



Montenegro: Construction of Bar-Boljare Highway - Environmental and Social Assessment

Gap Analysis & Disclosure Pack section Mateševo – Andrijevica

CRITICAL HABITAT ASSESSMENT

Consultant



PASECO SP LTD

26, Fokionos Negri str.,

11361 Athens, Greece

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Abbreviations

CBMP	Construction Biodiversity Management Plan
CH	Critical Habitat
CON	Construction
CR	Critical
EBRD	European Bank for Reconstruction and Development
EEAA	Ecologically Appropriate Areas of Analysis
EN	Endangered
EoO	Extent of Occurrence
ESIA	Environmental and Social Impact Assessment
ESP	Environmental and Social Policy
EU	European Union
GIP	Good International Practice
IUCN	International Union for Conservation of Nature
LC	Least Concern
MNE	Montenegro
NT	Near Threatened
OPE	Operation
PBF	Priority Biodiversity Feature
PR	Performance Requirement
SER	Serbia
TEM	Trans-European Motorways
TEN-T	Trans-European Transport
VU	Vulnerable

1 SCOPE

The present document provides the Critical Habitat Assessment for the Bar-Boljare Highway - section Mateševu – Andrijevu.

The assessment is performed according to the requirements of EBRD's PR6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources and the relevant guidance note issued in March 2023.

The CH assessment was based on the results of the specialized field surveys that were conducted for the section Mateševu – Andrijevu in the period 2019-2021 and the additional surveys of October 2024.

2 PROJECT DESCRIPTION

The Bar-Boljare Highway (BBH) in its length of 168 km, which the section Mateševu – Andrijevu is a part of, forms the Trans European Motorway (TEM) branch route through Montenegro. This BBH road is part of the E-80 and E-65 routes, comprising SEETO Route 4 [Romanian border/Vatin – Belgrade (SER) – Podgorica (MNE) – Bar (MNE)]. The Highway connects the Adriatic Coast (Port of Bar) to the border of Serbia (Boljare) and with ports on the Danube (Corridor VII and Corridor X) and, ultimately, with the entire so-called Pan-European corridor network and integrate the TEN-T extension in the Western Balkans.

The development phases for the entire BBH are as follows:

- Section I: Smokovac–Mateševu
- Section II: Mateševu–Andrijevu and the Smokovac–Tološi–Farmaci bypass;
- Section III: Andrijevu–Boljare
- Section IV: Podgorica – Đurmani

The intention of Montenegro to construct the Bar – Boljare Highway was initiated back in 2001 by the Parliamentary decision to proceed with the development of the Spatial Plan ("Official Gazette of MNE" no. 45/01). The Spatial Plan of Montenegro up to 2020 was subsequently adopted in 2008 ("Official Gazette of MNE" no. 24/2008) reserving space by defining a dedicated corridor for the Highway BBH. The objective of defining the corridor was to safeguard the space from other spatial demands and use (Spatial Plan, Pg.133). On October 19, 2023 the Government of MNE has determined the Draft Spatial plan of Montenegro up to the year 2040. After the disclosure, public insight, and consultation period, the final draft of the Spatial Plan was adopted and disclosed on January 29, 2024 by the Ministry of Spatial Planning, Urbanism and State Property. The Strategy of transport development in Montenegro (2019-2035) has included the completion of the Section "Mateševu - Andrijevu" part of the Bar - Boljare Highway into the unified list of priority infrastructure projects .

The section Mateševu–Andrijevu, subject to the present ESIA disclosure dossier, is 23.5 km long (14% of the total length of the Bar - Boljare highway).



Figure 1: The Bar-Boljare Highway and Mateševo - Andrijevića section

The start point is after the Mateševo IC (Smokovac – Mateševo section). The end of the exploration area is the area of the Kraštica River, tributary of Lim River, near Andrijevića. Part of the Mateševo-Andrijevića highway section is located within the municipality of Kolašin while the rest is located within the municipality of Andrijevića.

The activities undertaken in preparation of the mandatory documentation for the Mateševo-Andrijevića Section, can be observed through two continuous development phases, without overlapping sequences.

The first phase, started by the General Design (Louis Berger SAS-Paris, Simm Engineering – Podgorica) in 2008, when three alignment alternative solutions were examined. The work continued in 2018 when the Government of Montenegro benefited from Technical assistance services (TA) for the preparation of the Preliminary Design and Social Impact Assessment (ESIA) supported through a Western Balkans Investment Framework (WBIF) Grant. Under the Scope of work of the said TA together with earlier efforts financed by the Government of Montenegro, the following studies were developed:

- Preliminary Design for the Section Mateševo-Andrijevića adopting Variant 3, approved by the State Review Committee (2022)
- National EIA for the Mateševo – Andrijevića section, (2024) for which the consent of the Environmental Protection Agency was given with the Decision 03-UP-652/28 dated May 14th, 2024, based on the above Preliminary Design.
- Preliminary ESIA for the Mateševo – Andrijevića, drafted under the WBIF, based on the approved Preliminary Design, inclusive of a LARF and SEP, submitted in July 2023, which was not disclosed as final nor consulted.
- Preliminary ESIA prepared as a part of the Feasibility Study for the entire Bar-Boljare highway (2021).
- Strategic environmental impact assessment for Detailed spatial plan of Bar-Boljare highway (2008);

The second phase started during the first half of 2024 and was marked by two determining factors:

- (1) the Intention of EBRD to financially support the Government of Montenegro through a loan which required assessment on compliance of the entire project activities with, inter alia, the Environmental and Social Policy of EBRD (2019) and the applicable Performance Requirements, and consequently
- (2) the decision of MONTEPUT to address, at that time already raised and known concerns of three out of eight settlements, through formalizing and enhancing stakeholder engagement activities in exploring viable alternatives to the alignment in the areas of concerns (from the exit portal of Tunnel Trešnjevik to interchange Andrijevića).

The overview of the current status of activities and documentation required to continue with development of the Section Mateševo-Andrijevića, and planned schedule is summarized below:

- **Engineering design and Construction schedule:** the Preliminary Design, which includes preliminary routing and layout, was prepared in 2022 and 2024 (for the change in the alignment). The Detailed Design phase is expected to start in 2025 following the award of the Design and Build Contract. MONTEPUT foresees a time for completion of 60 months starting from the Commencement date (with additional 24 months Defect Notification Period). This procurement procedure is guided by EBRD Procurement guidelines utilizing the EBRD Standard Bidding Documents.
- **Supervision over Design and Works:** MONTEPUT has published an invitation for Prequalification for selection of Supervision for preparation of Detailed Design and Construction Works for the Mateševo - Andrijevića Section. The Contract is expected to be awarded beginning of 2025.
- **Technical Assistance** - MONTEPUT has published an invitation for Prequalification for selection of a Consultant to support MONTEPUT in managing the Design and Works Contractor the Mateševo - Andrijevića Section. The Contract is expected to be awarded beginning of 2025.
- **Expropriation:** the Project will require private land rights and assets to be acquired through expropriation. However, the Detailed Design will confirm the exact project land needs and economic and physical displacement impacts after mitigation measures have been considered and operationalized. There are some estimations of the area required including the number of physical and economic displacement cases. The Route change has also changed the physical footprint, minimized land acquisition and physical displacement. The changes also require changes in the declared and disclosed decision on Public interest.
- **Civil Works:** Preparatory works are expected to commence mid-2025, while the Permanent works will commence after approval of the Detailed Design by the Review Committee, the Road Safety Audit and after the Construction permit is obtained, (expected in late 2026/early 2027). The Detailed Design will be developed in sub-sections each of which will have a separate Construction permit to allow phased construction.

3 EBRD REQUIREMENTS

The EBRD Environmental & Social Policy (ESP, 2019) and the Performance Requirement 6 (PR 6) recognise that the conservation of biodiversity and sustainable management of living natural resources are fundamental to environmental and social sustainability.

Th this end, the objectives of PR are to:

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

PR6 contains two classes of important biodiversity, likewise based on the principles of threat (vulnerability) and geographic rarity (irreplaceability):

- Priority Biodiversity Features; and
- Critical Habitat.

The definition of the Priority Biodiversity features and Critical Habitats, as per PR6¹ are:

Table 1: Definition of Priority Biodiversity Features and Critical Habitats

Priority Biodiversity features (PR6 para.12)	Critical habitats (PR6 para.14)
(i) threatened habitats	(i) highly threatened or unique ecosystems
(ii) vulnerable species	
▪ Threatened species	(ii) habitats of significant importance to endangered or critically endangered species
▪ Range restricted species	(iii) habitats of significant importance to endemic or geographically restricted species
▪ Migratory and congregatory species	iv) habitats supporting globally significant migratory or congregatory species
(iii) significant biodiversity features identified by a broad set of stakeholders or governments	
(iv) ecological structure and functions needed to maintain the viability of priority biodiversity features	
	v) areas associated with key evolutionary processes

Critical habitat assessment

The logical flow for the Critical Habitat assessment is presented in the following diagram

¹ EBRD ESP 2019

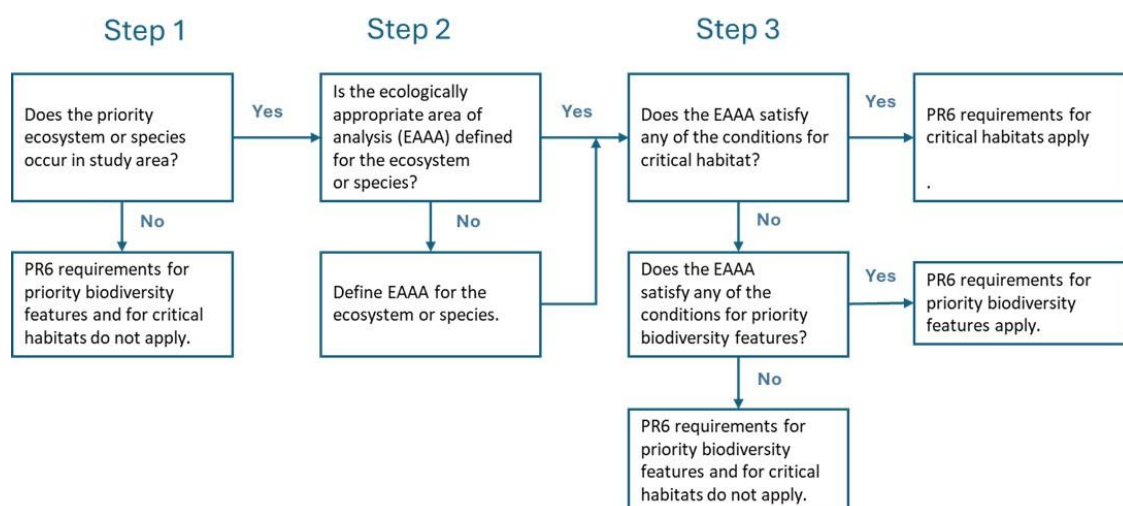


Figure 2: Logical flow of critical habitat assessment

Source: Guidance note EBRD Performance Requirement 6: Biodiversity conservation and sustainable management of living natural resources, March 2023

According to the EBRD guidelines, the criteria and conditions for identifying priority biodiversity features and critical habitats are presented in the following table:

Table 2: Criteria and conditions for identifying priority biodiversity features and critical habitats

Criterion	Priority biodiversity feature	Critical habitat
1. Priority ecosystems		
Threatened ecosystems (a) Habitats listed in Annex 1 of EU Habitats Directive (EU member states only) or Resolution 4 of Bern Convention (signatory nations only) (b) IUCN Red List EN or CR ecosystems	(PR6 para. 12-i) (a) EAAA is habitat type listed in Annex 1 of EU Habitats Directive or Resolution 4 of Bern Convention (b) EAAA < 5 per cent of the global extent of an ecosystem type with IUCN status of CR or EN	(PR6 para. 14-i) (a) EAAA is habitat type listed in Annex 1 of EU Habitats Directive marked as “priority habitat type” (b) EAAA ≥ 5 per cent of global extent of an ecosystem type with IUCN status of CR or EN (c) EAAA is ecosystem determined to be of high priority for conservation by national systematic conservation planning
2. Priority species and their habitats		
Threatened species (a) Species and their habitats listed in EU Habitats Directive and Birds Directive (EU members only) or Bern Convention (signatory nations only) (b) IUCN Red List EN or CR species	(PR6 para. 12-ii) (a) EAAA for species and their habitats listed in Annex II of Habitats Directive, Annex I of Birds Directive, or Resolution 6 of Bern Convention (b) EAAA supports < 0.5 per cent of global population OR < 5 reproductive units of a CR or EN species.	(PR6 para. 14-ii) (a) EAAA for species and their habitats listed in Annex IV of the Habitats Directive (See EU restrictions) (b) EAAA supports ≥ 0.5 per cent of the global population AND ≥ 5 reproductive units of a CR or EN species (c) EAAA supports globally significant population of VU species necessary to prevent a change of IUCN Red List

Criterion	Priority biodiversity feature	Critical habitat
(c) IUCN Red List VU species (d) Nationally or regionally (for example, Europe) listed EN or CR species	(c) EAAA supports VU species (d) EAAA for regularly occurring nationally or regionally listed EN or CR species	status to EN or CR, and satisfies threshold (b) (d) EAAA for important concentrations of a nationally or regionally listed EN or CR species
Range-restricted species	(PR6 para. 12-ii) (a) EAAA for regularly occurring range restricted species	(PR6 para. 14-iii) (a) EAAA regularly holds ≥ 10 per cent of global population AND ≥ 10 reproductive units of the species
Migratory and congregatory species	(PR6 para. 12-ii) (a) EAAA identified as per Birds Directive or recognised national or international process as important for migratory birds (especially wetlands)	(PR6 para. 14-iv) (a) EAAA sustains, on a cyclical or otherwise regular basis, ≥ 1 per cent of the global population at any point of the species' lifecycle (b) EAAA predictably supports ≥ 10 per cent of global population during periods of environmental stress

Montenegro is a non-EU country but a Bern Convention signatory (signature date 03/03/2009, ratification date 1/10/2009, entry into force 1/2/2010). For the present CH assessment, the following approach was applied:

- Use of IUCN and Bern Convention as primary references for identifying species and habitats of international importance.
- Reference to EU Directives, particularly for habitats and species that might be protected under future EU membership.
- Cross-reference with national legislation in cases where the country has developed its own lists or protection schemes.

4 CRITICAL HABITAT ASSESSMENT

4.1 Step 1 – Priority ecosystems and species

Due to the nature and the literature knowledge regarding biodiversity in the project's area, the need for site surveys was recognized at the beginning of the project and baseline surveys were performed.

4.2 Step 2 - Ecologically Appropriate Areas of Analysis (EAAA)

In the framework of the Preliminary ESIA, a baseline survey of the fauna and flora & vegetation (habitats) in the project area was conducted (2019-2021). A buffer zone of 500 m from both sides of the alignment was determined as the area of the analysis.

As a new alignment is proposed from the Trešnjevik tunnel to Andrijevića, new baseline surveys for this part of the highway were performed in October 2024.

The main outcomes of the surveys are presented below.

4.2.1 Flora and vegetation

Flora species

Status of protection of taxa (species and subspecies). In the investigated area (on the route Mateševo - Andrijevića), 12 plant taxa (species and subspecies) protected at the national and/or international level were found during the first surveys of 2019-2024, of which 4 are present in the new Trešnjevik-Andrijevića section.

All identified protected species belong to the orchid family (*Orchidaceae*) and have national protection - protected Decisions on protection of certain plant and animal species ('Official Gazette of the Republic of Montenegro' 76/06) and international protection. These *Orchidaceae* taxa are:

Table 3: *Orchidaceae* taxa in the project area

Latin name	Survey		Common English name	Montenegrin name
	2019-2021	2024		
<i>Anacamptis coriophora</i>	✓		Bug orchid	Kožasti kačun
<i>Anacamptis morio</i> <i>subsp. caucasica</i>	✓		Green-winged orchid	Kavkaski kačun
<i>Anacamptis morio</i> <i>subsp. morio</i>	✓	✓	Green-winged orchid	Obični kačun, Salep
<i>Cephalanthera</i> <i>longifolia</i>	✓		Narrow-leaved helleborine	Crvena naglavica
<i>Cephalanthera rubra</i>	✓	✓	Red helleborine	Bijela dugolisna naglavica
<i>Dactylorhiza cordigera</i> <i>ssp. bosniaca</i>	✓		Bosnian Heart-flowered Marsh-orchid	Bosanski tresavski kačunak

Latin name	Survey		Common English name	Montenegrin name
<i>Gymnadenia conopsea</i>	✓	✓	Fragrant orchid	Crveni ili mrežasti vranjak
<i>Neottia ovata</i>	✓		Common Twayblade	Jajoliki čopotac
<i>Neotinea tridentata</i>	✓		Three-toothed orchid	Trozubi kačun
<i>Neotinea ustulata</i>	✓		Burnt orchid	Medeni kačun
<i>Traunsteinera globosa</i>	✓		Round headed orchid	Okruglasti kačun
<i>Myricaria germanica</i>	✓	✓	German Tamarisk	

Endemic taxa (species and subspecies). In the territory of Montenegro, 372 endemic taxa of the Balkans (levels of species and subspecies) were found, of which 39 taxa were distributed only in Montenegro (Vuksanović et al. 2016). In the investigated area (on the route Mateševo - Andrijevića), 5 endemic plant taxa (species and subspecies) of the Balkan Peninsula were found, of which one (*Silene sendtneri*) in the Trešnjevnik-Andrijevića section.

Table 4: Endemic flora taxa in the project area

Latin name	Common English name	Montenegrin name
<i>Dactylorhiza cordigera ssp. bosniaca</i>	Bosnian Heart-flowered Marsh-orchid	Bosanski tresavski kačunak
<i>Cirsium appendiculatum</i>	Thistle	Čičak
<i>Lactuca pancicii</i>	Pancic's sow-thistle	Pančičev mliječ
<i>Lilium bosniacum</i>	Bosnian Turk's-cap lily	Bosanski ljiljan
<i>Silene sendtneri</i>	Sedtner's bladder	Sendtnerova pucalica

Invasive alien plant species. Along the highway route Mateševo - Andrijevića, the presence of five invasive plant species was ascertained: *Robinia pseudaccacia*, *Reynoutria japonica* and *Erigeron canadensis*, *Helianthus tuberosus* and *Ailanthus altissima*. The species *R. pseudaccacia* and *R. japonica* were found in a number of localities, while the species *E. canadensis* and *H. tuberosus* were found only along the Lim River in one locality. Three specimens of *Ailanthus altissima* (Tree of Heaven) were recorded in the village of Kralje.

Habitats.

According to the 2019-2021 surveys, in the western part (Mateševo-Trešnjevnik) the route of the road passes through the riparian habitats of the rivers Drcka, Vranještica, Ljubaštica and numerous streams, acidophilic forests and woodlands, hilly and mountain meadows. Most of the habitats are mosaically distributed. The area is exposed to anthropogenic influence, which is reflected in the felling of the forest, the regulation of the river flow (Drcka-Đekići), the flow of meadows and pastures. Representative forest stands in Crnja and Ljubaštica (local population and concessionaires) were not spared from felling.

The Trešnjevnik–Andrijevića section passes through the Trešnjevnik pass, traverses the eastern area of the Lim River basin, and ends in Andrijevića, following the Lim River toward Berane. Most habitats in this area are distributed in a mosaic pattern. The landscape has been impacted by human activities, including deforestation, river flow regulation (Drcka-Đekići), and meadow and pasture maintenance.

The impact zone includes the highway route across Crni Potok and Dragovo Katunište through Trešnjevnik. From Trešnjevnik, the road continues toward the Novovića Potok area, where the riparian forests along the Novovića Potok stream exhibit moderate ecological quality, with noticeable deforestation of surrounding beech-spruce forests. The route crosses a bridge over the mouth of Novovića Potok, where it meets the Rajovića River, descending from the northwest, north of the village of Lanište. It then traverses groves, which are degraded remnants of turkey oak and beech forests, often interspersed with clearings overgrown with common bracken (*Pteridium aquilinum*). Around the villages of Gnjili Potok and Miravčina, mountain meadows of good ecological quality and moderate ecological sensitivity are present. Representative riparian forests are well-developed along the Dubokalj stream, which flows into the Rajovića River.

The road descends to the village of Kralje, where mountain meadows and well-maintained orchards are prevalent. In Kralje, along the Kraštica River, riparian vegetation has developed but is not representative, due to anthropogenic influence. The route then ascends through forests of high ecological value within the EMERALD area. To the south, the Kraštica River flows within the EMERALD area and is bordered by high-quality riparian forests. Along the Kraštica River and surrounding hamlets, there are mowed hilly meadows of good ecological value.

In the vicinity of Peovac village, beech forests and fragments of oak-hornbeam forests within the EMERALD area have been established. The route passes the Bandovića Most bridge and descends to the existing regional road from Berane to Andrijevića, reaching the left bank of the Lim River in Andrijevića (EMERALD area). In the Lugovi hamlet, representative *Alnetum* riparian forests are well-developed, with communities of gray willow and German tamarisk along the Lim River, accompanied by herbaceous vegetation. The German tamarisk (*Myricaria germanica*) habitat on the riverbank is a rare habitat type in Montenegro, and a representative community is located only 60 meters from the road route. These riparian habitats are highly ecologically sensitive. Surrounding scattered houses, there are mowed mountain meadows, orchards, and fields. North of the route, above the Berane-Andrijevića regional road, lie turkey oak forests, mountain meadows, and orchards in the hamlets of Prisoja, Slatina, and Guvna. Southeast of the route, on the Lim River's right bank, communities with gray willow are present, along with mountain meadows and turkey oak forests above the bank. The route ends in the village of Sitna Luka, where orchards, meadows, and arable land are present.

The Trešnjevnik-Andrijevića road section crosses two main watercourses (Rajovića River and Lim River), which, along with various streams, form a network of forest habitats. These habitats are connected to larger forest areas, creating important corridors for amphibians, reptiles, small mammals, and invertebrates, and also serve as navigational aids for bats. The presence of large trees and shrubs provides suitable shelter and nesting conditions for bats and birds, contributing to a high level of ecological sensitivity in forest habitats and their networks.

Turkey oak forests, the Kraštica River, and habitats around the Lim River are areas of significant biodiversity and provide various meadows beneficial for fauna development, making them highly sensitive.

Habitat analyses have identified 14 habitats of the NATURA 2000 network during the 2019-2021 surveys (of which 11 were also identified in the 2024 surveys), which are of greater importance, as well as orchards that occur in the villages from Kralja to Sitna Luka

4.2.2 Fish fauna (Ichthyofauna)

4.2.2.1 Findings of surveys of 2019-2021

■ Drcka River

In the drainage basin of Tara River, nine (9) species of fish have been recorded up to now. Also, earlier investigation in the past confirmed the presence of five (5) species from 4 families in the Drcka River on the investigated sampling sites (Marić & Milošević, 2011; Marić, 2019) as it follows:

Familia: Salmonidae

Salmo labrax (Pallas.1814) – Black Sea trout

Familia: Thymallidae

Thymallus thymallus (Linn. 1758) - European Grayling

Familia: Cyprinidae

Barbus balcanicus (Kotlik, Tsigenopoulos, Rab and Berrebi, 2002) - Large spot barbel

Phoxinus csikii (Hanko, 1922) - Danube Minnow

Familia: Cottidae

Cottus gobio (Linn. 1758) – European Bullhead

During the investigation, species *Phoxinus csikii* was not recorded. According to former data, this species was represented in a small number, and was not recorded at all investigated sites within her areal of distribution. The following table shows list of fish species from Drcka River with their common name (English and Montenegrin).

Table 5: Findings of fish species from Drcka River

Latin name	English common name	Montenegrin common name	Literature data	Survey
<i>Salmo labrax</i>	Black Sea trout	Crnomor. pot. pastrmka	+	+
<i>Thymallus thymallus</i>	European grayling	Lipljen	+	+
<i>Barbus balcanicus</i>	Large spot barbel	Balkanskaa mrena	+	+
<i>Phoxinus csikii</i>	Danube Minnow	Dunavska gaovica	+	-
<i>Cottus gobio</i>	European Bullhead	Peš	+	+

■ Lim River and Zlorečica River

Two localities on the Lim River and one on its tributaries Zlorečica River were selected for a more reliable view of the possible impacts of the construction highway on aquatic organisms: fish and aquatic macroinvertebrates. The Zlorečica River is in the immediate vicinity of the works, and its confluence with the Lim River is just below Andrijevića. Obtained data on the ichthyofauna of the Zlorečica River will, in subsequent studies (monitoring), show if there was an impact and what was its extent during the construction and during the exploitation of the highway on the fish in its immediate surrounding.

Based on the available literature data (Drecun, 1962; Maric and Milosevic, 2011; Maric, 2019), in the Lim River and its whole drainage basin there are 24 fish species (+ 1 river lamprey) from 8 fish families and one lamprey family (Petromyzonidae) (list below):

Class Monorhina (Agnatha) - lamprey

Fam. Petromyzonidae

Eudontomizon sp. (cf. *E. vladikovi* Oliva & Zanandrea, 1959)

Class Osteichthyes

Oncorhynchus mykiss (Walbaum, 1792) – rainbow trout

Salmo labrax Pallas, 1814 – Black Sea trout

Hucho hucho (Linnaeus, 1758) – Huchen

Thymallus thymalus (Linnaeus, 1758) - European grayling

Alburnus alburnus (Linnaeus, 1758) – bleak

Alburnoides bipunctatus (Bloch, 1782) – spirlin,

Barbus balcanicus (Kotlik, Tsigenopoulos, Rab and Berrebi, 2002) – large spot barbel

Barbus barbus (Linnaeus, 1758) – barbel

Chondrostoma nasus (Linnaeus, 1758) - nase

Gobio obtusirostris (Valenciennes, 1842) - Danube gudgeon

Leuciscus leuciscus Linnaeus, 1758 – dace

Squalius cephalus (Linnaeus, 1758) – chub

Rutilus virgo (Linnaeus, 1758) - cactus roach

Telestes ryssela (Heckel, 1852) - Danube riffle dace

Scardinius erythrophthalmus (Linnaeus, 1758) - rudd

Phoxinus phoxinus (Hankó, 1922, 1758) - Danube minnow

Cobitis elongata Heckel et Kner, 1858 – Balkan spined loach

Misgurnus fossilis (Linnaeus, 1758) - Weather loach #

Sabanajewia balcanica (Karaman, 1922) – Balkan golden loach

Barbatula barbatula (Linnaeus, 1758) – stone loach

Lepomis gibbosus Linnaeus, 1758 – pumpkinseed

Esox lucius Linnaeus, 1758 – pike

Lota lota (Linnaeus, 1758) – burbot

Cottus gobio (Linnaeus, 1758) – European bullhead

Table 6: Findings of fish species from Lim River and its tributary Zlorečica River

Latin name	English common name	Montenegrin common name	Literature data	This report
<i>Oncorhynchus mykiss</i>	Rainbow trout	Kalifornijska pastrmka	+	–
<i>Salmo labrax</i>	Black Sea trout	Crnomorska pot. pastrmka	+	+
<i>Hucho hucho</i>	Huchen	Mladica	+	+

Latin name	English common name	Montenegrin common name	Literature data	This report
<i>Thymallus thymallus</i>	European grayling	Lipljen	+	–
<i>Alburnus alburnus</i>	Bleak	Zela, dunavska ukljeva	+	+
<i>Alburnoides bipunctatus</i>	Spirlin	Ukljevica	+	+
<i>Barbus balcanicus</i>	Large spot barbel	Balkanskaa mrena	+	+
<i>Barbus barbus</i>	Barbel	Velika mrena	+	+
<i>Chondrostoma nasus</i>	Nase	Skobalj	+	+
<i>Gobio obtusirostris</i>	Danube gudgeon	Dunavska mrenica	+	+
<i>Leuciscus leuciscus</i>	Dace	Klenić	+	–
<i>Rutilus virgo</i>	Cactus roach	Plotica	+	+
<i>Telestes ryssela (souffia)</i>	Danube riffle dace	Jelšovka	+	+
<i>Phoxinus csikii</i>	Danube Minnow	Dunavska gaovica	+	+
<i>Scardinious erythrophthalmus</i>	Rudd	Crvenperka	+	–
<i>Squalius cephalus</i>	Chub	Klen	+	+
<i>Cobitis elongata</i>	Balkan spined loach	Velikli vijun	+	+
<i>Misgurnus fossilis</i>	Weather loach	Čikov	+	–
<i>Sabanajewia balcanica</i>	Balkan golden loach	Balkanski vijun	+	–
<i>Barbatula barbatula</i>	Stone loach	Brkica	+	+
<i>Lepomis gibbosus</i>	Pumpkinseed	Sunčanica	+	–
<i>Esox lucius</i>	Pike	Štuka	+	–
<i>Lota lota</i>	Burbot	Manic, derać	+	+
<i>Cottus gobio</i>	European Bullhead	Peš	+	+
<i>Eudontomizon vladikovi</i>	Danubian brook lamprey	Zmijuljica	+	–

4.2.2.2 Findings of survey of 2024

In the surveyed sector of the Kraštica River, five fish species were identified: brown trout (*Salmo labrax*), river huchen (*Hucho hucho*), grayling (*Thymallus thymallus*), chub (*Squalius cephalus*), and bullhead (*Cottus gobio*).

4.2.3 Benthic fauna

A total of 70 taxa from the ten groups of macroinvertebrates were identified during the first investigations, as follows: Ephemeroptera, Plecoptera, Coleoptera, Diptera, Trichoptera, Hydrachnidia, Gastropoda, Tricladida, Oligochaeta and Nematoda.

The survey of 2024 at the Kraštica site confirmed the presence of 22 macroinvertebrate species, categorized into 7 taxonomic groups. The most diverse class, Insecta, is represented by 6 orders and 19 species, comprising 72.44% of the community. The order Trichoptera is the most diverse, with 7 species and a 41.08% share of the community, followed by Ephemeroptera with 3 species (15.41%), Plecoptera with 3 species (7.11%), and Diptera, also with 3 species, contributing 4.34%. Additionally, the order Coleoptera is represented by 2

species, making up 3.55% of the community, while Odonata is represented by 1 species with a 1.18% share.

4.2.4 Amphibians and reptiles

The recorded species during the first surveys (2019-2021) are:

- *Salamandra salamandra* (Fire salamander)
- *Bombina variegata* (Yellow-bellied toad)
- *Bufo bufo* (Common toad)
- *Pelophylax ridibundus* (Marsh frog)
- *Rana graeca* (Greek stream frog)
- *Rana temporaria* (European common frog)
- *Lacerta agilis* (Sand lizard)
- *Lacerta viridis* (Eastern green lizard)
- *Podarcis muralis* (Common wall lizards)
- *Anguis fragilis* (Slow worm)
- *Zamenis longissimus* (Aesculapian snake)
- *Coronella austriaca* (Smooth snake)
- *Natrix natrix* (Grass snake)
- *Natrix tessellata* (Dice snake)
- *Vipera ammodytes* (Nose-horned viper)

During the survey of 2024 for the Trešnjevik-Andrijevica section, the following species were recorded: *Salamandra Salamandra*, *Bufo bufo*, *Rana graeca*, *Podarcis muralis*, *Vipera ammodytes*.

4.2.5 Birds

Survey of 2020

According to the *Bird Species Reference List* for Natura 2000 in Montenegro, the following species were registered in the corridor during the autumn observation, which, according to this list, can be considered as species of special interest for protection, both the species and their habitats:

► Autumn survey

- *Lullula arborea*,
- *Anthus campestris*,
- *Cinclus cinclus*,
- *Sylvia hortensis*,
- *Accipiter gentilis*,
- *Buteo buteo*,

- *Falco vespertinus*,
- *Pernis apivorus*,
- *Aegolius funereus*,
- *Dryocopus martius*,
- *Leiopicus medius*
- *Dryobates minor*

► Spring survey

- *Lanius senator*,
- *Lanius collurio*,
- *Upupa epops*,
- *Caprimulgus europaeus*,
- *Tachymarptis melba*,
- *Jynx torquilla*
- *Dendrocopus syriacus*.

Survey 2024

The survey from 2020 also covers the revised 12km highway route (Tresnjevnik-Andrijeva), rendering the findings from the previous route applicable to the updated one. The update regarding the new alignment is based on the data collected in 2019 and 2020, as the update was performed in the fall of 2024, a time when ornithological field research—conducted outside the nesting season—cannot provide fully comprehensive understanding of the actual state of the area. Additionally, an analysis of habitat changes was conducted using Google Earth's time slider tool, comparing habitat conditions during the period of bird field research for the original report with the conditions observed in 2024. Habitat change analysis for the period 2021–2024 is showing that there are no habitat changes that occurred in the observed section of the highway corridor (Tresnjevnik-Andrijeva). Therefore, the findings of the previous survey remain current. The quality of species is consistent, although slight variations in population numbers can be expected, particularly for breeding species.

4.2.6 Mammals (including bats)

Mammal species (excluding bats)

By the fieldwork survey of 2019-2021, 15 mammal species were detected. Four (4) of these species are recognized as rare / endangered on a national / international level:

- *Canis lupus* (Grey wolf),
- *Lutra lutra* (Eurasian otter),
- *Nannospalax leucodon* (Lesser mole rat)
- *Ursus arctos* (Brown bear).

Species such as *Felis silvestris* (Wild cat), and *Mustela nivalis* (Weasel) should be expected, but during this biological survey were not registered.

During the survey of 2024, four species were identified, of which *Lutra lutra* is of high importance.

Bats

By the biodiversity survey, 13 species of bats were registered:

- *Barbastella barbastellus* (Schreber, 1774); Širokouhi slijepi miš; Western Barbastelle
- *Eptesicus serotinus* Schreber, 1774; Kasni slijepi mišić; Serotine bat
- *Hypsugo savii* Bonaparte, 1837; Savijev slijepi mišić; Savi's Pipistrelle
- *Myotis alcathoe* von Helversen & Heller, 2001; Alkatojn večernjak;
- *Myotis brandtii* (Eversmann, 1845); Brandtov večernjak; Brandt's Myotis
- *Myotis daubentonii* (Kuhl, 1817); vodeni večernjak; Daubenton's bat
- *Myotis myotis* (Borkhausen, 1797); veliki mišouhi večernjak; Greater Mouse-eared Myotis
- *Nyctalus leisleri* (Schreber, 1774); mali noćnik; Lesser Noctule.
- *Nyctalus noctula* (Schreber, 1774); obični noćnik; Noctule bat
- *Pipistrellus pipistrellus* (Schreber, 1774); Mali slijepi mišić; Common Pipistrelle
- *Pipistrellus pygmaeus* (Leach, 1825); patuljsti slijepi mišić; Soprano Pipistrelle
- *Pipistrellus kuhlii* (Kuhl, 1817); Bjelorubi slijepi mišić; Kuhl's Pipistrelle
- *Rhinolophus hipposideros* (Bechstein, 1800); Mali potkovičar; Lesser Horseshoe Bat.

Very possibly, due to habitat diversity, the presence of several more species is expected:

- *Myotis capaccinii* (Long-fingered Bat),
- *Myotis mystacinus* (Whiskered Myotis),
- *Pipistrellus nathusii* (Nathusius's pipistrelle).

4.3 Step 3 – Assessment according to the criteria for CH and PBF

The assessment according to the criteria is presented in the following sections. Main The sources that were used for the assessment are:

- European Nature Information System (EUNIS), <https://eunis.eea.europa.eu/>
- IUCN Red List, <https://www.iucnredlist.org/>
- IUCN Red List of Ecosystems, <https://iucn.org/resources/conservation-tool/iucn-red-list-ecosystems>
- Bird Life International, <https://datazone.birdlife.org/>

4.3.1 Priority ecosystems

1. Priority ecosystems		
	PBF	CH
Threatened ecosystems	(PR6 para. 12-i)	(PR6 para. 14-i)

(a) Habitats listed in Annex 1 of EU Habitats Directive (EU member states only) or Resolution 4 of Bern Convention (signatory nations only) (b) IUCN Red List EN or CR ecosystems	(a) EAAA is habitat type listed in Annex 1 of EU Habitats Directive or Resolution 4 of Bern Convention (b) EAAA < 5 per cent of the global extent of an ecosystem type with IUCN status of CR or EN	(a) EAAA is habitat type listed in Annex 1 of EU Habitats Directive marked as “priority habitat type” (b) EAAA ≥ 5 per cent of global extent of an ecosystem type with IUCN status of CR or EN (c) EAAA is ecosystem determined to be of high priority for conservation by national systematic conservation planning
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The results of the assessment according to the Criterion 1 are shown in Table 7. All examined habitats are included in Resolution 4 (and the Annex I of the Habitat Directive). None is considered as an IUCN EN or CR ecosystem. Therefore, all habitats are determined as PBF, while no habitat is characterized as critical according to non-EU states criteria. However, it is noted that the habitat *91E0 -Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior** is priority habitat type, according to the Habitat Directive. Based on the above, the PR6 requirements apply for all the habitats in the area.

Table 7: Criterion 1 - Assessment of Natura 2000 habitat types identified in Project area

Habitats	Survey	Eunis code / Bern convention	NATURA 2000			Bern Convention Resolution 4	PBF / CH
			Natura 2000 code	Natura 2000 Annex	Habitat type		
Alpine rivers and the herbaceous vegetation along their banks	2019-2021 2024	C3.5, C3.551, C3.552	3220	Annex 1	Not priority	YES	PBF
Alpine rivers and their ligneous vegetation with <i>Myricaria germanica</i>	2019-2021 2024	F9.1, F9.11, F9.13	3230	Annex 1	Not priority	YES	PBF
Alpine rivers and their ligneous vegetation with <i>Salix elaeagnos</i>	2019-2021 2024	F9.1, F9.11, F9.14	3240	Annex 1	Not priority	YES	PBF
Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	2019-2021	E1.2, E1.22, E1.26, E1.27, E1.28	6210	Annex 1	Not priority	YES	PBF
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	2019-2021 2024	E5.4, E5.41, E5.43, E5.5, E5.51, E5.52, E5.57, E5.58	6430	Annex 1	Not priority	YES	PBF
Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	2019-2021 2024	E2.2, E2.22, E2.23	6510	Annex 1	Not priority	YES	PBF
Mountain hay meadows	2019-2021 2024	E2.3, E2.31	6520	Annex 1	Not priority	YES	PBF
Alkaline fens	2019-2021	D4.1	7230	Annex 1	Not priority	YES	PBF
Siliceous rocky slopes with chasmophytic vegetation	2019-2021	H3.1	8220	Annex 1	Not priority	YES	PBF

Habitats	Survey	Eunis code / Bern convention	NATURA 2000			Bern Convention Resolution 4	PBF / CH
			Natura 2000 code	Natura 2000 Annex	Habitat type		
Luzulo-Fagetum beech forests	2019-2021 2024	G1.6, G1.61	9110	Annex 1	Not priority	YES	PBF
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	2019-2021 2024	G1.1, G1.111, G1.12, G1.121, G1.2, G1.21, G1.211, G1.212, G1.213	91E0	Annex 1	Priority	YES	PBF / CH (under EU legislation)
Illyrian oak-hornbeam forests (Erythronio-Carpinion)	2019-2021 2024	G1, A1A	91L0	Annex 1	Not priority	YES	PBF
Pannonian-Balkan turkey oak - sessile oak forests	2019-2021 2024	G1.769	91M0	Annex 1	Not priority	YES	PBF
Acidophilous <i>Picea</i> forests of the montane to alpine level (Vaccinio-Piceetea)	2019-2021 2024	G3.1, G3.1B	9410	Annex 1	Not priority	YES	PBF

This habitat 91E0 includes several different subtypes: coastal forests of black alder (*Alnus glutinosa*) and ash (*Fraxinus excelsior*) in temperate lowland and mountainous areas (*Alno-Padion*); riparian (coastal) woody alders (*Alnus incana*) along mountain streams and rivers (*Alnion incanae*) and strip galleries of tall willows (*Salix alba*, *S. fragilis*) and poplars (*Populus nigra*, *P. alba*) along river courses in lowland, submontan and montan areas of the temperate zone (*Salicion albae*). All habitat types occur on heavy, periodically flooded soils, which are poorly aerated during high water levels, while on the contrary, during low water levels they are well drained and aerated. The herbaceous plant includes many tall plants such as: *Filipendula ulmaria*, *Angelica sylvestris*, *Cardamine sp.*, *Rumex sanguineus*, *Carex sp.*, with which different spring plants occur: *Ficaria verna*, *Anemone nemorosa*, *A. ranunculoides*, *Corydalis solida*. These forests are present in almost all continental parts of Montenegro, both along large rivers and along occasional or permanent streams to the upper mountain belt.

The habitat occurs in the greater part of the Project's route, usually along the Drcka River, almost its entire length along Novovića potok, Dubokalj, Rajovića river and Sitna Luka above Lim.

4.3.2 Priority species and their habitats

4.3.2.1 Threatened species

2. Priority species and their habitats		
	PBF	CH
Threatened species	(PR6 para. 12-ii)	(PR6 para. 14-ii)
(a) Species and their habitats listed in EU Habitats Directive and Birds Directive (EU members only) or Bern Convention (signatory nations only)	(a) EAAA for species and their habitats listed in Annex II of Habitats Directive, Annex I of Birds Directive, or Resolution 6 of Bern Convention	(a) EAAA for species and their habitats listed in Annex IV of the Habitats Directive (See EU restrictions)
(b) IUCN Red List EN or CR species	(b) EAAA supports < 0.5 per cent of global population OR < 5 reproductive units of a CR or EN species.	(b) EAAA supports ≥ 0.5 per cent of the global population AND ≥ 5 reproductive units of a CR or EN species
(c) IUCN Red List VU species	(c) EAAA supports VU species	(c) EAAA supports globally significant population of VU species necessary to prevent a change of IUCN Red List status to EN or CR, and satisfies threshold (b)
(d) Nationally or regionally (for example, Europe) listed EN or CR species	(d) EAAA for regularly occurring nationally or regionally listed EN or CR species	(d) EAAA for important concentrations of a nationally or regionally listed EN or CR species

Regarding **flora** species, there are no species characterized as EN, CR or VU according to the IUCN Red List. All the taxa are listed as LC or not evaluated by IUCN Red List Europe with the exception of *Anacamptis morio subsp. Morio*, which is evaluated as NT. *Anacamptis morio subsp. morio* is widespread in Montenegro.

The assessment regarding threatened **fauna** species according to the Criterion 2 is presented in the following paragraphs. Detailed assessment tables are given in the Annex.

(a) Ichthyofauna

Among the examined species, seven fall under the Resolution 6 of the Bern Convention and thus, characterized as PBF: *Hucho hucho*, *Telestes ryssela (souffia)*, *Cobitis elongata*, *Misgurnus fossilis*, *Cottus gobio* and *Eudontomyzon vladykovi*.

Among them, one species, *hucho hucho*, is also considered EN according to IUCN Red List and the national legislation and one *Alburnus alburnus*, is classified as EN according to the national legislation. The characterization remains the same if EU Habitat Directive is considered, as there are no species that are included in the Annex IV of the Directive.

Hucho hucho is a big species that is under great anthropogenic pressure through habitat change, river pollution, and intensive sport fishing. In addition, global climate change through disturbed water regimes affects big and long-lived species. Low water level disables normal spawning, and migration during spawning, etc. The hucho spawns during May, the incubation of the fertilized eggs lasts for a relatively long time as with all salmonids, and feeds mainly with fish. These basic characteristics indicate that all of the above threats to the aquatic ecosystem are factors that may, as described, threaten the survival of this species². According to relevant bibliography, a total of 1842 river km in the Balkan region have been identified as carrying self-sustaining populations of *hucho hucho*. These populations are found in 43 river sections in Slovenia, Croatia, Bosnia-Herzegovina, Serbia and Montenegro, of which 240 km in Montenegro. About 1011 river km are found outside the Balkan region. As *Hucho hucho* is common throughout Montenegro's Black Sea basin, the Drcka River and this Lim River section represent a small fraction (less than 0.3%) of its population. Consequently, it is improbable that the EEAA qualifies as a CH.

Alburnus alburnus is a small species of short life that inhabits waters of different quality. This species prefers lentic regions in rivers and spawns in spring. The species has a wide geographical range (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; Türkiye; Ukraine; United Kingdom). It is one of the rare species in Montenegro. During the first surveys, it was found in two localities on the Lim River and one on its tributaries Zlorečica, with an abundance classified as rare or very rare. Consequently, it is unlikely that the EEAA has important concentrations of the species, to qualify as CH.

(b) Benthic fauna

Among the 70 identified species, only 4 species of gastropods are on the IUCN Red list and all of them have Least Concerned (LC) status. These species are: *Amphimelania holandrii*, *Ancylus fluviatilis*, *Bithynia tentaculata* and *Lithoglyphus naticoides* (EU Red List - Gastropods: Cuttelod et al. 2011). None of 70 recorded species is recognized as protected by EU Habitat directive, or Bern convention. In addition to this, among investigated species there are no species with status of nationally protected species. Based on the above, criterion 2 is not triggered.

(c) Amphibians and reptiles.

² Report on biodiversity research for the section of the Mateševo - Andrijevića highway, 2019, Prepared by Prof. Dr Drago Marić and M.Sc. Stevan Marić

One species of the amphibians (*Bombina variegata*) and one of the reptiles (*Natrix natrix*) are within the Resolution 6 of the Bern Convention, while there are no species categorized as VU, CR or EN as per IUCN Red List or CR /EN as per national legislation, with the exception of *Salamandra Salamandra*, which is VU under IUCN.

The geographical range of *Bombina variegata* includes Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France (mainland), Germany, Greece (mainland), Hungary, Italy (mainland), Liechtenstein, Luxembourg, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, Switzerland, Türkiye (Türkiye-in-Europe), Ukraine. The species is widely distributed in Montenegro, with more numerous occurrences in Mountain-valley region.

Natrix natrix has a wide geographical range and is Albania, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, China (Xinjiang), Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Georgia, Germany, Greece, Hungary, Iran, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Montenegro, North Macedonia, Norway, Poland, Romania, Russian Federation, Serbia, Slovakia, Sweden, Switzerland, Syrian Arab Republic, Turkmenistan, Türkiye, Ukraine

Based on the above, it is concluded that the two species qualify as PBF and do not trigger the CH criterion as per IUCN/Bern.

However, if the Habitat Directive is considered, the following species fall under Annex IV and could, potentially trigger CH criterion:

- Amphibians: *Bombina variegata*, *Rana graeca*
- Reptiles: *Lacerta agilis*, *Lacerta viridis*, *Podarcis muralis*, *Coronella austriaca*, *Natrix tessellate*, *Vipera ammodytes*

Rana graeca (Greek stream frog) is predominantly distributed in the Mountain-valley region of Montenegro, occasionally penetrating southwards along with gorges and valleys of cold fast-flowing streams. As resulted by the field surveys, the project impact zone lies well within the known range of *R. graeca* in Montenegro. The Greek stream frog is evaluated as abundant within the project impact zone. Considering that the project includes the construction of bridges and crossings over the rivers, these habitats are not expected to be affected if the necessary measures of protection and mitigation during the project construction phase are applied.

Lacerta agilis is discontinuously distributed at higher altitudes in Mountain-valley region of Montenegro and the project impact zone lies within the known range of *L. agilis* in Montenegro. Given that forests dominate the landscape of the project impact zone, patches of meadows and pastures within the zone do not represent the main habitats of the Sand lizard of the wider area.

Lacerta viridis is widely distributed in Montenegro. The project impact zone lies within the known range of *L. viridis* in Montenegro. The species spreads along the river valleys. Hence, The Lim and Drcka river valleys, as many other river valleys, gorges and canyons in Montenegro, could be corridors for spreading of *L. viridis*.

Podarcis muralis is widely distributed in Montenegro. And the project impact zone lies within the known range of *P. muralis* in Montenegro. It is common species throughout Montenegro and occupies variety of habitats. *P. muralis* was recorded at almost all selected locations, at overgrown river and streams banks, roadsides during the field surveys. During field surveys, *P. muralis* was also found in anthropogenically-modified habitats within the project impact

zone. The species is widespread in Montenegro and very adaptable. The Lim and Drcka river valleys, as many other river valleys, gorges and canyons in Montenegro, could be corridors for spreading of *P. muralis*.

Coronella austriaca. The species is distributed in Mountain-valley region of Montenegro and the project impact zone lies well within its known range in Montenegro. There are no exact data on the density of the Smooth snake in the project area or generally in Montenegro. However, it is presumed to be common across Mountain-valley region of Montenegro due to availability of suitable habitats. The Lim and Drcka river valleys, as many other river valleys, gorges and canyons in Mountain-valley region of Montenegro, could be corridors for spreading of the Smooth snake.

Natrix tessellate is widely distributed in Montenegro and the project impact zone lies within its known range of *N. tessellata* in Montenegro. It is common species throughout the country and occupies ponds, canals, streams, rivers, lakes and nearby habitats. During field surveys, *N. tessellata* was recorded in the second half of the route in Kraljštica and Lim rivers. There are no exact data on the density in the project area or generally in Montenegro. However, the species is quite common in all parts of Montenegro. Rivers in the project impact zone represent important dispersal corridors and connection between wetlands.

Vipera ammodytes is widely distributed in Montenegro and the project impact zone lies within the known range of *V. ammodytes* in Montenegro. It is found in dry, sunny, rocky hillsides with some vegetation such as small trees and shrubs and in open woods. During field surveys, specimens were found mainly in the first half of the route, near the main and side roads that pass between hillsides and deciduous forests. There are no exact data on the density in the project impact zone or generally in Montenegro. However, the species is quite common in all parts of Montenegro, including area through which the route passes. The nose-horned viper shows no preferences regarding the origin of the habitat: man-made stone walls and natural rocks are equally favoured. The Lim and Drcka river valleys, as many other river valleys, gorges and canyons in Mountain-valley region of Montenegro, could be corridors for spreading of *V. ammodytes*.

(d) Birds

Among the bird species in the section Mateševo Andrijevića, 19 species qualify as PBF:

- 17 bird species are included in the Resolution 6 of the Bern Convention (but not in the Annex IV of the Habitat Directive):
Gyps fulvus, *Aquila chrysaetos*, *Circus gallicus*, *Pernis apivorus*, *Falco vespertinus*, *Falco peregrinus*, *Bubo bubo*, *Aegolius funereus*, *Caprimulgus europaeus*, *Dryocopus martius*, *Picus canus*, *Leipicus medius*, *Dendrocopos syriacus*, *Dendrocopos leucotos*, *Lullula arborea*, *Anthus campestris*, *Lanius collurio*
- *Streptopelia turtur*, is considered as VU in the IUCN Red List (although not included in Resolution 6).
- *Perdix Perdix*, although not included in the Resolution 6 is considered EN according to the Montenegrin Red List³.

Streptopelia turtur (VU as per IUCN Red List) has an estimation of 6 breeding pairs in the area, while the global population is estimated to 12,800,000-47,600,000 mature individuals.

³ Agencija za zaštitu životne sredine (EPA): Crvena lista ptica Crne Gore. Pp.50 Podgorica, 2021

Perdix Perdix was not recorded but possibly exists in the area. According to IUCN data the global population is estimated about 3,300,000-5,300,000 mature individuals.

Falco peregrinus (Resolution 6 **and** CR according to Montenegrin Red List) was not recorded but possibly exists in the area. According to IUCN data the global population is 100,000-499,999 mature individuals.

Based on the above, none of the species triggers the criterion of CH according to the IUCN/Bern conditions. It is also noted that none of the species is included in the Annex IV of the habitat directive.

(e) Mammals

Regarding **mammals excluding bats**, three species are within the Resolution 6 of the Bern Convention, namely *Canis lupus*, *Lutra lutra*, and *Ursus arctos*. There are no species that are classified as VU, CR or EN according to IUCN Red List. *Lutra Lutra* and *Nannospalax leucodon* are under protection according to the national legislation (although the latter is not in Resolution 6).

Canis lupus. The wolf population in Montenegro belongs to the Dinaric-Balkan population, which is approximately 4,000 in size. The population trend is completely unknown. The wolf is a generalist, whose natural distribution includes not only the forest zone but also other habitats. Availability of food and safe shelters for rest and making a den are the main requirements of this large mammal. The proximity of the water is also of great importance for wolves. Today, forests are the main habitat of wolves in Europe, because large carnivores feel safer there. The fact that wolves have become typical forest dwellers is secondary and its occurrence on high mountain pastures is a common thing. According to the available literature, the species is widespread in both biogeographical regions, and most of the population is certainly concentrated in the alpine biogeographical region. During field surveys, one individual was registered on the site, which represents, a very small percentage at the national level. According to the local community, the wolf is constantly present in this area. The species uses this area and its home-range is much larger than the project area.

Lutra Lutra. The otter is one of the least researched mammals in Montenegro. Paunović & Milenković (1996) conclude that otters are more widespread in Montenegro than previously known and that individuals have been recorded in most areas except the western and central part of Montenegro, but its presence is not excluded from these areas. According to the data of Paunović & Milenković (1996), the otter in Montenegro is located along the coast, probably in small numbers and extends from 0 to 1400 m above sea level. Recent data on the presence of this species were recorded in the water net of Lim, Ibar, Piva, Čehotina, Morača (Mrtvica and Cijevna) and on the river Grlja (Prokletije) within the Project "Establishment of Natura 2000 network in Montenegro" where it is generally assessed that the population of this species is growing slightly. During the field survey within this Project, high otter activity was recorded along the entire course of the Drca river as well as in its streams from both sides. Based on recent data, it can be concluded that in Montenegro there are very suitable habitats for otter life, which is associated with a very rich web of watercourses and lakes. The great richness of the ichthyofauna of both the Black Sea and the Adriatic basin has a great influence on the life cycle of otters as roof predatory species on water surfaces. In the project area, the species was found in Drcka, Krašnica and Lim river valleys. The field surveys concluded that its occurrence is common, which confirms the fact that it is an exceptional habitat.

Nannospalax leucodon. There is not much data on this species both at the level of the Balkan and at the level of Montenegro. Although the distribution of this species has not yet been

defined, it is known so far that it is found only in the alpine biogeographical region of Montenegro. The three most important habitats for this species are the Durmitor plateau, the Sinjajevina plateau and Krnovo. Globally, the trend of this species is declining because it has little reproductive power and locally, where the population is stable it is generally considered a “pest”. As its habitats are located at a higher altitude than planned road, thus its population is not endangered. According to the literature, about 1 to 13 individuals are registered per 1 ha of suitable land. According to some ecological models, less than 2% of the total estimated population at the level of Montenegro is present in this area.

Ursus arctos. The population of the brown bear in Montenegro belongs to the Dinaric-Pindus population, which has not yet been scientifically estimated. Status of this species is unknown. However, according to available data, it can be concluded that the total population has been increasing in the last 30 years and that according to the Ministry of Agriculture, the population size is about 400 individuals. Found in deciduous and mixed forests with open grasslands around them. Availability of food and safe shelters for rest and roaming are the main requirements of this large mammal. The proximity of the water is also of great importance for bears as well as mature deciduous forests. According to the available literature, the species is widespread in both biogeographical regions, and most of the population is certainly concentrated in the Alpine biogeographical region. During the filed surveys, one individual was registered on the site, which represents a very small percentage at the national level. According to the local population, the bear is constantly present in this area.

Regarding **bats**, *Myotis myotis*, *Rhinolophus hipposideros*, *Myotis capaccinii* are included in the Resolution 6. *Myotis capaccinii* is also VU according to the IUCN Red List. It is noted that all bats are protected by the national law.

4.3.2.2 Range-restricted species

2. Priority species and their habitats		
	PBF	CH
Range-restricted species	(PR6 para. 12-ii) (a) EAAA for regularly occurring range restricted species	(PR6 para. 14-iii) (a) EAAA regularly holds ≥ 10 per cent of global population AND ≥ 10 reproductive units of the species

Regarding range -restricted species, the EBRD guidelines foresee the following:

- (a) For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an extent of occurrence (EoO) of less than 50,000 square kilometres (km²).
- (b) For marine systems, restricted-range species are provisionally considered to be those with an EoO of less than 100,000 km².
- (c) For coastal, riverine and other aquatic species in habitats that do not exceed 200 km width at any point (for example, rivers), restricted range is defined as having a global range of less than or equal to 500 km linear geographic span (that is, the distance between occupied locations furthest apart).

Based on the above, and considering the EoOs published in the IUCN Red List the following are concluded:

Ichthyofauna: None of the examined species qualifies as restricted -range species (as per point (c) above). Although IUCN does not provide an estimation of the EoO for the *Hucho hucho*,

other specialized studies give such an estimation for the Balkan region. A total of 1842 river km in the Balkan region have been identified as carrying self-sustaining populations of *Hucho hucho*. These populations are found in 43 river sections in Slovenia, Croatia, Bosnia-Herzegovina, Serbia and Montenegro. The most important river in terms of habitat length is the Drina together with its major tributaries the Lim and Tara, totaling 30% (553 km) of the Balkan Huchen distribution⁴.

Amphibians: None of the species qualifies as restricted -range species as per point (a) above

Birds. None of the species qualifies as restricted -range species as per point (a) above

Mammals. Regarding mammals (excluding bats), None of the examined species qualifies as restricted -range species. The following EoOs are published:

- *Canis lupus*: 6,184,500 km² in Europe (period 2012-2016)⁵
- *Lutra lutra* : no detailed data in IUCN. The EoO is estimated to be >20,000 km²
- *Ursus arctos*: 5,538,450 km² in Europe (period 2012-2016)⁶
- *Felis silvestris*: 6,015,635 km²⁷

Accordingly, none of the bat species qualifies as restricted -range species as per point (a) above.

4.3.2.3 Migratory and congregatory species

2. Priority species and their habitats		
	PBF	CH
Migratory and congregatory species	(PR6 para. 12-ii) (a) EAAA identified as per Birds Directive or recognised national or international process as important for migratory birds (especially wetlands)	(PR6 para. 14-iv) (a) EAAA sustains, on a cyclical or otherwise regular basis, ≥ 1 per cent of the global population at any point of the species' lifecycle (b) EAAA predictably supports ≥ 10 per cent of global population during periods of environmental stress

Montenegro is located on the Adriatic Migration Corridor, one of the most important migration routes in Europe, and several million birds fly over it every year. However, the project area is not within the migration corridors.

The project area neighbours the Komovi IBA. Komovi is classified as IBA as per criteria B1a (**Globally Near Threatened species**) and C1 (Species of global conservation concern, based on

⁴ Freyhof, J., S. Weiss, A. Adrović, M. Čaleta, A. Duplić, B. Hrašovec, B. Kalamujić, Z. Marčić, D. Milošević, M. Mrakovčić, D. Mrdak, M. Piria, P. Simonović, S. Šljuka, T. Tomljanović, & D. Zabrc. 2015. The Huchen Hucho hucho in the Balkan region: Distribution and future impacts by hydropower development. RiverWatch & EuroNatur, 30 p

⁵ IUCN (2018) Supporting information for the European IUCN Red List assessment for Grey Wolf (*canis lupus*)

⁶ IUCN (2018) Supporting information for the European IUCN Red List assessment for Brown Bear (*Ursus arctos*)

⁷ Gerngross, P. et al. 2022. *Felis silvestris*. The IUCN Red List of Threatened Species 2022:

e.T181049859A181050999. <https://dx.doi.org/10.2305/IUCN.UK.2022-1.RLTS.T181049859A181050999.en>

the species Rock Partridge (*Alectoris graeca*)⁸. The species is not encountered in the project area.

Based on the above, the criterion is not triggered.

4.3.3 Designated sites

The proposed highway route is in vicinity with the Regional Nature Park “Komovi” (15692 ha) and Area of Special Conservation Interest (ASCI) “Lim River”.

Komovi Mountains are a high, relatively isolated mountainous massif in the Eastern part of Montenegro on the border with Albania. The total area is 27663 ha, of which 15692 ha (56.7%) are under protection⁹.

Komovi is identified as Important Plant Area (IPA). Forest belt reaches 1700-1800 m a.s.l. It is made of well-developed beech forests, which are changed with coniferous forests at higher altitudes. Endemic pine species *Pinus heldreichii* makes different plant communities through the forests from 1500 until 2000 m a.s.l. At altitudes above the forest belt, open habitats are present, as alpine meadows and bare stones. 36 taxa are Dinaric or Balkan endemics. Vegetation and fauna of the Mala rijeka Canyon is similar to the same of Platije. Faunistic investigations of Komovi Mountain were not detailed. Several rare insect species were registered (*Libelula quadrimaculata*, *Aeshna juncea*, *Cordulia aenea*, *Somatochlora metalica* *Coenagrion hastulatum*). Herpetofauna is rich and consists of 5 amphibian and 9 reptilian species (*Bombina variegata* *scabra*, *Mesotriton alpestris*, *Rana graeca* and *Lacerta viridis* are endangered and protected species). Bird fauna consists of 97 species. Mammal fauna is not investigated, but according to the knowledge about fauna of surrounding areas, mammal specialists made one list with more than 30 species, mostly small mammals and bats.

The **Lim Valley** is part of the broader Dinaric Alps and is characterized by its deep river valleys, karst topography, and diverse ecosystems. The valley runs through Montenegro, continuing into Serbia and Bosnia and Herzegovina. River Lim is 219 km long, and the Montenegrin part is 87 km. Lim river flows through the whole of its current in Montenegro in its natural stream, there are no dams or regulation channels on the river, with only minor consolidations in urban areas.

4.4 Impacts and mitigation measures

The Project will avoid impacts to notable species and habitats by:

- Use of the mitigation hierarchy involving a sequential approach of impact avoidance, minimisation, restoration and finally offsetting if no other approach is effective.
- Use of GIP (Good International Practice) during construction works to further prevent or reduce impacts wherever practical. This includes avoidance measures such as seasonal timings of works as well as other generic mitigation measures as elaborated in the ESIA.

⁸ BirdLife International (2024) Important Bird Area factsheet: Komovi (Montenegro). Downloaded from <https://datazone.birdlife.org/site/factsheet/komovi-iba-montenegro> on 30/08/2024.

⁹ Rubinić, B., Sackl, P. & Gramatikov, M. (2019): Conserving of wild birds in Montenegro. The first inventory of potential Special Protection Areas in Montenegro. AAM Consulting. Budapest xiii +328 pp.

- Application of species and habitat-specific Biodiversity Action Plans for notable features

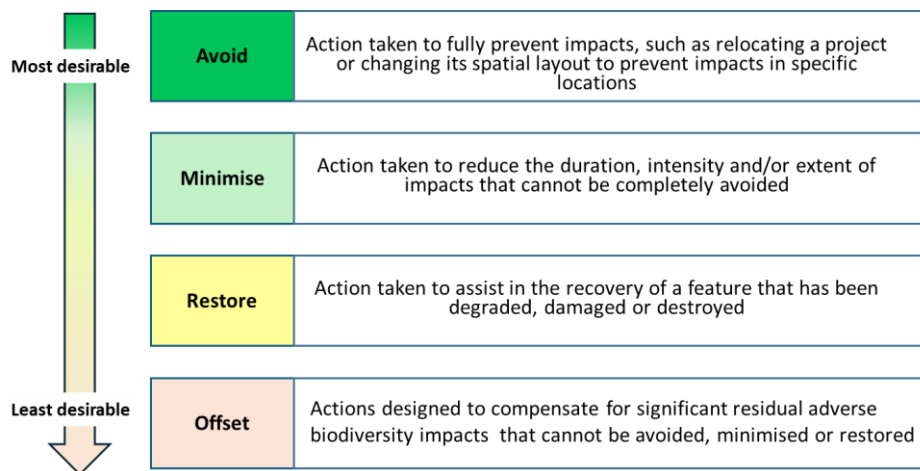


Figure 3: Mitigation hierarchy

:

One important impact is the permanent loss of a number of habitats. The impact will refer to the entire length of the road route where the physical removal of vegetation is planned, as well as around watercourses and for the needs of building bridges.

Table 8: Assessment of habitat loss at specific locations

Location and Type of habitat	Sensitivity	Magnitude of Fragmentation
Mateševo - Trešnjevnik part		
Mateševske strane, acidophile beech forests above right bank of the Drcka River. Total surface of the habitat on Mateševske strane is around 967 ha. Permanent loss due to implementation of the project is around 10 ha.	High	Middle (adverse)
Drcka Bridge - River Drcka with willow scrub of <i>Salix eleagnos</i> , total surface of habitat is around 8.7 ha. Permanent loss due to implementation of the project is around 1.2 ha	High	Middle (adverse)
Drcka Bridges - River Drcka, along with riparian vegetation, whereby the total surface of habitat is around 200 ha. Permanent loss due to implementation of the project is around 2.6 ha	High	Middle (adverse)
Vranještica - Bridge Vranještica River covered with riparian vegetation whereby the total surface of the habitat is around 76 ha. Permanent loss due to implementation of the project is around 1.8 ha.	High	Middle (adverse)
Ravni brijeg covered with beech forest, mountain meadows and part of RP Komovi, total surface of the habitat is around 777 ha of forest and 2.7 ha of meadows. Permanent loss due to implementation of the project is around 17 ha of forests and 2.5 ha of meadows.	High	Middle (adverse)
Ljubaštica - River Ljubaštica with riparian vegetation along the bank, total surface is approximately 21 ha. Permanent loss due to implementation of the project is around 0.7 ha.	Medium	Minor (adverse)
Ljubaštica - Alkaline fens characterized by low sedges and brown moss that form peat. Total surface of habitats is around 15 ha, at the distance of around 500 m from the project impact area.	No change	Negligible
Trešnjevnik-Andrijeviča part		
Rajovića river – Rajovića river, along with riparian vegetation. Total surface of habitats is around 100 ha and under impact caused by the project will be around 1.2 ha.	High	Middle (adverse)

Location and Type of habitat	Sensitivity	Magnitude of Fragmentation
Kraštica River, along with riparian vegetation. Total surface of habitats is around 30 ha and under impact caused by the project will be around 15 ha.	High	Major (adverse)
Lim River - habitat with willow <i>Salix eleagnos</i> . The total habitat area is about 5 ha; the area that will be affected by the project is about 3.5 ha . - habitat with <i>Myricaria germanica</i> . The total habitat area is about 3 ha; the area that will be affected by the project is about 1 ha . - habitat with <i>Calamagrostis pseudophragmites</i> ; The total habitat area is about 3 ha; the area that will be affected by the project is about 1 ha .; - habitat of ripar vegetation <i>Alnetum incanae</i> and gallery <i>Alnetium glutinosae</i> s. l. (Lugovi-Sitna Luka) The total area of the habitat is about 17 ha; the area that will be affected by the project is about 10 ha.	High	Major (adverse)

The impacts and relevant mitigation measures are summarised in Table 9.

Table 9: Impacts and mitigation measures

Phase		Impact	Mitigation measure	Type of action			
				A	M	R	O
Habitats and plant species							
CON	Habitat loss; degradation and simplification	- The works footprint should be reduced as far as possible e.g. through the use of a single vehicle track policies and use of low-impact vehicles where practical. - Vehicles will be driven at designated speed limits. Off-road travel will be prohibited where practical. - Laydown areas and compounds will be sited to avoid unnecessary clearance of vegetation. Natural breaks in vegetation will be used as preferred access routes where possible. The workforce will adhere to working corridors. - All staff will be provided with environmental awareness training. - The workforce will not deviate from approved clearance areas. Workforce hunting and fishing bans will be enforced and cutting of wood by workers will be prohibited. - Fencing will be minimized (apart from where put in place for operations to reduce roadkill) to ensure that areas vital for wildlife are not isolated by workforce activities, unless this is for species protection measures. - Temporary barriers will be used to prevent wildlife from accessing waste disposal areas and similar areas.		✓			
CON	Specific measures for the <i>Habitat 91E0 -Alluvial forests with Alnus glutinosa and Fraxinus excelsior</i>	The best-preserved continuous parts of this habitat type are present in the area of the Rajovića River (Stands with <i>Alnus incana</i>) but also along the Lim River in Andrijevića from Sitna Luka downstream with representative representatives of <i>Alnus glutinosa</i> in Sitna Luka and with large stands of the <i>Salix eleagnos</i> community downstream. - Physical removal of habitat should be avoided to the greatest extent possible, - Avoid removal, destruction or damage to the trees outside the construction zone - The water regime of the Lim River during construction should be maintained. - Fence the part of the forest that will not be removed and prohibit access to vehicles and workers - Young trees in the part that will be cleared can be safely plant out with the presence of supervision engineer and a botanist expert, and the area around the forest should be replanted with these	✓	✓	✓	✓	
CON	Fragmentation	The construction and use of the road will affect the habitat fragmentation of some plant species. This could, in the first place, apply to species that are protected and rare as well as their habitats (eg <i>Myricaria germanica</i> - it is protected by national legislation as a species).		✓			

Phase	Impact	Mitigation measure	Type of action			
			A	M	R	O
		Additional measures to reduce the impact on this species are necessary: direct - through maximum restraint of works in places where it is located, and, indirectly - prevention of disposal of construction materials or waste in the Lim River zone where it is present to avoid disturbing the physical parameters of coastal habitats of this species.				
CON	Changes in water conditions (hydrological impacts)	Changes in water conditions (hydrological impact) will have a negative impact on coastal habitats. The most obvious example is the habitat / species <i>Myricaria germanica</i>. Also, negative consequences of changes in water conditions would have on other riparian habitats (<i>Salicetum eleagni</i>, <i>Alnetum incanae</i>, etc.). Works in coastal areas should be kept to a minimum in order to preserve plant species of riparian habitats. Crossing points across rivers will be conducted where there is clear access to the banks and vegetation clearance is minimised. Construction works on rivers should primarily be carried out during dry periods in order to avoid negative impact. Standard pollution control measures will be implemented in all sites (e.g. to prevent silt contamination water will be kept out of the works area using appropriate isolation techniques, such as coffer dams, silt fences and by-pass channels). Erosion control using 'polders', pads of plants and geo-nets should be implemented. Where trees have to be removed to facilitate the crossing, these will be replanted with a similar species composition.	✓	✓		
CON	Habitat pollution including deposition and runoff	Standard pollution control measures will be implemented. Dust emissions due to road travel will be minimized by regulating vehicle speed and watering roads (where required). Spill kits will be available and standard industry refuelling protocols will be followed, e.g. use of drip trays. Erosion control will be implemented as appropriate.		✓		
CON / OPE	Spread of non-native or invasive species	Native plants that are locally sourced will be used for re-planting. A site wide ban will be placed on workers bringing vegetation or soil from outside the site area to prevent dispersion of non-native invasive species. Minimize topsoil movements. Wash down of all vehicles and equipment before entering the sensitive sites. Follow species specific mitigation regarding invasive species which includes demarcation and avoidance. Monitoring post-construction will ensure that newly restored areas are not inundated with non-native species from adjacent areas.		✓	✓	
Ichthyofauna & benthic fauna						

Phase	Impact	Mitigation measure	Type of action			
			A	M	R	O
CON	Habitat degradation due to the following:	General measures include:		✓		
	Changes in water conditions (sedimentation, turbidity)	Measures for mitigation of impacts on water as per ESIA Avoid heavy sedimentation during April to June when river huchen (<i>Hucho hucho</i>) eggs and larvae, sensitive to turbidity, are present If river diversion is necessary, perform it during high-flow periods, minimizing the length of diverted sections, and avoid constructing permanent barriers	✓	✓		
	Pollution (accidental leakages, runoff)	Adopt the mitigation for soil and water pollution prevention as in the ESIA		✓		
	Disturbance (noise, vibrations,	Adopt the measures for noise and vibration mitigation as in the ESIA		✓		
OPE	Pollution due to flashing of atmospheric waters	Adopt the measures for prevention of soil and water pollution mitigation as in the ESIA		✓		
Amphibians and reptiles						
CON	Habitat loss and degradation due to: - excessive vegetation removal for the construction of the road - elimination of the natural characteristics of the land within the paved area and adjacent roadsides - soil compaction due to operating machinery.	- Clearing of natural vegetation should be limited to the extent necessary - Restrict the movement of heavy machinery to the most necessary surface, using already existing clearings in order to avoid additional degradation of the habitats. Special attention should be paid to areas where the route passes very close to the river. - Save topsoil removed for construction activities and spread over the disturbed area as soon as possible after disturbance to accelerate natural re-vegetation, thus helping to minimize erosion and return lands to a useable condition for amphibians and reptiles.		✓	✓	
CON	Potential fragmentation can be expected with regard to terrestrial habitats of amphibians and reptiles.	Considering that the Project includes the construction of bridges, crossings and tunnels, movement corridors and habitats are not expected to be disrupted if the necessary measures of protection and mitigation during the project construction phase are applied. Use of heavy machinery should be limited to the project right-of-way area to avoid additional fragmentation of habitats		✓		
CON	Changes in water conditions (sedimentation, turbidity)	Measures for mitigation of impacts in water as per ESIA		✓		
CON	Pollution of aquatic and terrestrial habitats	Adopt the mitigation for soil and water pollution prevention as in the ESIA		✓		

Phase	Impact	Mitigation measure	Type of action			
			A	M	R	O
CON	Direct mortality	- The movement of heavy machinery and vehicles should be restricted to the most necessary surface, using dedicated haul routes. - Speed limits on vehicles should be imposed. - Pits and excavations should be filled in as soon as possible following works. If they are created for a longer period of time they should be equipped with escape ramps and regular crossing points. If needed, the trapped animals should be rescued by the help of a qualified person. - Construction workers must be informed that the intentional killing of animals is not permitted.		✓		
CON	Visual, noise and vibration disturbance	- Reduce noise and vibration impacts by scheduling intensive construction activities, if possible, outside the winter hibernation and spring breeding periods. - Direct construction and camp lighting downward to avoid illuminating nearby habitats and disturbing animals. Keep aquatic habitats shaded, if possible. - Minimize noise during construction by maintaining vehicles according to the manufacturer's specifications, using enclosures for noisy equipment, and reducing the height from which materials are dropped during loading or unloading..		✓		
OPE	Habitat degradation and fragmentation	Considering that the project includes the construction of a number of bridges and crossings, species movement corridors and habitats are not expected to be disrupted. Monitor the frequency of road kills one year after project completion and, if necessary, implement additional mitigation measures. Preserve roadside vegetation to maintain habitat connectivity and reduce fragmentation.		✓		
OPE	Habitat pollution (water runoff and accidental spillage of chemicals)	- Prohibit the direct discharge of untreated runoff into watercourses. Install drainage systems that divert runoff into drains, soakaways, and detention basins to prevent contamination of watercourses. Detention basins and drainage systems should be fenced or grated to prevent animals from being trapped. - Regularly inspect and maintain drainage structures to ensure their permeability. - Implement roadside waste collection and regular road clean-up to reduce contamination risks.	✓	✓		
OPE	Direct mortality	If sections of the route require fencing for safety (e.g., to prevent landslides or large animal mortality), ensure that the fence is gap-free and permanent. The fence should have small mesh holes or additional materials such as hardware cloth at the base to prevent reptiles from passing through and reduce the risk of small snakes getting stuck.		✓		

Phase	Impact	Mitigation measure	Type of action			
			A	M	R	O
		- An overhang lip should extend away from the road to deter climbing, and the fence should be secured with posts at regular intervals to prevent collapse. Fencing should direct animals towards safe crossing points, such as above tunnels or under bridges. - Monitor roadkill frequency one year after project completion, and if necessary, implement additional mitigation measures.				
OPE	Noise, light and vibration disturbance	Most of the species detected during the field surveys were recorded close to the main or local roads and are already habituated to the certain degree of noise. They also may become accustomed to highway transportation related noise and vibration over time. However, it is recommended to avoid installing lighting near potentially vulnerable sites, unless required for human safety or other road safety requirements; If the artificial lighting is required adjacent to important habitat sites, then design lighting or install shades to emit down and away from the natural area.		✓		
Birds						
CON	Loss of habitat due to cutting down trees and shrubs to trace the corridor	This activity must be done in the period of November/February, in order to avoid disturbing the birds during the autumn migration and prevent the beginning of breeding in early spring (due to lack of vegetation). After construction, prevent erosion by planting species that already exist on the corridor. It is desirable to install the pylons outside the breeding season in May-July. Avoid turbidity of streams and rivers.		✓		
CON	Permanent loss of space by highway construction	The construction of the road will lead to permanent loss of space in the part of the road that goes through the land. On the part of the highway that goes by viaduct, the foot of the bridge will permanently take up space. It is possible to place breeding platforms for breeding birds at the foot of the viaduct or, at lower layers, for species that breed in cavities, houses for their breeding.		✓		
CON	Construction of sites, service roads, temporary parking spaces for the machines etc.	The construction of temporary, service roads follow the construction of the highway. Clearing and removal of vegetation should be performed in the period of November/February. Do only the necessary infrastructure with as few changes to the terrain description as possible. After completion of works, rehabilitate the terrain, remove the construction materials, prevent soil erosion. It is advisable to avoid steeper slopes due to difficult vegetation overgrowth in the later period.		✓	✓	
CON	Removal and disposal of the upper layer of soil near the planned road	The activity should begin in the area that has been cleared of vegetation or intended for that purpose during the wintering of birds in November/February, in order to avoid possible start of breeding of birds in the field intended for the landfill. Dispose of material in places that are least environmentally significant or have already been devastated by other interventions.		✓	✓	

Phase	Impact	Mitigation measure	Type of action			
			A	M	R	O
CON	Noise and vibration disturbance	It is very likely that birds will adapt to this impact. (however, the impact may be more significant for their food base, such as small mammals). The measures are those implemented for the noise & vibrations impacts		✓		
CON	Disturbance from dust	Adopt the measures for dust mitigation as in the ESIA, to prevent dust from rising so that the surrounding plants, whose fruits birds use to feed, especially during migration, could carry out normal life cycles		✓		
CON	Soil and water pollution by washing machines, rinsing concrete or incidental oil spills	This impact is reflected in the impact on the food base of birds and on the threat to habitats. Adopt the measures for prevention of soil and water pollution mitigation as in the ESIA		✓		
CON	Impacts on rivers & streams (backfilling, increase of turbidity)	In case groundwater is encountered during excavation of the tunnel, it should be channelled in such a way that the undisturbed water goes into the watercourses, so that the rivers and streams are not additionally burdened with turbidity. Prevent in every way the backfilling of the riverbed with construction material, so that, after the completion of works, the habitat recovers faster where possible.		✓		
OPE	Barrier effect (noise barriers, pylons on the viaduct, cables, etc.)	Transparent noise barriers should be covered with bird silhouettes. In case of installation of pylons and cables, they should be equipped with visual jammers.		✓		
Mammals (excl. bats)						
CON	Fragmentation	Considering that the Project includes the construction of bridges, crossings and tunnels, movement corridors and habitats are not expected to be disrupted if the necessary measures of protection and mitigation during the project construction phase are applied. Use of heavy machinery should be limited to the project right-of-way area to avoid additional fragmentation of habitats		✓		
CON	Direct mortality	Fences, artificial deterrents	✓			
CON	Disturbance by noise and artificial light	Adopt measures for noise mitigation as per ESIA Construction activities exclusively by daylight		✓		
OPE	Fragmentation	Considering that the project includes the construction of a number of bridges and crossings, species movement corridors and habitats are not expected to be disrupted		✓		
OPE	Direct mortality	Fences, artificial deterrents	✓			
Bats						
CON	Disturbance by noise and artificial lights	Construction activities exclusively by daylight		✓		

Phase	Impact	Mitigation measure	Type of action			
			A	M	R	O
CON	Damaging effects of roost site destruction and habitat loss and degradation	Visit recorded roosts in pre-construction period (in summer before planned construction), several days per summer season, using regular bat survey methods (observation, netting, acoustic method etc.).		✓		
OPE	Barrier effect	The existing flight paths and migration routes, as well as landscape elements that define them (vegetation which surrounding Drcka river and its tributaries), should be preserved. Special measures should be taken in places where the road interrupts them to enable safe “transit” of bats – for example specific hop-over vegetation formations, such as green viaducts, appropriate passes below the road, or green bridge etc.	✓	✓		

4.5 Biodiversity Management

A Construction Biodiversity Management Plan (CBMP) shall be prepared by the Contractor, aiming to:

- Avoid / minimise the of adverse impacts on biodiversity
- To protect and conserve biodiversity
- Promote sustainable management and use of natural resources through the adoption of practices that integrate conservation needs with the project.

The CBMP will cover the pre-construction and construction phase

The Construction Biodiversity Management Plan shall:

- consider the baseline conditions, as they have been recorded by the filed surveys already executed
- include an additional survey regarding aquatic environment (ichthyofauna and benthic fauna) to be conducted during pre-construction
- determine any additional surveys that must be conducted during pre-construction, assessing also the need to conduct surveys at the areas of landfills and borrow pits.
- consider and incorporates finding of the Critical Habitat Assessment (in the frame of the ESIA)
- define detailed measures and procedures to avoid/minimise the adverse impacts to biodiversity features, and to restore the biodiversity features, based on the measures described in the ESIA and the national EIA and relevant approval decision,
- Includes a loss/gain analysis and ensures that for the habitats identified in the project area and characterised as PBF, **no net loss is achieved**, while for the habitat 91E0*, as well as for the species that qualify as CH as per EU legislation, **net gain is achieved**. If necessary for achieving net gain, opportunities for offset should be determined.
- be updated to reflect increased understanding of Project programme and design and incorporates any new information which may be obtained during the pre-construction phase

4.6 Summary and conclusions

A Critical Habitat Assessment for the Bar-Boljare Highway - section Mateševo – Andrijeviča was performed according to the requirements of EBRD's PR6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources and the relevant guidance note issued in March 2023.

All habitats identified in the area qualify as PBF, while the habitat 91E0 qualifies as CH. Regarding species, according to the criteria for non-EU member states, no species qualify for as critical habitats.

If the EU-member states criteria are applied, several species could qualify as CH. However, all these species are widely distributed in the country. The provisions for the Article 12 of the Habitats Directive should apply:

- (a) all forms of deliberate capture or killing of specimens of these species in the wild;
- (b) deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration;
- (c) deliberate destruction or taking of eggs from the wild;

(d) deterioration or destruction of breeding sites or resting places.

In the reports of field surveys impacts and mitigation measures were identified. These impacts and mitigation measures are described in the present report and included in the ESIA.

A Construction Biodiversity Management Plan shall be prepared by the Contractor, aiming to:

- Avoid / minimise the of adverse impacts on biodiversity
- To protect and conserve biodiversity
- Promote sustainable management and use of natural resources through the adoption of practices that integrate conservation needs with the project.

The Construction Biodiversity Management Plan will include a loss/gain analysis and ensure that for the habitats identified in the project area and characterised as PBF, **no net loss is achieved**, while for the habitat 91E0*, as well as for the species that qualify as CH as per EU legislation, **net gain is achieved**.

Table 10: Summary of CH assessment results

Group	Criterion 1: Priority ecosystems		Criterion 2: Priority species and their habitats			
			2.1 Threatened species		2.2 Range-restricted species	2.3 Migratory & congregatory species
	IUCN/ BERN	EU Directives	IUCN/BERN	EU Directives		
Alpine rivers and the herbaceous vegetation along their banks	PBF	PBF				
Alpine rivers and their ligneous vegetation with <i>Myricaria germanica</i>	PBF	PBF				
Alpine rivers and their ligneous vegetation with <i>Salix elaeagnos</i>	PBF	PBF				
Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	PBF	PBF				
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	PBF	PBF				
Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	PBF	PBF				
Mountain hay meadows	PBF	PBF				
Alkaline fens	PBF	PBF				
Siliceous rocky slopes with chasmophytic vegetation	PBF	PBF				
Luzulo-Fagetum beech forests	PBF	PBF				
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	PBF	CH				
Illyrian oak-hornbeam forests (<i>Erythronio-Carpinion</i>)	PBF	PBF				
Pannonian-Balkan turkey oak - sessile oak forests	PBF	PBF				
Ichthyofauna -Drcka River						
<i>Cottus gobio</i>			PBF	PBF		
Ichthyofauna -River Lim and Zlorečica						
<i>Cottus gobio</i>			PBF	PBF		
<i>Hucho hucho</i>			PBF	PBF		
<i>Alburnus alburnus</i>			PBF	PBF		
<i>Telestes ryssela (souffia)</i>			PBF	PBF		

Group	Criterion 1: Priority ecosystems		Criterion 2: Priority species and their habitats			
	IUCN/ BERN	EU Directives	2.1 Threatened species		2.2 Range-restricted species	2.3 Migratory & congregatory species
			IUCN/BERN	EU Directives		
<i>Cobitis elongata</i>			PBF	PBF		
<i>Misgurnus fossilis</i>			PBF	PBF		
<i>Eudontomyzon vladkovi</i>			PBF	PBF		
Amphibians and reptiles (A/R)						
<i>Bombina variegata</i> (A)			PBF	CH		
<i>Rana graeca</i> (A)				CH		
<i>Lacerta agilis</i> (R)				CH		
<i>Lacerta viridis</i> (R)				CH		
<i>Podarcis muralis</i> (R)				CH		
<i>Coronella austriaca</i> (R)				CH		
<i>Natrix natrix</i> (R)			PBF	PBF		
<i>Natrix tessellate</i> (R)				CH		
<i>Vipera ammodytes</i> (R)				CH		
Birds						
<i>Gyps fulvus</i>			PBF			
<i>Aquila chrysaetos</i>			PBF			
<i>Circaetus gallicus</i>			PBF			
<i>Pernis apivorus</i>			PBF			
<i>Falco vespertinus</i>			PBF			
<i>Falco peregrinus</i>			PBF			
<i>Perdix perdix</i>			PBF			
<i>Streptopelia turtur</i>			PBF			
<i>Bubo bubo</i>			PBF			
<i>Aegolius funereus</i>			PBF			
<i>Caprimulgus europaeus</i>			PBF			
<i>Dryocopus martius</i>			PBF			
<i>Picus canus</i>			PBF			
<i>Leiopicus medius</i>			PBF			
<i>Dendrocopos syriacus</i>			PBF			
<i>Dendrocopos leucotos</i>			PBF			
<i>Lullula arborea</i>			PBF			
<i>Anthus campestris</i>			PBF			
<i>Lanius collurio</i>			PBF			
Mammals						

Group	Criterion 1: Priority ecosystems		Criterion 2: Priority species and their habitats			
	IUCN/ BERN	EU Directives	2.1 Threatened species		2.2 Range-restricted species	2.3 Migratory & congregatory species
			IUCN/BERN	EU Directives		
<i>Canis lupus</i>			PBF	CH		
<i>Lutra lutra</i>			PBF	CH		
<i>Ursus arctos</i>			PBF	CH		
<i>Felis silvestris</i>				CH		
<i>Barbastella barbastellus</i>			PBF	CH		
<i>Eptesicus serotinus</i>				CH		
<i>Hypsugo savii</i>				CH		
<i>Myotis alcathoe</i>				CH		
<i>Myotis brandtii</i>				CH		
<i>Myotis daubentonii</i>				CH		
<i>Myotis myotis</i>			PBF	CH		
<i>Nyctalus leisleri</i>				CH		
<i>Nyctalus noctula</i>				CH		
<i>Pipistrellus pipistrellus</i>				CH		
<i>Pipistrellus pygmaeus</i>				CH		
<i>Pipistrellus kuhlii</i>				CH		
<i>Rhinolophus hipposideros</i>			PBF	CH		
<i>Myotis capaccinii</i>			PBF	CH		
<i>Myotis mystacinus</i>				CH		
<i>Pipistrellus nathusii</i>				CH		

5 ANNEX 1 – DETAILED ASSESSMENT TABLES

Annex - Table 1: Criterion 2 – Ichthyofauna

Latin name	Common English name	Montenegrin name	Bern Convention Annex	Bern Convention Resolution 6	Habitats Directive	IUCN - Red List	Montenegrin Legislation	Characterisation IUCN/Bern	Characterisation EU
<i>Salmo labrax</i>	Black Sea trout	Blatnjača				LC	VU		
<i>Thymallus thymallus</i>	Grayling	Lipljen	Annex III	NO	Annex V	LC	VU		
<i>Barbus balcanicus</i>	Large spot barbel	Balkanskaa mrena			Annex V	LC	LC		
<i>Phoxinus csikii</i>	Danube Minnow	Dunavska gaovica					LC		
<i>Cottus gobio</i>	Freshwater sculpin	Peš	Annex I	YES	Annex II	LC	LC	PBF	PBF
<i>Oncorhynchus mykiss</i>	Coast angel trout / rainbow trout	Kalifornijska pastrmka				Not evaluated			
<i>Salmo labrax</i>	Black Sea trout	Blatnjača				LC	VU		
<i>Hucho hucho</i>	Danube / Huchen	Mladica	Annex III	YES	Annex II, Annex V	EN	EN	PBF	PBF
<i>Thymallus thymallus</i>	European grayling	Lipljen	Annex III	NO	Annex V	LC	VU		
<i>Alburnus alburnus</i>	Bleak	Zela, dunavska ukljeva				LC	EN	PBF	PBF
<i>Alburnoides bipunctatus</i>	Spirlin	Ukljevica	Annex III	NO		LC	LC		
<i>Barbus balcanicus</i>	Large spot barbel	Balkanskaa mrena			Annex V	LC	LC		
<i>Barbus barbus</i>	Barbel	Velika mrena			Annex V	LC	VU		
<i>Chondrostoma nasus</i>	Undermouth	Skobalj	Annex III	NO		LC	LC		
<i>Gobio obtusirostris</i>	Danube gudgeon	Dunavska mrenica				LC	LC		
<i>Leuciscus leuciscus</i>	Dace	Klenić				LC	LC		
<i>Rutilus virgo</i>	Cactus roach	Plotica				LC	VU		
<i>Telestes ryssela (souffia)</i>	Danube riffle dace / Soufie	Ješovka	Annex III	YES	Annex II	LC	LC	PBF	PBF

Latin name	Common English name	Montenegrin name	Bern Convention Annex	Bern Convention Resolution 6	Habitats Directive	IUCN - Red List	Montenegrin Legislation	Characterisation IUCN/Bern	Characterisation EU
<i>Phoxinus phoxinus</i>	Danube Minnow	Dunavska gaovica				LC	LC		
<i>Scardinius erythrophthalmus</i>	Rudd / Redeye	Crvenperka	Annex III	NO		LC	LC		
<i>Squalius cephalus</i>	Chub	Klen				LC	LC		
<i>Cobitis elongata</i>	Balkan spined loach	Velikli vijun	Annex III	YES	Annex II	LC	VU	PBF	PBF
<i>Misgurnus fossilis</i>	Weather loach	Čikov	Annex III	YES	Annex II	LC		PBF	PBF
<i>Sabanajewia balcanica</i>	Balkan golden loach	Balkanski vijun				LC	VU		
<i>Barbatula barbatula</i>	Stone loach	Brkica				LC	LC		
<i>Lepomis gibbosus</i>	Pumpkinseed	Sunčanica				Not evaluated	LC		
<i>Esox lucius</i>	Pike	Štuka				LC			
<i>Lota lota</i>	Burbot	Manic, derać		NO		LC	LC		
<i>Cottus gobio</i>	Freshwater sculpin	Peš	Annex I	YES	Annex II	LC	LC	PBF	PBF
<i>Eudontomyzon vladykovi</i>	Danubian brook lamprey /Vladykov's lamprey	Zmijuljica	Annex III	YES	Annex II	LC		PBF	PBF

Annex - Table 2: Criterion 2 Amphibians and Reptiles

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Resolution 6	Habitats Directive	IUCN - Red List	Montenegrin Legislation	Characterisation IUCN / Bern	Characterisation EU
<i>Salamandra salamandra</i>	Fire salamander	Šareni daždevnjak	Annex III	NO		VU	LC	PBF	
<i>Bombina variegata</i>	Yellow-bellied toad	Žutotrbi mukač	Annex II	YES	Annex II and Annex IV	LC	LC	PBF	CH
<i>Bufo bufo</i>	Common toad	Obična krastača ili smeđa krastača	Annex III	NO		LC	LC		
<i>Pelophylax ridibundus</i>	Marsh frog / Lake frog	Velika zelena žaba	Annex III	NO	Annex V	LC	LC		
<i>Rana graeca</i>	Greek stream frog	Grčka smeđa žaba	Annex III	NO	Annex IV	LC	LC		CH
<i>Rana temporaria</i>	European common frog / Grass frog	Livadski smeđa žaba	Annex III	NO	Annex V	LC	LC		
<i>Lacerta agilis</i>	Sand lizard	Livadski ili sivi gušter	Annex II	NO	Annex IV	LC	LC		CH
<i>Lacerta viridis</i>	Eastern green lizard	Zelembač	Annex II / Annex III	NO	Annex IV	LC	LC		CH
<i>Podarcis muralis</i>	Common wall lizards	Zidni gušter	Annex II	NO	Annex IV	LC	LC		CH
<i>Anguis fragilis</i>	Slow worm	Sljepić	Annex III	NO		LC	LC		
<i>Zamenis longissimus</i>	Aesculapian snake	Obični smuk ili šumski smuk / eskulapov smuk				LC	LC		
<i>Coronella austriaca</i>	Smooth snake	Smukulja	Annex II	NO	Annex IV	LC	LC		CH
<i>Natrix natrix</i>	Grass snake	Bjelouška	Annex II / Annex III	YES		LC	LC	PBF	PBF
<i>Natrix tessellata</i>	Dice snake	Ribarica	Annex II	NO	Annex IV	LC	LC		CH
<i>Vipera ammodytes</i>	Nose-horned viper	Poskok	Annex II	NO	Annex IV	LC	LC		CH

Annex - Table 3: Criterion 2 – Birds

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Res.6	Birds Directive	IUCN Red List Category (Europe)	Montenegrin legislation (Red List)	Charact. IUCN /Bern	Char. EU	EOO (km2)	Migratory
<i>Ardea cinerea</i>	Grey Heron	Siva čaplja	Annex III	NO	General as per article 1	LC	VU			136,000,000	YES
<i>Anas platyrhynchos</i>	Mallard	Patka gluvvara	Annex III	NO	Annex II/ Annex III	LC	LC			65,800,000	YES
<i>Gyps fulvus</i>	Griffon Vulture	Bjeloglavi sup	Annex II	YES	Annex I	LC	EX	PBF	PBF	20,400,000	YES
<i>Aquila chrysaetos</i>	Golden Eagle	Suri orao	Annex II	YES	Annex I	LC	VU	PBF	PBF	139,000,000	YES
<i>Circus gallicus</i>	Short-toed Eagle	Orao zmijar	Annex II	YES	Annex I	LC	VU	PBF	PBF	48,800,000	YES
<i>Buteo buteo</i>	Buzzard	Mišar	Annex II	NO	General as per article 1	LC	LC			33,500,000	YES
<i>Pernis apivorus</i>	Honey Buzzard	Osičar	Annex II	YES	Annex I	LC	NT	PBF	PBF	18,200,000	YES
<i>Accipiter gentilis</i>	Goshawk	Jastreb	Annex II	NO	General as per article 1	LC	VU			113,000,000	YES
<i>Accipiter nisus</i>	Sparrowhawk	Kobac	Annex II	NO	General as per article 1	LC	LC			54,400,000	YES
<i>Falco tinnunculus</i>	Common Kestrel	Vjetruška	Annex II	NO	General as per article 1	LC	LC			106,000,000	YES
<i>Falco vespertinus</i>	Red-footed Falcon	Crvenonoga vjetruša	Annex II	YES	Annex I	NT		PBF	PBF	3,360,000	YES
<i>Falco subbuteo</i>	Eurasian Hobby	Soko lastavičar	Annex II	NO	General as per article 1	LC	VU			49,300,000	YES
<i>Falco peregrinus</i>	Peregrine	Sivi soko	Annex II	YES	Annex I	LC	CR	PBF	PBF	413,000,000	YES
<i>Perdix perdix</i>	Grey Partridge	Jarebica poljka	Annex III	NO	Annex II/ Annex III	LC	EN	PBF	PBF	16,900,000	NO
<i>Coturnix coturnix</i>	Common Quail	Prepelica	Annex III	NO	Annex II	NT	NT			8,490,000	YES
<i>Arenaria interpres</i>	Turnstone	Sljuka kamenjarka	Annex II	NO	General as per article 1	LC				177,000	YES
<i>Gallinago gallinago</i>	Snipe	Bekasine	Annex III	NO	Annex II/ Annex III	LC				63,100,000	YES
<i>Columba palumbus</i>	Woodpigeon	Golub grivnjaš			Annex II/ Annex III	LC	LC			32,000,000	YES
<i>Columba livia</i>	Rock dove	Divlji golub	Annex III	NO	Annex II	LC	LC			61,000,000	YES
<i>Columba oenas</i>	Stock dove	Golub dupljaš	Annex III	NO	Annex II	LC	DD			21,400,000	YES
<i>Streptopelia decaocto</i>	Eurasian Collared-dove	Gugutka	Annex III	NO	Annex II	LC	LC			213,000,000	NO
<i>Streptopelia turtur</i>	Turtle dove	Grlica	Annex III	NO	Annex II	VU	NT	PBF	PBF	35,700,000	YES
<i>Cuculus canorus</i>	Cuckoo	Kukavica	Annex III	NO	General as per article 1	LC	LC			61,200,000	YES
<i>Strix aluco</i>	Tawny Owl	Šumska sova	Annex II	NO	General as per article 1	LC	LC			23,300,000	NO
<i>Bubo bubo</i>	Eagle-owl	Velika ušara, buljina	Annex II	YES	Annex I	LC	VU	PBF	PBF	51,400,000	NO
<i>Aegolius funereus</i>	Tengmalm's Owl	Planinska kukumavka	Annex II	YES	Annex I	LC	NT	PBF	PBF	73,800,000	NO
<i>Caprimulgus europaeus</i>	Nightjar	Leganj	Annex II	YES	Annex I	LC	LC	PBF	PBF	19,500,000	YES
<i>Apus apus</i>	Swift	Pištarka, srpić, čiopa	Annex III	NO	General as per article 1	LC	LC			39,800,000	YES
<i>Tachymarptis melba</i>	Alpine Swift	Velika pištarka	Annex II	NO	General as per article 1	LC	LC			39,200,000	YES

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Res.6	Birds Directive	IUCN Red List Category (Europe)	Montenegrin legislation (Red List)	Charact. IUCN /Bern	Char. EU	EOO (km2)	Migratory
<i>Upupa epops</i>	Hoopoe	Pupavac	Annex II	NO	General as per article 1	LC	LC			78,300,000	YES
<i>Dryocopus martius</i>	Black Woodpecker	Crna žuna	Annex II	YES	Annex I	LC	LC	PBF	PBF	38,900,000	NO
<i>Picus viridis</i>	Green Woodpecker	Zelena žuna	Annex II	NO	General as per article 1	LC	LC			11,800,000	NO
<i>Picus canus</i>	Grey-faced Woodpecker	Siva žuna	Annex II	YES	Annex I	LC	LC	PBF	PBF	22,800,000	NO
<i>Leiopicus medius</i>	Middle Spotted Woodpecker	Srednji djetić	Annex II	YES	Annex I	LC	LC	PBF	PBF	8,580,000	NO
<i>Dryobates minor</i>	Lesser Spotted Woodpecker	Mali djetlić	Annex II	NO	General as per article 1	LC	LC			39,300,000	NO
<i>Dendrocopos syriacus</i>	Syrian Woodpecker	Seoski djetlić	Annex II	YES	Annex I	LC	LC	PBF	PBF	8,290,000	NO
<i>Dendrocopos leucotos</i>	White-backed Woodpecker	Planinski djetlić	Annex II	YES	Annex I	LC	NT	PBF	PBF	40,400,000	NO
<i>Jynx torquilla</i>	Wryneck	Zmijoglava	Annex II	NO	General as per article 1	LC	LC			38,400,000	YES
<i>Lullula arborea</i>	Woodlark	Šumska ševa	Annex III	YES	Annex I	LC	LC	PBF	PBF	6,290,000	YES
<i>Hirundo rupestris</i> (Ptyonoprogne rupestris)	Crag Martin	Lasta litičarka	Annex II	NO	General as per article 1	LC	LC			29,300,000	YES
<i>Hirundo rustica</i>	Swallow	Seoska lasta	Annex II	NO	General as per article 1	LC	LC			251,000,000	YES
<i>Delichon urbicum</i>	House Martin	Gradska lasta	Annex II	NO	General as per article 1	LC	LC			30,800,000	YES
<i>Anthus campestris</i>	Tawny Pipit	Poljska trepteljka	Annex II	YES	Annex I	LC	LC	PBF	PBF	22,100,000	YES
<i>Anthus spinoletta</i>	Water Pipit	Planinska trepteljka	Annex II	NO	General as per article 1	LC	LC			17,500,000	YES
<i>Anthus pratensis</i>	Meadow Pipit	Livadska trepteljka	Annex II	NO	General as per article 1	NT				15,600,000	YES
<i>Anthus trivialis</i>	Tree Pipit	Šumska trepteljka	Annex II	NO	General as per article 1	LC	LC			35,100,000	YES
<i>Motacilla alba</i>	White Wagtail	Bijela pastirica	Annex II	NO	General as per article 1	LC	LC			37,800,000	YES
<i>Motacilla cinerea</i>	Grey Wagtail	Potočna pastirica	Annex II	NO	General as per article 1	LC	LC			60,700,000	YES
<i>Cinclus cinclus</i>	Dipper	Mlinarić, vodenkos	Annex II	NO	General as per article 1	LC	LC			35,900,000	YES
<i>Troglodytes troglodytes</i>	Wren	Carić	Annex II	NO	General as per article 1	LC	LC			55,500,000	YES
<i>Prunella modularis</i>	Dunnock	Sivi popić	Annex II	NO	General as per article 1	LC	VU			15,200,000	YES
<i>Prunella collaris</i>	Alpine Accentor	Planinski popić	Annex II	NO	General as per article 1	LC	LC			38,000,000	YES
<i>Erithacus rubecula</i>	Robin	Crvenača	Annex II	NO	General as per article 1	LC	LC			23,900,000	YES
<i>Phoenicurus phoenicurus</i>	Redstart	Crvenrepka	Annex II	NO	General as per article 1	LC	LC			30,900,000	YES

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Res.6	Birds Directive	IUCN Red List Category (Europe)	Montenegrin legislation (Red List)	Charact. IUCN /Bern	Char. EU	EOO (km2)	Migratory
<i>Oenanthe oenanthe</i>	Wheatear	Planinska bjelka	Annex II	NO	General as per article 1	LC	LC			79,500,000	YES
<i>Saxicola rubetra</i>	Whinchat	Travarka	Annex II	NO	General as per article 1	LC	LC			20,500,000	YES
<i>Turdus merula</i>	Blackbird	Kos	Annex III	NO	Annex II	LC	LC			32,400,000	YES
<i>Turdus philomelos</i>	Song Thrush	Drozd pjevač	Annex III	NO	Annex II	LC	LC			23,300,000	YES
<i>Turdus viscivorus</i>	Mistle Thrush	Turdus viscivorus	Annex III	NO	Annex II	LC	LC			30,900,000	YES
<i>Sylvia atricapilla</i>	Blackcap	Crnoglava grmuša	Annex II	NO	General as per article 1	LC	LC			27,800,000	YES
<i>Sylvia hortensis</i>	Orphean Warbler	Velika grmuša	Annex II	NO	General as per article 1	LC	LC			3,060,000	YES
<i>Sylvia communis</i>	Whitethroat	Obična grmuša	Annex II	NO	General as per article 1	LC	LC			25,100,000	YES
<i>Cettia cetti</i>	Cetti's Warbler	Svilorepi cvrčič	Annex II	NO	General as per article 1	LC	LC			19,900,000	YES
<i>Phylloscopus collybita</i>	Chiffchaff	Zviždak	Annex II	NO	General as per article 1	LC	LC			15,300,000	YES
<i>Phylloscopus trochilus</i>	Willow Warbler	Brezov zviždak	Annex II	NO	General as per article 1	LC				23,100,000	YES
<i>Muscicapa striata</i>	Spotted Flycatcher	Siva muharica	Annex II	NO	General as per article 1	LC	LC			32,400,000	YES
<i>Parus caeruleus</i>	Blue Tit		Annex II	NO		Not evaluated					
<i>Parus major</i>	Great Tit	Velika sjenica	Annex II	NO	General as per article 1	LC	LC			89,800,000	NO
<i>Parus montanus</i>	Willow Tit	Planinska sjenica	Annex II	NO	General as per article 1	LC	LC			33,800,000	YES
<i>Poecile palustris</i>	Marsh Tit	Siva sjenica	Annex II	NO	General as per article 1	LC	LC			30,100,000	NO
<i>Periparus ater</i>	Coal Tit	Jelova sjenica	Annex II	NO	General as per article 1	LC	LC			52,500,000	NO
<i>Sitta europaea</i>	Nuthatch	Brgljev	Annex II	NO	General as per article 1	LC	LC			51,400,000	NO
<i>Certhia familiaris</i>	Treecreeper	Kratkokljuni puzić	Annex II	NO	General as per article 1	LC	LC			35,200,000	NO
<i>Lanius collurio</i>	Red-backed Shrike	Rusi svračak	Annex II	YES	Annex I	LC	LC	PBF	PBF	15,700,000	YES
<i>Lanius senator</i>	Woodchat Shrike	Ridoglavni svračak	Annex II	NO	General as per article 1	NT	LC			12,000,000	YES
<i>Garulus glandarius</i>	Jay	Kreštalica, sojka			Annex II	LC	LC			43,100,000	NO
<i>Pica pica</i>	Magpie	Svraka, čraka			Annex II	LC	LC			58,600,000	NO
<i>Nucifraga caryocatactes</i>	Nutcracker	Lješnjikara	Annex II	NO	General as per article 1	LC	LC			37,400,000	NO
<i>Pyrrhocorax graculus</i>	Alpine Chough	Žutokljuna galica	Annex II	NO	General as per article 1	LC	LC			21,300,000	NO
<i>Corvus monedula</i>	Jackdaw	Čavka			Annex II	LC	LC			26,000,000	YES
<i>Corvus corax</i>	Raven	Gavran, čkovran	Annex III		General as per article 1	LC	LC			137,000,000	NO
<i>Corvus cornix</i>	Hooded crow	Siva vrana			General as per article 1	Not evaluated					
<i>Sturnus vulgaris</i>	Starling	Čvorak			Annex II	LC	LC			38,400,000	YES

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Res.6	Birds Directive	IUCN Red List Category (Europe)	Montenegrin legislation (Red List)	Charact. IUCN /Bern	Char. EU	EOO (km2)	Migratory
<i>Oriolus oriolus</i>	Golden Oriole	Vuga	Annex II	NO	General as per article 1	LC	LC			26,600,000	YES
<i>Passer domesticus</i>	House Sparrow	Vrabac			General as per article 1	LC	LC			68,500,000	NO
<i>Fringilla coelebs</i>	Chaffinch	Zeba	Annex III	NO	General as per article 1	LC	LC			28,200,000	YES
<i>Carduelis carduelis</i>	Goldfinch	Štiglic, frkadel	Annex II	NO	General as per article 1	LC	LC			26,600,000	YES
<i>Coccothraustes coccothraustes</i>	Hawfinch	Batokljun, trešnjari	Annex II	NO	General as per article 1	LC	LC			33,000,000	YES
<i>Emberiza cia</i>	Rock Bunting	Planinska strnadica	Annex II	NO	General as per article 1	LC	LC			20,900,000	YES
<i>Emberiza cirlus</i>	Cirl Bunting	Crnogrla strnadica	Annex II	NO	General as per article 1	LC	LC			6,350,000	NO

Annex - Table 4: Criterion 2 – Mammals (including bats)

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Resolution 6	Habitats Directive	IUCN - Red List	Montenegrin Legislation	Characterisation	Characterisation EU	EOO
<i>Canis lupus</i>	Grey wolf	Vuk	Annex II	YES	Annex II, Annex IV, Annex V	LC		PBF	CH	>20000
<i>Capreolus capreolus</i>	European Roe Deer	Srna	Annex III	NO		LC				
<i>Erinaceus roumanicus</i>	Northern White-breasted Hedgehog	Sjeverni bjeloprsi jež				LC				9,648,887
<i>Glis glis</i>	Edible Dormouse	Obični puh	Annex III	NO		LC				9,300,590
<i>Lepus europaeus</i>	European hare	Zec	Annex III	NO		LC				
<i>Lutra lutra</i>	Eurasian Otter	Vidra	Annex II	YES	Annex II, Annex IV	NT	+	PBF	CH	>20000
<i>Martes foina</i>	Beech Marten/ Stone Marten	Kuna bjelica	Annex III	NO		LC				>20000
<i>Martes martes</i>	Pine Marten	Kuna zlatica	Annex III	NO	Annex V	LC				>20000
<i>Meles meles</i>	Badger	Jazavac	Annex III	NO		LC				>20000
<i>Mustela putorius</i>	European Polecat	Tvor	Annex III	NO	Annex V	LC				
<i>Nannospalax leucodon</i>	Lesser Mole Rat	Slijepo kuće				LC	+			>20000
<i>Sciurus vulgaris</i>	Eurasian Red Squirrel	Crvena vjeverica	Annex III	NO		LC				41,804,212
<i>Sus scrofa</i>	Wild Boar	Divlja svinja	Annex III	NO		LC				>20000
<i>Ursus arctos</i>	Brown bear	Mrki medvjed	Annex II	YES	Annex II, Annex IV	LC		PBF	CH	
<i>Vulpes vulpes</i>	Red Fox	Lišica				LC				
<i>Felis silvestris</i>	Wild cat	Divlja mačka	Annex II	NO	Annex II, Annex IV	LC			CH	6,015,635
<i>Mustela nivalis</i>	Weasel	Lasica	Annex III	NO		LC				
<i>Barbastella barbastellus</i>	Western Barbastelle	Širokouhi slijepi miš	Annex II	NO	Annex II, Annex IV	NT	+	PBF	CH	12,455,378
<i>Eptesicus serotinus</i>	Serotine bat	Kasni slijepi mišić	Annex II	NO	Annex IV	LC	+		CH	
<i>Hypsugo savii</i>	Savi's Pipistrelle	Savijev slijepi mišić	Annex II	NO	Annex IV	LC	+		CH	15,658,670
<i>Myotis alcathoe</i>	Alcathoe bat	Alkatoin večernja	Annex II	NO	Annex IV	DD	+		CH	2,860,473
<i>Myotis brandtii</i>	Brandt's Myotis	Brandtov večernjak	Annex II	NO	Annex IV	LC	+		CH	22,872,330
<i>Myotis daubentonii</i>	Daubenton's bat	Vodeni večernjak	Annex II	NO	Annex IV	LC	+		CH	
<i>Myotis myotis</i>	Greater Mouse-eared Myotis	veliki mišouhi večernjak	Annex II	YES	Annex II, Annex IV	LC	+	PBF	CH	7,071,111

Latin name	English name	Montenegrin name	Bern Convention Annex	Bern Convention Resolution 6	Habitats Directive	IUCN - Red List	Montenegrin Legislation	Characterisation	Characterisation EU	EOO
<i>Nyctalus leisleri</i>	Lesser Noctule.	mali noćnik	Annex II	NO	Annex IV	LC	+		CH	20,171,114
<i>Nyctalus noctula</i>	Noctule bat	obični noćnik	Annex II	NO	Annex IV	LC	+		CH	24,101,079
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	Mali slijepi mišić	Annex III	NO	Annex IV	LC	+		CH	
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	patuljsti slijepi mišić	Annex II	NO	Annex IV	LC	+		CH	10,673,041
<i>Pipistrellus kuhlii</i>	Kuhl's Pipistrelle	Bjelorubi slijepi mišić	Annex II	NO	Annex IV	LC	+		CH	51,385,949
<i>Rhinolophus hipposideros</i>	Lesser Horseshoe Bat.	Mali potkovičar	Annex II	YES	Annex II, Annex IV	NT	+	PBF	CH	22,157,273
<i>Myotis capaccinii</i>	Long-fingered bat	Dugoprsti slijepi miš	Annex II	YES	Annex II, Annex IV	VU	+	PBF	CH	2,757,764
<i>Myotis mystacinus</i>	whiskered bat	Brkati slijepi miš	Annex II	NO	Annex IV	LC	+		CH	13,823,224
<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	Nathusijev slijepi miš	Annex II	NO	Annex IV	LC	+		CH	