Republic of Serbia
Ministry of European Integration

This project is funded by the European Union

#ЕУ ЗА ТЕБЕ

RAILWAY LINE BELGRADE–NIŠ, SECTION III PARAĆIN-TRUPALE,
Environmental and Social Impact Assessment,
APPROPRIATE ASSESSMENT

EU PPF
PROJECT PREPARATION FACILITY

Republic of Serbia
Ministry of European Integration

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

The Birds and Habitats Directives set out the overall legal framework for protecting and managing Natura 2000 sites in EU.

This report presents the Appropriate Assessment for the Project. The Appropriate Assessment is prepared following Article 6(3) and (4) of the Habitats Directive 92/43/33C and based on the guidance - Assessment of plans and projects concerning Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Given that some areas of the planned Project intersect potential Natura 2000 areas in Serbia, conducting an Appropriate Assessment is essential. This requirement has a foundation in national legislation, EU Legislation and the Bern Convention and Emerald network.

1.1. National legislation

The Appropriate Assessment (AA) is included in the current Law on Nature Protection (Official Gazette of RS, No. 36/2009, 88/2010, 91/2010-correction, 14/2016 and 95/2018- amended law, and 71/2021) of Serbia in Articles 8 to 10. In practice, it has not yet been fully implemented, as the required related regulation has not yet been adopted. However, the Law on Environmental Impact Assessment ("*Official Gazette of the RS," No. 94/2024*) and the Law on Strategic Environmental Impact Assessment *("Official Gazette of the RS," No. 94/2024*) entered into force on 6 December 2024, where the introduction of new terms such as "*ecological network*" and "*acceptability for the ecological network*," enabled more precise alignment with the Law on Nature Protection.

The Laws address the relationship between the environmental impact assessment process and Appropriate Assessment for projects that may have a significant impact on the conservation and integrity of the ecological network area. For projects subject to strategic impact assessment or environmental impact assessment, the Appropriate Assessment is conducted as part of these processes. The Law on Environmental Impact Assessment prescribes that if a project might have an impact on the conservation and integrity of the ecological network area, the main Appropriate Assessment procedure is conducted following the Law on Nature Protection, before the issuance of the decision granting consent for the environmental impact assessment study.

According to the Law on Strategic Environmental Assessment, the Appropriate Assessment is conducted for plans and programs that, either alone or with other plans, programs, projects, works, or activities, may have a significant negative impact on the conservation goals and integrity of the ecological network area. The preliminary Appropriate Assessment is carried out before the decision to draft the strategic environmental assessment is made. The main Appropriate Assessment is then carried out before the preparation of the strategic impact assessment report, if the preliminary assessment shows that the project may have an impact on the preservation and integrity of the ecological network area.

Additionally, under the Law on Environmental Impact Assessment, the competent authority, when deciding on a request for an impact assessment for a project that may affect the conservation and integrity of the ecological network area, may decide that an impact assessment is not required only if, based on the conducted procedure and the decision made in the preliminary appropriate assessment, it is determined that the project will not have negative impacts on the conservation and integrity of the ecological network area.

The provisions of the Laws concerning the Appropriate Assessment will become applicable two years after the Laws entered into force.

According to Article 10 of the Law on Nature Protection, an Appropriate Assessment is a procedure that evaluates the possible impact of a strategy, plan, basis, program, project, works, or activities on conservation goals and the integrity of the area of the ecological network, and negative impact on the integrity of the ecologically important area, with the previously obtained conditions from the Institute for Nature Conservation.

1.2. EU Legislation

According to Article 6(3) of the Habitats Directive 92/43/EEC, any project or plan within a Natura 2000 or Emerald Network site, or in its vicinity, requires an Appropriate Assessment, conducted by national authorities following European Commission guidance, to ensure that it will not have a significant impact on the integrity of the site. Projects that cannot show, without reasonable scientific doubt, that there will be no negative impact on the conservation objectives of the site, its integrity, or the integrity of the Natura 2000 or Emerald Network will not comply with the Habitats Directive. In some instances, national authorities may derogate from this requirement of the Habitats Directive for “imperative reasons of overriding public interest (IROPI)” under Article 6(4) of the Directive. As required by the Habitats Directive in these cases, compensatory measures must ensure that the overall coherence of the Natura 2000 (or Emerald) Network is protected. This is also stated within EBRD, PR6 Guidance Note, 2022.

Article 6(3) and (4) sets out a step-by-step procedure for assessing plans or projects that are likely to impact Natura 2000 sites. This involves three main stages:

- Stage one: screening. The first part of the procedure consists of a pre-assessment stage (‘screening’) to ascertain whether the plan or project is directly connected with, or necessary to, the management of a Natura 2000 site, and, if this is not the case, then whether it is likely to have a significant effect on the site (either alone or in combination with other plans or projects) given the site’s conservation objectives.
- Stage two: the appropriate assessment. If likely significant effects cannot be excluded, the next stage of the procedure involves assessing the impact of the plan or project (either alone or in combination with other plans or projects) against the site’s conservation objectives and ascertaining whether it will affect the integrity of the Natura 2000 site, taking into account any mitigation measures.
- Stage three: derogation from Article 6(3) under certain conditions. The third stage of the procedure is governed by Article 6(4). It only comes into play if, despite a negative assessment, the developer considers that the plan or project should still be carried out for imperative reasons of overriding public interest. This is only possible if there are no alternative solutions, the imperative reasons of overriding public interest are duly justified, and if suitable compensatory measures are adopted to ensure that the overall coherence of Natura 2000 is protected.

Each stage of the procedure is influenced by the previous one. The order in which the stages are followed is therefore essential for applying Article 6(3) and (4) correctly. Figure 1-1 gives a flow chart of this procedure.

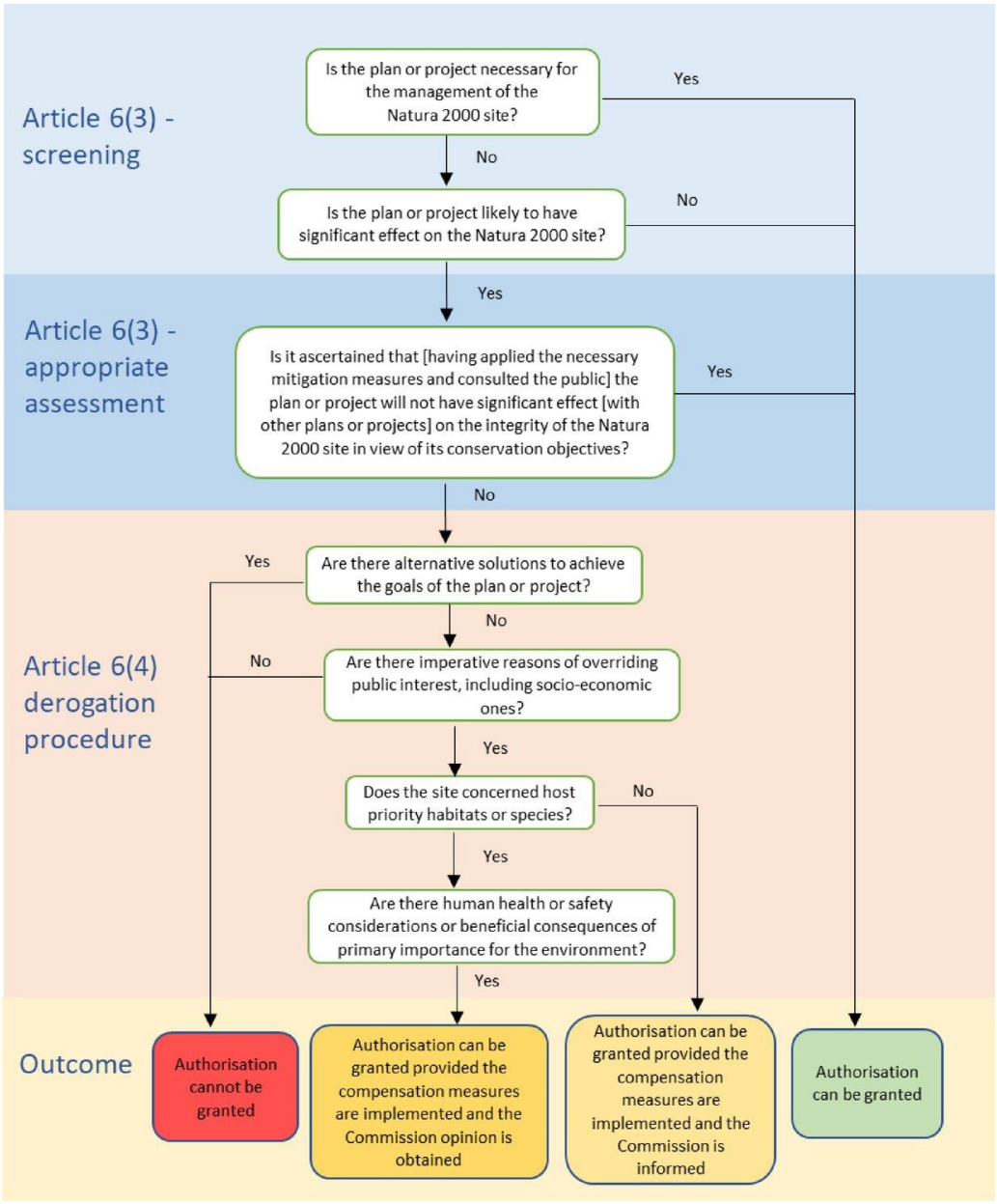

Figure 1-1. Flow chart of a step-by-step procedure for assessing plans or projects that are likely to have an impact on Natura 2000 sites

1.3. Bern Convention and Emerald network

Serbia ratified the Convention on the Conservation of European Wild Flora and Fauna and Natural Habitats in 2001, or the Bern Convention. As part of the Bern Convention is the Emerald network, established based on Recommendation No. 16 (1989) of the Standing Committee and implemented by the Council of Europe, particularly relevant to non-EU countries, such as Serbia. an ecological network made up of Emerald network is consisted of Areas of Special Conservation Interest (ASCIs).

Serbia set up the Emerald Network at the national level, which comprises 61 sites based on the lists of the strictly protected species of flora (Appendix I) and fauna (Appendix II), the list of protected species of fauna (Appendix III) that are part of the Bern Convention and require legislative and administrative measures to ensure their conservation, as well as Appendix IV, which lists the prohibited means and methods of killing, capture and other forms of exploitation. Based on the site typology according to species or habitat importance, 60 sites were identified as important for birds and other species and/or habitats (Type C), and one site was defined as important for habitats and other species (Type B).

The total area of the potential Emerald network in Serbia is 1,019,269.31 ha, i.e., 11.54% of the territory of Serbia. The Emerald Network is also within the ecologically important areas of the Serbian ecological network and the Natura 2000 Network. To ensure maximum coherence between the two processes, the Emerald Network and the Natura 2000 Network, the lists of plant and animal species included in the Appendices of the Convention have been harmonized with the lists of species in the Annexes of the Habitats Directive and the Birds Directive.

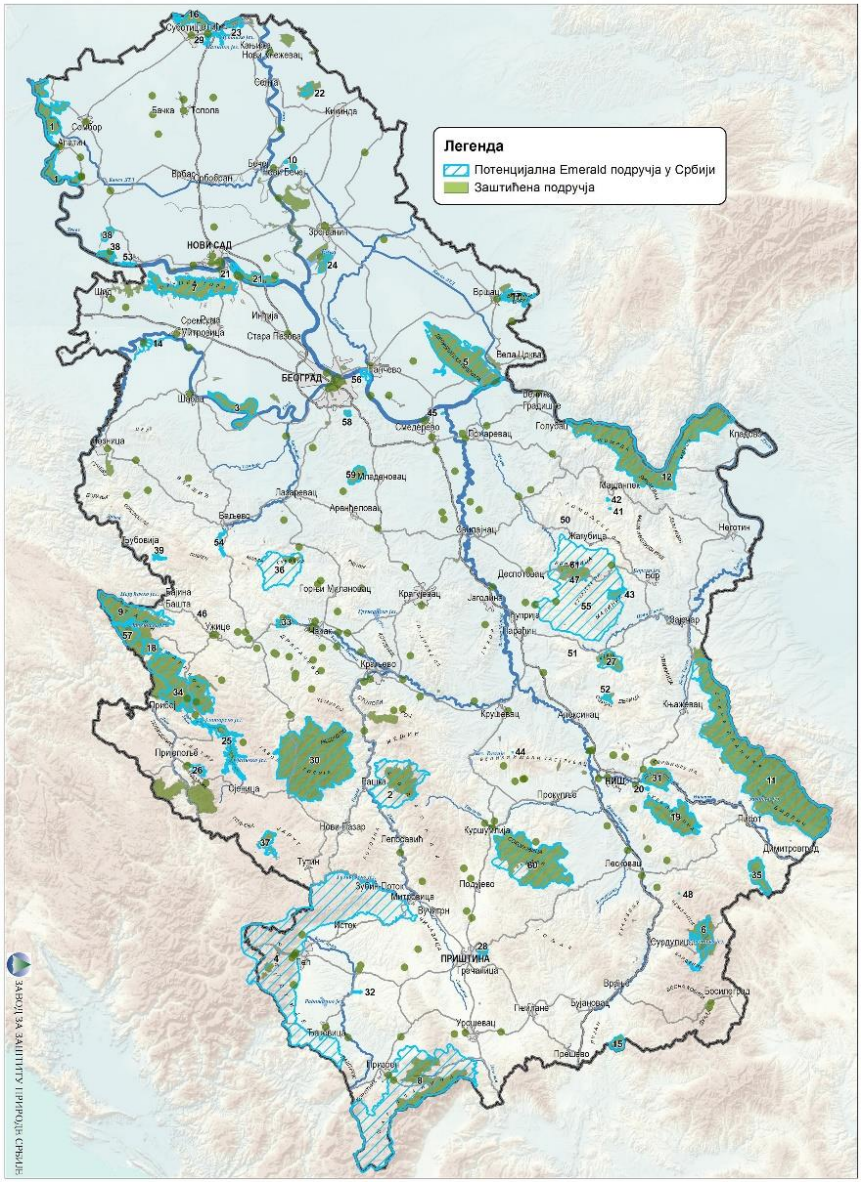

Figure 1-2. Potential Emerald areas (light blue) in Serbia and protected areas (green)[1]

Based on Article 38, of the Law on Nature Conservation, the Institute for Nature Conservation of Serbia, in cooperation with the Institute for Nature Conservation of Vojvodina and other professional and scientific institutions, prepares documentation for the establishment of an Ecological Network in the territory of the Republic of Serbia. The Institute creates and updates a digital database containing both vector-displayed boundaries of Ecological Network areas and a map of ecologically important areas.

[1] *Institute of Nature Conservation of Serbia*

An Ecological Network is established as a functionally and spatially connected entity for maintaining the habitat types of special importance for the protection, restoration and/or improvement of disturbed habitats. The Ecological Network of the Republic of Serbia consists of **ecologically significant areas** and **ecological corridors.** Ecological Network management relates to the management of individual ecologically significant areas and ecological corridors, in a way that ensures the preservation of favourable conditions of sensitive, rare, endangered and habitat types of special importance for the conservation and populations of strictly protected and protected wild species of national and international importance, as well as maintaining and improving functional and spatial connectivity of its parts.

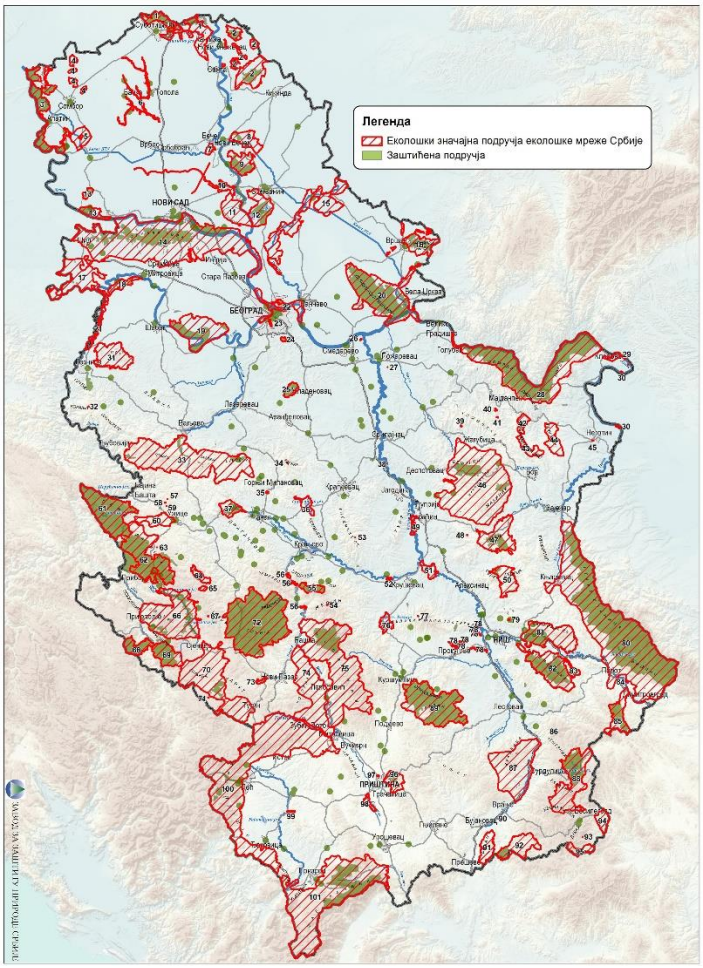

Figure 1-3. Ecologically significant areas of the Ecological network of Serbia and protected areas

1.3.1. Natura 2000 network

The Ministry of Environmental Protection and the Institutes for Nature Conservation of Serbia and Vojvodina have been working on the identification and designation of the Natura 2000 network in Serbia. Serbia, as the accession country, prepared a list of sites in the Natura 2000 network, following requirements under the two European Directives: The Birds and the Habitats. In terms of that, as a result of the project “EU for Natura 2000 in Serbia”, the

first list of potential sites Natura 2000 (SPAs and SCIs) with an information data system, database and GIS for Natura 2000 are developed. Each potential site is justified by the presence of reference list habitats and/or species that fulfil the agreed criteria. The correct coverage of each species and habitat according to the requirements of the Directives has also been verified. However, all experts agree that more fieldwork and specific data on some species and habitats are necessary to confirm this information with greater certainty. The boundaries of potential Natura 2000 sites are delineated roughly according to the distribution of species and habitat types. Their exact specification will be completed later according to the cadastral parcels. Since these areas have not been officially designated, they do not have established management of the site, a management plan, and defined conservation objectives.

1.3.2. Habitats

One of the first and most essential steps in the identification process of the Natura 2000 network is the establishment of the habitats and species reference lists in the country. Not all the habitats listed in Annex I of the Habitats Directive can be found in Serbia, so specific reference lists for habitat types have been established.[2]

Out of 233 habitat types protected in Europe, a total of 73 can be found in Serbia. There are 63 habitat types with a clear presence in Serbia. However, 10 habitat types are still questionable and must be confirmed through more field mapping.

Serbia has requested amendments of Annex I, II, IV & V of the Habitats Directive and amendments of definitions of certain habitat types in the Interpretation manual of EU habitats as is the case of the habitat type Dry Balkan serpentinophilous stepic grasslands *(Halacsyetalia sendtneri).* The data analysis located this habitat in the Alpine region of Kosovo, but there is a high assumption of presence also in central Serbia Alpine region.

The Republic of Serbia, through the EU for Natura 2000 project, has improved the knowledge and the fieldwork data in habitat mapping, including the preparation of the field mapping methodology of habitat types as well as an Interpretation Manual of Habitat Types of EU Importance for Serbia.

1.3.3. Reference list of species[3]

Annex I of Birds Directive and Annexes I, II and IV of Habitats Directive (for some species as plant species and fish species, also consider Annex V) list the species that are the reference for the designation of pSPAs and pSCI. Not all species listed in these Annexes occur in Serbia, so specific reference lists for each species and habitat have been established.

[2] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Habitat-types.pdf*

[3] *http://www.natura2000.gov.rs/en/reference-list-of-species/*

The reference list of **plant species** in Serbia[4] counts 33 species from Annex II and Annex IV and 34 species from Annex V of the Habitats Directive. For this list of species, five of them: *Campanula secundiflora, Cephalaria pastricensis, Daphne malyana, Nepeta rtanjensis* and *Picea omorika* are given as a proposal for amendments to the Annexes of Habitats Directive.

The reference list of **birds**[5] contains the species from Annex I of the Birds Directive and migratory species. The limitation is that no current and detailed information is available for all the species. The Serbian Reference List listed 141 species, out of 197 species and subspecies of birds included in Annex I. For these species, the most suitable territories are conserved in number and size as Special Protection Areas.

The list of **mammal** species consists of 141 species of mammals protected in Europe through Annexes II and IV of the Habitats Directive, 46 are present in Serbia[6]. Of these species, 31 are species of bats and 15 are other mammals. However, only 2 species have an unclear status and more research is needed to confirm their presence in Serbia.

The Habitats Directive lists 71 **amphibian** species under protection; however, only 14 species occur in Serbia[7]. Most of them are distributed in the two biogeographical regions, Pannonian and Continental ones, except a couple of newts species that are not present in the Pannonian region. Serbia has amended the Habitats Directive to include the species *Triturus dobrogicus* as part of Annex IV.

The Serbian reference list of **reptiles** includes 21 species[8], although 106 are included in the Annexes of Habitats Directive. Serbia has amended the Habitats Directive to include the species *Vipera berus bosniensis* as part of Annex IV.

There are 203 **fish** species under protection in Europe. From this list of species, 34 are included in the reference list of fish species[9], although one of them is considered extinct in the Danube River, hence in Serbia.

[4] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Plant-species.pdf*

[5] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Bird-species.pdf*

[6] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Mammal-species.pdf*

[7] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Amphibian-species.pdf*

[8] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Reptile-species.pdf*

[9] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Fish-species.pdf*

Invertebrate groups of species are also included in the Annexes of the Habitats Directive and those present in Serbia are the following ones: Dragonflies (7 species)[10], Grasshoppers (8 species)[11], Butterflies (28 species)[12], Beetles (16 species)[13], Other invertebrates: Mollusca (6 species); Crayfish (2 species) and Mayflies (1 species)[14]

The European Directive is protecting 134 species of invertebrate species, although only half of them (67) occur in Serbia, and the presence of some of them in the country is still unconfirmed. The Republic of Serbia has amended the Habitats Directive to include the species *Palingenia longicauda,* an aquatic insect from the order *Ephemeroptera* which is also known as the Tisza mayfly. This species is distributed in Tisza River (in Slovakia, Serbia and Hungary, although its presence in Slovakia is not confirmed). Also, Serbia has amended the Habitats Directive for the inclusion of three more species of invertebrates: two grasshoppers: *Pyrgomorphula serbica* and *Zeuneriana amplipennis,* and one beetle species: *Tentyria frivaldszkii.*

1.4. Appropriate assessment procedure

AA procedure consists of:

- stage 1 (screening) – likely significant effects can be excluded;
- stage 2 (appropriate assessment) – adverse effects on the integrity of a Natura 2000 site can be excluded.

AA procedure is carried out following the precautionary principle, based on the best available scientific evidence and methods within the preparation of the plan or project, before being placed in the procedure for adopting the plan, issuing location conditions, location permits, or other approvals for implementation or execution. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved.

The government prescribes in more detail the procedure, content, deadlines, the method of conducting AA, including the list of the necessary documentation on the AA concerning the conservation goals and the integrity of the ecologically significant area, the method of notifying the public, as well as the procedure for determining the prevailing public interest and compensatory measures.

[10] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Dragonfly-species.pdf*

[11] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Grasshopper-species.pdf*

[1212] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Butterfly-species.pdf*

[13] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Beetle-species.pdf*

[14] *http://www.natura2000.gov.rs/en/wp-content/uploads/2021/06/RefList_N2000-Invertabrate-species-others.pdf*

1.5. Approach to the assessment

Due to all mentioned above, an equivalent assessment applicable for potential Natura 2000 sites will be done in this document, to fulfil as much as possible the requirement on the identification of relevant Natura 2000 sites using as much as possible the Source-Pathway-Receptor model and compilation of information on Qualifying Interests and conservation objectives (the limitations are due to the lack of exact data):

- Name and type of the site, based on pSPA and pSCI lists prepared for Serbia and available at: https://daphne.sk/Natura2000Serbia/
- Evidence regarding the overlap of the project area of influence
- Description of the site, including defined importance of the site in a wider regional/EU context, justifications for the site's nomination as a potential Natura 2000/Emerald site, accompanied by available lists of the ecosystems and species important to this status. These ecosystems and species will be the Qualifying Interests, and their support will be determined by whether they are directly affected by the project's parts. Under Description of the site, the equivalent conservation objectives for the key species and habitats in a wider EU context will be provided, given that there are no site-specific conservation objectives for pSCI and pSPA registered along Section 3. This will serve as the basis upon which to assess the significance of the impacts of the Project.
- As a conclusion, determine whether the proposals will have any adverse effects on the integrity of the site and trigger an Appropriate Assessment.

These steps were fulfilled by undertaking a desk study and a four-season field survey, which enabled the establishment of the baseline and the assessment. The results are presented in the chapters below.

2. PROJECT DESCRIPTION

2.1. Railway corridor Belgrade–Niš area

The railway route Belgrade–Niš represents one of the most important transport corridors in the Republic of Serbia and plays an important role in the concept of transport system development. It is a part of SEETO Corridor X and connects Central and Western Europe with Greece, Turkey and the Middle East, and also part of the indicative extension of the Core TEN-T rail network in the Western Balkans.

The length of the railway Belgrade-Niš is around 244 km, while the length of the double-track section is 137.691 kilometers. It was built in 1884 as a single-track railway, and from 1934 to 1993, a second track was added in stages to increase capacity.

The overall objective of this Project is the modernisation of railway infrastructure on the Pan-European Corridor X and to enhance the capacity, safety and quality of services. This Project should ensure a modern, high-performance double-track railway line for combined passenger and freight traffic with the highest speed as economically justified. That will enhance railways' competitiveness and interconnectedness of transport modes on Corridor X and improve the protection of the environment.

Section 3 covers the railway corridor between Paraćin and Trupale. Spatially, this section is divided into 2 sub-sections. Paraćin-Stalać and Đunis-Trupale.

The Paraćin–Stalać sub-section runs from km 153+380 to km 174+170.79, with a total length of 20.8 km. This sub-section continues on Section 2 from Velika Plana to Paracin. The existing railway route passes through or near the following 8 settlements: Paraćin, Striža, Ratare, Sikirica, Drenovac, Pojate, Ćićevac and Stalać. The Project route within the Paraćin-Stalać sub-section does not deviate significantly from the existing railway alignment. Where the existing alignment does not allow for the proposed design speed of up to 200 km/h, minor deviations may be necessary to increase the length of curves in the track. The two existing stations (Paraćin and Ćićevac) will be retained but reconstructed and modernized. Additionally, the existing Sikirica–Ratare stop will be upgraded to be a station. Two existing stops, Drenovac and Lučine, will be decommissioned.

The Đunis–Trupale sub-section runs from km 191+937.96 to km 229+642, with a total length of 37.7 km. The existing railway route passes through or near the following 19 settlements: Đunis, Vitkovac, Donji Ljubeš, Gornji Ljubeš, Korman, Trnjane, Donji Adrovac, Prćilovica, Žitkovac, Moravac, Nozrina, Lužane, Tešica, Grejač, Veliki Drenovac, Supovac, Mezgraja, Vrtište and Trupale. On the majority of the Đunis–Trupale sub-section of the Project route, the radius of the curves does not meet the requirements for a design speed of 200 km/h. The alignment has therefore been revised in places to allow for increasing the radius of curves and milder turning angles. The existing Korman, Adrovac, Aleksinac, Lužane, and Trupale stations will be retained and reconstructed for modernization. The existing Tešica stop will be fully modernized and reconstructed to become a station. The existing Vitkovac, Donji Ljubeš,

Gornji Ljubeš, Trnjane, Norzina, Supovački most, Mezgraja and Vrtište stops will be decommissioned. The existing Grejač station will also be decommissioned.

The preliminary design of the Project has determined the locations where new bridges will be constructed, as well as underpasses and overpasses. Detailed locations are provided under the Biodiversity Management Plan.

Given the category of the railway line and the design speed of up to 200 km/h, the design envisages that the railway line will be fenced with the type of fence used for highways. The purpose of the fence is to protect against and deter unauthorized/uncontrolled access to railway facilities and equipment by people and animals (thus reducing the risk of accidents or collisions and vandalism). A 1.80 m high (minimum) fence will be installed on both sides of the railway line, at a distance of 1.0m from the toe of the embankment. A 5 m wide zone will be reserved outside of the fence for service roads.

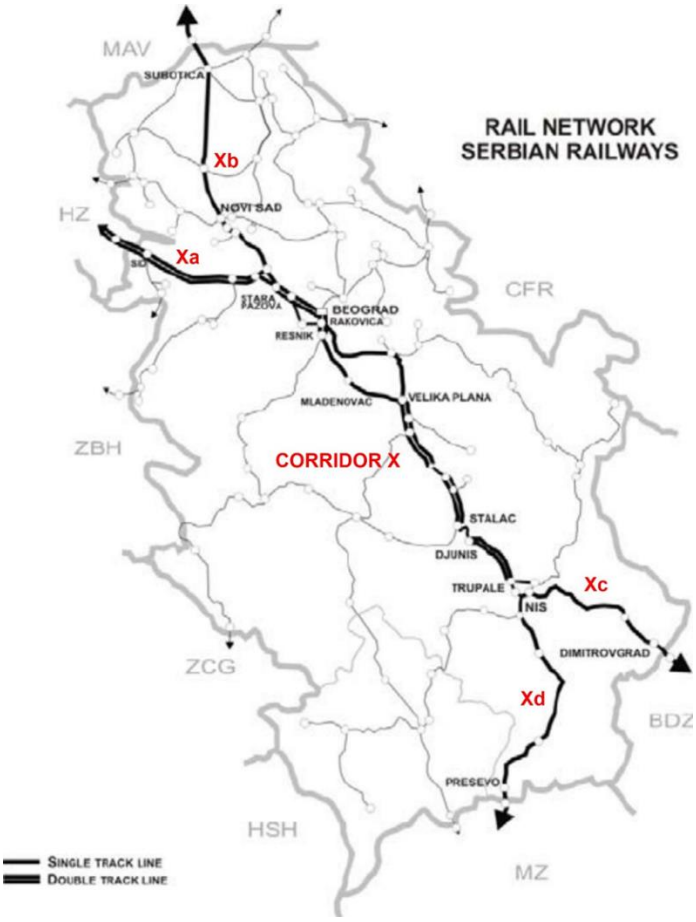

Figure 2-1. Schematic representation of the railway Belgrade (Resnik)–Niš (Trupale) with connecting railway

3. SCREENING

Screening identified and examined the implications of the Project for the designated features, including species and habitats, as well as the implications for habitat types and species present outside the boundaries of each site of conservation interest and functionally linked if those implications affect the conservation objectives of the site.

As the railway route passes through pSPA Dobrić-Nišava, where planned reconstruction and construction works will be done, and which may cause degradation of habitats suitable for target species, significant impacts could not be excluded, and an Appropriate Assessment will therefore be completed in detail regarding potential impacts on these sites.

A summary of screening for analysis possible impacts on pSPA and pSCI sites present within a buffer of 10 km from the Project area is outlined in Table 3-1. .

Table 3-1. Summary of Screening analysis

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
Južna Morava	pSCI	3.65 km	The Južna Morava pSCI is 3,847 ha in area and has been selected as a 'top location' for two species: *Unio crassus* and *Zerynthia polyxena* and three habitats within the complex of Broadleaf xerophilic forests – xerophilic oak forests 91M0, 91W0, 91Y0. It is located southwest of the railway subsection Djunis-Trupale, in its southern part. The shortest distance between this pSCI and the railway is 3.65 km. The Južna Morava River is an ecological corridor, designated because it is a major water flow that enables ecological connectivity. There is no data on the biodiversity of the river in the Regulation on ecological network (Official Gazette of RS, No. 102/2010), through which it was designated. However, The Južna Morava River is generally under high anthropogenic pressure, primarily from organic and nutrient pollution. On its course through Serbia, it runs along several towns and villages. The towns do not have wastewater treatment in place, so the River has	The railway route does not pass through pSCI Južna Morava, this site is out of the PAoI. Therefore, the Project will not cause loss, fragmentation and degradation of habitats suitable for the target species. Also, other activities will not impact the daily/night behaviour of animals, such as noise, vibration or lights. It is expected that animals will avoid construction zones and will not move towards the construction area. Negative impacts of the Project on pSCI Južna Morava during the construction and operation phases can be excluded, and possible impacts will not be further analyzed within Appropriate Assessment.	NO

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
			been the main recipient of wastewater from each of them.		
Južna Velika Morava	pSCI	0.49 km	The Južna Velika Morava" pSCI is 12,745 ha large area. It is selected as a 'top location' for seven species: *Lutra lutra, Lycaena dispar, Nyctalus noctula, Pipistrellus nathusii, Plecotus austriacus, Theodoxus transversalis, Unio crassus*. The pSCI includes two major waterflows – Juzna Morava River and Velika Morava River and their shoreline. The ecological corridor was designated because it is a major water flow that enables ecological connectivity. The Južna Velika Morava pSCI is located west of the part of the railway sub-section between Paracin and Stalac. The closest distance between the railway sub-section Paraćin-Stalać and pSCI Južna Velika Morava is 0.49 km, which is on the border with the project AoI.	The railway route does not pass through pSCI Južna Velika Morava and this site is out of the PAoI. It is not expected that the project will cause degradation of habitats suitable for the target species. Negative impacts on pSCI Južna Velika Morava in both construction and operation phases, can be excluded, and possible impacts will not be further analysed within the AA.	NO
Dobrić-Nišava	IBA/pSPA	Yes	pSPA Dobrić-Nišava is situated in Central Serbia between Mali Jastrebac Mt. to the north, Vidojevica Mt. to the south and Niš city to the east. This mostly agricultural (I1.1 and X0.7), flat area is interspaced with hills, villages, rivers, creeks, gravel pits and one lake (Oblačinsko jezero). Inside the pSPA borders, there are more than 40 villages belonging to six municipalities (Niš, Aleksinac, Merošina, Prokuplje, Žitorađa and Doljevac). Most of the existing habitats within the pSPA (92%) are artificial and terrestrial, covered with perennial crops, orchards and groves. The site was identified as internationally important for bird conservation in 2019 because it was regularly supporting significant populations of two species: Grey Partridge *Perdix perdix* and Black-headed Bunting *Emberiza melanocephala*. The pSPA/IBA "Dobrić-Nišava" is located on the	The railway route passes through pSPA Dobrić-Nišava and may cause the degradation of habitats suitable for target species. Negative impacts on pSPA Dobrić-Nišava cannot be excluded, and possible impacts like habitat loss and fragmentation, disturbance of fauna, electrocution due to power lines, or collisions with trains, as well as the takeover of invasive species, will be further analysed within the AA.	YES

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
			southernmost part of the Project, and from 220+315 km to the end of Section 3, it is crossed by a railway.		
Niš	pSCI	2.63 km	The Niš pSCI is 4,315 ha in area and has been selected as a 'Top location' for two species: *Eriogaster catax* and *Pipistrellus kuhlii*. *Eriogaster catax* colonizes open uncultivated areas with natural vegetation, such as trees, shrubs, or other plants, It is threatened with extinction due to the decline of traditional forest managements, the loss of riparian forests and other habitat destruction (including eutrophication, sinking groundwater levels, removal of hedges, intensification etc.). *Pipistrellus kuhlii* is often associated with human settlements and roosts in tree/cliff crevices and in building gaps and cellars. This is a very agile species, which can feed on mayflies, mosquitoes, moths and other insects while in flight. The species hunts in inhabited areas, often frequenting locations with artificial lighting, such as parks and gardens near water bodies, degraded habitats, including areas of intensive agriculture and recently deforested zones. This pSCI is mostly an urban area of the City of Niš, with a narrow strip of urban green areas and agricultural areas in the southern part of pSCI. Niš pSCI is 2.63 km from the southern part of the railway subsection Djunis-Trupale, and is no intersected with the railway.	Based on the analysis, it is unlikely that these species will move towards project sites, where the level of disturbances is higher. The pSCI area provides enough foraging opportunities for these species. Project activities are not expected to have any adverse impact on them within the pSCI, during either the construction or operation phases. As a result, the pSCI Niš does not require further analysis within the AA.	NO
Gornje Pomoravlje	IBA/pSPA	1.14 km	pSPA Gornje Pomoravlje is 5,920 ha large. pSPA covers the entire IBA (RS044) and the enlarged area in the north. The Gornje Pomoravlje IBA is located in an alluvial area in Central Serbia, in the valley of the Velika Morava River. The habitats of this area include remnants of *Salix sp., Populus sp., Alnus sp., Fraxinus sp.*, and *Quercus sp*. forests. It is more	Based on the analysis, and distance between pSPA and PAoI, no disturbance to birds and bats from noise and light is likely. No deterioration of the pSPA's physical or ecological integrity is expected. Casualties are not expected during the operation phase,	NO

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
			than 40 km far from Ćićevac and Stalać in the south to Krušar and Ribare in the north. The area is comprised of several smaller units: Vidovački ključ, Čepursko, Moravište, the mouth of Crnica river and Supski rukavac. Trigger species are Common Tern *Sterna hirundo*, Common Kingfisher *Alcedo atthis* and Collared Sand Martin *Riparia riparia*. *Sterna hirundo is* migratory species in Serbia, with national VU status, recorded around the Velika Morava River, However, in the vicinity of its nesting place, construction of the new motorway was done in the past, so nesting of the species has not been proven. *Alcedo atthis* is breeding species in Serbia. Its nesting places are near water with sand cliffs, especially in areas around Morava River, including artificial water bodies and wetlands. *Riparia riparia* a species of passerine bird in the swallow family found in wetlands, urban and river and lake ecosystems. This species is not mentioned in the annexes, but it is covered by the general protection regime provided by Article 1 of the Directive to all species of birds naturally occurring in the wild state in the European territory of the Member States to which the Treaty applies. It is listed in Annex II of the Bern Convention Suitable habitats are rivers and lakes, sparsely vegetated land, urban, wetlands. pSPA Gornje Pomoravlje is an important area for nesting birds, as well as a migration corridor along the north-south direction. Most of the recorded species inhabit habitats in a narrow strip along the Velika Morava River. According to Key Biodiversity Areas Partnership (2024) - Key Biodiversity	taking into consideration that this is already a functioning and existing railway. Birds and bats have established their dailly migratory routes to avoid areas around the railway. Impacts of the Project on the pSPA Gornje Pomoravlje can be excluded, during both the construction and operation phases. pSPA Gornje Pomoravlje will not be further assessed in the AA.	

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
			Areas factsheet: Gornje Pomoravlje, the area is also recognized as a KBA, with two "trigger species" (*Alcedo atthis and Riparia riparia*). pSPA is 1.14 km far from the project Area of influence.		
Lalinačka Slatina	pSCI	5.01	The Lalinačka slatina pSCI is 4,315 ha area south-east of the project area, and has been selected as a 'Top location' for one habitat type: ht1340 - Central Balkan salt marshes and salt steppes. This pSCI is situated 5,01 km in wider project area.	Based on the analysis, it is unlikely that the Project will have any impact on the integrity of the pSCI Lalinačka Slatina. Due to the distance between the pSPA and the PAoI, no disturbance to birds or bats from noise and light is expected.. Casualties are not expected during the operation phase, taking into consideration that this is already a functioning and existing railway. Birds and bats have established their dailly migratory routes to avoid areas around the railway. pSCI Lalinačka slatina will not be further assessed in the AA.	NO
Obla glava	pSCI	3.84	The Obla glava pSCI is 4,785 ha area and has been selected as a 'Top location' for one habitat type: 91M0 - Broad-leaved xerophilous forests; xerophilous oak forests. It is situated in the eastern part of the wider project area, 3.84 km far from the railway, in the area of Aleksinac city. This habitat is listed in Annex I of the Habitats Directive. It is obvious that some birds and bats that have been evidenced in the project AoI, 91M0 is a preferable habitat to them. This species will for sure avoid project area during construction, due to disturbances. By using area of this pSCI, they raise their opportunities for suitable area (*Myotis bechsteinii, Myotis mystacinus, Nyctalus noctule, Vespertilio murinus, Miniopterus schreibersii, Pipistrelus nathusii, Dendrocopos syriacus, Dryocopus martius*).	It is unlikely that birds and bats will move from this pSCI towards the PAoI, as the habitat within the pSCI is in a more favourable condition. Impacts from the Project are not expected to this pSCI. pSCI Obla glava will not be further assessed in the AA.	NO

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
Poslonske planine	pSCI	1.39	The Poslonske planine pSCI is 2,165 ha area and has been selected as a 'Top location' for one habitat type: 91M0 - Broad-leaved xerophilous forests; xerophilous oak forests. The pSCI is 1.39 km far from the railway on the south east of Paraćin-Stalać subsection, , without overlapping with project AoI. This habitat is listed in Annex I of the Habitats Directive. It is obvious that some birds and bats that have been evidenced in the project AoI, 91M0 is a preferable habitat to them. This species will for sure avoid project area during construction, due to disturbances. By using area of this pSCI, they raise their opportunities for suitable area (*Myotis bechsteinii, Myotis mystacinus, Nyctalus noctule, Vespertilio murinus, Miniopterus schreibersii, Pipistrelus nathusii, Dendrocopos syriacus, Dryocopus martius*)	It is unlikely that birds and bats will move from this pSCI towards the PAoI, as the habitat within the pSCI is in a more favourable conditionImpacts from the Project are not expected to this pSCI.pSCI Poslonske planine will not be further assessed in the AA.	NO
Juhor	pSCI	5.5	Juhor pSCI covers an area of 11.892 ha north-west of the project area. The site is selected for one species *Carabus variolosus,* which is listed in Annexes II and IV of the Habitats Directive, as well as in Annex I of Resolution 6 of the Bern Convention. The closest part of pSCI to the railway is 5.5 km, and the area does not overlap with the project AoI. This species is a strongly hygrophilous, stenotopic flightless species. It prefers riparian zones with sparse vegetation and high soil moisture however, it also inhabits peat bogs and their edges.	Taking into account the distance of pSCI from the pProject area is more than 5.5 km, it is unlikely that habitat loss or disturbance will impact this species as a result of the Project. Any significant impacts on pSCI Juhor can be excluded during both the construction and operation phases of the Project. pSCI Juhor will not be further assessed in the AA.	NO
Mali Jastrebac	pSCI	8.9 km	Mali Jastrebac pSCI covers an area of 3117 ha south-west of the project area. The site is selected for one habitat, 91M0 Pannonian-Balkanic turkey oak-sessile oak forests, which is listed in Annex I of the Habitats Directive. The closest part of pSCI to the railway is 8.9 km, and the area does not overlap with the project	It is unlikely that birds and bats will move from this pSCI towards the PAoI, as the habitat within the pSCI is in a more favourable condition. Impacts from the Project are not expected to this pSCI pSCI Mali Jastrebac will not be further assessed in the AA.	NO

Name of the site	Type	Overlap of the project area of influence	Description of the site	Possibility of negative impacts/Conclusion	Triggers AA
			AoI. For some birds and bats that have been evidenced in the project AoI, this is a preferable habitat. This species will for sure avoid project area during construction, due to disturbances. By using area of this pSCI, they raise their opportunities for suitable area (*Myotis bechsteinii, Myotis mystacinus, Nyctalus noctule, Vespertilio murinus, Miniopterus schreibersii, Pipistrelus nathusii, Dendrocopos syriacus, Dryocopus martius*).		
Bukovik II	pSCI	6.1 km	pSCI Bukovik II covers an area of 3724 ha east of the project area. The site is selected for one habitat, 91W0 Moesian beech forests, which is listed in Annex I of the Habitats Directive. The closest part of pSCI to the railway is 6.1 km, and the area does not overlap with the project AoI. No expected impacts of the project on this pSPA	Taking into account that between this pSCI and the PAoI an operable motorway presents a longstanding physical barrier, and pSCI area provides more favourable conditions for foraging and nesting of bird and bat species, any significant impacts on pSCI Bukovik II can be excluded during both the construction and operation phases of the project. pSCI Bukovik II will not be further assessed in the AA.	NO

The maps below (Figure 3-1 and Figure 3-2)show the location of the pSCI and pSPA in terms of the whole Project (Paraćin-Stalać and Djunis-Trupale Sub-Sections).

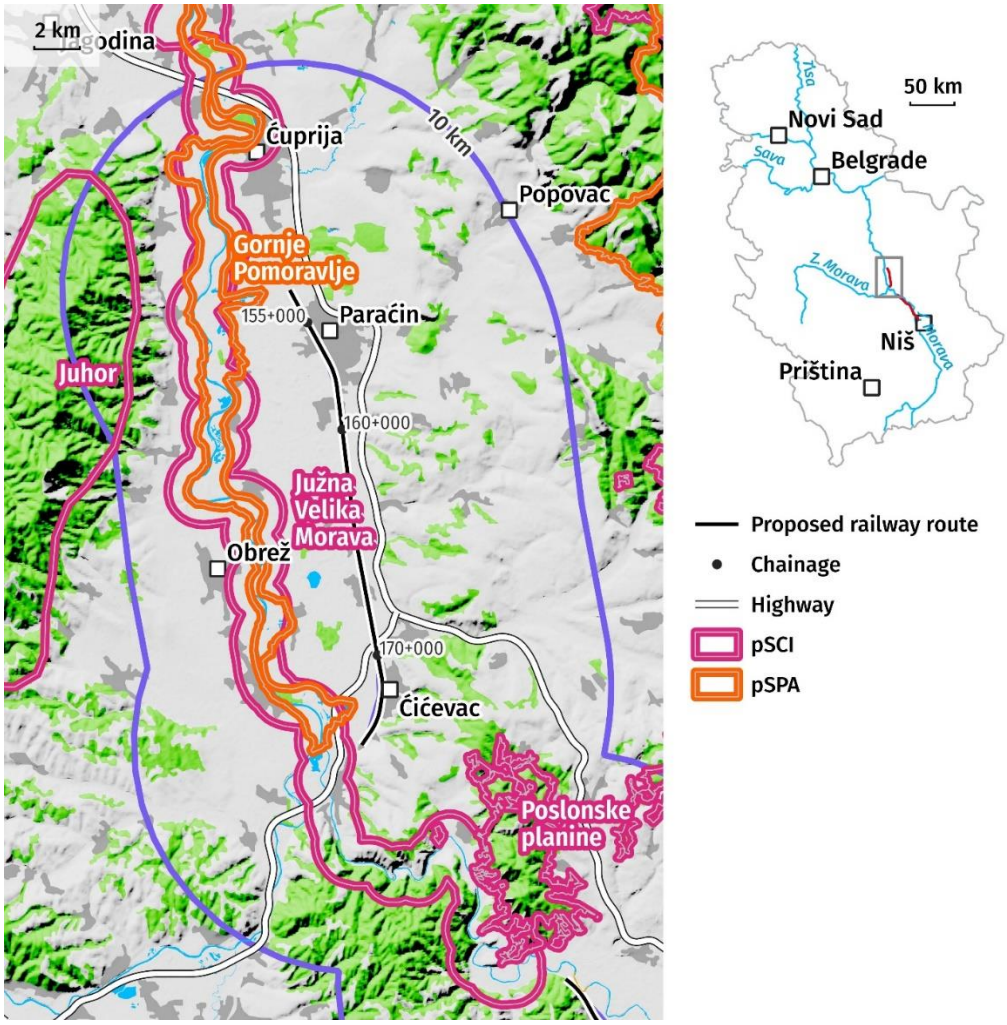

Figure 3-1. Protected areas, pSCI and pSPA in 10 km wider area of Paraćin-Stalać subsection

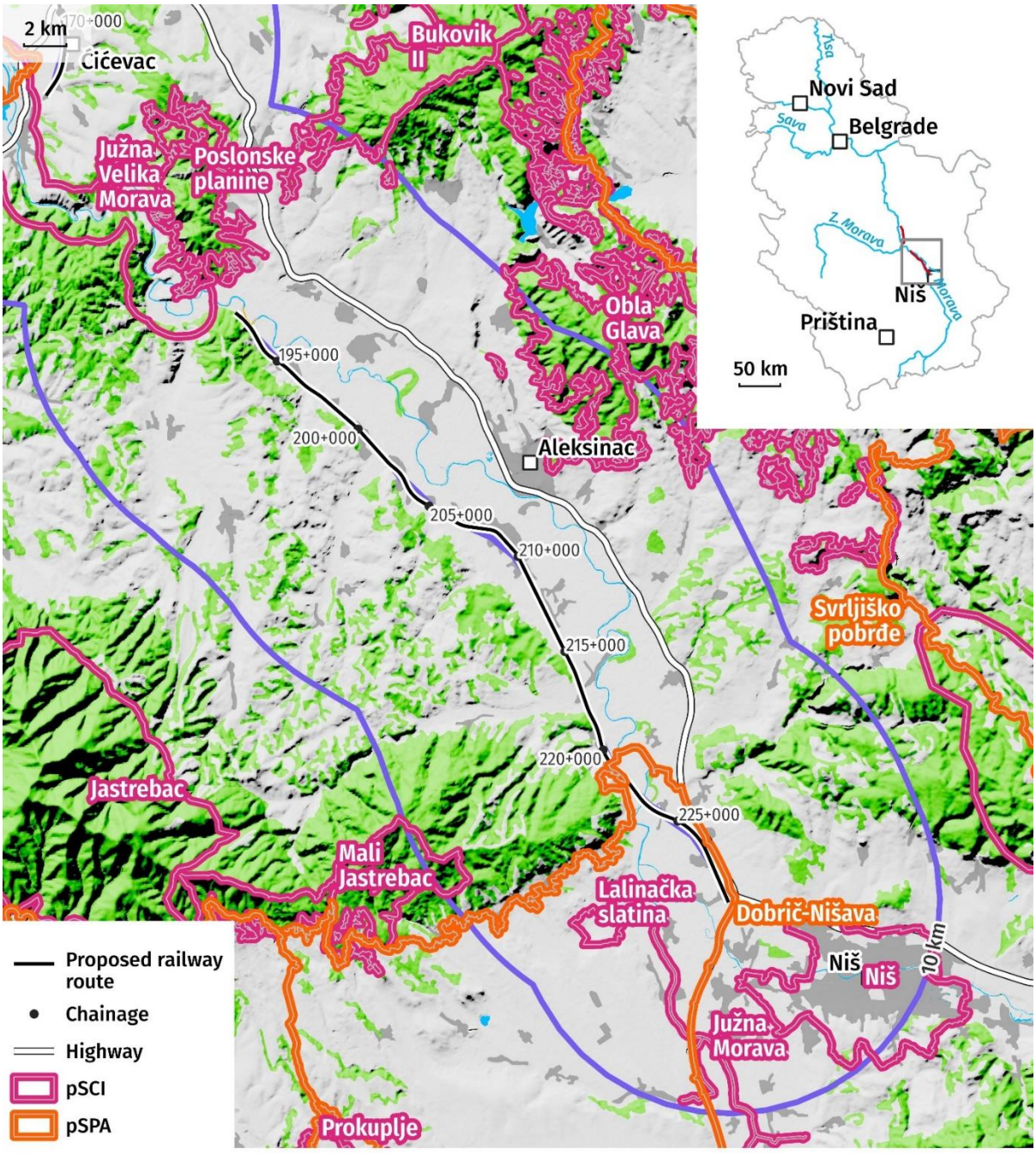

Figure 3-2. Protected areas, pSCI and pSPA in 10 km wider area of Djunis-Trupale subsection

4. APPROPRIATE ASSESSMENT

The Appropriate Assessment covers the entirety of each protected area, which is necessary to determine whether the Project will not adversely affect the integrity of the site(s). The integrity of a site is the coherence of its ecological structure and function, **across its whole area**, that enables it to sustain the habitat, complex of habitats, and/or the levels of populations of the species for which it was designated.

During Screening, one pSPA Dobrić-Nišava was brought forward for further assessment of potential impacts on trigger species and habitats suitable for species (Figure 4-1).

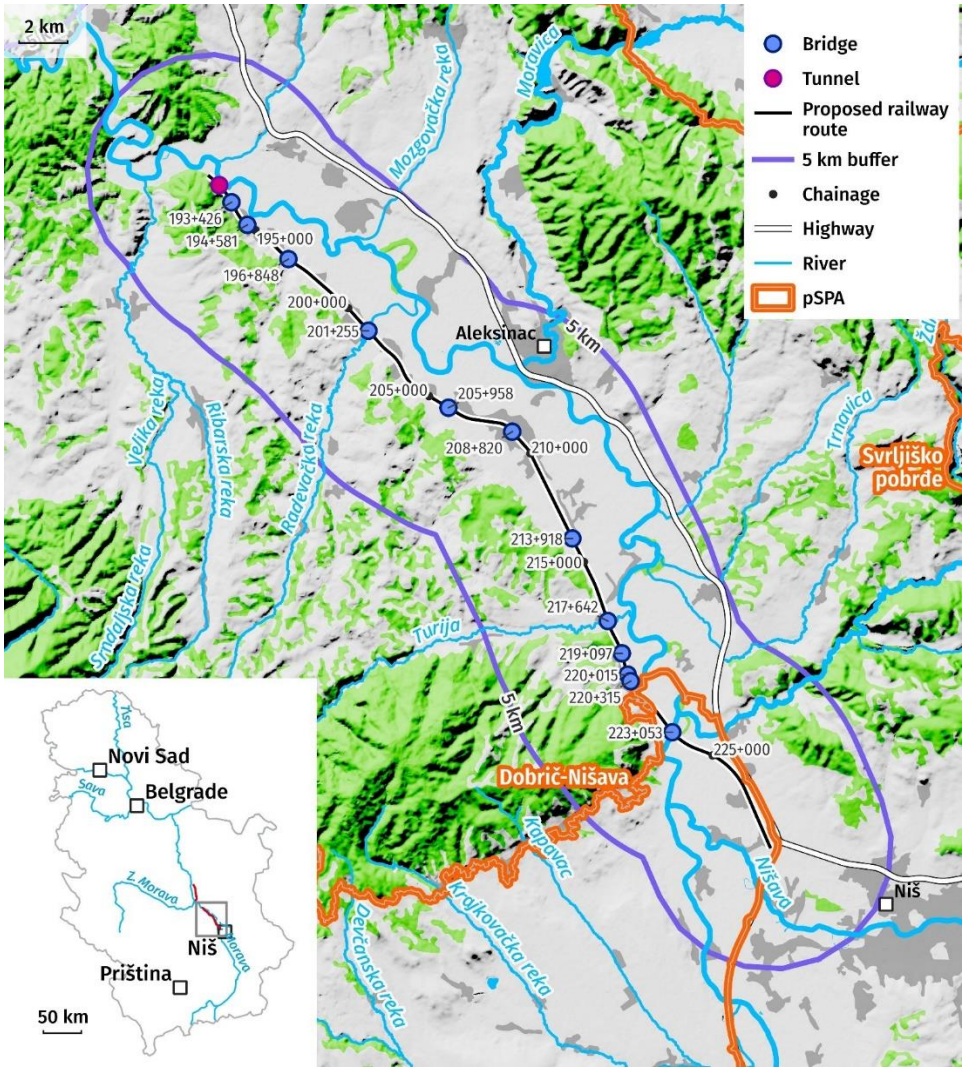

Figure 4-1. pSPA Dobrić-Nišava subject of the Appropriate Assessment

4.1. pSPA Dobrić-Nišava 35389 ha / IBA RS048

The Dobrić-Nišava pSPA is declared as an important area for birds, thus it is recognized as an ecologically important area by national legislation. pSPA “Dobrić-Nišava” extends to 35389 ha from previously established IBA RS048. As such, conditions for nature protection will be issued by a competent authority (Institute for Nature Conservation) through location conditions. However, any harmful activities that will impact ecological functionality and integrity are not allowed. At km 220+315 the existing railway passes boundaries of pSPA Dobrić-Nišava, and until the end of Section 3, the railway passes over pSPA. Due to a lack of data regarding habitat types within pSPA Dobrić-Nišava, Corine Land Cover (CLC) is used to present habitats, but also to calculate the loss of habitats in the working corridor during construction, on those parts of the railway that cross the pSPA. For the purpose of assessing the impact of the project on habitats and connected species in the PAoI, CLC codes are translated into the EUNIS codes. Results are shown in Table 4-1 and presented in Figure 4-2.

Table 4-1. Corine Land Cover / EUNIS pSPA Dobrić-Nišava

Corine Land Cover (2018)		EUNIS (2012)		% of area in Serbia	Area within pSPA ha	Construction phase temporary loss ha	% of temporary loss area	Operation phase permanent loss ha	% of permanent loss area
1.1.2.	Discontinuous urban fabric	J4.7	Constructed parts of cemeteries	2.98	1300.58	0	0	0	0
1.2.1.	Industrial or commercial units	J2.6	Disused rural constructions	0.31	75.20	0	0	0	0
1.3.1.	Mineral extraction sites	J3.2	Active opencast mineral extraction sites, including quarries	0.14	57.98	0	0	0	0
2.1.1.	Non-irrigated arable land	I1.5	Bare tilled, fallow or recently abandoned arable land	25.78	15207.95	0	0	0	0
2.2.1.	Vineyards	FB.4	Vineyards	0.17	72.66	0	0	0	0
2.2.2.	Fruit trees and barry plantations	FB.3	Shrub plantations for ornamental purposes or for fruit, other than vineyards	0.29	90.27	0	0	0	0
2.3.1.	Pastures	E2.6	Agriculturally-improved, re-seeded and heavily fertilised grassland, including sports fields and grass lawns	2.04	4.32	0.70	16.20	0.35	8.10
2.4.2.	Complex cultivation patterns	I1.1	Intensive unmixed crops	13.25	17399.73	24.04	0.14	11.84	0.07
2.4.3.	Land principally occupied by agriculture with significant areas of natural vegetation	X07	Intensively-farmed crops interspersed with strips of natural and/or semi-natural vegetation	12.15	80.86	10.32	12.76	5.26	6.38
3.1.1.	Broad-leaved forest	G1	Broadleaved deciduous woodland	28.02	3.90	0	0	0	0

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Corine Land Cover (2018)		EUNIS (2012)		% of area in Serbia	Area within pSPA ha	Construction phase temporary loss ha	% of temporary loss area	Operation phase permanent loss ha	% of permanent loss area
3.2.4.	Transitional woodland-shrub	G5	Lines of trees, small anthropogenic woodlands recentlz felled woodlands, early-stage woodlands and coppice	6.88	6.85	0	0	0	0
4.1.1.	Inland marshes	C3.2	Water-fringing reedbeds and tall helophytes other than canes	0.30	0.10	1.30	/	0.61	/
511	Water courses	C2	Surface running waters	0.72	988.52	0	0	0	0
512	Water bodies	C1.33	Rooted submerged vegetation of eutrophic waterbodies	0.31	100.08	0.26	0.26	0.13	0.13

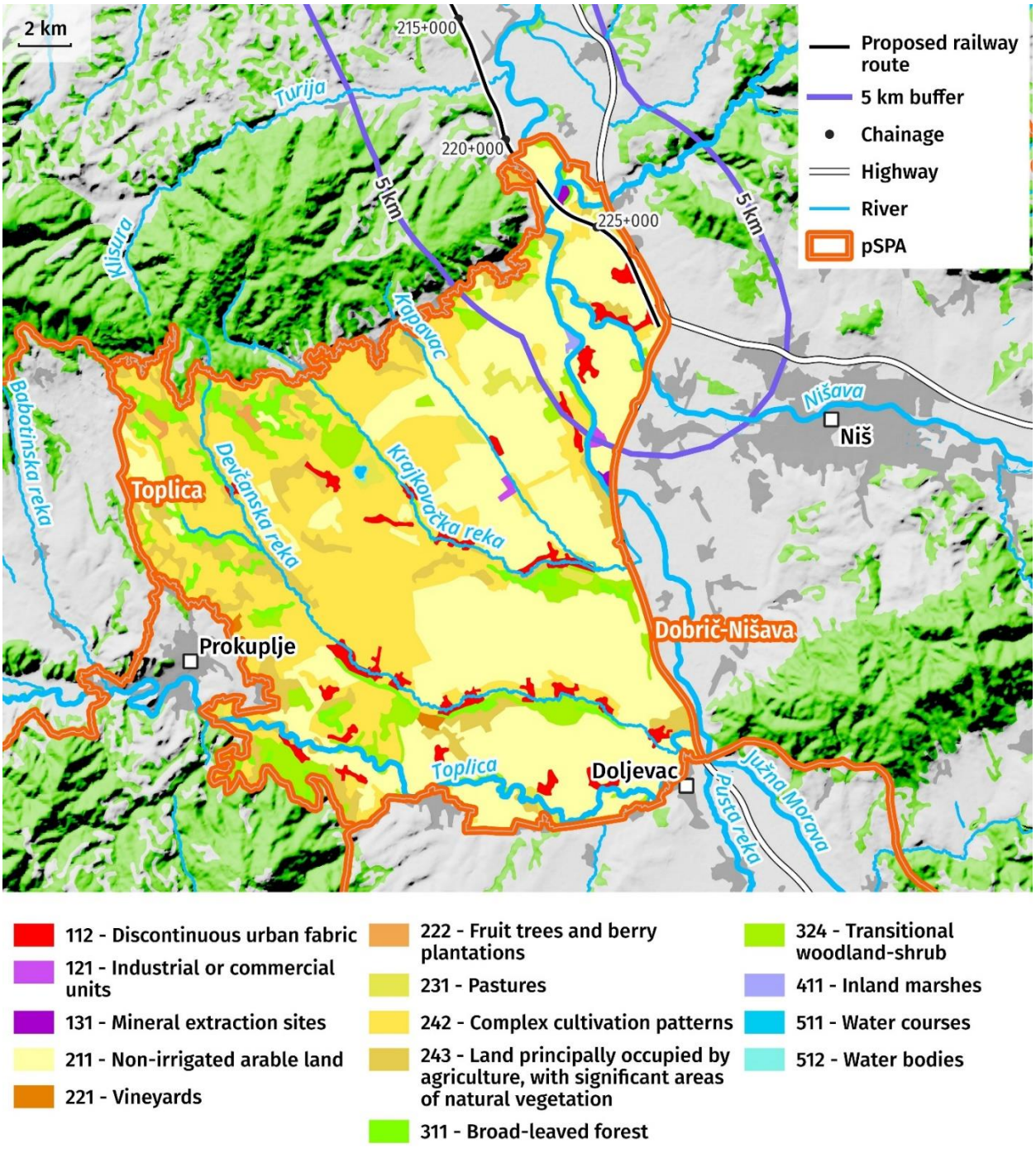

Figure 4-2. Corine Land Cover Dobrić-Nišava

The site was identified as internationally important for bird conservation in 2019 because it regularly supports significant populations of the species listed in Table 4-2.

Table 4-2. Population of trigger species for pSPA/IBA "Dobrić-Nišava"

Species	Current IUCN Red List Category	Season	Year(s) of estimate	Population estimate	IBA Criteria Triggered
Grey Partridge *Perdix perdix*	LC	Resident	2016-2019.	1,000–1,500 breeding pairs	B1b
Black-headed Bunting *Emberiza melanocephala*	LC	Breeding	2016-2019.	700–1,000 breeding pairs	B2a

Grey Partridge (*Perdix perdix*) is found in the temperate zone, steppe regions and open arable areas. It prefers open, low-intensity mixed farmland and grasslands with small fields and hedges on grassy banks. This kind of habitat is the most frequently recorded in the PAoI where the railway intersects pSPA "Dobrić-Nišava". The species can be found in large tracts of grassland, or other ground cover that is only slightly taller than the bird itself with some dense shrubby patches and hedgerows at intervals. Laying occurs from late April to June, with re-nesting until August or September. It typically lays 15–17 eggs in the first clutch but fewer eggs when re-nesting. The nest is a shallow depression lined with plant material at the base of a hedge or other thick vegetation. It feeds on seeds of grains and weeds, cereals and clover and grass leaves as well as insects. The species is mainly sedentary however it is partially migratory in eastern Europe and performs altitudinal migration in the Caucasus moving to the foothills in October and November.

Between 2016 and 2019, an estimated 1000–1500 breeding pairs were identified across the entire IBA site "Dobrić-Nišava". In Serbia, the Grey Partridge is resident, and 20.000-28.000 breeding pairs have been recorded.

During the field surveys conducted in 2022 and 2023, this species was recorded in Donje Međurovo and Mezgraja localities, which are inside of the pSPA borders. It has status of VU in Serbia.

The Black-headed Bunting (*Emberiza melanocephala*) is a passerine bird which breeds in southeastern Europe and extends east to Iran. This species breeds in open, rather dry terrain with scattered trees, shrubs and hedges. It favours low-intensity farmland with cornfields, vineyards or olive groves, but also more natural habitats such as mountain slopes with scrub vegetation. It can occur op to 2,100 m Asl. The species returns to the breeding grounds in May and starts nesting from mid-May, with a peak in June. The nest, built by the female, is placed in shrubs. They usually lay four to five eggs, incubated by the female. The chicks hatch after 13–14 days. The nestling period is 14–16 days. The species leaves the breeding grounds in late June to early August. During the breeding season, they mainly feed on invertebrates and, to a lesser extent, on seeds and other plant materials. The species is migratory, with most birds wintering in western India.

Between 2016 and 2019, an estimated 700–1000 breeding pairs were identified across the entire IBA site "Dobrić-Nišava". So far, in Serbia, 1800–2700 breeding pairs have been recorded.

During the field surveys realized in 2022 and 2023, this species was not recorded.

"Dobrić-Nišava" has been designated as pSPA and part of the ecological network, based on the presence of 50 Natura2000 bird species (Table 4-3), along with 112 other bird species.

Table 4-3. Occurrence of 50 Natura 2000 Annex Bird Species in pSPA from 2000 till 2021

Taxon Valid Name	IUCN 2020	Bird Directive	Bern Convention
Accipiter brevipes	LC	Annex I	Annex II
Acrocephalus melanopogon	LC	Annex I	Annex II
Alcedo atthis	LC	Annex I	Annex II
Anas acuta	LC	Annex IIA, Annex IIIB	Annex III
Anthus campestris	LC	Annex I	Annex II
Ardea alba	LC	Annex I	Annex I, Res. 6
Ardea purpurea	LC	Annex I	Annex II
Ardeola ralloides	LC	Annex I	Annex II
Asio flammeus	LC	Annex I	Annex II
Aythya ferina	VU	Annex IIA, Annex IIIB	Annex III
Aythya nyroca	NT	Annex I	Annex III
Botaurus stellaris	LC	Annex I	Annex II
Bucephala clangula	LC	Annex IIB	Annex III
Ciconia ciconia	LC	Annex I	Annex II
Ciconia nigra	LC	Annex I	Annex I, Res. 6
Circaetus gallicus	LC	Annex I	Annex I, Res. 6
Circus aeruginosus	LC	Annex I	Annex I, Res. 6
Circus cyaneus	LC	Annex I	Annex I, Res. 6
Circus pygargus	LC	Annex I	Annex I, Res. 6
Coracias garrulus	LC	Annex I	Annex II
Coturnix coturnix	LC	Annex IIB	Annex III
Crex crex	LC	Annex I	Annex I, Res. 6
Egretta garzetta	LC	Annex I	Annex III
Emberiza hortulana	LC	Annex I	Annex III
Falco peregrinus	LC	Annex I	Annex I, Res. 6
Falco vespertinus	NT	Annex I	Annex II
Ficedula albicollis	LC	Annex I	
Gallinago gallinago	LC	Annex IIA, Annex IIIB	
Himantopus himantopus	LC	Annex I	
Chlidonias hybrida	LC	Annex I	
Ixobrychus minutus	LC	Annex I	Annex II
Lanius collurio	LC	Annex I	Annex II
Lanius minor	LC	Annex I	Annex II
Lullula arborea	LC	Annex I	Annex III
Mareca penelope	LC	Annex IIA. Annex IIIB	
Mareca strepera	LC	Annex IIA	
Mergus merganser	LC	Annex IIB	
Microcarbo pygmaeus	LC	Annex I	
Nycticorax nycticorax	LC	Annex I	Annex II
Pandion haliaetus	LC	Annex I	
Pernis apivorus	LC	Annex I	Annex III
Rallus aquaticus	LC	Annex IIB	Annex III
Recurvirostra avosetta	LC	Annex I	
Spatula clypeata	LC	Annex IIA, Annex IIIB	
Spatula querquedula	LC	Annex IIA	
Sterna hirundo	LC	Annex I	Annex II
Streptopelia turtur	VU	Annex IIB	Annex III
Sylvia nisoria	LC	Annex I	Annex III
Turdus pilaris	LC	Annex IIB	Annex III
Vanellus vanellus	NT	Annex IIB	Annex III

Within the area of the pSPA, the Project will include the construction of four crossings (at km 221+359, 223+500, 227+127 and 229+420 and one access road (at km 229+420). One new bridge on the Južna Morava River, at km 223+053, will be constructed.

In the locality of Vrtište (between km 227+000 and 228+000), the Project currently plans for the realignment of the existing railway route, which will then go through one of the artificially created wetlands in southern Serbia. This small area appeared by relocating the Nišava river, where the semi-natural vegetation occupied the area, providing places for bird nesting and migration route. Following habitats are recorded at Vrtište: G1.11, C1.33, E3, C3.2. Some of the recorded bird species during field surveys in 2022 (undertaken by Enova and results presented in "Corridor environmental & social assessment report") and 2023 are very rare in southern part of Serbia, such as: Black Kite (*Milvus migrans*) and Purple Heron (*Ardea purpurea*), migratory species; Savi's warbler (*Locustella luscinioides*), Cetti's Warbler (*Cettia cetti*), Great Reed Warbler (*Acrocephalus arundinaceus*), Western Marsh Harrier (*Circus aeruginosus*), and Eurasian Reed Warbler (*Acrocephalus scirpaceus*). During the field survey, no nests of these birds were recorded in the PAoI.

4.2. Impact assessment

4.2.1. Methodology for assessment of impacts

To evaluate the significance of the impact of the planned alignment (without the application of mitigation measures), the following scale for expressing the significance of the impact was used.

Table 4-4. Scale for expressing the importance of impact

Value/Grade	Description	Explanation
-2	Significant negative impact	Significant disturbance or destruction of habitat or species, significant changes in ecological conditions of habitat or species, significant impact on habitats or natural development of species. Significant negative impacts need to be reduced to a level below significant through mitigation measures, and if this is not possible, consider changes to the implementation mechanism (other suitable solutions) or reject them as unacceptable
-1	Negative impact that is not significant	Moderately negative impact on habitat type or species population; moderate disturbance of ecological conditions of habitat types or species; marginal impact on habitat types or natural development of species. Eliminating or mitigating the impact is possible by applying the proposed mitigation measures.
0	No impact	The intervention has no visible impact.
+1	Positive impact that is not significant	Moderately positive impact on habitats or populations, moderate improvement of ecological conditions; moderately positive impact on habitats or natural development of species.
+2	Significant positive impact	Significant positive impact on habitats or populations, significant improvement of ecological conditions, significant positive impact on habitats or natural development of species.

4.2.2. Description of impacts for pSPA Dobrić-Nišava

Since the most frequently recorded habitats are cultivated areas that are owned mainly by private owners, and the type of cultivation pattern changes every season, it is important to establish an additional pre-construction survey of birds in the year of planned construction. This will provide up-to-date information due to changing habitat conditions. That would set the actual relevant baseline for future monitoring.

During the construction phase, disturbance of movements and daily routine of birds and bats may occur due to increased noise and light pollution, and this will impact species within pSPA "Dobrić-Nišava". However, it is expected that animals will avoid the construction area, and for that purpose, enough area of suitable habitats is available across the pSPA (presented in Table 4-1). In addition, habitat loss, fragmentation and degradation in the working corridor will impact bird species that are associated with a certain type of habitat. The most frequent habitat in the entire area of pSPA is I1.1 Intensive unmixed crops, covering an area of 17399.73 ha. In the working corridor where the railway intersects the pSPA, during construction, loss of this habitat is expected to be 24.04 ha, which represents 0.14% of the total cover of this habitat under the pSPA. Permanent loss of this habitat will be 0.07%, which is a negligibly small area compared to the available area of this habitat within the pSPA. In terms of that, the Project is not expected to exacerbate impacts on the long-term survival of species within the pSPA and its surrounding area. This is especially important for trigger species *Perdix perdix* and *Emberiza melanocephala*, which will be able to utilize a larger area outside the PAoI. The biggest permanent loss of habitat is expected for E2.6 Agriculturally-improved, re-seeded and heavily fertilised grassland, including sports fields and grass and X07 Intensively-farmed crops interspersed with strips of natural and/or semi-natural vegetation, compared to the total area of these two habitats in the entire pSPA, which is relatively small (for E2.6 is 4.32 ha and for X07 is 80.86 ha). Permanent loss of aquatic habitats is expected for C1.33 Rooted submerged vegetation of eutrophic waterbodies:0.13% of the total surface in the pSPA. Such permanent loss of C1.33 habitat will not impact the long-term survival of species within the pSPA and the surrounding area.

During the operational phase, the effects of the most significant impacts from the construction phase will be largely reduced. Conversely, impacts such as the collision of birds with a high-speed train might arise eventually, along with the disturbance of behaviour and daily routine caused by the passing of trains. During field research, no nesting of the species important for protection was recorded and collision is not expected to impact pSPA trigger species. However, as the route is partially located within a pSPA, a monitoring report should be produced annually by an ecologist engaged by the Company (SRI) during the operation, who will be in charge of compiling and analysing the results.

The project will have an impact on habitats and species; however, these impacts are not deemed significant In the absence of mitigation measures , a moderately negative impact on habitat types and trigger species is expected, with moderate disturbance of the ecological conditions of habitat types or species. Also, marginal impact on habitat

types or the natural development of species is anticipated. Eliminating or mitigating the impact is possible by applying the proposed mitigation measures.

Neither the physical nor ecological integrity of the pSPA is expected to deteriorate. The separate impacts on individual species trigger for pSPA Dobrić-Nišava are analysed in more detail and presented in Table 4-5.

Table 4-5. Impacts on trigger species for pSPA Dobrić-Nišava

Species	Possible impacts	Grade of impact	Mitigation measures	Grade of residual impact
Emberiza melanocephala **The Black-headed Bunting**	The Black-headed Bunting faces several primary threats globally, including habitat loss, changes in agricultural practices, and illegal trapping during migration. These factors contribute to a global population decline of the species. The implementation of the Project is expected to have minimal impact on this species. Areas covered by shrubs and low vegetation that the species might use for nesting are registered around pSPA "Dobrić-Nišava" in the working corridor: I1.1, X07 and G5. However, only part of these habitats will be impacted by construction activities, which will not affect the foraging habitats that this species typically uses. Although the species has not been recorded during field research, suitable foraging habitats are present and distributed across the broader pSPA. The localities around the railway represent only a small fraction of the total pSPA area, and thus the loss of foraging and nesting habitats due to the Project is considered negligible. Disturbance caused by increased noise and vibrations during construction activities could impact the species' reproductive success and might affect the species' presence in the project vicinity within noise-affected zones. This impact can be minimised through the proposed measures. Residual impacts are not expected. The risk of collision with trains is low. This is a small bird which does not migrate in large flocks, so collision risks are reduced. Individual collisions may still occur.	-1	To prevent disturbance during the breeding season, check the area before construction to ensure that no birds are present (between January and March and August-September). This is to be done by Contractor (ECoW), and if needed, a qualified ornithologist will be engaged. If breeding territories of Black-headed bunting are detected within 100 m of the work area, activities in that section will be postponed until fledglings are confirmed/fledged. . The success of tree planting implemented near the end of the construction phase shall be regularly monitored to evaluate the effectiveness in minimising bird collision and electrocution risks. This includes assessments of vegetation growth, canopy development, and whether the planted vegetation successfully guides bird flight paths away from overhead lines and other hazardous infrastructure. An immediate monitoring program should be established during the first year of operation, with monthly monitoring to assess potential bird-vehicle collisions (WTC). In addition to formal monitoring, railway maintenance crews must be instructed to record and report any fauna carcasses found during routine maintenance. Train drivers will be asked to report any observed bird or other wildlife collisions. All findings will be reported to the designated environmental officer within the Company, who will be responsible for compiling and analysing the data. Cooperation with the Institute for Nature Conservation is mandatory, in accordance with	+1

Species	Possible impacts	Grade of impact	Mitigation measures	Grade of residual impact
			national regulations, particularly in the event of increased bird mortality due to collisions. The analysed data will be used to inform adaptive management in case increased collision is recorded, applying additional measure in consultation with a qualified ornithologist.	
Perdix perdix **Grey Partridge**	The primary threats to Grey Partridge (*Perdix perdix*) populations globally include habitat loss and degradation, increased predation, pesticide use, and hunting. Specifically, agricultural intensification and the simplification of rural landscapes have led to reduced insect availability for chicks, increased predation, and a decline in breeding success. The Grey Partridge breeding season typically starts in late winter or early spring, with pair formation and nest building occurring from January to March. Egg laying occurs from late April to June, with potential for renesting until August or September. The brood-rearing period extends into late September, by which time the chicks are fully grown. Habitats in the section of the working corridor through the pSPA suitable for the Grey Partridge are I1.1, X07 and E2.6. Construction of crossings, access road and one bridge is planned, which will cause loss and degradation of habitats suitable for this bird. The size of the area impacted by the Project represents only a part of a wider distribution for this birds, and suitable habitats are abundant. It is expected that the Grey Partridge will avoid the wider area of the working corridor, due to the disturbances and increased noise. Casualties are possible during construction, but the Grey Partridge will maximally avoid the Project area, moving to the closest suitable habitat. During the operational phase, permanent loss of habitats suitable for this species is negligible, compared to the overall availability of habitat within the pSPA. Based on the above, the Project will not exacerbate impacts to the long-term survival of species within the pSPA and the surrounding area.	-1	To prevent disturbance during the breeding season, check the area before construction to ensure that no birds are present (between January and March and August-September). This is to be done by Contractor (ECoW), and a qualified ornithologist will be engaged if needed. If breeding territories of Grey Partridge are detected within 100 m of the work area, activities in that section will be postponed until fledglings are confirmed/fledged. An immediate monitoring program should be established during the first year of operation, with monthly monitoring to assess potential bird-vehicle collisions (WTC). In addition to formal monitoring, railway maintenance crews must be instructed to record and report any fauna carcasses found during routine maintenance. Train drivers will be asked to report any observed bird or other wildlife collisions. All findings will be reported to the designated environmental officer within the Company, who will be responsible for compiling and analysing the data. Cooperation with the Institute for Nature Conservation is mandatory, in accordance with national regulations, particularly in the event of increased bird mortality due to collisions. The analysed data will be used to inform adaptive management in case increased collision is recorded, applying additional measure in consultation with a qualified ornithologist.	+1

5. MITIGATION MEASURES

The mitigation measures presented in Table 5-1 concern habitats, species and the integrity of pSPA "Dobrić-Nišava" are connected to mitigation measures provided under ESIA and BMP.

Table 5-1. List of measures proposed to mitigate project impacts on habitats, species and the integrity of pSPA

Construction (including design phase and pre-construction, clearance)	
AVOIDANCE	AV01 – Identify and mark avoidance zones (EAAAs of PBFs and CHs, G1 and C3.2 habitats) in the vicinity of the construction sites: ■ C3.2 Water-fringing reedbeds and tall helophytes other than canes – chainages: cca 223+00 km, cca 225+000 km, cca 227+000 km and cca 228+000 km. ■ G1.11 Riverine Salix woodlands (*91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) – chainages: cca 223+000 km, cca 225+000 km, cca 226+000 km, cca 227+000 km and cca 228+000.
	AV02 - A detailed survey of aquatic habitats in the riparian zone of Južna Morava River must be undertaken to map their exact locations and boundaries
	AV03 - Contain all activities within the Project footprint (construction of local roads throughout the pSPA, removal of vegetation, storage of construction materials, waste disposal, excavation of soil or gravel, etc., or any occupation of space).
	AV04 - Avoid major activities including land clearance, cutting trees and blasting during the breeding period and migration period for large mammals, especially from the 1st of March to the 15th of June and from the 15th of October to the 30th of November, to limit impacts of the project on large mammals, bats, avifauna, butterflies and reptiles. If construction cannot be avoided, then implement the minimisation measures presented in the Biodiversity Management Plan.
	AV05 - Prevent contaminated effluent from entering watercourses and streams, especially during the construction of a new bridge on the Južna Morava River at km 223+053
	AV06 – Avoid/minimise work during the night and disturbance of movements and day-night activities of bats due to increased noise and light pollution.
	AV07 – Avoid clearing areas that serve as fauna pathways during construction works. Conduct an ecological site assessment prior to any vegetation clearance, construction of temporary access roads, or establishment of laydown areas, particularly where the railway route intersects pSPA (from km 220+315). This assessment must include a pre-construction bird survey in the year of planned construction to ensure up-to-date data is collected, given the potential for changes in habitat conditions.
	AV08 – Prepare ecological survey and chance finds protocol including habitat and species avoidance in the siting of temporary works and laydown areas.
	AV09 - A detailed survey of aquatic habitats in the riparian zone of Južna Morava River must be undertaken to map their exact locations and boundaries; to confirm avoidance of these habitats or facilitate the identification and implementation of additional mitigation measures if they cannot be avoided.
REDUCTION	RD01 – Minimise pesticide use, replacing it with biological methods of pest control and organic maintenance of the road and associated facilities
	RD02 - Control access on tracks developed for the Project purpose to limit all access to natural areas and critical habitats within pSPA.
	RD03 - Develop a Waste management plan. Organic waste storage must be kept dry and no water discharge is allowed before treatment in conformity with International and national quality standards.

Construction (including design phase and pre-construction, clearance)	
	RD04 – Develop an Invasive Alien Species Management Plan to prevent the spread of alien species through vehicle movement. Include dominant species that could also spread and degrade natural or critical habitats within pSPA.
	RD05 - Space around the railway line within the pSPA should be managed in a way that deters the approach of wild species. This implies that landscaping must avoid stimulating primary production inside the fenced area or in the close vicinity.
	RD06 – Develop the Construction Noise Management Plan, as part of the noise monitoring system and organise works at the site following the plan, to reduce the impact of noise on fauna, especially birds and mammals.
	RD07 – Reduce impact on water habitats and organisms by implementing measures for segregation by containment, using silt screens, and implementing surface water drainage to separators.
	RD08 – Prevent habitat fragmentation by planning crossings below rail for invertebrates and reptiles
	RD9 – Reduce/prevent animal collision along the length of the railway during operation, by fencing and putting sound barriers during the construction phase
RESTORATION	RE01 - Develop a Restoration plan including restoration of areas degraded by the project and no longer needed – camps, dumping sites… Restoration must start as soon as possible and be progressively phased and monitored.
	RE02 - Implement passive restoration. Demarcate “avoidance” areas (based on habitat quality/type) for employees, subcontractors, and communities within the project area, favouring natural regeneration of plant species and supplementing with regular control and monitoring activities to compare with assisted regeneration.
	RE03- Implement ecological survey and chance finds protocol including habitat and species avoidance in the siting of temporary works and laydown areas
	RE04 - Implement revegetation of railway corridor with native plant species
	RE05 - Ecological improvement of existing anthropogenically impacted rail corridor
Operation/Maintenance	
REDUCTION	RD01 – Limit the source of lighting along the railway only to areas representing a risk for human safety (*e.g.* crossings, passes). Maintain darkness for nocturnal species (such as large mammals, bats and nocturnal birds).
	RD02 – Maintain fencing to limit the collision risk in association with wildlife crossings
RESTORATION	RE01 - Implement a Restoration plan including restoration of areas degraded by the project and no longer needed. Monitor activities and propose improvements, if necessary.
	RE02 - Monitor passive restoration and “avoidance” areas (based on habitat quality/type) for employees, subcontractors, and communities, within the pSPA, favouring natural regeneration of plant species and supplement with regular control and monitoring activities to compare with assisted regeneration.
	RE03 - Implement ecological survey and chance finds protocol including habitat and species avoidance in the siting of temporary works and laydown areas
	RE04 – Establish ecological monitoring of the rail corridor by an ecologist and maintenance squad, to report if any carcasses are found during regular railway maintenance. Train drivers should also report any such bird strikes (or other fauna collision). Prepare a report on the annual mortality registered and include a threshold for further preventative action. The report is to be the subject of communication and cooperation between the Company (SRI) and the Institute for Nature Conservation.

6. CUMULATIVE IMPACTS

An assessment of cumulative impacts was undertaken regarding projects implemented or planned for construction within the area of influence of the planned railway route. The predominant source of impact that can accumulate on the impacts of planned railway Section 3 is the **existing railway**.

This assessment has been prepared with the available information at the time of writing. Due to the lack of technical and design information/documentation, and the information on the planned projects in the project area, the report may not provide a comprehensive analysis of all potential cumulative environmental and social impacts of the proposed project.

The AA was done for pSPA “Dobrić-Nišava”, which is intersected by the railway from km 220+315 to the end of Section 3. As most of the route follows an existing railway that will be reconstructed, there are no significant impacts that are expected during construction and operation on the evaluated pSPA and its target species. The part of the route that will be newly constructed is planned on dominantly agricultural land, but at the Vrtište locality (between km 227+000 and 228+000), the project currently plans for a railway relocation, which will go through the artificial wetland. Within the working corridor during construction, there will be permanent habitat loss (cultivated land, urban fabric, non-irrigated arable land, land principally occupied by agriculture with significant areas of natural vegetation and fragments of broad-leaved forest), which will have a cumulative impact on the pSPA “Dobrić-Nišava”.

During construction, the species will avoid the wider area of the planned route, due to disturbances and increased noise and lighting. Casualties are possible during construction but taking into consideration that the species will avoid the Project area, this impact is not significant. Construction of one access road is planned at km 229+420, where agricultural area is predominant. Mitigation measures are prescribed to ensure that no construction or waste dumping sites are located within the pSPA. During the operational phase, no significant impacts on these species are expected, as the railway already exists and is functioning, and will be mostly reconstructed.

The cumulative impact arising from the reconstruction of Section 2, which is connected with Section 3 in Paraćin, is not expected, taking into account that significant negative effects of the Project on the integrity of the sites pSCI Velika Morava, pSCI Južna Velika Morava and pSPA Gornje Pomoravlje can be excluded. There is minimal temporary reduction of the range of habitats due to construction, and disturbance of animals during construction will occur. However, the planned reconstruction of the railway will be staged by Sections, and no significant cumulative impact on biodiversity is expected.

Based on all the above, significant cumulative impacts on the target species and the integrity of pSPA “Dobrić-Nišava can be excluded.

7. CONCLUSIONS

An AA identified and evaluated the potential impacts of the railway in the direction Paraćin-Trupale n designated features, including species and habitats. The assessment considered effects on habitat types and species outside the pSPA boundaries, where functionally linked, if such effects could influence the site's conservation objectives.

The AA covered the entire protected area, which was necessary to determine whether the proposal would adversely affect the integrity of the site.

As the railway route passes through **pSPA "Dobrić-Nišava"** (from km 220+315 to the end of the section), where the planned reconstruction and construction works will be done, which may cause degradation of habitats suitable for target species, an AA was done in detail regarding potential impacts on this site.

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In the area of pSPA, the Project foresees the construction of four crossings (at km 221+359, 223+500, 227+127 and 229+420) and one access road (at km 229+420). One new bridge on the Južna Morava River, at km 223+053, will be constructed.

At the Vrtište locality (between km 227+000 and 228+000), the Project currently plans for a railway realignment, which will intersect the artificial wetland, createdby relocating the Nišava river. Semi-natural vegetation occupied the area, providing habitat for bird nesting and migration (following habitats are recorded: G1.11, C1.33, E3, C3.2).

Results of the impact assessment done for this pSPA showed that main impacts to trigger species are habitat loss, degradation and fragmentation, disturbance of animals (by increased noise and lighting).Collision will not have significant impact. Significant negative effects on the integrity of the site can be excluded. All works are conducted on upgrading an existing railway, where the anthropogenic impact is a pre-existing baseline condition adjacent to or within these areas.

According to AA's conclusion for Section 2, significant negative effects on the integrity of the sites pSCI Velika Morava, pSCI Južna Velika Morava and pSPA Gornje Pomoravlje can be excluded. All works are conducted on upgrading an existing railway, where the anthropogenic impact is a pre-existing baseline condition adjacent to or within these areas. Based on the assessment for Section 2, and with mitigation measures, there is minimal temporary reduction of the range of habitats due to construction and overall, no loss of site or site integrity due to works.

Based on all of the above, and with the implementation of mitigation measures, only a minimal temporary reduction in habitat range is expected during construction. Overall, no loss of the site or its integrity is anticipated during either the construction or operation phases. .