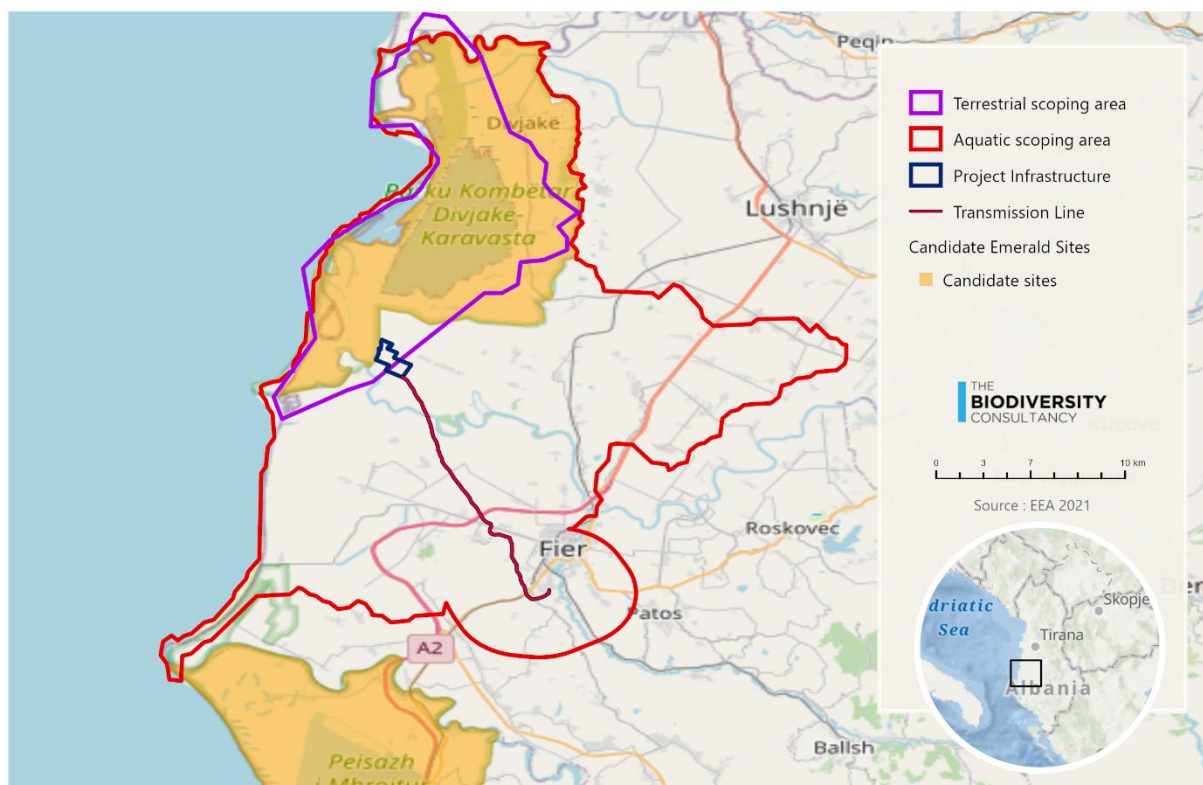


Figure 4. Overlap between the Candidate Emerald Sites, the two scoping areas and Project infrastructure.

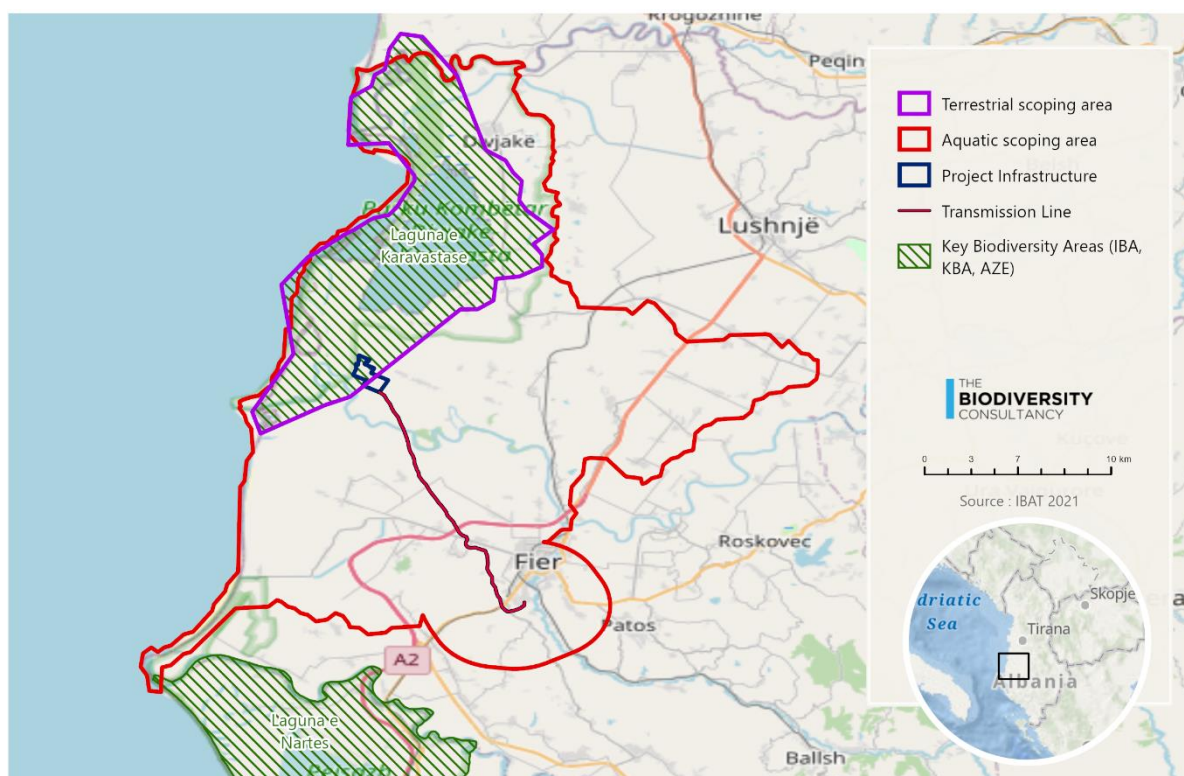


Figure 5. Overlap between Key Biodiversity Areas, the two scoping areas and Project infrastructure.

4.3 Natural and Modified Habitats

Classification of natural and modified habitats (as defined by the IFC) within the aquatic and terrestrial scoping areas is complicated by the different habitats classification systems used by different data sources. This section attempts to align these classification systems and determine which habitat types meet the IFC definition of natural and modified habitats – as summarised in Table 2.

Within the Karavasta KBA, four broad habitat categories (as defined by the IUCN⁶) have been recorded as present (Key Biodiversity Areas Partnership 2022):

- forest (alluvial and very wet forest, broadleaved deciduous woodland, mixed woodland and native coniferous woodland);
- shrubland (scrub);
- wetlands (rivers and streams, standing brackish and salt water, water fringe vegetation); and
- artificial areas (arable land, other urban and industrial areas).

⁶ Habitats Classification Scheme (Version 3.1)

Of these, CH-qualifying species are supported by 'wetlands' habitats, which has been to define the EAAA and represent CH (Table 1). Forests and shrublands should be considered natural habitat and artificial areas as modified habitat, as defined by the IFC.

For the aquatic scoping area, CH-qualifying species are known, or predicted, to occur in all flowing or standing water bodies, including the Semani River, wetlands and lagoons, drainage channels and temporary pools which exist after rains plus adjacent riparian areas (Table 1). All wetlands and aquatic areas should therefore be considered as the aquatic EAAA and qualify as CH.

Almost all other habitats in the vicinity of the project are likely to have been degraded to some extent through human modification. This is indicated by the Corine landcover mapping available for the scoping areas (Copernicus 2018) (Figure 6), which show the majority of the area overlapping the Project infrastructure as cultivated areas. The ESIA describes the majority of the site of the PV plant as well as the route of the transmission line as agricultural. Attempts to cultivate the PV plant appears to have ceased some years ago, leading to a heterogenous mixture of degraded habitats including areas that are starting to naturally rehabilitate to Mediterranean and thermo-Atlantic salt marshes and salt meadows. However, due to the isolation of the area from influence from the sea and the extensive drainage that has been installed, the area is not functioning as a natural saltmarsh habitat.

The only natural habitat (as defined by IFC) within the project area is the area of 92A0: *Salix alba* and *Populus alba* galleries along the Semani river between pylons 10-15 (Abkons 2021) (Table 2).

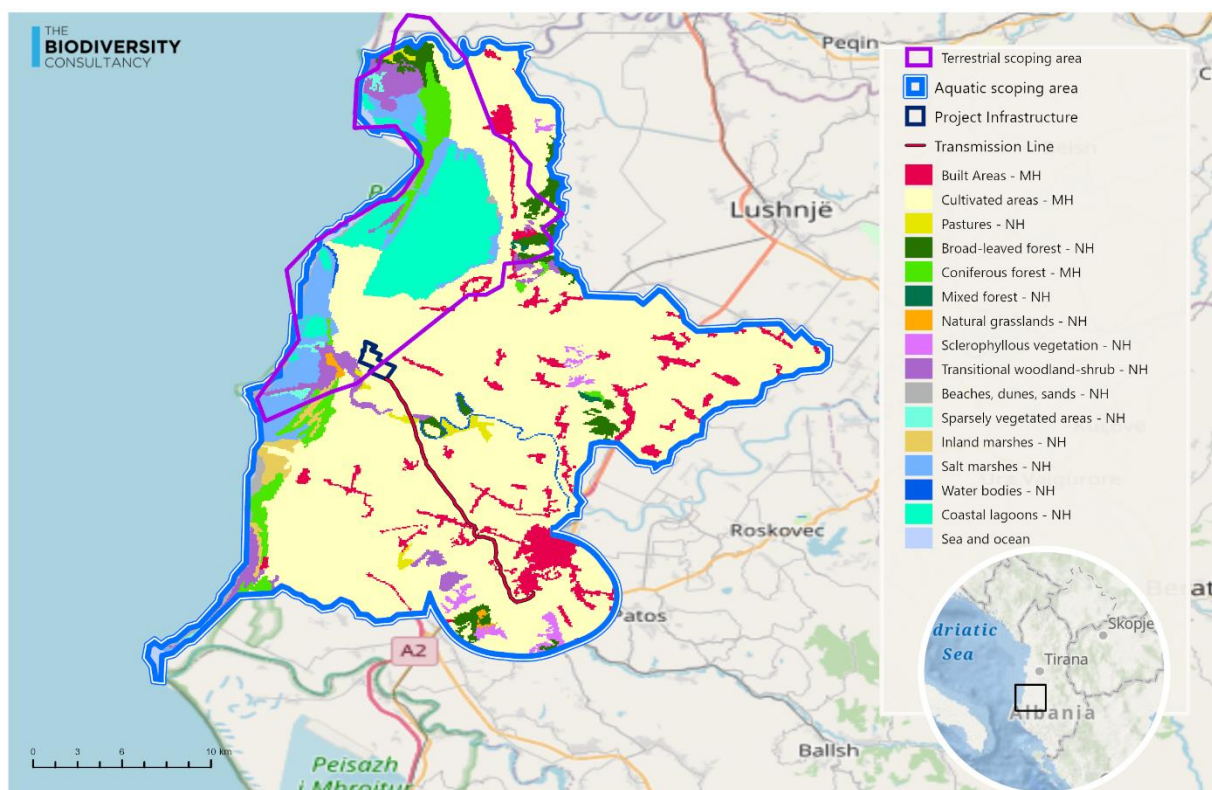


Figure 6. Habitats in the Project terrestrial and aquatic scoping areas, based on Corine landcover layers (Copernicus 2018).

Table 2. Details of habitats, or likely to be present, in the aquatic scoping area.

Habitat Classification						Overlap with Project infrastructure
IUCN Habitats Classification Scheme	Corine (Copernicus 2018)	European Commission 2016 – threat status	ESIA habitat (Abkons 2021)	EU Habitats Directive (European Union 1992) Annex I habitats	IFC PS6	
Artificial	Built areas	-	-	-	MH	Yes
	Cultivated areas	-	Mixed mosaic agriculture, olive groves	Includes small areas of 1310: <i>Salicornia</i> and other annuals colonising mud and sand. [Also present, but not in listed in Annex 1 - 1410: Salted Mediterranean meadows (<i>Juncetalia maritimi</i>)	MH	Yes, the majority of the project footprint (Abkons 2021)
	Pastures	-	-	-	MH	Yes
Forest	Broad-leaved forest		-		NH	No
	Transitional woodland	G1.3 Mediterranean and Macaronesian riparian woodland - VU	92A0: <i>Salix alba</i> and <i>Populus alba</i> galleries		NH	Yes, along the Semani river between pylons 10-15 (Abkons 2021)
	Coniferous forest	B1.7d Mediterranean coniferous coastal dune woodland - LC	Coastal coniferous forest	2270: Wooded dunes with <i>Pinus pinea</i> and/or <i>Pinus pinaster</i>	NH	No
	Mixed forest	-	-	-	NH	No

Habitat Classification						Overlap with Project infrastructure
IUCN Habitats Classification Scheme	Corine (Copernicus 2018)	European Commission 2016 – threat status	ESIA habitat (Abkons 2021)	EU Habitats Directive (European Union 1992) Annex I habitats	IFC PS6	
Grasslands	Natural grasslands	-	Natural and semi natural grasslands	Includes areas of 6510: Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	NH	No
Shrubland	Sclerophyllous vegetation		Sclerophyllous grazed forests	6310 Dehesas with evergreen Quercus spp.	NH	No
	Transitional woodland-shrub			-	NH	No
Marine	Beaches, dunes, sands	B1.3b Mediterranean and Black Sea shifting coastal dune - VU	Sea dunes of the Mediterranean coast	2110 embryonic shifting dunes	NH	No
Wetlands	Coastal lagoons		Coastal wetlands / lagoons	[Not listed on Annex 1 – 1150 Coastal lagoons]	CH	No
	Water bodies	-	Drainage channels/reedbeds	-	CH	Yes

5 Summary

In summary, the assessment confirms:

- Five species meet the Critical Habitat (CH) thresholds for Criteria 1-3 / Criteria ii-iv (Table 1) in wetland and aquatic habitats within the PV plant and along the transmission line route: four fish species and the Albanian Water Frog.
- The remainder of the Project area meets the IFC definition of modified habitat – with the exception of a small area of *Salix alba* and *Populus alba* galleries along the Semani river between pylons 10-15 of the transmission line.
- Two habitats and 49 species are identified as PBFs, as defined by EBRD PR6
- The Project footprint overlaps with an internationally-recognised area (Karavasta KBA). The KBA also meets the EBRD definition of PBF. The wetland habitats within the Karavsta KBA are CH for two bird species, however these habitats do not overlap with the Project area and PS6 / PR6 CH requirements do not apply to either Dalmatian Pelican or Pygmy Cormorant.

The implications of these findings and recommended next steps for managing biodiversity risks and aligning with IFC PS6 requirements for operating in CH are presented below.

5.1 Implications and next steps

CH designation is purely an assessment of biodiversity importance of an area, based on the biodiversity values and not the potential Project impacts. For Projects operating in CH, IFC PS6 requires project proponents to ‘fully exercise the mitigation hierarchy’, with an emphasis on measures aimed at avoiding and minimizing impacts. Where significant residual impacts remain, additional remediation and offset measures may be required to deliver a net gain for all CH-qualifying features.

The presence of species that qualify areas as CH does not necessarily mean that a project will significantly impact these species. Several scenarios are possible, from impacts that are negligible, readily avoided or temporary, to those that are significant, long-term and challenging to mitigate. It is also important to consider whether any features need a species-specific focus or if they can be collectively addressed through broader consideration of habitat management and taking a landscape-level perspective (e.g. using particular habitats as a proxy for a suite of similar species).

Even where no measurable impacts are anticipated to CH-qualifying biodiversity after mitigation, projects need to undertake monitoring to verify this, which can either be described in a Project-specific Biodiversity Monitoring and Evaluation Plan (BMEP) or within other documents. Where monitoring indicates that there are unforeseen impacts, adaptive management measures should be in place to address these.

The PV plant is located in an area with a mixture of critical and modified habitat and therefore PS6 paragraphs 12 and 17-19 are applicable (IFC 2012). In areas of modified habitat, a project should minimize impacts to biodiversity and implement mitigation measures as appropriate. In areas of CH, projects are required to demonstrate:

- 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 CH 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.

Where the Project could have significant, adverse and irreversible impacts to PBFs, the Project should (EBRD 2014a, paragraph 13) not implement any project-related activities unless:

- There are no technically and economically feasible alternatives;
- The overall benefits outweigh the project impacts on biodiversity;
- Stakeholders are consulted in accordance with PR 10;
- The project is permitted under applicable environmental laws, recognising the priority biodiversity features; and,
- Appropriate mitigation measures are put in place, in accordance with the mitigation hierarchy, to ensure no net loss and preferably a net gain of priority biodiversity features over the long term, to achieve measurable conservation outcomes.

As the Project is situated within an Internationally Recognised Area, it must also comply with PS6 paragraph 20 (IFC 2012), and Guidance Note 6 paragraph GN93 to GN98 (IFC 2019) by:

- Demonstrating that Project's operations within the protected area are in line with national law;
- Developing the Project in a manner which is consistent with any management plans that exist for the area;
- Consulting with protected area staff, or officials responsible for management of the area; and
- Developing, and implementing, additional programmes to 'promote and enhance the conservation aims of the area'.

Next steps

While this CHA has identified CH-qualifying species and PBFs for the Project, available information (known habitat associations and field records in the Project ESIA and CHA: Abkons 2021) suggests that areas of temporary or permanent water in the Project site have suitable habitat for the Albanian Water Frog and the four CH fish species.

It is therefore recommended that the Project develops:

- A Biodiversity Management Plan (BMP) that details the mitigation and monitoring measures that will be implemented during construction and operation phases of the Project to avoid and minimise impacts to CH-qualifying features and PBFs, and restore habitat for these features on-site and verify the levels of impacts occurring; and,
- A Biodiversity Action Plan (BAP) that quantifies the residual impacts to identified priority species and proposes conservation actions that would support the Project meet its NG commitments for

CH-qualifying species and NNL commitments for PBFs, and promotes the conservation aims and effective management of the Karavasta KBA.

6 References

- Abkons (2021) Environmental and Social Impact Assessment (ESIA) Report. Karavasta 140 MW solar PV project, Albania.
- BirdLife International (2022a) Species factsheet: *Pelecanus crispus*.
<http://datazone.birdlife.org/species/factsheet/dalmatian-pelican-pelecanus-crispus/text>
- BirdLife International (2022b) Species factsheet: *Microcarbo pygmaeus*.
<http://datazone.birdlife.org/species/factsheet/pygmy-cormorant-microcarbo-pygmaeus/text>
- BirdLife International (2022c) Important Bird Areas factsheet: Karavasta Lagoon.
- Bogutskaya, N.G. & Ahnelt, H. (2019) New data on the western Balkan leuciscids *Alburnoides* and *Alburnus* (Teleostei, Leuciscidae) from the Vjosa River, Albania. *ZooKeys* 870: 101–115.
- Copernicus (2018) Corine Land Cover (CLC) 2018, Version 2020_20u1. *Copernicus Land Monitoring Service*. <https://land.copernicus.eu/pan-european/corine-land-cover/clc2018>
- EBRD (2014a) EBRD Performance Requirement 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources. European Bank for Reconstruction and Development, London, UK.
- EBRD (2014b) Guidance Note: EBRD Performance Requirement 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources. European Bank for Reconstruction and Development, London, UK.
- European Commission (2016) European Red List of Habitat Part 2. Terrestrial and freshwater habitats. https://ec.europa.eu/environment/nature/knowledge/redlist_en.htm
- European Union (1992) DIRECTIVE 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. European Union.
- Government of Albania (2013) Red List of wild flora and fauna, Albania. Tirana, Albania.
- Government of Albania (2019) Urdhër Nr. 536 Për miratimin e planit të menaxhimit të ngjalës evropiane (*Anguilla anguilla*) në shqipëri për periudhën 2019-2024. [Order No. 536 Approving the Plan for The Management of the European Eel (*Anguilla anguilla*) for the Period 2019-2024].
- IFC (2012) Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. International Finance Corporation (IFC), Washington DC, USA.
- IFC (2019) Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. International Finance Corporation (IFC), Washington DC, USA.
- IUCN (2019) *Pelophylax shqipericus*.
- IUCN (2020) Red List of Ecosystems. <https://iucnrl.org/>
- Keith, D.A., Rodríguez, J.P., Rodríguez-Clark, K.M., Nicholson, E., Aapala, K., Alonso, A., Asmussen, M., Bachman, S., Basset, A., Barrow, E.G., Benson, J.S., Bishop, M.J., Bonifacio, R., Brooks, T.M.,

Burgman, M.A., Comer, P., Comín, F.A., Essl, F., Faber-Langendoen, D., Fairweather, P.G., Holdaway, R.J., Jennings, M., Kingsford, R.T., Lester, R.E., Nally, R.M., McCarthy, M.A., Moat, J., Oliveira-Miranda, M.A., Pisanu, P., Poulin, B., Regan, T.J., Riecken, U., Spalding, M.D. & Zambrano-Martínez, S. (2013) Scientific foundations for an IUCN Red List of Ecosystems. *PLoS ONE* 8: e62111.

Key Biodiversity Areas Partnership (2022) Key Biodiversity Areas factsheet: Karavasta Lagoon (Extracted from the World Database of Key Biodiversity Areas. Developed by the Key Biodiversity Areas Partnership: BirdLife International, IUCN, American Bird Conservancy, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Rainforest Trust, Royal Society for the Protection of Birds, World Wildlife Fund and Wildlife Conservation Society). Key Biodiversity Areas Partnership. <https://www.keybiodiversityareas.org/site/factsheet/2904>

Appendix 1 Application of Critical Habitat thresholds

Criterion 1: Critically Endangered and Endangered species

Areas qualifying for this criterion support:

- a. Globally-important concentrations of IUCN Red-listed Critically Endangered or Endangered species (>0.5% of the global population and >5 reproductive units of a CR or EN species);
- b. 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 under (a); or
- c. As appropriate, areas containing important concentrations of a nationally/regionally-listed EN or CR species

Quantitative data for the list of candidate species in each scoping area were screened against PS6 thresholds (IFC 2019). In the absence of information on species' populations, the screening was based on the proportion of a species' distribution in that scoping area. When information was unclear, a precautionary approach was taken.

This assessment also considered any subspecies and sub-populations that have been individually assessed on the IUCN Red List.

Criterion 2: Restricted-range species

Areas qualifying for this criterion hold $\geq 10\%$ of the global population size and ≥ 10 reproductive units of a restricted-range species. "Restricted-range" refers to a species' extent of occurrence (EOO), and for terrestrial vertebrates, dragonflies and damselflies, and plants, is defined as those that have an EOO of 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 was defined as a global range <500 km maximum linear geographic span.

Each scoping area was screened for overlap with restricted-range species' maps from the IUCN Red List. Any such species were compared with the recommended thresholds for Criterion 2 (IFC 2019). As for Criterion 1 species, the screening was preferentially based on the proportion of a species' population in a given area, but often – owing to limited data – on the proportion of a species' global distribution.

Criterion 3: Migratory and congregatory species

Areas qualifying for this criterion support either:

- ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle and on a cyclical or otherwise regular basis; or
- ≥ 10 percent of the global population of a species during periods of environmental stress.

Data for the list of candidate species in each scoping area was screened against PS6 thresholds (IFC 2019), based on the proportion of a species' population in a given area.

Criterion 4: Highly threatened and/or unique ecosystems

IUCN maintains a Red List of Ecosystems (IUCN 2020) and ecosystems are progressively being assessed against the Red List criteria. Areas qualifying under this criterion hold $\geq 5\%$ of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN, or other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning.

Criterion 5: Areas associated with key evolutionary processes

The key factor defining this criterion is 'the structural attributes of a landscape'. Although key evolutionary processes may operate at various spatial scales, in the sense of PS6 these are usually considered at a relatively fine scale rather than broad biogeographic regions (e.g. an unusual outcrop of a rock type that holds unique and endemic plant assemblages). No quantitative thresholds exist for this criterion, so there is a reliance on expert opinion and qualitative value judgement.

Appendix 2 Candidate species

Table 3. List of candidate species for the Project scoping areas assessed against Critical Habitat thresholds for Criteria 1-3 (IFC 2019).

Group	Scientific name	English Name
Mammalia	<i>Myotis mystacinus</i>	Whiskered Myotis
Mammalia	<i>Myotis capaccinii</i>	Long-fingered Bat
Mammalia	<i>Miniopterus schreibersii</i>	Schreiber's Bent-winged Bat
Mammalia	<i>Canis aureus</i>	Golden Jackal
Mammalia	<i>Meles meles</i>	Badger
Amphibia	<i>Pelophylax shqipericus</i>	Albanian Water Frog / Albanian Pool Frog
Aves	<i>Oxyura leucocephala</i>	White-headed Duck
Aves	<i>Neophron percnopterus</i>	Egyptian Vulture
Aves	<i>Puffinus mauretanicus</i>	Balearic Shearwater
Aves	<i>Anser erythropus</i>	Lesser White-fronted Goose
Aves	<i>Podiceps auritus</i>	Horned Grebe
Aves	<i>Clanga clanga</i>	Greater Spotted Eagle
Aves	<i>Puffinus yelkouan</i>	Yelkouan Shearwater
Aves	<i>Streptopelia turtur</i>	European Turtle-dove
Aves	<i>Aythya ferina</i>	Common Pochard
Aves	<i>Pelecanus crispus</i>	Dalmatian Pelican
Aves	<i>Microcarbo pygmaeus</i>	Pygmy Cormorant
Aves	<i>Accipiter nisus</i>	Eurasian Sparrowhawk
Aves	<i>Circus cyaneus</i>	Hen Harrier
Aves	<i>Circus pygargus</i>	Montagu's Harrier
Aves	<i>Himantopus himantopus</i>	Black-winged Stilt
Aves	<i>Merops apiaster</i>	European Bee-eater
Aves	<i>Recurvirostra avosetta</i>	Pied Avocet
Aves	<i>Glareola pratincola</i>	Collared Pratincole
Aves	<i>Anas crecca</i>	Common Teal
Aves	<i>Ardea alba</i>	Great White Egret
Aves	<i>Phalacrocorax carbo</i>	Great Cormorant
Aves	<i>Spatula clypeata</i>	Northern Shoveler
Aves	<i>Sternula albifrons</i>	Little Tern
Aves	<i>Alauda arvensis</i>	Eurasian Skylark
Aves	<i>Alcedo atthis</i>	Common Kingfisher
Aves	<i>Anthus campestris</i>	Tawny Pipit
Aves	<i>Anthus pratensis</i>	Meadow Pipit
Aves	<i>Ardea cinerea</i>	Grey Heron
Aves	<i>Ardeola ralloides</i>	Squacco Heron
Aves	<i>Burhinus oedicnemus</i>	Eurasian Stone-curlew
Aves	<i>Calandrella brachydactyla</i>	Greater Short-toed Lark

Group	Scientific name	English Name
Aves	<i>Charadrius alexandrinus</i>	Kentish Plover
Aves	<i>Circus aeruginosus</i>	Western Marsh Harrier
Aves	<i>Egretta garzetta</i>	Little Egret
Aves	<i>Falco naumanni</i>	Lesser Kestrel
Aves	<i>Falco tinnunculus</i>	Common Kestrel
Aves	<i>Glareola pratincola</i>	Collared Pratincole
Aves	<i>Hippolais olivetorum</i>	Olive-tree Warbler
Aves	<i>Ixobrychus minutus</i>	Little Bittern
Aves	<i>Lanius collurio</i>	Red-backed Shrike
Aves	<i>Lullula arborea</i>	Woodlark
Aves	<i>Melanocorypha calandra</i>	Calandra Lark
Aves	<i>Sterna hirundo</i>	Common Tern
Gnetopsida	<i>Ephedra distachya</i> L.	Joint Pine
Liliopsida	<i>Ammophila arenaria</i> (L.) Link	Marram Grass
Liliopsida	<i>Baldellia ranunculoides</i>	The lesser water plantain
Liliopsida	<i>Crocus dalmaticus</i>	Dalmatian saffron
Liliopsida	<i>Eleocharis acicularis</i>	Scirpe Épingle
Liliopsida	<i>Gymnadenia frivaldii</i>	Frivald's Gymnadenia
Magnoliopsida	<i>Glaucium flavum</i> Crantz	Horned Poppy
Magnoliopsida	<i>Hypericum perforatum</i> L.	Perforate St. John's wort
Magnoliopsida	<i>Matthiola tricuspidata</i> (L.) R. Br.	Three-horned Stock
Magnoliopsida	<i>Pancretium maritimum</i> L.	Azucena de Mar
Magnoliopsida	<i>Tanacetum cinerariifolium</i>	Dalmatian Pyrethrum
Magnoliopsida	<i>Tamarix dalmatica</i>	-
Polypodiopsida	<i>Pilularia minuta</i>	Dwarf Pillwort
Actinopterygii	<i>Squalius</i> sp. nov. 'Aaos'	-
Actinopterygii	<i>Barbus prespensis</i>	Prespa barbel
Actinopterygii	<i>Acipenser naccarii</i>	Adriatic sturgeon
Actinopterygii	<i>Anguilla anguilla</i>	European Eel
Actinopterygii	<i>Oxynoemacheilus pindus</i>	Pindus stone loach
Actinopterygii	<i>Cyprinus carpio</i>	Common Carp
Actinopterygii	<i>Salmo dentex</i>	-
Actinopterygii	<i>Aphanius fasciatus</i>	Mediterranean killifish
Actinopterygii	<i>Alburnus scoranza</i>	-
Actinopterygii	<i>Dicentrarchus labrax</i>	European Sea Bass
Actinopterygii	<i>Chelon ramada</i>	Thinlip Grey Mullet
Actinopterygii	<i>Gobio skadarensis</i>	Scdar gudgeon
Malacostraca	<i>Austropotamobius pallipes</i>	White clawed Crayfish
Malacostraca	<i>Astacus astacus</i>	Noble Crayfish
Gastropoda	<i>Chondrula lugorensis</i>	-
Gastropoda	<i>Chilostoma fuchsi</i>	-
Gastropoda	<i>Poiretia delesserti</i>	-

Group	Scientific name	English Name
Gastropoda	<i>Gyalina circumlineata</i>	-
Gastropoda	<i>Monacha microtricha</i>	-
Gastropoda	<i>Chilostoma dunjana</i>	-
Gastropoda	<i>Gyalina candida</i>	-
Gastropoda	<i>Chilostoma albanograeca</i>	-
Gastropoda	<i>Codringtonia neocrassa</i>	-
Gastropoda	<i>Cochlostoma kleciaki</i>	-
Gastropoda	<i>Agardhiella skipetarica</i>	-
Gastropoda	<i>Charpentieria stigmatica</i>	-
Insecta	<i>Buprestis splendens</i>	Goldstreifiger
Insecta	<i>Agrilinus ibericus</i>	-
Insecta	<i>Thorectes intermedius</i>	-
Insecta	<i>Eupholidoptera garganica</i>	Gargano Marbled Bush-cricket
Insecta	<i>Myrmecophilus hirticaudus</i>	Rough-tailed Ant-cricket

Appendix 3 Priority Biodiversity Features – species and habitats

Priority Biodiversity Features – species and habitats, as identified in the Project ESIA and supporting documents (Abkons 2021)

	Name
Habitats	
	<i>Salix alba</i> and <i>Populus alba</i> galleries (92A0)
	<i>Salicornia</i> and other annuals colonizing mud and sand (1310)
Plants	
	Marram grass <i>Ammophila arenaria</i>
	Joint Pine <i>Ephedra distachya</i>
	Sea-poppy <i>Glaucium flavum</i>
	Perforate St. John's wort <i>Hypericum perforatum</i>
	The lesser water plantain <i>Baldellia ranunculoides</i>
	Three-Horned Stock <i>Matthiola tricuspidata</i>
	Sea Daffodil <i>Pancratium maritimum</i>
Mammals	
	Badger <i>Meles meles</i>
	Western Polecat <i>Mustela putorius</i>
Birds	
	Eurasian Sparrowhawk <i>Accipiter nisus</i>
	Eurasian Skylark <i>Alauda arvensis</i>
	Common Kingfisher <i>Alcedo atthis</i>
	Tawny Pipit <i>Anthus campestris</i>
	Meadow Pipit <i>Anthus pratensis</i>
	Great Egret <i>Ardea alba</i>
	Grey Heron <i>Ardea cinerea</i>
	Squacco Heron <i>Ardeola ralloides</i>
	Common Pochard <i>Aythya ferina</i>
	Eurasian Stone-curlew <i>Burhinus oedicephalus</i>
	Greater Short-toed Lark <i>Calandrella brachydactyla</i>
	Kentish Plover <i>Charadrius alexandrinus</i>
	Western Marsh Harrier <i>Circus aeruginosus</i>
	Hen Harrier <i>Circus cyaneus</i>
	Montagu's Harrier <i>Circus pygargus</i>
	Greater Spotted Eagle <i>Clanga clanga</i>
	Syrian Woodpecker <i>Dendrocopos syriacus</i>
	Little Egret <i>Egretta garzetta</i>
	Lesser Kestrel <i>Falco naumanni</i>
	Common Kestrel <i>Falco tinnunculus</i>
	Collared Pratincole <i>Glareola pratincola</i>
	Black-winged Stilt <i>Himantopus himantopus</i>
	Olive-tree Warbler <i>Hippolais olivetorum</i>
	Little Bittern <i>Ixobrychus minutus</i>
	Red-backed Shrike <i>Lanius collurio</i>
	Lesser Grey Shrike <i>Lanius minor</i>
	Woodlark <i>Lullula arborea</i>

	Name
Habitats	
	Calandra Lark <i>Melanocorypha calandra</i>
	European Bee-eater <i>Merops apiaster</i>
	Night Heron <i>Nycticorax nycticorax</i>
	Greater Flamingo <i>Phoenicopterus roseus</i>
	Golden Plover <i>Pluvialis apricaria</i>
	Common Tern <i>Sterna hirundo</i>
	Little Tern <i>Sternula albifrons</i>
	European Turtle Dove <i>Streptopelia turtur</i>
Aquatic species	
	White-clawed crayfish <i>Austropotamobius pallipes</i>
	European crayfish <i>Astacus astacus</i>
	Ohrid loach <i>Cobitis ohridana</i>
	Scadar gudgeon <i>Gobio skadarensis</i>
	Pindus stone loach <i>Oxynoemacheilus pindus</i>