Albanian Development Fund

Biodiversity Baseline Assessment

Zgosht to Cerenec road scheme; Albania National and Regional Roads Project

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EXECUTIVE SUMMARY

On behalf of the European Bank for Reconstruction and Development (EBRD) and the Albanian Development Fund (ADF), RSK have prepared a biodiversity baseline assessment for the proposed Zgosht to Cerenec road scheme, as part of the Albanian National and Regional Roads Scheme. The 46.5 km road scheme will entail upgrading the section of an existing gravel road from Zgosht to Cerenec located in east Albania, approximately 41 km from Tirana. The Project is currently in the design phase and has been classified as a Category B project in accordance with the 2014 Environmental and Social Policy. Approximately 13.5 km of the road traverses the western border of the Shebenik-Jabllanicë National Park (IUCN Category 2; national park category 2). The EBRD is considering providing a sovereign loan to the Republic of Albania for the benefit of the ADF to finance the works. It is anticipated that this biodiversity basline assessment will inform the development of an EIA or ESIA for the project by ADF.

This biodiversity baseline assessment was based on information yielded by a literature and data review, scoping biodiversity surveys, habitat mapping, priority biodiversity feature screening, critical habitat assessment and stakeholder consultation. The assessment confirmed that the Project is located within an area of high biodiversity value. A summary of the critical habitat-qualifying features and Priority Biodiversity Features (PBFs) are presented in Table E1 and Table E2 respectively.

Table E1: Summary of Critical Habitat-qualifying features for the Project

EBRD PR6 Criteria	IFC PS6 Criterion Threshold Numbers	Critical Habitat-qualifying Features	Justification
Highly threatened or unique ecosystems	4a	No critical habitat qualifying features	–
	4b	Shebenik-Jabllanicë National Park	Protected area status Priority Annex 1 Habitat
Habitats of significant importance to endangered or critically endangered species	1a	Balkan lynx European Eel	Balkan lynx meets the threshold Precautionary due to the paucity of data
	1b	Pindus stone loach	Precautionary due to the paucity of data
	1c	Balkan Lynx European Eel	Balkan lynx meets the threshold Precautionary due to the paucity of data

Habitats of significant importance to endemic or geographically restricted species	2	Balkan Lynx Chamois Heldreich's Pine Serpentine false brome Mountain tea	Precautionary due to the paucity of data
Habitats supporting globally significant (concentrations of) migratory or congregatory species	3a	No critical habitat qualifying features	-
	3b	No critical habitat qualifying features	-
Areas associated with key evolutionary processes	N/A	Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe	-
Ecological functions that are vital to maintaining the viability of biodiversity features described (as critical habitat features)	N/A	Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe and waterbodies/courses within the AOA	Precautionary basis assuming the presence of the critical habitat-qualifying species listed above

Table E2: Summary of priority biodiversity features for the Project

EBRD PR6 Criteria	Priority Biodiversity Features (PBF)
Vulnerable Species	Plants x 7; insect x2; fish x 2, mammals x 9; birds x 23
Threatened Habitats (EU Habitats Directive Annex 1 priority habitats)	• Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)
Significant Biodiversity Features Identified by a Broad Set of Stakeholders or Government	Protected areas within the area of analysis: • Shebenik-Jabllanicë National Park • Kuturman Managed Nature Reserve • Mali Me Gropa-Bize-Martanesh Protected Landscape • Mali I Dajtit
Ecological Structure and Functions Needed to Maintain the Viability of Priority Biodiversity Features	Project falls within Pindus Mountains mixed forests ecoregion (category Palearctic) which covers Greece, Macedonia (FYROM) and Albania. This ecoregion covers 15,300 square miles and is categorised by WWF as Critical / Endangered.

The key biodiversity sensitivities for the Project are summarised as follows:

- The Project falls within WWF's Pindus Mountains mixed forests ecoregion (category Palearctic) which covers 15,300 square miles and is categorised by WWF as Critical / Endangered (Regato, 2020).
- Approximately 13.5 km of the road traverses the western border of the Shebenik-Jabllanicë National Park (IUCN Category 2; national park category 2) which is also designated as a Candidate Emerald Site. A portion of this National Park is also designated as a World Heritage Site, transboundary Important Plant Area and a Key Biodiversity Area.
- The transboundary World Heritage Site entitled Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe incorporates 12 counties (including Albania) and 82 components parts. These components comprise sufficiently sized stands of ancient and primeval beech forest with maximum integrity, that represent the outstanding universal values of the World Heritage Site. One component, namely Rrajca, falls within the boundary of the Shebenik-Jabllanicë National Park. Based on publicly available information, this component of the World Heritage Site appears to fall within the Central Zone of the National Park and does not overlap the footprint of the proposed study area.
- Forest, grassland and scree habitats in the Project area may potentially support nationally rare and threatened plant species, some of which are PBFs for the project or trigger critical habitat.
- Shebenik-Jabllanicë National Park provides important habitat within one of the primary remaining ranges of the Balkan lynx (*Lynx lynx* ssp *balcanicus).* This species is categorised as Critically Endangered by the IUCN Red List of Threatened Species (2020) and the Albanian Red List (2013) and triggers critical habitat. the Balkan lynx population in Albania is estimated to comprise approximately 10 mature individuals, with at least 4 individuals occupying the Munella area (PPNEA, 2018).
- The existing Zgosht to Cerenec road traverses some well-known habitats for medium to large mammals in Albania. Indirect evidence of fauna species activity was recorded during the scoping assessment in June 2020 near the Zgosht to Cerenec road including tracks of Eurasian otter (*Lutra lutra*; a PBF; IUCN listed Near Threatened (NT); Albanian Red Listed Vulnerable (VU)), brown bears (*Ursus arctos*; a PBF; IUCN VU in the Mediterranean and Albanian Red List VU) and grey wolf (*Canis lupus*; IUCN Least Concern (LC) and Albanian Red List NT). Forest, scrub and grassland habitats that surround the road offer potentially suitable habitat to support PBF fauna and critical habitat-qualifying mammals.
- The fauna scoping assessment identified that currently there are areas with good habitat connectivity that are likely to facilitate the movement of fauna species of high biodiversity value inside and outside of the Shebenik-Jabllanicë National Park. The existing Zgosht to Cerenec road is not considered to be a major barrier for large mammal species. This is primarily linked to the poor condition of Zgosht to Cerenec road which limits the speed and volume of vehicle traffic (with a few exceptions e.g. at Shkalla e Lunikut).
- Bat surveys undertaken by the Dutch Mammal Society in 2015 indicate that several bat species use habitats for foraging, commuting and roosting near the Zgosht to Cerenec road. The fauna scoping assessment undertaken for the Project in June 2020 identified a number of trees and structures, located in close proximity to the road with potential to support roosting bats. There are international legal obligations for the protection of some

bat species in Albania through the Bonn Convention (Eurobats) and Bern Convention in parts of its range where these apply and the European Union Habitats Directive.

- The fauna scoping assessment, undertaken for the Project in June 2020, identified that forest, scrub and scree habitats located adjacent to the Zgosht to Cerenec road offer potentially suitable habitat for nesting birds, including nationally rare and threatened species. A common kestrel (*Falco tinnunculus*; PBF, Albanian Red listed VU) was observed during the scoping survey near the road, approximately 3 km from Zgosht.
- The fauna scoping assessment also identified a few waterbodies near the Zgosht to Cerenec road with the potential to support aquatic fauna of national conservation importance (i.e. amphibians, invertebrates and fish).
- Dead or decaying wood with oak forests in the Project area may potentially provide habitat for the saproxylic stag beetle (*Lucanus cervus*) and great Capricorn beetle (*Cerambyx cerdo*) which are both PBFs for the Project.

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1 INTRODUCTION

On behalf of the European Bank for Reconstruction and Development (EBRD) and the Albanian Development Fund (ADF), RSK have undertaken a biodiversity baseline assessment for the proposed Zgosht to Cerenec road scheme located in Albania (hereafter 'the Project'). The road scheme will entail upgrading an existing gravel road from Zgosht to Cerenec. The Project has been classified as a Category B project in accordance with EBRD's 2014 Environmental and Social Policy. EBRD is considering providing a sovereign loan to the Republic of Albania for the benefit of the ADF to finance the works.

Figure 1.1: Section of the Zgosht to Cerenec road

1.1 Project description

The Project is located in east Albania, approximately 41 km from Tirana at the closest point, within the Municipalities of Bulqizë and Librazhd. The existing road currently spans 46.5 km and connects Zgosht to Cerenec. Road improvements were undertaken along this section of the road in 2012, however the road is currently considered to be of an inadequate standard to support existing and predicted levels of vehicle traffic. The road is currently in the design phase; however, it is anticipated that the Project is likely to entail the following road works to the existing Zgosht to Cerenec road:

- localised habitat clearance and topsoil removal within some areas of the working width
- installation of the subgrade and aggregate base layers along the length of the entire road

- the installation of an asphalt layer (6 cm thick binder course and 4 cm wearing course layer)
- cleaning and improvements of the existing drainage system (including concrete channels and culverts). Currently some culverts also serve as animal crossings.
- construction of additional concrete retaining walls
- installation of road safety barriers
- bioengineering works to stabilise and protect escarpments
- installation of traffic signs (i.e. pedestrian and vehicle signage)
- the addition of road markings
- installation of streetlighting along sidewalks in urban areas
- upgrading existing areas of paving
- constructing new areas of paving in urban areas
- the installation of optical cabling for the optical fibre network in urban areas
- the rehabilitation of several bridges

The Project has been classified as a Category B project in accordance with EBRD's 2014 Environmental and Social Policy. Approximately 13.5 km of the road will cross the western border of the Shebenik-Jabllanicë National Park (IUCN Category 2; national park category 2). This nationally protected area is also designated as a Candidate Emerald Site, Key Biodiversity Area and an Important Plant Area. The beech forests in Rrajca basin area of the National Park are part of the Ancient Beech Forests of Europe UNESCO World Heritage site called Primeval Beech Forests of the Carpathians and Other Regions of Europe. The Project may also require small-scale land acquisition.

To manage environmental and social risks associated with the project, key documents have been prepared as follows:

- Feasibility Study: Upgrade of the Road "Zgosht (Librazhd)- Cerenec Bridge (Bulqizë)" (ADF, 2015)
- Biodiversity Impact Assessment (RSK, 2020)
- Habitat Regulations Assessment (RSK, 2020)
- Biodiversity Management Plan (RSK, 2020)

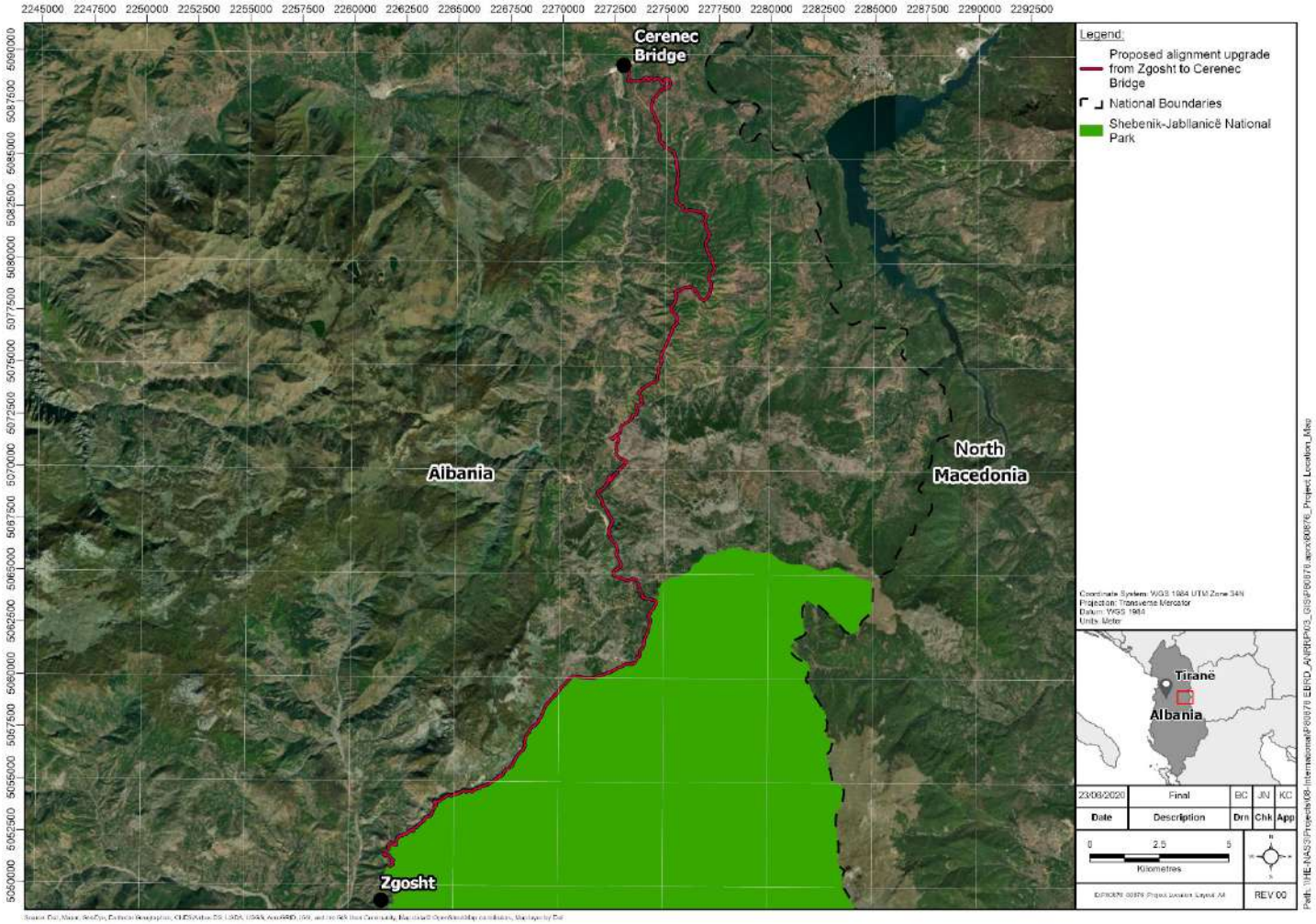


Figure 1.2: Project location

1.2 Scope of Work

This biodiversity baseline assessment comprises the following components:

- literature and data review
- habitat mapping and ground-truthing
- fauna and botanical scoping assessments
- preliminary, rapid critical habitat assessment and priority biodiversity feature screening.

1.3 Study area

1.3.1 Literature review

The study area for the literature review encompassed the Project footprint, the adjoining habitats and key protected areas located in proximity to the Project. The review aimed to ascertain ecological information regarding terrestrial and aquatic habitats, species, ecological communities and protected areas. This information was contextualised at the local, regional, national and global scales.

1.3.2 Habitat mapping

Habitats were mapped within the Project footprint and a 50 m buffer either side of the centre of the road alignment . The proposed road measures 46.5 km in length, resulting in a mapped area of 461 ha.

1.3.3 Biodiversity scoping assessments

The biodiversity scoping assessments were undertaken within a 50 m buffer located either side of the centre of the road alignment within the section of road that passes through the Shebenik-Jabllanicë National Park. Binoculars were used by the surveyors to extend their field of vision.

1.3.4 Area of Analysis for the rapid Priority Biodiversity Feature Screening and Critical Habitat Assessment

The area of analysis is described in detail in Section **Error! Reference source not found.**

1.4 Good Practice Guidelines

This report has been compiled using the following best practice guidance documents and industry standards:

- EBRD Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (EBRD, 2014).
- IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (IFC, 2012).
- Design Manual for Roads and Bridges. Volume 10 environmental design (Highways Agency et al., 1992).

- Design Manual for Roads and Bridges. Volume 11 environmental assessment (Highways Agency et al 1993).
- Good Practices for the Collection of Biodiversity Baseline Data. Prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross-Sector Biodiversity Initiative (Gullison et al., 2015).

2 LEGISLATION AND GUIDANCE

2.1 Introduction

This section summarises the environmental regulatory requirements that will apply to project activities on three levels:

- the applicable international requirements such as international conventions and treaties to which Albania is a signatory, as well as European Union (EU) frameworks
- applicable Albanian national legislation, permitting related to forests and other relevant approval conditions (such as permits to cross fish-bearing watercourses)
- EBRD Performance Requirements.
- This section lists all relevant national and international legislation, guidance and policy to provide a framework for the development of the project, and any relevant legislation or policies relating to the identification and conservation of rare and endangered species or habitats.

2.2 International Conventions and Treaties

Albania has ratified several international biodiversity conventions and treaties. These are summarised in Table 2.1.

Table 2.1: Biodiversity-related conventions and treaties to which Albania is a signatory

International Convention	Date of signing	Description
Convention on Biological Diversity, 1992 (Rio Convention)		The objectives of the CBD are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from commercial and other utilization of genetic resources. The agreement covers all ecosystems, species, and genetic resources. The Rio Convention describes requirements for ratifying countries so they can address key biodiversity issues through the development and implementation of national strategies focusing on the conservation and sustainable use of biological diversity, such as National Biodiversity Strategies and Action Plans (NBSAPs). The convention also describes requirements to ensure that these strategies are mainstreamed into the planning and activities of those sectors whose activities could have an impact (positive or negative) on biological diversity. *Cartagena Protocol on Biological Safety, 2003 (the Biosafety Protocol)* As a supplement to the Rio Convention, the Biosafety Protocol aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse

		effects on biological diversity, also taking into account risks to human health. *Nagoya Protocol, 2010* As a second supplementary agreement to the Rio Convention, the 'Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity' provides a transparent legal framework for the implementation on the fair and equitable sharing of benefits arising out of the utilisation of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity.
United Nations Convention to Combat Desertification, 1994 (UNCCD)	27 April 2000	The UNCCD aims to combat desertification and mitigate the effects of drought through national action programmes that incorporate long-term strategies supported by international cooperation and partnership arrangements.
Bern Convention on the Conservation of European Wildlife and Natural Habitats, 1982 (Bern Convention)	1st May 1999	The Bern Convention is particularly concerned about protecting natural habitats and endangered species, including migratory species. Its overall goals are to conserve wild flora and fauna and their natural habitats, promote cooperation between states and give particular attention to endangered and vulnerable species including endangered and vulnerable migratory species. *Emerald Network* The Emerald Network is an ecological network of terrestrial, coastal and marine protected areas in Europe and North America and is set up by the contracting parties to the Bern Convention with the aim to ensure the conservation and protection of those particular habitats. Albania currently has 25 sites which are official candidate sites to join the Emerald Network.
Bonn Convention on the Conservation of Migratory Species of Wild Animals, 1983 (Bonn Convention)	September 2001	The Bonn Convention requires contracting parties to cooperate in the aim to conserve migratory species and their habitats. These goals are implemented by providing strict protection for endangered migratory species, multilateral agreements for the conservation and management of migratory species that require or would benefit from international cooperation and by undertaking cooperative research activities. *Agreement on the Conservation of Populations of European Bats, 1991 (EUROBATS)* EUROBATS is an international treaty that binds the Parties on the conservation of bats in their territories. The overall goal of the EUROBATS agreement is to provide a framework for bat conservation for the member states and those that have not yet joined. Member states prohibit the deliberate capture, keeping or killing of bats except for research purposes for which a special permit is required. Furthermore, the member states identify important sites for bat conservation,

		survey the status and trends of bat populations and study their migratory patterns. Based on the result of these monitoring activities the agreement develops and reviews recommendations and guidelines that shall be implemented by the Parties on national levels. The EUROBATS agreement aims to protect all 53 European bat species through legislation, education, conservation measures and international co-operation with members and with those who have not yet joined. The agreement provides a framework of co-operation for the conservation of bats throughout Europe, Northern Africa and the Middle East. *Agreement on the Conservation of African-Eurasian Migratory Waterbirds, 1999 (AEWA)* AEWA is an intergovernmental treaty dedicated to the conservation of migratory water birds and their habitats across Africa, Europe, the Middle East, Central Asia, Greenland and Canada. AEWA covers 255 species of birds which cross international boundaries and that are ecologically dependent on wetlands for at least part of their annual cycle, including many species of divers, grebes, pelicans, cormorants, flamingos, ducks, swans, geese, waders, terns, auks and even the South African penguin.
Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973 (CITES)	25th September 2003	The CITES treaty aims to protect endangered plants and animals, particularly ensuring that international trade in specimens of wild animals and plants does not threaten the survival of the species. CITES accords varying degrees of protection to more than 35,000 species of animals and plants listed in its appendices: • Appendix I comprises about 1,200 species that are threatened with extinction and are, or may be, affected by trade. Commercial trade in wild-caught specimens of these species is illegal (permitted only in exceptional licensed circumstances). • Appendix II covers about 21,000 species that are not necessarily threatened with extinction but may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilisation incompatible with the survival of the species in the wild. International trade in specimens of Appendix II species may be authorised by the granting of an export permit or re-export certificate. • Appendix III includes 170 species that are listed after a member country has asked other CITES parties for assistance in controlling trade in a species. The species are not necessarily threatened with extinction globally. However, in all member countries, trade of these species is only permitted with appropriate export permit and a certification of

		origin from the state of the member country who has listed the species
Convention on Wetlands of International Importance, especially as Waterfowl Habitat, 1971 (Ramsar)	29th February 1996	Intergovernmental treaty that provides a framework for national action and international cooperation for the conservation and sustainable use of wetlands and their resources. Wetlands that are covered by the Ramsar Convention include lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.

2.3 EU Biodiversity Framework

2.3.1 Biodiversity strategy

In 2011, the European Commission adopted a new strategy aimed to halt the loss of biodiversity and ecosystem services within the EU by 2020. The strategy is aligned with the commitments made at the tenth meeting of the Rio Convention held in Nagoya, Japan in 2010.

The Biodiversity Strategy aims that by 2050 European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity. In this way, catastrophic changes caused by the loss of biodiversity shall be avoided.

The strategy contains six targets and 20 actions. The six targets cover:

- full implementation of EU nature legislation to protect biodiversity
- better protection for ecosystems, and more use of green infrastructure
- more sustainable agriculture and forestry
- better management of fish stocks
- tighter controls on invasive alien species
- a bigger EU contribution to averting global biodiversity loss.

2.3.2 Biodiversity legislation

The EU has adopted four key directives in relation to biodiversity legislation for wildlife and nature conservation.

2.3.2.1 Birds Directive - 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

The Birds Directive acknowledges that wild bird populations are most threatened through habitat loss and degradation. The directive places great emphasis on the protection of habitats for endangered bird species, as well as migratory species, especially through

the establishment of a coherent network of special protection areas comprising all the most suitable territories for these species.

The Birds Directive bans activities that directly threaten birds, such as the deliberate killing or capture of birds, the destruction of their nests and taking of their eggs, and associated activities such as trading in live or dead birds, with a few exceptions.

2.3.2.2 *Habitats Directive - 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora*

The Habitats Directive was adopted in 1992 as an EU response to the Bern Convention. It aims to promote the maintenance of biodiversity by requiring member states to take measures to maintain or restore natural habitats and wild species listed in the Directive's annexes at a favourable conservation status through the introduction of robust protection for those habitats and species of European importance.

In applying these measures, member states are required to take account of economic, social and cultural requirements, as well as regional and local characteristics.

The directive is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection. Overall, the directive protects over 1,000 animal and plant species and over 200 so-called 'habitat types' (special types of forests, meadows, wetlands, etc.) that are of European importance that are listed in the directive's Annexes:

- Annex I covers habitats
- Annex II covers species requiring designation of Special Areas of Conservation
- Annex III covers species in need of strict protection
- Annex IV covers species whose taking from the wild can be restricted by European Law.

2.3.2.3 *The EU Water Framework Directive - 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy*

The purpose of the water policy directive is to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. It expands the scope of water protection to all waters and sets out clear objectives that must be achieved by specified dates. It will ensure that all aquatic ecosystems and, with regards to their water needs, terrestrial ecosystems and wetlands meet 'good status' by 2015.

The directive requires member states to establish river basin districts and, for each of these, a river basin management plan.

2.4 National legislation

Basic environmental law was first developed in Albania in 1967 but the development of a modern framework only began in 1991. There are a number of laws in Albania with reference to biodiversity. Although improvement to the environmental legal system has been made there are still gaps in some aspects of nature conservation, over-lapping responsibility and some contradictory language within the provision. The National

Environmental Agency (NEA) is defined as the responsible authority for the implementation of environmental law in Albania (UNEP 2002).

On a national level, various laws and policies address and implement the international biodiversity framework signed and/or ratified by the Albanian government. This section addresses the Albanian national biodiversity framework.

Albania's general nature protection principles are guaranteed through Law No. 10431 "On Environmental Protection", dated 09/06/2011. Article 5 of the law defines "conservation of biological diversity" as one of the environmental elements.

Additional legislation includes the following (described in more detail in Appendix 1):

- Law no. 9587/2006 on Biodiversity Protection, as amended in 2014
- Law no. 81/2017 On protected areas, replacing law no. 8906/2002
- Law no. 10006/2008 on Wild Fauna Protection, amended in 2012
- Law no. 9867/2008 on rules and procedures for international trade of endangered species of flora and fauna, amended in 2012
- Law no. 10234/2010 on the integrated management of the coastal zone in the Mediterranean Sea
- Law no. 10120/2009 on the protection of medicinal, essential oil and tannin plants
- Law no. 5/2016 on the Moratorium in Forests
- Law no. 61/2016 on the Moratorium on hunting, amending Law n. 10253/2010 on hunting.

Supportive bylaws have been published to complete the legal basis for specific elements of nature protection, including, for example, the listing of protected fauna and flora species published in the Red List of Albanian Flora and Fauna 2013.

Protection of species of conservation interest is accomplished through specific provisions of the biodiversity protection law and the wild fauna protection law. The biodiversity protection law also contains provisions for invasive species and protection measures for species conservation.

Habitat protection is accomplished through the provisions of the law on protected areas, and the network of protected areas. This network serves to identify and establish the Natura 2000 ecological network. Important habitats for birds in general and migratory birds in particular are included in the law on wild fauna protection.

2.4.1 National Biodiversity Strategy and Action Plan

The National Biodiversity Strategy and Action Plan (NBSAP) 2016 lists the following achievements:

- enhancement of the legal framework
- the protected areas network has been extended from 5.8% in 2005 to about 16.61% of the territory. The protected areas network currently covers 477,566 hectares.
- Action plans have been developed for: brown bear (*Ursus arctos*), Eurasian lynx (*Lynx lynx*) (prepared in cooperation with MEDASSET). An Alien Invasive Species Action Plan has also been developed, this is described in more detail below.
- drafting of a framework project (2013) for kick-starting the process of Natura 2000 in the country

- regular reporting to the Convention on Biological Diversity.

The 2016 NBSAP envisages the expansion of the protected areas network to cover 17% of the land surface and internal waters and 6% of the coastal and marine areas. It envisages the development of management plans for five protected areas and implementation of the 12 plans already adopted. Various measures are envisaged for the protection and conservation of habitats, promoting natural regeneration and regeneration with autochthonous species of forest trees, and conservation of freshwater and marine habitats. Emphasis is placed on monitoring, education and awareness-raising.

2.4.2 Invasive Alien Species Action Plan

The Albanian Invasive Alien Species Action Plan aims to coordinate and harmonise measures to minimise or prevent adverse impacts on current or future biodiversity, economy and health arising as a result of invasive alien species.

The plan acknowledges invasive alien species (IAS) as alien species whose introduction and/or spread threatens biological diversity. They are the second biggest cause, after damage to habitats, of the significant losses of biodiversity, with harmful effects on the environment, economy and social life.

The purpose of the action plan on invasive alien species is defined through the Rio Convention for all taxonomic groups and to all levels (species, subspecies, varieties, etc.). The IAS Action Plan does not include genetically modified organisms.

The overall goals of this plan are to:

- make people aware of the issues associated with IAS and mechanisms for their control
- establish priorities in the list of actions for implementation at a national and regional level
- establish a cooperating science, state and government network focussing on IAS
- prevent new introductions of invasive species
- build capability for quick responses to new introductions
- reduce the impacts of existing invading species
- recover native species and restore natural habitats and ecosystems that are currently affected by biological invasions.

The plan outlines a methodology for the identification and prevention of invasion, as well as mechanisms for rapid response to invasion.

It addresses IAS in all three natural environments (freshwater, marine and terrestrial) and establishes a biological baseline of currently known species that fall under these categories that are present in Albania, including but not limited to molluscs, insects, fish, marine worms and mammals.

The plan prioritises IAS according to the species' risk level and whether they pose a threat to biological diversity or cause economic or health problems.

It recommends potential improvements to the current situation in Albania. In terms of tackling the introduction of invasive species, the following problems are outlined:

- lack of coordination between government agencies, state and other groups dealing with the introduction and impact of IAS
- lack of public awareness about the introduction of invasive species

- lack of priorities and overall plans for action
- inadequate and outdated legislation
- lack of monitoring capacity
- lack of measures to respond quickly to new threats
- lack of general information, its fast and effective collection and distribution, and quick responses
- lack of and inadequate scientific information.

The IAS action plan, while considering the above-mentioned issues, has outlined the following actions and priorities:

- education and public awareness raising, including the creation of an information centre, brochures, e-newsletter, seminars, workshops
- capacity building of experts, authorities and stakeholders' cooperation on national and international levels, including creation of an IAS working group, lectures at universities, and national and international workshops
- investment in research and monitoring, including the management of key research data, scientific study of impacts and mitigation measures of IAS on ecology, monitoring of IAS, and development of predictive models
- Implementation of sound legal and organisational structures, including the development of preventive measures as per Rio Convention prevention principles, a review of the current legislative framework, the development of recommendations for actions, and the harmonisation of national and international practices.

The implementation of the IAS action plan will be launched primarily for those species that are invasive or potentially invasive and could cause problems for nature conservation or the economy. It will also take into consideration the species that pose a risk to human health or veterinary science.

2.5 EBRD guidelines and policies

The EBRD is an international financial institution which uses investment as a tool to build market economies. Commitment to sustainable energy and safeguarding the environment are central to the EBRD's activity. The EBRD Performance Requirements were introduced to provide guidance for EBRD clients to manage and improve their environmental and social performance through a risk and outcomes-based approach. The most relevant performance requirement in terms of ecology and ecosystem services is Performance Requirement 6 (PR6): Biodiversity Conservation and Sustainable Management of Living Natural Resources (EBRD, 2014). PR6 promotes the importance of protecting and conserving ecological functions of ecosystems, the biodiversity supported by these functions and the sustainable management of natural resources to ensure environmental and social sustainability. Some of the key components and concepts of EBRD PR6 are as follows:

- The provision of a robust biodiversity impact assessment package that manages risks in alignment with the stages of the mitigation hierarchy to avoid, minimise, rehabilitate / restore impacts to biodiversity and offset residual impacts. This should include an assessment of cumulative biodiversity impacts. These assessments should form a component of a wider physical, environmental and social impact assessment process for a project with the understanding that there are significant overlaps and influences between these fields.

- the identification of priority biodiversity features and critical habitat-qualifying features with high levels of irreplaceability or vulnerability, consideration of the implications of their identification and the effective management of these features
- the development and implementation of a biodiversity mitigation and management strategy to minimise project-related direct and indirect impacts, followed by the continued monitoring and evaluation of these measures to ensure their suitability and identify triggers that show when measures are suboptimal and need to be adapted and re-evaluated
- the scope and benefits of biodiversity management plans and / or monitoring plans
- the identification and effective management of invasive alien species (i.e. species that are introduced by man, accidently or intentionally, outside their natural geographical range into an area where they are not naturally present (IUCN GISD 2018))
- the continual improvement of the existing management of biodiversity, ecosystem services and living natural resources
- sustainable management of living natural resources for projects where these resources are central to the project's core function and projects involved in the primary production of living natural resources.

3 METHODOLOGIES

3.1 Literature review

A review of publicly available studies and data regarding the ecological characteristics of the study area was undertaken with the aim of informing the development of the Environmental and Social Impact Assessment / Environmental Impact Assessment for the Project and other supporting documentation. Key literature sources included, but were not limited to:

- Government of Albania fauna and flora legislation, policies and local development plans
- the National Red List of Wild Flora and Fauna, Albania (2013)
- Management Plan for Shebenik-Jabllanicë National Park 2015-2024; October 2015 (PROGES and Sapienza University of Rome, 2015)
- previous flora and fauna studies conducted in the study area and broader region by universities, research centres, NGOs and international organisations
- Global Forest Watch database (2018)
- World Database of Protected Areas (WDPA): a joint venture of UNEP and IUCN, produced by UNEP-WCMC and the IUCN World Commission on Protected Areas (IUCN-WCPA) working with governments and collaborating NGOs. The WDPA is compiled from multiple local and national sources and is the most comprehensive global dataset on marine and terrestrial protected areas available.
- Key Biodiversity Areas (KBAs): KBA status is triggered by the presence of key biodiversity criteria, informed by the IUCN Red List of Threatened Species. KBA mapping builds upon the work of a number of existing partnership-supported initiatives - such as BirdLife International's Important Bird Areas, PlantLife International's Important Plant Areas and sites identified by the Alliance for Zero Extinction.
- Alliance for Zero Extinction (AZE): AZE sites are the last refuges for some of the most threatened species on the planet. AZE sites are discrete areas that contain 95% of the known global population of an Endangered (EN) or Critically Endangered (CR) species or 95% of one life history segment (e.g. breeding or wintering) of an EN or CR species.
- IUCN Red List of Threatened Species™ (2020): The Red List is widely recognised as the most comprehensive, objective global approach for evaluating the conservation status of plant and animal species. This is based on a scientifically rigorous approach to determine risks of extinction that is applicable to all species and has become a world standard.
- the European Red List (IUCN, 2018)
- the European Red List of Amphibians (Temple and Cox, 2009)
- Evolutionarily Distinct and Globally Endangered (EDGE) species database
- Broad-scale conservation priorities, including Biodiversity Hotspots, Endemic Bird Areas and High Biodiversity Wilderness Areas.

This literature review informed all aspects of this biodiversity baseline assessment.

3.2 Satellite imagery, remote vegetation interpretation and habitat mapping

Habitat mapping was undertaken using visual interpretation of satellite imagery, supplemented by ground-truthing conducted during the scoping survey. Habitats located in the study area (i.e. 50 m buffer either side of the centre of the road alignment as illustrated in Figure 3.1) were classified based on the EUNIS and EU Habitats Directive Annex I habitat types classification system (European Environment Agency, 2019). This is a comprehensive pan-European classification system that covers modified and natural habitat types including terrestrial, freshwater and marine habitats. The dates and type of satellite images utilized to develop the map is summarised in Table 3.1 and the habitat types and descriptions located in the study area are described in more detail in Section 4.4. The mapping was further validated and refined based on the findings of the ground-truthing, undertaken as part of the botanical scoping survey, to include any habitat types, including Annex I Priority Habitats, that were not previously identified.

Table 3.1: Satellite imagery used for habitat mapping

Image Used	Date of Imagery
Maxar Vivid imagery	10/09/2018

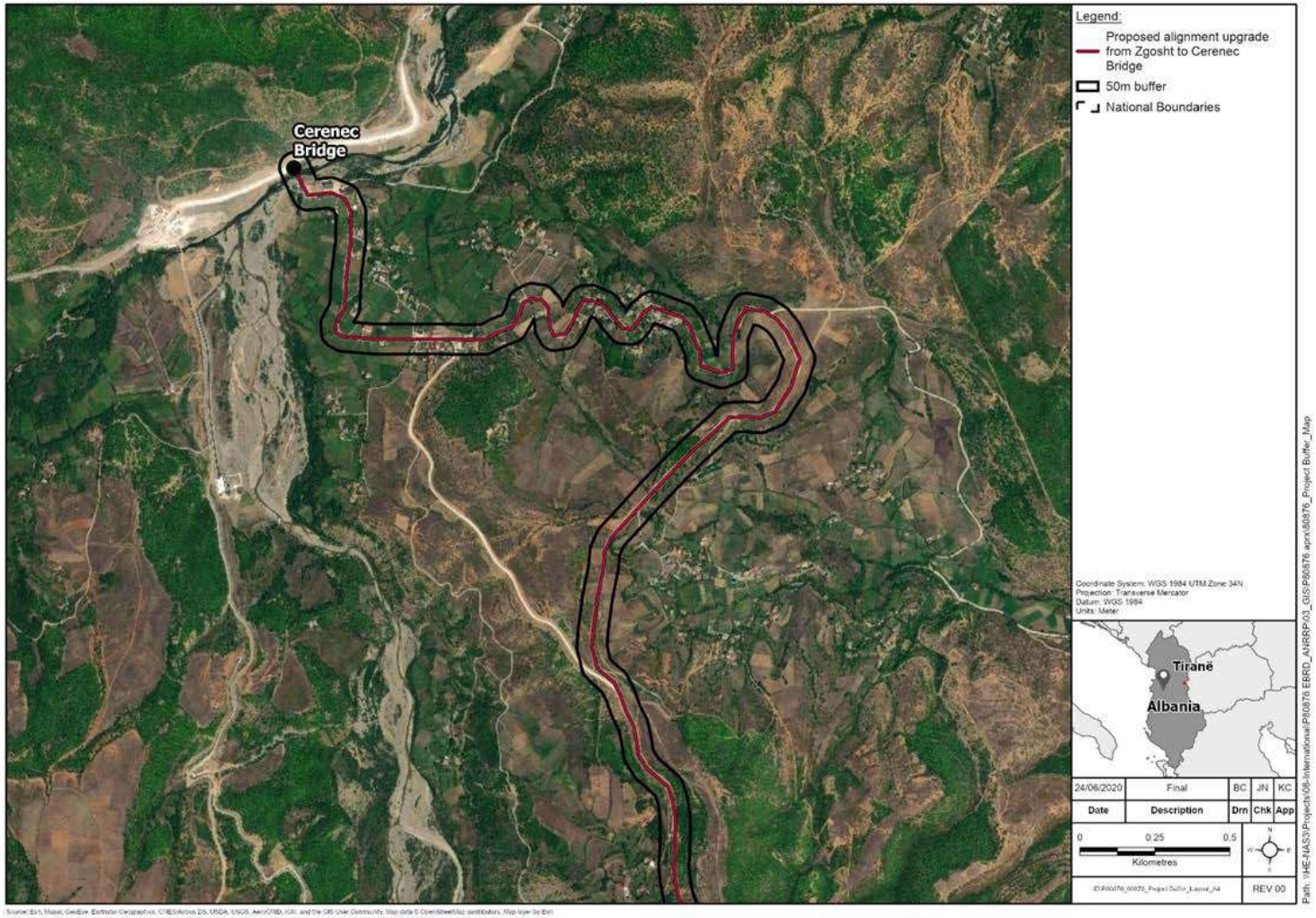


Figure 3.1: Study area (50 m buffer area) of proposed alignment

3.3 Biodiversity scoping assessment and ground-truthing

A rapid botanical scoping assessment was undertaken within the study area (the 50 m buffer) in late June 2020 by an experienced Albanian botanist over a 2-day period. The botanist undertook ground-truthing along the entire extent of the road. This entailed driving the length of the existing road from Zgosht to Cerenec, undertaking spot-checks of the draft habitat map and confirming the habitat types and structures at predetermined points adjacent to the existing alignment using a handheld GPS unit. These points were identified by RSK's GIS specialist prior to the commencement of ground-truthing. Photographs were also taken to facilitate the refinement of the habitat map ex situ. The botanist also searched for and recorded the locations of any Annex 1 priority habitats. Focus was given to characterising the floristic composition of habitats within the section of the study area (approximately 13.5 km) that traverses the Shebenik-Jabllanicë National Park. The botanist also searched for and recorded any nationally and globally rare and threatened plant species within this section of the study area where practicable.

The botanical specialist was accompanied by an Albanian fauna specialist who searched for direct and indirect evidence indicative of fauna activity and assessed the potential of habitats within the study area to support nationally and globally rare and threatened fauna species. The specialist also assessed the existing habitat connectivity between the Shebenik-Jabllanicë National Park and the adjoining environs in order to assess the risk of the proposed rehabilitation works adversely impacting the movement of large ranging fauna species of conservation importance.

3.4 Rapid, preliminary Critical Habitat / Priority Biodiversity Feature screening

3.4.1 Identification of priority biodiversity features for the Project

The first step in the identification of the PBFs for the Project was to define the spatial study area. The area of analysis is defined in Section 3.4.1.1. A literature review of known management plans of protected areas and other studies in the area were then used to develop a list of PBFs which are present or potentially present within the study area. This list underpinned the screening process of candidate critical habitat-qualifying features against PR6 criteria. Information was collated about each PBF to inform the screening process. Key species information included:

- the species name (scientific and common)
- habitat preference type
- conservation status
- date, location and author of the record
- population data (i.e. distribution, abundance and range) within the study area, region as well as on the national and global scales
- Known breeding sites within the study area, region, Albania and across their global range.

Key habitat information included:

- habitat name

- conservation status
- location
- date and author of the record.

Key information regarding protected areas included:

- conservation status
- protected area boundary
- key ecological characteristics and functions.

The following data sources were used to inform the assessment and identification of priority biodiversity features for the project (i.e. habitats and species):

- EU Habitats Directive (Annex I habitats)
- EU Birds Directive (Annexes 1, 2.1 and 2.2)
- Birds of Conservation Concern (Red/Amber list and not based on IUCN criteria)
- Convention on Migratory Species if any relevant species likely to be present (Appendices 1 and 2, AEWA, ASCOBANS, EUROBATS)
- IUCN Red List of Threatened Species (IUCN 2020)
- National Red List for Albania (2013)
- protected area citations and published information regarding protected areas in the vicinity of the proposed project
- Birdlife International Data Zone and information database
- Alliance for Zero Extinction (AZE) database
- Evolutionarily Distinct and Globally Endangered (EDGE) species database
- Published information regarding specific species and habitat information (i.e. journals and studies).

Candidate features were screened against PR6 criteria for PBFs as presented in Table 3.2.

Table 3.2: Criteria for the identification of Priority Biodiversity Features

Priority Biodiversity Features	Criteria
Threatened habitats	Habitats considered under pressure by national, regional or international assessments. These include natural and priority habitats identified under the EU Habitats Directive (Annex I).
Vulnerable species	Species listed by the International Union for Conservation of Nature (IUCN) or any other national/regional lists (such as national Red Lists) as Vulnerable (VU) or equivalent. These include animal and plant species of community interest identified under the EU Habitats Directive (Annex II).
Significant biodiversity features identified by a broad set of stakeholders or governments	Key Biodiversity Areas and Important Bird and Biodiversity Areas; nationally and internationally important species or sites for conservation of biodiversity; many areas meeting natural habitat definitions of other international financial institutions.

Priority Biodiversity Features	Criteria
Ecological structure and functions needed to maintain the viability of priority biodiversity features	Where essential for PBFs, riparian zones and rivers, dispersal or migration corridors, hydrological regimes, seasonal refuges or food sources, keystone or habitat-forming species.

(Source: EBRD 2014)

3.4.1.1 Identifying the Area of Analysis

The spatial scale at which the critical habitat determination takes place depends on underlying ecological processes for the habitat in question and is not limited to the footprint of the project. The first stage in the screening process was to define the overall area of analysis (AOA) for screening.

Considering a broader landscape than just the project site demonstrates that the project is taking a precautionary approach to biodiversity so that all project risks are taken into consideration. Different landscape units may be required for different biodiversity features (i.e. species, habitats, ecological processes etc.) or in some cases the entire area of analysis may be considered during screening.

In this case, the AOA would ideally have been split into terrestrial and aquatic landscape units. However, due to the lack of hydrology data and a spatial GIS layer, the entire area of analysis was classed as one landscape unit. Whilst this will lead to limitations in assessing certain species, particularly those in aquatic habitats (i.e. fish, amphibians etc), using the entire AOA does demonstrate that a precautionary approach is being taken towards the project risks that may be posed to biodiversity.

The AOA was selected to be as demonstrative of the proposed project area's habitat as possible, whilst keeping potential habitat connectivity and wildlife corriors clearly within the boundaries of the AOA. For this reason, the boundary of the AOA extends to the east to include Mali me Grope-Bize National Park, Mali I Dajtit National Park and Qafe Shtame National Park. Similarly the close proximity of Kuturman Managed Nature Reserve to Shebenik-Jabllanicë National Park was the reason it was included in the AOA. The north-eastern boundary of the AOA was designed to follow the Drin river valley, thus the Korab-Koritnik Managed Nature reserve was not included in the AOA due to the river and high levels of agriculture that occur on it's floodplain, despite its relatively close proximity to the project area.

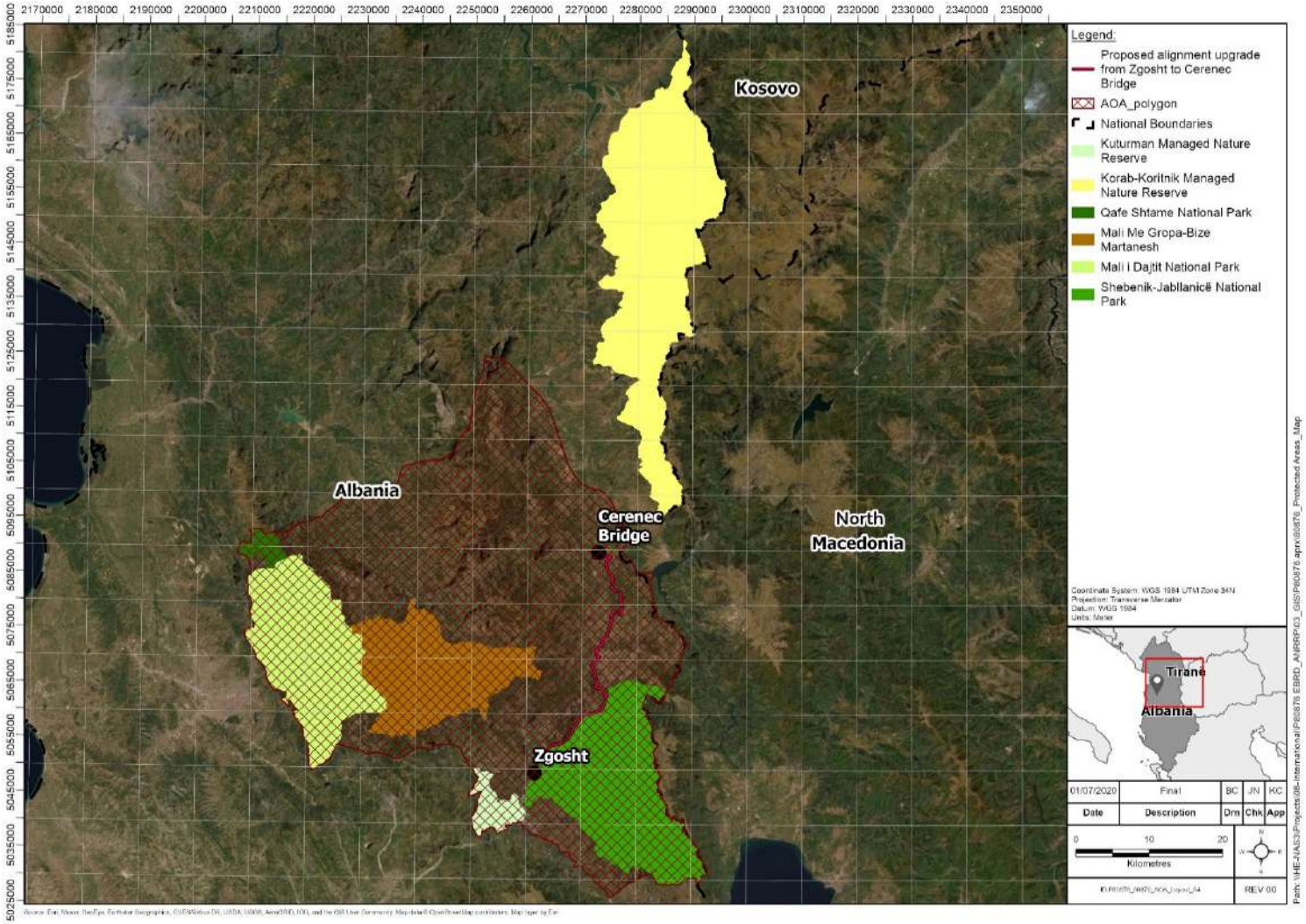


Figure 3.2: Area of Analysis

3.4.2 Determination of Critical Habitat

3.4.2.1 Critical Habitat definition

The most sensitive biodiversity features are defined as critical habitat which have the highest degree of irreplaceability and vulnerability and as such are of the highest biodiversity value. Not all PBFs qualify as critical habitat even though they remain of conservation importance.

The designation of an area as critical habitat is independent of the state of the habitat as critical habitat-qualifying biodiversity may be present in heavily degraded habitat. Critical habitat may also include an area that is not currently occupied by a species but is necessary for its recovery. Critical habitat is defined by EBRD PR6 as follows:

1. Highly threatened or unique ecosystems
2. Habitats of significant importance to endangered or critically endangered species
3. Habitats of significant importance to endemic or geographically restricted species
4. Habitats supporting globally significant migratory or congregatory species
5. Areas associated with key evolutionary processes
6. Ecological functions that are vital to maintaining the viability of biodiversity features described in this paragraph.

EBRD PR6 provides a more detailed explanation of these criteria, as presented in Table 3.3. To evaluate and assess EBRD's criteria 2 to 4, EBRD recommend using the threshold values as defined by IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources guidance notes (IFC, 2012) and the accompanying Guidance Note 6 (IFC, 2019). The IFC criteria and thresholds for determining critical habitat are presented in Table 3.4. These thresholds serve merely as a guide for decision-making and as there is no all-encompassing approach for the determination of critical habitat. IFC (2019) strongly promote the involvement of external experts particularly when data are limited.

IFC PS6 also recognises that Internationally recognised areas of high biodiversity value will also often qualify for critical habitat designation. For example:

- areas that meet the criteria of the IUCN's Protected Area Management categories Ia, Ib and II
- the majority of Key Biodiversity Areas (KBAs) which encompass, among others, Important Bird and Biodiversity Areas (IBA)
- UNESCO Natural and Mixed World Heritage Sites
- Sites that fit the designation criteria of the Alliance for Zero Extinction (AZE).

Table 3.3: PR6 criteria for the identification of Critical Habitat

Criteria	Definition
Highly threatened or unique ecosystems	Ecosystems that are at risk of significantly decreasing in area or quality; have a small spatial extent; and/or contain concentrations of biome-restricted species. For example: • Ecosystems listed as, or meeting criteria for, Endangered or Critically Endangered by the IUCN Red List of Ecosystems • Areas recognised as priorities in official regional or national plans, such as National Biodiversity Strategy and Action Plans • Areas determined to be of high priority/significance based on systematic conservation planning carried out by government bodies, recognised academic institutions and/or other relevant qualified organisations (including internationally-recognised NGOs).
Habitats of significant importance to endangered or critically endangered species	Areas supporting species at high risk of extinction (Critically Endangered or Endangered) on the IUCN Red List of Threatened species (or equivalent national/regional systems). For example: • Alliance for Zero Extinction sites • Animal and plant species of community interest in need of strict protection as listed in EU Habitats Directive (Annex IV).
Habitats of significant importance to endemic or geographically restricted species	Areas holding a significant proportion of the global range or population of species qualifying as restricted-range under Birdlife or IUCN criteria. For example: • Alliance for Zero Extinction sites • Global-level Key Biodiversity Areas and Important Bird and Biodiversity Areas identified for restricted-range species.
Habitats supporting globally significant (concentrations of) migratory or congregatory species	Areas that support a significant proportion of a species' population, where that species cyclically and predictably moves from one geographical area to another (including within the same ecosystem), or areas that support large groups of a species' population that gather on a cyclical or otherwise regular and/or predictable basis. For example: • Global-level Key Biodiversity Areas and Important Bird and Biodiversity Areas identified for congregatory species • Wetlands of International Importance designated under criteria 5 or 6 of the Ramsar Convention.
Areas associated with key evolutionary processes	Areas with landscape features that might be associated with particular evolutionary processes or populations of species that are especially distinct and may be of special conservation concern given their distinct evolutionary history. For example: • Isolated lakes or mountaintops • Populations of species listed as priorities by the Edge of Existence programme.
Ecological functions that are vital to maintaining the viability of biodiversity	Ecological functions without which critical biodiversity features could not persist. For example: • Where essential for critical biodiversity features, riparian zones and rivers, dispersal or migration corridors, hydrological regimes, seasonal refuges or food sources, keystone or habitat-forming species.

features described (as critical habitat features)	

Table 3.4: IFC PS6 criteria for the determination of Critical Habitat

IFC Criterion Type	Definition	Threshold Values
Criterion 1: Critically Endangered and Endangered Species	Species threatened with global extinction and listed as CR and EN on the IUCN Red List of Threatened Species shall be considered as part of Criterion 1. Critically Endangered species face an extremely high risk of extinction in the wild. Endangered species face a very high risk of extinction in the wild.	(a) areas that support globally-important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population and ≥ 5 reproductive units of a CR or EN species); The IUCN KBA Standard definition of reproductive unit: "the minimum number and combination of mature individuals necessary to trigger a successful reproductive event at a site (Eisenberg 1977). Examples of five reproductive units include five pairs, five reproducing females in one harem, and five reproductive individuals of a plant 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 (a). (c) As appropriate, areas containing nationally/regionally-important concentrations of an IUCN Red-listed EN or CR species.
Criterion 2 Endemic and Restricted-range Species	The term endemic is defined as restricted-range. Restricted range refers to a limited extent of occurrence (EOO). For terrestrial vertebrates and plants, a restricted-range species is defined as those species that have an EOO less than 50,000 km^2. For marine systems, restricted-range species are provisionally being considered those with an EOO of less than 100,000 km^2. For coastal, riverine and other aquatic species in habitats that do not exceed 200 km width at any point (e.g., rivers), restricted range is defined as having a global range less than or equal to 500 km linear geographic span (i.e., the distance between occupied locations furthest apart).	(a) areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.

IFC Criterion Type	Definition	Threshold Values
Criterion 3: Migratory and Congregatory Species	Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem). Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis. For example: Species that form colonies. Species that form colonies for breeding purposes and/or where large numbers of individuals of a species gather at the same time for non-breeding purposes (e.g., foraging, roosting). Species that move through bottleneck sites where significant numbers of individuals of a species pass over a concentrated period of time (e.g., during migration). Species with large but clumped distributions where a large number of individuals may be concentrated in a single or a few sites while the rest of the species is largely dispersed. Source populations where certain sites hold populations of species that make an inordinate contribution to recruitment of the species elsewhere (especially important for marine species).	(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.
Criterion 4: Highly Threatened or Unique Ecosystems	The IUCN is developing a Red List of Ecosystems, following an approach similar to the Red List for Threatened Species (see https://iucnrle.org). This should be used where possible. Where an IUCN assessment has not been performed, an assessment should be made using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally-recognized NGOs).	(a) areas representing ≥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 5: Key Evolutionary Processes	Maintaining physical or spatial features which are of importance for evolutionary and ecological processes. Such features are often associated with species diversification. By conserving species diversity within a landscape, the processes that drive speciation, as well as the genetic diversity within species, ensures the evolutionary flexibility in a system, which is especially important in a rapidly changing climate.	No thresholds

3.4.2.2 Screening

The first step in the screening process was to prepare a list of candidate habitats, species, sub-species and sub-populations based on the literature review, existing baseline data and the findings of the walkover survey. This candidate list built on that used for the determination of PBFs for the project. Where possible, as much additional information was collected about these biodiversity features as follows:

- estimates of population size at the global and national levels
- estimates of population density at the global and national levels
- ranges of extent of occurrence (EOO) at the global and national levels
- distribution maps of species ranges
- area of occupancy (AOO) at the global and national levels
- reproductive units of a species at the global and national levels (i.e. number of breeding pairs)
- Reliable records of species distribution and numbers and reproductive units within known protected areas relevant to the area of analysis and the surrounding landscapes.

Candidate features were then screened against the EBRD and IFC critical habitat criteria to determine critical habitat.

When considering the threshold criteria relevant to a species, the proportion of the global (or national) population represented by the units of analysis was based on the estimates of population and/or its distribution extent and, for some criterion, the number of reproductive units. The output value is a percentage of extent of its global or national population (and reproduction units) overlapping with the area of analysis.

For some species the population size within the area of analysis was estimated by dividing the area of analysis by the known home range of an individual animal. Hence, if the global range of a species covers 1,000 km^2 and 100 km^2 of this range is included within the area of analysis, the proportion is 10%. In some instances, the EOO or AOO provided a surrogate for population size. For some species where the estimates of population numbers and reproductive units are known, at the global scale and within the area of analysis (i.e. a protected area species account) the proportion was calculated as a percentage. For many species, particularly those that face a very high risk of extinction, no data was available, hence a precautionary approach was taken.

3.4.2.3 Stakeholder consultation

Consultation with relevant stakeholders is a critical stage of the screening process. Due to the current restrictions associated with the COVID-19 pandemic a questionnaire was prepared and disseminated to stakeholders in June 2020 by ADF for their feedback. Key stakeholders are listed as follows:

- AKZM (National Protected Areas Agency)
- Protection and Preservation of Natural Environment in Albania (PPNEA)
- Albanian Ornithological Society (AOS)
- University Marin Barleti
- Albaglobal
- Ministry of Tourism and Environment (MTM)

4 BIODIVERSITY BASELINE

4.1 Protected area status

Approximately 13.5 km of the existing Zgosht to Cerenec road crosses the western border of the Shebenik-Jabllanicë National Park (IUCN Category 2; national park category 2). This nationally protected area is also designated as a Candidate Emerald Site (Figure 4.1). A portion of this National Park is also designated as a World Heritage Site, an Important Plant Area and Key Biodiversity Area. These designations are described below in more detail.

4.1.1 Shebenik-Jabllanicë National Park

The Shebenik-Jabllanicë National Park is one of 14 National Parks in Albania and was designated as a National Park in 2008. The park covers 33,928 ha and is located within a mountainous area of East Albania, near the border of Macedonia (Figure 4.1). The majority of the National Park is situated within the Librazhd District of the Elbasan Region, whilst the northern portion of the National Park falls within the Bulqizës District of the Dibër Region. The Shebenik-Jabllanicë National Park overlaps parts of seven communes (i.e. Trebisht and Stebleve in Bulqizës District and Lunik, Librazhd Qender, Hotolisht, Qukes and Rrajcë within Librazhd District) for which the total area is 77,450 ha and the total population comprises 44,677 inhabitants (PROGES and Sapienza University of Rome, 2015).

The National Park ranges in altitude from 300 to 2,200 m above sea level and supports a diversity of climatic conditions, geological types, landscapes, habitats and species including nationally and globally rare and threatened species. The Shebenik-Jabllanicë National Park is thought to potentially have important habitat linkages for large ranging fauna species with other protected areas nearby in Albania and Macedonia and it is anticipated that the Shebenik-Jabllanicë National Park may potentially form part of a much larger transboundary protected area in the future (PROGES and Sapienza University of Rome, 2015).

The Shebenik-Jabllanicë National Park, is divided in 4 sub-zones for protection and administration:

- Central Zone (Zone Qendrore): this zone covers 14,046 ha and includes the main area of natural habitats. This is a high value area for nature and biodiversity values, and as such is afforded level 1 protection.
- The Sustainable Use Zone (Zone Perdormini Quendrueshon): this zone covers 5,253 ha and serves as a buffer around the central zone. This area predominantly comprises forest and pasture. Seasonal economic activities (i.e. grazing, gathering of medicinal plants, secondary forest products) are authorised in this area in accordance with environmental permits as long as the activities do not affect the ecological integrity of the ecosystem. This zone is afforded level 2 protection.
- The Recreation Zone (Zone Rekreative): this zone has a surface area of 2,209 ha and includes forests, pastures, meadows and agricultural lands in Letë, Fushe Studë and Stebleva. Key recreational activities are authorised to occur in this zone (i.e. wildlife, cultural and environmental tourism) in accordance with the functions of the protected area. This zone is afforded level 3 protection.

- The Zone of Traditional use (Zone Perdorimi Traditional): This zone covers 12,420 ha and is designated as an area where traditional and economic activities can be undertaken. This area includes agricultural, water and forest areas around residential centres, mainly used by residents. New activities can only be carried out with environmental permits and, in the case of cultural heritage, with the permission of the Minister of Tourism, Culture, Youth and Sports and the archaeological service. This zone is afforded level 4 protection.

The Project passes through the border of the zones of traditional use and recreation use, see Figure 4.2 (PROGES and Sapienza University of Rome, 2015).

The National Park is managed by the National Agency of Protected Areas and the Regional Administration of Protected Areas of Elbasan region. This is undertaken in accordance with the management and monitoring actions presented in the Management Plan for Shebenik-Jabllanicë National Park 2015-2024 (PROGES and Sapienza University of Rome, 2015). ADF have consulted the National Agency of Protected Areas who are keen to work with ADF to safeguard the protected area throughout the Project development and delivery.

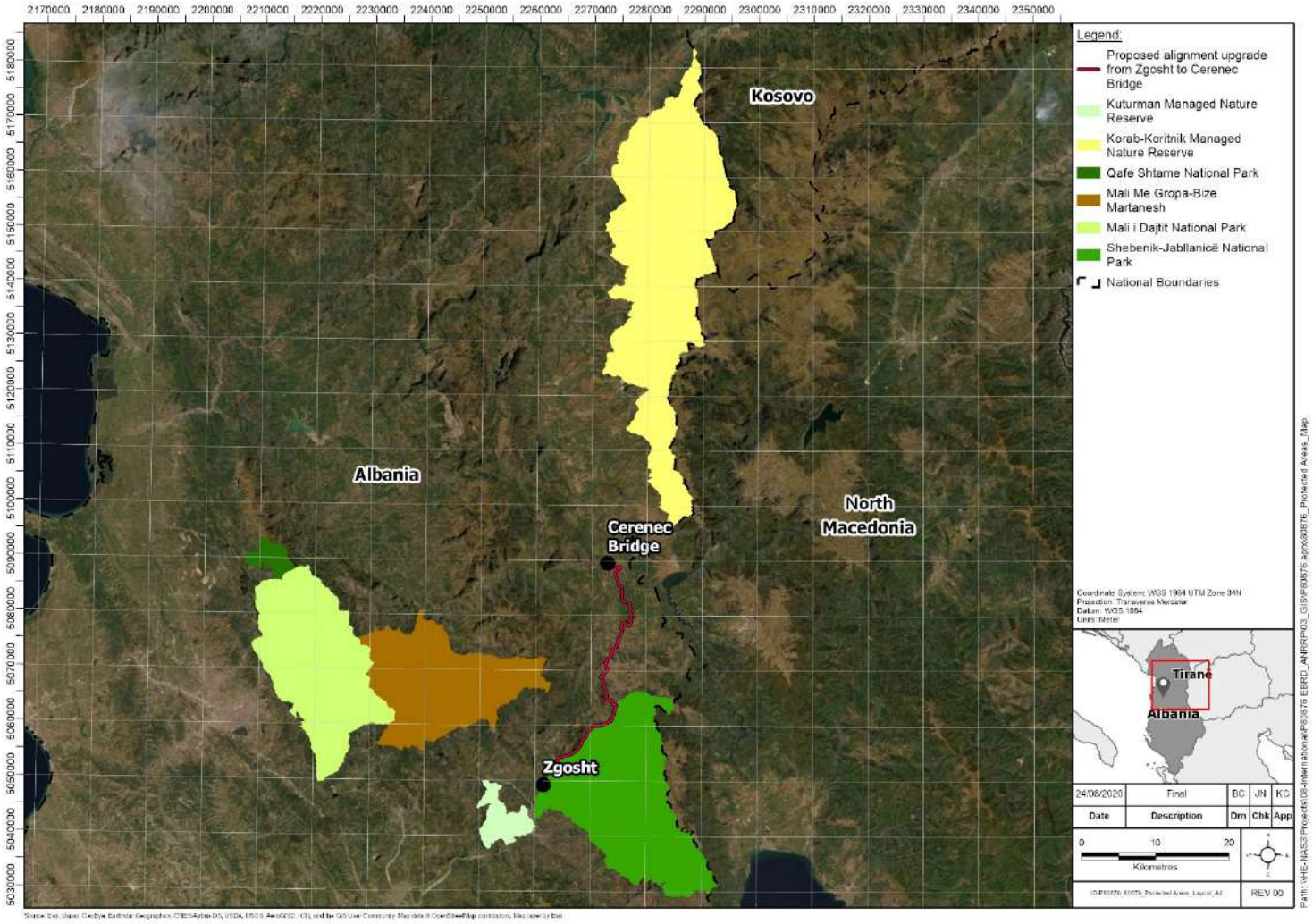


Figure 4.1: Location of the Shebenik-Jabllanicë National Park in proximity to the existing Zgosht to Cerenec road and other protected areas

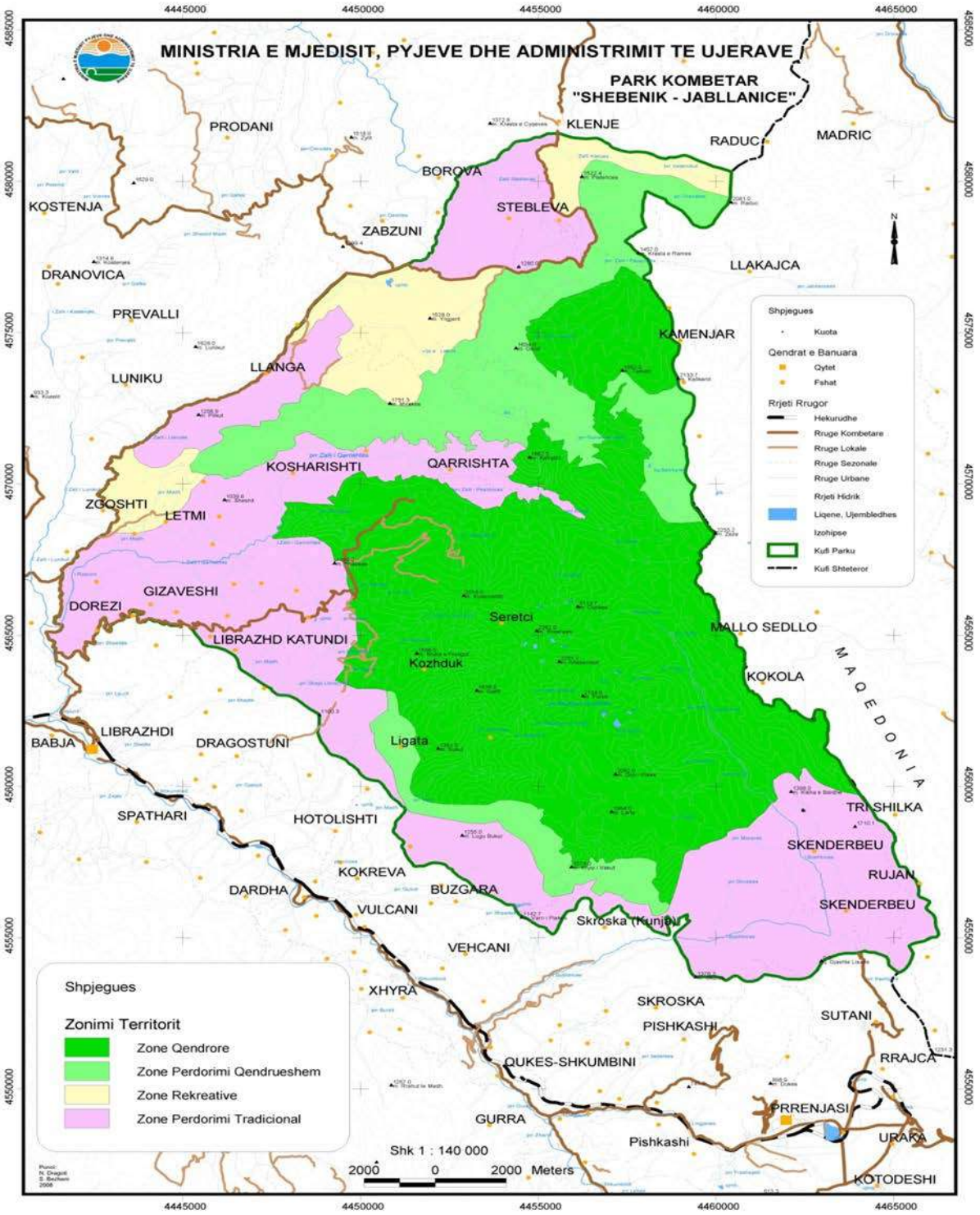


Figure 4.2: Zonation of the Shebenik-Jabllanicë National Park (source: PROGES and Sapienza University of Rome, 2015)

4.1.2 Candidate Emerald Site

The Emerald Network is an ecological network of Areas of Special Conservation Interest (ASCIs), which were established to conserve the species and habitats of the Bern Convention requiring specific protection measures.

The network was launched by the Council of Europe as part of its work under the Convention on the Conservation of European Wildlife and Natural Habitats (or Bern Convention). These habitats and species are listed respectively in Resolution No. 4 (1996) and Resolution No. 6 (1998) of the Standing Committee to the Bern Convention. The Natura 2000 sites are considered as the contribution from the EU member States to the Emerald Network.

The identification of Emerald sites for Albania took place during 2002-2008 and in total, 25 candidate sites were selected. The proposals were evaluated by ETC/BD and Council of Europe during 2010-2012. The Standing Committee of the Bern Convention, in its 32 meeting, in December 2012 accepted the proposal of all 25 areas for Albania (Ministre E Mjedist 2015).

The Shebenik-Jabllanicë National Park is therefore a candidate Emerald site (Council of Europe, 2018). Once a candidate site is officially adopted as an Emerald Network site, it is designated and managed at a national level by employing measures that contribute to the main objective of the Network.

"Management

2.1 The national designation of the adopted Emerald sites will ensure that they are protected from external threats and subject to an appropriate regime for achieving a satisfactory conservation status of the species and natural habitats listed in Resolutions no. 4 (1996) and no. 6 (1998) present on the site, involving, if and where appropriate, management plans, administrative measures and contractual measures;

2.2 The authorities responsible for the implementation of the management measures and their monitoring will be clearly identified;

2.3 Specific short and long-term site objectives will be drawn up for the management of Emerald sites, in compliance with the national/regional conservation objectives of the country, in order to facilitate the monitoring of their implementation and the regular assessment of their achievement;

2.4 National, regional and local stakeholders will be involved, if and where appropriate, in the planning of the management of the sites, as well as in the implementation of the conservation and protection measures foreseen, and in the monitoring of the sites' management."

4.1.3 World Heritage Site: Ancient and primeval beech forests of the Carpathians and other regions of Europe

The transboundary world heritage site entitled Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe incorporates 12 counties (i.e. Albania, Austria, Belgium, Bulgaria, Croatia, Italy, Poland, Romania, Slovenia, Spain, Ukraine and Germany) and includes 82 component parts (Figure 4.3). These components comprise sufficiently sized stands of ancient and primeval beech forest with maximum integrity, that represent the outstanding universal values of the World Heritage Site (UNESCO,

2020). Two components of the world heritage site are located in Albania (Table 4.1), and one component, namely Rrajca, falls within the boundary of the Shebenik-Jabllanicë National Park. Based on publicly available information, this component of the World Heritage Site appears to fall within the Central Zone of the National Park and does not overlap the footprint of the study area. The Rrajca component of the World Heritage Site covers 2,129.45 ha and has a buffer of 2,569.75 ha (UNESCO, 2020; Figure 4.4).

Figure 4.3: Components location of the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe World Heritage Site (Green circle = point of each part (source UNESCO 2020))

Table 4.1: Albanian components of the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe World Heritage Site

Component Part / Cluster Name	Region / District	Coordinates of the Central point	Area of the Component Part (ha)	Area of the Buffer Zone (ha)
Rrajca	Elbasan, Librazhd District (North of Albania)	N:41°12'11" E:20°30'2"	2,129.45	2,569.75
Lumi i gashit	Kukes, Tropojë district	N:42°28'53" E:20°3'26"	1,261.52	8,977.48

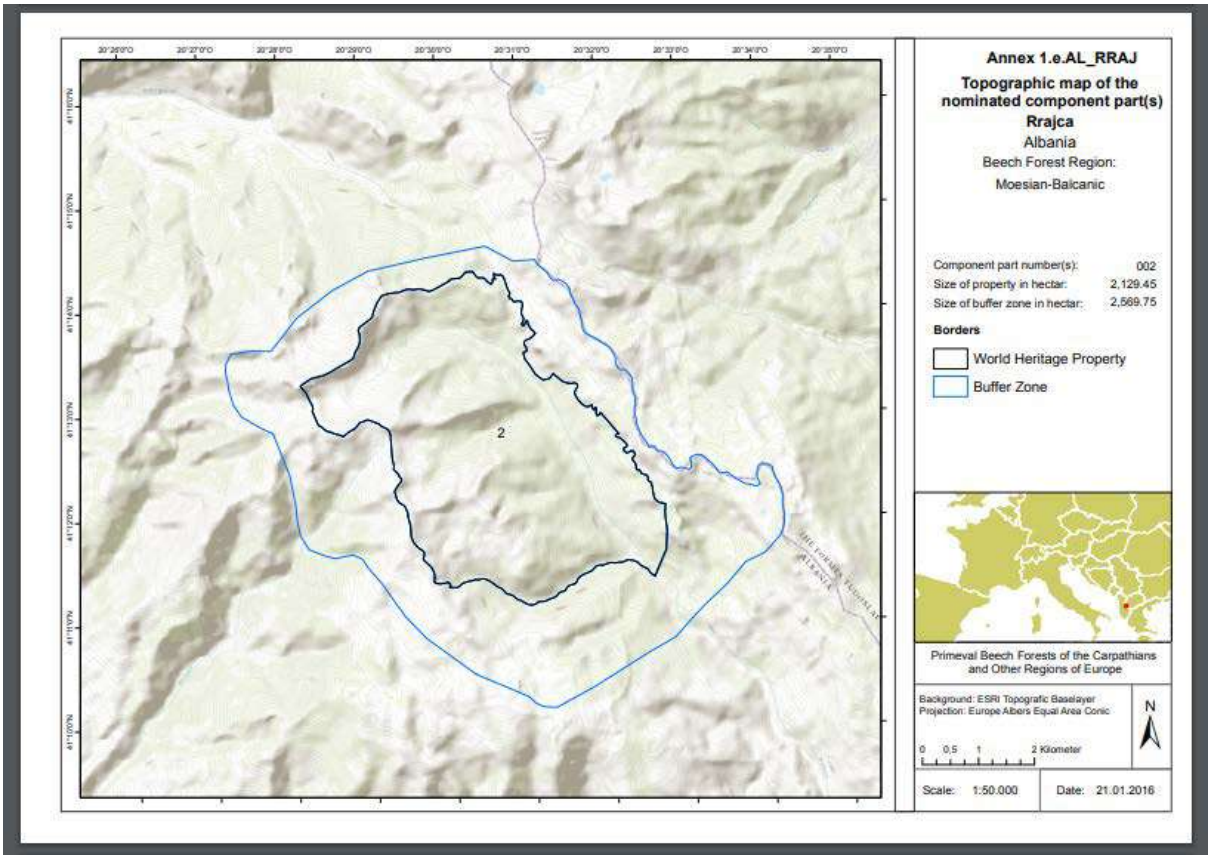


Figure 4.4: Location of the Rrajca component of the Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe World Heritage Site (Source UNESCO 2020)

4.1.4 Key Biodiversity Area: Rrajce

A portion of the Shebenik-Jabllanicë National Park is designated as a key Biodiversity Area; site name Rrajca. The site's central coordinates are 41o 12' 58" North (41.22o), 20o 29' 9" East (20.49o) and the location is illustrated in Figure 4.5 (PROGES and Sapienza University of Rome, 2015; BirdLife International, 2020).

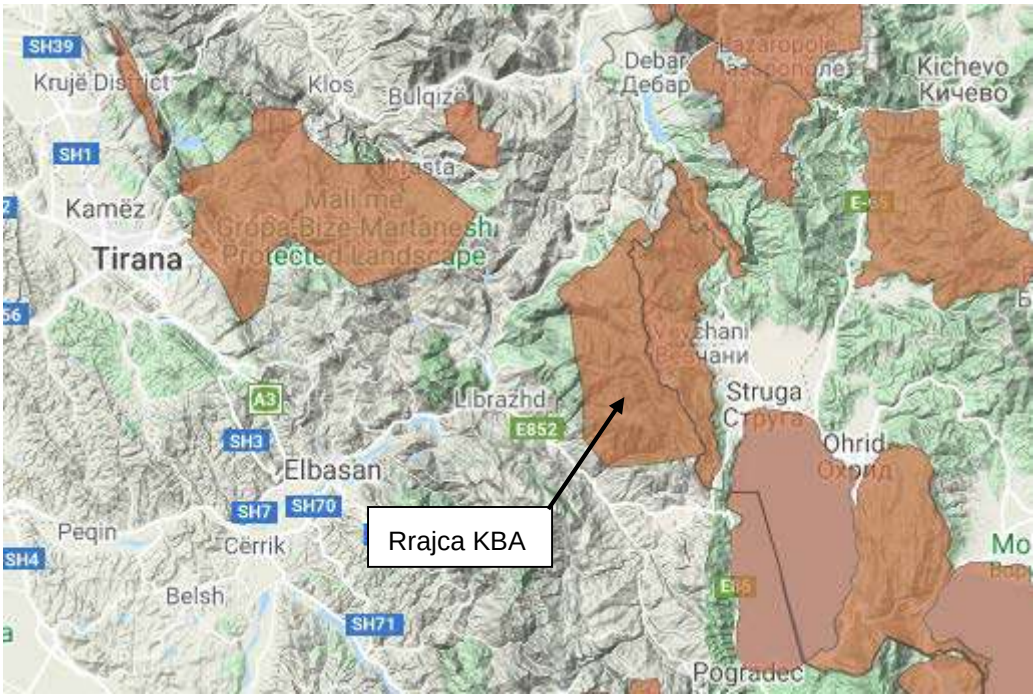


Figure 4.5: Location of the Rrajca Key Biodiversity Area (KBA) (Source BirdLife International (2020))

4.1.5 Rrajcë-Shebenik-Jabllanica Important Plant Area

The transboundary Rrajcë-Shebenik-Jabllanica Important Plant Area (IPA; number AL08)) overlaps the boundary of the Shebenik-Jabllanicë National Park and adjoining habitats in Macedonia. This is one of 45 IPAs identified for Albania and covers 3,900 ha (Shuka and Malo, 2010).

The high diversity of ecosystems and habitats located within the eastern transboundary Albanian IPAs (i.e. rivers, broadleaf, conifers and mixed forests, alpine and subalpine pastures and meadows, and high mountain ecosystems) are floristically rich in nature. The Rrajcë-Shebenik-Jabllanica IPA is known to support plant species and habitats of conservation importance (Shuka and Malo, 2010).

4.1.6 Alliance for Zero Extinction Sites

There are no Alliance for Zero Extinction Sites in Albania. These sites are of high conversation importance and are designated when the site meets a set of criteria including the following: “if the site is the sole area where an EN or CR species occurs, contains the overwhelmingly significant known resident population (>95%) of the EN or CR species, or contains the overwhelmingly significant known population (>95%) for one life history segment (e.g. breeding or wintering) of the EN or CR species” (Alliance for Zero Extinction, 2020).

4.2 Other nationally protected areas in proximity to the Project and the Shebenik-Jabllanicë National Park

A number of protected areas are located within the wider region of the project, outside of the study area (Figure 4.1). These are listed as follows:

- Kuturman - Managed Nature Reserve (Category IV IUCN)
- Mali Me Gropa-Bize-Martanesh - Protected Landscape (Category V IUCN)
- Mali I Dajtit - National Park (Category Ii)

The closest protected area to the project and the Shebenik-Jabllanicë National Park is the Kuturman. This nature reserve is located approximately 5 km from the Project and 500 m from the Shebenik-Jabllanicë National Park at the closest points.

4.3 Ecoregion

The project falls within WWF's Pindus Mountains mixed forests ecoregion (category Palearctic) which covers Greece, Macedonia (FYROM) and Albania. This ecoregion covers 15,300 square miles and is categorised by WWF as Critical / Endangered (Regato, 2020).

The Pindus Mountains mixed forests ecoregion is characterised by a mountainous, karstic landscape characterised by conifer forests and woodland at higher altitudes (average altitudinal range of 1,200-2,500 m) and mixed broadleaf woodland and forests at lower altitudes. The pallas pine (*Pinus nigra pallasiana*) is the dominant canopy tree species of the mountain conifer forests whilst mixed broadleaf woodlands are dominated by beech (Fagus sylvatica) forests in Albania and mixed oak forests (i.e. species include *Quercus frainetto, Q. pubescens, Q. cerris, Q. trojana, Q. petraea, Q. dalechampi*). Other deciduous broadleaf species recorded in mixed broadleaf woodland include *Carpinus orientalis, C. betulus, Ostrya carpinifolia, Tilia* spp., *Sorbus* spp., *Acer* spp. (Regato, 2020)).

This ecoregion is known to support a high diversity of endemic flora and a high diversity of avifauna and fauna including brown bears (*Ursus arctos*), wolves (*Canis lupus*) and jackals (*Canis aureus* (Regato, 2020)).

4.4 Habitats

The Zgosht to Cerenec road is currently surrounded by a mosaic of modified and natural habitat types. The distribution and coverage of these habitat types are illustrated by the habitat map, presented in Appendix 2, in which habitats have been mapped within the project footprint and the study area (a 50 m buffer either side of the centre of road alignment). A list and description of habitat types located within the study area are also presented in Table 4.2.

The habitat map indicates that modified habitats (i.e. agro-pastoral land, black pine plantations, fallow land, bare-ground / disturbed land, settlements and areas of hard standing) have a higher coverage in the study area than natural habitats (i.e. woodlands, forests and thickets). The botanical scoping survey also identified evidence of disturbance from the previous roadworks in the study area where ruderal plant species have sporadically colonised (Figure 4.6). These exposed areas of escarpment and disturbed ground are prone to erosion (Figure 4-8).

Figure 4.6: Maxar Vivid imagery (2018) of the disturbance either side of the Zgosht to Cerenec road (see Figure 4-7)

Figure 4-7: Existing areas of habitat loss and disturbance (UTM 451318.24, 4583468.46)

Figure 4-8: Existing area of exposed escarpment prone to erosion (UTM 442902.8, 4568501.67)

Natural habitats within the study area comprise:

- broadleaf woodlands and forests dominated by oak species (i.e. *Quercus petraea*, *Q. frainetto*, *Q. cerris*; Figure 4-9) or European beech (*Fagus sylvatica*; Figure 4-10 and Figure 4-11)
- exposed screes with limited vegetation
- deciduous thickets
- aquatic habitat types (i.e. alpine streams, reservoir, ponds; Figure 4-12)

These habitats are described in detail in Table 4.2. All the natural habitats located within the study area are common and widespread in nature and as such do not qualify as EU Habitats Directive Priority Annex 1 habitats.

Figure 4-9: Oak Forest located both sides of the Zgosht to Cerenec road at UTM 454683.84, 4589447.14, outside of the Shebenik-Jabllanicë National Park

Figure 4-10: Beech forest with rocky outcrops in the Shebenik-Jabllanicë National Park (UTM 446612.6, 4570828.55)

Figure 4-11: Beech forest either side of the Zgosht to Cerenec road in the Shebenik-Jabllanicë at UTM 451902.72 4575457.46

Figure 4-12: Pond located in agro-pastoral land approximately 100 m from the Zgosht to Cerenec road near Fushë Studë (UTM 451353.67, 4575213.73)

Approximately 13.5 km of the Zgosht to Cerenec road traverses the western periphery of the Shebenik-Jabllanicë National Park. The distribution and diversity of habitats in the National Park are illustrated in Figure 4.15. It is however important to acknowledge that the western periphery of the National Park has been subject to habitat loss and degradation due to the expansion of grazing pasture, cultivated land and settlements. Hence, a significant portion of this section of the 50 m buffer comprises modified habitat (i.e. agro-pastoral land and housing), particularly near settlements such as Fushë Studë as illustrated in Figure 4.13 and Figure 4.14. Natural habitats are relatively fragmented in nature and comprise beech woodland, oak woodland, scrub, pine woodland and grassland.

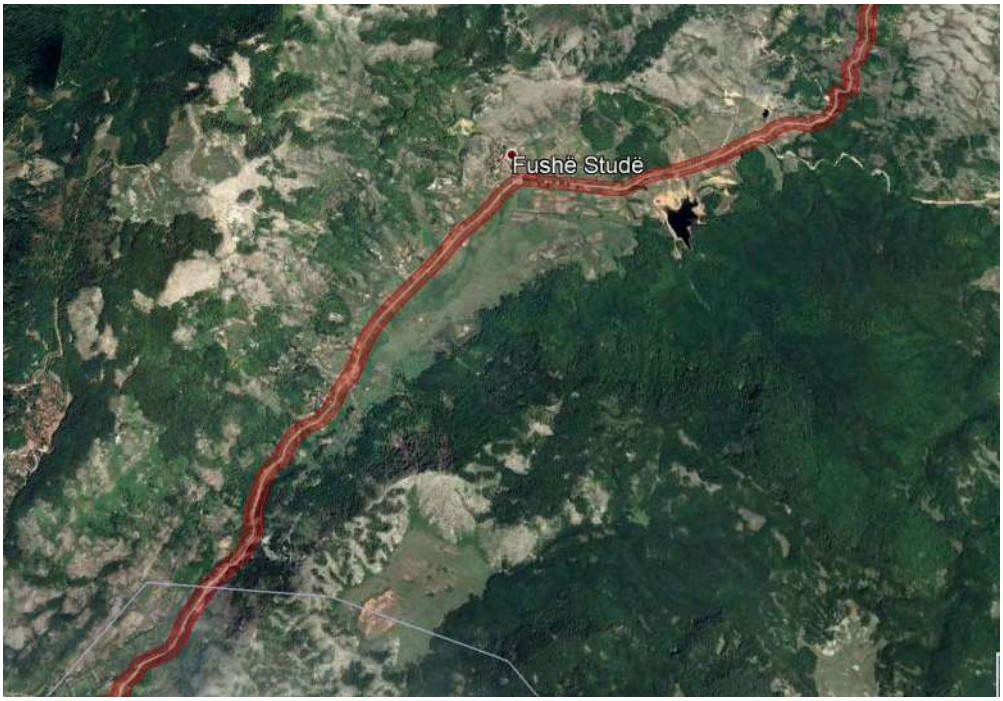


Figure 4.13: Section of the Zgosht to Cerenec road and study area (highlighted in red) that passes through the Shebenik-Jabllanicë National Park surrounded by agro-pastoral land (source Google Earth, 2018)

Figure 4.14: Section of the Zgosht to Cerenec road and study area (highlighted in red) that passes through the Shebenik-Jabllanicë National Park with the footprint of the Shebernik Jabllanice National Park highlighted in green for comparative purposes with (source Google Earth, 2018)

Table 4.2: EUNIS and Annex 1 habitat types identified within the study area (50m buffer around the Zgosht to Cerenec road

EUNIS Habitat Classification	Annex 1 Code and Habitat Type	Annex 1 Priority Habitat Status	Botanical Scoping and Ground-truthing Assessment Findings
Natural Habitats			
C1.3 - Permanent eutrophic lakes, ponds and pools	3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	Not priority	Standing waters inhabited mainly with *Typha angustifolia, Potamogeton sp., Myriophyllim sp*.
C2 - Surface running waters	3200 – Running water	N/A	
G1.7 - Thermophilous deciduous woodland	91M0 - Pannonian-Balkanic turkey oak –sessile oak forests	Not priority	These woodlands occupy a very wide surface not only in the study area but along all the region from Librazhd to Bulqize. The woodlands are installed in brown slightly acid soil and represent a mixed woodland usually with co-dominance of *Quercus cerris* and

			Quercus frainetto with total cover between 85 – 100% and a maximum height of trees up to 13 m. Among these woodlands there are areas in which they are better preserved and in high regeneration rates and some other areas in which they are degraded mainly by previous human activities and in these cases, they overlap with hornbeam scrubs. In dry eroded soils the co-dominant species of these plant communities are *Quercus pubescen*s and *Carpinus orientalis*. Present species of the woodlands are: *Quercus cerris, Q. frainetto, Q. pubescents, Carpinus orientalis, Ostrya carpinifolia, Acer monsepssulanum, Fraxinus ornus, Acer tataricum, Helleborus odorus, Acinos alpinus, Dactylis glomerate, Clinopodium vulgare, Brachypodium sylvaticum, Teucrium chamaedrys, Fragaria vesca, Cephalanthera rubra, Asparagus acutifolius, Geum urbanum, Melica ciliata, Viola odorata, Veronica chamaedrys* etc.
G1.7 - Thermophilous deciduous woodland with Roinia pseudoacacia			
G 1.63 - Medio-European neutrophile Fagus forests	9130 - Asperulo-Fagetum beech forests	Not priority	A dense beech forest (old and young) with dominance of *Fagus sylvatica* is regenerating quite healthy and beautiful in the study area. The forest covers almost always 100% of its surface and can grow up to 30 m with a trunk diameter between 10 – 45 cm. The tree layer is *Fagus sylvatica* monodominant, and species in the shrub layer are mainly represented by: *Cornus mass, Cornus sanginea, Crategus monogyna, Fraxinus ornus, Juniperus oxycedrus, Rubus ulmifolius, Acer pseudoplatanus* etc. The herbaceous layer is composed of diverse species like: *Fragaria vesca, Helleborus odorus, Aremone agrimonoides, Lactuca muralis, Granium macrorhizum, Carex crupina, Melitis melissophyllum, Hedera helix, Asplenium trichomanes, Epipactis helleborine, Cephalanthera rubra, Saxifraga rotundifolia, Symphytum tuberosum, Festuca heterophylla, Asplenium trichomanes, Ceterach officinalis* etc.
Cleared Medio-European neutrophile Fagus forests			

F3.243 - Balkano-Hellenic deciduous thickets	N/A	N/A	These plant communities represent deciduous shrubs generally dominated by *Caprinus orientalis* which in fact substitute the *Quercion frainetto* and *Ostryo-Carpinion* climax forests. They can have a total cover from 50 % to 85%, mainly in rocky surfaces and surrounded by screes. These scrubs are up to 3 m high and on average 10 years old. The shrub layer is co-dominated by *Carpinus orientalis. Ostrya carpinifolia, Juniperus oxycedrus, Fraxinus ornus, Acer tataricum, Quercus pubescens* etc.
E5 - Woodland fringes and clearings and tall forb stands/ E5.3 - Pteridium aquilinum fields	N/A	N/A	Once an oak forest, it has now been cleared and the area used for pasture. Almost 85% of the clear surface is populated by *Pteridium aquilinum*. The other remaining surface is a dry fringe used for pasture with those main plant species: *Teucrium pollium, Micromeria juliana, Verbascum sp., Bromus tectorum, Trifolium resupinatum, Leucanthemum vulgare, Tunica saxifrage, Plantago lanceolata, Filago vulgaris etc.* On the southern part of this fringe the oak forest (91M0) is very well preserved. The terrain is very steep and rocky making human activity more challenging and difficult to access this part of the woodland. It is a very good part of the oak forest to be protected. On the N-NE side of the fringe the vegetation is represented by degraded *Carpinus orientalis* scrubland.
G 1.3 - Mediterranean riparian woodland; G 1.112 Mediterranean tall Salix galleries; G 1.1 - Riparian and gallery woodland, with dominant Alnus, Betula, Populus or Salix	92A0 - Salix alba and Populus alba galleries	Not priority	The Oshtuni river and its tributaries hold a magnificent gallery of riparian forest dominated mainly by *Salix alba* (majority of time monodominant) which is accompanied by *Populus nigra, Alnus glutinsa dhe Acer monspessulanus, Ostrya carpinifolia etc*. Other species are: *Hedera helix, Helleborus odorus, Arum italicum Mill., Brachypodium sylvaticum Dactylis glomerata L., Humulus lupulus, Clematis vitalba* etc. This habitat is already endangered by the HPP which is located at the area and is taking away majority of the water; and at the same lightly from the inert material during road construction in 2012. It is recommended careful attention is paid to the disposal of raw materials during construction to avoid them entering the river, but at the same time consider a clean up of the remaining 2012 works.
Screes	N/A	N/A	The area in the surroundings is very rich in screes, but they represent mainly the geological formation of screes rather than the habitat itself in the Annex I of the EU Habitat Directive. As such they will not be classified in any of the codes. By any case those geological

			formations are either with no vegetation at all, or with very few species such as *Pseudofumaria alba, Festuca sp*. etc.
Modified Habitats			
Disturbed land from 2012 roadworks	N/A	N/A	
G3.57 – Pinus nigra reforestation	N/A	N/A	In the study area this habitat type is represented by *Pinus nigra* plantations, so not a natural forest, which are planted 40-60 years ago to protect the soil from erosion. They are mainly monodominant forests but considering they are planted in the Oak phytoclimatic belt, many often in the area are seen as a mixture of pine forest with sparse oak species.
Quarry	N/A	N/A	
HPP and trout cultivation	N/A	N/A	
Road / track	N/A	N/A	
I1 - Arable land and market gardens	N/A	N/A	
J2 - Low density buildings	N/A	N/A	There are a number of buildings situated alongside the existing road as it passes through and close to several small villages.

Habitats within the Shebenik-Jabllanicë have been mapped as part of the Management Plan for Shebenik-Jabllanicë National Park 2015-2024 (PROGES and Sapienza University of Rome, 2015; Figure 4.15; also refer to Appendix 2) and are listed as follows:

- *Platanus orientalis* and *Liquidambar orientalis* woods
- alpine rivers and their ligneous vegetation with *Salix elaeagnos*
- Pannonian-Balkanic turkey oak- sessile oak forests
- Illyrian *Fagus sylvatica* forests (*Aremonio-Fagion*)
- high oro-Mediterranean pine forests
- Oro-Moesian acidophilous grasslands
- alpine and boreal heaths
- alkaline fens
- semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*)
- endemic oro-Mediterranean heaths with gorse
- *Juniperus communis* formations on heaths or calcareous grasslands
- calcareous rocky slopes with chasmophytic vegetation
- Eastern Mediterranean screes
- mountain hay meadows

- hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
- water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation.

One Annex 1 priority habitat reportedly occurs within the Shebenik-Jabllanicë National Park, namely species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe (code 6230) (PROGES and Sapienza University of Rome, 2015))). Annex I priority habitats are of particular conservation importance. Priority habitats are a sub-set of the Annex I habitats, identified by the Habitats Directive, as habitats "in danger of disappearance" in the European Union (Article 1d). The importance of Annex I priority habitats are discussed in the Directive in Articles 4, 5, 6, 11 and Annex III. Conservation intervention is required in order to halt the expected decline of these habitats.

IPAs in Eastern Albanian, such as the Rrajcë-Shebenik-Jabllanica IPA, are also known to support a number of habitat types of conservation importance, including:

- Active raised bogs (code 7110) – Annex 1 priority habitat
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnion incanae, Salicion albae*) – Annex 1 priority habitat
- Limestone pavements (code 8240) - Annex 1 priority habitat
- Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea (code 6220) - Annex 1 priority habitat
- Endemic forests with *Juniperus* spp (code 9560) - Annex 1 priority habitat
- *Rupicolous calcareous* or basophilic grasslands of the Alysso-Sedion albi (code 6110) - Annex 1 priority habitat
- Xeric sand calcareous grasslands (code 6120) - Annex 1 priority habitat
- *Juniperus communis* formations on heaths or calcareous grasslands (code 5130) – Annex 1 (not a priority habitat).

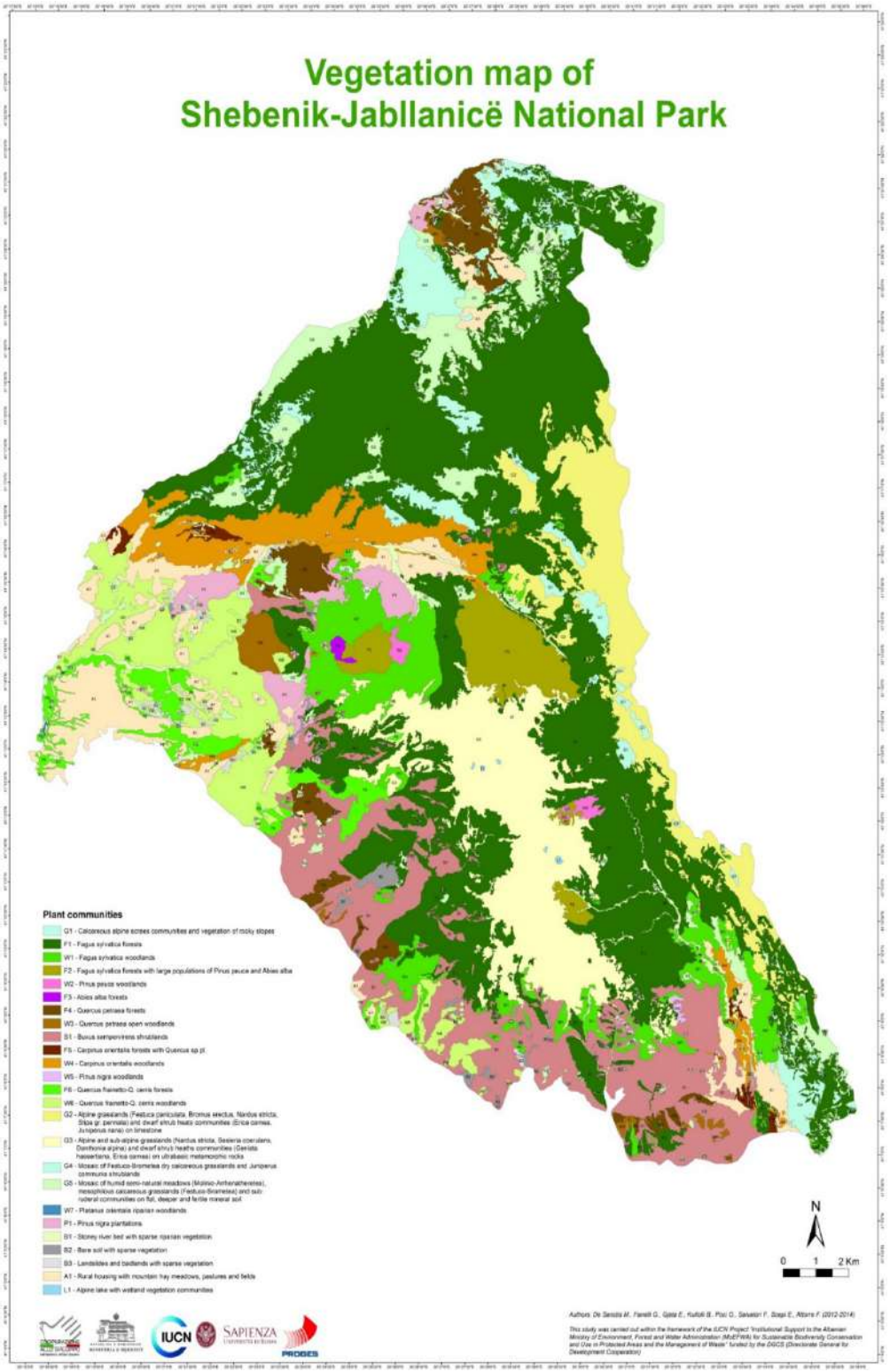


Figure 4.15: Habitats of The Shebenik-Jabllanicë National Park (source: PROGES and Sapienza University of Rome, 2015).

4.5 Flora

The walkover botanical scoping assessment undertaken for the Project in June 2020 identified *Juniperus oxycedrus* which is listed on the Albanian Red List as Vulnerable, within the study area. It is however important to acknowledge that this was a rapid survey over a 2-day period and as such only a very small proportion of the habitat was surveyed and assessed.

According to the Shebenik-Jabllanicë National Park Management Plan, 20 plants species that inhabit the National Park are of conservation importance at the national scale (PROGES and Sapienza University of Rome, 2015). The statuses of these species range from Low Risk to Endangered in accordance with the Albanian Red Data List (2013). Furthermore, 7 plant species of conservation importance in Albania are known to inhabit the Rrajcë-Shebenik-Jabllanica IPA. There is potential for these Albanian Red Listed plant species to occur in natural habitats located outside of the National Park and IPA, within the study area.

Whilst the botanical scoping assessment did not identify the presence of any flora species of conservation importance within the study area, the scoping assessment reported that residents within the vicinity of the Project may collect mountain tea (*Sideritis raeseri* subsp. *raeseri*) for medicinal purposes. This is a perennial species endemic to the Balkans, found in rocky habitats and open grassland. Mountain tea is listed as Endangered on the Albanian Red List (2013).

Table 4.3: Plant species recorded within the Shebenik-Jabllanicë National Park

Scientific Name	Common Name	IUCN Status (2020)	Albanian Red Data List
Agrimonia eupatoria	Agrimony	LC	Not listed
Alkanna scardica	-	NA	LRcd
Alyssum bertolonii	-	NA	LRcd
Anthyllis vulneraria subsp. *bulgarica*	-	NA	Not listed
Bornmuellera baldaccii	-	NA	EN
Centaurea candelabrum	-	NA	EN
Cistus sintenisii (synonym *Cistus albanicus*)	-	NA	EN
Dryopteris filix-mas	Common male-fern	LC	Not listed
Festucopsis serpentini	Serpentine false-brome	LC	VU
Genista hassertiana	-	NA	Not listed
Gentiana lutea	Great yellow gentian	LC	EN
Hypericum perforatum	St. John's-wort	LC	EN
Juniperus communis	Common juniper	LC	VU
Juniperus oxycedrus	Prickly juniper	LC	VU

Lilium albanicum	zambaku shqiptar / Albanian lily	LC	EN
Narthecium scardicum	-	NA	VU
Pedicularis graeca	-	NA	LRcd
Pinus heldreichii	Heldreich's pine	LC	VU
Pinus peuce	Balkan pine	NT	EN
Ramonda serbica	Српска рамонда	LC	VU
Satureja montana	-	NA	VU
Saxifraga scardica	-	NA	VU
Sedum serpentini	-	NA	Not listed
Trifolium pilczii	-	NA	LRnt
Trifolium wettsteinii	-	NA	Not listed
Veronica saturejoides subsp. munellensis	-	NA	VU

Table 4.4: Plant species recorded within the Rrajcë-Shebenik-Jabllanica IPA

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Distribution
Alyssum markgrafii	Basket of gold	NA	EN	–
Cistus sintenisii (synonym Cistus albanicus)	-	NA	EN	Albania, Corsica & Greece (Endemic)
Oxytropis prenja	-	NA	LRcd	Albania, Greece & Yugoslavia
Pinus heldreichii	Heldreich's pine	LC	VU	Albania; Bosnia and Herzegovina; Bulgaria; Greece (Greece (mainland)); Italy (Italy (mainland)); Montenegro; North Macedonia; Serbia
Pinus peuce	Balkan pine	NT	EN	Albania; Bulgaria; Greece (Greece (mainland)); Montenegro; Serbia

Ramonda serbica	Српска рамонда	LC	VU	Albania; Bulgaria; Greece (Greece (mainland)); Montenegro; North Macedonia; Serbia
Sedum serpentini	-	NA	Not listed	Albania
Silene schwarzenbergeri	-	NA	Not listed	Albania, N-Greece, Macedonia
Haplophyllum boissieranum	-	NA	EN	Albania, Bosnia & Hercegovina, Serbia & Kosovo, Greece

4.6 Mammals

Approximately 13.5 km of the Project is located with the Shebenik-Jabllanicë National Park. This protected area is known to support a high diversity of fauna species (PROGES and Sapienza University of Rome, 2015). Many of these species are common and widespread in nature (Table 4.5) and as such are categorised as Least Concern by the IUCN Red List of Threatened Species (IUCN, 2020) and are not included on the Albanian Red List (2013).

Table 4.5: Common and widespread mammals species recorded in the Shebenik-Jabllanicë National Park (PROGES and Sapienza University of Rome, 2015)

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Bern Convention
Apodemus flavicollis	Yellow-necked field mouse	LC	Not Listed	-
Apodemus sylvaticus	long-tailed field mouse	LC	Not Listed	II
Crocidura suaveolens	lesser white-toothed shrew	LC	Not Listed	II
Dryomys nitedula	Forest dormouse	LC	Not Listed	III
Erinaceus roumanicus	Northern white-breasted hedgehog	LC	Not Listed	III
Lepus europaeus	European hare	LC	Not Listed	III
Talpa stankovici subsp. montenegrina	Balkan mole	LC	Not Listed	-
Vulpes vulpes	Red fox	LC	Not Listed	-

However the Shebenik-Jabllanicë National Park is also known to provide habitat for nationally and globally rare and threatened species of mammals. For example, the National Park provides important habitat within one of the primary remaining ranges of the Balkan lynx (*Lynx lynx* ssp *balcanicus*; PROGES and Sapienza University of Rome, 2015). On 07 August 2012, PPNEA confirmed the presence of the Balkan lynx in Shebenik - Jabllanica National Park (Hunia et al., 2016). This species is categorised as Critically Endangered by the IUCN Red List of Threatened Species (2020) and the Albanian Red List (2013).

The National Park is also known to support Eurasian otters (*Lutra Lutra*; PROGES and Sapienza University of Rome (2015)) which are IUCN listed Near Threatened (IUCN, 2020) and are categorised as Vulnerable by the Albanian Red List (2013).

Camera trapping surveys undertaken within the National Park in 2013 confirmed the presence of the following fauna species of national conservation importance:

- Brown bears (*Ursus arctos*) - IUCN LC at the global scale; IUCN VU in the Mediterranean; Albanian Red List VU
- Grey wolf (*Canis lupus)* - IUCN LC and Albanian Red List NT
- Wild cat (*Felis sylvestris*) - IUCN LC, Albania EN

Subsequent camera trapping surveys undertaken in the National Park in 2015 by the Dutch Mammal Society (Hunia et al., 2016) photographed 11 mammal species including the following nationally threatened species:

- Brown bears
- Eurasian badger (*Meles meles*) – IUCN LC; Albanian Red List EN
- European roe deer (*Capreolus capreolus*) - IUCN LC; Albanian Red List VU
- Wild cat
- Beech marten / stone marten (*Martes foina*) - IUCN LC; Albanian Red List Low Risk / near Threatened (LRnt)
- Red squirrel (*Sciurus vulgaris*) – IUCN LC; Albanian Red List LRnt

The camera traps also photographed a hedgehog however the species was not confirmed (Hunia *et al.,* 2016).

Other mammalian species of national conservation importance that reportedly use habitats within the National Park according to the Management Plan for Shebenik-Jabllanicë National Park 2015-2024 (PROGES and Sapienza University of Rome, 2015) are listed as follows:

- Chamois (*Rupicapra rupicapra*) – IUCN LC; Albanian Red List VU
- Golden jackal (*Canis aureus*) – IUCN LC; Albanian Red List VU
- Pine marten (*Martes martes*) – IUCN LC; Albanian Red List VU
- Wild boar (*Sus scrofa*) - IUCN LC; Albanian Red List LRnt

Indirect evidence of fauna species activity (i.e. prints and faeces) was recorded during the scoping assessment of the Project area in June 2020 including marten species and fox scat and tracks of Eurasian otter, grey wolf and brown bear.

Tracks of brown bears were observed on the north-western shore of a lake 119 m from the road (at UTM 450704.99, 4574620.87) indicating that the area is used by brown bears

for foraging and as a water resource. Potential brown bear denning habitat was also identified during the assessment in close proximity to the 50 m buffer. Eurasian otter evidence was recorded beneath a bridge that crosses the alpine stream approximately 39 m from the road (at UTM 451190.95, 4578237.59) and on the stream associated with the hydropower system that begins from the village of Borova and extends to Moglica village. A grey wolf print was recorded 37 m from the road within pasture (at UTM 451100.97, 4579483.7). Large carnivores are known to frequently use modified habitats for commuting and foraging. Brown bears are frequently reported to wander into agropastoral lands and into plantations in Albania in search of food (often causing situations of conflict with local residents). Grey wolves are also reported to move across the wider landscape natural and modified matrix in the area and even near villages in search of livestock or dead animals to feed on. The scoping assessment identified that the 50 m buffer offers potentially suitable suitable habitats (in terms of foraging and commuting and, to a lesser extent, for breeding) for species of high conservation importance. The major exceptions are areas where the buffer crosses inhabited areas and settlements (i.e. Fushë-Studë, Borovë, Sebisht, Cerenec), and in areas where major landscape modifications have been made due to construction works (i.e. the hydropower development near Borovë and the road widening works between point e.g. between UTM 451547.64, 4582498.05 and 451676.3, 4583985.84).

The fauna scoping assessment identified that currently there are areas with good habitat connectivity that are likely to facilitate the movement of fauna species inside and outside of the National Park. The existing Zgosht to Cerenec road traverses some well-known habitats for large mammals in Albania. Although the construction of this road has contributed to some habitat fragmentation, in its current condition the road was not considered to be a major barrier for large mammal species. This is primarily linked to the poor condition of Zgosht to Cerenec road (i.e. gravel road surface, unpaved, unmarked and unfenced with no artificial lighting and large sections of the road have no safety barriers) which limited the speed and volume of vehicle traffic (with a few exceptions e.g. at Shkalla e Lunikut). Furthermore, the lack of artificial lighting, electronic road signs and retroreflective safety features also facilitates the movement of crepuscular and nocturnal mammals across the road. The scoping assessment also identified several potential wildlife crossing points on the Zgosht to Cerenec road with good habitat connectivity either side of the road which are likely to facilitate the movement of wildlife across the existing road (Figure 4-16, Figure 4.17, Figure 4.18). These potential wildlife crossing points are illustrated in Figure 4.19. Scoping also identified that some sections of the Zgosht to Cerenec road with steep sided hill cuttings, retaining walls and safety barriers are likely to serve as a barrier to the movement of some fauna species (Figure 4.20).

Figure 4-16: Photograph of good habitat connectivity either side of the Zgosht to Cerenec on the border of the Shebenik-Jabllanicë National Park

Figure 4.17: Photograph of good habitat connectivity between beech forest located either side of the Zgosht to Cerenec on the border of the Shebenik-Jabllanicë National Park (UTM 451837.33, 4575284.57)

Figure 4.18: Photograph of good forest connectivity either side of the Zgosht to Cerenec on the border of the Shebenik-Jabllanicë National Park (UTM 447859.5, 4572393.11)

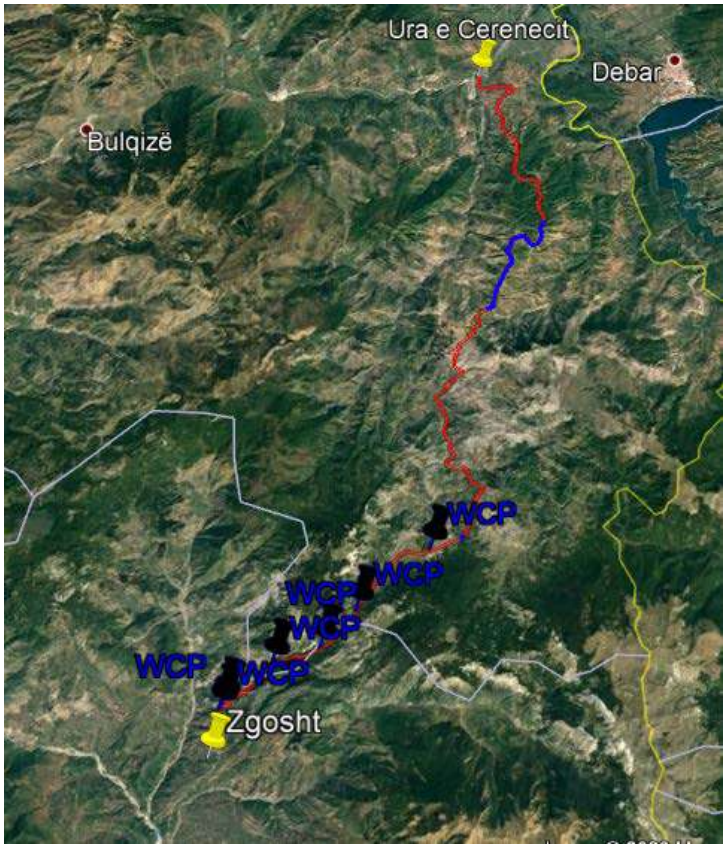


Figure 4.19: Potential wildlife crossing point identified during the fauna scoping assessment. Key: WCP = wildlife crossing point, blue lines = wildlife crossing areas, red line = the Zgosht to Cerenec road.

Figure 4.20: Photograph of the Zgosht to Cerenec road at shkembor lart kanion Poshte, approximately 35 m from the western border of the Shebenik-Jabllanicë National Park. The steep sided hill cutting and retaining wall have fragmented the forest habitat and are likely to serve as a barrier to the movement of some fauna species (444165.84, 4569530.41).

The status of the nationally and globally rare and threatened fauna species present within proximity to the Project are described in more detail below.

Balkan lynx

The Balkan lynx is a subspecies of the Eurasian lynx and is classified as Critically Endangered as there are only estimated to be less than 50 mature individuals in the wild (20–39 mature individuals). The total size of the global population is estimated to be 27-52 adult and subadult lynx (IUCN, 2020). The Balkan lynx population is considered to comprise two subpopulations, one of which is located in Albania and one in Macedonia in relatively close proximity. Camera-trapping surveys identified a single individual in Kosovo which was potentially a dispersing individual. The Balkan lynx is unlikely to occur in Montenegro and Greece. This species is known to inhabit deciduous forests (i.e. beech, oak, hornbeam and hop-hornbeam), evergreen forests (i.e. those dominated by fir and pine trees), mixed forests (e.g. forests dominated by fir trees and beech trees) and bush habitats in mountainous terrain. This species predates roe deer, chamois, brown hare, marten species and fox (Melovski et al. 2011).

In Albania, the Balkan lynx inhabits forested areas in most of its range. Lynx are solitary animals, except for females and the young of the year, with both males and females occupying individual homeranges. The homerange of males are smaller than female lynx and are marked with gland secretions, urine and faeces. Each night a Balkan lynx may travel between 1 km - 45 km within their range (PPNEA, 2018).

A small population of Balkan lynxs occupy the Munella area (Puka-Mirdita region) where they are known to reproduce. However the Bulkan lynx also occurs in eastern Albania in the Shebenik-Jabllanica National Park and Stravaj Protected Area, and in northern Albania in the Nikaj –Mertur Protected Area (PPNEA, 2018). There is sporadic evidence of the Balkan lynx in the Shebenik-Jabllanicë National Park and the Martanesh mountains ecosystem and protected landscape to the west with recent evidence identified further south outside the Shebenik-Jabllanica National Park. Based on camera trapping data, the Balkan lynx population in Albania is estimated to comprise approximately 10 mature individuals, with at least 4 individuals occupying the Munella area (PPNEA, 2018). The Balkan lynx, although more cryptic than other predators, have also been evidenced very near to shepherds summer huts, as well as on forest roads that are used by cars.

The Balkan lynx population is threatened by the loss of a limited range and abundance of prey species due to hunting, habitat loss and degradation (particularly in Albania), poaching and disturbance (Melovski, et al., 2015).

The Balkan Lynx Recovery Programme (BLRP) is a partnership project that is being implemented in the Western Balkan Peninsula (Albania, North Macedonia and Kosovo). The vision of the BLRP is “the long-term existence of a viable Balkan lynx population in its historic distribution range in harmony with and supported by local communities”. The BLRP is being implemented by partner NGOs in Albania, Macedonia and Kosovo including the Protection and Preservation of Natural Environment in Albania (PPNEA, 2018).

Eurasian Otter

Eurasian otters are predominantly nocturnal and inhabit a variety of aquatic habitats (i.e. highland and lowland lakes, rivers, streams, marshes, swamp forests, brackish water and

coastal areas). Most of the otter activity is generally restricted to the waterbody itself and riparian / adjoining marginal vegetation (Roos et al., 2018); rivers and streams often serve as wildlife corridors facilitating movement across their range. Otter distribution in coastal areas, especially near holts, is linked to a freshwater source (Roos et al., 2018). Eurasian otters are nocturnal and mainly solitary in nature, with adults only associating with each other for mating.

Eurasian otters are nationally listed as VU (MoE, 2013). There have been several large-scale surveys regarding the presence and distribution of otters in Albania during the last 30 years (e.g. Prigioni et al., 1986 and Balestrieri et al., 2015). These surveys showed the otter to be relatively widespread throughout Albania and to frequently occur in and around the region of the proposed project. The distribution of Eurasian otters in Albania is illustrated in Figure 4.21. Based on this information, otters frequently occur in the region of the proposed project.

Eurasian otters reportedly inhabit the Shebernik Jabllanice National Park (PROGES and Sapienza University of Rome, 2015). The fauna scoping assessment undertaken for the Project in June 2020 identified that rivers and streams located outside of the Shebenik-Jabllanicë National Park, within the wider region of the Project, also offer potentially suitable foraging and commuting habitat to support Eurasian otter activity. Eurasian otter evidence was recorded beneath a bridge that crosses the alpine stream approximately 39 m from the road (at UTM 451190.95, 4578237.59; Figure 4.22) outside of the Shebenik-Jabllanicë National Park. Evidence was also identified on the stream associated with the hydropower system that begins from the village of Borova and extends to Moglica village.

The global population of the Eurasian otter is widespread across Europe and parts of Asia and north Africa. This species is listed as NT globally as the population is in a state of decline due to the loss of aquatic habitats arising from high levels of pollutants, accidental mortality caused by vehicle collisions and drowning in fishing nets, illegal hunting and the decrease in prey species from wetlands and waterways (Roos et al., 2018).

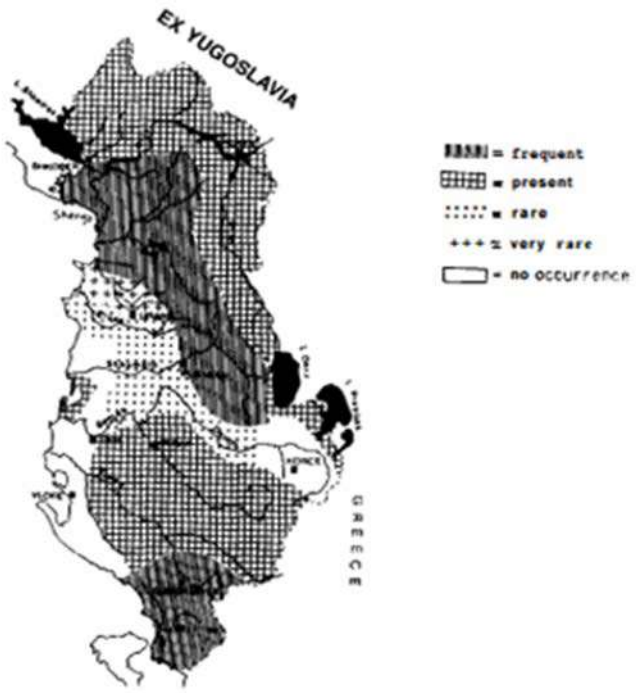


Figure 4.21: Distribution of Eurasian otters in Albania

Figure 4.22: Location of Eurasian otter activity adjacent to a stream approx. 39 m from the road

Brown bear

The global population of brown bears is spread over three continents with an excess of over 200,000 individuals. As such the species is IUCN LC (2018). In Europe, brown bears occur in twenty-two countries and the population of the Dinaric-Pindos region, the second largest brown bear population in Europe, is reportedly stable to decreasing (IUCN, 2018). Bears are threatened in Europe by habitat loss, disturbance, ineffective management, accidental mortality and persecution, and these pressures are considered likely to continue (Kaczensky et al. 2013).

The Albanian brown bear population is categorised as VU and comprises an estimated 180–200 individuals over approximately 5,000 km² (IUCN, 2018; National Red List 2013; Kaczensky et al. 2013; Bego, 2007). The distribution of bears in Albania in 2013 is illustrated in Figure 4.23. The Zgosht to Cerenec road transverses two well-known habitats for brown bears namely the Shebenik-Jabllanica National Park and the Martanesh mountains. Brown bears are widely distributed in both areas. Camera trapping surveys undertaken by the Dutch Mammal Society (Hunia et al., 2016) photographed brown bear within forest habitat which connect the wide river valley of Fushë Studë with the high mountain grasslands on the hills above. Bear prints were also recorded in this locality (Hunia *et al.,* 2016). Two brown bear prints were recorded 119 m from the Zgosht to Cerenec road, approximately 1.8 km from Fushë Studë along the banks of a reservoir during the fauna scoping assessment (Figure 4.23). This indicates that the area is used by brown bears for foraging and as a water resource (Figure 4.25).

The characteristics of brown bear habitat ideally comprise a variety of forest types (including key deciduous tree species i.e. beech, chestnut and oak), thickets, meadows and wetlands. Low disturbance levels are important, particularly during the winter when new-born cubs are in the dens. Bears also require habitat connectivity between foraging sites (Bego, 2007).

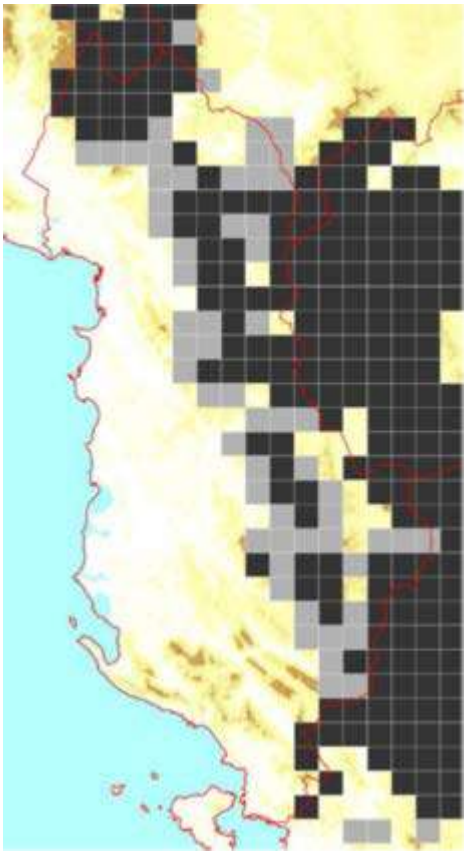


Figure 4.23: Brown bear distribution in Albania (Kaczensky et. al. 2013) Key: Dark cells indicate core and reproduction areas with permanent presence, light grey cells peripheral areas of occurrence. Cells are 10x10 km in size.

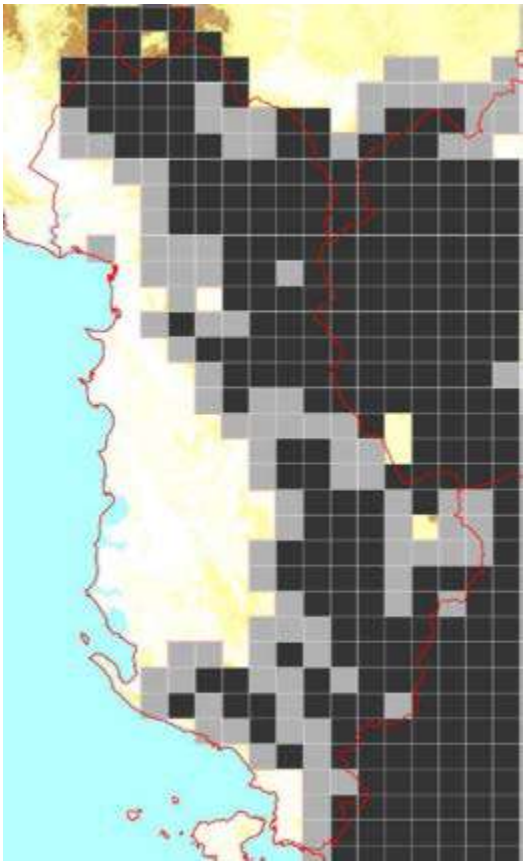


Figure 4.24: Wolf distribution in Albania (from Kaczensky et. al. 2013). Dark cells indicate core and reproduction areas with permanent presence, light grey cells peripheral areas of occurrence. Cells are 10x10 km.

Figure 4.25: Beech forest and reservour, water resource for brown bears (and other fauna) and the location brown bear activity

Figure 4.26: Grey wolf print recorded 37 m from the road within pasture at (UTM 451100.97, 4579483.7).

Figure 4.27: Two brown bear prints recorded 119 m from the road along the banks of a reservoir (UTM 451379.64575241.8).

Grey wolf

The distribution of grey wolves in Albania is illustrated in Figure 4.24. Wolves live in the most diverse types of habitat and their broad distribution ranges show the species' adaptability to the most extreme habitat conditions. In Albania wolves are known to be distributed in almost all mountainous areas of the country. They are found across habitats covering hilly, mountainous and alpine zones in the northern, eastern, south-eastern and south-western parts of the country and are missing only from the densely populated coastal and lowland areas in the west. In general, large forest areas are particularly suitable for wolves in Europe, although wolves are not primarily a forest species. Habitat quality for wolves is influenced by human disturbance, prey densities and range size. Grey wolves reportedly inhabit the Shebenik-Jabllanicë National Park (PROGES and Sapienza University of Rome, 2015). Based on the distribution information alone as illustrated in Figure 4.24, wolves are likely to use habitats outside of the National Park in the vicinity of the Project. The National Park is likely to serve as core habitat or a reproduction area. A grey wolf print was recorded 37 m from the road within pasture at (at UTM 451100.97, 4579483.7) during the scoping fauna assessment (Figure 4.26).

The wolf is a protected species in Albania and is classified as Near Threatened (LR/nt) in the most recent Albanian Red List of Flora and Fauna (MoE, 2013). Monitoring and research on grey wolves in Albania have been largely lacking in the past, thus information on their numbers is mostly based on expert estimations. Experts estimate that 200 – 250 wolves are likely to be present within their distribution areas in Albania (Chapron et al. 2014, Kaczensky et al., 2013). The Albanian wolf population is part of the larger Dinaric-Balkan population that spreads across the Balkan Peninsula (Kaczensky et al. 2013). In the National Biodiversity Strategy and Action Plan the wolf is selected as a priority species for conservation and the development of an action plan is recommended as an immediate action to take. However, to date, there is no official plan for the management and conservation of wolves in Albania.

The most evident threats to the survival of wolves in Albania are habitat destruction, habitat fragmentation and human persecution; however, little is still known about the extent and magnitude of these threats. There are no systematic data on the number of individual wolves killed per year, as the species is protected by law including the Wildlife Protection (2008) and Hunting (2010) laws which prohibit wolf hunting in Albania; however, there are consistent indications that wolves are often victims of retaliatory killing due to livestock damage they cause to local people (Trajçe et al. 2008). Historically wolves were heavily persecuted in Albania and there were eradication programmes in place involving regular poisoning and bounty hunting (Bego 2005, Bego et al., 2002).

The global population of grey wolf is estimated to be between 200,000-250,000 individuals. The species is relatively widespread with a stable population trend and as such is listed as LC (IUCN, 2020).

Wild cat

The global distribution of the wild cat is wide ranging and includes Albania. Wild cats are found in a wide variety of habitats including deserts, scrub grassland, to dry and mixed forest but are absent only from rainforest and coniferous forest. This species predominantly occurs in broad-leaved or mixed forests in Europe which are relatively

undisturbed by people. But they also utilise Mediterranean marquis scrubland, riparian forest, marshes and coastal habitats. Generally, wild cats avoid areas of intensive agriculture and urbanisation. The Shebenik-Jabllanicë National Park is thought to provide habitat for wild cats.

Wild cats are most threatened by introgressive hybridization with domestic cats. This is occurring throughout this species range and is potentially in cryptic extirpations of some populations. Other threats to this species population include habitat loss, accidental vehicle collisions and hunting.

Chamois

The Northern chamois is categorised by the IUCN Red List of Threatened species (2020) as LC as this species is widespread and has a large sized population. The subspecies *balcanica* inhabits most of the mountain regions of Albania and is categorised as VU by the Albanian Red List. The main habitat types utilised by the Northern chamois is alpine meadows, open rocky areas, mixed broadleaf woodland, and coniferous woodland (Pedrotti and Lovari, 1999). Their main food sources are grasses, herbs, leaves of trees, buds, shoots and fungi (Sägesser and Krapp, 1986). Females and young occur in flocks of 5-30 animals, while adult males remain solitary. The Northern chamois inhabits the Shebenik-Jabllanicë National Park and is one of the prey species of the Balkan lynx (IUCN 2020; PROGES and Sapienza University of Rome, 2015).

Eurasian badger

Eurasian badgers are widely distributed in Europe and are categorised globally as LC (IUCN, 2020). In Albania, badgers are listed as EN by the National Red List (MoE 2013). This assessment is thought to be based on expert estimation of population status. Monitoring and research is required to inform an up to date assessment of the population status in Albania. Badgers are widely distributed in Albania and occur in a range of habitats from lowland and agricultural areas to highland forests. Camera trapping surveys conducted by PPNEA between 2009 and 2018 have confirmed their presence in a multitude of regions across the country (Trajce, unpubl. data) and Eurasian badgers reportedly inhabit the Shebenik-Jabllanicë National Park (PROGES and Sapienza University of Rome, 2015). Camera trapping surveys undertaken by the Dutch Mammal Society photographed a badger on the forested hillside of the Fushë Studë valley near the Project (Hunia et al., 2016).

Whilst badger setts and field signs were not observed during the scoping survey, natural habitats within the 50 m buffer zone (e.g. forests and woodlands) were considered to offer potentially suitable habitat for supporting badger activity (i.e. foraging, commuting and sett building).

Badgers are an opportunistic forager with an omnivorous diet feeding on a variety of plants, insects and carrion etc. They are found in deciduous and mixed woodlands, meadows, pastureland and scrubland, including Mediterranean maquis. They are increasingly reported to also occupy suburban and urban areas in various European cities (IUCN, 2018).

Badgers do not face any imminent threats in Albania. Conflict with farmers due to crop/corn damage seems to be widespread but not a concern for large-scale retaliatory killings of badgers. In the long term, badgers may potentially be threatened by habitat

loss and disturbance arising from continuous intensification of agriculture and rapid uncontrolled urbanization.

European roe deer

European roe deer use a wide range of habitat types (i.e. a mosaic of coniferous, deciduous and mixed woodlands, moorland, agro-pastoral land and suburban gardens) and occur in a large number of protected areas across its range (Lovari et al., 2018). European roe deers reportedly inhabit the Shebernik Jabllanice National Park (PROGES and Sapienza University of Rome, 2015). Whilst European roe deers or field signs indicative of their activity (i.e. prints and faeces) were not observed during the scoping survey, natural habitats within the study area (e.g. agro-pastoral land, forests and woodlands) were considered to offer potentially suitable habitat for supporting European roe deer activity (i.e. foraging and commuting). In Albania, this species is listed as VU on the National Red List (MoE 2013).

The European roe deer has an expansive global range throughout the Palaearctic region with an estimated European population of 15,000,000 individuals. The population is in a state of increase and as such is IUCN LC. The species is also listed on the Bern Convention in Appendix III. The primary threat to the European roe deer is the mixing of the gene pool of genetically distinct peripheral populations located in northern Portugal, the southern Italian Apennines, and Greece (i.e. Italian roe deer *Capreolus capreolus* spp *italicus*). In Albania, the main threat to roe deer is poaching and their population has been drastically reduced in the past (IUCN, 2020).

Marten species

Two separate marten species are present in Albania namely the stone marten (*Martes foina*) and the pine marten (*Martes martes*). Both species reportedly inhabit the Shebernik Jabllanice National Park (PROGES and Sapienza University of Rome, 2015). In Albania, the stone marten is listed on the National Red List as LRnt and the pine marten is listed as VU, whilst on the global scale both species are listed as LC (IUCN 2020). Pine martens usually occupy highland habitats and are not found in lowland areas or near densely populated and agricultural regions. Unlike the pine marten, which is a forest specialist, the stone marten is a habitat generalist and can survive in a variety of habitats, including forest, scrubland, agricultural areas and even suburban and urban areas. Recent camera trapping efforts conducted by PPNEA between 2009 and 2018 has proven their presence in a multitude of regions across Albania (Trajce, unpubl. data). Natural habitats (i.e. forest, woodland and scrub) located within the 50 m buffer zone, with good connectivity to surrounding natural habitats, offer potentially suitable habitat for supporting these marten species. The stone marten's diet has a considerable amount of plant food, compared to the pine marten. These include a variety of fruits and seeds. Among animal food the stone martens feed on different bird species (including their eggs), rats and mice, but can also take prey much larger than their own body (IUCN, 2020).

Figure 4.28: Marten species scat recorded adjacent to the road at National Grid Ref 444102.14, 4569474.34

4.7 Bats

In total, 32 bat species have been recorded in Albania, and several of these include globally and nationally rare and threatened species (Théou and Đurović 2015). Whilst the Shebenik-Jabllanicë National Park Management Plan does not include bat species within the assessment of values for the National Park, mist netting undertaken by the Dutch Mammal Society in the National Park in 2015 confirmed the presence of the following 10 bats species in the Shebenik-Jabllanicë National Park (Hunia *et al*., 2016):

- Lesser horseshoe bat (*Rhinolophus hipposideros*) – IUCN LC global, NT in Europe and the Mediterranean; Albanian Red Listed LRnt; Included in Annex II (and IV) of EU Habitats and Species Directive
- Greater mouse-eared bat (*Myotis myotis*) – IUCN LC; Albanian Red Listed LRcd; Annex II (and (IV) of EU Habitats and Species Directive
- Lesser mouse-eared bat (*Myotis blythii*) - IUCN LC global, NT in Europe and the Mediterranean; Annex II (and (IV) of EU Habitats and Species Directive
- Daubenton's bat (*Myotis daubentonii*) – IUCN LC; not included on the Albanian Red List; Annex IV of EU Habitats and Species Directive
- Natterer's bat (*Myotis nattereri*) – IUCN LC; Albanian Red List DD; Annex IV of EU Habitats and Species Directive
- Brandt's bat (*Myotis brandtii*) – IUCN LC; Not listed on the Albanian Red List; Annex IV of EU Habitats and Species Directive
- Common long-eared bat / Brown long-eared bat (*Plecotus auritus*) – IUCN LC; Albanian Red List DD;
- Grey long-eared bat (*Plecotus austriacus*) – IUCN LC; Albanian Red List DD; Annex IV of EU Habitats and Species Directive
- Lesser Noctule / Leisler's bat (*Nyctalus leisleri*) – IUCN LC; Albanian Red List DD; Annex IV of EU Habitats and Species Directive
- Savi's pipistrelle (*Hypsugo savii*) – IUCN LC; Not listed on the Albanian Red List; Annex IV of EU Habitats and Species Directive.

The presence and identification of these species were later validated using DNA analysis. At the time of survey, it was noted that the Brandt's bat had a very limited distribution in the Balkans and records of this species in Albania were relatively new due to the difficulties associated with identifying this cryptic species based on morphological features (Hunia et al., 2016).

Bat activity surveys using Petterson D100, D240x and a Batlogger-M were also undertaken by the Dutch Mammal Society in 2015 at the following four broad locations in the National Park:

- Region 1: Hotel Hasa located adjacent to the existing Zgosht to Cerenec road in Fushë Studë. This survey area comprised a wide valley surrounded by hills dominated with broadleaved forests, some pine plantations and open rocky areas (Figure 4.29).
- Region 2: The village Klenje, at the north border of the National Park, approximately 3.5 km from the proposed project.
- Region 3:, near the village Skenderbej, in the south of the National Park, approximately 24 km from the proposed Project.

The software package Batsound was used to analyse time expansion recordings using the Petterson D240x bat detectors and the software package Batexplorer was used to analyse the ultrasonic sounds recorded by the Batlogger-M. The survey indicated that Schreiber's bent-winged bat (*Miniopterus schreibersii*), common pipistrelle (P*ipistrellus pipistrellus*), Kuhl's pipistrelle (*Pipistrellus kuhlii*), Leisler's bat (*Nyctalus leisleri*), Savi's pipistrelle (*Hypsugo savii*), particoloured bat, (*Vespertilio murinus*), serotine (*Eptesicus serotinus*), soprano pipistrelle (*Pipistrellus pygmaeus*) were active in close proximity to the proposed project at the time of survey (Hunia et al., 2016).

Figure 4.29: Bat activity survey regions (Hunia *et al.*, 2016)

Table 4.6: Bat species identified echolocating within the Shebenik-Jabllanicë National Park in 2015 (Hunia et al., 2016)

Key: LR/cd = lower risk / conservation dependent

Species	IUCN Status (2020)	National Red Data Book Status (2013)	Region 1		Region 2	Region 3
			Hotel Hasa	Stream near Hotel Hasa	Klenje	North of Skender bej
Schreiber's bent-winged bat (Miniopterus schreibersii)	NT	Not listed	+	+	+	+
Common pipistrelle (Pipistrellus pipistrellus)	LC	Not listed	+	+	+	+
Greater horseshoe bat (Rhinolophus ferrumequinum)	Global - LC,Europe – Mediterranean NT	LR/cd				+
Kuhl's pipistrelle (Pipistrellus kuhlii)	LC	Not listed	+			
Lesser noctule / Leisler's bat (Nyctalus leisleri)	LC	DD	+	+	+	+
Mediterranean horseshoe bat (Rhinolophus Euryale)	Global NT, Europe VU, Mediterranean VU	VU				+
Particoloured bat (Vespertilio murinus)	LC	DD		+		
Savi's pipistrelle (Hypsugo savii)	LC	NA	+	+		+
Serotine (Eptesicus serotinus)	LC	DD	+	+	+	+
Soprano pipistrelle (Pipistrellus pygmaeus)	LC	DD	+			+

A number of bat species were found roosting in structures (i.e. abandoned military bunkers, houses and tunnels) near Fushë Studë in proximity to the Project in 2015 (Hunia et al., 2016): These are described in more detail in Table 4.7.

Table 4.7: Bat species identified roosting near Fushë Studë in proximity to the Project 2015 (Hunia et al., 2016)

Species	Description
Greater horseshoe bat	Identified in bunkers and abandoned houses in the surrounds of Fushë Studë.
Lesser horseshoe bat	Identified in bunkers and abandoned houses in the surrounds of Fushë Studë.
Greater mouse-eared bat	Summer roosts identified in the Hoxha bunkers and tunnels in the surroundings of Fushë Studë.
Lesser mouse-eared bat	Summer roosts identified in Hoxha bunkers near Fushë Studë.

The scoping survey identified the following features that may be suitable for roosting bats:

- mature beech trees at UTM 447859.5, 4572393.11
- several small caves associated with the canyon at Shkalla e Lunikut (at UTM 444165.84, 4569530.41)
- an old abandoned farmhouse in Llanga village
- caves located in the rocky slopes of the Okshtuni stream valley, between UTM 26 451649.7, 4578203.88 and 36 450575.58, 4581448.64 (Figure 4.30).

Bat activity surveys, mist netting and roost inspections would be required to establish whether bats are using any of these features for roosting or hibernation.

Figure 4.30: Photograph of caves along the Zgosht to Cerenec road corridor with potential for roosting bats (observed from UTM 451100.98, 4579438.22)

4.8 Avifauna

The diversity of natural and modified terrestrial and aquatic habitats within the region of the Project in addition to the altitudinal range (i.e. between valley bottoms and alpine landscapes) is likely to contribute to relatively high diversity of bird species in the Shebenik-Jabllanicë National Park and surrounding environs (PROGES and Sapienza University of Rome, 2015).

A bird survey undertaken within Shebenik-Jabllanicë National Park in 2013, focused on surveying within 16 habitat types and included approximately 11% of the National Park, confirmed the presence of 84 bird species (Table 4.8). All of these species are categorised as LC by the IUCN Red List of Threatened Species (IUCN, 2020), excluding the rock partridge (*Alectoris graeca*) which is categorised as NT. In total 67% of the identified bird species are listed in Annex II of the Bern Convention ("Strictly protected fauna species"). Several species are also rare and threatened at the national level and are categorised by the Albanian Red list (2013) as EN or VU. These bird species are listed as follows:

- Golden eagle (*Aquila chrysaetos*) – Albanian Red List EN
- Northern goshawk (*Accipiter gentilis*) – Albanian Red List VU
- Common buzzard (*Buteo buteo*) - Albanian Red List VU
- Short-toed snake eagle (*Circaetus gallicus*) - Albanian Red List VU
- Peregrine falcon (*Falco peregrinus*) - Albanian Red List VU
- Eurasian hobby (*Falco Subbuteo*) - Albanian Red List VU
- Common kestrel (*Falco tinnunculus*) - Albanian Red List VU

The survey identified that bird diversity was highest in areas of mixed traditional farmland, dry calcareous grasslands with *Juniperus communis* shrublands and alpine pastures. These habitats were characterised by an unusually high abundance of red-backed shrike (*Lanius collurio*), Eurasian skylark (*Alauda arvensis*), corn bunting (*Emberiza calandra*), cuckoo species and cirl bunting (*Emberiza cirlus*). Traditional agricultural techniques, which are widely practiced in the region, were highlighted as an important contributing factor to promoting species richness in these areas. The surveyors recorded large flocks of house sparrows (*Passer domesticus*) and tree sparrows (*Passer montanus*) in and around villages, which were of particular interest as the European populations of both species are in a rapid state of decline. The habitat type with the lowest level of species diversity was the secondary *Fagus sylvatica* forests. This forest habitat was found to be dominated by generalist species such as common chiffchaff (*Phylloscopus collybita*), Eurasian blackcap (*Sylvia atricapilla*) and common chaffinch (*Fringilla coelebs*) (PROGES and Sapienza University of Rome, 2015). It is likely that similar trends in bird habitat usage and species diversity will occur in similar habitats outside of the National Park in the region of the Project.

The National Park is also known to support a number of migratory and congregatory (and dispersive) bird species. These are presented in Table 4.8. Habitats within the National Park have not been identified by the National Park's management plan as supporting globally significant numbers of migratory or congregatory avifauna populations. Habitats within the verges of the Zgosht to Cerenec Road and the 50m buffer zone are unlikely to support globally significant numbers of migratory or congregatory bird species.

The fauna scoping assessment, undertaken for the Project in June 2020, identified that forest, scrub and scree habitats located adjacent to the Zgosht to Cerenec road offer potentially suitable habitat for nesting birds, including nationally rare and threatened species.

Whilst a dedicated avifauna survey was beyond the scope of the scoping assessment, the common ringed plover (*Charadrius dubius;* IUCN LC, not included in the Albanian Red List) and the Eurasian coot (*Fulica atra*; IUCN LC, not included in the Albanian Red List) were observed at a large water reservoir located 311 m from the Zgosht to Cerenec road, approximately 1.8 km from Fushë (at UTM 450707.96, 4574536.58). In addition a common kestrel (*Falco tinnunculus*; IUCN LC; Albanian Red listed Vulnerable) was observed in flight above rocky habitat near the road at UTM 444095.67, 4569467.96, approximately 3 km from Zgosht.

Table 4.8: Birds species recorded in the Shebenik-Jabllanicë National Park in 2013

Key: NR = not recognised; DD = Data Deficent; LC = Least Concern; NT = Near Threatened; VU = Vulnerable; EN = Endangered; CR = Critically Endangered

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Migratory Status	Congregatory Status
Accipiter gentilis	Northern goshawk	LC	VU	Full migrant	Not congregatory
Alauda arvensis	Eurasian skylark	LC	Not listed	Full migrant	Not congregatory
Alectoris graeca	Rock partridge	NT	Not listed	Altitudinal migrant	Not congregatory
Anthus spinoletta	Water pipit	LC	Not listed	Full migrant	Not congregatory
Anthus trivialis	Tree pipit	LC	Not Listed	Full migrant	Not congregatory
Aquila chrysaetos	Golden eagle	LC	EN	Full migrant	Not congregatory
Buteo buteo	Eurasian buzzard	LC	VU	Full migrant	Congregatory (and dispersive)
Caprimulgus europaeus	European nightjar	LC	LRlc	Full migrant	Not congregatory
Carduelis cannabina	Common linnet	LC	Not listed	Full migrant	Not congregatory
Carduelis carduelis	European goldfinch	LC	Not listed	Full migrant	Not congregatory
Carduelis chloris	European greenfinch	LC	Not listed	Full migrant	Not congregatory

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Migratory Status	Congregatory Status
Acanthis flammea (Synonym *Carduelis flammea)*	Redpoll	LC	Not listed	Full migrant	Not congregatory
Certhia familiaris	Eurasian treecreeper	LC	Not listed	Not a migrant	Not congregatory
Circaetus gallicus	Short-toed snake eagle	LC	VU	Full migrant	Congregatory (and dispersive)
Columba palumbus	Common woodpigeon	LC	Not listed	Full migrant	Not congregatory
Corvus corax	Common raven	LC	Not listed	Not a migrant	Not congregatory
Corvus corone cornix	Hooded crow	NA / NR	Not listed	-	-
Corvus corone corone	Carrion crow	NA	Not listed	-	-
Corvus monedula	Eurasian jackdaw	LC	Not listed	Full migrant	Not congregatory
Coturnix coturnix	Common quail	LC	Not listed	Full migrant	Not congregatory
Cuculus canorus	Common cuckoo	LC	Not listed	Full migrant	Not congregatory
Delichon urbicum (synonym *Delichon urbica)*	Northern house martin	LC	Not listed	Full migrant	Not congregatory
Dendrocopos leucotos	White-backed woodpecker	LC	LRcd	Not a migrant	Not congregatory
Dryocopus martius	Black woodpecker	LC	LRcd	Not a migrant	Not congregatory
Emberiza cia	Rock bunting	LC	Not listed	Full migrant	Not congregatory
Emberiza cirlus	Cirl bunting	LC	Not listed	Not a migrant	Not congregatory
Emberiza citrinella	Yellowhammer	LC	Not listed	Full migrant	Not congregatory
Emberiza melanocephala	Black-headed bunting	LC	DD	Full migrant	Not congregatory
Erithacus rubecula	European robin	LC	Not listed	Full migrant	Not congregatory
Falco peregrinus	Peregrine falcon	LC	VU	Full migrant	Congregatory (and dispersive)

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Migratory Status	Congregatory Status
Falco subbuteo	Eurasian hobby	LC	VU	Full migrant	Congregatory (and dispersive)
Falco tinnunculus	Common kestrel	LC	VU	Full migrant	Congregatory (and dispersive)
Ficedula hypoleuca	European pied flycatcher	LC	Not listed	Full migrant	Not congregatory
Fringilla coelebs	Common chaffinch	LC	Not listed	Full migrant	Not congregatory
Galerida cristata	Crested lark	LC	Not listed	Full Migrant	Not congregatory
Gallinula chloropus	Common moorhen	LC	Not listed	Full migrant	Congregatory (and dispersive)
Garrulus glandarius	Eurasian jay	LC	Not listed	Not a migrant	Not congregatory
Cecropis daurica (Synonym *Hirundo daurica)*	Red-rumped swallow	LC	Not listed	Full migrant	Not congregatory
Hirundo rustica	Barn swallow	LC	Not listed	Full migrant	Congregatory (and dispersive)
Jynx torquilla	Eurasian wryneck	LC	LRnt	Full Migrant	Not congregatory
Lanius collurio	Red-backed shrike	LC	Not listed	Full migrant	Not congregatory
Lullula arborea	Woodlark	LC, NT in Europe	Not listed	Full migrant	Not congregatory
Luscinia megarhynchos	Common nightingale	LC	Not listed	Full migrant	Not congregatory
Miliaria calandra	Corn bunting	LC	Not listed	Full migrant	Not congregatory
Monticola saxatilis	Rufous-tailed rock-thrush	LC	Not listed	Full migrant	Not congregatory
Motacilla alba	White wagtail	LC	Not listed	Full migrant	Not congregatory
Motacilla cinerea	Grey wagtail	LC	Not listed	Full migrant	Not congregatory
Muscicapa striata	Spotted flycatcher	LC	Not listed	Full migrant	Not congregatory

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Migratory Status	Congregatory Status
Nucifraga caryocatactes	Northen nutcracker	LC	Not listed	Not a migrant	Not congregatory
Oenanthe hispanica	Black-eared wheater	LC	Not listed	Full migrant	Not congregatory
Oenanthe oenanthe	Northern wheatear	LC	Not listed	Full migrant	Not congregatory
Oriolus oriolus	Eurasian golden oriole	LC	Not listed	Full migrant	Not congregatory
Parus ater	Coal tit	LC	Not listed	Not a migrant	Not congregatory
Cyanistes caeruleus (Synonym *Parus caeruleus*)	Eurasian blue tit	LC	Not listed	Not a migrant	Not congregatory
Poecile lugubris	Sombre tit	LC	Not listed	Not a migrant	Not congregatory
Parus major	Great tit	LC	Not listed	Not a migrant	Not congregatory
Passer domesticus	House sparrow	LC	Not listed	Not a migrant	Not congregatory
Passer montanus	Eurasian tree sparrow	LC	Not listed	Not a migrant	Not congregatory
Phoenicurus ochruros	Black redstart	LC	Not listed	Full migrant	Not congregatory
Phoenicurus phoenicurus	Common redstart	LC	Not listed	Full migrant	Not congregatory
Phylloscopus collybita	Common chiffchaff	LC	Not listed	Full migrant	Not congregatory
Phylloscopus sibilatrix	Wood warbler	LC	Not listed	Full migrant	Not congregatory
Pica pica	Eurasian magpie	LC	Not listed	Full migrant	Not congregatory
Prunella collaris	Alpine accentor	LC	DD	Altitudinal migrant	Not congregatory
Pyrrhocorax graculus	Yellow-billed chough	LC	Not listed	Not a migrant	Not congregatory
Regulus ignicapilla	Common firecrest	LC	Not listed	Full migrant	Not congregatory
Regulus regulus	Goldcrest	LC	Not listed	Full migrant	Not congregatory
Saxicola rubetra	Whinchat	LC	Not listed	Full migrant	Not congregatory

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Migratory Status	Congregatory Status
Saxicola torquata	Common stonechat	LC	Not listed	Full migrant	Not congregatory
Serinus serinus	European serin	LC	Not listed	Full migrant	Not congregatory
Sitta europaea	Eurasian nuthatch	LC	LRnt	Not a migrant	Not congregatory
Streptopelia turtur	European turtle dove	LC	Not listed	Full migrant	Not congregatory
Strix aluco	Tawny owl	LC	Not listed	Not a migrant	Not congregatory
Sturnus vulgaris	Common starling	LC	Not listed	Not a migrant	Not congregatory
Sylvia atricapilla	Eurasian blackcap	LC	Not listed	Full migrant	Not congregatory
Sylvia borin	Garden warbler	LC	Not listed	Full migrant	Not congregatory
Sylvia cantillans	Subalpine warbler	LC	Not listed	Full migrant	Not congregatory
Sylvia communis	Common whitethroat	LC	Not listed	Full migrant	Not congregatory
Sylvia curruca	Lesser whitethroat	LC	Not listed	Full migrant	Not congregatory
Tetrao urogallus	Wester capercaillie	LC	CR	Not a migrant	Not congregatory
Turdus merula	Eurasian blackbird	LC	Not listed	Full migrant	Not congregatory
Turdus philomelos	Song thrush	LC	Not listed	Full migrant	Not congregatory
Turdus viscivorus	Mistle thrush	LC	Not listed	Full migrant	Not congregatory
Upupa epops	Common hoopoe	LC	VU	Full migrant	Not congregatory

4.9 Reptiles

The Shebenik-Jabllanicë National Park Management Plan lists 18 species of reptiles as occurring within the Shebenik-Jabllanicë National Park (PROGES and Sapienza University of Rome, 2015). Most of these species are categorised as LC by the IUCN Red List of Threatened Species (IUCN, 2020), excluding two species which are listed as NT, namely the Hermann's tortoise (*Testudo hermanni*) and four-lined snake (*Elaphe quatuorlineata*).

The Hermann's tortoise is categorised by the Albanian Red List (2013) as LR/nt and is listed on Annex II of the Bern Convention, Annex II and IV of the EU Habitats Directive, Annex II of CITES and Annex A of EU Wildlife Trade Regulation 338/97. The range of the Hermann's tortoise is extant in nearly all of Albania but is otherwise distributed patchily throughout Mediterranean Europe. The population is relatively stable in the Balkans, with a more continuous distribution (van Dijk et al. 2004; Bertolero et al. 2011).

In the Mediterranean, including Albania, the Hermann's tortoise prefers open patchy evergreen oak forest, but also inhabits coastal dunes, pastures, scrubs and sparse vegetation. It is not found in areas of intensive agriculture, marshy areas or dense forests (Bertolero et al. 2011). The main threats to the species are habitat loss and degradation, wildfires and collection for the pet trade (van Dijk et al. 2004, Bertolero et al. 2011).

The four-lined snake is categorised as CR by the Albanian Red List and is listed on Annex II of the Bern Convention and Annex II and IV of the EU Habitats Directive. The four-lined snake has a fragmented distribution that extends across Mediterranean and sub-Mediterranean zones particularly across the Balkan region and central and southern Italy (excluding Sicily). The global population is thought to be in a state of decline (Crnobrnja-Isailovic et al. 2009). This species has a relatively widespread distribution in Albania and inhabits a broad range of habitats including open woodlands and woodland edge habitats, hedgerows, rocky habitat types and agro-pastoral land. It is characterised by large home ranges. The principle threats to the global and Albanian populations are habitat loss arising from the intensification of agricultural practices and infrastructure development. In some parts of this species range, the four-lined snake is also persecuted (Crnobrnja-Isailovic et al. 2009).

Six additional reptile species that reportedly inhabit the Shebenik-Jabllanicë National Park are listed as Low Risk by the Albanian Red Data Book (Table 4.9). According to IUCN (2020) the snake *Dolichophis jugularis* is not native to Albania. This species range extends across Cyprus, Egypt, Greece, Iran, Islamic Republic of Iraq, Israel, Jordan, Syrian Arab Republic and Turkey and possibly Kuwait. Hence, it is unlikely that the National Park and surrounding environs provide habitat for *D. jugularis*.

A grass snake (*Natrix* sp) was observed basking near the pond near the western border of the Shebenik-Jabllanicë National Park during the fauna scoping assessment in June 2020, approximately 100m from the Zgosht to Cerenec road (UTM 451386.44, 4575319.39; refer to Section 4.12, Figure 4.32).

Good habitat connectivity between the National Park and the surrounding environs are likely to facilitate the movement of reptiles inside and outside of the Shebenik-Jabllanicë National Park. Reptiles are known to bask and use refugia on road verges, hence there is potential for reptiles which inhabit the region (potentially including those listed in Table 4.9) to occur within the study area within suitable habitat along the Zgosht to Cerenec road verges.

Currently, there is also a risk of accidental vehicle collision with reptiles at crossing points along the existing road (i.e. sections of the road with good habitat connectivity either side) resulting in injury and the mortality of individual reptiles. The risk of collision may potentially be greater along the section of road the traverses the National Park. It is however likely that sections of the existing Zgosht to Cerenec road with steep sided retaining and receiving walls will serve as a barrier to the movement of snakes, slow

worms and tortoises. Lizards may potentially climb and bask on the retaining and receiving walls.

Table 4.9: Reptile species recorded in the Shebenik-Jabllanicë National Park

Key: NE = not evalusated; LC = Least Concern; NT = Near Threatened; CR = Critically Endangered

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Bern Convention
Testudo hermanni	Hermann's tortoise	NT	Low risknt	II
Algyroides nigropunctatus	Blue-throated keeled lizard	LC	Low riskcd	II
Podarcis melisellensis	Dalmation wall lizard	LC	Low risk /cd	II
Platyceps najadum (Synonym *Coluber najadum)*	Dahl's whipsnake	LC	Low risk / cd	II
Coronella austriaca	Smooth snake	LC	Low risk/ nt	II
Zamenis longissimus	Aesculapian snake	LC	Not listed	II
Elaphe quatuorlineata	Four-lined snake	NT	CR	II
Natrix tessellata	Dice snake	LC	Not listed	III
Vipera ammodytes	Nose-horned viper	LC	Low risknt	II
Algyroides nigropunctatus	Dalmatian algyroides	LC	Low riskcd	II
Dolichophis schmidti	Red bellied racer	LC	Not listed	II
Malpolon insignitus		LC	Not listed	III
Dolichophis jugularis		LC	Not listed	
Anguis fragilis	Slow worm	LC	Not listed	III
Lacerta agilis	Sand lizard	LC	Low Risk/ nt	II
Lacerta viridis		LC	Low Risk /cd	II
Natrix natrix	Grass snake	LC	Not Listed	
Podarcis muralis		LC	NE	II

4.10 Invertebrates

Two invertebrate species that are categorised as NT in Europe by the IUCN Red List of Threatened Species (2020) have been recorded in the Shebenik-Jabllanicë National Park, namely the stag beetle (*Lucanus cervus*) and *Caliaeschna microstigma* (Table 4.10).

Whilst the stag beetle is widely distributed across Europe, the northern and central parts of this species' European range is in a state of decline. Hence the IUCN European regional assessment has classified the stag beetle as NT and is reportedly close to qualifying as VU. The stag beetle is also listed on Annex II of the EU Habitats Directive and Appendix III of the Bern Convention (IUCN, 2020).

The stag beetle is classed as a saproxylic invertebrate which means that it is dependent on dead or decaying wood (or dependent on other organisms that are themselves dependent on dead wood). The larvae of the stag beetle develop over a 4 to 5-year period in moist decaying wood (i.e. old tree stumps, the base of rotting fence posts) either on or below the soil surface. Following pupation, the adults are predominantly active during the evening and feed on fruit and sap. This species is present in oak forests at higher altitudes (up to 2,000 m) in the south of the Mediterranean. This species is threatened in Europe by an increase in intensive forestry management practices resulting in the loss of available dead wood habitat and a decline in coppicing and pollarding (Nieto, 2010). Woodland habitats within the study area and surrounding environs may potentially provide habitats for stag beetles.

The range of the dragonfly *C. microstigma* is predominantly located in Southwest Asia. This species European range is limited to Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Greece, Montenegro, North Macedonia, Serbia and Turkey-in-Europe. In the southern parts of the Balkan Peninsula *C. microstigma* is still relatively common in nature, but becomes rare further north. This species inhabits stony brooks and small rivers which are partly shaded, predominantly in hilly or mountainous regions. The larvae usually develop in still sections of the rivers and brooks. *C. microstigma* is threatened by habitat loss (Kalkman, 2010).

The literature review identified that the great Capricorn beetle (*Cerambyx cerdo*) may potentially occur in proximity to the Project. This species is IUCN listed VU, Albanian Red Data Book listed EN and is listed on the Habitats Directive under Annex II & IV. The great Capricorn beetle is a saproxylic beetle commonly associated with oak woodland (Redolfi De Zan et al., 2017). Whilst this species reportedly occurs within a number of protected areas in Albania, including the Mali i Tomorrit National Park which shares broadly similar habitats to the Project region (RSK, 2017), the IUCN assessment undertaken in 1996 does not cite Albania as part of this species' geographical range (IUCN, 2020). This species also reportedly occurs in the Galichica National Park (Galicica, 2019) which is located on the eastern shore of Lake Ohrid near the Shebenik-Jabllanicë National Park.

Table 4.10: Invertebrate species of the Shebenik-Jabllanicë National Park

Key: LC = Least Concern; NT = Near Threatened

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)

Caliaeschna microstigma	-	LC at the global scale; NT in Europe	Not listed
Lucanus cervus	Stag beetle	NT in Europe	Not listed

4.11 Fish

The project area is located within a mountainous landscape characterised by natural and artificial alpine lakes, springs and alpine streams. The eastern end of the Project, that traverses the National Park, is located within the catchment area of the Shkumbin River. This river originates in Southeastern Albania and flows westwards over 181 km to the Myzeqe Plain where it forms a small delta in Karavasta Lagoon. Waterbodies located within the Shebenik-Jabllanicë National Park are known to provide habitat for 13 fish species (Table 4.11) and it is likely that some of these species may inhabit waterbodies with similar aquatic conditions located outside of the National Park within the wider mountainous region. Of these 13 species, only one fish species (i.e. European eel (*Anguilla Anguilla*)) has a geographical range that falls within Albania according the IUCN Red List of Threatened Species (IUCN, 2020; Table 4.11).

According the Shebenik-Jabllanicë National Park Management Plan (PROGES and Sapienza University of Rome, 2015), the following fish species of global conversation importance inhabit waterbodies in the National Park:

- European eel (IUCN CR)
- Mediterranean barbel (*Barbus meridionalis*; IUCN NT)
- Pindus stone loach (*Oxynoemacheilus pindus*; IUCN VU)
- South European roach (*Rutilus rubilio*; IUCN NT)

The Management Plan also lists 5 fish species that are categorised as Low Risk by the Albanian Red List (2013) (Table 4.11) and one species that is categorised as EN in Albania, namely Mediterranean trout (*Salmo trutta macrostigma*). The rare and threatened species status of the Mediterranean trout has not been assessed by IUCN (2020). Of the 13 species of fish listed by the Shebenik-Jabllanicë National Park's Management Plan as occurring in this protected area, three species of fish are considered to be full migrants (i.e. European eel, nase and chub) and only one species, the European eel, is considered to be congregatory (and dispersive) by IUCN (2020).

The fauna scoping assessment identified several waterbodies either within or in close proximity to the 50 m buffer. Many of these waterbodies offer potentially suitable habitat to support fish species. These waterbodies are described as follows:

- An ephemeral small pond located approximately 5 km from Zgosht, approximately 12 m from the Zgosht to Cerenec road (at UTM 444746.94, 4570210.1). Litter and piles of gravel were evident at the time of survey (Figure 4.31, point 1).
- An alpine stream crosses Zgosht to Cerenec road, approximately 3 km south of Fushë Studë (at UTM 447859.5, 4572393.11; Figure 4.31, point 3). This stream

was also considered to offer potentially suitable habitat to support trout (*Salmo trutta*).

- A large water reservoir located 311 m from the Zgosht to Cerenec road, approximately 1.8 km from Fushë Studë (at UTM 450707.96, 4574536.58). A large stand of beech forest is located immediately adjacent to the south-eastern banks of the reservoir within the Shebenik-Jabllanicë National Park (Figure 4.31, point 3). The lake is used for irrigation during the summer, so the water table is highly variable over the year.
- A small pond located approximately 110 m from the Zgosht to Cerenec road amongst agro-pastoral land, approximately 1.9 km from Fushë Studë, near the western border of the Shebenik-Jabllanicë National Park (at UTM 451379.6, 4575241.8). This pond serves as a water resource for livestock (Figure 4.31, point 4).
- A cascade hydropower system located near the village of Borovë (at UTM, 451649.7, 4578203.88) which runs in parallel with the Zgosht to Cerenec road (Figure 4.31, point 5). The hydropower system uses the water from Okshtuni stream that runs toward the village of Moglicë. The stream has been channelled at this point which has affected the hydrology of the river and the surrounding landscape has also been heavily modified for the construction of the hydropower plant and ancillary buildings.
- The remaining Okshtuni stream runs in parallel with the Zgosht to Cerenec road at UTM 451190.95, 4578237.59, and is characterised by emergent vegetation with good connectivity to surrounding agro-pastoral land (Figure 4.31, point 6).

A detailed fish survey was beyond the scope of the fauna scoping assessment, however, a number of Barbels (*Barbus sp*.) were observed within the Okshtuni stream (at UTM 451190.95, 4578237.59). A fish survey would be required to confirm the abundance and diversity of fish species within the waterbodies located in proximity to the Project.

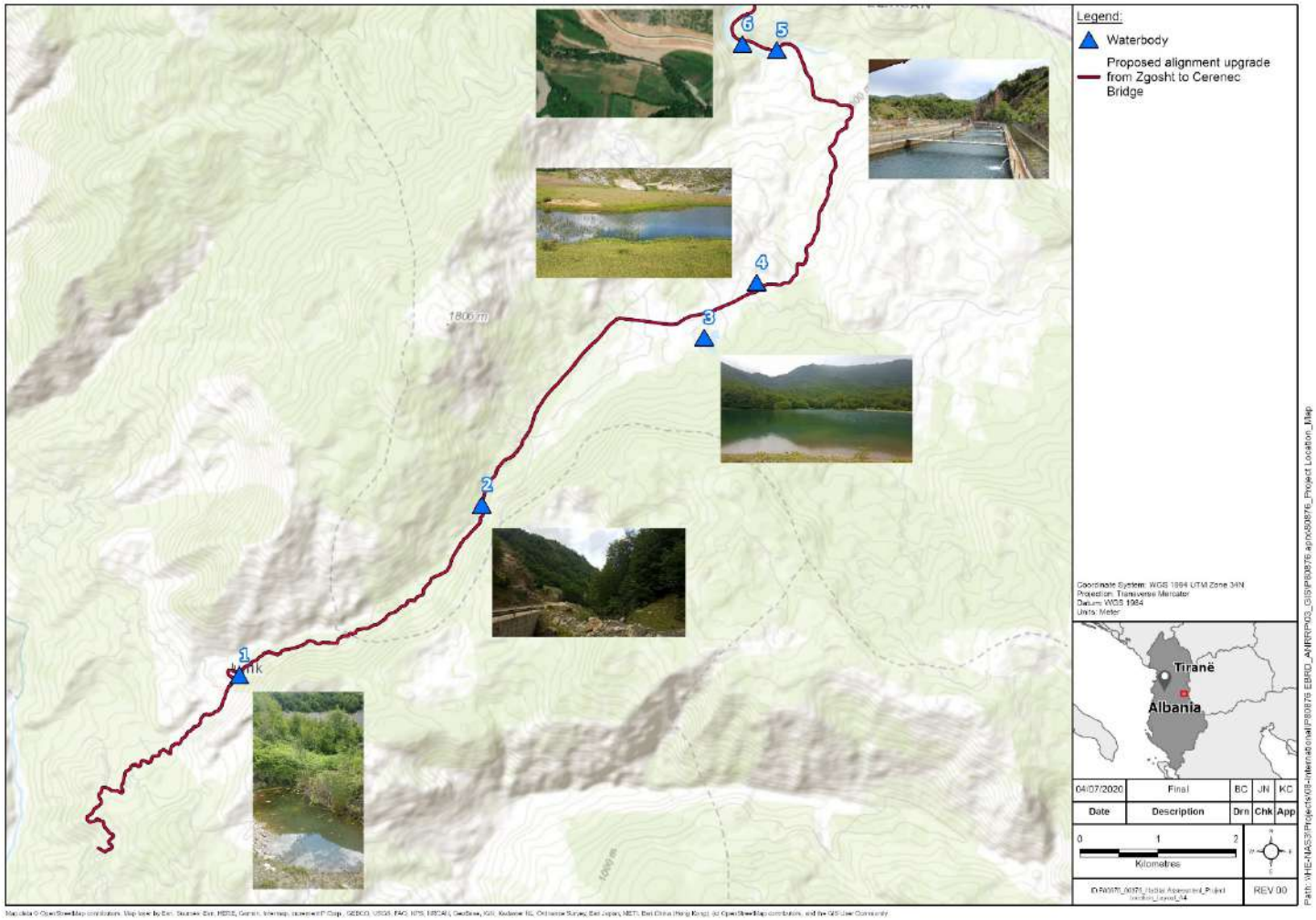


Figure 4.31: Waterbodies located within the 50 m study area

Table 4.11: Fish species of the Shebenik-Jabllanicë National Park

Key: LC = Least Concern; NT = Near Threatened; VU = Vulnerable; EN = Endangered

Scientific Name	Common Name	IUCN Status (2020)	National Red Data Book Status (2013)	Geographic Range (IUCN, 2020)	Migratory Status (IUCN, 2020)	Congregatory Status (IUCN, 2020)
Alburnus alburnus	Bleak	LC	Not Listed	Andorra; Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Czechia; Denmark; Estonia; Finland; France; Georgia; Germany; Greece; Guernsey; Hungary; Italy; Jersey; Kazakhstan; Latvia; Liechtenstein; Lithuania; Luxembourg; Moldova; Montenegro; Netherlands; North Macedonia; Norway; Poland; Romania; Russian Federation; Serbia; Slovakia; Slovenia; Spain; Sweden; Switzerland; Turkey; Ukraine; United Kingdom	Not migratory	Not Congregatory
Anguilla anguilla	European eel	CR	Not listed	Albania; Algeria; Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Cyprus; Czechia; Denmark; Egypt; Estonia; Faroe Islands; Finland; France; Georgia; Germany; Gibraltar; Greece; Guernsey; Iceland; Ireland; Isle of Man; Israel; Italy; Jersey; Latvia; Lebanon; Libya; Lithuania; Luxembourg; Malta; Mauritania; Moldova; Monaco; Montenegro; Morocco; Netherlands; North Macedonia; Norway; Poland; Portugal; Romania; Russian Federation; Serbia; Slovakia; Slovenia; Spain; Sweden; Switzerland; Syrian Arab Republic; Tunisia; Turkey; Ukraine; United Kingdom	Full migrant	Congregatory (and dispersive)

Barbatula barbatula	Stone loach	LC	LRnt	Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Czechia; Denmark; Estonia; Finland; France; Georgia; Germany; Hungary; Ireland; Italy; Kazakhstan; Latvia; Liechtenstein; Lithuania; Luxembourg; Moldova; Montenegro; Netherlands; North Macedonia; Poland; Romania; Russian Federation; Serbia; Slovakia; Slovenia; Sweden; Switzerland; Ukraine; United Kingdom	Not migratory	Not Congregatory
Barbus cyclolepis		LC	Not Listed	Bulgaria; Greece; Turkey endemic to the Cholorema, Strymon, Evros, Nestos, Axios, Pinios and Sperchios river basins as well as in the northern part of Eboia Island in Greece.	Not migratory	Not Congregatory
Barbus meridionalis	Meditteranean barbel	NT	Low risknt	Restricted to the southern part of the Rhône river basin and to several coastal streams in France, and to few coastal streams in northern Catalonia, Spain.	Not migratory	Not Congregatory
Chondrostoma nasus	Nase	LC	Low riskcd	Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Czechia; France; Germany; Hungary; Latvia; Liechtenstein; Lithuania; Luxembourg; Moldova; Montenegro; Netherlands; North Macedonia; Poland; Romania; Russian Federation; Serbia; Slovakia; Slovenia; Switzerland; Ukraine	Full migrant	Not Congregatory
Cobitis satunini (synonym Cobitis taenia)	Colchic spined loach	LC	Low Riskcd	Georgia; Turkey (Turkey-in-Asia)	Not migratory	Not Congregatory
Gobio gobio	Gudgeon	LC	Low risknt	Austria; Belarus; Belgium; Czechia; Denmark; Estonia; Finland; France; Germany; Latvia; Liechtenstein; Lithuania; Luxembourg; Netherlands; Norway; Poland; Russian Federation; Slovakia; Sweden; Switzerland; Ukraine; United Kingdom	Not migratory	Not Congregatory

Squalius cephalus (synonym Leuciscus cephalus)	Chub	LC	Not Listed	Andorra; Armenia; Austria; Azerbaijan; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Czechia; Denmark; Estonia; Finland; France; Georgia; Germany; Hungary; Iran, Islamic Republic of; Italy; Kazakhstan; Latvia; Liechtenstein; Lithuania; Luxembourg; Moldova; Montenegro; Netherlands; North Macedonia; Norway; Poland; Romania; Russian Federation; Serbia; Slovakia; Slovenia; Spain; Sweden; Switzerland; Turkey; Turkmenistan; Ukraine; United Kingdom	Full migrant	Not Congregatory
Oncorhynchus mykiss	Rainbow trout	NA	Not listed	Native to Pacific Slope from Kuskokwim River, Alaska to (at least) Rio Santa Domingo, Baja California, Mexico; upper Mackenzie River drainage (Arctic basin), Alberta and British Columbia in Canada; endorheic basins of southern Oregon, USA. Widely introduced in cold waters elsewhere in North America and rest of the world (Ref. 5723). Eastern Pacific: Kamchatkan Peninsula and have been recorded from the Commander Islands east of Kamchatka and sporadically in the Sea of Okhotsk as far south as the mouth of the Amur River along the mainland. The records outside Kamchatka probably represent migrating or straying Kamchatkan steelhead (penshinensis) rather than the established native population (Reg. 50080). Several countries report adverse ecological impact after introduction.	-	-
Oxynoemacheilus pindus	Pindus stone loach	VU	Not listed	restricted to the Aoos river basin in Epirus, Greece, and is possibly also present in Albania.	Not migratory	Not Congregatory
Pseudorasbora parva	Topmouth gudgeon	LC	Not listed	Native to China; Japan; Korea, Democratic People's Republic of; Mongolia; Russian Federation	Not migratory	Not Congregatory

				Extant & Introduced (resident) in Afghanistan; Albania; Algeria; Armenia; Austria; Azerbaijan; Belgium; Bulgaria; Czechia; Denmark; Fiji; France; Germany; Greece; Hungary; Iran, Islamic Republic of; Italy; Kazakhstan; Kyrgyzstan; Lao People's Democratic Republic; Netherlands; Poland; Romania; Serbia; Slovakia; Spain; Switzerland; Taiwan, Province of China; Turkey; Turkmenistan; United Kingdom; Uzbekistan		
Rutilus rubilio	South European roach	NT	Not Listed	Restricted to the Tuscano-Latum district of Italy, and introduced to southern Italy and Sicily.	Not migratory	Not Congregatory
Salmo trutta macrostigma	Mediterranean trout	NA	EN	Corsica, Sardinia, Sicily, Tyrrehenian basin of Italy from Magra drainage southward.	-	-

4.12 Amphibians

The Shebenik-Jabllanicë National Park is known to provide habitat to four species of amphibians (PROGES and Sapienza University of Rome, 2015). All of these species are categorised as LC by the IUCN Red List of Threatened Species (2020) and Low Risk by the Albanian Red List, excluding the fire salamander (*Salamandra salamandra*) and the newt *Ichthyosaura alpestris* which are categorised as data deficient:

- *Bombina variegate* – IUCN LC; Albanian Red List LRcd; Appendix II of the Bern Convention and on Annexes II and IV of Natural Habitats Directive.
- Fire salamander (*Salamandra salamandra*) – IUCN LC; Albanian Red List Data Deficient; listed on Appendix III of the Bern Convention
- *Rana graeca* – IUCN LC; Albanian Red List LRnt; listed on Annex IV of the EU Habitats Directive and Appendix III of the Bern Convention
- *Ichthyosaura alpestris* - IUCN LC; Albanian Red List Data Deficient; listed on Appendix III of the Bern Convention

Culverts, drains and channels associated with the existing Zgosht to Cerenec road in addition to waterbodies located within the 50 m buffer may potentially provide habitat for amphibians such as frogs and newts including those species known to inhabit the National Park. Amphibians (i.e. frogs, newts and toads) may also use refugia along the existing road verges in the study area. There is also a risk of accidental vehicle collision with amphibians that attempt to cross the road, particularly at night during wet weather (i.e. at sections of the road with good habitat connectivity either side) resulting in injury and / or the mortality of individual amphibians. The risk of collision may potentially be greater along the section of road the traverses the National Park. It is however likely that sections of the existing Zgosht to Cerenec road with steep sided retaining and receiving walls will serve as a barrier to the movement of amphibians.

The scoping assessment identified water bodies along the route with potential to support amphibians. A small pond located approximately 110 m from the Zgosht to Cerenec road amongst agro-pastoral land, approximately 1.9 km from Fushë Studë (at UTM 451379.6, 4575241.8; Figure 4.32); a reservoir located 3 11 m from the Zgosht to Cerenec road, approximately 1.8 km from Fushë Studë (at UTM 450707.96, 4574536.58); and the small ephemeral pond, located approximately 5 km from Zgosht, approximately 12 m from the Zgosht to Cerenec road (at UTM 444746.94, 4570210.1) all appear to provide good habitat for both frogs and newts.

Figure 4.32: Photograph of pond approximately 100m from the Zgosht to Cerenec road with potential for amphibians (UTM 451386.44, 4575319.39). A grass snake (*Natrix* sp) was observed basking near the pond during the fauna scoping assessment in June 2020.

4.13 Natural resource usage

Whilst the provision of a detailed ecosystem services assessment was beyond the scope of this biodiversity assessment, the literature search, field observation and anecdotal interviews with local residents undertaken during the scoping survey identified that the habitats located within the study area together with the species they support, provide a range of ecosystem services as set out below.

Provisioning services:

- The region's main economic activities are agriculture and forestry. Vascular plants are used for provisioning services by local communities (i.e. trees used for construction and fuel; plants for food, medicinal purposes and aromatic products). This reportidly includes mountain tea (*Sideritis raeseri* subsp. *raeseri*), thyme (*Thymus* sp.) and orchids (*Orchis* sp.).
- Fauna and avifauna are used for food (hunting, gathering and foraging). Evidence of hunting (i.e. used gun cartridges) was not observed during the scoping survey.

Regulating services:

- climate change amelioration, in terms of carbon sequestration and carbon sinks, and attenuating directional and or hemispherical surface albedo
- microclimate climate regulation by vegetation and soils in terms of regulating ambient temperatures and water vapour levels

- local water and air pollution control - through waste assimilation, water and air filtration
- water regulation, erosion control and water catchment protection in terms of maintaining higher flows in rivers and for longer duration; reducing flood surges; and reducing sedimentation of receiving waters through the stabilisation of riverbanks and steep slopes by vegetation including riparian, emergent habitats
- erosion control of terrestrial habitats (i.e., arising from wind erosion) – in terms of controlling ambient fugitive dust emissions though the stabilisation of soil by terrestrial habitats and maintaining edaphic conditions including soil moisture levels
- Regulation of ambient noise levels – habitats and vegetation acts as a natural sound barrier, buffering noise emissions including those arising from anthropogenic sources (i.e., vehicle movement, people, and machinery).

Cultural services:

- Ethical and biodiversity 'non-use values', particularly in terms of maintaining populations of endangered and endemic species. These values are difficult to ascertain.
- sense of place and way of life – these locations are likely to provide value to local people living near and utilising these areas in terms of the way of life and special connection with such areas
- Eco-tourism and tourism. Tourism in the region is currently limited by access and the poor conditions of the current road network in the region, however tourism, particularly ecotourism associated with the Shebenik-Jabllanicë National Park represents a vital economic opportunity (PROGES and Sapienza University of Rome, 2015).
- Locations within the project landscape may provide spiritual, sacred or religious values; inspiration for culture and design; and cognitive development.

Habitat and species support:

- Habitats within the 50 m buffer and surrounding landscapes, including the National Park, provide important refuge, feeding, watering, breeding and nursery areas for a host of animals.

Other supporting services:

- The abovementioned habitats and species provide a range of supporting services such as photosynthesis and water, carbon and nutrient cycling, whose values are typically accounted for in other ecosystem services.

4.14 Existing Threats to Biodiversity

The current threats to habitat quality and species diversity were identified as occurring or potentially occurring within the project area. These threats are predominantly linked to human habitation and anthropogenic activities in the region. Existing threats to biodiversity in the project area are as follows:

Alien invasive species encroachment: Whilst alien invasive species were not observed in the study area during the field surveys and have not been identified as occurring in the Shebenik-Jabllanicë National Park (PROGES and Sapienza University of Rome, 2015), invasive species continue to pose a threat to biodiversity. In recognition of this, Albania has adopted an invasive alien species management plan.

Habitat loss and degradation: Deforestation has been identified as the main threat to forest habitat in the Shebenik-Jabllanicë National Park, particularly deciduous forests (PROGES and Sapienza University of Rome, 2015). Deforestation was also noted as occurring outside of the National Park during the biodiversity scoping assessment in June 2020.

The rise in Albanian population in combination with habitat clearance for the development of agro-pastoral activities, the development and expansion of settlements and industries and the establishment and upgrade of transport infrastructure is thought to be a driver for the loss and degradation of natural habitats in Albania. The advancement of intensive agricultural methods, as a result of the introduction of a free market economy has also led to a degradation of natural habitats and subsequent loss of biodiversity (Ministry of Environment 2011; Cat specialist group 1998). Since the 1950s, the forest area has decreased from 45 % to 36 % of the land cover, resulting in the loss, degradation and fragmentation of habitat for biodiversity and problems with soil erosion (UN, 2002). The lack of sustainable management of forest and conversion to agriculture has impacted biodiversity. (UN, 2002).

Over exploitation of natural resources: The continued unsustainable collection of certain Albanian Red Listed plant species recorded in the Shebenik-Jabllanicë National Park pose a threat to the status and range of these populations in the Park and Albania For example, the nationally Endangered great yellow gentian (*Gentiana lutea*) is threatened by over harvesting for medicinal purposes.

Poaching: Since the 1990s hunting has become one of the major causes of wildlife decline in Albania (Ruppert, 2018). To combat the issue, in 2014 the Albanian government approved a complete hunting ban for the whole of Albania. It came into force in March 2014 and was intended to remain effective for two years until March 2016 (law no. 7/2014 “proclaiming the moratorium of hunting in the republic of Albania”). However, because of ineffective management the ban was extended until 2021 (law no. 61/2016 "On the Promulgation of the Moratorium in the Republic of Albania"). Illegal hunting is still occurring even in protected areas. Birdlife International published the report “The Killing” in 2016 which denounces the illegal killing of 25 million birds in the Mediterranean, with Albania being in the ten most problematic areas for the illegal killing of birds (BirdlLife International, 2015). The hunting ban is unpopular with the public and there is limited enforcement, but it has reduced the number of foreigners coming to Albania on hunting holidays.

5 PRIORITY BIODIVERSITY FEATURES AND CRITICAL HABITATS

5.1 Identification of Priority Biodiversity Features for The Project

EBRD PR6 defines Priority Biodiversity Features (PBFs) as features that are particularly irreplaceable or vulnerable, albeit a lower priority than critical habitats (see Section 5.2). PR6 identifies the following as likely PBFs:

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

5.1.1 Threatened Habitats

Threated habitats are habitats considered under pressure by national, regional or international assessments. These include natural and priority habitats identified under the EU Habitats Directive (Annex I). EU Habitats Directive Annex 1 priority habitats located in the project footprint, buffer and surrounding environs (i.e. within the area of analysis) are listed as follows:

- *Platanus orientalis* and *Liquidambar orientalis* woods
- Alpine rivers and their ligneous vegetation with *Salix elaeagnos*
- Pannonian-Balkanic turkey oak- sessile oak forests
- Illyrian *Fagus sylvatica* forests (Aremonio-Fagion)
- High oro-Mediterranean pine forests
- Oro-Moesian acidophilous grasslands
- Alpine and Boreal heaths
- Alkaline fens
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*)
- Endemic oro-Mediterranean heaths with gorse
- *Juniperus communis* formations on heaths or calcareous grasslands
- Calcareous rocky slopes with chasmophytic vegetation
- Eastern Mediterranean screes
- Mountain hay meadows
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

EU Habitat Directives Annex 1 priority habitats located within the area of analysis, including the Shebenik-Jabllanicë National Park and Rrajcë-Shebenik-Jabllanica Important Plant Area (IPA; number AL08) are listed as follows:

- Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe). These grasslands tend to develop where there is flushing through base-rich strata on siliceous bedrock. Species present in the grasslands tend to be mesophilic.
- Active raised bogs (code 7110)
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnion incanae, Salicion albae*)
- Limestone pavements (code 8240)
- Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea (code 6220)
- Endemic forests with Juniperus spp (code 9560)
- Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi (code 6110)
- Xeric sand calcareous grasslands (code 6120)

5.1.2 Vulnerable Species

A list of vulnerable (VU) species (IUCN 2019) that are present or potentially present within the total area of analysis was identified for the project based on the findings of the literature search and walkover survey. These are presented below. It is worth noting that the Pindus spined loach (*Oxynoemacheilus pindus*) is the only species listed in the Shebenik-Jabllanicë National Park Management Plan (2015) that is categorised as VU. All other species listed may potentially be present in the AOA due to their habitat preferences and ecology.

Insect:

- great Capricorn beetle (*Cerambyx cerdo*)
- stag beetle (*Lucanus cervus)* [1]

Fish:

- pindus stone loach (*Oxynoemacheilus pindus*)
- Ohrid gobby (*Gobio ohridanus*)

Birds:

- common pochard (*Aythya farina*)
- great bustard (*Otis tarda*)
- greater spotted eagle (*Aquila clanga*)
- lesser white-fronted goose (*Anser erythropus*)
- red-breasted goose (*Branta ruficollis*)
- marbled teal (*Marmaronetta angustirostris*)
- European turtle-dove (*Streptopelia turtur*)
- oystercatcher (*Haematopus ostralegus*; VU in Europe)

[1] *Lucanus cervus* has been included here despite its IUCN Red List of Threatened Species status being Near-Threatened. *Lucanus cervus* is in significant decline throughout its range and thus is close to qualifying for Vulnerable status, and is such included as a priority biodiversity feature.

- European curlew (*Numenius arquata*; VU in Europe)
- Northern lapwing (*Vanellus vanellus*; VU in Europe)

Mammal:

- long fingered bat (*Myotis capaccinii*)
- Blasius' horseshoe bat (*Rhinolophus blasii*; VU in Europe)
- Mediterranean horseshoe bat (*Rhinolophus Euryale*; VU in Europe and Mediterranean)
- Brown bear (*Ursos arctos*; VU in Mediterranean)

Species categorised by the National Red List for Albania as VU that occur or potentially occur within the area of analysis in **Error! Not a valid bookmark self-reference.**, with species categorised as CR or EN by National Red List for Albania in Table 5.2.

Table 5.1: Vulnerable species per the National Red List of Albania, 2013

Taxon Type	Common Name	Scientific Name	IUCN (2018) Status	Listed in National Park MP
Plant		*Adiantum cappilus-veneris*	Least Concern	No
		Nymphoidetum peltata	Least Concern	No
	Heldreich's pine	*Pinus heldreichii*	Least Concern	Yes
	Serbian ramonda	*Ramonda serbica*	Least Concern	Yes
	Serpentine false-brome	*Festucopsis serpentini*	Least Concern	Yes
	Common juniper	*Juniperus communis*	Least Concern	Yes
	Prickly juniper	*Juniperus oxycedrus*	Least Concern	Yes
		Narthecium scardicum	Not evaluated	Yes
		Satureja montana	Not evaluated	Yes
Mammal	Mediterranean horseshoe bat	*Rhinolophus euryale*	Near Threatened	No
	Eurasian otter	*Lutra lutra*	Near Threatened	Yes
	Golden jackal	*Canis aureus*	Least Concern	Yes
	Brown bear	*Ursus arctos*	Least Concern	Yes
	Chamois	*Rupicapra rupicapra*	Least Concern	Yes
	European roe deer	*Capreolus capreolus*	Least Concern	Yes
	Pine marten	*Martes martes*	Least Concern	Yes
Bird	Common buzzard	*Buteo buteo*	Least Concern	No
	Grey heron	*Ardea cinerea*	Least Concern	No
	Little egret	*Egretta garzetta*	Least Concern	No
	Black-crowned night heron	*Nycticorax nycticorax*	Least Concern	No

Taxon Type	Common Name	Scientific Name	IUCN (2018) Status	Listed in National Park MP
	Short-toed snake eagle	*Circaetus gallicus*	Least Concern	No
	Western marsh harrier	*Circus aeruginosus*	Least Concern	No
	Eurasian Penduline-tit	*Remiz pendulinus*	Least Concern	No
	Lesser kestrel	*Falco naumanni*	Least Concern	No
	Common kestrel	*Falco tinnunculus*	Least Concern	No
	Northern goshawk	*Accipiter gentilis*	Least Concern	Yes
	Peregrine falcon	*Falco peregrinus*	Least Concern	Yes
	Eurasian hobby	*Falco subbuteo*	Least Concern	Yes
	Common hoopoe	*Upupa epops*	Least Concern	Yes
Fish		*Salmothymus obtusirostris*	Endangered	No
		Petromyzon Marinus	Least Concern	No
	Lake brown trout	*Salmo trutta lacustris*	Least Concern	No

Table 5.2: Critically Endangered or Endangered Species per the National Red List of Albania, 2013

Taxon Type	Common Name	Scientific Name	IUCN (2018) Status	National Red List Status	Listed in National Park MP
Plant	European waterclover	*Marsilea quadrifolia*	Least Concern	Endangered	No
	European frogbit	*Hidrocharis morsus-ranae*	Least Concern	Endangered	No
	Lax-flowered orchid	*Anacamptis laxiflora*	Not evaluated	Endangered	No
		Anacamptis palustris	Least Concern	Endangered	No
	Box thorn	*Lycium europeum L.*	Not evaluated	Critically Endangered	No
	Sea grape	*Ephedra distachya L.*	Least Concern	Endangered	No
	Mountain tea	*Sideritis raeseri subsp. raeseri*	Near threatened	Endangered	No
	Wild-olive	*Olea oleaster L.*	Not evaluated	Endangered	No
	Bay Laurel	*Laurus nobilis L.*	Least Concern	Endangered	No

Taxon Type	Common Name	Scientific Name	IUCN (2018) Status	National Red List Status	Listed in National Park MP
	Water Caltrop	*Trapa natans L.*	Least Concern	Endangered	No
	Mare's tail	*Hippuris vulgaris*	Least Concern	Critically Endangered	No
	Basket of Gold	*Alyssum markgrafii*	Not evaluated	Endangered	Yes - IPA
		Cistus sintenisii ((synonym Cistus albanicus)	Not evaluated	Endangered	Yes - IPA
	Balkan Pine	*Pinus peuce*	Near Threatened	Endangered	Yes - IPA
		Haplophyllum boissieranum	Not evaluated	Endangered	Yes - IPA
		Bornmuellera baldaccii	Not evaluated	Endangered	Yes - Protected Area MP
		Centaurea candelabrum	Not evaluated	Endangered	Yes - Protected Area MP
	Great Yellow Gentian	*Gentiana lutea*	Least Concern	Endangered	Yes - Protected Area MP
Bird	Common tern	*Sterna hirundo*	Least Concern	Endangered	No
	Dalmatian pelican	*Pelecanus crispus*	Near Threatened	Critically Endangered	No
	Golden Eagle	*Aquila chrysaetos*	Least Concern	Endangered	No
	Great egret	*Egretta alba*	Least Concern	Endangered	No
	Levant sparrowhawk	*Accipiter brevipes*	Least Concern	Critically Endangered	No
	Purple heron	*Ardea purpurea*	Least Concern	Endangered	No
	Greater spotted eagle	*Aquila clanga*	Vulnerable	Critically Endangered	No
	Eurasian stone curlew	*Burhinus oedicnemus*	Least Concern	Critically Endangered	No
	European Bee-eater	*Merops apiaster*	Least Concern	Endangered	No
	European Honey-buzzard	*Pernis apivorus*	Least Concern	Endangered	No
	Pallid Harrier	*Circus macrourus*	Near Threatened	Critically Endangered	No

Taxon Type	Common Name	Scientific Name	IUCN (2018) Status	National Red List Status	Listed in National Park MP
	White-tailed Eagle	*Haliaeetus albicilla*	Least Concern	Critically Endangered	No
	Hen harrier	*Circus cyaneus*	Least Concern	Endangered	No
	Eurasian Sparrowhawk	*Accipiter nisus*	Least concern	Endangered	No
	Wester capercaillie	*Tetrao urogallus*	Least concern	Critically Endangered	Yes
Fish	Marble trout	*Salmo marmoratus*	Least Concern	Endangered	No
	River Lamprey	*Lampetra fluviatilis*	Least Concern	Endangered	No
	Mediterranean Brown Trout	*Salmo trutta macrostigma*	Data deficient	Endangered	Yes
Insect	Great Capricorn beetle	*Cerambyx cerdo*	Vulnerable	Endangered	No
Mammal	Eurasian Badger	*Meles Meles*	Least concern	Endangered	Yes
	Wild Cat	*Felis silvestris*	Least concern	Endangered	Yes
Reptile	Balkan whipsnake	*Hierophis gemonensis / Coluber gemonensis*	Least Concern	Critically Endangered	No
	Fourlined snake	*Elaphe quatuorlineata*	Near Threatened	Critically Endangered	Yes
	European ratsnake	*Zamenis situla / Elaphe situla*	Least Concern	Critically Endangered	No
	European blind snake	*Xerotyphlops vermicularis*	Least Concern	Critically Endangered	No

5.1.3 Significant biodiversity features identified by a broad set of stakeholders or Government

Whilst stakeholder consultation was beyond the scope of this assessment, the literature review and analysis of satellite imagery clearly shows that the proposed project is in close proximity to areas of national and international biodiversity importance, namely; the Shebenik-Jabllanicë National Park, national park category 2, IUCN Category II, Important Plant Area and candidate world heritage site. A portion of the National Park, Rrajca, is also designated as World Heriateg Site and a Key Biodiversity Area. The AOA also includes Kuturman Managed Nature Reserve (IUCN Category IV), Mali Me Gropa-Bize-Martanesh Protected Landscape (IUCN Category V) and Mali I Dajtit (IUCN Category II).

Hence these protected areas are priority biodiversity features of conservation importance.

5.1.4 Ecological structure and functions needed to maintain the viability of priority biodiversity features

The project falls within WWF's Pindus Mountains mixed forests ecoregion (category Palearctic) which covers Greece, Macedonia (FYROM) and Albania. This ecoregion covers 15,300 square miles and is categorised by WWF as Critical / Endangered.

The mixed forests ecoregion supports a high diversity of endemic flora and a high diversity of avifauna and fauna including brown bear, wolves and jackals. The integrity and quality of the habitat is essential to maintain the abundance, diversity and habitat usage of species of conservation importance, particularly within protected areas which fall within the ecoregion.

5.2 Identification of Critical Habitat-qualifying features

Critical habitat features are the most sensitive biodiversity features and the EBRD definitions of critical habitat can be seen in section **Error! Reference source not found.**. The results of the critical habitat screening are presented below.

5.2.1 Summary of the Findings of the Critical Habitat Screening

A summary of the key findings of the critical habitat assessment are presented in Table 5.3. The screening process is discussed below for each EBRD criteria (Sections 5.1.2 to Section 5.2.7).

Table 5.3: Summary findings of the Critical Habitat screening

EBRD PR6 Criteria	IFC PS6 Criterion Threshold Numbers	Critical Habitat-qualifying Features	Justification
Highly threatened or unique ecosystems	4a	No critical habitat qualifying features	
	4b	Shebenik-Jabllanicë National Park including Rrajce-Shebenik-Jabllanice Important Plant Area	Protected area status Priority Annex 1 Habitat
Habitats of significant importance to endangered or critically endangered species	1a	Balkan lynx European Eel	Balkan lynx meets the threshold Precautionary due to the paucity of data
	1b	Pindus stone loach	Precautionary due to the paucity of data

	1c	Balkan Lynx European Eel	Balkan lynx meets the threshold Precautionary due to the paucity of data
Habitats of significant importance to endemic or geographically restricted species	2	Balkan Lynx Chamois Heldreich's Pine Serpentine false brome Mountain tea	Precautionary due to the paucity of data
Habitats supporting globally significant (concentrations of) migratory or congregatory species	3a	No critical habitat qualifying features	-
	3b	No critical habitat qualifying features	-
Areas associated with key evolutionary processes	N/A	Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe	
Ecological functions that are vital to maintaining the viability of biodiversity features described (as critical habitat features)	N/A	Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe and waterbodies/courses within the AOA	Precautionary basis assuming the presence of the critical habitat-qualifying species listed above

5.2.2 EBRD Criterion: Highly Threatened or Unique Ecosystems

IFC Threshold 4a: "Areas representing ≥5% of the global extent of an ecosystem type meeting the criteria for IUCN status of Critically Endangered or Endangered" (IFC, 2019).

The IUCN Red List of Ecosystems Categories and Criteria is a global standard for assessing the conservation status of ecosystems at different spatial scales (i.e. the local, national and global scales) (IUCN 2018). The criteria defined by the Red List of Ecosystems can be used to identify ecosystems that are on the brink of collapse / the final stages of degradation, such as Critically Endangered or Endangered ecosystems. This may be through the reduction in geographical extent or degradation of the key processes and components. Critically Endangered ecosystems face an extremely high risk of collapse and Endangered ecosystems have a very high risk of collapse (IUCN, 2018).

None of the habitats withing the AOA have been assessed for the Red List of Ecosystems, and based on this information, the area of analysis, including the protected areas does not qualify for critical habitat in accordance with IFC criterion 4a (IFC, 2019).

IFC Threshold 4b: "Other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning" (IFC, 2019).

EBRD also define highly threatened or unique ecosystems as “Ecosystems that are at risk of significantly decreasing in area or quality; have a small spatial extent; and/or contain concentrations of biome-restricted species” (EBRD, 2014). Examples include Endangered or Critically Endangered ecosystems, priority areas identified by official regional or national plans and areas of high priority / significance based on systematic conservation planning undertaken by appropriate governmental authorities and organisations (EBRD, 2014).

A final definition of highly threatened and unique ecosystems by EBRD states ‘Areas determined to be of high priority/significance based on systematic conservation planning carried out by government bodies, recognised academic institutions and/or other relevant qualified organisations (including internationally-recognised NGOs).’

Within the AOA, the Shebenik-Jabllanicë National Park contains an EU Habitats Directive Annex 1 priority habitat, species-rich *Nardus* grasslands which provide important habitats for invertebrates and bird species (Natura 2000, 2008). Within mountainous areas, these habitats are often found on steep slopes but may occur on flat areas or gentle slopes. The National Park is also a Candidate Emerald Site, Key Biodiversity Area (site name Rrajca) and an Important Plant Area (site code AL008 Rrajce-Shebenik-Jabllanice), which is known to support several Annex 1 priority habitats. The beech forests in Rrajca basin area of the National Park are part of the Ancient Beech Forests of Europe UNESCO World Heritage site called Primeval Beech Forests of the Carpathians and Other Regions of Europe.

Based on this information, the Shebenik-Jabllanicë National Park is considered to trigger critical habitat in accordance with IFC criterion 4b. Species-rich *Nardus* grasslands Annex 1 priority habitat is also considered to trigger critical habitat in accordance with EBRD criteria for highly threatened or unique ecosystems.

5.2.3 EBRD Criterion: Habitats of Significant Importance to Endangered or Critically Endangered Species

The literature review identified that the area of analysis does not qualify as an Alliance for Zero Extinction site. Furthermore, these sites are absent in Albania. The area of analysis was however identified as supporting, or potentially supporting several species that are IUCN listed CR and face an extremely high risk of extinction in the wild, and EN species that face a very high risk of extinction in the wild. Information relating to their population statuses and distribution at the global and national levels were limited due the lack of up-to-date surveys and monitoring. Therefore, a precautionary approach was taken to the assessment of these species.

5.2.3.1 IFC Threshold 1a

“Areas that support globally-important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species)” (IFC, 2019).

The IUCN KBA Standard uses the following definition for reproductive unit: “the minimum number and combination of mature individuals necessary to trigger a successful reproductive event at a site (Eisenberg 1977). Examples of five reproductive units include five pairs, five reproducing females in one harem, and five reproductive individuals of a plant species.” (IFC, 2019)

The following IUCN listed CR species were identified as being present or potentially present in the area of analysis:

- Balkan lynx (*Lynx lynx balcanicus*) – National Red List CR
- European eel (*Anguilla Anguilla*) - National Red List CR

Of these species, only the Balkan lynx is listed in the Shebenik-Jabllanicë National Park Management Plan. It is unlikely that the area of analysis supports ≥ 0.5% of the global population and ≥ 5 reproductive units of all of these species, excluding the lynx. However, due to the size of the AOA and the paucity of up to date survey data and monitoring of species at a national level, it is assumed that both of these species qualify the area of analysis as critical habitat under IFC criterion 1a (IFC, 2019), until this assumption can be disproven on the basis of defensible information or expert opinion.

A more detailed account of this assessment is provided below.

Balkan lynx

Conservation status:

- IUCN listed CR
- Albanian Red List CR

The Area of Analysis:

- The Balkan lynx occupies mountainous terrain, with its main habitat preferences being deciduous (beech, oak, hornbeam, hop-hornbeam), evergreen (fir and pine), mixed forests (fir-beech), but also fragmented forests and bush habitats. It uses rocky and sunny sites for day beds. In the summer period, it occasionally visits high-mountain pastures (Melovski et al, 2015). The Shebenik-Jabllanicë National Park, surrounding areas and protected areas in close proximity to the project area were selected for the area of analysis.

Population data is available for the Balkan lynx as follows:

- Global estimates of the Balkan lynx are between 20-39 mature individuals in two sub-populations within a global EOO of 16613 km^2 (Melovski et al, 2015).
- National estimates: In Albania, no more than 10 individuals in the Munella and Mertur Protected Area (northern Albania) and Shebenik-Jabllanicë National Park, Stravaj Protected Area (PPNEA, 2020).

Number of Balkan lynx in potentially supported by the area of analysis in Albania:

- According to the Shebenik-Jabllanicë National Park MP, the lynx uses the forested areas of the National Park. Specific information, other than its presence, regarding distribution and species abundance within the National Park is unknown. Monitoring programmes are required to determine whether the mountainous and forest habitats within the area of analysis support a single individual of Balkan lynx.

Number of reproductive units of Balkan lynx potentially supported by the area of analysis in Albania:

- The number of breeding individuals within the area of analysis is unknown

Analysis output:

- Based on the existing level of information, it is likely that Balkan lynx are present within the area of analysis, and in particular the Shebenik-Jabllanicë National Park which was designated in part to protect the lynx. Further monitoring and expert opinion will likely confirm the presence of this species within the area of analysis. Hence, Balkan lynx triggers critical habitat in accordance with Criterion 1a.

European eel

Conservation status:

- IUCN listed CR
- National Red List not evaluated

The Area of Analysis:

- The European eel is facultatively catadromous, living in fresh, brackish waterbodies and migrating down rivers to the pelagic marine waters to breed and spawn. Relatively little is known about its marine phase. As European eels inhabit coastal water, transitional waters (i.e. estuaries and lagoons) and freshwater habitats (i.e. lakes, rivers, ponds etc), the wetland, water courses and bodies within the area of analysis were selected for analysis.

Limitation: due to the lack of a hydrology data file/layer, water courses were not mapped accurately and thus the area of analysis encompasses both terrestrial and aquatic habitats.

Population data available for the European eel is as follows:

- Global estimates: the European eel has a ubiquitous distribution throughout its known European range. The exact numbers are uncertain.
- National estimates: Uncertain. These is a lack of reliable data regarding the distribution and abundance of eels in Albanian rivers.

Number of European eel potentially supported by the area of analysis in Albania:

- European eel spawn in the Sargasso Sea and larvae drift across the Atlantic using prevailing currents before they metamorphose. Eel densities are known to decrease with increasing distance from the tidal limit and increasing altitude. Due to the distance from the tidal limit and relatively high altitude of the area of analysis, it is unlikely that the waterbodies within the AOA will support ≥10% of the global population. However, it is possible that the waterbodies will support the regular occurrence of a single individual of this species. Field surveys would be required to determine the presence or absence of the species within the AOA, with the assumption that there are no impoundments, weirs or other infrastructure such as hydroelectric power plants that cut off this part of the catchment from the sea.

Number of reproductive units of European eel potentially supported by the area of analysis in Albania:

- European eels migrate to pelagic marine waters to breed. There are no data regarding specific spawning sites of the European eel, however, it is thought that

spawning takes place in the Sargasso Sea (West Central Atlantic) within an elliptic zone approximately 2,000 km wide (IUCN, 2019).

- Whilst the numbers of reproductively viable male and female eels within the area of analysis is unknown, it is reasonable to assume that there is sufficient suitable habitat to support the number of individuals required to meet the Criterion threshold values.

Analysis output:

- A precautionary approach to the assessment and designation of critical habitat has been taken due to the paucity of monitoring data. Hence the area of analysis supporting European eel qualifies as critical habitat in accordance with Criterion 1a.

5.2.3.2 IFC Threshold 1b

"Areas that support globally-important concentrations of an IUCN Red-listed Vulnerable species, the loss of which would result in the change of the IUCN Red List status to Endangered or Critically Endangered and meet the following thresholds: (≥ 0.5% of the global population AND ≥ 5 reproductive units)" (IFC, 2019).

The literature review identified fourteen IUCN listed VU species as being present or potentially present within the area of analysis as follows:

- great Capricorn beetle (*Cerambyx cerdo*)
- common carp (*Cyprinus carpio*)
- long fingered bat (*Myotis capaccinii*)
- meadow viper (*Vipera ursinii*)
- common pochard (*Aythya farina*)
- great bustard (*Otis tarda*)
- horned grebe (*Podiceps auratus*)
- greater spotted eagle (*Aquila clanga*)
- lesser white-fronted goose (*Anser erythropus*)
- red-breasted goose (*Branta ruficollis*)
- marbled teal (*Marmaronetta angustirostris*)
- Pindus stone loach (*Oxynoemacheilus pindus*)
- European turtle dove (*Streptopelia turtur*)
- velvet scoter (*Melanitta fusca*)

Based on the existing known information regarding population and distribution data presented in Table 5.4, none of these species, bar the Pindus stone loach, trigger critical habitat in accordance with IFC Criterion 1b.

The Pindus stone loach is listed as present within the Shebenik-Jabllanicë National Park, despite the uncertainty of its presence within Albania (Crivelli and Kottelat, 2006). Further investigation and expert opinion would be needed to validate the management plan and to establish a more accurate understanding of the species habitat use and distribution

throughout the area of analysis. A precautionary approach to the assessment and designation of critical habitat has been taken due to the paucity of data, and as such the Pindus stone loach is considered to trigger critical habitat in accordance to IFC Criterion 1b.

Table 5.4 IUCN listed VU Species that are Present or Potentially Present within the Area of Analysis (Information source IUCN, 2018)

Key: VU = Vulnerable; EN = Endangered; CR = Critically Endangered; NL = Not Listed; LR/nt = Low Risk / Near Threatened; DD = data deficient; SJNPMP = Shebenik-Jabllanicë National Park Management Plan

Scientific Name	Common Name	IUCN	Albanian Red List (2013)	EOO (Km^2)	Global Population Status	European Population Estimates	Albanian Population Estimate	Extent of Global Population Within the AOA (2465.57 Km^2)	Number of Reproductive Units in the AOA
Insect									
Cerambyx cerdo	Great Capricorn beetle	VU	EN	Unknown	Unspecified	Unknown	Unknown but not recognised by IUCN (2018) as occurring in Albania	Not listed as present in SJNPMP	Unknown
Fish									
Cyprinus carpio	Common carp	VU	NL				Native species and heavily farmed within Albania	Not listed as present in SJNPMP	Unknown
Oxynoemacheilus pindus	Pindus stone loach	VU	Not evaluated	Max 5000	Unknown	Unknown	Unknown	Listed as present in SJNPMP Using 5000km^2 as global EOO, AOA supports 49% of global population	Unknown

Scientific Name	Common Name	IUCN	Albanian Red List (2013)	EOO (Km^2)	Global Population Status	European Population Estimates	Albanian Population Estimate	Extent of Global Population Within the AOA (2465.57 Km^2)	Number of Reproductive Units in the AOA
Mammals									
Myotis capaccinii	Long fingered bat	VU	LR/$_{CD}$	5387,022	Decreasing	Spain - 10,000 France - 3,800 individuals Bulgaria - ca. 20,000	Unknown	Not listed in SJNPMP. 0.05% of global population within AOA	Unknown
Reptile									
Vipera ursinii	Meadow viper	VU	LR/nt	Unknown	Decreasing	Uncommon, patchy distribution	Unknown	Not listed as present in SJNPMP	Unknown
Birds									
Aythya ferina	Common pochard	VU	NL	27,800,000	Decreasing c. 1,950,000-2,250,000 individuals (2012)	Europe holds between 35% (breeding) and 40% (wintering) of the global population	Unknown	Not listed as present in SJNPMP 0.008% of global population within AOA	Unknown
Otis tarda	Great bustard	VU	DD	20,100,000	c.44,000-57,000 individuals in 2014 Decreasing	Unknown	Unknown	Not listed as present in SJNPMP 0.02% of global population within AOA	Unknown

Scientific Name	Common Name	IUCN	Albanian Red List (2013)	EOO (Km^2)	Global Population Status	European Population Estimates	Albanian Population Estimate	Extent of Global Population Within the AOA (2465.57 Km^2)	Number of Reproductive Units in the AOA
Podiceps auritus	Horned grebe	VU	NL	52,900,000	c.239,000-583,000 individuals Decreasing	12,900-18,500 mature individuals	Unknown	Not listed as present in SJNPMP 0.004% of global population within AOA	Unknown
Aquila clanga	Greater spotted eagle	VU	CR	18.100.000	3,300-8,800 mature individuals Decreasing	770-1,000 pairs	Passage or wintering bird numbers are uncertain	Not listed as present in SJNPMP 0.013% of global population within AOA	Unknown
Anser erythropus	Lesser white-fronted goose	VU	Extinct	7,060,000	16,000-27,000 mature individuals Decreasing	Unknown	Unknown	Not listed as present in SJNPMP 0.035% of global population within AOA	Non-breeding in Albania
Branta ruficollis	Red-breasted goose	VU	CR	871,000	Decreasing	Unknown	Not present (Birdlife International 2018)	Not listed as present in SJNPMP 0.28% of global population within AOA	Unknown

Scientific Name	Common Name	IUCN	Albanian Red List (2013)	EOO (Km^2)	Global Population Status	European Population Estimates	Albanian Population Estimate	Extent of Global Population Within the AOA (2465.57 Km^2)	Number of Reproductive Units in the AOA
Marmaronetta angustirostris	Marbled teal	VU	NL	14,600,000	Decreasing	650-2,300 mature individuals	Unknown	Not listed as present in SJNPMP 0.02% of global population within AOA	Unknown
Streptopelia turtur	European Turtle Dove	VU	NL	8,300,000	Decreasing	6,310,000-11,900,000 mature individuals	Unknown	Not listed as present in SJNPMP 0.03% of global population within AOA	Unknown
Melanitta fusca	Velvet scoter	VU	NL	9,340,000	Decreasing	144,000-190,000 mature individuals	Unknown	Not listed as present in SJNPMP 0.03% of global population within AOA	Unknown

5.2.3.3 *IFC Threshold 1c*

"Areas containing nationally / regionally-important concentrations of an IUCN Red-listed Endangered or Critically Endangered species" (IFC, 2019).

The area of analysis was identified as supporting two species that are categorised as either CR or EN by the IUCN Red List of Threatened Species (IUCN 2019) as follows:

- European eel – IUCN CR
- Balkan lynx – IUCN CR

There is evidence to suggest that the Balkan lynx is present within the area of analysis and given the rarity of the species at a global scale, even one individual present within the Shebenik-Jabllanicë National Park will equate to nationally and regionally important concentrations. This assumption may also apply to European eels within the area of analysis. Consultation with protected area managers and species experts would be required to confirm the presence / likely absence, abundance and distribution of these species within the area of analysis.

A precautionary approach to the assessment and designation of critical habitat has been taken due to the paucity of data. Therefore, European eel and Balkan lynx are considered to trigger critical habitat in accordance with IFC Criterion 1c.

5.2.4 EBRD Criterion: Habitats of Significant Importance to Endemic or Geographically Restricted Species

5.2.4.1 *IFC Threshold 2*

The IFC PS6 guidance note (section GN72) defines "*the term endemic as restricted-range and restricted range refers to a limited extent of occurrence (EOO). For plants, a restricted-range species is defined as those plant species that have an EOO less than 50,000 km2" (IFC, 2019).*

Threshold: areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species (IFC, 2019).

The following species are present or potentially present within the area of analysis and meet both the definition and threshold above.

- Balkan lynx (*Lynx lynx balcanicus)*
- Chamois (*Rupicapra rupicapra*)
- Heldreichs pine (*Pinus heldreichii*)
- Serpentine false brome (*Festucopsis serpentine*)
- Mountain tea (*Sideritis raeseri subsp. raeseri*)

Balkan lynx

Conservation status:

- IUCN - CR

- National Red List – CR

Area of analysis:

- The Balkan lynx is listed as present within Shebenik-Jabllanicë National Park

Available population data:

- Global estimates of the Balkan lynx are between 20-39 mature individuals in two sub-populations within a global EOO of 16613 km2 (Melovski et al, 2015).
- National estimates: In Albania, no more than 10 individuals in the Munella and Mertur Protected Area (northern Albania) and Shebenik-Jabllanicë National Park, Stravaj Protected Area (PPNEA, 2020).

Number of Balkan lynx supported by area of analysis in Albania:

- According to the Shebenik-Jabllanicë National Park MP, the lynx uses the forested areas of the National Park. Specific information, other than its presence, regarding distribution and species abundance within the National Park is unknown. Monitoring programmes are required to determine whether the mountainous and forest habitats within the area of analysis support a single individual of Balkan lynx.

Analysis outcome:

- With the current levels of monitoring data available for the Balkan lynx, it cannot be said for certain whether the species will trigger critical habitat under criterion 2 under the IFC thresholds. However, given the known individual within the SJNP, an assumption can be made that there will be more than one individual present at least during the mating season. As previously stated, extensive further monitoring programmes would be required to obtain a more detailed understanding of the populations within the National Park and within the area of analysis. Given the global population of the Balkan lynx is only estimated at 20-40 individuals, meeting the threshold for criterion 2 within the area of analysis would mean that potentially 50% of the population could be present within the AOA which encompasses only 15% of its total extent of occurrence. Taking the above factors into consideration and using a very precautionary approach, the Balkan lynx does trigger critical habitat under criterion 2 of EBRD PR6, without meeting the IFC thresholds.

Chamois

Conservation status:

- IUCN - LC
- National Red List - VU

Area of analysis:

- The Chamois is listed as present within Shebenik-Jabllanicë National Park

Available population data:

- Whilst the species listed in the management plan is *Rupicapra rupicapra*, it is likely to be the subspecies of the Balkan chamois *R.r.balcanica*. The global population of *Rupicapra rupicapra* species is thought to be approximately

440,000 and generally increasing. *R.r.balcanica*, however has seen dramatic declines and its now thought there is less than 1000 across its range.

Number of chamois supported by area of analysis in Albania:

- With limited data available for the subspecies of the Balkan chamois, the assessment has been made on the basis of the *Rupicapra rupicapra*. The species has a global EOO of less than 20,000 km^2. However, no population data within the management plan is presented, and thus further field surveys would be required to establish population estimates within the area of analysis.

Analysis outcome:

- A precautionary approach to the assessment and designation of critical habitat has been taken due to the paucity of monitoring data. Hence the area of analysis supporting Chamois qualifies as critical habitat in accordance with Criterion 2.

Heldreich's pine

Conservation status:

- IUCN - LC
- National Red List - VU

Area of Analysis

- Heldreich's pine is a mountain to sub-alpine species that is listed as being present in the Shebenik-Jabllanicë National Park management plan. It usually grows between 2,200 m above sea level (asl) up to 2,640 m asl but has been found down to 800 m in Albania (Tomorri NP).

Available population data:

- The global population is thought to be stable, albeit fragmented and consisting of limited stands. The global Extent of Occurrence of this species is 18,900km^2.
- In Albania, the most extensive stands are thought to exist throughout the species range but localised declines are occurring throughout the Balkans.

Population status supported by the area of analysis:

- Using the global extent of occurrence and the area of analysis as a proxy for population, the area of analysis supports 13.04% of the global population. Based on this assumption and calculation, Heldreich's pine will trigger critical habitat under Criterion 2. Further field surveys and stakeholder engagement would be needed to verify the presence and establish the species' abundance and distribution.

Serpentine false brome

Conservation status:

- IUCN – LC
- National Red List - VU

Area of Analysis:

- Serpentine false brome is found in crevices in gullies, deep slopes and gorges on serpentine rock, at altitudes between 500 and 2,100 m. The species is listed in

the national park management plan and is endemic to Albania. The species typically occurs in sub-alpine grasslands (over 1,500 m asl) in serpentine soils.

Available population data:

- Data in the National Herbarium in Tirana shows there are 18 known populations in Albania but the status and size of these populations is unknown. It is mentioned in the national park management plan

Population status supported by the area of analysis:

- Using the global extent of occurrence and the area of analysis as a proxy for population, the area of analysis supports 44.31% of the global population. Based on this assumption and calculation, Serpentine false brome will trigger critical habitat under Criterion 2. Further field surveys and stakeholder engagement would be needed to verify the presence and establish the species' abundance and distribution.

Mountain tea

Conservation status:

- IUCN – NT
- National Red List – EN

Area of Analysis:

- Mountain tea is a perennial species endemic to the Balkans, found in rocky habitats and open grassland. The scoping assessment reported that residents within the vicinity of the Project may collect mountain tea for medicinal purposes. It can therefore be assumed that the species may be present throughout the AOA in suitable habitats.

Available population data:

- The total population size of all sub-species of mountain tea is unknown, but thought to be declining throughout its range due to over harvesting due to its medicinal properties.
- The global Extent of Occurrence for the species is estimated to be approximately 86,000 km^2. However, the calculated area of suitable habitat throughout Europe is estimated to be 9,600 km^2.

Population status supported by the area of analysis:

- If the global extent of occurrence and the area of analysis are used as a proxy for population, the AOA will support approximately 3% of the global population. If a precautionary approach is taken and the calculated area of suitable habitat across Europe is used along with the area of analysis as a proxy for population, the AOA will support approximately 25.5% of the global population. Based on this precautionary approach, mountain tea will trigger critical habitat under Criterion 2. Further field surveys and stakeholder engagement would be needed to verify the presence and establish the species' abundance and distribution.

5.2.5 EBRD Criterion: Habitats Supporting Globally Significant (concentrations of) Migratory or Congregatory Species

IFC PS6 defines migratory species as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem). Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis (IFC, 2019).

5.2.5.1 IFC Threshold 3a

"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" (IFC, 2019).

The literature review identified the presence or potential presence of 216 migratory and / or congregatory species (e.g. birds, bats or fish) that may be present within the area of analysis. Of these, 36 are known to be present within the national park as per the management plan or the 2015 field survey by the Dutch Mammal society (Hunia et al, 2015). However, none of the species were found in numbers within the national park to suggest they may occur in significant concentrations. However, given the lack of information available, it is possible that large roost sites/colonies of bats haven't been discovered, particularly with the habitats within the AOA providing potential roosting sites such as forests and caves.

Further field surveys, along with stakeholder engagement would be required to establish if any of these species occurred within the national park or area of analysis in significant concentrations. Given the present paucity of data., no species will qualify the area of analysis as critical habitat in accordance with Criterion 3a.

5.2.5.2 IFC Threshold 3b

"Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress" (IFC, 2019).

Although information on species abundance in the area of analysis is limited, the literature review and calculations suggest that no species will trigger critical habitat under Criterion 3b.

5.2.6 EBRD Criterion: Areas Associated with Key Evolutionary Processes

Within the area of analysis, a portion of the Shebenik-Jabllanicë National Park is designated as a Key Biodiversity Area; site name Rrajca. Rrajca is part of a transboundary world heritage site entitled Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe. The beech forests throughout the site represent an 'outstanding example of anthropogenically undisturbed, complex temperate forests and exhibit the most complete and comprehensive ecological patterns and processes of pure and mixed stands of European beech across a variety of environmental conditions. They contain an invaluable genetic reservoir of beech and many species associated and dependent on these forest habitats' (UNESCO, 2017). On the basis that this habitat type is present within the area of analysis, it will trigger critical habitat as an area associated with Key Evolutionary Processes.

Given the presence of Serpentine false broom within the area of analysis, it may be assumed that there are areas in which an edaphic interface occurs. These specific juxtapositions of soil types (e.g. serpentine outcrops and limestone deposits) creates unique conditions and give rise to unique endemic flora and plant assemblages such as Serpentine false brome. Further field survey and expert opinion would be needed to validate this and confirm the presence of the habitat. A precautionary approach to the assessment and designation of critical habitat has been taken due to the paucity of information and as such serpentine outcrops within the AOA would be considered a critical habitat trigger.

No candidate species qualified as Evolutionarily Distinct and Globally Endangered (EDGE) species.

5.2.7 EBRD Criterion: Ecological functions that are vital to maintaining the viability of biodiversity features described as Critical Habitat

Shebenik-Jabllanicë National Park contains an Important Plant Area and UNESCO world heritage site. Based on the available data, the national park and surrounding areas provide habitat for several critical habitat qualifying species, but in particular provides refuge for the Balkan lynx. Maintenance of the integrity and quality of the deciduous forests such as the ancient beech is essential for the continued use and viability of the lynx within the area of analysis. Similarly, whilst no hydrology data has been provided for this assessment and further validation would be needed, it can be assumed that the water courses and waterbodies provide habitat for the European eel and the Pindus stone loach.

6 CONCLUSION

This baseline assessment confirmed that the Project is located within an area of high biodiversity value. A number of Priority Biodiversity Features (PBFs) and critical habitat-qualifying features for the project were identified based on screening. These features are of high conservation importance for the project. A summary of the critical habitat-qualifying features are presented in Table 6.1.

Table 6.1: Summary findings of the Critical Habitat screening

EBRD PR6 Criteria	IFC PS6 Criterion Threshold Numbers	Critical Habitat-qualifying Features	Justification
Highly threatened or unique ecosystems	4a	No critical habitat qualifying features	
	4b	Shebenik-Jabllanicë National Park	Protected area status Priority Annex 1 Habitat
Habitats of significant importance to endangered or critically endangered species	1a	Balkan lynx European Eel	Balkan lynx meets the threshold Precautionary due to the paucity of data
	1b	Pindus stone loach	Precautionary due to the paucity of data
	1c	Balkan Lynx European Eel	Balkan lynx meets the threshold Precautionary due to the paucity of data
Habitats of significant importance to endemic or geographically restricted species	2	Balkan Lynx Chamois Heldreich's Pine Serpentine false brome Mountain tea	Precautionary due to the paucity of data
Habitats supporting globally significant (concentrations of) migratory or congregatory species	3a	No critical habitat qualifying features	-
	3b	No critical habitat qualifying features	-
Areas associated with key evolutionary processes	N/A	Ancient and Primeval Beech Forests of the	

		Carpathians and Other Regions of Europe	
Ecological functions that are vital to maintaining the viability of biodiversity features described (as critical habitat features)	N/A	Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe and waterbodies/courses within the AOA	Precautionary basis assuming the presence of the critical habitat-qualifying species listed above

Approximately 13.5 km of the Zgosht to Cerenec road crosses the western border of the Shebenik-Jabllanicë National Park (IUCN Category 2; national park category 2). This nationally protected area is also designated as a Candidate Emerald Site. A portion of this National Park is also designated as a World Heritage Site, an Important Plant Area and Key Biodiversity Area. This protected area supports many globally and national rare and threatened wildlife.

The existing Zgosht to Cerenec road traverses some well-known habitats for medium to large mammals that are globally and nationally rare and threated. Forest, scrub and grassland habitats that surround the road offer potentially suitable habitat to support PBF mammals and critical habitat-qualifying mammals, particularly within and near the Shebenik-Jabllanicë National Park. The fauna scoping assessment identified that currently there are areas with good habitat connectivity that are likely to facilitate the movement of fauna species of high biodiversity value inside and outside of the Shebenik-Jabllanicë National Park. The existing Zgosht to Cerenec road is not considered to be a major barrier for large mammal species. This is primarily linked to the poor condition of Zgosht to Cerenec road which limits the speed and volume of vehicle traffic (with a few exceptions e.g. at Shkalla e Lunikut).

Bat surveys undertaken by the Dutch Mammal Society in 2015 indicate that several bat species use habitats for foraging, commuting and roosting near the Zgosht to Cerenec road. The fauna scoping assessment undertaken for the Project in June 2020 identified several trees and structures, located near the road with potential to support roosting bats. The scoping assessment also identified that forest, scrub and scree habitats located adjacent to the Zgosht to Cerenec road offer potentially suitable habitat for nesting birds, including nationally rare and threatened species.

Dead or decaying wood with oak forests in the Project area may potentially provide habitat for the saproxylic stag beetle and great Capricorn beetle which are both PBFs for the Project.

Given the high biodiversity value of the Project area, targeted biodiversity monitoring will be undertaken by biodiversity specialists for the project prior to the commencement of works, throughout the construction and early operation phases with the aim of increasing the Project's knowledge of priority species' habitat usage and informing adaptive management. Biodiversity monitoring will include the following:

- the implementation of a camera trapping programme
- walkover fauna transects surveys through areas of critical habitat-qualifying carnivore species habitat

- bat activity monitoring programme using static bat detectors (SM4 or equivalent) and bat activity transects, and bat root inspections where required
- breeding and migratory bird surveys in areas of PDF and critical habitat-qualifying avifauna habitat

These biodiversity monitoring works are described in more detail in the Project's Biodiversity Management Plan (RSK, 2020).

7 REFERENCES

ADF (2015). Feasibility Study: Upgrade of the Road “Zgosht (Librazhd)- Cerenec Bridge (Bulqizë)”. The Albanian Development Fund.

Aulagnier, S., Giannatos, G. & Herrero, J. 2008. Rupicapra rupicapra. The IUCN Red List of Threatened Species 2008: e.T39255A10179647. https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T39255A10179647.en. Downloaded on 03 July 2020.

Balestrieri, A., Messina, S., Pella, F., Prigioni, C., Saino, N. and Fasola, M., 2016. Eurasian otter Lutra lutra in developing countries: a resurvey of Albania 22 years after the fall of communism. Oryx, 50(2), pp.368-373.

Bego F. (2007). The Brown Bear (Ursus arctos) Action Plan-Albania. https://www.researchgate.net/publication/269095567_The_Brown_Bear_Ursus_arctos_Action_Plan-Albania

BirdLife International (2020) The World Database of Key Biodiversity Areas. Developed by the Key Biodiversity Areas Partnership: BirdLife International, IUCN, Amphibian Survival Alliance, Conservation.

BirdLife International (2015b): The killing. MAVA Foundation. http://www.birdlife.org/sites/default/files/attachments/01-28_low.pdf accessed

Bertolero, A., Cheylan, M., Hailey, A., Livoreil, B., and Willemsen, R.E. 2011. Testudo hermanni (Gmelin 1789) – Hermann’s Tortoise. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research

Caković, D., Gargano, D., Matevski, V. & Shuka, L. 2017. Pinus heldreichii. The IUCN Red List of Threatened Species 2017: e.T42368A95725658. https://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T42368A95725658.en. Downloaded on 03 July 2020.

Cat specialist group. 1998 Biodiversity in Albania report on national situation of biodiversity in Albania.

Chapron, G., Kaczensky, P., Linnell, J.D.C., von Arx, M., Huber, D., Andrén, H., Vicente López-Bao, J., Adamec, M., Álvares, F., Anders, O., Balčiauskas, L., Balys, V., Bedő, P., Bego, F., Blanco, J. C., Breitenmoser, U., Brøseth, H., Bufka, L., Bunikyte, R., Ciucci, P., Dutsov, A., Engleder, T., Fuxjäger, C., Groff, C., Holmala, K., Hoxha, B., Iliopoulos, Y., Ionescu, O., Jeremić, J., Jerina, K., Kluth, Knauer, F., Kojola, I., Kos, I., Krofel, M., Kubala, J., Kunovac, S., Kusak, J., Kutal, M., Liberg, O., Majić, A., Männil, P., Manz, R., Marboutin, E., Marucco, F., Melovski, D., Mersini, K., Mertzanis, Y., Mysłajek, R.W., Nowak, S., Odden, J., Ozolins, J., Palomero, G., Paunović, M., Persson, J., Potočnik, H., Quenette, P.-Y., Rauer, G., Reinhardt, I., Rigg, R., Ryser, A., Salvatori, V., Skrbinšek, T., Stojanov, A., Swenson, J.E., Szemethy, L., Trajçe, A., Tsingarska-Sedefcheva, E., Váňa, M., Veeroja, R., Wabakken, P., Wölfl, M., Wölfl, S., Zimmermann, F., Zlatanova, D., and Boitani, L. 2014. Recovery of Large carnivores in Europe's modern human-dominated landscapes. Science 346: 1517-1519.

Crnobrnja-Isailović, J., Ajtic, R., Vogrin, M., Corti, C., Pérez Mellado, V., Sá-Sousa, P., Cheylan, M., Pleguezuelos, J., Westerström, A., De Haan, C.C., Tok, V., Borczyk, B., Sterijovski, B.,

Schmidt, B., Borkin, L., Milto, K., Golynsky, E., Rustamov, A, Nuridjanov, D., Munkhbayar, K., Shestopal, A. & Litvinchuk, S. 2017. Coronella austriaca. The IUCN Red List of Threatened Species 2017: e.T157284A748852. http://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T157284A748852.en. Downloaded on 13 July 2020

Crivelli, A.J. & Kottelat, M. 2006. Oxynoemacheilus pindus. The IUCN Red List of Threatened Species 2006: e.T61388A12458367. https://dx.doi.org/10.2305/IUCN.UK.2006.RLTS.T61388A12458367.en. Downloaded on 07 July 2020.

EBRD (2014). EBRD Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; European Bank for Reconstruction and Development. https://www.ebrd.com/who-we-are/our-values/environmental-and-social-policy/performance-requirements.html

Galicica (2019). Carabus gigas – The great Capricorn beetle. National Park Galicica. http://galicica.org.mk/en/gallery/carabus-gigas-the-great-capricorn-beetle/

Gullison, R.E., J. Hardner, S. Anstee, M. Meyer. 2015. Good Practices for the Collection of Biodiversity Baseline Data. Prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross-Sector Biodiversity Initiative

Highways Agency et al. (1992 amended and updated 2014) Design Manual for Roads and Bridges (DMRB) Volume 10 Environmental Design and Management.

Hunia A., Bulsink B., van de Tempel C., van der Knaap F., Boshamer J., Wondergem J., Bekker H., Mostert K., Snijder M., Boon S (2016). Mammal Survey Shebenik-Jabllanicë National Park, Albania 2015.Dutch Mammal Society. Publication of the Field Study Group, Dutch Mammal Society Report 2017.06 Nijmegen, April 2016 ISBN/EAN 97890799243 63.

International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Royal Society for the Protection of Birds, World Wildlife Fund and Wildlife Conservation Society. Downloaded from http://www.keybiodiversityareas.org on 15/06/2020.

IFC (2012). Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living NaturalResources; International Finance Corporation; https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps6

IUCN GISD. 2018. IUCN Global Species Database.

Jacoby, D. & Gollock, M. 2014. Anguilla anguilla. The IUCN Red List of Threatened Species 2014: e.T60344A45833138. https://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T60344A45833138.en. Downloaded on 03 July 2020.

Kalkman, V.J. 2010. Caliaeschna microstigma. The IUCN Red List of Threatened Species 2010: e.T165467A6023265. Downloaded on 18 June 2020.

Kaczensky P., G. Chapron, G., von Arx, M., Huber, D., Andrén, C.H., and Linnell, J. 2013. Status, management and distribution of large carnivores – bear, lynx, wolf and wolverine in Europe. Instituto di Ecologia Applicata and with contributions of the IUCN/SSC Large Carnivore Initiative for Europe.

Lovari, S., Herrero, J., Masseti, M., Ambarli, H., Lorenzini, R. & Giannatos, G. 2016. Capreolus capreolus. The IUCN Red List of Threatened Species 2016: e.T42395A22161386.

https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T42395A22161386.en. Downloaded on 10 July 2020.

Melovski, D., Breitenmoser, U., von Arx, M., Breitenmoser-Würsten, C. & Lanz, T. 2015. Lynx lynx ssp. balcanicus (errata version published in 2016). The IUCN Red List of Threatened Species 2015: e.T68986842A87999432. https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T68986842A68986849.en. Downloaded on 19 June 2020.

MoE – Ministry of Environment, Forests and Water Administration Biodiversity Directorate (2013), 'Red List of Flora and Fauna'.

MoE – Ministry of Environment, Forests and Water Administration Biodiversity Directorate (2011), 'Fourth National Report to the United Nations Convention on Biological Diversity.

Natura 2000 (2008). MANAGEMENT of Natura 2000 habitats * Species-rich Nardus grasslands 6230

Nieto, A. Mannerkoski, I., Pettersson, R., Mason, F., Méndez, M. & Schmidl, J. 2010. Lucanus cervus. The IUCN Red List of Threatened Species 2010: e.T157554A5094499. Downloaded on 17 June 2020.

Pedrotti, L. and Lovari, S. 1999. Rupicapra rupicapra. In: A. J. Mitchell-Jones, G. Amori, W. Bogdanowicz, B. Kryštufek, P.J.H. Reijnders, F. Spitzenberger, M. Stubbe, J.B.M. Thissen, V. Vohralík, and J. Zima (eds), The Atlas of European Mammals, Academic Press, London, UK.

Prigioni, C., Bogliani, G. and Barbieri, F., 1986. The otter Lutra lutra in Albania. Biological Conservation, 36(4), pp.375-383.

PPNEA (2018). Balkan Lynx Recovery Programme. https://ppnea.org/balkan-lynx-recovery-program/

PPNEA (2018). Bulnan Lynx. Protection and Preservation of Natural Environment in Albania (PPNEA). https://ppnea.org/balkan-lynx/

PROGES and Sapienza University of Rome (2015). Management Plan for Shebenik-Jabllanicë National Park 2015-2024; October 2015.

Redolfi De Zan L, Bardiani M, Antonini G, Campanaro A, Chiari S, Mancini E, Maura M, Sabatelli S, Solano E, Zauli A, Sabbatini Peverieri G, Roversi PF (2017) Guidelines for the monitoring of Cerambyx cerdo. In: Carpaneto GM, Audisio P, Bologna MA, Roversi PF, Mason F (Eds) Guidelines for the Monitoring of the Saproxylic Beetles protected in Europe. Nature Conservation 20: 129-164.

Regato P. (2020). Pindus Mountains mixed forests. WWF; https://www.worldwildlife.org/ecoregions/pa1217

Roos, A., Loy, A., de Silva, P., Hajkova, P. & Zemanová, B. 2015. Lutra lutra. The IUCN Red List of Threatened Species 2015: e.T12419A21935287. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T12419A21935287.en. Downloaded on 18 June 2020.

RSK (2017). Trans Adriatic Pipeline; Critical Habitat Assessment. https://www.tap-ag.com/assets/07.reference_documents/english/Project%20Finance%20Disclosure/Critical%20Habitat%20Assessment%20Report.pdf. Downloaded 3rd July 2020.

Rupert, D. (2018) Assessing the effectiveness of the hunting ban in Albania. Masters thesis University

Sägesser, H. and Krapp, F. 1986. Rupicapra rupicapra (Linnaeus, 1758) - Gemse, Gams. In: J. Niethammer and F. Krapp (eds), Handbuch der Säugetiere Europas, Band 2/II Paarhufer, Akademische Verlagsgesellschaft, Wiesbaden.

Shuka L. and Malo S. (2010) The transboundary important plant areas as conservation units of European green belt (eastern Albanian zone). Journal of Environmental Protection and Ecology. Vol. 11, No 3, 2010; p. 866-874:https://www.researchgate.net/publication/262523953_The_transboundary_important_plant_areas_as_conservation_units_of_european_green_belt_eastern_albanian_zone

Théou P., Đurović M. (2015): Conservation action plan for bat population in Shkodër/Skadar area. Montenegrin Ecological Society. Pp 72

Trajçe A., Keçi E., Mersini K. & Shumka S. 2008. Baseline Survey on Lynx, Prey and other Carnivores in Albania, August 2006 – July 2007, Final Report. Protection and Preservation of Natural Environment in Albania (PPNEA), Tirana, Albania. 111 pp.

UNESCO (2020). Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe. United Nations Educational Scientific Cultural Organisation. https://whc.unesco.org/en/list/1133/

United Nations Environment Programme Economic Commission for Europe Committee on Environmental Policy (2002) Environmental Performance Review Albania

UNESCO (2017). Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe – Executive Summary. United Nations Educational Scientific Cultural Organisation.

van Dijk, P.P., Corti, C., Mellado, V.P. & Cheylan, M. 2004. Testudo hermanni. The IUCN Red List of Threatened Species 2004: e.T21648A9306057. http://dx.doi.org/10.2305/IUCN.UK.2004.RLTS.T21648A9306057.en. Downloaded on 12 July 2020

APPENDIX 1
BIODIVERSITY LEGISLATION

Law no. 10431/2011 on the protection of environment, as amended

This law comprises high-level legislation for the general approach and requirements of environmental protection in Albania.

The law aims to protect, maintain and improve the environment; prevent and reduce risks to human life, health and safety; improve the quality of life for the benefit of generations present and future; and provide conditions for sustainable development of the country.

This law is fully aligned with Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage.

The law outlines the following principles of environmental protection:

- sustainable development
- prevention and taking precautions
- conservation of natural resources
- substitution and/or compensation;
- an integrated approach
- mutual responsibility and cooperation
- "polluter pays"
- the right to information and public participation
- promoting environmental protection activities.

It establishes an overall framework for environmental protection in the planning process by demanding environmental strategies and plans, local plans of action for the environment, development plans, strategic environmental assessment and environmental impact assessments as part of the process.

Furthermore, it addresses requirements for pollution prevention and control, as well as monitoring.

It also establishes an environmental information system to serve the protection and integration of environmental management and its components, monitoring the implementation of environmental policies at national and international level, as well as to provide public information.

Other aspects within the law include environmental liability and a framework for an environmental permitting framework for activities causing pollution to the environment, which are equipped with environmental licences, to ensure that activities/installations will meet the requirements of environmental legislation in force.

The approval of environmental permits is determined by a system consisting of three levels, based on the size and type of activity proposed, and the possibility that its activities could cause pollution to the extent that could bring harm to the environment and endanger human health. Three categories (A, B and C) apply.

Categories of activities and the boundaries between the three levels are defined in Law no. 10448, dated 14/07/2011 “On the Environmental Permits”, see below.

Law no. 10448/2011 on the Environmental Permits, as amended

The environmental permits law aims at preventing, reducing and controlling pollution caused by a range of activities, in order to achieve a high level of protection for the environment, human health and quality of life. In accordance with the law no. 10431, dated 09/06/2011 "On Environmental Protection", a system of three levels of environmental permits, type A, B and C, applies as follows:

- environmental permit type A is required for conducting the activities on the category A list, the relevant thresholds of which are set out in Annex 1/A of this law for a range of activities
- environmental permit type B is required for conducting the activities on the category B list, relevant thresholds for which are set out in Annex 1/B of this law for a range of activities
- environmental permit type C is required for conducting the activities on the category C list, the relevant thresholds of which are set out in Annex 1/C of this law for a range of activities.

Environmental permit types A, B and C are dependent on the capacity limit of industrial productions.

The competent authorities for environmental permitting of types A, B and C are as follows:

- The National Licensing Centre (NLC) processes the permit application for all categories.
- The Minister has the authority to approve type A and B environmental permits, after they have been reviewed and prepared by the National Environment Agency.
- The National Environment Agency is responsible for verifying the accuracy of the information provided by operator in his application for a type A or B environmental permit and providing a recommendation to the Minister for the issue of this permit, the conditions detailed, etc. The permit is then issued by the NLC.
- The regional environmental agency is responsible for verifying the accuracy of the information provided by the operator in his application for a type C environmental permit and deciding on whether to issue the permit, the conditions detailed, etc. The permit is then issued by the NLC.
- The State Inspectorate is the competent authority for verifying fulfilment of the conditions by the operator of this permit, after its issuance by the NLC.
- Type A, B and C environmental permit conditions can be reviewed at any time by the ministry or regional environment agency, for example if there are changes in relevant environmental legislation or if the following occurs:
- new ecological issues arise that were unknown at the time of the original permit issued
- new environmental legislation enters into force that explicitly requires permit condition changes
- changes to pollution norms enter into force
- fundamental changes to the permitted activity occur
- improvements in the best techniques available are implementable industry wide, allowing significant reduction in discharges into the environment without disproportionate cost.

Law no. 9587/2006 on the protection of biodiversity, including amendments and additions as per Law no. 68/2014

The aim of this law is to ensure the protection and conservation of biological diversity and to regulate the sustainable use of the components of biological diversity through the integration of key elements of biodiversity in strategies, plans, programmes and decision making at all levels.

The key cornerstones of this legislation are as follows:

- requirement of a NBSAP (Article 8)
- network inventory and monitoring of biodiversity (Article 9)
- planning for emergencies, through action plans and procedures for handling of unexpected human activities or natural events that threaten biodiversity (Article 10)

The law also addresses ecosystems, habitats and landscapes that are outside the network of protected areas, while considering protective measures for all species types on land, water and sea. It also involves the identification, protection and management of native species.

Law no. 61/2016 on a moratorium for hunting in the Republic of Albania, amending Law no. 10253/2010 on hunting

The purpose of this law is to improve the situation of wild fauna species subject to hunting and therefore suspends the right to hunt in the entire territory of the Republic of Albania. The ban was initially introduced in 2014 and the 2016 law extends the ban for a further five years.

Law no. 81/2017 on Protected Areas, replacing Law no. 8906/2002

The object of this law is the declaration, preservation, administration, management and usage of protected areas and their natural and biological resources. It also deals with the facilitation of conditions for the development of environmental tourism, for the information and education of the general public and for economic profits, direct or indirect, by the local population and the public and private sectors.

The purpose of this law is to provide special protection of important components of natural reserves, of biodiversity and the natural environment as a whole, through the establishment of protected areas.

Protected areas are set to provide the preservation and regeneration of natural habitats, of species, of natural reserves and landscapes.

This law regulates the protection of six categories of protected areas applied in the territory of the Republic of Albania. The categorisation of areas and level of protection for each area is based on the criteria of World Conservation Monitoring Centre.

The law declares important or endangered parts of the territory protected areas, according to the following categories:

- strictly natural reserve/scientific reservation/ (Category I)
- national park (Category II);
- national monument (Category III) (including caves)
- natural managed reservation/area of management of habitats and species (Category IV)

- protected landscape (Category V)
- protected area of managed resources/protected area with multipurpose utilisation (Category VI), including regional natural parks.

The law outlines criteria for the selection, protection level and management process of the designated areas. It clarifies on the requirement of management plans for each protected area and the implementation of these plans, as well as monitoring of protected areas.

Law no. 81/2017 establishes the National Agency of Protected Areas (NAPA) and reflects other aspects of institutional reform. It addresses the reform of the forestry industry introduces the Natura 2000 concepts.

Law no. 10006/2008 on the protection of wild fauna

The law aims to protect, manage and control wild fauna, with the aim of preserving types, populations, habitats and migration routes to ensure their needs for food, shelter and breeding are preserved. The law considers wild fauna in the Republic of Albania a national asset, which is administered and protected by law, in line with relevant international treaties to which the Republic of Albania is a party.

The following key targets of wild fauna protection are outlined:

- maintaining the recovery of the diversity of species and their genetic integrity
- protection of habitats, migration routes and propagation conditions
- maintaining the integrity of natural communities
- use of wild fauna for scientific research purposes, to ensure their regeneration
- re-introduction of fauna species that are extinct or endangered.

The law particularly considers types of threatened and endemic species, defined in the National Red List, and provides special legal protection in accordance to the Bern Convention, ratified by the Republic of Albania with the law no. 8294, dated 02/03/1998.

It considers the protection of habitats, migration routes and breeding conditions; protection from adverse effects of climate change; protection from materials and hazardous waste; and recovery of populations of keystone species.

It also outlines special measures for the preservation of wildfowl and species of wild fauna, the planning and recovery of species of wild fauna and the monitoring of wild fauna.

Law no. 9867/2008 on establishing the rules and procedures for international trading in endangered species of fauna and wild flora

This law establishes rules and procedures for implementing the provisions of the CITES Convention so that international trade does not endanger their survival and to ensure animals are not mistreated during international trading.

Law no. 10234/2010 on integrated management of the coastal zone in the Mediterranean Sea

This law is the implementation of the Barcelona Convention for integrated management of the Mediterranean area (as outlined in Section 2.2), within the Albanian territory.

Law no. 10120/2009 on the protection of medicinal, essential oil and tannin plants

This law aims to protect medicinal and essential oil plants that grow in the territory of the Republic of Albania, and to promote and develop their natural habitats. It sets out the conditions governing their collection and harvest and further promotes activities aimed at their cultivation and rehabilitation.

The law, which considers medicinal plants to be a national asset, is composed of the following chapters:

- general provisions
- protection and administration of the plants' fund
- harvesting, packaging and transport of plants
- control and monitoring
- public consultations
- penalties
- final provisions.

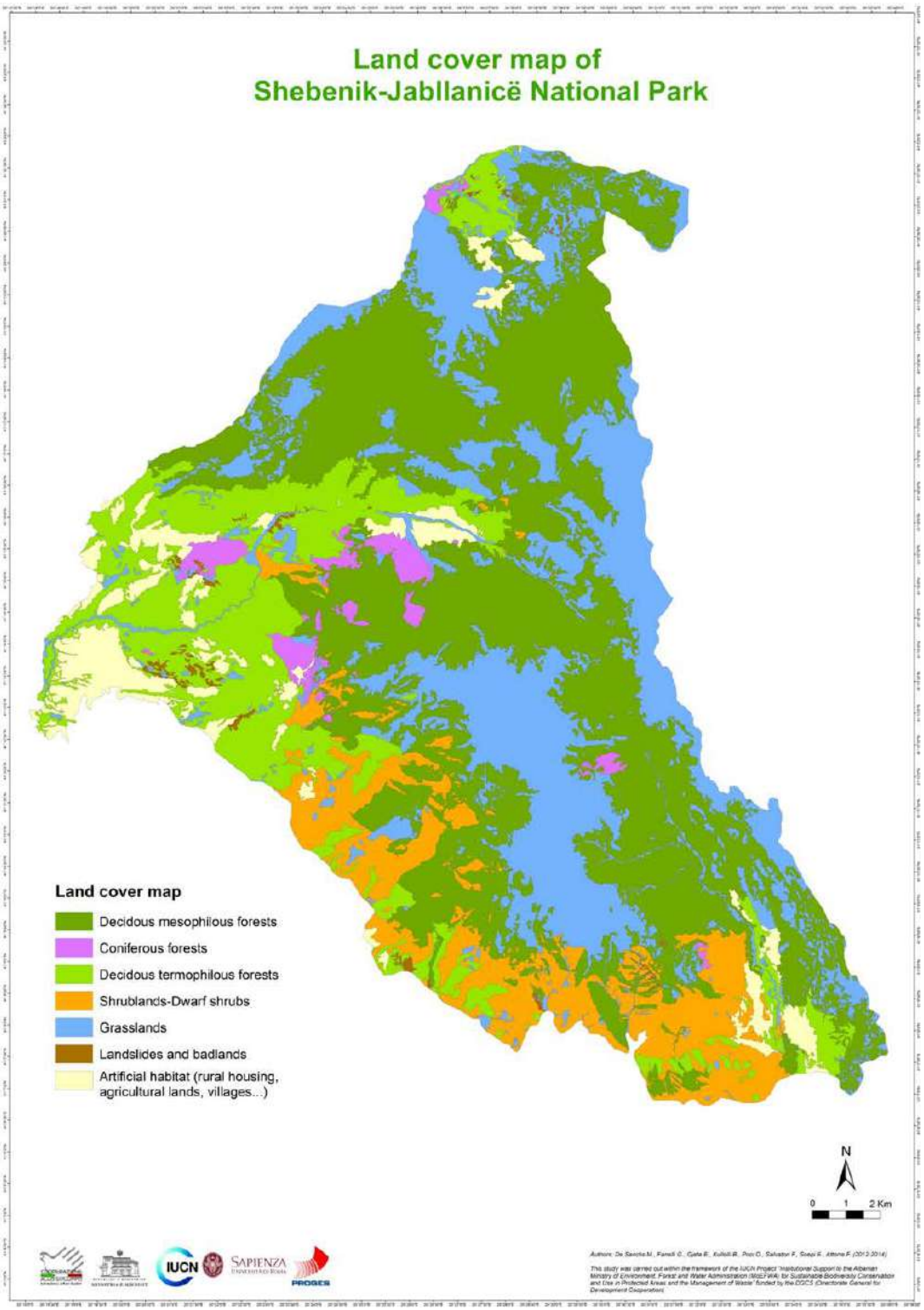
Law no. 5/2016 on the moratorium in forest, replacing Law no. 93852005 on forest[s] and forestry service

This law introduced a ten year ban on logging for industrial purposes and export, a drastic measure to address illegal logging (mostly logging in excess of permitted timber quantities, which has been a common practice). The law guarantees the supply of firewood to the population. The other exception refers to forest exploitation for the purposes of regeneration and sanitation. All other forest exploitation rights are suspended and / or require renegotiation.

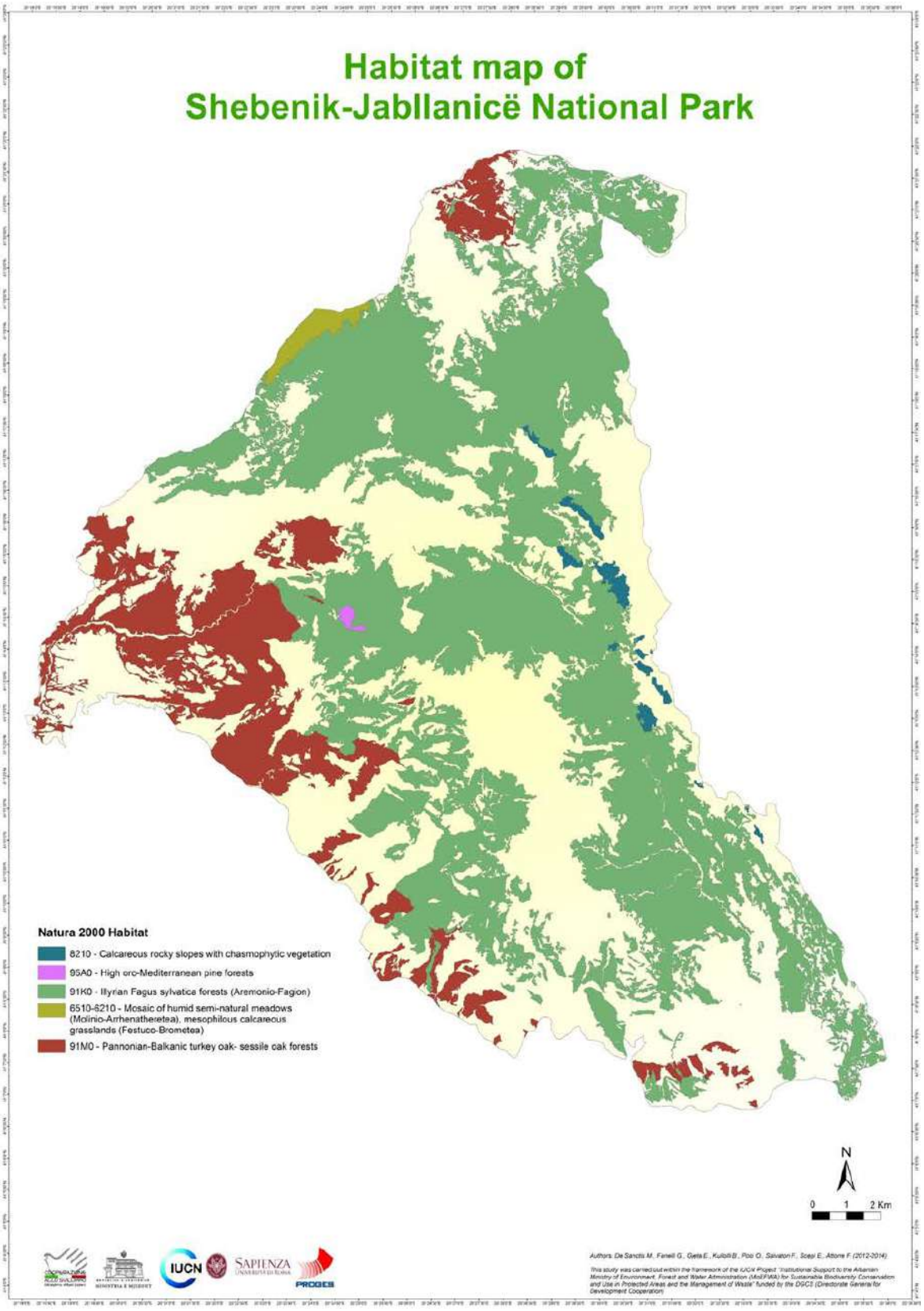
APPENDIX 2
HABITAT MAP

APPENDIX 3
HABITAT MAPS OF THE SHEBENIK – JABLLANICE NATIONAL PARK

Landscape Cover of the Shebenik – Jabllanice National Park



Natural 2000 Habitat Map of the Shebenik – Jabllanice National Park



APPENDIX 4
IUCN RED LIST OF ECOSYSTEMS CATEGORIES AND CRITERIA VERSION 2.2

APPENDIX 5 CANDIDATE PRIORITY BIODIVERSITY FEATURES AND CRITICAL HABITAT QUALIFYING FEATURES

Taxon Type	Species Scientific Name	Species Common Name	IUCN (2018) Status	National Red Book Status of Albania	Endemic Status	Migratory/Congregatory Status	Status under CITES	Status under Habitats Directive /Birds Directive	Other	EDGE Species	Habitat Of Occurrence
Plant	*Sideritis raeseri subsp. raeseri*	Mountain tea	Near threatened	Edangered	Balkan peninsular	N/A	Not listed	Not listed		No	Found in rocky habitats and open grassland
Plant	*Quercus robur* spp. *Scutariensis*	Skadar oak	Not evaluated	Not evaluated	Endemic to the Balkan peninsula	N/A	Not listed	Not listed		No	Forests
Plant	*Hidrocharis morsus-ranae*	European frogbit	Least Concern	Endangered	Not endemic	N/A	Not listed	Not listed		No	Freshwater (=Inland waters); Wetlands (inland), Artificial/ Aquatic & Marine; typically occurs in shallow, calcareous, mesotrophic or meso-eutrophic water in the sheltered bays of lakes or in ponds, canals and ditches.

Taxon Type	Species Scientific Name	Species Common Name	IUCN (2018) Status	National Red Book Status of Albania	Endemic Status	Migratory/Congregatory Status	Status under CITES	Status under Habitats Directive /Birds Directive	Other	EDGE Species	Habitat Of Occurrence
Plant	*Anacamptis laxiflora*	Lax-flowered orchid	Not evaluated	Endangered	Not endemic	N/A	All orchids are included under Annex B of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Not listed		No	
Plant	*Anacamptis palustris*		Least Concern	Endangered	Not endemic	N/A	All orchids are included under Annex B of the Convention on International Trade in Endange	All orchids are included under Annex B of the Convention on International Trade in Endanger		No	Wetlands (inland); It is a perennial herbaceous plant (tuberous Geophyte) that inhabits humid pastures, wet meadows and swamps. It prefers calcareous soils and it needs a lot of light. Flowering occurs during spring.

Taxon Type	Species Scientific Name	Species Common Name	IUCN (2018) Status	National Red Book Status of Albania	Endemic Status	Migratory/Congregatory Status	Status under CITES	Status under Habitats Directive /Birds Directive	Other	EDGE Species	Habitat Of Occurrence
							red Species of Wild Fauna and Flora (CITES)	ed Species of Wild Fauna and Flora (CITES)			
	Satureja montana		Not evaluated	Vulnerable	No						
Plant	*Narthecium scardicum*		Not evaluated	Vulnerable	Albania, Greeve, Yugoslavia	NE	Not a Migrant	Not congregatory			Wet areas

Taxon Type	Species Scientific Name	Species Common Name	IUCN (2018) Status	National Red Book Status of Albania	Endemic Status	Migratory/Congregatory Status	Status under CITES	Status under Habitats Directive /Birds Directive	Other	EDGE Species	Habitat Of Occurrence
Plant	*Lycium europeum L.*		Not evaluated	Critically Endangered	Not endemic	N/A	Not listed	Not listed		No	
Plant	*Desmazeria marina (L.) Drude*		Not evaluated	Endangered	Not endemic	N/A	Not listed	Not listed		No	
Plant	*Ephedra distachya L.*	Sea grape	Least Concern	Endangered	Not endemic	N/A	Not listed	Not listed		No	Shrubland, Rocky areas (eg. inland cliffs, mountain peaks), Grassland, Desert, Marine Coastal/Supratidal; A dwarf shrub, found growing in a wide range of arid habitats including steppe communities, sandy areas (dunes or seaside), rocky ledges, gravelly plains, slopes. Tolerates areas where other plants are virtually non-existent
Plant	*Olea oleaster L.*		Not evaluated	Endangered	Not endemic	N/A	Not listed	Not listed		No	
Plant	*Laurus nobilis L.*	Bay Laurel	Least Concern	Endangered	Not endemic	N/A	Not listed	Not listed		No	Marine Coastal/Supratidal, Forest, Wetlands (inland), Shrubland; This plant is a dioecious evergreen large shrub or small tree found in a variety of lowland habitats such as woodland, scrub, sea cliffs, dunes, roadsides and river banks; It is always found

Taxon Type	Species Scientific Name	Species Common Name	IUCN (2018) Status	National Red Book Status of Albania	Endemic Status	Migratory/Congregatory Status	Status under CITES	Status under Habitats Directive /Birds Directive	Other	EDGE Species	Habitat Of Occurrence
											in regions of warm climate and high rainfall and more frequently in humid microclimates such as canyons and valleys.
Plant	*Querqus robur (L.) subsp. scutariensis*		Not evaluated	Not evaluated	Endemic	N/A	Not listed	Not listed		No	
Plant	*Butomus umbellatus*	Flowering-rush	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; can grow as a terrestrial species on wet mud, emergent in shallow water or more or less permanently submerged in deep or fast-flowing water. It is most often found on nutrient-rich, calcareous clay substrates and will occur in a variety of water bodies such as rivers, lakes, streams, ditches (particularly those which serve as "wet fences") and canals.
Plant	*Cladium mariscus*	Great Fen-Sedge	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland); This species forms dense, extensive stands resembling and sometimes grading into beds of Phragmites australis. It occurs most often in strongly calcareous habitats such as

Taxon Type	Species Scientific Name	Species Common Name	IUCN (2018) Status	National Red Book Status of Albania	Endemic Status	Migratory/Congregatory Status	Status under CITES	Status under Habitats Directive /Birds Directive	Other	EDGE Species	Habitat Of Occurrence
											fens but will also occur in acid habitats: it may be the case that it is more intolerant of nutrients than pH.
Plant	*Nuphar lutea*	Yellow Water-lily	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; N. lutea typically occurs in slow-flowing or standing, mesotrophic or eutrophic water bodies such as ponds, lakes, rivers and canals. It will also occur in oligotrophic conditions.
Plant	*Nymphaea alba*	European White Waterlily	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; occurs mostly in standing fresh water wetlands and lakes, ponds and canals.
Plant	*Nymphoides peltata O. Künze*	No common name	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; typically occurs in naturally eutrophic, calcareous, slow-flowing rivers and large ditches.
Plant	*Sagittaria sagittifolia L.*	Arrowhead	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; It grows in deep, mesotrophic to eutrophic, slow flowing or standing rivers, canals or ditches.

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Plant	*Trapa natans L.*	Water Caltrop	Least Concern	Endangered	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; This plant is an annual floating-leaved plant that grows in stagnant waters, lakes, channels with weak currents, ponds and swamps. It primarily occurs in unpolluted nutrient-rich lowlands without too much calcium; it is important as a food source for birds and provides fish spawning habitat.
Plant	*Adiantum cappilus-veneris*		Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Rocky areas (eg. inland cliffs, mountain peaks), Wetlands (inland), Artificial/Aquatic & Marine, Artificial/Terrestrial, Forest; This species typically grows in shaded, permanently moist crevices on calcareous rock face (typically limestones) and cliffs, often beside streams or waterfalls or growing directly in seepages. In some areas, such as the Mediterranean, it will grow on non-calcareous rocks such as schists, sandstone grits and rhyolite.

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Plant	*Baldellia ranunculoides*	Lesser Water-plantain	Near Threatened	Critically Endangered	Not endemic	N/A	Not listed	Not listed		No	Freshwater (=Inland waters); The species typically occurs along the margins of shallow meso-oligotrophic lakes, ponds, reservoirs and pools, on the shorelines of slow streams, in marshes, fens, brackish dune slacks and bog pools. It can also be found in more anthropogenic or disturbed habitats such as ditches, canals, flooded quarries, man-made dune wetlands, abandoned peat-drains and cuttings, fish ponds, and temporary flooded fields.
Plant	*Spirodela polyrhiza*	Greater Duckweed	Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; This species is found in fresh lentic waters in regions with warm summers. It occurs lakes, large dams, among reeds. The species occurs generally in mesotrophic to eutrophic lake and river waters
Plant	*Ulmus minor (synonym Ulmus campestris)*	Vulnerable	Data Deficient	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	

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Plant	*Ulmus laevis*		Data Deficient	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Forest; The species is found within riparian deciduous forests, often in association with Ulmus minor and occasionally in oak mixed forests. Although the species prefers moist sites and can tolerate inundation it can also grow in moderately dry soils and steppe. The species can also tolerate the cold and acidic or calcareous soils
Plant	*Potamogeton gramineus*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Artificial/Aquatic & Marine, Wetlands (inland); will occur in most oligotrophic to mesotrophic water body types, from large lakes through ponds to temporary pools in fens and marshes as well as streams and even fairly large, fast-flowing rivers.
Plant	*Hippuris vulgaris*	No common name	Least Concern	Critically Endangered	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Aquatic & Marine; The species typically occurs in permanent rivers, ponds and lakes that are usually more than 1 m deep and have fairly deep beds of soft sediment rich in organic matter.

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Plant	*Leucojum aestivum*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Grassland; It occurs in formations of Carex riparia, mostly characteristic of larger valleys and southern regions and is intolerant to dessication. It prefers wet meadows and marshy alder carrs of plains. L. aestivum grows on mineral or thin peaty substrates, often in areas almost permanently inundated by somewhat lime-rich water
Plant	*Groenlandia densa*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland); typically occurs in shallow, clear, base-rich water, including lakes and rivers, but more often streams, canals, ditches and ponds, particularly the headwaters of calcareous streams.
Plant	*Vallisneria spiralis*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Artificial/Aquatic & Marine, Wetlands (inland);typically occurs in mesotrophic to eutrophic slow-flowing or lentic lowland water bodies such as canals, ditches, rivers and occasionally lakes. It can be found in fresh or brackish water at depths of 0.2-3.5 m.

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Plant	*Potamogeton nodosus Poiret*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland);will occur in most types of water body, from lake margins to ponds and even temporary pools, as well as streams and backwaters of larger rivers. It appears to tolerate nutrient enrichment and is most frequently found in mesotrophic to eutrophic calcareous waters. It will grow to a water depth of 2 metres.
Plant	*Rorippa amphibia*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland); typically occurs on the margins of mesotrophic to eutrophic water bodies, such as ponds, lakes and large lowland rivers.
Plant	*Persicaria amphibia*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland), Artificial/Terrestrial, Artificial/Aquatic & Marine; This species generally occurs in still or slow-flowing water, from which it will spread in a terrestrial form away from the water. It is most typical of mesotrophic to eutrophic water bodies, particularly lakes, canals and canalized lowland rivers.
Plant	*Lemna trisulca*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Wetlands (inland); will occur in most mesotrophic to eutrophic still or slow-flowing water bodies, and will also occur in

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											backwaters in fast-flowing rivers. It is tolerant of shade and apparently also of hyper-eutrophication and will often occur where there are very few other aquatic plant species.
Plant	*Alnus glutinosa*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Forest; is species favours a moderate to cold climate and prefers damp or wet soils. It grows well in acidic soils and its growth is reduced under the alkaline or near-neutral conditions that are desirable for many other species. This species is commonly found in hilly regions, along the banks of streams and rivers, in damp marshy woods and riverside woodlands. It grows alongside spring-lines in oak woods and damp hollows or on wet slopes in high rainfall areas, away from the waterside. This species can also grow on poor quality soil due to nodules on the roots with nutrifying bacteria. The roots of this species can grow into open water as dense masses of hard, dark red cords which adds support to the banks.

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Plant	*Salix pentandra*		Least Concern	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Forest, Wetlands (inland); often found in bogs, wet meadows and flood plains
Plant	*Salix fragilis*	Crack willow	Not evaluated	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	
Plant	*Nymphoidetum peltata*		Least Concern	Vulnerable	Not endemic	N/A	Not listed	Not listed		No	Shkodra Lake; Wetlands (inland), Artificial/Aquatic & Marine; typically occurs in naturally eutrophic, calcareous, slow-flowing rivers and large ditches.
Plant	*Pinus heldreichii*	Heldreich's Pine	Least Concern	Vulnerable	Albania; Bosnia and Herzegovina; Bulgaria; Greece (Greece (mainland)); Italy (Italy (mainland)); Monte	No	N/A Not listed		Not listed		Pinus heldreichii is a mountain to subalpine species, in Albania, Bosnia, Kosovo and Serbia usually growing above 2,200 m asl. up to 2,640 m (Farjon and Filer 2013), but elsewhere down to 800 m, such as in Tomorri National Park in Albania (L. Shuka pers. comm. 2016). It is most commonly found on steep mountainsides with very thin soil over limestone, or on rocky faces, but it can also occur on siliceous (Kosovo) and ultrabasic rocks or substrate, most often in pure, scattered stands. It grows very slowly in this habitat and presumably ancient specimen

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					negro; North Macedonia; Serbia						trees are known, e.g. in Calabria. Although occurring in the Mediterranean region, its altitudinal range subjects it to sometimes quite severe winter frosts. A small to medium size tree (25-30) m (Farjon 2010a).
Plant	*Ramonda serbica*		Least Concern	Vulnerable	Not endemic	No	N/A		Not listed		This species has a very specific, small and restricted habitat requirement and it belongs to a group of rare resurrection vascular plants in Europe. Ramonda serbica is a perennial herb, which can be found in humid and shady areas and it flowers from mid April until the second half of May. The species occurs in shady crevices of limestone rocks between 400-1,500 m asl (Commission of the European Communities 2009). It usually inhabits north-northwest crevices but is occasionally found in northeast facing crevices.
Plant	*Festucopsis serpentini*	Serpentine false brome	Least Concern	Vulnerable	Albania endemic	N/A	Not listed	Not listed		No	It's found in crevices in gullies, deep slopes and gorges on serpentine rock, at altitudes between 500 and 2,100 m.

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	Juniperus communis	Common Juniper	Least Concern	Vulnerable	No	No	N/a	N/a	Not listed	Not listed	This is largely a pioneer woodland species, occupying natural rock outcrops and other places with skeletal soil and abundant sunlight in woodland and light forest, both broad-leaf and coniferous forest
	Juniperus oxycedrus	Prickly Juniper	Least Concern	Vulnerable	No	No	N/a	N/a	Not listed	Not listed	A common shrub in Mediterranean sclerophyll scrubland (maquis, garrigue); also in dry woodland with Pinus spp., Carpinus betulus, Quercus ilex and other oaks, Quercus-Lentiscus scrub, as well as in montane and wetter forest with Cedrus libani, Pinus nigra, Juniperus foetidissima, and J. excelsa
Insect	*Cerambyx cerdo*	Great capricorn beetle	Vulnerable	Endangered	Not endemic	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	This species develops in fresh wood of broadleaf trees. In Central Europe, only trees of the genus Quercus (the oaks) are used, while in more southern parts of Europe it is also able to develop in Castanea (the chestnuts) and some other trees, including Ceratonia species. The Cerambyx longicorn inhabits large trees with sun-exposed

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											stems, such as large, solitary oaks situated in fairly open landscape, or old pasture-woodlands
Fish	*Salmo marmoratus*	Marble trout	Least Concern	Endangered	Not endemic	Not migratory; Not congregatory	Not listed	Listed in the Annex II of the European Union Habitats Directive.		No	Wetlands (inland); The remaining population of Marble trout are found in headwaters of mountainous streams.
Fish	*Salmothymus obtusirostris*	No common name	Endangered	Vulnerable	Not endemic	N/A	Not listed	EU Habitats Directive Annex II animal and plant species of community interest whose conservation requires the designation of special		No	Wetlands (inland); It lives in rivers of the karstic region

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								areas of conservation.			
Fish	*Chondrostoma scodrensis*		Extinct	Not evaluated	Not endemic	N/A	Not listed	Not listed		No	Formerly restricted to the Lake Skadar basin in Albania and Montenegro.
Fish	*Lampetra fluviatilis*	River Lamprey	Least Concern	Endangered	Not endemic	Migratory	Not listed	Not listed		No	Wetlands (inland), Marine Neritic; Adults live in coastal waters and estuaries and spawn in strong-current habitats of rivers and streams.
Fish	*Lampetra planeri*	Brook Lamprey	Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	Wetlands (inland); Found in the lowland, piedmont and montane zone in clear, well oxygenated brooks. Ammocoetes live in detritus-rich sands or clay sediments.
Fish	*Alburnoides bipunctatus ohridanus*		Data Deficient	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	lakes, rivers and reservoirs
Fish	*Alburnus alburnus*		Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	Open waters of large lakes and medium to large rivers.

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Fish	*Alosa fallax*	Twaite Shad	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Annex II and Annex V		No	At sea, pelagic. Juveniles remain close to shore and estuaries. Migrates from sea to rivers, spawns in main river often only few kilometres above limit of brackish water. Spawning also reported from small rivers over gravel bottom.
Fish	*Anguilla anguilla*	European Eel	Critically Endangered	Not Evaluated	Not endemic	Migratory and congregatory	Not listed	CITES Annex II		No	found in a range of habitats from small streams to large rivers and lakes, and in estuaries, lagoons and coastal waters.
Fish	*Aristichtys nobili*		Data Deficient	Invasive	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	
Fish	*Chondrostoma nasus*	Nase	Least Concern	Low riskcd	Not endemic	migratory	Not listed		Bern Convention Annex 3	No	Moderate to fast-flowing large to medium sized rivers with rock or gravel bottom. Spawns in fast-flowing water on shallow gravel beds often in small tributaries
Fish	*Ctenopharyngodon idellus*		Low risk	Not Evaluated	Invasive	Not migratory; Not congregatory	Not listed	Not listed		No	
Fish	*Cyprinus carpio*	No common name	Vulnerable	Not Evaluated	Invasive	Migratory	Not listed	Not listed		No	Warm, deep, slow-flowing and still waters, such as lowland rivers and large, well

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											vegetated lakes. Introduced in all types of water bodies
Fish	*Dicenthrarchus labrax*		Least Concern	Not Evaluated	Not endemic	Migratory	Not listed	Not listed		No	Coastal waters and estuaries.
Fish	*Gobio gobio*		Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	Nearly all types of riverine and lacustrine habitats with sand bottom.
Fish	*Oxnoemacheilus pindus*	Pindus Stone loach	Vulnerable	Not evaluated	It is restricted to the Aoos river basin in Epirus, Greece, and is possibly also present in Albania.	Not migratory; Not congregatory	Not listed	Not listed		No	Small creeks, streams and rivers
Fish	*Gobitis taenia* spp *ohridana*		Not evaluated	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	

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Fish	*Hypophthalmichthys molitrix*		Near Threatened	Not Evaluated	Invasive	Migratory	Not listed	Not listed		No	
Fish	*Salaria fluviatilis*		Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	mainly a riverine species that can be found also in lakes. It likes rubble and gravel substrate with moderate to high current velocity
Fish	*Salmo Dentex*		Data Deficient	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	The species occurs in lakes and large rivers. It spawns on gravel bottom
Fish	*Pachychilon pictum*	Albanian Roach	Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed		Annex 3 of Bern Convention	No	Wetlands (inland); It is a small cyprinid living in rivers as well as in lakes.
Fish	*Petromyzon Marinus*		Least Concern	Vulnerable	Not endemic	Migratory	Not listed	Annex II		No	Adults migrate from the ocean or lake to spawning streams.
Fish	*Rhodeus amarus*		Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Annex II		No	Most abundant in still or slow-flowing water with dense aquatic vegetation and sand-silt bottom as lowland ponds, canals, slow-flowing rivers, backwaters and oxbows, where mussels are present.
Fish	*Leucos basak* (synonym		Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	lakes and rivers.

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	Rutilus basak)										
Fish	*Salmo trutta lacustris*		Least Concern	Vulnerable	Not endemic	Migratory	Not listed	Not listed		No	
	Eudenttomyzon stankokaramani	Drini Brook Lamprey	least concern	Not listed	Yes - Drin drainage including Lake Ohrid and Lake Skadar basins (Macedonia, Montenegro, Albania, Kosovo) .	Not a Migrant Not congregatory		Not listed			Piedmont and montane zones in clear, well oxygenated brooks. Ammocoetes in detritus-rich sands or clay sediments.
	Alburnus scoranza	Ohrid Bleak	Least concern	Not listed	Lakes Skadar and Ohrid basins (Mont	Full Migrant Not congregatory		Not listed			Lacustrine and in lake tributaries. Spawns on lakes shores, or migrates to tributaries to spawn in shallow riffle habitats.

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					enegro, Albania, Macedonia).						
	Barbus prespensis	Prespa Barbell	Least concern	LRcd	Known from the Shkumbini river to the Dukati river including the Greek part of Vjosa (Aoos) and the Prespa lakes in north-western Greece, Albani	Full Migrant Not congregatory		Not listed			It is a small size barbel (<300 mm) that spends most of its life in the lakes except during reproduction (late April-July) when it migrates into tributaries to spawn. It is a commercial species.

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					a and the former Yugoslav Republic of Macedonia (FYROM).						
	Cobbitis ohridanus	Ohrid loach	Not listed	Not listed		Not a migrant Not congregatory		Not listed			
	Chondrostoma ohridanus	Ohrid nasse	Not listed	Not listed		Not a migrant Not congregatory		Not listed			
	Squalis platycephs	Balkan chub	Not listed	Not listed		Not a migrant Not congregatory		Not listed			
	Barbatula sturanyi	Ohrid stone loach			Albania, North Macedonia	Not a migrant Not congregatory		Not listed			Lake Ohrid basin (Macedonia, Albania). Mainly in springs draining into the lake and the upper Drin river.
	Gobio ohridanus	Ohrid gobby	Vulnerable	LRnt	Lake Ohrid (Macedonia, Albania).	Not a migrant Not congregatory		Not listed			Lacustrine, usually on sand to pebble bottom.

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Mammal	*Sciurus vulgaris*	Red Squirrel	Least Concern	Lower Risk/Near Threatened	Not endemic	Not migratory; Not congregatory	Not listed	Not listed	listed in appendix III of Bern Convention	No	Forest, Artificial/Terrestrial; It is most abundant in large tracts of coniferous forest and also occurs in deciduous woods, mixed forest, parks, gardens, and small stands of conifers. It is found in lowland to subalpine forests.
Mammal	*Glis glis*	Edible Doormouse	Least Concern	Lower Risk/Least Concern	Not endemic	Not migratory; Not congregatory	Not listed	Not listed	listed in appendix III of Bern Convention	No	Shrubland, Forest, Artificial/Terrestrial; typically found in mature deciduous and mixed woodland, where it frequents the canopy, although it also occurs in maquis and shrubland on rocky areas along the Mediterranean coast.
Mammal	*Rhinolophus ferrumequinum*	Greater Horseshoe Bat	Least Concern	Lower Risk/Conservation Dependent	Not endemic	Migratory and congregatory	Not listed	Annex II and Annex IV	CMS Appendix II	No	Artificial/Terrestrial, Caves and Subterranean Habitats (non-aquatic), Grassland, Forest, Shrubland
Mammal	*Rhinolophus euryale*	Meditteranean Horseshoe Bat	Near Threatened	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Annex II and Annex IV	CMS Appendix II	No	Caves and Subterranean Habitats (non-aquatic), Artificial/Terrestrial, Forest, Shrubland
Mammal	*Rhinolophus blasii*	Blasius's horseshoe bat	Least Concern	Lower Risk/Near Threatened	Not endemic	Migratory and congregatory	Not listed	Annex II and Annex IV	CMS Appendix II	No	Forest, Savanna, Shrubland, Caves and Subterranean Habitats (non-aquatic), Desert

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Mammal	*Myotis myotis*	Greater mouse-eared bat	Least Concern	Not Evaluated	Not endemic	Migratory and congregatory	Not listed	Annex II and Annex IV	CMS Appendix II	No	Caves and Subterranean Habitats (non-aquatic), Forest, Shrubland, Artificial/Terrestrial
Mammal	*Myotis blythii*	Lesser mouse-eared bat	Least Concern	Not listed		Migratory and congregatory					It forages in scrub and grassland habitats, including farmland and gardens. Maternity colonies are usually found in underground habitats such as caves and mines, and sometimes in attics of buildings (particularly in central Europe). In Iberia and in the Balkans it is mainly found in caves and other underground sites (e.g., mines). In Turkey and Syria maternity colonies are found in caves and in very old buildings (castles, inns, etc.). It hibernates in winter in underground sites with a relatively constant temperature of 6-12ºC. The species is an occasional migrant, with movements of up to 488 km recorded (Hutterer et al. 2005; previous reports of 600 km are erroneous).
Mammal	*Myotis brandtii*	Brandt's bat	Least Concern	Not listed	No	Congregatory					It inhabits mixed and broadleaf forest, and sometimes coniferous forest, often in close proximity to water (K. Tsytsulina pers. comm. 2005;

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											Gerell 1999). It is less often found near human habitation than its congener M. mystacinus. Summer roosts are in buildings, tree holes, and bird and bat boxes, but most often in tree holes. In winter it hibernates in caves, tunnels, cellars and mines. It is an occasional migrant, with movements of up to 618 km recorded (Hutterer et al. 2005). It hunts near inland waters, but feeds on non-aquatic insects, breeding in June and July (Sokolov and Orlov 1980).
Mammal	*Myotis nattereri*	Natterers bat	Least Concern	Data Deficient		Congregatory					It forages in woodland (including Mediterranean pine and oak forest: Amr 2000), shrubland and parkland, sometimes over water, pasture, and road verges. It occurs in humid areas, and in dry areas it is dependant on water bodies. Summer roosts are in hollow trees, buildings and occasionally underground sites. It hibernates in underground habitats (caves, cellars and mines). It is a sedentary species, movements between summer,

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											autumn and winter roosts are up to 120 km (Masing et al. 1999 in Hutterer et al. 2005).
Mammal	*Rhinolophus hipposideros*	Lesser horseshoe bat	Least Concern	LRnt		Congregatory					It forages close to ground within and along the edges of broadleaf deciduous woodland, which represents its primary foraging habitat, but also in riparian vegetation, Mediterranean and sub-mediterranean shrubland. Its prey consists mainly of midges, moths and craneflies. Foraging activities take place nearly exclusively within woodland areas, while open areas are avoided (Zahn et al. 2008, Lino et al. 2014). Habitat loss and fragmentation may therefore reduce the amount of suitable habitats for the Lesser Horseshoe Bat and pose a threat to this species (Reiter et al. 2013). Summer roosts (breeding colonies) are found in natural and artificial underground sites in the southern part of the range, and in attics and buildings in the northern part of it. In winter it hibernates in underground

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											sites (including cellars, small caves and burrows). A sedentary species, winter and summer roosts are usually found within 5-10 km (longest distance recorded 153 km: Heymer 1964 in Hutterer et al. 2005).
Mammal	*Plecotus auritus*	Brown long-eared bat	Not evaluated	Data Deficient		Congregatory					It forages in the vicinity of the roost in deciduous and coniferous woodlands, along hedgerows, and in isolated trees in parks and gardens. It feeds mainly on moths and flies gleaned from foliage. In summer it roosts in colonies in buildings (attics, barns, churches, drainage channels), tree holes, and bat boxes. Solitary animals also roost in underground sites. In winter it hibernates in caves, mines, buildings and occasionally trees. A sedentary species, its longest recorded movement is 88 km
Mammal	*Hypsugo savii*	Savi's pipistrelle	Least Concern	not listed		Congregatory					This species forages over open woodland, pasture and wetlands, and often feeds at lights in rural areas, towns and cities. It roosts in rock crevices, occasionally in

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											fissures in buildings or under bark, rarely in underground habitats. Found mainly in uplands and mountains in North Africa, foraging over water and prairies, roosting in crevices of rocks, trees and buildings. Occurs around cliffs and in rocky areas and deep valleys in the Canaries.
Mammal	*Myotis daubentonii*	Daubenton's bat	Least Concern	Lrcd		Congregatory					It forages over natural and artificial water bodies (including fjords), sometimes in woodland or scrub. Summer roosts are in tree hollows, caves, buildings and other artificial structures (e.g. bridges, cellars) in mixed sex colonies. It winters in a wide range of underground habitats
Mammal	*Plecotus austriacus*	Gray long-eared bat	Least Concern	Data Deficient	Europe	Congregatory					It forages in lowland valleys and open agricultural landscapes in central Europe, and in a great variety of open and semi-open habitats in southern Europe. It feeds mainly on moths. In summer it typically roosts in buildings (attics, fissures, cavities, old castles), although solitary animals may roost in underground sites. In winter it

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											hibernates in buildings, mines, and caves.
Mammal	*Myotis nattereri*	Natterers bat	Least Concern	Data Deficient		Congregatory					It forages in woodland (including Mediterranean pine and oak forest: Amr 2000), shrubland and parkland, sometimes over water, pasture, and road verges. It occurs in humid areas, and in dry areas it is dependant on water bodies. Summer roosts are in hollow trees, buildings and occasionally underground sites. It hibernates in underground habitats (caves, cellars and mines). It is a sedentary species, movements between summer, autumn and winter roosts are up to 120 km (Masing et al. 1999 in Hutterer et al. 2005).
Mammal	*Nyctalus leisleri*	Lesser Noctule	Least Concern	Data Deficient		Migratory and Congregatory					The Lesser Noctule (Nyctalus leisleri) forages over woodland (both Eurosiberian and Mediterranean), pasture, and river valleys, where it feeds on flies (including mosquitos), moths and beetles. It is linked to old trees. Summer nursery roosts are located in tree holes, but also

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											in buildings and bat boxes. Nursery colonies usually number 20-50 females, occasionally up to 1,000 (e.g., in Ireland: Stebbings and Griffith 1986). In winter this bat hibernates mainly in tree holes, or occasionally in underground sites or buildings, often in large groups. Females migrate over distances up to 1,567 km (Ohlendorf et al. 2000).
Mammal	*Hypsugo savii*	Savi's pipistrelle	Least Concern	not listed		Congregatory					This species forages over open woodland, pasture and wetlands, and often feeds at lights in rural areas, towns and cities. It roosts in rock crevices, occasionally in fissures in buildings or under bark, rarely in underground habitats. Found mainly in uplands and mountains in North Africa, foraging over water and prairies, roosting in crevices of rocks, trees and buildings. Occurs around cliffs and in rocky areas and deep valleys in the Canaries.
Mammal	*Miniopterus*	Schreiber's Bent-winged Bat	Near Threatened	Not listed	Not endemic	Migratory and		Annex II and Annex IV			It forages in a variety of open and semi-open natural and artificial habitats, including

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	schreibersii					Congregatory					suburban areas. It feeds mainly on moths, and occasionally on flies. It is a colonial species that roosts mostly in caves and mines (although it can also be found in man made tunnels, ruins and other buildings), often in large mixed colonies with other cave-dwelling bat species. Large warm caves are preferred during the nursing season. In winter it hibernates in underground sites (usually large caves with a constant microclimate). Schreiber's bat is a migrant species which changes its roosts several times during the year; long-distance movements occur occasionally (longest recorded distance 833 km: Hutterer et al. 2005).
Mammal	*Pipistrellus pipistrellus*	Common pipistrelle	Least Concern	Not listed	Not endemic	Migratory		Annex IV			It forages in a variety of habitats including open woodland and woodland edges, Mediterranean shrubland, semi-desert, farmland, rural gardens and urban areas. It feeds on small moths and flies. Summer roosts are mainly found in

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											buildings and trees, and individuals frequently change roost site through the maternity period. Most winter roost sites are located in crevices in buildings, although cracks in cliffs and caves and possibly holes in trees may also be used. It is not especially migratory in most of its range, but movements of up to 1,123 km have been recorded
Mammal	*Pipistrellus kuhlii*	Kuhl's pipistrelle	Least Concern	Not listed	Not endemic	No		Annex IV			Kuhl's Pipistrelle (Pipistrellus kuhlii) forages over a variety of habitats, including agricultural and urban areas (including around street lights).
Mammal	*Vespertilio murinus*	Particoloured bat	Least Concern	Data Deficient	Not endemic	Migratory		annex IV			The Particoloured Bat (Vespertilio murinus) forages in open areas over various habitat types (forest, semi-desert, urban, steppe, agricultural land). Summer roosts tend to be situated in houses or other buildings; also rarely hollow trees, nest boxes, or rock crevices. Winter roost sites include rock fissures, often (as a substitute) crevices in tall buildings (including, or especially, in

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											cities), occasionally tree holes or cellars.
Mammal	*Eptesicus serotinus*	Serotine	Least Concern	Data Deficient	Not endemic	No		Annex IV			Found in a variety of habitats across its wide range including semi-desert, temperate and subtropical dry forest, Mediterranean-type shrubland, farmland and suburban areas. Favoured feeding areas include pasture, parkland, open woodland edge, tall hedgerows, gardens, and forested regions. Feeds on larger beetles, moths and flies. Most summer (maternity) colonies are in buildings and occasionally tree holes or rock fissures. In winter it roosts singly or in small numbers in buildings and rock crevices, or often in underground habitats in north central Europe. Winter roosts are usually in fairly cold, dry sites. It is a largely sedentary species, with movements to 330 km recorded
Mammal	*Pipistrellus pygmaeus*	Soprano pipistrelle	Least Concern	Data Deficient	Not endemic	No		Annex IV			It forages around woodland and wetlands, and is more closely associated with water than P.pipistrellus. It feeds mainly on small Diptera

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											(especially aquatic midges). Maternity colonies are located in hollow trees, rock crevices and buildings (which provide warmer sites) (Michaelsen et al. 2014)
Mammal	*Lutra lutra*	Eurasian Otter	Near Threatened	Vulnerable	Not endemic	Not migratory; Not congregatory	Listed in Appendix I	Annex II and Annex IV	listed in appendix III of Bern Convention	No	Lives in a wide variety of aquatic habitats, including highland and lowland lakes, rivers, streams, marshes, swamp forests and coastal areas
Mammal	*Canis aureus*	Golden Jackal	Least Concern	Vulnerable	Not endemic	Not migratory; Not congregatory	Appendix III (India)	Annex V		No	Due to their tolerance of dry habitats and their omnivorous diet, the Golden Jackal can live in a wide variety of habitats. These range from the Sahel Desert to the evergreen forests of Myanmar and Thailand.
Mammal	*Ursus arctos*	Brown bear	Least Concern	Vulnerable	Not endemic	Not migratory; Not congregatory	Appendix III (India)	Annex II and Annex IV		No	Brown Bears occupy a great variety of habitats from dry Asian steppes to Arctic shrublands to temperate rain forests.
Mammal	*Sus scrofa*	Wild boar	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	It is found in a variety of habitats. In Europe, it prefers broadleaved forests and especially evergreen oak forests, but may also be found in more open habitats such as steppe, Mediterranean

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											shrubland, and farmland, so long as there is water and tree cover nearby
Mammal	*Talpa stankovici subsp. montenegrina*	Balkan Mole	Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	It occurs in a variety of open habitats including sandy beaches, pastures and arable land
Mammal	*Canis lupus*	Grey Wolf	Least Concern	LRnt	Not endemic	Not migratory; Not congregatory	CITES Appendix II except populations from Bhutan, India, Nepal and Pakistan, which are listed on Appendix I.	Habitats Directive (Annex II and IV),	Bern Convention (Appendix II)	No	Forest, Desert, Rocky areas (eg. inland cliffs, mountain peaks), Artificial/Terrestrial, Shrubland, Grassland, Wetlands (inland)
Mammal	*Myotis capaccinii*	Long fingered Bat	Vulnerable	Lower Risk/Conservation Dependent	Not endemic	Migratory and congregatory	Not listed	Annex II and Annex IV	CMS Appendix II	No	Wetlands (inland), Caves and Subterranean Habitats (non-aquatic), Shrubland; The Long-fingered Bat (Myotis capaccinii) depends strictly on aquatic habitats. It forages over wetlands and waterways

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											(including artifical waterbodies, such as canals and reservoirs), also scrub
Mammal	*Lynx lynx balcanicus*	Balkan lynx	Critically Endangered	Critically Endangered	South West Balkans	No		Habitats Directive (Annex II and IV),		No	occupies mountainous terrain in the most southern parts of the Dinaric range and throughout the northern part of the Scardo-Pindic range. Main habitats are: deciduous (beech, oak, hornbeam, hop-hornbeam), evergreen (fir and pine), mixed forests (fir-beech), but also fragmented forests and bush habitats. It uses rocky and sunny sites for day beds. In the summer period, it occasionally visits high-mountain pastures. Shrub lands and cultivated areas (rural fields and mountain meadows) are visited primarily for hunting
Mammal	*Felis silvestris*	Wild Cat	Least Concern	Endangered	No	No				No	Wildcats are found in a wide variety of habitats, from deserts and scrub grassland to dry and mixed forest; absent only from rainforest and coniferous forest. European wildcats are primarily associated with forest and are found in highest numbers in

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											broad-leaved or mixed forests with low population densities of humans.
Mammal	*Rupicapra rupicapra*	Chamois	Least Concern	Vulnerable	No	No		Habitats Directive (Annex II and IV),		No	Alpine chamois inhabit steep, rocky areas in the mountains, utilizing a variety of habitats including alpine meadows, open rocky areas, mixed broadleaf woodland, and coniferous woodland (Pedrotti and Lovari 1999). This species occupies rocky areas and alpine meadows, and feeds on grasses, herbs, leaves of trees, buds, shoots, and fungi (Sägesser and Krapp 1986).
Mammal	*Apodemus sylvaticus*	wood mouse/long-tailed field mouse	Least Concern	not listed	No	Not		Not listed		No	It is a very adaptable species, inhabiting a wide variety of semi-natural habitats including all types of woodland, moorland, steppe, arid Mediterranean shrubland, and sand dunes. It is also found in many man-made habitats including suburban and urban parks, gardens and wasteland, pastures and arable fields, and forestry plantations.

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Mammal	*Crocidura suaveolens*	lesser white-toothed shrew	Least Concern	not listed	No	No		Annex II		No	At higher latitudes and altitudes in Europe it is often associated with human habitation, tending to be found in parks, gardens, and even houses. It is very common in straw ricks. In western and southern Europe and it inhabits a wide range of habitats including vineyards, olive groves, terraced farmland on hillsides, dry Mediterranean shrubland, sand dunes, rocky areas in the mountains, and damp densely-vegetated patches near to water. It tends to avoid dense forests
Mammal	*Apodemus flavicollis*	Yellow-necked field mouse	Least Concern	Not listed	No	No		Not listed		No	It inhabits a variety of woodland habitats. It tends to be a forest edge species,
Mammal	*Capreolus capreolus*	European Roe Deer	Least Concern	Vulnerable	No	No			Appendix III of Bern convention	No	It occupies a wide variety of habitats, including deciduous, mixed or coniferous forests, moorland, pastures, arable land, and suburban areas with large gardens. It prefers landscapes with a mosaic of woodland and farmland

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Mammal	*Dryomys nitedula*	Forest Dormouse	Least Concern	Data Deficient	No	No			Appendix III of Bern convention	No	It occurs in a broad variety of habitats including broad-leaved, mixed, coniferous and dwarf montane woodland. Also found in rocky areas, evergreen shrubland (including Mediterranean-type shrubland), and wood-steppe
Mammal	*Erinaceus roumanicus*	Norther White-breasted Hedgehog	Least Concern	Not Listed	No	No		Not listed		No	The northern white-breasted hedgehog inhabits farmland, parks and gardens in rural and urban areas, scrubby habitats at the edge of forests, and shrubby vegetation.
Mammal	*Lepus europaeus*	European Hare	Least Concern	Not listed	No	No		Not listed		No	The European Hare is a highly adaptable species that can persist in numerous habitat types from sea level to alpine areas
Mammal	*Martes foina*	Beech Marten	Least Concern	LRnt	No	No			Appendix II Bern Convention	No	Beech Marten prefers more open areas than do other martens (Sachhi and Meriggi 1995). Its habitat preferences vary in different parts of its range. It is typically found in deciduous forest, forest edge, and open rocky hillsides (sometimes above the tree line).

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Mammal	*Martes martes*	Pine Marten	Least Concern	Vulnerable	No	No		Annex IV	Appendix II Bern Convention	No	Pine Marten inhabits deciduous, mixed and coniferous woodlands, as well as scrub. Optimal habitat appears to be woodlands with an incomplete canopy and dense understorey vegetation.
Mammal	*Vulpes vulpes*	Red Fox	Least Concern	Not listed		No					Red Foxes have been recorded in habitats as diverse as tundra, desert (though not extreme deserts) and forest, as well as in city centres (including London, Paris, Stockholm, etc.). Natural habitat is dry, mixed landscape, with abundant "edge" of scrub and woodland. They are also abundant on moorlands, mountains (even above the treeline, known to cross alpine passes), sand dunes and farmland from sea level to 4,500 m
Amphibian	*Hyla arborea*	European Tree Frog	Near Threatened	Low riskcd	Not endemic	No	Not listed	Annex IV of Habitats Directive	Appendix II of Bern Convention	No	Wetlands (inland), Artificial/Aquatic & Marine, Artificial/Terrestrial, Shrubland, Introduced vegetation, Grassland, Forest
Reptile	*Testudo hermanni*	Hermann's Tortoise	Near Threatened	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	open patchy evergreen Mediterranean oak forest, but in its absence inhabits maquis, garigue, dune scrub and

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											maritime grassland, as well as agricultural and railway edge
Reptile	*Testudo marginata*	Marginated Tortoise	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	Phrygana' and Macchia scrub, dense thorny scrub among rocky outcrops, but also a range of other vegetation types, from coastal dunes to olive groves, small-scale agricultural landscapes and damp areas.
Reptile	*Anguis fragilis / Anguis cephallonica*	Peloponnese Slow Worn	Near Threatened	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	
Reptile	*Pseudopus apodus*	European Glass Lizard	Not evaluated	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	pen country, such as short grassland or sparsely wooded hills
Reptile	*Mediodactylus kotschyi*	Kotschy's Gecko	Least Concern	Not listed	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	Artificial/Terrestrial, Shrubland, Rocky areas (eg. inland cliffs, mountain peaks)
Reptile	*Hemidactylus turcicus*	Meditteranean house gecko	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	It is extremely adaptable species. It is found in shrubland, rocky areas, salt marshes, coastal areas, cliffs, caves, on stone walls in agricultural areas and it is common in urban

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											environments, including inside buildings.
Reptile	*Algyroides nigropunctatus*	Blue-throated Keeled Lizard	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	open woodlands, scrubland, hedges, bushes, on walls and in olive groves. In river valleys it can be found close to water on rocks and cliffs and urban areas.
Reptile	*Lacerta agilis*	Sand lizard	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	meadows, heathland, coastal dunes, grassland, steppe, subalpine and alpine meadows, shrubland, hedgerows, open woodland
Reptile	*Lacerta trilineala*	Balkan Green Lizard	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	bushy areas, sand dunes, boundary walls, orchards, and abandoned cultivated land. It can also be found close to streams and ditches
Reptile	*Lacerta viridis*	European Green Lizard	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	bushy vegetation at woodland and field edges, within open woodlands, forested areas and shrubland, hedgerows, and in overgrown areas and cultivated land including orchards
Reptile	*Podarcis melisellensis*	Dalmation wall lizard	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	dry open woodland, scrub, pastures and overgrown areas. It can be found on cliffs, rocks and stone walls

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Reptile	*Podarcis muralis*	Common wall lizard	Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	ocky and scree areas, scrubland, deciduous and coniferous woodland, orchards, vineyards, fields, stone walls, and on buildings. It is often found in human settlements including large cities and villages and railway lines
Reptile	*Podarcis tauricus*	Balkan wall lizard	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	open areas of steppe, grassland, meadows, field edges, olive groves, traditionally cultivated land, rural gardens, sparsely vegetated sandy dunes and sometimes in open scrub.
Reptile	*Ablepharus kitaibelii*	European copper skink	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	dry areas including south facing slopes, meadows, scrubland and clearings in woodland (both deciduous and pine).
Reptile	*Eryx jaculus*	Javelin sand boa	Not evaluated	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	open dry steppes and semi-deserts. It appears to prefer clay and stony soils, and is more rarely it is encountered on stabilized sands and in vineyards and gardens
Reptile	*Dolichophis caspius / Coluber caspius*	Caspian whipsnake	Least Concern	Low risklc	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	dry areas of open scrubland (macchia) and woodland, steppe and other grassland, rocky hillsides, semi-desert, overgrown areas, vineyards,

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											olive groves, rural gardens, stone walls and ruins.
Reptile	*Hierophis gemonensis / Coluber gemonensis*	Balkan whipsnake	Least Concern	Critically Endangered	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	dry, stony areas, scrubland, macchia, open woodland, vineyards, olive groves, generally overgrown areas, rural gardens and ruins
Reptile	*Coluber najadum / Platyceps najadum*	Dahl's whipsnake	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	stony semi-desert and wermuth steppe, among rocky outcrops and stones. Populations are found at the slopes of foothills and mountain covered with bush vegetation and woods, in thickets of xerophilous bushes, in juniper open woodlands, oak groves, border of forests. It has been recorded from open woodland, garrigue, overgrown areas, gullies, vineyards, gardens, stone walls and old buildings.
Reptile	*Coronella austriaca*	Smooth snake	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	moorland, rocky coastlines, open woodland (deciduous, coniferous and mixed) and scrubland, hedgerows, woodland edges, heathland, sandy coastal sites, rocky areas, screes, subalpine and

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											open areas with sparse vegetation
Reptile	*Zamenis longissimus*	Aesculapian snake	Least Concern	Not listed	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	dry, open woodlands (deciduous, mixed and coniferous), woodland edges, forested ravines, scrubland and thickets, rocky outcrops, road embankments, moist meadows, field edges, traditionally cultivated land, tea plantations, stone walls and old buildings, parks and gardens
Reptile	*Elaphe quatuorlineata*	Fourlined snake	Near Threatened	Critically Endangered	Not endemic (med only)	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	hedgerows, close to woodland edges, in open woodland, rocky overgrown areas and traditionally cultivated land
Reptile	*Zamenis situla / Elaphe situla*	European ratsnake	Least Concern	Critically Endangered	Not endemic	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	scrubland, macchia, karst habitats, field edges, marshes, stream edges, vineyards, olive groves, on stone walls, and in rural gardens and buildings.
Reptile	*Natrix natrix*	Grass snake	Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	found in humid as well as dry areas with abundant vegetation. It can mostly be found close to water bodies, and is present in woodland (both deciduous and mixed), meadows, hedgerows, coastal

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											areas, and suburban areas (especially gardens)
Reptile	*Natrix tessellata*	Dice snake	Least Concern	Not Evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	largely aquatic species associated with rivers, coasts, streams, lakes, ponds and the surrounding terrestrial habitat. It occurs in coastal areas
Reptile	*Telescopus fallax*	European cat snake	Least Concern	Low risklc	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	found amongst rocks in shrubby landscapes. It can also be found in open or degraded woodland, among old walls and ruins, on sandy beaches with plant cover
Reptile	*Xerotyphlops vermicularis*	European blind snake	Least Concern	Critically Endangered	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	associated with moist, sparsely vegetated, open areas. It is often found in grassy fields and slopes
Reptile	*Vipera ammodytes*	Nose-horned viper	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	associated with rocky areas but can be opportunistic in other habitats. It can be found in dry, often rocky habitats, including open woodland and scrub, sand dunes, hillsides, screes, stone walls, traditionally cultivated land, gardens and vineyards.
Reptile	*Vipera berus*	European adder	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	habitats including open heathland, woodland, moors, lake sides, alpine rocky

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											slopes, and saline and sandy semi-deserts
Reptile	*Vipera ursinii*	Meadow viper	Vulnerable	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	primarily associated with open meadows and hillsides. Upland subspecies are generally found on well drained rocky hillsides, steppe and meadows, while the lowland forms are found in either steppe, or dry or damp meadows
Amphibian	*Salamandra atra*	Alpine salamander	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	found in cool, damp alpine meadows, stony pastures, dwarf heath and mixed, broadleaf and coniferous woodland
Amphibian	*Salamandra salamandra*	Fire salamander	Least Concern	Data Deficient	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	associated with wet cool deciduous, mixed, or rarely, coniferous forests with well shaded brooks and small rivers. Within the mountain forest belt, the species can be found in woodlands
Amphibian	*Triturus alpestris*	Alpine Newt	Least Concern	Data Deficient	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	aquatic species generally found close to water. It is widespread in both alpine and lowland habitats including wet, shaded coniferous, mixed and deciduous forests, sub alpine meadows and pastureland.

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Amphibian	*Lissotriton vulgaris*	Smooth Newt	Least Concern	Low risklc	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	generally associated with woodland habitats, including deciduous, coniferous, mixed forests and dry forests and woodlands. This is an adaptable species also present in meadows, bushlands, parks, fruit gardens, many damp habitats and rural and urban areas. The species breeds in still and slow moving shallow waters and irrigation ditches
Amphibian	*Bombina variegata*	Yellow-bellied Toad	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex II and Annex IV		No	found in coniferous, deciduous and mixed forests, bushlands and meadows, floodplains and grasslands. At low elevations this species lives in deciduous forests, at higher altitudes it is more often found in coniferous forests and highland glades. The species uses many types of wetland. The breeding habitats are typically unshaded temporary pools within, or close to, woodland.
Amphibian	*Bufo bufo*	European toad	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	widespread and adaptable species present in coniferous, mixed and deciduous forests, groves, bushlands, meadows, arid areas, parks and gardens. It is usually in damp areas with dense vegetation, and large

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											open areas are generally avoided.
Amphibian	*Bufo viridis*	European green toad	Least Concern	Low risknt	Not endemic	Congregatory	Not listed	Not listed	Bern Convention Annex II	No	lives in a wide range of forests, forest steppe, scrubland, grassland and alpine habitats. Animals may be present in modified areas including urban centres (e.g. Bucharest), city parks and gardens - and often benefits from disturbed habitats
Amphibian	*Hyla arborea*	European Tree Frog	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	generally associated with open, well-illuminated broad-leaved and mixed forests, bush and shrublands, meadows, gardens, vineyards, orchards, parks, lake shores and low riparian vegetation.
Amphibian	*Pelophylax kurtmuelleri / Rana balcanica*	Balkan water frog	Least Concern	Vulnerable	Not endemic (Greece and Albania only)	Not migratory; Not congregatory	Not listed	Not listed		No	a largely aquatic species, generally found in areas close to suitable open water wetland habitats. It breeds in various stagnant and slow-moving waterbodies
Amphibian	*Rana dalmatina*	Agile frog	Least Concern	Low risklc	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	found in glades and open sites within light deciduous woodland (oak, beech, hornbeam etc.), and less frequent in meadows and thickets

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Amphibian	*Rana graeca*	Greek stream frog	Least Concern	Low risknt	Not endemic	Not migratory; Not congregatory	Not listed	Annex IV		No	a largely aquatic, montane species associated with cold small clear rivers, streams and springs often located in shady deciduous and mixed forest. It may also occur in moors and meadows, and around glacial pools in lakes.
Amphibian	*Rana temporaria*	Common frog	Least Concern	Low riskcd	Not endemic	Not migratory; Not congregatory	Not listed	Annex V		No	Many terrestrial (associated with woodland) and aquatic habitat types are used. Present in coniferous, mixed and deciduous forests, forested tundra and steppe, bush and shrublands, glades, grasslands, dry and wet meadows, marshes, fields, rural gardens, parks, and urban areas. Aquatic habitats include both temporary and permanent ponds, lakes and rivers
Amphibian	*Ichthyosaura alpestris*	Alpine newt	Least Concern	Not listed	Not endemic	Not congregatory			Appendix III of Bern Convention	No	This is a very aquatic species generally found close to water. It is widespread in both alpine and lowland habitats including wet, shaded coniferous, mixed and deciduous forests, sub alpine meadows and pastureland. The species breeds, and larval development takes place, in all

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											stagnant waters including shallow ponds, temporary pools, lakes, and ditches, drinking troughs, ruts and sometimes slow-moving streams.
Bird	*Porzana pusilla*	Baillon's crake	Least Concern	Data Deficient	Not endemic.	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	CMS Appendix II. Bern Convention Appendix II.	No	It inhabits freshwater, brackish or saline marshy wetlands, both inland and coastal, permanent and temporary, with dense emergent and floating vegetation (especially reeds, rushes, sedges, tall dense grasses and Typha spp.)
Bird	*Merops apiaster*	European bee-eater	Least Concern	Endangered	Not Endemic	Migratory and congregatory	Not listed	Not listed	CMS Appendix II; Bern Convention Appendix II.	No	inhabits broad river valleys, pasture and cultivated land with shelter-belts and scattered trees, meadows, and practically any open and well-timbered country, such as cork-oak woods, olive groves, tamarisks, rice fields, cereal and root crops, and Mediterranean macchia scrub.
Bird	*Emberiza melanocephala*	Black-headed Bunting	Least Concern	Data Deficient	Not Endemic	Migratory	Not listed	Not listed		No	This species breeds in open rather dry terrain with scattered trees, shrubs and hedges. It favours low-intensity farmland with cornfields or vineyards or olive groves, but also more natural habitats

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											such as mountain slopes with scrub vegetation
Bird	*Larus ridibundus*	Black-headed gull	Least Concern	Not evaluated	Not Endemic	Migratory and congregatory	Not evaluated	Annex II of the Birds Directive		No	The species chiefly breeds inland and shows a preference for shallow, calm (Snow and Perrins 1998), temporarily flooded wetland habitats (del Hoyo et al. 1996) with lush vegetation (Flint et al. 1984, del Hoyo et al. 1996).
Bird	*Podiceps nigricollis*	Black-necked grebe	Least Concern	Not evaluated	Not Endemic	Migratory and congregatory	Not listed	Not listed	Included in the Grebes Status Survey and Conservation Action Plan published in 1997	No	During the breeding season this species frequents permanent and temporary (Snow and Perrins 1998) small, shallow, highly eutrophic pools with lush vegetation, such as freshwater marshes and lakes (del Hoyo et al. 1992) with dispersed submergent vegetation and patches of reeds
Bird	*Limosa limosa*	Black-tailed godwit	Near Threatened	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II		No	In its breeding range it mostly inhabits areas with high but not dense grass and soft soil, occasionally using sandy areas; although other information suggests it may prefer short vegetation. Its

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											preferred habitats include cattle pastures, hayfields, lowland wet grasslands, grassy marshland, raised bogs and moorland, lake margins and damp grassy depressions in steppes
Bird	*Gavia arctica*	Black-throated loon	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds directive Annex I	CMS Appendix II; Bern Convention Appendix II.	No	breeds on deep, productive, freshwater lakes or extensive pools with islets, peninsulas and other inaccessible nesting sites. Outside of the breeding season the species is most common on inshore waters along sheltered coasts, occasionally also frequenting large inland freshwater bodies such as natural lakes or barrages, lagoons and large rivers
Bird	*Himantopus himantopus*	Black-winged stilt	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds directive Annex I		No	The species typically breeds in shallow freshwater and brackish wetlands with sand, mud or clay substrates and open margins, islets or spits near water level. Suitable habitats include marshes and swamps, shallow lake edges, riverbeds, flooded fields, irrigated areas, sewage ponds and fish-ponds.

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Bird	*Larus cachinnans*	Caspian gull	Least Concern	Endangered	Not endemic	Migratory and congregatory	Not listed	Annex II of the Birds Directive.	Covered under the African Eurasian Waterbird Agreement.	No	During the breeding season the species nests near lakes surrounded by reedbeds, reservoirs, rivers, and on grassy or shrubby river islands, also forming colonies on sea cliffs, rocky and sandy beaches, spits, sand-dunes, and salt-pans, and foraging in intertidal zones and in brackish coastal marshes
Bird	*Buteo buteo*	Common buzzard	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Not listed		No	inhabits a wide variety of habitats but requires at least some tree cover for nesting and roosting; ideal habitat appears to be forest edge, or mosaics of forest and open areas
Bird	*Larus canus*	Common gull	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	Annex II of the Birds Directive.	Covered under the African Eurasian Waterbird Agreement.	No	The species breeds along the coast and inland in a variety of sites not necessarily close to wetlands. On the coast it nests on grassy and rocky cliff-ledges, grassy slopes, inshore rocky islets, islands and stacks, and on sand and shingle beaches, banks and dunes amongst tide-wrack or flood debris. Inland the species nests on small islands in freshwater and saline lakes, shingle bars or small islets in streams or rivers, islets,

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											artificial structures and shores of artificial waterbodies with short, sparse vegetation, and on bog marshes, meadows and grass or heather moorland near small pools or lakes.
Bird	*Gallunula chloropus*	Common moorhen	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II		No	The species inhabits freshwater wetlands, both still and moving, requiring easy access to open water and showing a preference for waters sheltered by woodland, bushes or tall emergent vegetation. Suitable habitats include slow-flowing rivers, oxbow lakes, streams, canals, ditches, lakes, reservoirs, sites with small open water surfaces such as pools and ponds only a few metres across, swamps, marshes, seasonally flooded sites
Bird	*Aythya ferina*	Common pochard	Vulnerable	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II.	CMS Appendix II	No	This species requires well-vegetated eutrophic to neutral swamps, marshes, lakes and slow-flowing rivers with areas of open water and abundant emergent fringing vegetation.

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Bird	*Tringa totanus*	Common Redshank	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	The species is listed on Annex II (B) of the EU Birds Directive		No	The species breeds on coastal saltmarshes, inland wet grasslands with short swards (including cultivated meadows), grassy marshes, swampy heathlands and swampy moors. Non-breeding On passage the species may frequent inland flooded grasslands and the silty shores of rivers and lakes
Bird	*Actitis hypoleucos*	Common sandpiper	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed	The species is listed on Annex II of the Bern Convention	No	During the breeding season this species shows a preference for pebbly, sandy or rocky margins of fast-flowing rivers, as well as small ponds, pools and dams, clear freshwater lake shores, sheltered sea coasts with rocky or sandy beaches, tidal creeks and estuaries, and often forages in patches of dry meadow
Bird	*Tadorna tadorna*	Common shelduck	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed	CMS Appendix II. Bern Convention Appendix II.	No	The species shows a preference for saline habitats and frequents mudflats and muddy or sandy estuaries

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Bird	*Gallinago gallinago*	Common snipe	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	The species is listed on Annex II (A) and III (B) of the EU Birds Directive		No	The species breeds in open fresh or brackish marshland with rich or tussocky vegetation, grassy or marshy edges of lakes and rivers, wet hay fields, swampy meadows and marshy tundra. Outside breeding season, generally occupies similar habitats, with more use of man-made habitats, e.g. sewage farms and rice fields, upper reaches of estuaries and coastal meadows.
Bird	*Sterna hirundo*	Common tern	Least Concern	Endangered	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.		No	breeds in a wide variety of habitats in coastal and inland areas from sea-level to heights of greater than 4,000 m. Including nesting on flat rock surfaces on inshore islands, open shingle and sandy beaches, dunes and spits, vegetated inter-dune areas, sandy, rocky, shell-strewn or well-vegetated islands in estuaries and coastal lagoons, saltmarshes, mainland peninsulas and grassy plateaus atop coastal cliffs. Inland it may nest in similar habitats including sand or shingle lakes shores, shingle banks in rivers, sandy, rocky,

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											shell-strewn or well-vegetated islands in lakes and rivers, sand- or gravel-pits, marshes, ponds, grassy areas and patches of dredged soil
Bird	*Miliaria calandra*	Corn bunting	Least Concern	Not evaluated	Not endemic	Migratory	Not listed	Not listed		No	The species inhabits open rolling grasslands, both in natural steppe and in agricultural land. It tolerates scattered bushes, but avoids extensive bushy cover. In southern Europe it has a broader habitat array occupying several types of open country, including grasslands and steppes.
Bird	*Pelecanus crispus*	Dalmatian pelican	Near Threatened	Critically Endangered	Not endemic	Migratory and congregatory	Appendix I	EU Birds Directive Annex I.	CMS Appendix I and II. Bern Convention Appendix II.	No	It occurs mainly at inland, freshwater wetlands but also at coastal lagoons, river deltas and estuaries. Breeding It breeds on small islands in freshwater lakes or in dense aquatic vegetation such as reedbeds of Typha and Phragmites, often in hilly terrain.

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Bird	*Calidris alpina*	Dunlin	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	Annex I of the EU Birds Directive	Annex II of the Bern Convention.	No	In the breeding season this species frequents moist boggy ground interspersed with surface water, such as tussock tundra and peat-hummock tundra in the arctic, as well as wet coastal grasslands, salt marshes and wet upland moorland. Non-breeding In the non-breeding season this species mainly prefer estuarine mudflats, but also frequent a wide variety of freshwater and brackish wetlands
Bird	*Fulica atra*	Eurasian coot	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III.		No	The species inhabits large, still or slow-flowing waters and shows a preference for shallow water with adjacent deeper water (e.g. > 2 m) for diving, and muddy substrates, marginal, emergent, floating or submergent vegetation
Bird	*Numenius arquata*	Eurasian curlew	Near Threatened	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex I and II.		No	The species breeds on upland moors, peat bogs, swampy and dry heathlands, fens, open grassy or boggy areas in forests, damp grasslands, meadows, non-intensive farmland in river valleys, dune valleys and coastal marshlands. During the winter the species frequents muddy

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											coasts, bays and estuaries with tidal mudflats and sandflats, rocky and sandy beaches with many pools, mangroves, saltmarshes, coastal meadows and pasture and muddy shores of coastal lagoons, inland lakes and rivers.
Bird	*Pica pica*	*Common magpie*	Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Not evaluated	EU Birds Directive Annex II.		No	Everywhere
Bird	*Haematopus ostralegus*	Eurasian oystercatcher	Near Threatened	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Listed on Annex II (B) of the EU Birds Directive		No	The species breeds on coastal saltmarshes, sand and shingle beaches, dunes, cliff-tops with short grass and occasionally rocky shores, as well as inland along the shores of lakes, reservoirs and rivers or on agricultural grass and cereal fields, often some distance from water
Bird	*Nycticorax nycticorax*	Black-crowned night heron	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.		No	It occupies the forested margins of shallow rivers, streams, lagoons, pools, ponds, lakes, marshes and mangroves and may feed on pastures, reservoirs, canals, aquaculture ponds. On migration the species may also frequent dry grasslands or marine coasts.

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Bird	*Anser erythropus*	Lesser White-fronted Goose	Vulnerable	Extinct	Not endemic	Migratory and congregatory	Not listed	Listed in Annex 1 of the EU Birds Directive. It is protected in most of its key range states.		No	Rocky areas (eg. inland cliffs, mountain peaks), Artificial/Terrestrial, Shrubland, Grassland, Wetlands (inland)
Bird	*Anas crecca*	Eurasian teal	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III	CMS Appendix II.	No	preference for shallow permanent waters in the breeding season, especially those in the vicinity of woodlands with fairly dense herbaceous cover available nearby for nesting.
Bird	*Anas penelope / Mareca penelope*	Eurasian Wigeon	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III	CMS Appendix II.	No	This species breeds in lowland freshwater marshes, slow-flowing large rivers and shallow lakes and lagoons with ample submerged, floating and emerging vegetation
Bird	*Scolopax rusticola*	Eurasian woodcock	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	listed on Annex II (A) and III (B) of the EU Birds Directive		No	Breeding For breeding the species requires extensive unfragmented areas of broadleaved deciduous or mixed broadleaved/coniferous forest containing a dense undergrowth of shrubs and ground cover

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Bird	*Pluvialis apricaria*	European golden plover	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	listed on Annex I, II (B), III (B) of the EU Birds Directive	Annex III of the Bern Convention	No	The species breeds on humid moss, lichen and hummock tundra, low-lying marshes. It shows a preference for nesting on short vegetation less than 15 cm tall. Non-breeding, when on passage and in its winter quarters the species frequents freshwater wetlands, moist grasslands, pastures, agricultural land (e.g. stubble, ploughed or fallow fields)
Bird	*Anas Strepera*	Gadwall	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III	CMS Appendix II.	No	inhabits highly productive and eutrophic freshwater marsh or lake habitats in open lowland grassland, showing a preference for sheltered, shallow, standing or slow-flowing waters with abundant emergent vegetation
Bird	*Anas querquedula*	Garganey	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II.	CMS Appendix II	No	In the breeding season this species frequents small, shallow ponds and lakes with abundant floating, emergent and fringing vegetation. Non-breeding During this season the species shows a preference for large freshwater or occasionally brackish lakes, again with abundant floating, emergent and fringing vegetation

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Bird	*Plegadis falcinellus*	Glossy ibis	Least Concern	Endangered	Not endemic	Migratory and congregatory	Not listed	listed on Annex I of the EU Birds Directive	Annex II of the Bern Convention and Annex II of the Convention on Migratory Species	No	The species feeds in very shallow water and nests in freshwater or brackish wetlands with tall dense stands of emergent vegetation (e.g. reeds or rushes) and low trees or bushes. It shows a preference for marshes at the edges of lakes and rivers, as well as lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and irrigated cultivation
Bird	*Aquila chrysaetos*	Golden Eagle	Least Concern	Endangered	Not endemic	Migratory	Not listed	listed on Annex I of the EU Birds Directive		No	occupies a wide range of flat or mountainous, largely open habitats, often above the tree line, from sea level to 4000m.
Bird	*Botaurus stellaris*	Eurasian bittern	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	listed on Annex I of the EU Birds Directive	Annex II of the Bern Convention and Annex II of the Convention on Migratory Species	No	preference for quiet lowland marshes around lakes and rivers (less than 200 m above sea-level) with extensive dense young reedbeds

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Bird	*Otis tarda*	Great Bustard	Vulnerable	Data Deficient	Not endemic.	Migratory	Not listed	EU Wild Birds Directive Annex I	CITES Appendix I and II, CMS Appendix I and II and CMS MoU for Middle European Populations in place since 2002. Bern Convention Annex II, Bonn Convention Annex I	No	Species has acclimated to agricultural landscapes. It occurs in open, flat or somewhat rolling landscapes, usually with a mixture of crops (cereals, vineyards, fodder plants, in some countries also with steppic grassland
Bird	*Phalacrocorax carbo*	Great cormorant	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed	listed under the African Eurasian Waterbird	No	The species frequents both coastal and inland habitats. It also inhabits fresh, brackish or saline inland wetlands including lakes, reservoirs, wide rivers, flood waters, deep marshes with open water, swamps and oxbow lakes,

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									Agreement		requiring trees, bushes, reedbeds or bare ground for nesting and avoiding overgrown, small, very shallow or very deep waters
Bird	*Egretta alba*	Great egret	Least Concern	Endangered	Not endemic	Migratory and congregatory	Not listed	listed on Annex I of the EU Birds Directive	Annex II of the Bern Convention and Annex II of the Convention on Migratory Species	No	The species inhabits all kinds of inland and coastal wetlands although it is mainly found along the coast in the winter (e.g. in the Palearctic Region) or during droughts (e.g. in Australia). It frequents river margins, lakes shores, marshes, flood-plains, oxbows, streams, damp meadows
Bird	*Podiceps cristatus*	Great crested grebe	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed		No	species breeds on fresh or brackish waters with abundant emergent and submerged vegetation, showing a preference for non-acidic eutrophic waterbodies with flat or sloping banks and muddy or sandy substrates
Bird	*Tringa ochropus*	Green sandpiper	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed		No	During the breeding season this species inhabits damp areas in the vicinity of rivers, streams, swamps, ponds, lakes and bogs. Outside of the breeding season this species shows a preference for a wider

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											variety of inland freshwater habitats such as marshes, lake edges, sewage farms, small dams and ponds, ditches, riverbanks
Bird	*Ardea cinerea*	Grey heron	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Not listed		No	This species is a generalist in its habitat use, although shallow water and relatively large prey are among the essential characteristics of its habitat
Bird	*Pluvialis squatarola*	Grey plover	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	listed on Annex II (B) of the EU Birds Directive.		No	Frequents intertidal mudflats, saltmarshes, sandflats and beaches of oceanic coastlines, bays and estuaries. During migration it may also be found inland on lakes, pools or grasslands
Bird	*Anser anser*	Greylag goose	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Directives Annex II.	CMS Appendix II	No	inhabits wetlands surrounded by fringing vegetation in open grassland
Bird	*Podiceps auratus*	Horned grebe	Vulnerable	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex I.	Bern Convention Appendix II.	No	The species breeds on small, shallow fresh, brackish or slightly alkaline waters between 0.5 and 2 m deep and between 1 and 20 ha in area with rich floating, submergent and emergent vegetation

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Bird	*Charadrius alexandrinus*	Kentish plover	Least Concern	Not evaluated	Not endemic	Migratory	Not evaluated	listed on Annex I of the EU Birds Directive	Annex II of the Bern Convention.	No	During all seasons the species is predominantly coastal and is usually found on sand, silt or dry mud surfaces
Bird	*Alcedo atthis*	Common kingfisher	Least Concern	Not evaluated	Not endemic	Migratory	Not evaluated	EU Birds Directive Annex I.	Bern Convention Appendix II.	No	prefers still or gently flowing water with plenty of small fish, and with reeds, rushes or shrubs on the banks for perches. Streams, small rivers, canals and ditches are favoured to open waterbodies, but it also uses lakes, ponds and flooded gravel pits.
Bird	*Accipiter brevipes*	Levant sparrowhawk	Least Concern	Critically Endangered	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.		No	It inhabits woody plains, often near water, and usually ranges up to 1,000 m
Bird	*Ixobrychus minutus*	Little bittern	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex I.	Annex II of the Bern Convention and Annex II of the CMS	No	The species is most common in freshwater marshes with beds of bulrushes Typha spp., reeds Phragmites spp. or other dense aquatic vegetation, preferably also with deciduous bushes and trees such as willow Salix spp.
Bird	*Egretta garzetta*	Little egret	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	Annex II of the Bern Convention	No	Habitats frequented include the margins of shallow lakes, rivers, streams and pools, open swamps and marshes, flooded meadows, flood-plains, lagoons, irrigation canals, aquaculture ponds,

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											saltpans and rice fields (which are especially important in areas with few remaining natural wetland habitats). The species also occupies dry fields, inland savannas and cattle pastures
Bird	*Tachybaptus ruficollis*	Little grebe	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed	Bern Convention Appendix II	No	inhabits a wide range of small and shallow wetlands usually less than 1 m deep with rich vegetation (floating, submerged and emergent) and high densities of aquatic invertebrates, generally avoiding waters with large predatory fish. Suitable habitats include small lakes, ponds, the sheltered bays and vegetated shores of larger freshwater, alkaline or saline lakes and reservoirs, slow-flowing rivers
Bird	*Hydrocoloeus minutus*	Little gull	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex I.	Listed under the African Eurasian Waterbird Agreement and on	No	The species breeds inland on shallow freshwater and brackish lakes, river basins, marshes and bogs, occasionally also at coastal lagoons. Non-breeding, on migration the species occurs at sea, along shores, and on reservoirs, lagoons and lakes

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									Appendix II of the Bern Convention.		
Bird	*Athene noctua*	*Little owl*	Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Appendix II	Not listed	Bern Convention Appendix II	No	Found in a variety of semi-open habitats, ranging from parkland, orchards and cultivated fields with hedges to rocky, semi-desert regions and steppes
Bird	*Charadrius dubius*	Little ringed plover	Least Concern	Not evaluated	Not endemic	Migratory	Not listed	Not listed	listed on Annex II of the Bern Convention	No	preference for bare or sparsely vegetated sandy and pebbly shores of shallow standing freshwater pools, lakes or slow-flowing rivers
Bird	*Calidris minuta*	Little stint	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed	listed on Annex II of the Bern Convention	No	On migration this species is found along the muddy edges of small inland lakes, reservoirs, sewage farms, riverbanks and seasonal pools, as well as on coastal mudflats and seashores

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Bird	*Sterna albifrons*	Little tern	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex I.	The species is listed in Appendix II of the Convention on Migratory Species and is covered under the African Eurasian Waterbird Agreement. It is on Annex II of the Bern Convention.	No	shows a preference for islets surrounded by saline or fresh water where small fish can be caught without the need for extensive foraging flights
Bird	*Anas platyrhynchos*	Mallard duck	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III	CMS Appendix II	No	occurs in almost every wetland type although it generally avoids fast-flowing, oligotrophic, deep, exposed,

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											rough, rockbound waters and hard unvegetated areas such as rocky ground, sand dunes and artificial surfacing
Bird	*Tringa Stagnatilis*	Marsh Sandpiper	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Not listed		No	This species inhabits warm inland wetlands from open steppe to boreal forest, including shallow freshwater and brackish marshlands, grassy or marshy lake-edges, river valleys and flooded meadows.
Bird	*Ichthyaetus melanocephalus*	Meditteranean gull	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex I.	Appendix II of the Convention on Migratory Species, and is covered under the African Eurasian Waterbird Agreement. It is listed on	No	breeds on the Mediterranean coast at lagoons, estuaries and sometimes coastal saltmarsh, often also breeding inland on large steppe lakes and marshes in open lowland areas. It nests near water on flood-lands, fields and grasslands

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									Appendix II of the Bern Convention		
Bird	*Cygnus olor*	Mute swan	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II	CMS Appendix II	No	inhabits a variety of lowland freshwater wetlands such as shallow lakes, ponds, lagoons, marshes, reedbeds and slow-flowing rivers
Bird	*Caprimulgus europaeus*	European nightjar	Least Concern	Low risklc	Not endemic	Migratory	Not listed	EU Birds Directive Annex I.	Bern Convention Appendix II	No	nests on bare or sparsely vegetated ground, often on free-draining soils. It uses mainly dry, open country including lowland heaths with scattered trees and bushes, commons and moorland, forest and woodland (especially glades, clearings and edges), recently felled woodland and young forestry plantations.

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Bird	*Vanellus vanellus*	Northern lapwing	Near Threatened	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II	CMS Appendix II. Bern Convention Annex III	No	reference for breeding on wet natural grasslands, meadows and hay meadows with short swards. During the winter the species utilises large open pastures for roosting and forages on damp grassland, irrigated land, stubble and ploughed fields, riverbanks, lake shores, fresh and saline marshes, drainage ditches,and estuaries.
Bird	*Anas acuta*	Northern pintail	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III	CMS Appendix II	No	preference for open lowland grassland, prairie or tundra habitats containing freshwater, brackish and saline wetlands with shallow water
Bird	*Anas clypeata*	Northern shoveler	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not evaluated	EU Birds Directive Annex II and III	CMS Appendix II	No	inhabits permanent shallow freshwater wetlands from sea level up to 2,900 m, preferred sites being those surrounded by dense stands of reeds or other emergent vegetation whilst being free of overhanging trees or fringing forest

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Bird	*Ardea purpurea*	Purple heron	Least Concern	Endangered	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	Annex II of the Bern Convention and Annex II of the Convention on Migratory Species, under which it is covered by the African-Eurasian Waterbird Agreement	No	inhabits wetlands from sea level to 1,800m, showing a preference for dense, flooded, freshwater reedbeds (Phragmites spp.) in temperate areas. It also utilises lake shores, river margins, ditches, canals, brackish water lagoons
Bird	*Phalacrocorax pygmeus*	Pygmy cormorant	Least Concern	Critically Endangered	Not endemic	Migratory and congregatory	Not listed	Annex I of the EU Birds Directive. and Annex I of the EU Birds Directive	Annex II of the Bern Convention	No	reedbeds, transition zones between reedbeds and open waters, extensively grazed or mowed shores and wet meadows and, in winter, in coastal wetlands, along rivers, and sometimes on inland lakes

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Bird	*Calidris canutus*	Red knot	Near Threatened	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Annex II (B) of the EU Birds Directive.	CMS Appendix I	No	Outside of the breeding season the species is strictly coastal, frequenting tidal mudflats or sandflats, sandy beaches of sheltered coasts, rocky shelves, bays, lagoons and harbours, occasionally also oceanic beaches and saltmarshes
Bird	*Mergus serrator*	Red-breasted merganser	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex II.	CMS Appendix II.	No	he majority of the species winters at sea, frequenting both inshore and offshore waters, estuaries, bays and brackish lagoons but showing a preference for clear, shallow waters not affected by heavy wave action. It will also utilise large freshwater lakes on passage
Bird	*Netta rufina*	Red-crested pochard	Least Concern	Low riskcd	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex II.	CMS Appendix II.	No	inhabits inland deep fresh or brackish reed-fringed lakes, rivers, or saline and alkaline lagoons in open country, also occurring (less often) on estuaries, river deltas and other sheltered coastal habitats on passage or during the winter

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Bird	*Podiceps grisegena*	Red-necked grebe	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Bern Convention Appendix II.	CMS Appendix II.	No	frequents large inland lakes or shallow coastal areas with abundant fish stocks, often considerable distances from the shore, amongst islands in archipelagos or over drop-off zones. When foraging at sea the species shows a preference for sub-tidal locations down to a depth of 15 m with sand or gravel substrates, scattered rocks and patches of seaweed
Bird	*Gavia stellata*	Red-throated loon	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Annex I of the EU Birds Directive	Annex II of the Bern Convention and CMS Appendix II	No	Outside of the breeding season the species frequents inshore waters along sheltered coasts, occasionally occurring inland on lakes, pools, reservoirs and rivers
Bird	*Coracias garrulus*	European roller	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	Bern Convention Appendix II. CMS Appendix I & II	No	prefers lowland open countryside with patches of oak Quercus forest, mature pine Pinus woodland with heathery clearings, orchards, mixed farmland, river valleys, and plains with scattered thorny or leafy trees

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Bird	*Calidris pugnax*	Ruff	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I and II	CMS Appendix II.	No	During the non-breeding season the species occupies the muddy margins of brackish, saline and alkaline lakes, ponds, pools, rivers, marshes and food-plains, as well as freshly mown or grazed short-sward grasslands and wheat- or rice-fields, usually roosting at night in the shallow waters of lake shores. The species rarely utilises intertidal habitats but may frequent tidal mudflats and lagoons in India.
Bird	*Riparia riparia*	Sand martin	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed		Bern Convention Appendix II	No	nests colonially in newly eroded banks of rivers, streams, lakes, reservoirs and coastal cliffs. Quarries are important nesting sitesand birds may use other man-made habitats including road and railway cuttings and building work excavations
Bird	*Sterna sandvincensis*	Sandwich tern	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	CMS Appendix II. Bern Convention Appendix II.	No	species frequents sandy or rocky beaches, mudflats fringed by mangroves, estuaries, harbours and bays, often feeding over inlets and at sea

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Bird	*Otus scops*	*Eurasian scops*	Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Not listed	Not listed		No	wide variety of habitats
Bird	*Circaetus gallicus*	Short-toed snake eagle	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Annex I of the EU Birds Directive		No	uses a variety of habitats within warm temperate and tropical environments, and is recorded up to 2,300 m
Bird	*Numenius tenuirostris*	Slender-billed Curlew	Critically Endangered	Critically Endangered	Not endemic	Migratory and congregatory	Appendix I	Annex I of the EU Birds Directive. I.	CMS Appendix I and II.	No	On migration and in winter, a wide variety of habitats are used, including saltmarsh, steppe grassland, fishponds, saltpans, brackish lagoons, tidal mudflats, semi-desert, brackish wetlands and sandy farmland next to lagoons. Large coastal wetland complexes may be especially characteristic, and most records come from close to the sea. Artificial/Aquatic & Marine, Artificial/Terrestrial, Grassland, Wetlands (inland), Marine Coastal/Supratidal, Marine Intertidal; a wide variety of habitats are used, including saltmarsh, steppe grassland, fishponds, saltpans, brackish lagoons, tidal mudflats, semi-desert, brackish wetlands and sandy farmland next to lagoons. Large coastal wetland

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											complexes may be especially characteristic, and most records come from close to the sea
Bird	*Larus genei*	Slender-billed gull	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Listed on Annex I of the EU Birds Directive	CMS Appendix II. Bern Convention Appendix II	No	species is almost entirely coastal outside of the breeding season, frequenting shallow inshore waters and salt-pans, although it generally avoids harbours
Bird	*Mergellus albellus*	Smew	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	CMS Appendix II. Bern Convention Appendix II	No	The species overwinters on large freshwater lakes and reservoirs, ice-free rivers , brackish coastal lagoons, estuaries and sheltered coastal bays (although rarely on the open sea) , often resting and feeding on small bodies of water or small streams when on passage.

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Bird	*Platalea leucorodia*	Eurasian spoonbill	Least Concern	Endangered	Not endemic	Migratory and congregatory	Appendix II	Annex I of the EU Birds Directive	CMS Appendix II. Bern Convention Appendix II	No	The species shows a preference for extensive shallow wetlands with mud, clay or fine sand substrates, generally avoiding waters with rocky substrates, thick vegetation or swift currents . It inhabits either fresh, brackish or saline marshes, rivers, lakes, flooded areas and mangrove swamps, especially those with islands for nesting or dense emergent vegetation (e.g. reedbeds) and scattered trees or srubs (preferably willow Salix spp., oak Quercus spp. or poplar Populus spp.) . It may also frequent sheltered marine habitats during the winter such as deltas, estuaries, tidal creeks and coastal lagoons.
Bird	*Melanitta fusca*	Velvet scoter	Vulnerable	Not Listed	No	Migratory and congregatory	Not listed	Not listed		no	The species breeds on wooded coastlines, small freshwater lakes, pools and rivers in northern coniferous forests, wooded Arctic tundra and alpine zones, especially where there are boulder-covered or small rocky islands available for nesting with extensive herbaceous

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											vegetation, shrubs and low trees
Bird	*Aquila clanga*	Greater spotted eagle	Vulnerable	Critically Endangered	Not endemic	Migratory and congregatory	Appendix II	EU Birds Directive Annex I.	CMS Appendix I and II.	No	occurs in lowland forests near wetlands, nesting in different types of (generally tall) trees, depending on local conditions
Bird	*Tringa erythropus*	Spotted redshank	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Annex II (B) of the EU Birds Directive	Annex II of the Bern Convention	No	species frequents a variety of freshwater and brackish wetlands such as sewage farms, irrigated rice fields, brackish lagoons, salt-marshes, salt-pans, sheltered muddy coastal shores and mudflats , marshes and marshy lake edges , small reservoirs, pools and flooded grasslands
Bird	*Ardeola ralloides*	Squacco heron	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Annex I of the EU Birds Directive	CMS Appendix II. Bern Convention Appendix II	No	inhabits permanent or temporary wetlands showing a preference for fresh waters with abundant marsh vegetation, reedbeds, nearby bushes, trees and scrub . Habitats frequented include swampy plains, river valleys, deltas, lakes, ponds, canals

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											and ditches although rice paddyfieldsare now the principle habitat throughout much of its range
Bird	*Burhinus oedicnemus*	Eurasian stone curlew	Least Concern	Critically Endangered	Not endemic	Migratory and congregatory	Not listed	CMS Appendix II. EU Birds Directive Annex I. Bern Convention Appendix II.		No	The species inhabits lowland heath, semi-natural dry grassland, infertile agricultural grassland, steppe on poor soil, desert and extensive sand-dunes . It breeds on open, bare ground or areas with little vegetation , and has adapted to arable land but only where crops are short or have an open structure during the breeding season, such as maize, carrots, sugar beet and sunflowers
Bird	*Dendrocopos syriacus*	*Syrian woodpecker*	Least Concern	Not evaluated	Not endemic	Not migratory; Not congregatory	Not listed	EU Birds Directive Annex I	Bern Convention Appendix II	No	occurs in open country with wooded areas. It is often found in plantations of all kinds, including olive, pecan (Carya) and avocado in the south, and vineyards in central Europe, where it is also seen in roadside trees and groups of trees, mainly near habitations, as well as forest edges, parks and gardens

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Bird	*Aythya fuligula*	Tufted duck	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	CMS Appendix II. EU Birds Directive Annex II and III.		No	The species breeds in lowland regions and shows a preference for eutrophic waters 3-5 m deep (avoiding lakes deeper than 15 m) with open water, islands for breeding and abundant marginal and emergent vegetation. It is common on large, freshwater lakes, ponds, reservoirs, gravel-pits and quiet stretches of wide slow-flowing rivers during this season
Bird	*Rallus aquaticus*	Water rail	Least Concern	Not evaluated	Not endemic	Migratory	Not listed	EU Birds Directive Annex II		No	The species requires muddy ground for foraging and shows a preference for shallow still or slow-flowing water 5-30 cm deep, surrounded by dense riparian, emergent, submergent or aquatic vegetation
Bird	*Circus aeruginosus*	Western marsh harrier	Least Concern	Vulnerable	Not endemic	Migratory and congregatory	Not listed	Annex I of the EU Birds Directive		No	inhabits extensive areas of dense marsh vegetation, in fresh or brackish water, generally in lowlands but up to 2,000 m
Bird	*Ciconia ciconia*	White stork	Least Concern	Critically Endangered	Not endemic	Migratory and congregatory	Not listed	Annex I of the EU Birds Directive, Annex II		No	The species inhabits open areas, generally avoiding regions with persistent cold, wet weather or large tracts of tall, dense vegetation such as

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								of the Bern Convention and Annex II of the Convention on Migratory Species			reedbeds or forests, shallow marshes, lakesides , lagoons, flood-plains, rice-fields and arable land especially where there are scattered trees for roosting.
Bird	*Lullula arborea*	Woodlark	Least Concern	Not evaluated	Not endemic	Migratory	Not listed	EU Birds Directive Annex I		No	inhabits a variety of open and semi-open habitats on well-drained soils, with a preference for acidic, sandy soils. It favours unmanaged or poorly managed habitats such as low-intensity or abandoned farmland, heathland, young forestry plantations, recently felled woodland, open woodland and scrub, orchards, steppes, woodland edges and clearings, wooded coastal dunes and parkland
Bird	*Lanius senator*	Woodchat shrike	Least Concern	Not evaluated	Not endemic	Migratory	Not listed	Bern Convention Appendix II.		No	requires shrub-like or arboreal cover, open ground offering rich supply of large insects, and perches with commanding view of area. It is commonly found in semi-open areas with bushes and well-spaced trees, such as open woodland, old orchards, olive (Olea) groves,

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											gardens, and parks or hedgerows with large thorny bushes; in Greece it prefers open pine (Pinus) forest
Bird	*Motacilla flava*	Western yellow wagtail	Least Concern	Not evaluated	Not endemic	Migratory and congregatory	Not listed	Bern Convention Appendix II.		No	occupies a range of damp or wet habitats with low vegetation, from damp meadows, marshes, waterside pastures, sewage farms and bogs to damp steppe and grassy tundra.
Bird	*Pelecanus crispus*	Dalmatian pelican	Near Threatened	Critically Endangered	Not endemic	Migratory and congregatory	Appendix I	EU Birds Directive Annex I.	Bern Convention Appendix II. CMS Appendix I and II.	No	Marine Neritic, Wetlands (inland), Marine Coastal/Supratidal; It occurs mainly at inland, freshwater wetlands but also at coastal lagoons, river deltas and estuaries

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Bird	*Anser erythropus*	Lesser White-fronted Goose	Vulnerable	Extinct	Not endemic	Migratory and congregatory	Not listed	Listed in Annex 1 of the EU Birds Directive. It is protected in most of its key range states.	CMS Appendix I and II and designated for Concerted Action (CMS Resolution 5.1). Listed in Table 1 Column A of the Action Plan under the African-Eurasian Migratory Waterbird Agreement (AEWA) and in Annex	No	Rocky areas (eg. inland cliffs, mountain peaks), Artificial/Terrestrial, Shrubland, Grassland, Wetlands (inland)

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									II 'Strictly protected species' of the Bern Convention.		
Bird	*Lullula arborea*	Wood lark	Least Concern	Not listed	Not endemic	Migratory		EU Birds Directive Annex I		No	Forest, Artificial/Terrestrial, Shrubland, Grassland
Bird	*Branta ruficollis*	Red-breasted goose	Vulnerable	Critically Endangered	Not endemic	Migratory and congregatory	Appendix II	Not listed	CMS Appendix I and II.	No	Wetlands (inland), Grassland, Artificial/Terrestrial, Marine Coastal/Supratidal; It breeds in tundra or scrubby 'wooded' tundra, in close proximity to rivers and gulley. It favours high and dry areas on steep river banks and precipices, low hills, rock outcrops and rocky islands. Less commonly it

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											inhabits low islands in lowland areas. The distribution of geese from year to year depends a lot on differences in lake water levels.
Bird	*Oxyura leucocephala*	White-headed duck	Endangered	Critically Endangered	Not endemic	Migratory and congregatory	Appendix II	CITES Appendix II.	CMS Appendix I and II. The species is legally protected in many range countries, and occurs in a number of protected areas.	No	Wetlands (inland), Artificial/Aquatic & Marine, Marine Coastal/Supratidal; Habitats include saline inland lakes, coastal lakes and lagoons, and even the coastal waters of inland seas

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Bird	*Marmaronetta angustirostris*	Marbled teal	Vulnerable	Not Evaluated	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	CMS Appendix I and II.	No	Wetlands (inland), Marine Coastal/Supratidal, Artificial/Aquatic & Marine; t is adapted to temporary, unpredictable, Mediterranean-type wetlands and breeds in fairly dry, steppe-like areas on shallow freshwater, brackish or alkaline ponds with well vegetated shorelines, and rich emergent and submergent vegetation. It also breeds on delta marshes where receding waters leave behind large areas of shallow water with abundant sedges and bulrushes. In addition it may use slow rivers and saline coastal lagoons, and man-made wetlands including fish-rearing ponds, small reservoirs and sewage farms. Although it favours brackish wetlands, it tends to avoid waters of high salinity.

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Bird	*Aythya nyroca*	Ferruginous duck	Near Threatened	Critically Endangered	Not endemic	Migratory and congregatory	Not listed	EU Birds Directive Annex I.	Appendix III of the Bern Convention and on Appendices I and II of the Bonn Convention. CMS Appendix I and II.	No	Wetlands (inland), Artificial/Aquatic & Marine, Marine Coastal/Supratidal; it shows a strong preference for fresh standing water and is very rarely found on flowing streams or rivers. It requires shallow water 30-100 cm deep close to littoral vegetation for feeding and generally avoids large open areas
Bird	*Gallinago media*	Great snipe	Near Threatened	Critically Endangered	Not enedemic	Migratory	Not listed	EU Birds Directive Annex I.	CMS Apendix II	No	Wetlands (inland), Grassland, Shrubland, Savanna, Artificial/Terrestrial; generally associated with moist to wet terrain, it is tolerant of wooded, and occasionally well-drained sites that adjoin bogs/fens or marshes
Bird	*Falco naumanni*	Lesser Kestrel	Least Concern	Vulnerable	Not enedemic	Migratory and congregatory	Not listed				It is usually a colonial breeder, often in the vicinity of human settlements. It forages in steppe-like habitats, natural and managed grasslands, and non-intensive cultivation. It is mainly migratory, with most

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											breeders overwintering in sub-Saharan Africa, although some travel to parts of north-west Africa, southern Europe and southern Asia
Bird	*Falco tinnunculus*	Common kestrel	Least Concern	Vulnerable	Not enedemic	Migratory and congregatory	Not listed	Not listed			The species tolerates a wide range of open and partially forested habitats, and has been recorded up to 4,500 m (del Hoyo et al. 1994).
Bird	*Accipiter gentilis*	Northern Goshawk	Least Concern	Vulnerable	Not enedemic	Migratory and not congregatory	Not listed	Not listed			It inhabits mature woodland, preferring areas near clearings and the forest edge (del Hoyo et al. 1994).
Bird	*Falco subbuteo*	Eurasian Hobby	Least Concern	Vulnerable	Not enedemic	Migratory and congregatory	Not listed	Not listed			It occurs in open wooded areas, and has been recorded up to 4,000 m
Bird	*Upupa epops*	Common Hoopoe	Least Concern	Vulnerable	Not enedemic	Migratory and not congregatory	Not listed	Not listed	Bern Convention Appendix II		This species occupies open country such as pastures, parkland, orchards, sand-heathland, olive groves and vineyards as well as steppe and broken ground in Asia and dry wooded savanna in Africa. It requires the presence of features offering perches, shade, nest-sites and accessible food.