MEMO

On the negative impact of the planned Lugoj–Deva motorway and presentation of possible mitigation solutions

This document presents the results of a field assessment, competed by a group of specialists, to the designated route of the Lugoj–Deva motorway (Europe Aid 122273/D/SER/RO ISPA 2004/RO/16/P/PA/002/01; part of TEN-T Corridor IV) and specifically the sector that will intersect an extremely important ecological corridor between two mountain ranges in Romania: the Southern and Western Carpathians.

The document presents alternative / supplementary measures, to those proposed by the Final Feasibility Study [9] *and the Environmental Impact Assessment study* [8]*, to minimize the impact of the motorway on the integrity of the ecological corridor and primarily large carnivore species. The proposed measures have been drafted by the authors and are based on their combined extensive experiences and best practice from across Europe, and taking into consideration the conservation context of the target area.*

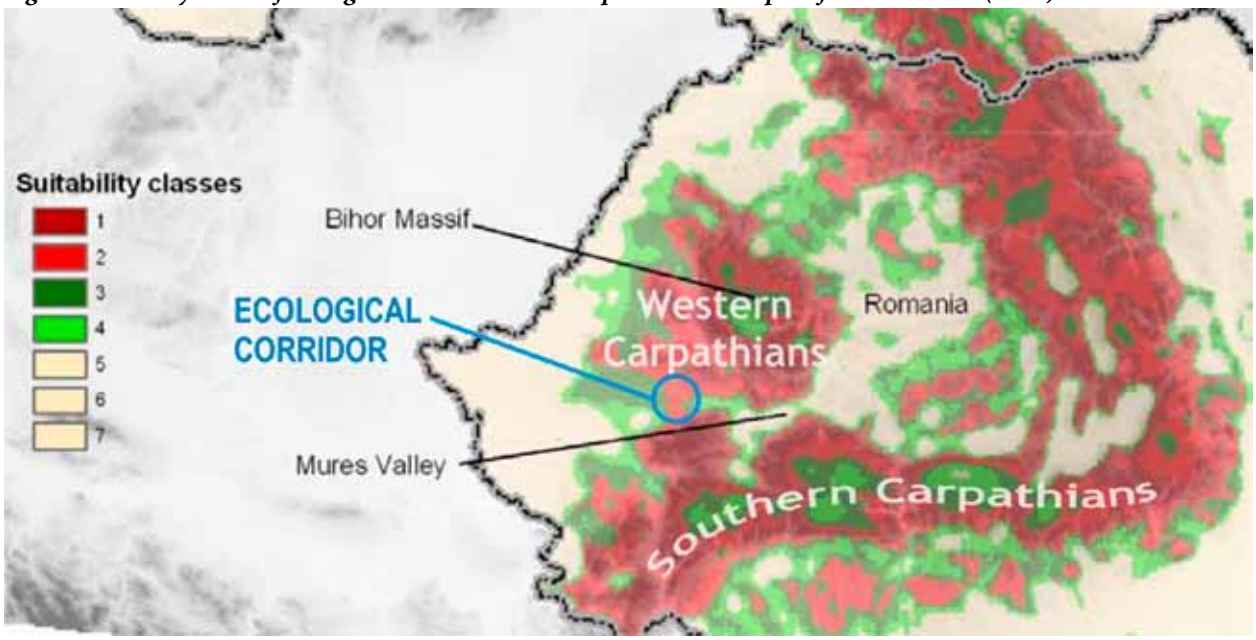
The document does not present detailed technical / engineering solutions - these will be best developed through collaboration between the developers, architects, construction engineers and specialists in biology and conservation. A monitoring and evaluation programme should be implemented in order to establish whether or not suitable and sufficient mitigation measures have been provided for during the planning and construction phases, guaranteeing minimum impact on the fragmentation of animal populations and habitats.

It is important to highlight that the assessment was limited to those sections of the motorway that will impact on areas crucial for the movement of large carnivore species. No assessment of other sections of the motorway or for other species was undertaken. However, when applied, the proposed measures will contribute to the conservation of to other species of fauna.

1. The conservation relevance of the area

Concerned about potential radical changes to the Carpathian landscape, ecosystems and biodiversity driven by EU accession, Valeria Salvatori (2004) conducted a study [1] aiming to determine the most important areas for large carnivore conservation in the Carpathian range. The study methodology was presented to the European Council in 2002 [2]. The study revealed that one of the most sensitive issues for large carnivores in the Carpathians is the connectivity between the Western Carpathians (Apuseni Mountains) and the Southern Carpathians of Romania.

Fig. 1. Suitability classes for large carnivores in the Carpathians – adapted from Salvatori (2004)



Salvatori concludes that there is just one small section of suitable habitat connecting the Western Carpathians (Apuseni Mountains) with the Southern Carpathians, which is indicated on the above map. The Western Carpathians are classified as highly suitable for large carnivores, but are separated from the rest of the mountain range by the Mureş river valley, which functions as a natural barrier. The Transylvanian Plain, situated to the East of the ecological corridor, is ecologically unsuitable and therefore unable to support the movement of brown bear and Eurasian lynx. Movement through the Plain is less of an issue for the wolf as it is much more adaptable.

2. Designation of new Natura 2000 sites

An assessment of the Natura 2000 network in Romania (2008) concluded that new Natura 2000 sites should be designated for large carnivores. One specific issue to be solved was the connectivity between the Western Carpathians (Apuseni Mountains) and the Southern Carpathians of Romania.

Table 1– Conclusion of the Bio-geographical Seminar, 2008: Excerpt – species of large carnivores in Romania.

Bioregion	Species	Conclusion	Comments
Alpine	*Canis lupus	IN MOD#	North-East and West
	*Ursus arctos	IN MOD	Same as wolf
	Lynx lynx	IN MOD	Link to other carnivores
Continental	*Canis lupus	IN MOD	-
	*Ursus arctos	IN MOD	Including enlargement of existing sites to form corridor between Southern & Western Carpathians
	Lynx lynx	IN MOD	Link to other large carnivores
Steppic	*Canis lupus	IN MOD	Add to Ref. list

#, An assessment of habitat types and species included in the pSCIs indicated that insufficient protection was given to certain habitat types (and their functions) and species and designation of further sites was proposed.

As a result, a follow-up research report [3] supported by the Romanian Ministry of Environment and Forests recommended the designation of a number of new Natura 2000 sites that would safeguard ecological connectivity for large carnivore moving between the Apuseni Mountains (Western Carpathians) and Southern Carpathians of Romania. Designation as Natura 2000 being an efficient means through which ecological connectivity and the Favourable Conservation Status of the species can be maintained. Intensive field assessments paired with GIS analyse confirmed the existence of the last habitat corridor (more than 150 kilometers long but also affected by several major "bottle-necks" and habitat fragmentation caused by existing transportation infrastructure and human developments).

The major concern was to ensure the Favourable Conservation Status for the separate bear subpopulation in the Apuseni Mountains. Based on the recommendations given in "Guidelines for Population Level Management Plans for Large Carnivores" [4], the report proposed new Natura 2000 sites that will protect major movement/dispersal/migration routes, favourable habitats in central areas and will eliminate major present mortality sinks (please see the Annex). The Lugoj–Deva motorway will intersect one of these proposed Natura 2000 sites – *Podisul Lipovei – Poiana Rusca,* and thus impact on ecological connectivity and the large carnivore populations.

3. The impact of the Lugoj – Deva motorway

Although, Romania has one of the lowest paved road densities in Europe (0.06 km/sqkm, compared to 3.5 km/sqkm in The Netherlands, for example) [5], the volume of traffic on national roads is increasing. Some sections of road are now acting as barriers for wildlife. [6] At present, road construction rates are low. But the development of new motorways and highways are a priority for the authorities and general public. Due to its strategic location at the crossroads of Europe and Asia, Romania has the potential to become one of the busiest transport areas in central and Southern Europe (The Centre for South-East European Studies – CSEES). [5]

Analysis of the intersection of existing and proposed Natura 2000 sites with existing and planned transportation infrastructure reveals a high level of fragmentation impact. Similarly, analysis of the transportation infrastructure against species distribution models for brown bear indicates a high level of fragmentation. 29% of the road network crosses valuable habitat areas. [7] Unfortunately, at present, species population connectivity and habitat fragmentation are not properly addressed by the environment impact assessments undertaken for road developments.

The existing road network, with sections of variable permeability, in conjunction with human developments represent a major issue for the functionality of the Apuseni – Southern Carpathians ecological corridor. However, new planned transportation infrastructure such as the Deva - Lugoj motorway threaten to block the ecological corridor completely. Without providing proper mitigation measures for de-fragmentation, this will have a major negative impact on ecological connectivity, on large carnivore populations, and on the functionality of the Natura 2000 network.

4. Lugoj – Deva motorway Environment Impact Assessment and de-fragmentation measures

Although an EIA was carried out, the impact was assessed only on the immediately adjacent *Defileul Muresului Inferior – Dealurile Lipovei* (ROSPA0029) SPA Natura 2000 area. The impact on carnivore populations, on ecological connectivity and on the existing *Defileul Muresului Inferior* (ROSCI0064) SCI Natura 2000 site, situated only 10 kilometers from the motorway location, was not considered.

The Romanian Environment Agency and the Romanian Highways and National Roads Company (CNADNR) have been provided with the new data on Natura 2000 sites and impacts on ecological connectivity. As a result, the existing EIA has been approved with the requirement that mitigation measures be implemented; these should be based on a scientific assessment. [8] However, no assessment has been carried out and instead two "ecoducts" have been proposed by the Romanian Highways and National Roads Company (CNADNR) at specific locations and with specific construction characteristics (including the width of 80 meters). It is unclear how these 'mitigation measures' have been proposed without a proper assessment being conducted.

Fig. 2. The Lugoj - Deva Motorway in relation with existing (green) and proposed (yellow) Natura 2000 sites

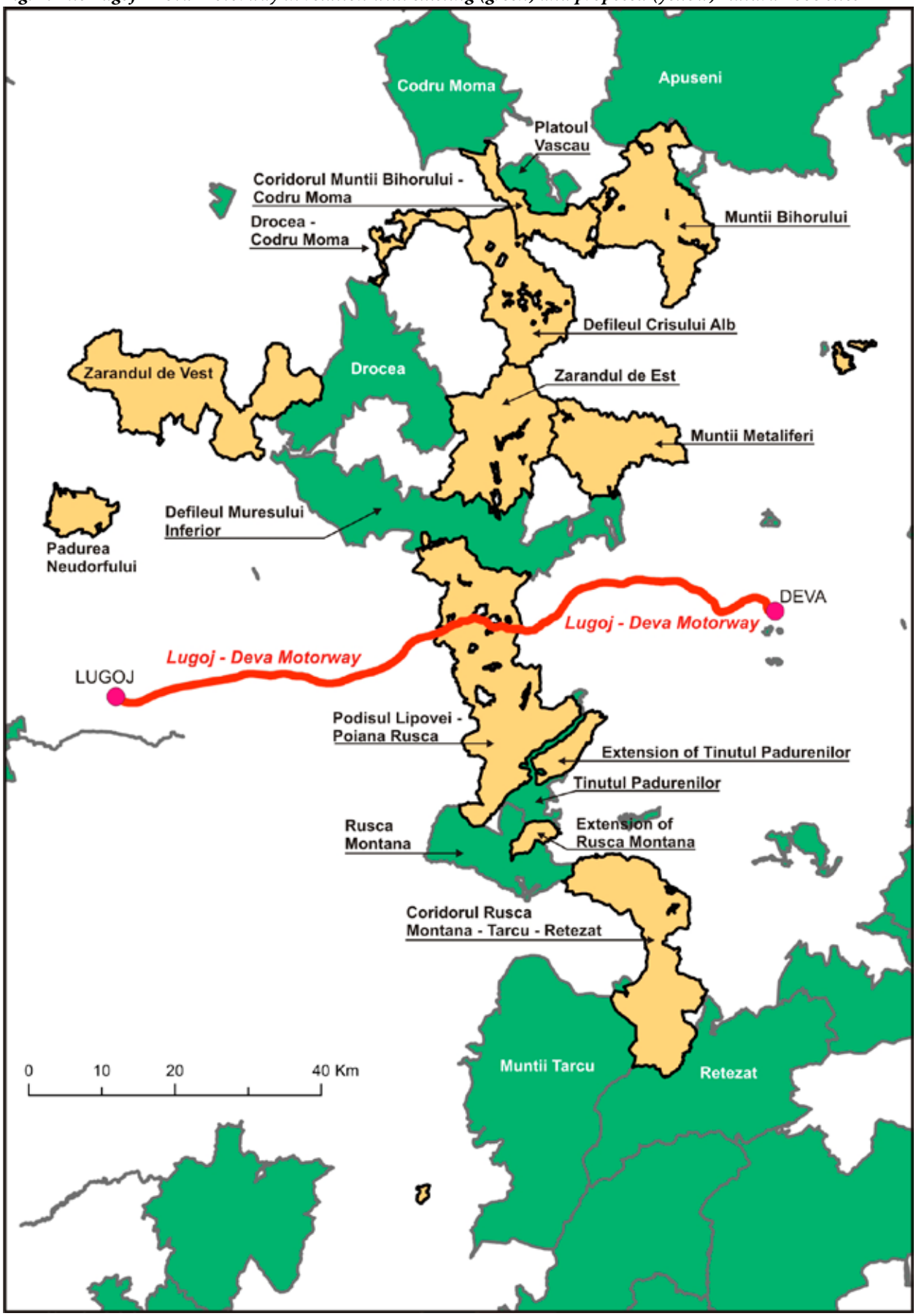
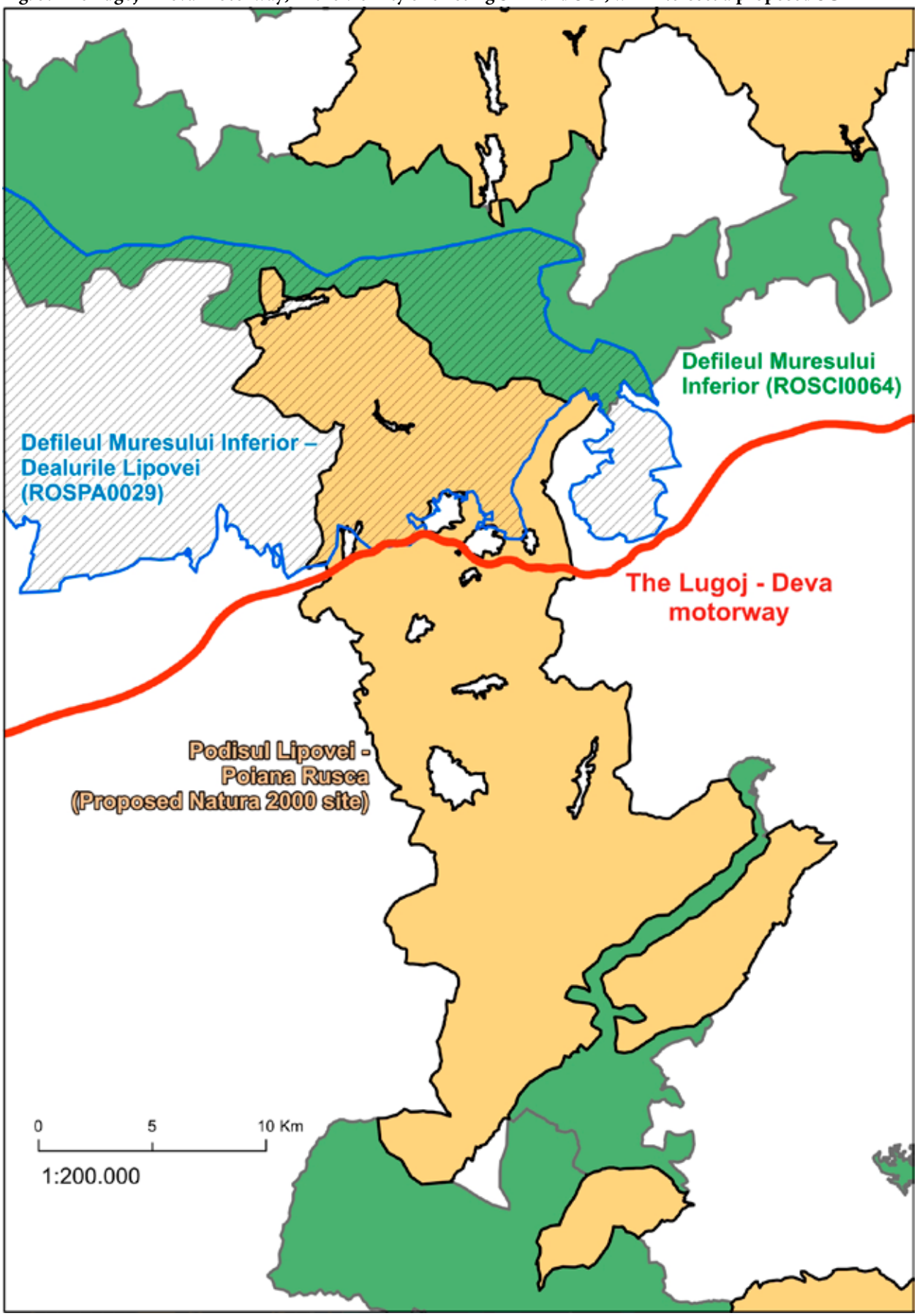


Fig. 3. The Lugoj - Deva Motorway, in the vicinity of existing SPA and SCI, will intersect a proposed SCI

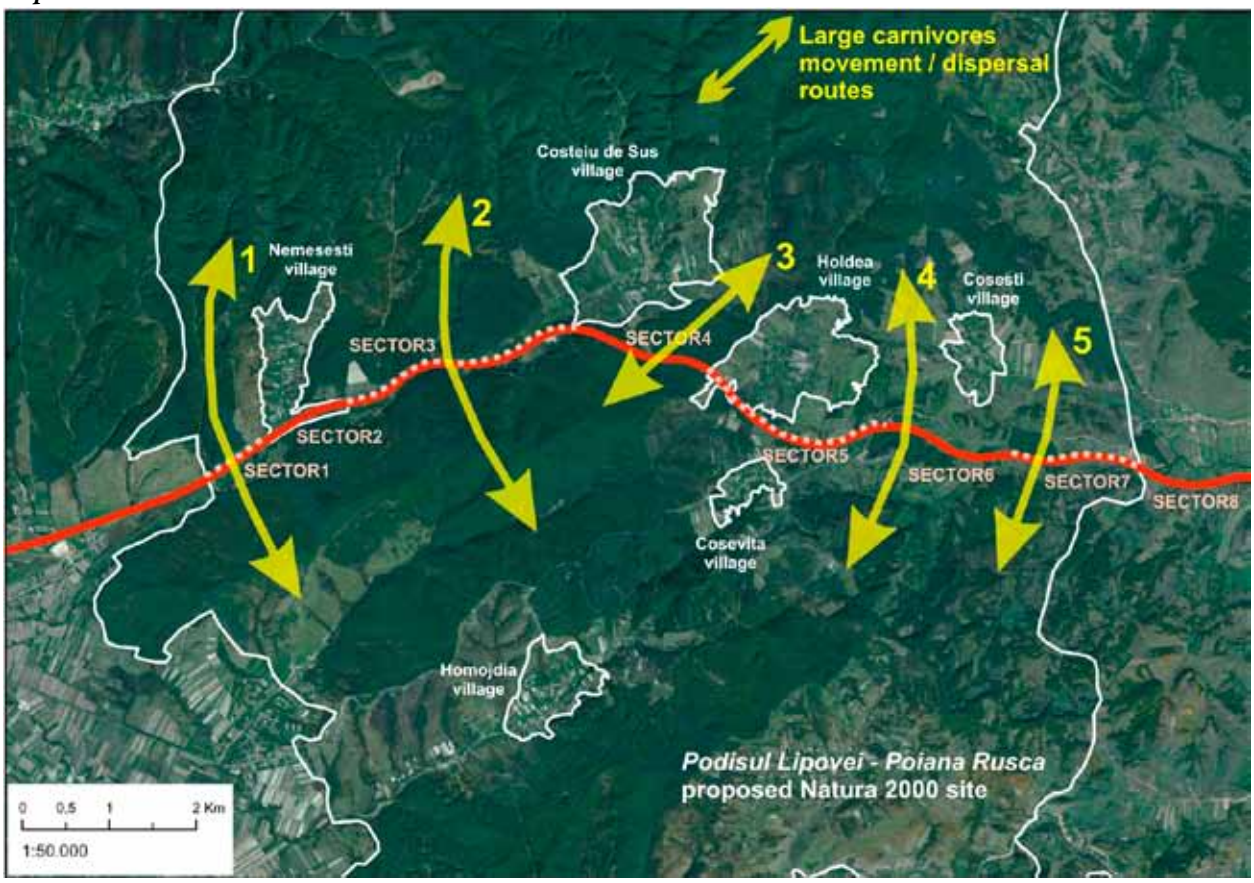


5. Assessment of the impact of Lugoj – Deva motorway on large carnivores' connectivity

In order to assess the efficiency of the mitigation measures proposed by the EIA, the authors evaluated the context of the area at the landscape scale and examined the existing fragmentation issues inside and outside the ecological corridor. Aerial photographic maps and a detailed map [9] of the motorway (horizontal and vertical profiles imposed over terrain details) were used for this purpose.

Sectors were major dispersal routes of large carnivores will be intersected by the motorway were identified and the impact of the construction for each of these sectors was assessed.

Fig. 4. The Lugoj – Deva motorway intersecting a proposed Natura 2000 site and blocking large carnivore's dispersal routes



The motorway will intersect the *Podisul Lipovei – Poiana Rusca* proposed Natura 2000 site for a length of 11.7 kilometers [between km 48 + 125 and km 59 + 750 points] of which only five sectors still offer viable large carnivores' passage.

Our assessment clearly indicates that the mitigation measures proposed by the motorway's Final Feasibility Study and EIA are not appropriate for large carnivores.

6. Proposed solutions

This chapter presents the findings for each important sector of the motorway and proposes alternative mitigation measures to ensure a level of permeability required by large carnivores.

SECTOR 1 [**1A – 1B**] is blocking the 0.6 kilometer-wide movement/dispersal route no. 1. The route consists of a stripe of forest interrupted by a meadow with some agricultural plots. At present, the existing Communal Road and Railway are not acting as major blockage due to low traffic volume, however, their cumulate impact have to be considered.

Fig.5. Aerial view of the Sector 1

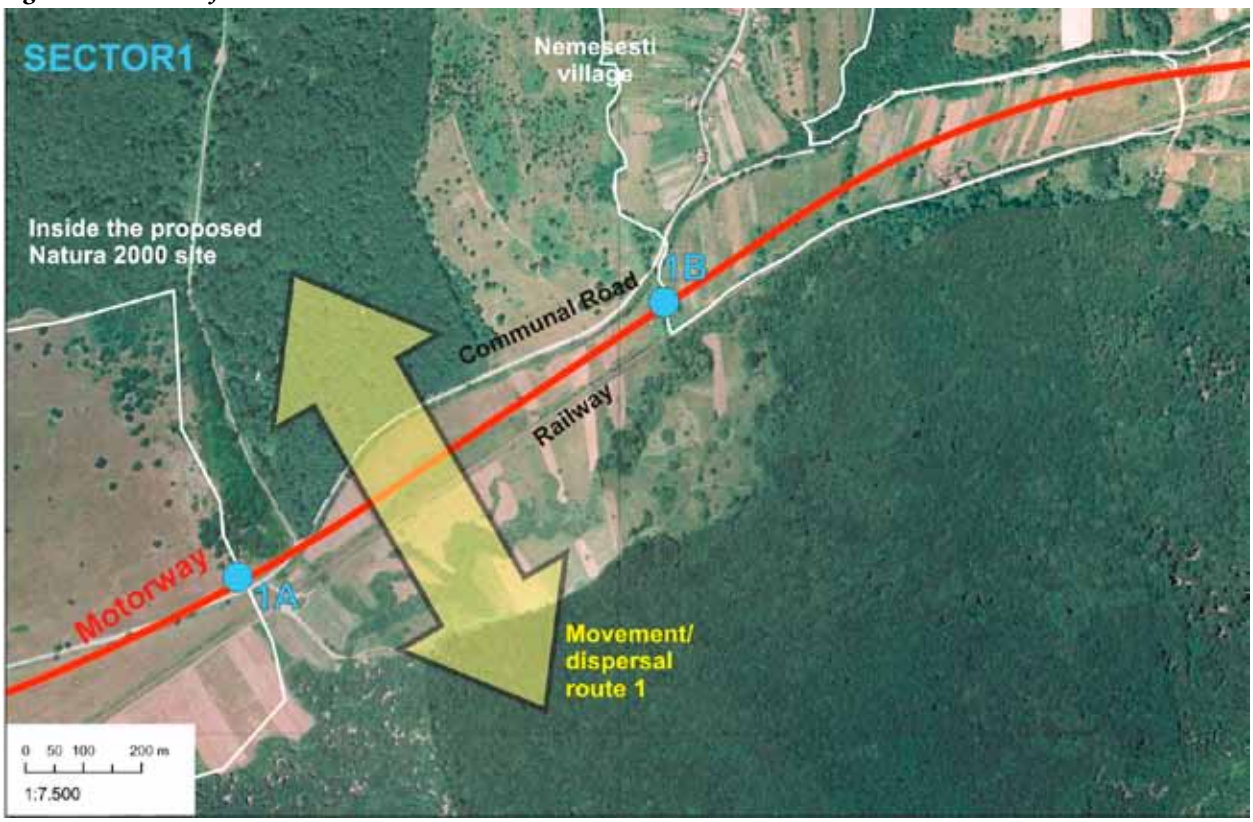
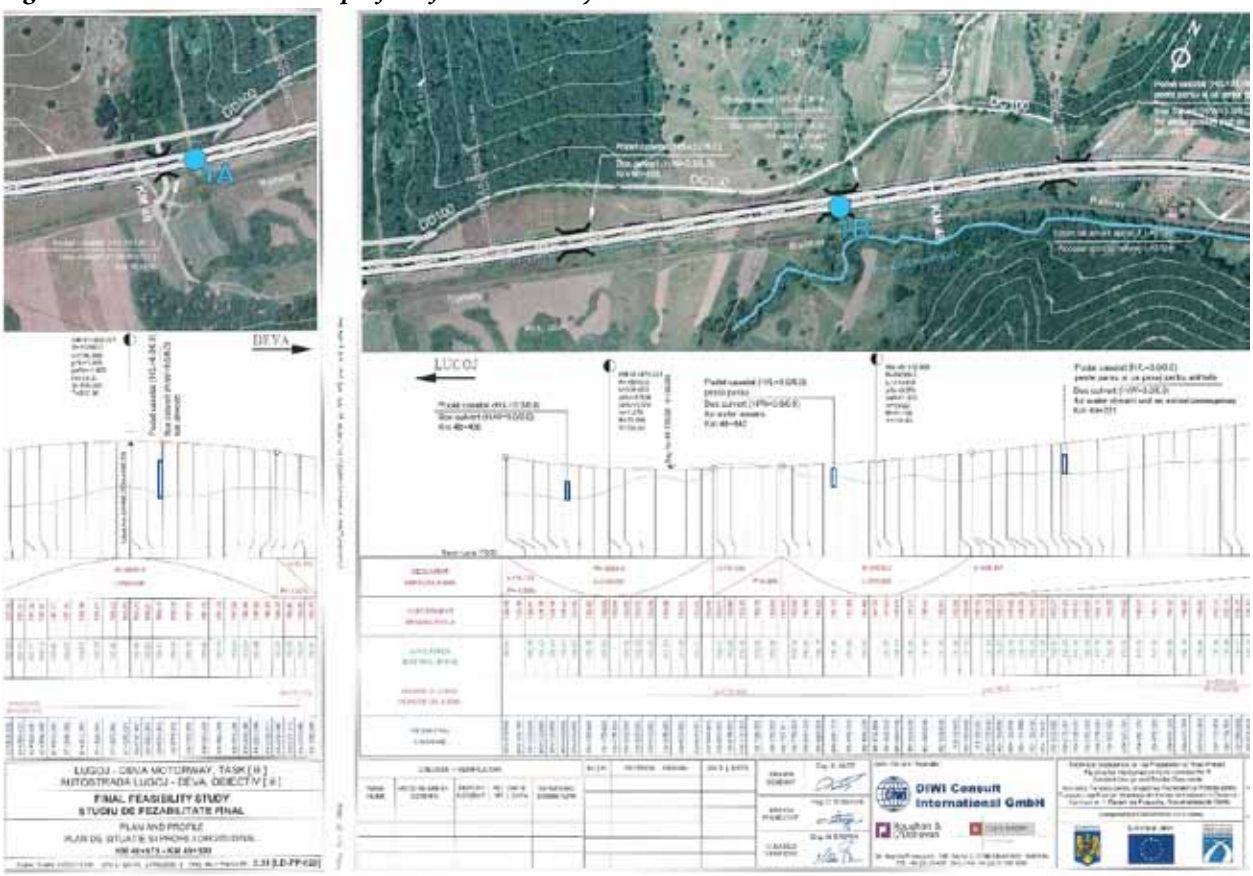


Fig. 6. Aerial view and vertical profile of the motorway on Sector 1

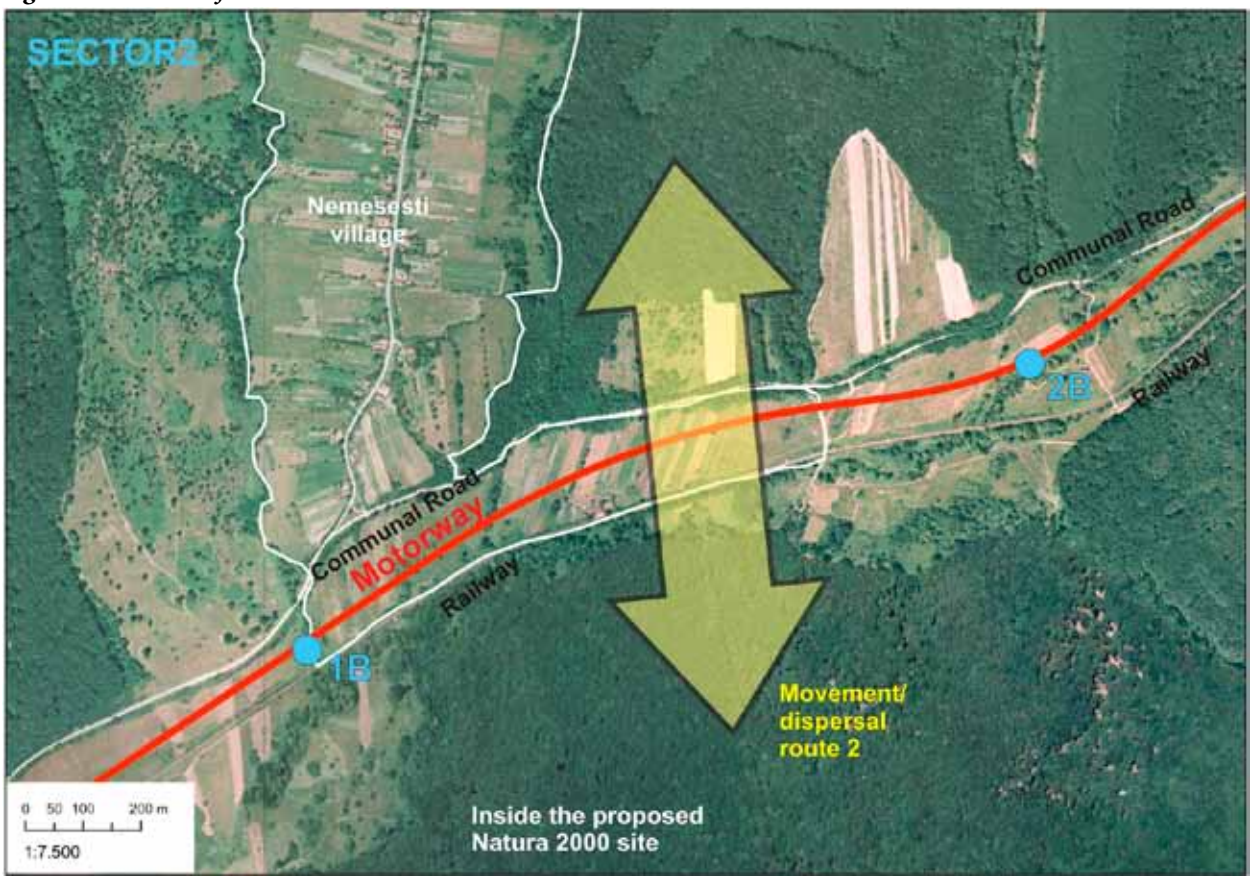


The existing project includes for "**Sector 1**" the construction of three box culverts (one of H/W 6.0/6.0 meters and two of H/W 3.0/6.0 meters). These objects and their specifications are not suitable for large carnivores. However, the functionality of the box culverts can be much improved for small to medium sized mammals and reptiles and amphibians by extending their width to at least 12 meters and by ensuring appropriate design and construction. [10]

An ecoduct should ideally be constructed in this sector for safeguarding the movement/dispersal route for large carnivores. Due to the relatively flat terrain and the necessity of mitigating also the existing road and railway line in the vicinity, construction of a functional ecoduct could be complicated and expensive. For this reason we consider that the best and most economical solution is to provide an alternative motorway route for Sectors 1 – 3 (please see **fig. 12**).

SECTOR 2 [1B – 2B] is similar to the first sector as the existing transportation infrastructure is characterized by low traffic volumes. The 0.7 kilometer wide movement/dispersal route for large carnivores is disrupted by a more extended cultivated area.

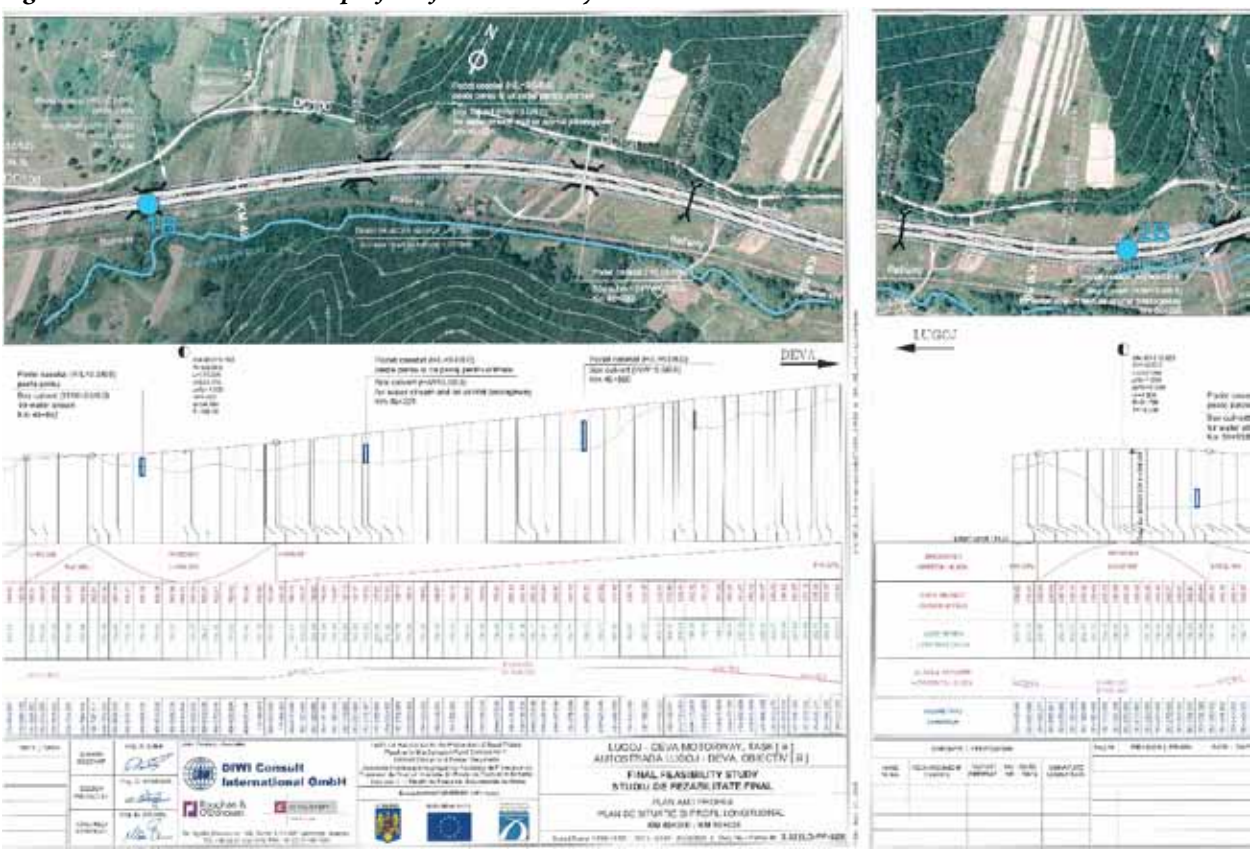
Fig. 7. Aerial view of the Sector 2



The motorway project includes two box culverts in this sector (H/W 3.0/6.0 and 5.0/6.0 meters, last one designed for an access road). These objects and their specifications are not suitable for large carnivores. However, the functionality of the box culverts can be much improved for small to medium sized mammals and reptiles and amphibians by extending their width to at least 12 meters and by ensuring appropriate design and construction. [10]

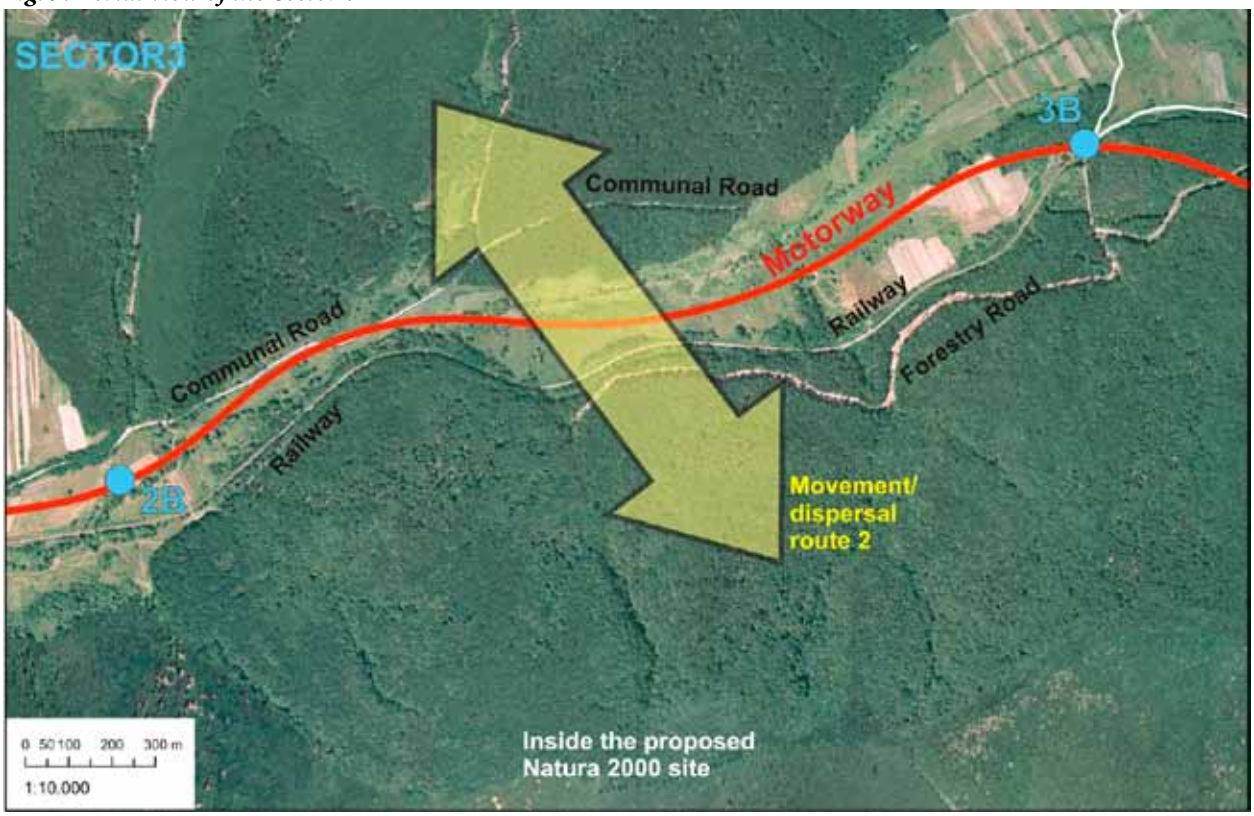
Similar to Sector 1, constructing a functional ecoduct here could be difficult and we believe that the best solution is to provide an alternative motorway route for Sectors 1 – 3 (please see **fig. 12**).

Fig. 8. Aerial view and vertical profile of the motorway on Sector 2



SECTOR 3 [2B – 3B] will block one of the main dispersal route (route no. 2) for large carnivores (in itself only 1.4 kilometers wide) and requires special mitigation measures for de-fragmentation.

Fig. 9. Aerial view of the Sector 3

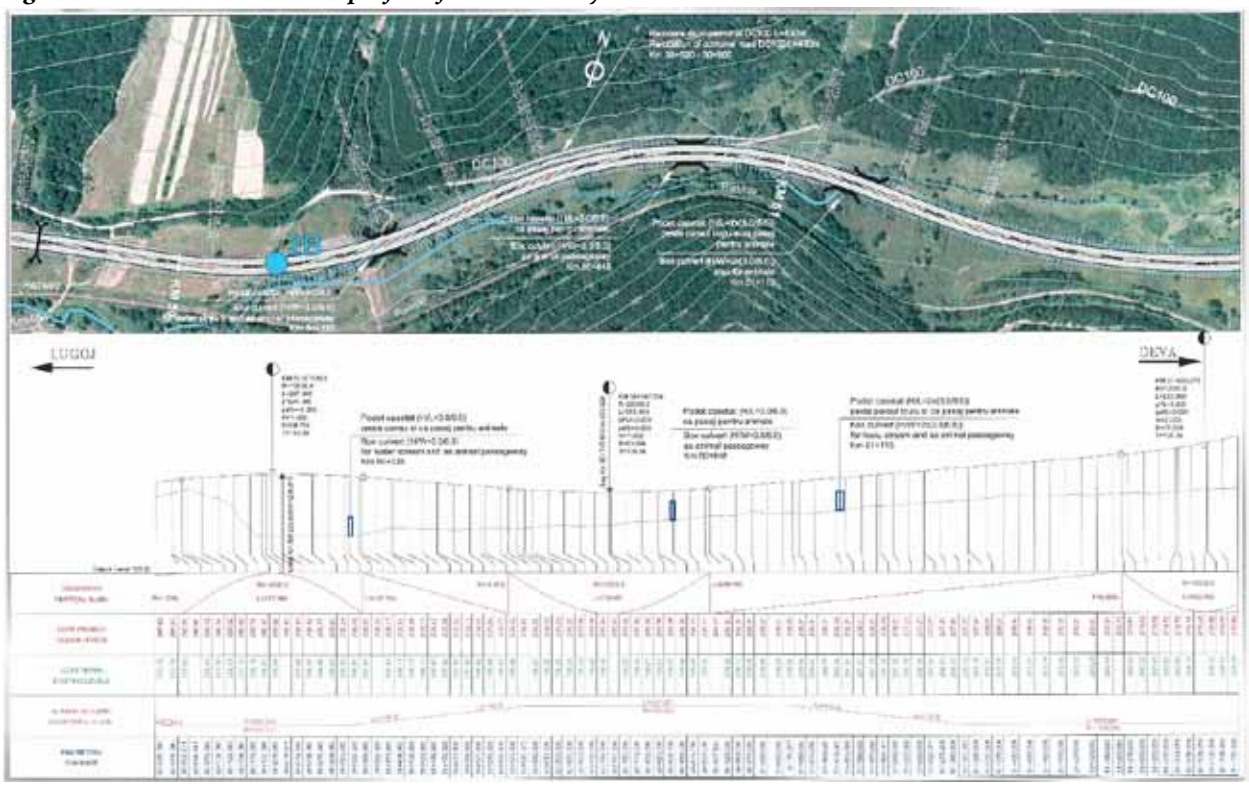


The existing project includes here three box culverts – two for streams and animal passage (H/W 3.0/6.0 and 3.0/6.0 + 6.0 m) and one animal passage only (H/W 3.0/6.0 m). These culverts are not suitable for large carnivores.

However, their functionality for small to medium mammals and reptiles/amphibians could be improved by extending the width to 12 meters and by ensuring appropriate design and construction. [10]

To overpass the railway and the forestry road, a 900 m long viaduct is designed in this sector. Although long and relatively high (8.7 m), the functionality of the viaduct as a passageway for large carnivores is questionable and, considering the importance of the sector, we strongly suggest that an efficient ecoduct has to be constructed here.

Fig.10. Aerial view and vertical profile of the motorway on Sector 3

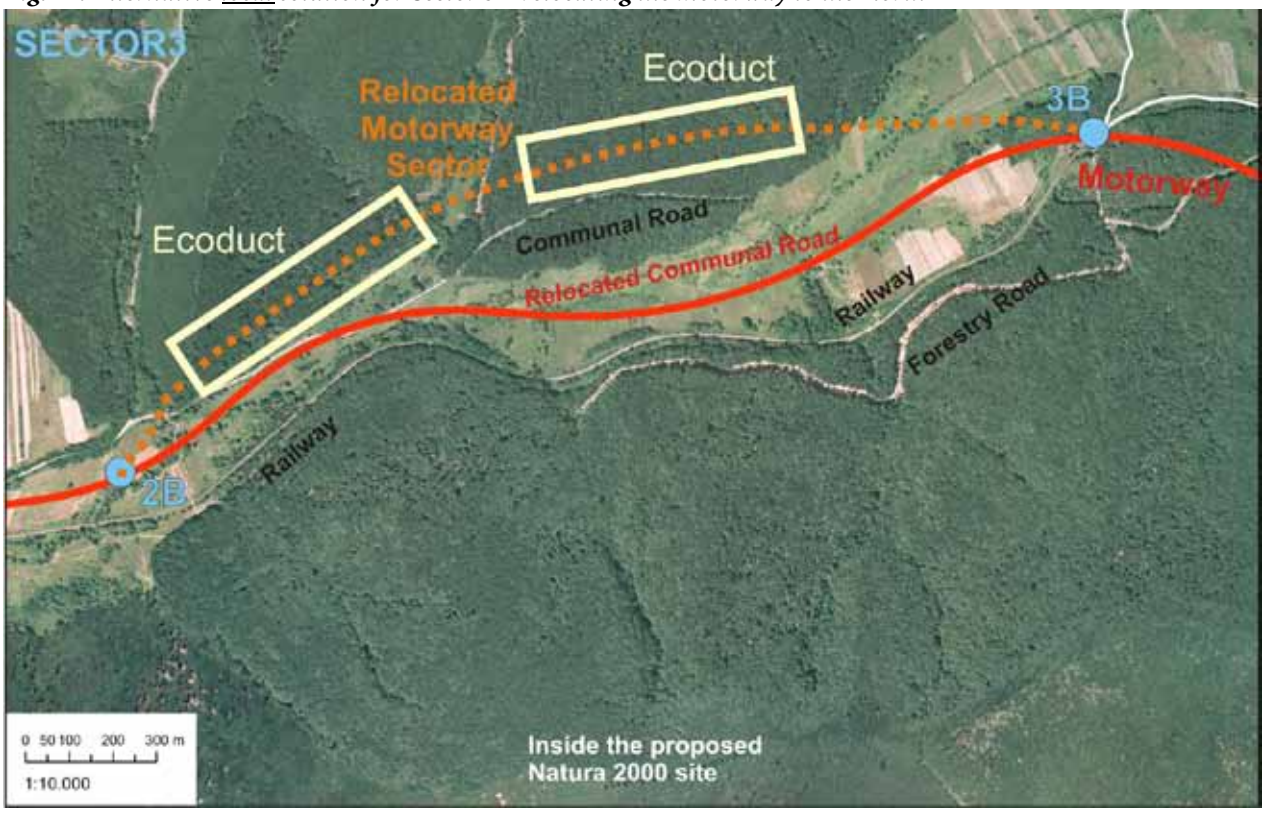


Prior to the viaduct, the motorway is elevated above ground level, and considering the nearby communal road and railway, building a functional ecoduct will be problematic in this sector, too.

If the motorway will go ahead in its current planned location, as an alternative local solution, we are proposing the relocation of the motorway to the North of its current position and onto the forested slope, where functional ecoduct(s) could be constructed. Additionally, in this case, the viaduct will become shorter and motorway's building costs will be lower. The communal road will have to be relocated to the South, on the open terrain.

However, we believe that most efficient solution is to provide an alternative motorway route for Sectors 1 – 3 (please see **fig. 12**).

Fig. 11. Alternative <u>local</u> solution for Sector 3 – relocating the motorway to the North



AN ALTERNATIVE ROUTE FOR SECTORS 1, 2, 3

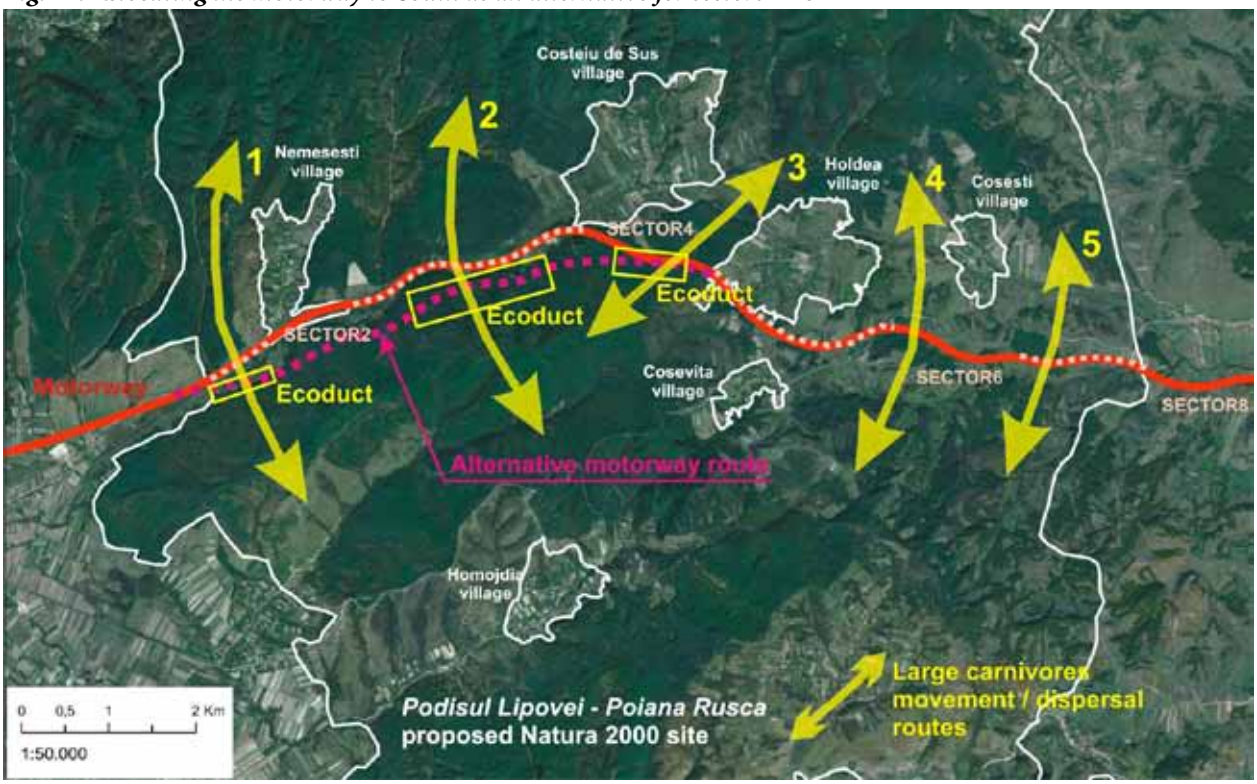
As described earlier, functional mitigation measures will be difficult to be implemented in sectors 1 to 3 of the current planned motorway location. However, as the motorway is still in its feasibility study stage and changes to location and design can be expected, we would like to suggest an alternative route for the motorway between sectors 1 and 3.

This alternative route would significantly reduce the motorway's impact on connectivity and large carnivore species.

Relocating Sectors 1 to 3 of the motorway on to the Southern forested slope of the valley has many key benefits:

- Movement/dispersal routes no. 1, 2 could be efficient safeguard;
- Mitigation measures could target both the motorway and the existing railway;
- The overall cost of the motorway construction and associated mitigation measures could be lower compared to the current planned motorway location.

Fig. 12. Relocating the motorway to South as an alternative for sectors 1 - 3



SECTOR 4 [3B – 4B] of the motorway is blocking another important dispersal route (route no. 3). This landscape was carefully inspected. Although at present the movement/dispersal route maintains its structural continuity, special care should be taken in order to prevent this sector developing into a "bottleneck".
Being situated between two villages, it is highly probable that ecoducts implemented for large carnivores will be also used by people from nearby villages, thus disturbing large carnivores' movements.

In this respect, agricultural and forestry roads should be relocated in order to cross the motorway at a distance that will limit as much as possible the disturbance of the wildlife passage. However they should be designed to take into account the needs of the local communities. Failure to relocate local roads conveniently for locals will increase the pressure on local people to use the wildlife passageway instead.

The actual motorway project includes here a small viaduct where the motorway will cross a valley. In addition, between the viaduct and the point "4B", an 80 meter wide ecoduct is requested by EIA. An 80 m wide object will not be sufficient for large carnivores. In addition, erecting a construction over a massive excavation area will not be ecologically or cost-efficient.

Given that current plans require significant excavations for this section, we propose that the motorway be channeled into a bored tunnel or cut-and-cover tunnel. Although expensive, the ecological benefits of using tunnel solutions will be incalculable [10] Moreover, this solution will complement the alternative motorway route for Sectors 1 – 3 we were proposing.

Fig. 13. Aerial view of the Sector 4

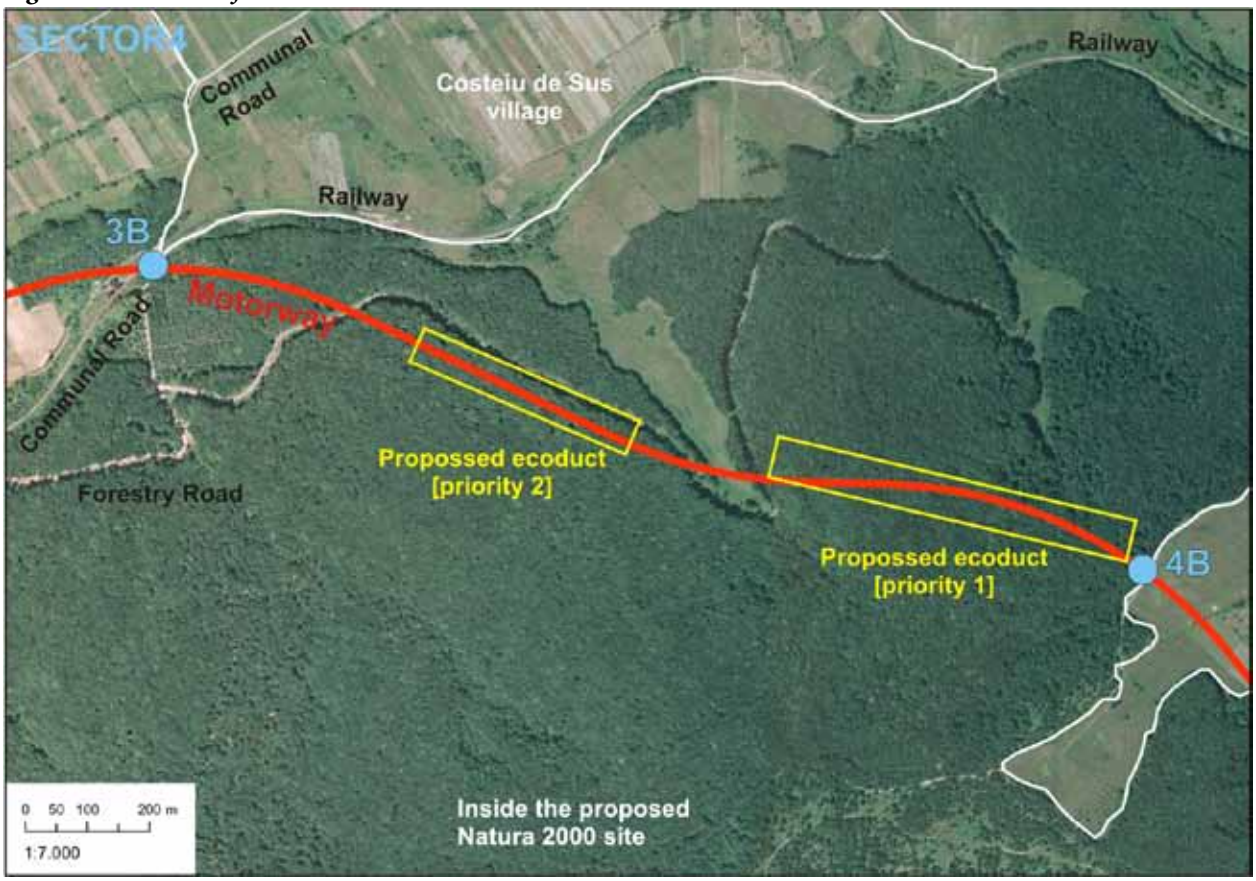
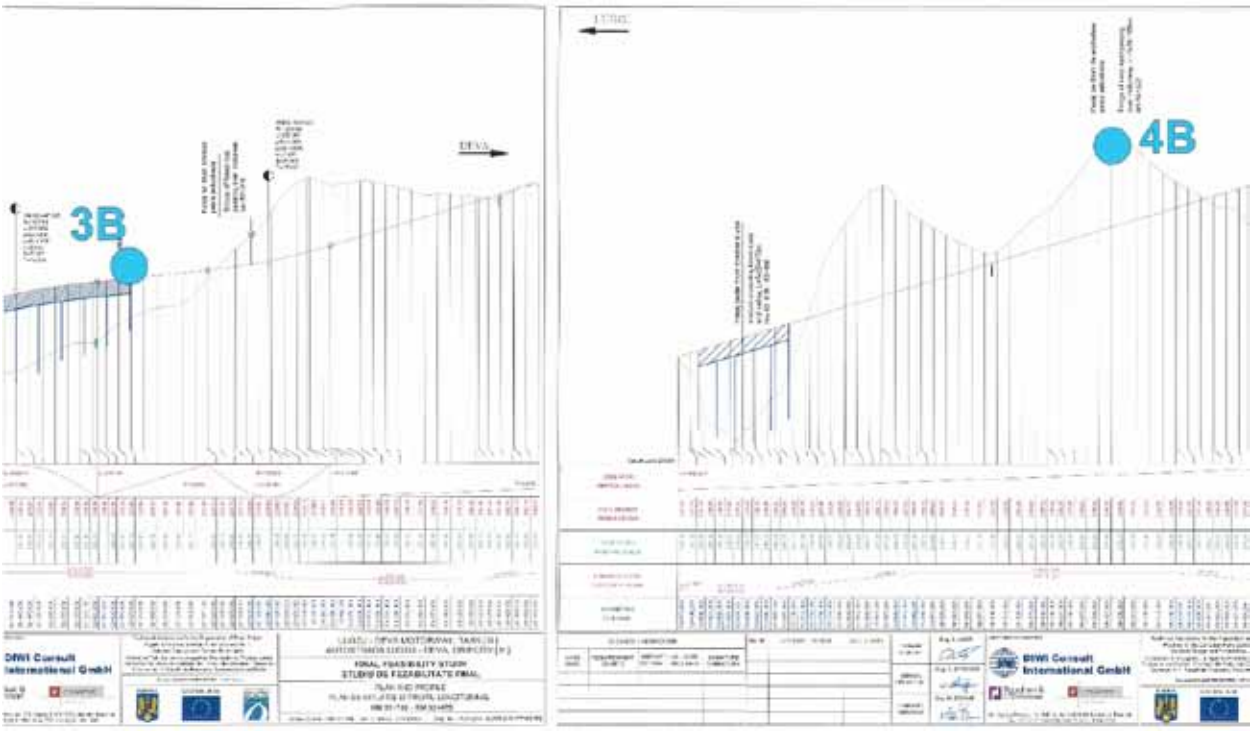


Fig. 14. Aerial view and construction details of the motorway on Sector 4

Fig. 15. Vertical profiles of the motorway on Sector 4



SECTOR 5 [4B – 5B] although this sector is not currently important for large carnivores, where excavation is planned to take place, the opportunity should be taken to build overpasses for wildlife. The maintenance of connectivity in more open landscapes is also important for a number of other species. Although not specially designed for them, such connectivity could benefit large carnivores, also.

Fig. 16. Aerial view of the Sector 5

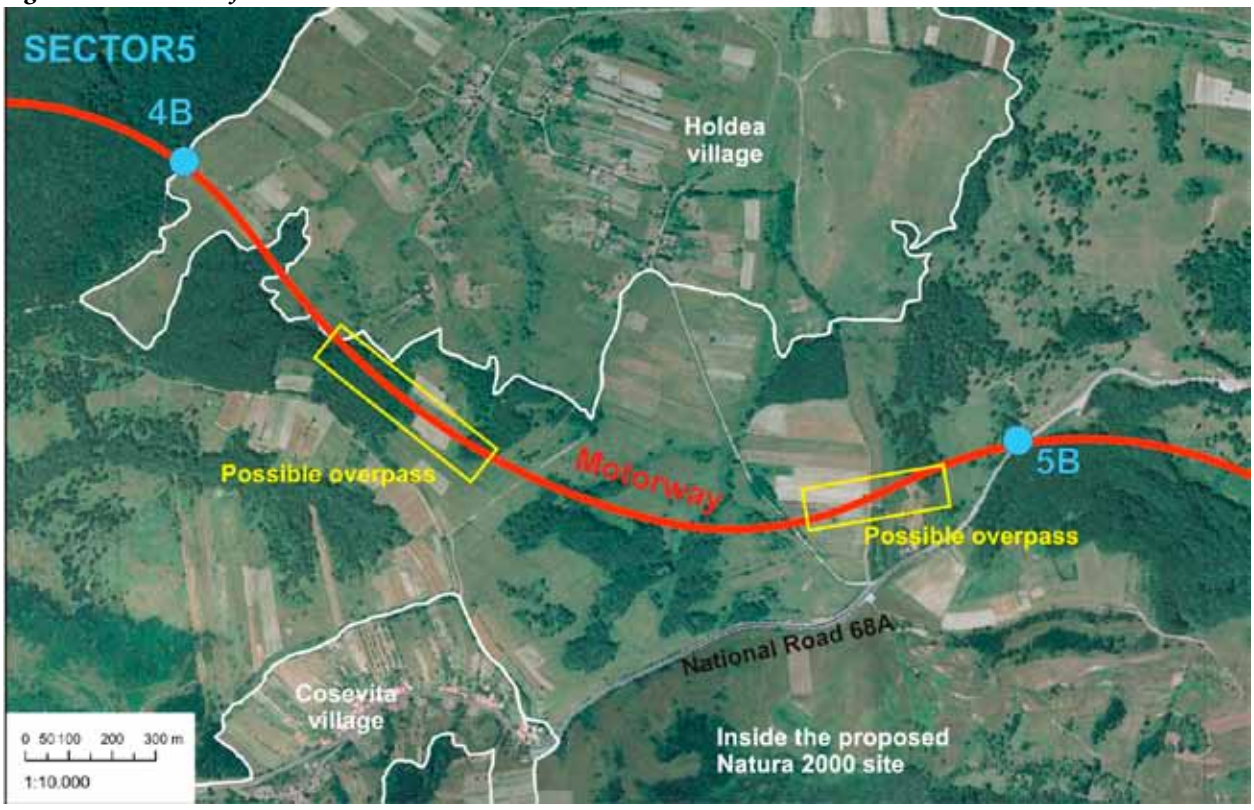


Fig. 17. Aerial view and construction details of the motorway on Sector 5

SECTOR 6 [5B – 6B] will block the dispersal route no. 4 and we are proposing mitigation solutions in areas where excavation is requested by motorway construction, making the implementation of ecoducts feasible and cost-effective. Special attention should be given in order to maintain the permeability of the existing National Road 68A.

Fig. 18. Aerial view of the Sector 6

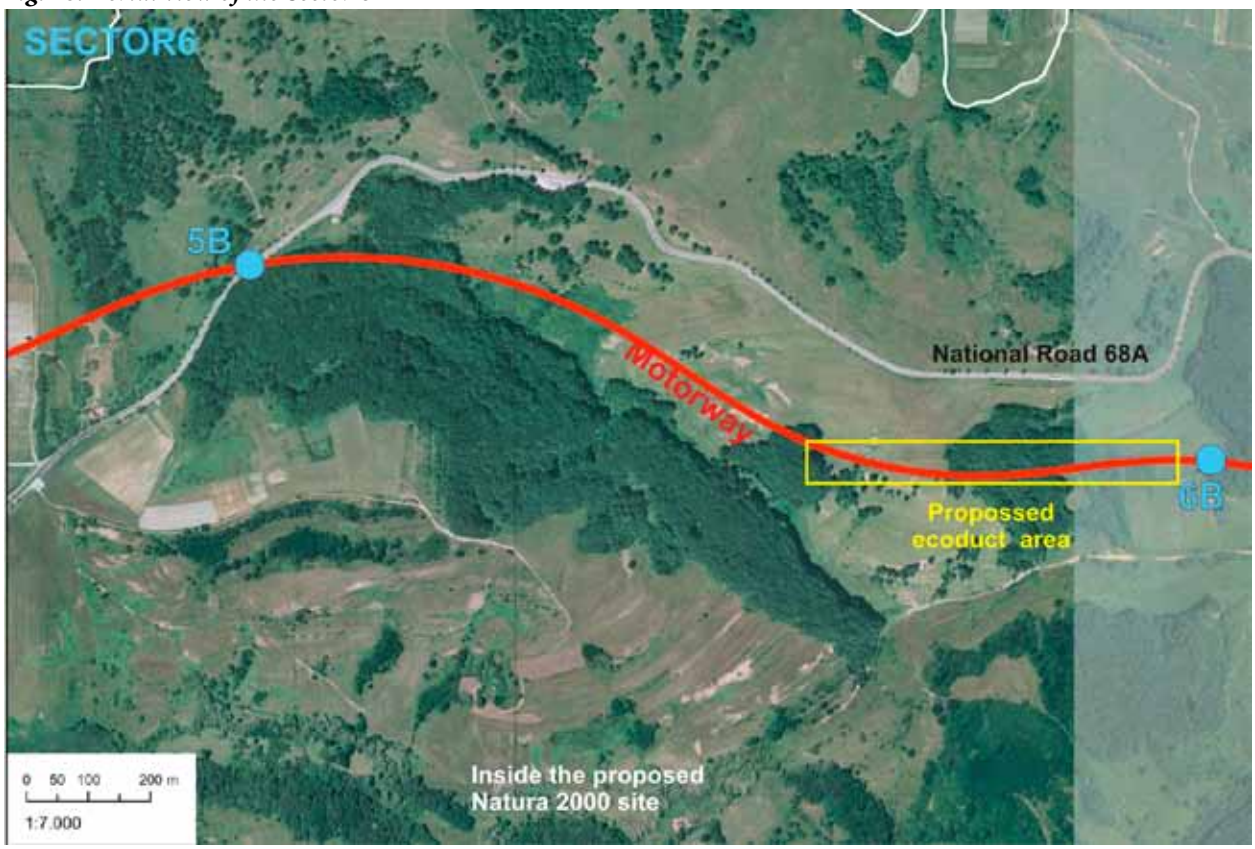


Fig. 19. Aerial view and construction details of the motorway on Sector 6

SECTOR 7 [6B – 7B] will block the dispersal route no. 5 and we are proposing the construction of an ecoduct as a mitigation solution in the area where excavation is requested. Special attention should be given to maintaining the permeability of the existing National Road 68A.
A parking area is proposed for this section of the motorway. However, as this is within a proposed Natura 2000 site, we strongly recommend that the parking / service area be relocated to a less sensitive section of the motorway.

Fig. 20. Aerial view of the Sector 7

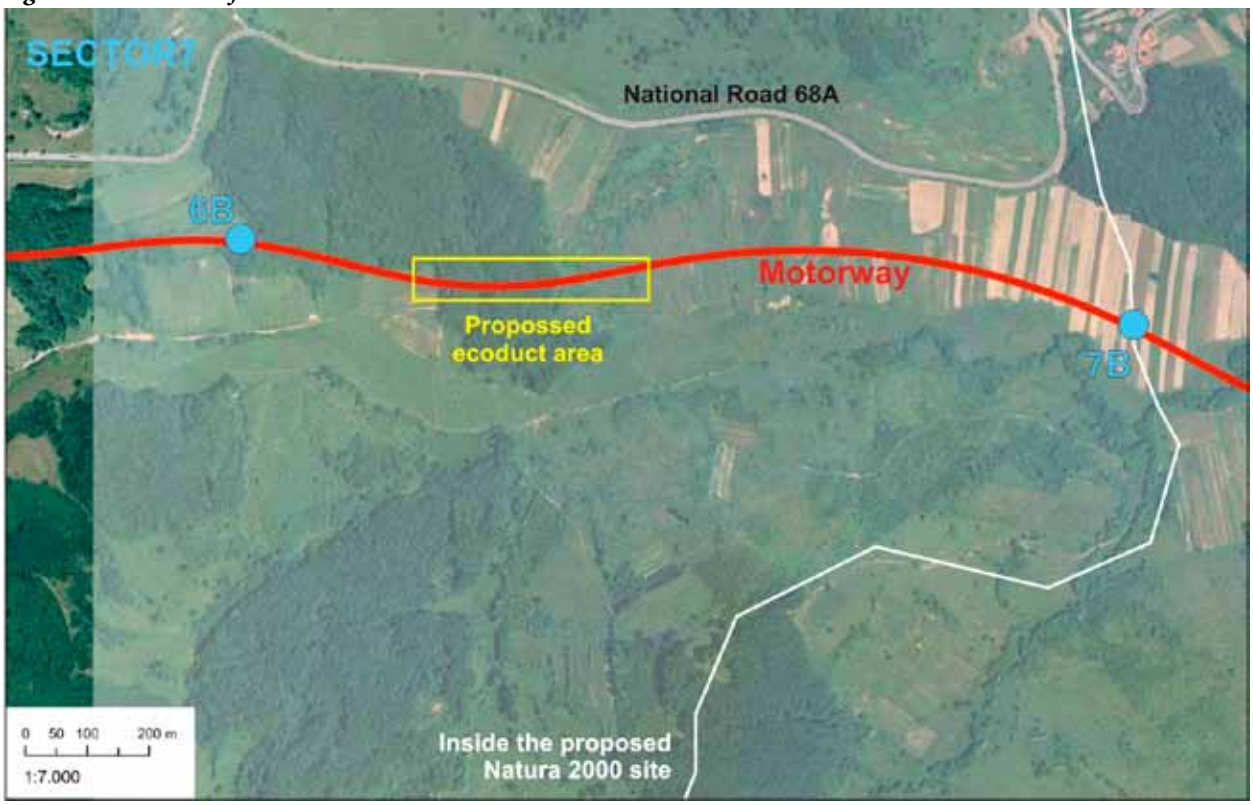


Fig. 21. Aerial view and construction details of the motorway on Sector 7

SECTORS OUTSIDE THE PROPOSED NATURA 2000 SITE "PODISUL LIPOVEI-POIANA RUSCA"

The following discussion relates to two sectors that are situated outside the proposed Natura 2000 site. Until it reaches Deva city, the motorway will pass through a highly fragmented landscape. The current functionality of this area as movement corridor for large carnivores (especially lynx and brown bears) is not clearly understood ; however, as the area is a historical main natural dispersal route, it should be assessed and considered for possible ecological reconstruction, as in its current form it represents a blockage to large carnivores.

We recommend that all objects to be constructed as part of the motorway (bridges, box culverts, overpasses and underpasses) be considered as potential passageways for wildlife. Their functionality should be maximised accordingly, through attention to appropriate design and construction details. [10]

Special attention should be given to the bridge over the River Mures. The river and its tributaries act as green corridors for wildlife, thus the area beneath the bridge and rivers banks should be protected and, if necessary, ecologically reconstructed in order to retain their function as green corridors.

The existing motorway includes an 80 meters wide ecoduct for wildlife at km 85 + 750 where the motorway is passing by a forested hill ("Magura Branisca"). Although the location offers a good opportunity for building an ecoduct, and we also identified many wildlife activities in the area (martens, foxes, roe deer and wild cat), technically the solution proposed is not suitable for large carnivores. A functional ecoduct should be at least 200 meters wide.

However, as the main issue here is the fragmentation of the surrounding landscape, we are proposing that an assessment for the use of the area by large carnivores and for the potential ecological reconstruction of the area be undertaken. The aim should be to connect the forested area South of River Mures with the favourable habitats from North of the river.

Post assessment, the mitigation measures for the motorway should be designed accordingly, including the construction details of the proposed ecoduct at km 85 + 750.

Fig. 22. Aerial view of the Sector 8

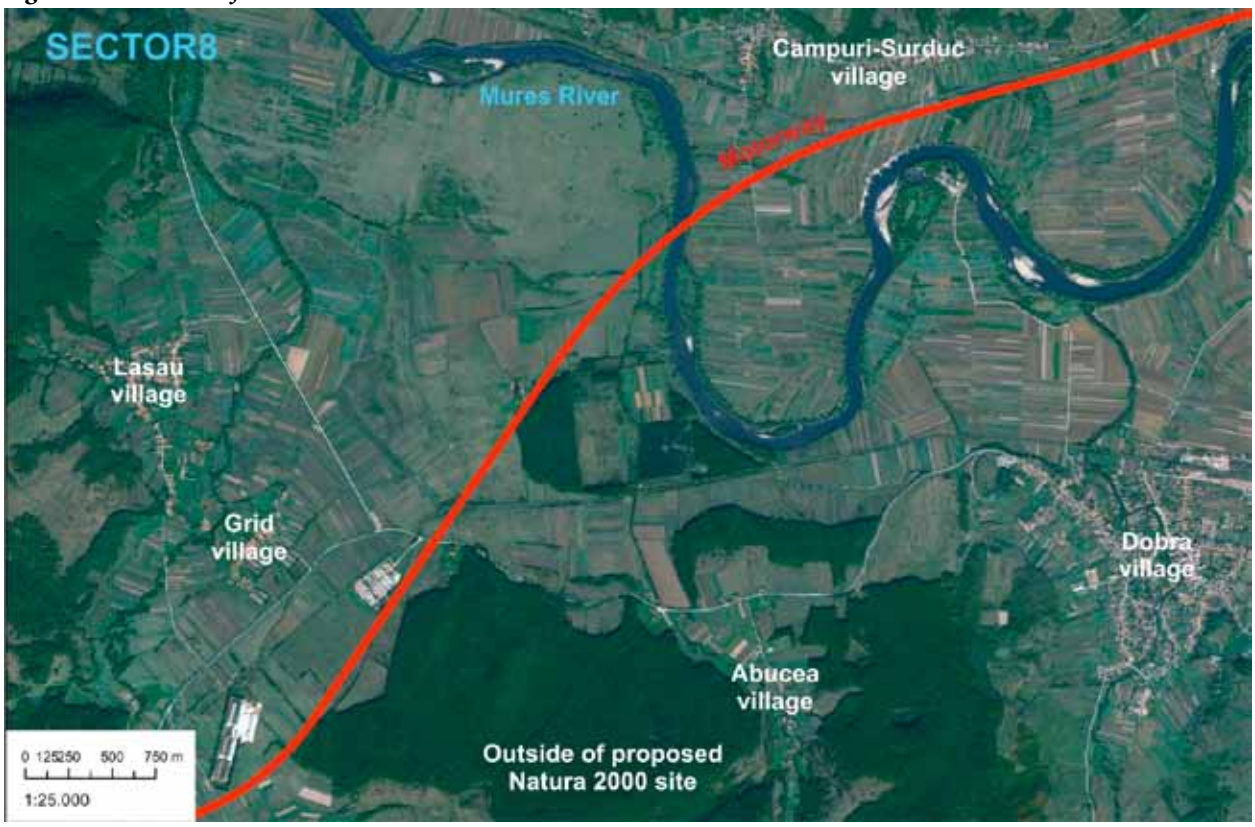


Fig. 23. Aerial view of the Sector 9

7. Conclusions

We recommend that all of the movement/dispersal routes highlighted (1-5, **fig. 4**) in this document should be safeguard and appropriate mitigation measures should be implemented.

In the areas outside the proposed Podisul Lipovei – Poiana Rusca Natura 2000 site, a further study should assess the possibility of ecological reconstruction of this currently fragmented landscape.

All objects designed specifically for wildlife movements should be constructed according to the latest recommendations and based on functionality assessment [10, 7].

Additionally, it is extremely important that all the mitigation/de-fragmentation solutions take into consideration the importance of the area for connectivity at regional level, but also the local conditions. [10]

In this respect, **we recommend that all ecoducts designed for large carnivores in the studied area should be at least 200 meters wide**.

If, for budgetary reasons, there will not be enough funds available to safeguard the main movement/dispersal routes for large carnivores (routes no. 2 and 3, **fig. 4**) on the entire width during the motorway construction, we recommend that the construction be designed to allow later construction of additional functional ecoducts on the rest of motorway sectors width.

All the objects (over and underpasses, box culverts, viaducts and bridges) designed for motorway construction reasons should be assessed and adapted to allow the maximum functionality for wildlife movements, according with the specific of each location.

We recommend that no parking / service area should be built inside the proposed Natura 2000 site.

We recommend that a large carnivore monitoring program for the area should be implemented prior to, during and after the motorway construction, and the data acquired by specialists should be used to implement tailored mitigation solutions, in collaboration with the designer and constructor of the motorway.

During the motorway construction, aforestation in sensitive areas should be reduced to minimum, access roads and temporary construction sites should be placed in locations that result in minimum disturbance to wildlife and sensitive habitats.

A landscape-scale ecological reconstruction project should be implemented during and after the construction of the motorway in order to safeguard the connectivity in the area, in the long term. The designation of the new-proposed Natura 2000 sites will facilitate this effort.

A proper fencing / deterrent system should be implemented in order to reduce incidences of wildlife entering onto the motorway, thus avoiding accidents. In this respect, the system should be design for the species that could pose the greatest danger to pass through – brown bear, wild boar and red deer.

8. Challenges and opportunities

We believe that relevant Romanian authorities, agencies and scientific / conservation organisations will be open to collaborate and to support such an initiative aimed at providing the best mitigation solutions for the motorway.

We are pleased to inform you that a major relevant European organisation – Infra Eco Network Europe - IENE, and important international and European conservation organisations – Fauna & Flora International and Euronatur, have indicated their support for safeguarding the ecological corridor between Apuseni Mountains and Southern Carpathians and are ready to implement functional de-fragmentation solutions.

This will open the opportunity of a collaborative pilot-project between Romanian and international experts and organisations that not only will aim to solve the specific issue, but also will build capacity and expertise for mitigation of future infrastructure projects.

In this respect, we ask for your support for the implementation of the recommendations in this document which form a package of solutions to mitigate the impact of of the proposed Lugoj - Deva motorway on critical ecological connectivity and large carnivores.

We also ask for your support in ensuring that appropriate field studies and monitoring are undertaken prior to, during and after the construction.

Yours sincerely,

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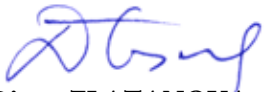

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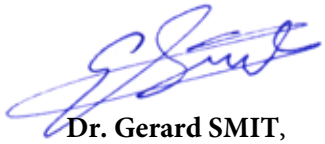
ARCTUROS,
Greece



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11. Annex

Designation of new Natura 2000 sites for establishing a functional regional ecological network between Apuseni Mountains and Southern Carpathians – A Research Report, 2010

Authors: Radu Mot (Greenlight Services), Marius Popa (Romanian Forest Research and Management Institute), Petru Nechifor-Moraru (Romanian National Environment Guard), Ramon Jurj (Carpathian Wildlife Foundation), Victor A. Indreica (Faculty of Silviculture and Forest Engineering, Brasov)

The goal of the study was to fundament the designation of new Natura 2000 sites integrated into a functional ecological network between Western and Southern Carpathians that could assure conservation and connectivity of large carnivores' populations (brown bear, wolf and lynx).

Brown bear was designated as target-species of the study as, in the study area, it is the species with the highest ecological demands and the subpopulation from Western Carpathians could be considered endangered [4] and susceptible to become genetically isolated from the main population from the Carpathian range.

The objectives of the study were:

*Assessment of the conservation status of the brown bear subpopulation from Western Carpathians;
*Highlight specific problems and possible solutions according with the Habitats Directive;
*Assessment of connectivity conservation / re-construction as a method of assuring Favorable Conservation Status as recommended by "Guidelines for Population Level management Plans for Large Carnivores" [4]
*Designing a functional regional ecological network for brown bear as key-species, with specific roles / ecologic functions assigned to each component of the network;
*Assessment and adaptation of the designed network in relation with the other species (wolf and lynx);
*Identification of areas within the network that could be eligible as Natura 2000 sites, considering their importance for large carnivores but also for other species and habitats, the coherence of the Natura 2000 network in Romania and the recommendations of the latest Bio-geographical Seminar.

The study highlighted that the structural corridor identified by Salvatori is being used by large carnivores and that present Natura 2000 sites in the interest-area do not form a functional network for large carnivores. As a result, new Natura 2000 sites were proposed:

Muntii Bihorului – central zone for all three large carnivore species, important dispersal source within the brown bear subpopulation in Western Carpathians;

Coridorul Muntii Bihorului – Codru Moma – habitat corridor for all three species;

Drocea – Codru Moma – the only structural corridor between Zarand and Codru Moma Mountains;

Defileul Crisului Alb – will safeguard an essential linkage area between Bihorului and Zarand Mountains. Together with adjacent sites form a central zone for wolf and lynx and a possible expansion area for bear, at present is acting as mortality sink for bear.

Zarandul de Est – will safeguard sensitive parts of the major dispersal routes for large carnivores. Together with adjacent sites form a central zone for wolf and lynx and a possible expansion area for bear, at present is acting as mortality sink for bear.

Muntii Metaliferi – central zone for wolf and lynx. Together with adjacent sites form a possible expansion area for bear.

Zarandul de Vest - central zone for wolf and lynx. Together with adjacent sites form a possible expansion area for bear.

Coridorul Podisul Lipovei – Rusca Montana – important linkage area, will safeguard the only structural sector of the ecological corridor South of River Mures. Central zone for wolf and lynx; will link the corridor to the bear dispersal front from Southern Carpathians.

Coridorul Podisul Lipovei – Rusca Montana – Tarcu – Retezat - central zone for all three species; will safeguard the main dispersal front and dispersal route for bear from Southern Carpathians.

Extension of two existing Natura 2000 sites (**Tinutul Padurenilor** – ROSCI0250 and **Rusca Montana** – ROSCI0219) was also proposed.

The new proposed sites, in conjunction with existing ones, will protect important movement/dispersal routes and habitats for large carnivores, will eliminate major mortality sinks and will safeguard the last structural corridor between Western and Southern Carpathians.

Statement of Intent for the implementation of a functional ecological network in Romania, February 2010

Fauna and Flora International, WWF Danube-Carpathian Programme, Greenlight Services,
Romanian National Environment Guard, Romanian Forest Research and Management Institute,
Faculty of Silviculture and Forest Engineering Brasov, Carpathian Wildlife Foundation,
The European Nature Trust.

Targeting biodiversity conservation and protection of wild habitats in parallel with the European Union vision; based on European directives adopted in Romanian legislation, on relevant strategies and conventions; stressing the role of large carnivores (bear, wolf and lynx) as key-species and the importance of their populations in the Romanian Carpathians; based on scientific research highlighting the most important connectivity issue in the Carpathian range, the signatories stated that they will support the principle of implementing a functional ecological network pilot-project between the Apuseni Mountains and the Southern Carpathians of Romania where priorities will be to safeguard large carnivore populations, their habitats and connectivity corridors encompassed within the design of an effective, sustainable conservation model of national and international importance.

Protocol of Collaboration for designing and implementation of a functional ecological network between the Apuseni Mountains and the Southern Carpathians, June 2011

The Romanian Ministry of Environment and Forests and a group of organisations (WWF Danube-Carpathian Programme, Greenlight Services, Romanian National Environment Guard, Romanian Forest Research and Management Institute, Faculty of Silviculture and Forest Engineering Brasov, Carpathian Wildlife Foundation) agreed to collaborate on designing a functional regional ecological network (through proposing new Natura 2000 sites in the Apuseni Mountains – Southern Carpathians area) and to support the implementation of the ecological network.

Fig. 24. Map of existing and proposed Natura 2000 sites to form a functional regional ecological network between Western and Southern Carpathians in Romania