

ЕМПИРИА - ЕМС

До АД Електрани на Македонија – Скопје

11 Октомври 9

**1000 Скопје
п.фах 16**

Предмет:

Доставување на одговори на коментари доставени од страна на претставници на невладин сектор, меѓународни асоцијации и експерти во однос на Годишниот извештај за спроведени истражувања на биолошката разновидност во пред-градежната фаза на опфатот на подрачјето на проектот ХЕЦ Бошков Мост

15 ноември 2013

Почитувани

Во прилог на овој допис Ви доставуваме одговори на доставени коментари во однос на Годишниот извештај за спроведени истражувања на биолошката разновидност во пред-градежната фаза на опфатот на подрачјето на проектот ХЕЦ Бошков Мост.

Со почит
Константин Сидеровски



Response to Comments on the Annual Biodiversity Report

The expert team responsible for the annual environmental and biodiversity surveys (further referred to as – “the Consultant”) would like to thank to all those who provided comments and suggestions in regard to the Annual Biodiversity Report. The interest shown is seen as valuable contribution toward finalization of the one year intensive work, first of such scope and aim in Macedonia.

Below are the responses to comments which are relevant for the scope of work of the Consultant.

General clarification

Number of comments addressed by the NGO representatives and other experts as well as various concerned institutions (further referred to as – “interested parties”) in the document *“Comments on the final biodiversity monitoring report for the pre-construction phase of the project “Boshkov Most”* is related to the issues which are beyond the scope of the baseline surveys. The aim of the performed environmental and biodiversity survey was to establish the baseline or reference state of selected environmental media and areas as well as the biological diversity in the area to be affected by the construction and operation of HPP Boshkov Most as a base for subsequent biodiversity monitoring in further project stage. As such, in terms to its scope, this exercise could not and should not be seen as a revision or a (partial) replacement of the previously performed thorough environmental and social impact assessment (ESIA), but rather as a measure that will overcome the data gaps identified throughout the ESIA and would complement the mitigation strategy with eventual additional mitigation measures identified as a result of surveys. Therefore, in terms to the relation impact – mitigation, the ESIA package and the Annual Report are interlinked documents and need to be considered as such.

Having in mind the above and the overall scope of the comments made, the Consultant gained an impression that the certain interested parties have not fully understood the main aim and scope of the baseline surveys in the context of the HPP Boshkov Most. Therefore, there is a need to clarify that this one-year exercise was not a scientific project aimed to conduct thorough scientific biodiversity investigation or species population census, but baseline investigations to identify / clarify which species are present in the area affected by the proposed project and if any species would be adversely affected by the project activities as a base for additional mitigation (if needed) and for further monitoring during next project’s stages - construction and operation.

One should understand that those who commented the Annual Report in the context of its likely or potential impacts should have been introduced with the findings and results of the ESIA and, more importantly, with the very comprehensive mitigation strategy and clearly stated requirement for development of various thematic management plans. However, number of received comments indicates that number of those who commented was not familiar with, or simply ignored, the ESIA package and mitigation strategy, which is an essential precondition for gaining holistic view of the issue and to avoid misinterpretation of the results gained from the baseline survey.

In terms to the scope and content of the Annual Report itself, it is clearly explained in its opening part that the main goal of the Report is to provide an overview of the main findings of surveys on annual level – the conclusions and, consequently, the recommendations reached by the surveys. Therefore, it is very much self-explanatory that the rationale behind the Report is to present the substance and the results of the surveys, rather than to stretch the Report with the detailed reaffirmation of the methodological aspects (summaries of methodologies used are included in the Report) or with operational information, e.g. timing, number and duration of each field work, etc. Nevertheless, the Consultant agrees to prepare an overview of the field work activities and include it as an appendix to the Annual Report.

At this point, it has to be stressed that the methodological aspects of the surveys were developed and reported in the standalone document – *“Environmental Monitoring over the area of HPP Boshkov Most*

- *Programme for monitoring in the pre-construction phase (pre-construction monitoring)*” - in very early stage of the exercise and were submitted to concerned NGOs on timely manner prior to practical commencement of the surveys. The above document was presented, discussed and endorsed by all parties on a thematic meeting held on 14th September 2012. The Consultant would like to remind the interested parties that comprehensive and detailed seasonal reports were prepared and submitted to them in timely manner as part of the overall package of reporting documents. In addition, semi-annual meeting for presentation of the findings for the period summer-autumn was held on 18th March 2013. It is obvious that interested parties had a number of opportunities to intervene or to ask for changes or amendments to the methodologies proposed and adopted. The Consultant recognized the fact that there is no unique and universal methodological approach for the target flora and fauna groups which could satisfy every single purpose and, therefore, proposed widely accepted approaches tailored to meet the needs for the required baseline surveys in the context to the type of a project such is HPP Boshkov Most and having into the consideration the significance and the values of the project area. Despite all above facts, the interested parties have devoted number of comments in respect to the methodological aspects in this final stage of the annual survey when clearly such comments could not be practically addressed, which rises a question on the productivity of such comments and their constructiveness. Clearly, the Consultant is not going to open further discussion on this subject in this point of time as it is considered well presented, discussed and agreed among all project parties at the beginning of the surveys. The Minutes of Meeting (MoM) from the above mentioned meetings are attached to this letter.

The process of re-proclamation of the National Park Mavrovo is in its final stage of finalization. This process is regulated by the Macedonian Law on Nature Protection and its associated sub-laws and is widely based on the Study for Revalorization of the Protected Area Mavrovo. This Study has been prepared and has passed public consultation process and hearings and, consequently has been submitted to the NP Mavrovo authorities. The competent authority – the MEPP has initiated the process for preparation of a law for re-proclamation of the NP Mavrovo via appropriate legal and administrative procedure, based on positive opinions received by various relevant stakeholders and institutions. Currently, the Government of Macedonia is in a process for preparation of the above mentioned law which is to be submitted to the Macedonian Parliament for adoption. Adoption of the already prepared PA's Management Plan (MP) including zoning decisions will follow the act of re-proclamation and by that the whole process will be completed. Practically, no practical amendments in the main re-proclamation expert documents (the Study and the MP) are likely as they have already passed all required professional, legal and administrative instances.

In reference to the strategic environment assessment (SEA), it needs to be pointed out that the on-going procedure is related only to the urban planning documentation relevant for the structural elements of the future HPP, which is a specific example of plan / programme whose scope and content is widely defined in the Macedonian Law on Spatial and Urban Planning. In comparison with the performed ESIA on project (infrastructural) level, the on-going SEA could be considered as much more general and less detailed document in reference to the impacts to the living and societal environment, and will not deal with construction and operational aspects of the project as essential impact-related project's phases. On other hand, the national strategic documents for the development of the Macedonian energy sector which are considered as most relevant for the HPP Boshkov Most project – the Strategy on Energy until 2030 (2010) and the accompanying Strategy on Renewable Energy Sources (2010) have already been subject to joint SEA Report, which clearly recognizes the HPP Boshkov Most as one of the priority energy project in Macedonia.

Number of comments expressed concerns due to the fact that the proposed project (or most of its territory) is to be implemented in the National Park Mavrovo, also identified as an Emerald site (potential NATURA 2000 site). Still, this simple fact itself without more thorough view on the quality and existing conditions in the immediate area affected by the proposed project and without knowing the context of the proposed project and its impact mitigation strategy could be and apparently is a misleading and limiting factor for objective assessment of likely effects from the project. It seems that number of those who commented the Annual Report has never (or recently) visited the particular project area and its surroundings and did not have opportunity to consult the comprehensive description of the existing environment in the project area given in the ESIA package as well as existing project documentation.

The project area is on very peripheral part on the southern border of the NP Mavrovo (also proposed as Emerald site). Its natural surrounding is far from pristine with presence of number of human interventions (existing settlements, road network, transmission lines). In terms to the protection zones of the NP Mavrovo, the particular area is in a zone for sustainable use (see Appendix 2) as a zone with lowest level of protection according to the Macedonian Law on Nature Protection, which defines this zone type as follows: "Zone for sustainable use is a significant part of the protected area (PA) which does not possess high values for protection, where infrastructural facilities, objects of cultural heritage and forest types which are not characteristic for the PA as well as settlements and agricultural land exist."

In addition, and in respect to the status of the NP Mavrovo as Emerald site (potential Natura 2000 site) it is obvious that an area of more than 70.000 ha (or 2.72% of Macedonian total area) could not be untouchable as regards future developments provided that they are not in strictly protected zone(s) and an appropriate assessment in line with the Article 6 of the Habitat Directive (and other biodiversity-related multilateral environmental agreements) has been performed as it is exactly a case with the proposed HPP Boshkov Most project. There is no *a priori* prohibition of new activities or developments within Natura 2000 sites and in respect to the hydro-projects it should be pointed out that such projects are not listed in any environmental or social exclusion list, nationally or internationally. In addition, without any ambition to challenge Macedonian approach for designation of Emerald sites by including large areas (see text box below), while other counties have proposed only the core areas, one would ask if the Boshkov Most area if evaluated with specific reference to EU's NATURA 2000 and EC environmental legislation would be eligible for designation as NATURA 2000 site and, therefore, subject to provisions from the EU HD, Article 6? It is very doubtful that it would be eligible; giving the fact that it is clearly not a core area of the NP Mavrovo and is not under strict regime of protection, which implies that its values are not pristine or exceptional (already thoroughly described in the project's ESIA package).

Emerald network in Macedonia

The total number the proposed Emerald sites in Macedonia is 35 with total area of 752,223 ha (7522 km²), representing about 29.2% of the country's territory^{*)}, which for a country of size like Macedonia is tremendous challenge. Significant number of these sites are large areas with an area more than 45,000 ha (450 km²) – Shara Mt. – also proposed as NP (470 km²), Osogovo Mt. (567 km²), Mariovo (587 km²), Pcinja-German (635 km²), Pelagonija (666 km²), NP Mavrovo (735 km²) and Jakupica - also proposed as NP (768 km²).

Note: No public consultation with concerned stakeholders on the selection of Emerald sites has been organized so far in order to assess likely economical or social impacts of the designations. Such lack of discussion may result in considerable controversy in the country with a variety of administrative and legal challenges, which, on other hand may delay the whole designation process.

An indication of the scale of the area of designated Natura 2000 sites vs the national areas for EU27 countries is given in the following text^{**)}: Slovenia (35%); Bulgaria (33.9%); number of countries with more than 20% (Slovakia (29%), Spain and Greece (27%); Hungary and Portugal (21%)); number of EU countries with a range between 15%-20%: (Italy and Poland (19%), Romania and Estonia (17.8%), Germany (15.4%), etc.). However, most of the EU countries are in a range below 15%: Austria, Czech R. and Finland (14.5%), Netherland and Sweden (13.8%), Ireland (13%), Belgium and France (12.5%), etc. or even below 10%: (Denmark (8.9%) and UK (7.2%)). In all EU27 countries such percentage is 17.5%.

^{*)} Source: Project 00058373 - PIMS 3728 "Strengthening of ecological, institutional and financial sustainability of the system of protected areas in the Republic of Macedonia"; Report - Project Activity Ref. RFP 79/2009 "Development of representative protected areas network"; Macedonian Ecological Society, March 2011; supported by UNDP and the Macedonian Ministry of Environment and Physical Planning.

^{**)} Source: <http://ec.europa.eu/environment/nature/natura2000/barometer/docs/sci.pdf>

To demonstrate the scale and the magnitude of the proposed project vis a vis the NP Mavrovo as whole, it should be emphasized that the whole scope of the development area of the proposed project according to its urban plan documentation is approx. 191.3 ha including the part that is outside of NP Mavrovo boundaries. Even in a conservative analysis (assuming that whole project area is in the NP) – it is only 0.25% of the territory of the NP Mavrovo, on its southern peripheral bordering zone. Only approx. 4.7 ha (less than 2.5% of the whole development site) would be occupied by structures, while the area of the reservoir would be approx. 22 ha (approx. 11.5% of the whole development site or only 0.03% of the territory of the NP Mavrovo). The area of this reservoir would be smaller around 60 times than the existing reservoir - Mavrovo Lake (13.3 km²).

IUCN's recommends that up to 25% of land within the protected area can be managed for other purposes ("75 percent" rule) so long as these are compatible with the primary objective of the protected area. The Consultant is of an opinion that the effect on this rule in the context of the HPP Boshkov Most project presented by the interested parties is overestimated and arbitrary and not supported by any quantified indicators. The whole HPP Boshkov Most project area is in a zone for sustainable use. The land that will be permanently occupied by different facilities is approx. 26.7 ha (reservoir, dam and other structures) which is less than 0.04% of the territory of the NP. The remaining area in the surroundings will not be permanently disturbed and will be used as foreseen with planning and management documents of the NP. Therefore, it is clear that a project with a scale and location such the HPP Boshkov Most cannot obstruct achievement of the above rule, provided that NP as whole is managed in sense to promote its primary objective. In addition and to clarify the national context of this issue, it should be stressed that the Macedonian Law on Nature Protection does not strictly quantify the protection zones and such comment in terms to applicability of IUCN standards into national legal requirements is to be addressed to competent authorities and not to the Consultant or to the project Developer – ELEM AD. For more details on zoning aspects as regulated by the Macedonian respective legislation see Appendix 3.

To add more clarity, the Consultant wants to stress that IUCN on its WCC (2012) has adopted a Recommendation, not a Resolution as stated by the interested parties. Regardless the document type and its formal / legal implications, the Consultant has taken its notes into thorough consideration. The annual biodiversity surveys and this letter as well as the prior ESIA process have provided number of arguments in favor to the HPP Boshkov Most project which clearly need to be presented to IUCN on professional and transparent manner, so it may review them and take further action.

The particular comments of type that "internationally respected experts from Macedonia and Balkan Peninsula ... have not been consulted" are inconsistent with the Consultant's assignment and are beyond the Consultant's scope of work. The interested parties have been introduced with the expert team which was selected throughout a tendering procedure according to Macedonian legislation on public procurement to deliver its expertise according to the specific Terms of Reference (ToR). As noted above, number of documents / reports were developed and submitted to interested parties on timely manner during the annual surveys for their consideration. Eventual need to consult external experts should have been determined and realized by interested parties via submission of the aforementioned documents / reports to whom they consider is relevant for such task. In order to add clarity of the capacities and human resources of the nominated expert team it should be explained that the ToR has requested one specialist per target group of flora and fauna which is considered as appropriate for the requested scope and level of details for one baseline study. Of course, such requirement could not be seen as a justifying argument not to compose wider thematic expert teams, but this was also related to the limited available budget. For particular groups, like zoobenthos and mammals, such situation limited the available expertise required to cover whole range of orders / groups.

At the end, the Consultant would like to express its surprise for accusations made by the interested parties that the report is "deliberately misleading" which is serious breach of any professional and meaningful manner of communication. Such non intellectual communication style speaks for itself and the Consultant will not allow to be indrawn in such low level of conversation. The Consultant's expert team was consisted of credible specialists with recognized and proved professional reputation and scientific background who acted independently in their professional capacity and without conflict of interest.

Responses to Conclusions made by interested parties

(1) C1: "This biological diversity survey is in large parts superficial, incomplete and misleading."

Such conclusion is obviously a result of an essential misunderstanding of the expected goals of the performed baseline surveys, which clearly was not to produce an assessment and an evaluation of the biodiversity in the project region, as it was already thoroughly done in the process for preparation of the Study for Revalorization of the Protected Area Mavrovo and the Management Plan for the Protected Area Mavrovo, both developed for the purposes of re-proclamation of the NP Mavrovo (see the results in abstract form in Appendix 1). One would expect that those who commented the Annual Report have consulted such essential and significant biodiversity-related documents in order to be meaningfully introduced with the current situation.

Furthermore, the meaning of the term "survey" or "surveillance" versus the term "monitoring" should be clarified when designing long-term surveillance and / or monitoring programmes. The terms "survey" / "surveillance" and "monitoring" have been used somewhat interchangeably in the past, but in fact a distinction can be drawn between the two activities and this is quite important when considering the level of information required.

Surveillance, in the context of measuring populations, consists of repeated and standardised observations of abundance over time, using methods that enable changes in numbers to be detected (Hellawell¹⁾ 1991). Surveillance is a means of assessing what is happening to populations of a particular species over time.

Monitoring requires that targets are set; management recommendations made and carried out, the effectiveness of the management assessed and changes made to improve the process. Monitoring therefore involves surveillance, not only of the species in question but, so far as possible, also of the other factors likely to affect populations of that species, such as shelter site condition, habitat extent and quality, climate, food availability, disturbance and other variables, to monitor possible causal factors of changes in species populations.

(2) C2: "It is not in line with international monitoring standards."

As for the scope of the baseline study and methodology-related aspects, including its endorsement by interested parties in early stage of the process, please refer to the respective response in the above section on general clarification.

(3) C3: "In contrast to what the survey concludes, Boshkov Most HPP would result in severe destruction of biodiversity and to population decline of endangered species."

According the official IUCN Red Lists (on global and regional level) none of the 3,757 recorded species within the boundaries of the National Park, including the 10 threatened species, five (5) of which are threatened species on the global red list and five (5) threatened species on the regional (European) Red Lists is included in the threatened category "endangered species" (EN), except the species Large Blue (see Appendix 1 for details - Mavrovo Protected Area: Conservation Status). However, the Large Blue is threatened by quite other factors that are not related with this project.

Responses to general comments

The comment on the effect of the hydro-peaking as elaborated by interested parties is vague and, in practice, may be universally raised for each and every HPP project. However, in relation to a project of scope and scale such is the proposed HPP Boshkov Most project and on its particular location such comment could not be applicable. It seems that those who raised this issue (mainly international

¹⁾ Hellawell, J.M., 1991. Development of a rationale for monitoring. In: Goldsmith, F.B. (ed.): Monitoring for conservation and ecology. London (Chapman and Hall) S. 1-14.

organizations and experts) are not familiar or knowledgeable of the natural – geographic specifics as well as of the hydrological regime of the project area.

Clearly, the daily fluctuations of the water level in the Radika River downstream from Boshkov Most, i.e. downstream to the HPP's discharge (outlet) point will not cause negative and adverse ecological effects for 10s / 100 km away from the release point, due to:

- (i) The total distance of the powerhouse (and its associated release point) to the Radika River and further to Radika's mouth to the existing reservoir - Debar Lake is approx. 3.4 km. This simple fact contradicts the level of effect estimated above for devastation of significant part of river ecosystem. Even more, only approx. 1.5 km long section of the Radika River (up to the bridge above the village Dolno Kosovrasti) has a character of river ecosystem. The area of the Radika River downstream from the Boshkov Most locality is outside of the territory of the NP Mavrovo. Currently, the remaining river's section below the village Dolno Kosovrasti up to river's mouth to the lake (approx. 1.9 km) is completely devastated due to massive natural disposition of eroded material as well as due to existing human activities and has lost the character of a river ecosystem.
- (ii) Daily fluctuation of the water level in the Radika River downstream from Boshkov Most (with expected maximum capacity of the outlet - 22 m³/sec) will also not cause adverse ecological effect to the downstream river ecosystem, due to the natural fact that the river itself is featured with significant torrential character with extremely variable regime of water flow in a range between $Q_{\min} = 2.1 \text{ m}^3/\text{s}$ and $Q_{\max} = 262 \text{ m}^3/\text{s}$. In other words, during autumn heavy rains and rapidly snow melting in the spring period – the water level in the river may increase up to 12 times than the expected maximum discharge capacity of the HPP Boshkov Most. Consequently, the benthic fauna in the Radika River is naturally adapted to such intensive and high fluctuations and would not be affected by the HPP's discharge regime.
- (iii) In addition to the natural intensive fluctuations of the water level in the Radika River and the river Mala Reka with its tributaries, all these watercourses are characterized with extremely high values of their longitudinal gradient which results in extremely high values of fluvial erosion. Due to that, 300.000 m³ of washed (eroded) material per year is transported and disposed at the river profile at locality Boshkov Most (see text box below). These natural hydrological conditions in the project area are to be taken into consideration when the results from the baseline surveys on benthic fauna are interpreted or otherwise such interpretations would be very general and out of project's context. The results from the baseline surveys were cross-checked and confirmed as identical with those obtained by the three-years analysis conducted for purposes of the re-proclamation of the Protected Area Mavrovo (performed by Italian international team) which also included macro invertebrates. The same applies to other invertebrate taxonomic groups, especially to Odonata (dragonflies) – the results obtained from analysis of this fauna in similar types of natural habitats and conducted by a recognized regional expert (M. Jovic) showed very similar to identical results.

River Radika originates below the peak Golema Vraca, at an altitude of 2,260 m a.s.l. Its mouth to Debar Lake at the village Dolno Kosovrasti is at 571 m or 580 m (depending on the water level in the lake). Its maximum length is 64.7 km. The average annual flow rate for a period of 50 years (1961-2010) at measuring station Boskov Most is 19.63 m³/s. The extreme values of the flow rates are in a range from $Q_{\min} = 2.1 \text{ m}^3/\text{s}$ to $Q_{\max} = 262 \text{ m}^3/\text{s}$, which clearly shows massive changes in the water regime throughout a year and extremely torrent character.

The longitudinal gradient of the Radika River is very high and along its whole length is 27.83‰. This particular gradient is main factor for the massive water power to transport eroded material. The river is characterized with extreme high fluvial erosion and as a result - 300.000 m³ of washed (eroded) material per year is transported and disposed at the river profile at locality Boskov Most. This eroded material is deposited in the river bed of Radika River, downstream from Boskov Most in a 3.4 km long section up to river's mouth to Debar Lake and in the lake.

The river Mala Reka is characterized with very similar variable water regime, even more intensive, and with very strong fluvial erosion. It originates at an altitude of 1,830 m a.s.l. Its confluence to Radika River, at the locality Boskov Most is at altitude of 606 m a.s.l. with total length of 21.3 km.

Responses to specific comments

The letter is structured as a combination of comments given on specific groups and comments given by experts on behalf of various institutions. Due to interlinked manner of these comments and in order to address the comments on meaningful manner the responses below are given by specific group and not to each interested organization.

Macro invertebrates / macro zoobenthos

The Consultant is aware of complexity of this group and as the interested parties recognized - an impressive number was surveyed. The limiting factor in terms to the expertise available was the fact that no single expert in Macedonia could cover whole range of these groups. It is of course objective shortcoming of the survey, resulting from ToR requirements and the available budget, but it is not considered as showstopper or a reason to halt further project development and activities.

In respect to the terrestrial invertebrates and having into consideration the above, butterflies as most representative group were proposed for detailed consideration. This was specifically stated in the methodologies and discussed with interested parties on the initial meeting.

The EU HD status of the species *Cerambyx cerdo* will be corrected in the final Report to meet the comment given on this subject. As for clarification this species was identified in area of the village Mogorce, which is not in the area directly affected by the proposed project.

The Consultant would propose that further surveys of these groups during the construction stage to be performed by a group of specialists covering their whole range or, as an option such survey to be performed next spring in line with proposal given by the interested parties (subject to ELEM's acceptance).

Fish species

According to the Study for Revalorization of the PA Mavrovo, beside in the watercourses affected by the proposed project, the *Salmo farioides* (Mavrovo or Padika trout) is represented in number of other watercourses in the NP Mavrovo including Radika River and all its tributaries as well as in the existing reservoir - Mavrovo Lake. The *Salmo montenegrinus* (Garska trout) is represented in river Garska as well as in Radika River, rivers Mala Reka and Rosocka. The lack of data and the need for determination of the taxonomic status of these fish species is evident and the Consultant appreciates such suggestion. However, investigations of that type and scope are beyond responsibilities of the Consultant and ELEM AD, but are rather responsibility of the competent authorities and respective scientific institutions in Macedonia. In that respect, one will agree that a priority project of national importance as the HPP Boshkov Most project could not be delayed solely due to the lack of such data.

Like for other target groups / species (if required), the Annual Report identifies additional mitigation measures for fish fauna as well. As explained above, the Report itself does not replace the full-scale ESIA package where project's impacts are identified, described as per different criteria and detailed mitigation strategy is determined. The annual survey identified that fish paths on intakes on each watercourse is required due to likely 'barrier' effect as an additional mitigation measure which was not proposed in the ESIA package. In same time, the stocking measure for the reservoir was re-affirmed and an option with fish path / ladder at the dam is proposed. For other impacts and mitigation measures on the fish fauna, ESIA package should be consulted.

Stocking has proven to be successful measure in the NP Mavrovo. It is regularly performed in the many watercourses in the NP Mavrovo and in the existing reservoir - Mavrovo Lake – which contradicts the statement given by the interested parties.

In respect to the doubts expressed on the effectiveness of the MFR and its "incompatibility" with the EU legal framework as well as with the statement that if MFR is applied it "will result in no reduction in the ecological status of the affected water bodies", the Consultant would like to remind the interested parties to the definition of the MFR in the Macedonian Law on Nature: "the biological minimum is the

lowest amount of surface water that has to be ensured throughout the year, except in cases where natural flow is lower than the set biological minimum, that enables preservation of natural balance of aquatic habitats and properties of watercourses determining the characteristics of landscape types and do not reduce the status of ecological parameters of surface waters". This law is transposed from EU legal framework and is compatible with such legislation. Of course, monitoring of effectiveness of the MFR is to be performed and correction measures are to be taken if the effectiveness is unsatisfactory.

It seems that the interested parties lack proper information about small hydropower projects in Europe where MFR plays crucial role to achieve sustainable and environmental integrated hydro-plants in various natural surroundings, including National Parks. Simply as an explanation, these small hydropower projects utilize exactly the same principles in regard to the fish passing solution and MFR as proposed in a case of the intakes for the HPP Boshkov Most project. Extensive information on such developments may be found on internet and the interested parties are recommended to consult various internet sources.

Birds

As for the lack of methodology details and surveys operational data as well as the scope of the baseline study in terms to the relation impact – mitigation, please refer to the respective response in the above section on general clarification.

The Consultant accepts the comment regarding the species Semicollared Flycatcher (*Ficedula semitorquata*). This species was included in the autumn seasonal report, and it will be included in the final baseline study. The species was omitted due to the fact that it is very difficult to quantify its presence by the line transects as it could be separated by the collared flycatcher only if mist netting is applied which is not possible by using the line transect method. However, this issue is of pure technical nature as it is obvious that the proposed project will not affect this species in any way.

Quantified data in respect to the birds was not given due to the reason that the expert judgment, based on the surveys conducted and prior ESIA, is that there is no bird species in the area that will be adversely affected from the proposed project and, therefore, no specific or additional mitigation in comparison to that determined by the ESIA package is proposed. An exception might be the *Cinclus cinclus* (Common Dipper) for which quantitative investigations / surveys should be performed in further project stage (subject to scoping of such surveys). It is very clear that from ornithological perspective it is almost impossible to conduct such detailed investigation within the limits of the methodologies for baseline surveys and method for such investigation – belt mapping (Micevski, 1992) – is much more time consuming and resource demanding. Again, it should be re-affirmed that the baseline surveys are not aimed to be a scientific project or species census exercise, but rather an inventory of species and assessment if any species is to be adversely affected by the proposed project for planning purposes of the further surveys. It is clear that, in a case of the proposed HPP Boshkov Most project, no species that will be adversely affected is identified and no quantifiable investigation will be required. An exception is the *Cinclus cinclus* for which such research will be needed. The relative abundance resulting from the method of linear transects (used during the baseline surveys) is considered as sufficient for other species which is a conclusive fact from the seasonal reports.

Mammals

a) Methodology

As for the lack of methodology details and surveys operational data as well as the scope of the baseline study in terms to the relation impact – mitigation, please refer to the respective response in the above section on general clarification.

b) Otter

The Consultant accepts the comment in regard to the otters and acknowledges the shortcomings in the baseline surveys. However, the magnitude of the likely effect and the conclusion that the otter will

not survive in the area is drawn arbitrary and without consideration of possible mitigation measures. The disturbance effect during the construction which will affect mammals is of temporary character and reversible provided that suitable habitats are available in the area, which is a case in the wider surrounding.

A biodiversity monitoring during the project's operational stage is foreseen to evaluate effects from the HPP Boshkov Most operations and to propose additional mitigation / compensatory measures if concluded as necessary and in line with best international practice. Such measures are intended to offset negative effect and to ensure that there will be no significant loss of breeding and resting sites. Compensation measures may include, for example²⁾:

- The construction of artificial holts to replace holts that are lost or to provide additional places of shelter.
- Construction of viaducts or underpasses for otter to cross features that would otherwise present a barrier.
- Installation of mammal ledges on bridges and culverts to allow continued passage of otter alongside watercourses.
- Habitat restoration or enhancement works to compensate for habitat loss or to provide enhancements.

It should be noted that otters are widely distributed on the territory of the NP Mavrovo³⁾ along the Radika River and its tributaries up to their upper parts as well as in the existing reservoir - Mavrovo lake which is a part of the Mavrovo Hydropower Plants, built in late 1950s. They may be found in other parts of Macedonia as well⁴⁾.

c) Lynx

In respect to the magnitude of habitat loss please refer to the respective response in the above section on general clarification. Undoubtedly, the aspect of loss of habitat associated with the proposed HPP Boshkov Most project is overrated or is a result of clearly ignorance of the information about the scale of the project and the residual effects from the project (available in the ESIA package).

The same argument stands for the effect of the disturbance which is likely during construction and is of periodical character during the day (most intensive construction works are to be performed during the standards daily working hours when living activities of the lynx are restricted) and are of seasonal significance (actual only during construction season which is expected to last several months per year due to severe weather conditions and off the breeding season). However, all relevant lynx-related project documents so far have recognized the disturbance effect as an issue that need to be dealt with. Again, the interested parties simply are omitting the fact that mitigation strategy will be in place throughout the construction period. Such strategy will, inter alia, include concrete measures to manage the disturbance effect and may also be structured to incorporate daily and seasonal adaptation of the construction works to avoid significant disturbance the lynxes.

Number of risks / threats to the lynx was identified as could be seen in various documents / reports available to the Consultant (see box below). It is Consultant's opinion that the proposed project does not possess potential to significantly increase the magnitude of identified risks, especially to the most important risks and for most of them the project may be considered as irrelevant. Therefore, the project would meet expectation expressed by the interested parties that "as long as the Balkan lynx is "Critically Endangered" (Melovski 2012), no further risk must be put on this species".

²⁾ Source: www.naturalengland.org.uk/Images/Otters_tcm6-21615.pdf

³⁾ Source: Study for Revalorization of the Protected Area Mavrovo

⁴⁾ Source: Distribution of the Eurasian Otter (*Lutra lutra*) in the Republic of Macedonia in 2007; Lukáš Poledník, Kateřina Poledníková, Václav Beran, Jitka Thelenová, Martin Valášek, Václav Prášek, Vlasta Škorpíková and Mojmír Dostál; IUCN/SCC Otter Specialist Group Bulletin, 2008

THREATS – former and present threats to the survival of the lynx (listed by importance)

Mortality of lynx and prey

1. Small size and isolation of lynx population
2. Poaching of lynx despite protection
3. Low density of some prey populations
4. Lack of enforcement of hunting legislation for ungulates / poaching

Habitat

1. Habitat degradation caused by non-sustainable land-use
2. Forest fires
3. Habitat fragmentation
4. EU accession brings new funding for (traffic) infrastructure development
5. Disturbance from people in forest

Livestock

1. Decrease in livestock
2. Loss of traditional husbandry

Policy

1. Poverty – puts extra pressure on forest resources
2. Inappropriate (for wildlife conservation) economic development

Social unrest

1. History of recent conflicts / social unrest in region

Source: Strategy for Conservation of the Balkan Lynx in Macedonia and Albania; Document presented by KORA, Switzerland; CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS, Standing Committee (31st meeting, Strasbourg, 29 November - 2 December 2011)

It is not clear to which facts the interested parties refer when they suggest that “facts have been omitted...”. Documents produced by various authors were taken into consideration during the surveys and in matter of fact, the conclusions presented by the Consultant in the Annual Report about the distribution of the lynx in the wider project area is in full compliance with results drawn and presented in above mentioned documents. Just to reconfirm – the Annual Report concluded that main areas in the project area where lynx is located are those east from the village Tresonce which are also the areas where the Macedonian Ecological Society (MES) registered most intensive lynx presence by radio location devices (see Appendix 2). It is clearly that “core zone” where the lynx is mainly present in the wider area is beyond the area directly affected by the project development.

In respect to the population estimates, the Consultant accepts the comment and most recent estimation (22-40 individuals) as important contribution to further scientific research of the status of the species. However, various population estimation figures were found in available documents ranging from 60⁵⁾ to 100⁶⁾ individuals. Still, it is not clear on which comprehensive surveys in neighboring countries the interested parties refer as to the available information such surveys have been done in Macedonia and Albania, while Kosovo and Montenegro are included in the Balkan Lynx Recovery Programme since this year – 2013⁷⁾. The lynx is also potentially distributed in Greece.

In respect to the loss of habitat and the insignificant magnitude of such effect please refer to the respective response in the above section on general clarification.

⁵⁾ Systematic camera-trapping survey in Mavrovo National, Macedonia in winter season 2012/2013; Report 2013, MES

⁶⁾ Systematic camera-trapping survey in Mavrovo National Park and its adjacent areas, Macedonia; Report 2010, MES

⁷⁾ Balkan Lynx Recovery Programme, Phase 3 (2013-2015)

In respect to the main prey (roe deer vs chamois), the Consultant accepts the comment. Still, the relevance of such fact and the issue of the short-term disturbance are overestimated in terms to their significance for the eventual lynx's extinction which is without concrete arguments equalized with temporal dislocation of the prey and the lynx. As noted above, the main intensity of the construction season is expected to last several months in a yearly period (late spring-early autumn) when the accessibility and abundance of the prey is satisfactory in all part of the NP Mavrovo and, therefore, the temporal dislocation is expected to be in or in the immediate vicinity to the current home range. In order to avoid uncertainties included in this particular comment, the Consultant would like to reemphasize that a specific management plan and accompanied monitoring actions during the project's construction stage will be organized in order prevent adverse negative effect on the lynx due to nuisance associated with the construction.

Summary and Conclusions

- The interested parties have submitted comments on following target groups: macro invertebrates / macro zoobenthos, fish species, birds and mammals. It may be concluded that other groups are considered by the interested parties as well addressed and no further action in this stage is required.
- There are no substantial comments / showstoppers that imply that the project should be stopped in this stage or delayed due to necessity for additional surveys or data gaps. Such surveys as proposed by the interested parties (if considered as necessary and subject to ELEM's decision) could be performed in the scope of the subsequent monitoring during construction as part of the Biodiversity Management Plan within the project's ESMP.
- Number of comments have likely been raised due to the possibility that the Annual Report was considered by certain interested parties without cross-reference with prior ESIA package and this resulted in lack of appropriate information in regard to the project design and scale, existing living and social environment in the project area as well as in regard to the identified impacts and proposed mitigation strategy and associated management plans.
- Number of comments is of technical nature and they will be addressed in the Final Annual Report. These are various additions to the reference list, used data sources, correction of unintended errors, etc.
- Various quantified indicators in this letter related to the scope and scale of the proposed project are for demonstration needs to indicate the level of potential impacts for the purpose to clarify and respond to comments submitted. Clearly, the biodiversity baseline surveys are not an impact assessment process and should not be seen as such.
- Various explanations in this letter related to the current state and natural values and characteristics of the project area are given to add clarity to responses to those comments which are likely result of lack of information about these aspects, which are considered as important when particular results from baseline surveys are interpreted in the context of the proposed HPP Boshkov Most project.
- Consultant re-affirms its general conclusion that having into consideration its scale and its location, the proposed HPP Boshkov Most project does not possess potential to cause additional adverse impacts on the biodiversity in the project area to those already identified in the prior ESIA process, provided that the thorough mitigation strategy as determined in the respective ESIA package is implemented. For target groups for which such impacts are identified during the annual surveys – additional mitigation measures are proposed and should be included in the project's ESMP and ESAP.

Appendix 1

Mavrovo Protected Area

The Mavrovo Protected Area is situated on the North-western part of Republic of Macedonia, at the tripoint of Albania, Kosovo and the Republic of Macedonia, occupying geographic latitudes from 41°33'01"N to 41°52'39" N, and geographic longitudes from 20° 31'02"E to 20° 48'59"E, between the cities of Gostivar, Debar and Kichevo.

The elevation of the Protected Area ranges from minimum 600 m to the highest mountain peak that reaches 2,764 m. Administratively, the territory of the Park belongs to the Municipality of Mavrovo-Rostushe and only small portion to the Municipality of Gostivar.

Current Status of the Mavrovo Protected Area: Category II (National Park).

First (original) Proclamation (1949): 11.750 ha.

Re-proclamation (1952): 72,204.1 ha.

Proposed Re-proclamation (2012): 72,416.8 ha.

Biodiversity of the Mavrovo Protected Area

Assessment of Biodiversity

Key Ecosystems. A large portion of the Mavrovo Protected Area is covered by forest ecosystems, encompassing an area of 33,179.15 ha, which is 45.82% of the total area of the Park. The analysis of the structure and covering of various forest types has shown that the broadleaved woodlands are dominant, encompassing 70.72% of the total area under forests, followed by mixed forests with 18.90%, scrublands with 9.37%, coniferous forests with 0.96%, and forest plantations with 0.05%.

The mountain ecosystems with 35,604 ha, or 49.17% occupy the largest area of the Park, developing on elevations from 1,800 to 2,764 m asl.

The aquatic ecosystems encompass an area of 1,704 ha, or 2.35% of the total area of the Park. The reservoir Mavrovsko Ezero Lake encompasses 75% of the total aquatic surface in the Park; 10.3% belong to the planned future reservoir Lukovo Pole; 1.1% to the planned future reservoir Boshkov Most; 13.1% of the aquatic surface is covered by the rivers and streams. Summarized, it is 99.5% of the total aquatic surface of the Park. The remainders 0.5% belong to aquatic surfaces covered by glacial lakes and temporary pools.

Vegetation. The vegetation of the National Park Mavrovo is represented by 41 plant communities, of which: 25 forest communities, three (3) meadow plant communities and 13 communities of high-mountain vegetation. Forest ecosystems are represented by 25 forest communities, of which: four (4) coastal floodplain forest communities, 15 typical forest communities in the belt of oak and the belt of beech forests, and six (6) forest communities of coppice forests. Meadow plant communities within the territory of the Park are represented by three (3) plant communities, of which two (2) are lowland meadow plant communities and one (1) is mountain to subalpine meadow plant community. Almost 50% of the Park area (356 km²) is covered by high-mountain vegetation. The high-mountain vegetation is composed of 13 clearly defined plant communities. The plant species of high-mountain vegetation are represented by various floral elements, among which, the autochthonous tertiary floral elements are most significant.

Species richness and Heterogeneity. The most striking feature of Biodiversity in the Mavrovo Protected is its high degree of species richness and heterogeneity. The species richness is expressed by the presence of numerous taxonomic groups of flora and fauna represented by 3,757 taxa (species and subspecies) of which: 78 algae, 661 fungi, 151 lichens, 1,473 vascular plants, 1,172 invertebrates, eight (8) fishes, 11 amphibians, 24 reptiles, 129 birds and 50 mammal species. The species heterogeneity is expressed by the presence of various complexes of faunal and floral elements concentrated into a relatively small area that causes Mediterranean Species to go hand-in-hand with the Arctic, Siberian (Boreal) or Steppe Species.

Evaluation of Biodiversity

Legal Protection. Habitats Directive (Directive 92/43/EEC) provides Legal Protection (under Annex II) for 20 species of community interest whose conservation requires designation of special areas of conservation, of which: eight (8) species are from the invertebrate fauna: Stone Crayfish (*Austropotamobius torrentium*); the damselfly Ornate Bluet (*Coenagrion ornatum*); the dragonfly Bladetail (*Lindenia tetraphylla*); the Stag Beetle (*Lucanus cervus*) and the butterflies: False Eros Blue (*Polyommatus eros eroides*), Large Blue (*Phengaris arion*), Scarce Fritillary (*Euphydryas maturna*) and Marsh Fritillary (*Euphydryas aurinia*); two (2) species of amphibians: Macedonian Crested Newt (*Triturus macedonicus*) and Balkan Yellow-bellied Toad (*Bombina scabra*); three (3) species of reptiles: Hermann's Tortoise (*Eurotestudo hermanni*), European Pond Terrapin (*Emys orbicularis*) and Orsini's Viper (*Vipera ursinii*); and seven (7) species of mammals: Greater Horseshoe Bat (*Rhinolophus ferrumequinum*), Lesser Horseshoe Bat (*Rhinolophus hipposideros*), Wolf (*Canis lupus*), Balkan Lynx (*Lynx lynx balcanicus*), Otter (*Lutra lutra*), Brown Bear (*Ursus arctos*) and Balkan Chamois (*Rupicapra rupicapra balcanica*).

Habitats Directive (Directive 92/43/EEC) provides Strict Legal Protection (under Annex IV) for additional 45 species, of which: one (1) species of vascular plants: Serbian phoenix flower (*Ramonda serbica*); seven (7) species of invertebrate fauna: the dragonfly Bladetail (*Lindenia tetraphylla*) and the butterflies: Mountain Apollo (*Parnassius apollo*), Clouded Apollo (*Parnassius mnemosyne*), Southern Festoon (*Zerynthia polyxena*), False Eros Blue (*Polyommatus eros eroides*), Large Blue (*Phengaris arion*) and Scarce Fritillary (*Euphydryas maturna*); six (6) species of amphibians: Macedonian Crested Newt (*Triturus macedonicus*), Balkan Yellow-bellied Toad (*Bombina scabra*), Green Toad (*Pseudepidalea viridis*), Common Tree Frog (*Hyla arborea*), Agile Frog (*Rana dalmatina*) and Balkan Stream Frog (*Rana graeca*); 18 species of reptiles: Hermann's Tortoise (*Eurotestudo hermanni*), European Pond Terrapin (*Emys orbicularis*), Kotschy's Gecko (*Mediodactylus kotschy*), Snake-eyed Skink (*Ablepharus kitaibelii*), Dalmatian Algyroides (*Algyroides nigropunctatus*), Green Lizard (*Lacerta viridis*), Balkan Green Lizard (*Lacerta trilineata*), Sand Lizard (*Lacerta agilis*), Common Wall Lizard (*Podarcis muralis*), Balkan Wall Lizard (*Podarcis tauricus*), Erhard's Wall Lizard (*Podarcis erhardii*), Large Whip Snake (*Dolichophis caspius*), Dahl's Whip Snake (*Platyceps najadum dahlii*), Aesculapian Snake (*Zamenis longissimus*), Dice Snake (*Natrix tessellata*), Smooth Snake (*Coronella austriaca*), Nose-horned Viper (*Vipera ammodytes*) and Orsini's Viper (*Vipera ursinii*); as well as 13 species of mammals: Greater Horseshoe Bat (*Rhinolophus ferrumequinum*), Lesser Horseshoe Bat (*Rhinolophus hipposideros*), Serotine (*Eptesicus serotinus*), Kuhl's Pipistrelle (*Pipistrellus kuhlii*), Savi's Pipistrelle (*Hypsugo savii*), Whiskered Bat (*Myotis mystacinus*), Schreibers' Bat (*Miniopterus schreibersii*), Wolf (*Canis lupus*), Wildcat (*Felis silvestris*), Balkan Lynx (*Lynx lynx martinoi*), Otter (*Lutra lutra*), Brown Bear (*Ursus arctos*) and Balkan Chamois (*Rupicapra rupicapra balcanica*).

The Wild Birds Directive-WBD (Directive 2009/147/EC) of the European Parliament and the Council of the European Union provides Legal Protection for 19 species of birds, through the establishment of a coherent network of Special Protection Areas (SPAs) comprising all the most suitable territories for these species (Annex I): Ferruginous Duck (*Aythya nyroca*), Honey Buzzard (*Pernis apivorus*), Short-toed Eagle (*Circaetus gallicus*), Griffon Vulture (*Gyps fulvus*), Golden Eagle (*Aquila chrysaetos*), Peregrine Falcon (*Falco peregrinus*), Black Grouse (*Tetrao tetrix*), Rock Partridge (*Alectoris graeca*), Corncrake (*Crex crex*), Eagle Owl (*Bubo bubo*), European Nightjar (*Caprimulgus europaeus*), Common Kingfisher (*Alcedo atthis*), Grey-headed Woodpecker (*Picus canus*), Middle Spotted Woodpecker (*Dendrocopos medius*), Woodlark (*Lullula arborea*), Barred Warbler (*Sylvia nisoria*), Collared Flycatcher (*Ficedula albicollis*), Red-backed Shrike (*Lanius collurio*), Ortolan Bunting (*Emberiza hortulana*).

Conservation Status. The IUCN Red List of Globally Threatened Species (2011) includes five (5) threatened species, all in the Category VU (Vulnerable), of which three species of invertebrates: European Crayfish (*Astacus astacus*), Stone Crayfish (*Austropotamobius torrentium*) and Mountain Apollo (*Parnassius apollo*); one species of reptiles: Orsini's Viper (*Vipera ursinii*); and one species of mammals: Balkan Snow Vole (*Dinaromys bogdanovi*).

The IUCN European Red List of Dragonflies (2010) includes two (2) species ranked in the category Vulnerable (VU): Dark Emerald Damselfly (*Lestes macrostigma*) and Bladetail (*Lindenia tetraphylla*).

The IUCN European Red List of Butterflies (2010) includes two threatened species, of which the species Large Blue (*Phengaris arion*) is included in the Category EN (Endangered), while the species Scarce Fritillary (*Euphydryas maturna*) in the Category VU (Vulnerable).

The IUCN European Red List of Reptiles (2009) includes one threatened species: Orsini's Viper (*Vipera ursinii*) in the Category VU (Vulnerable).

Geographical Distribution / Endemism. Within the boundaries of the Park, presence of 115 endemic taxa (species and subspecies) has been ascertained, of which: 13 vascular plants, 86 invertebrates, three (3) fishes, three (3) amphibians, five (5) reptiles and five (5) mammals. Of the total number of 115 endemic taxa, 58 taxa are local/national endemics, while the remainder 57 taxa are Balkan endemics.

Besides the high level of species diversity, another striking feature of the flora of National Park Mavrovo is its high degree of endemism, represented by 13 endemic species, 10 of which are species and subspecies ascertained as local endemics: *Ranunculus wettsteinii*, *Cynoglossum scardicum*, *Achillea korabensis*, *Crepis macedonica*, *Dianthus macedonicus*, *Erysimum korabense*, *Micromeria cremnophila* var. *glandulosa*, *Ranunculus carinthiacus* subsp. *austrororientalis*, *Ranunculus degenii* var. *degenii* and *Viola gostivarensis*, while three (3) species like sub-endemics: *Draba korabensis*, *Festuca korabensis*, *Sesleria korabensis*. The territory of the Park is also inhabited by rare plant species, 29 of which on national level, only on the territory of the National Park Mavrovo have been recorded (MK 1). On National Level, the territory of the Park is only second finding site for additional 31 plant species (MK 1-2). For additional 60 plant species, the territory of the Park is one of the 3-5 finding sites within the territory of the whole country (MK 3-5), and finally the territory of the Park is one of the 6-10 finding sites on national level, for 44 plant species (MK 6-10).

The level of endemism among the invertebrate fauna on the territory of the Park is also unusually high, represented by 86 endemic species, which is 7.34% of the total number of species recorded in the Park, 48 of which are local/national endemics, while the remainder 38 species are Balkan endemic species.

All of the three native species of trouts: Balkan Brook Trout (*Salmo farioides*), Montenegro Trout (*Salmo montenegrinus*) and Glavatitsa (*Salmo dentex*) are Western-Balkan endemics, i.e. with distribution range restricted to the East-Adriatic watershed.

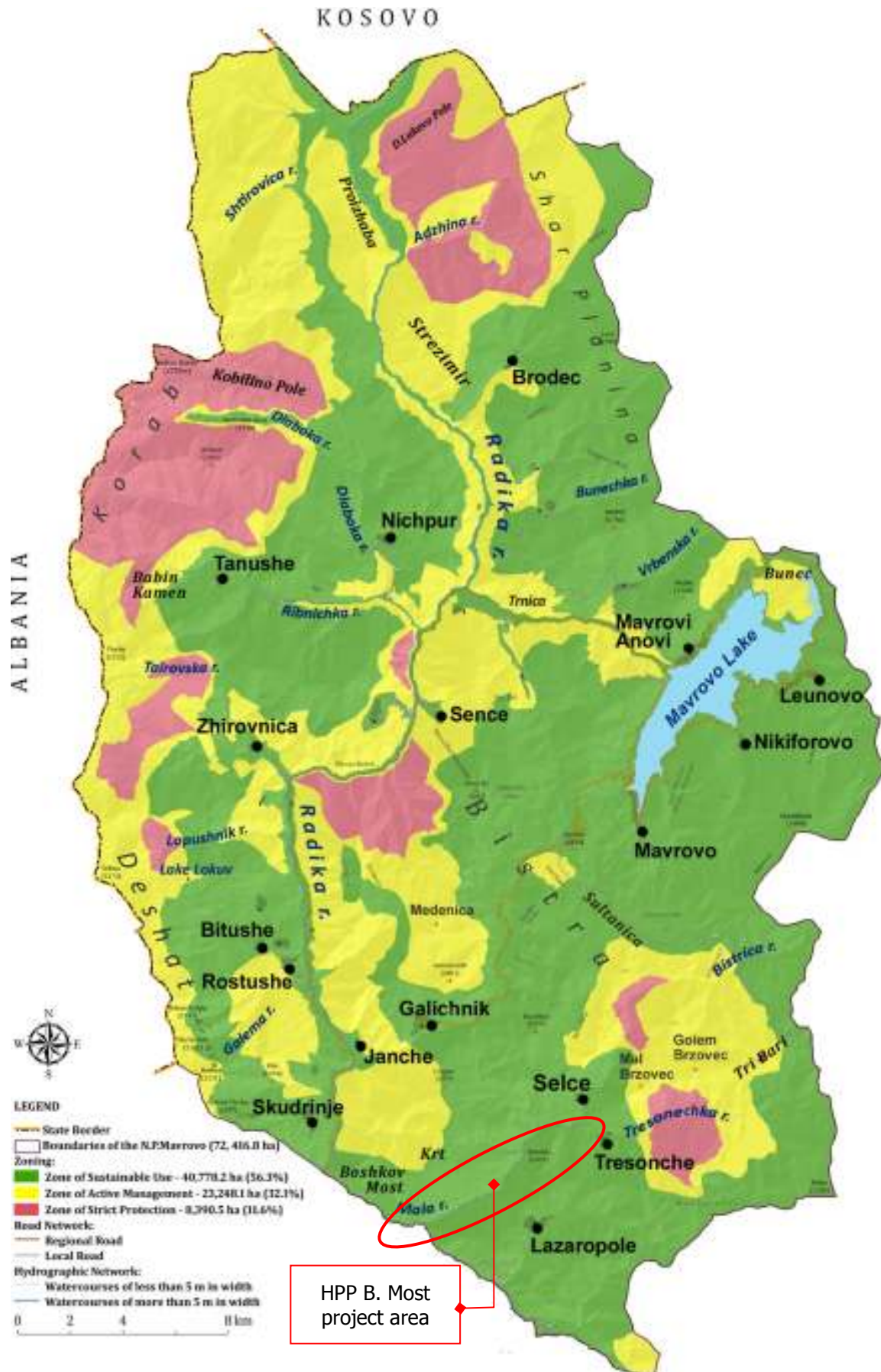
The amphibians Macedonian Crested Newt (*Triturus macedonicus*), Balkan Yellow-bellied Toad (*Bombina scabra*) and Balkan Stream Frog (*Rana graeca*) are endemic to the Balkans, vulnerable to extinction due to their restricted range size that covers wetland ecosystems with disjunctive distribution only within certain parts of the Balkan Peninsula.

The Reptiles: Hermann's Tortoise (*Eurotestudo hermanni boettgeri*), Dalmatian Algyroides (*Algyroides nigropunctatus*), Balkan Green Lizard (*Lacerta trilineata*), Erhard's Wall Lizard (*Podarcis erhardii*) and Balkan Wall Lizard (*Podarcis tauricus*) are endemic to the Balkans, vulnerable to extinction due to their restricted range size.

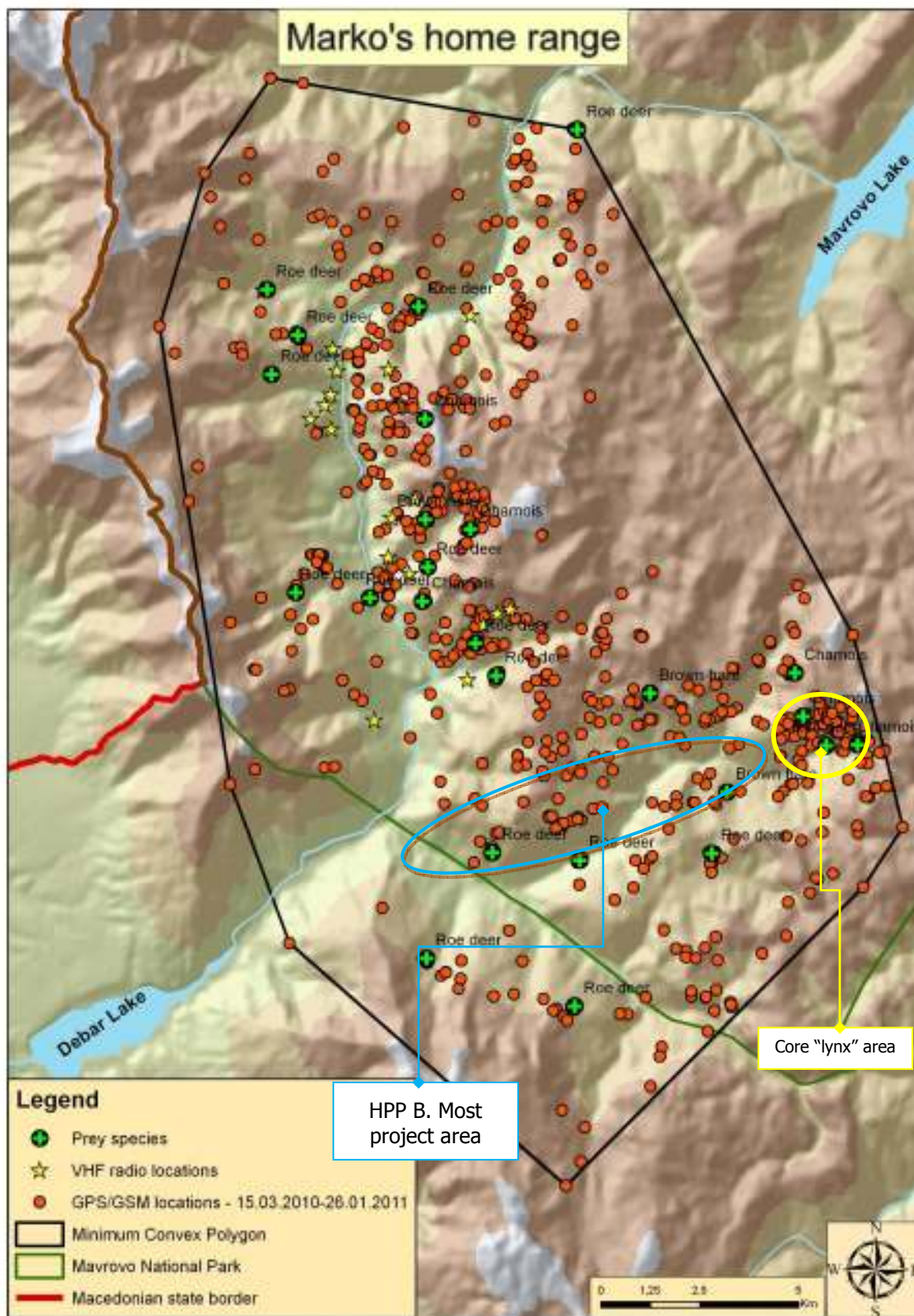
Five (5) taxa of the fauna of mammals of the National Park Mavrovo are ascertained as Balkan endemics, of which the species: Rock Mouse (*Apodemus epimelas*), Balkan Snow Vole (*Dinaromys bogdanovi*) and Balkan Mole (*Talpa stankovici*), as well as the subspecies: Balkan Lynx (*Lynx lynx balcanicus*) and Balkan Chamois (*Rupicapra rupicapra balcanica*).

Appendix 2

Map – Protection zones in the NP Mavrovo



Map – Distribution of the lynx in the NP Mavrovo and the area of the proposed HPP Boshkov Most



Source: Balkan Lynx Recovery Programme (MES)

Appendix 3

Zoning of Protected Areas – Macedonian Context

Building in a National Park

Building activities in Protected Areas, including Category II (National Park) are regulated by zoning of the Area (Articles 93 and 104-106, of the Law on Nature Protection). In addition, by the Law on Nature Protection (Article 103) for Protected Areas of Category II, a Spatial Plan is obligatory required, which in details regulates the building in a National Park.

Zoning in Protected Areas

In accordance with Article 93 of the Law on Nature Protection (2004), in the Mavrovo Protected Area Management Plan for the period 2012-2021, three management zones are proposed: Zone of Strict Protection, Zone of Active Management and Zone of Sustainable Use. In practice, all the permitted building activities, including facilities for sustainable use of natural resources are restricted to the Zone of Sustainable Use.

Zone of Strict Protection. In accordance with Article 104 of the Law on Nature Protection, the Zone of Strict Protection is defined as follows:

- (1) Zone of strict protection shall be part of the protected area of highest interest for protection, characterized by authentic, unchanged ecosystem characteristics, or slightly changed as a result of the traditional management practices.
- (2) Within the strict protection zone it shall be distinguished:
 - Authentic natural areas, with no human interventions at all.
 - Areas with limited intervention, where the traditional manner of management is still present and serves the maintaining of the natural values of the zone.
- (3) Scientific research activities shall be allowed in the strict protection zone, unless they are in contradiction with the primary objectives of the protection of the area.
- (4) The entity responsible for the natural heritage management shall provide for constant monitoring for the purpose of maintaining the characteristics of the strict protection zone.

Zone of Active Management. In accordance with Article 105 of the Law on Nature Protection, the Zone of Active Management is defined as follows:

- (1) Zone for active management shall be a zone of high interest for the protection, in which some major management interventions are needed for the purpose of restoration, revitalization or rehabilitation of the habitats, ecosystems and other elements of the landscape.
- (2) Within the zone for active management, management activities may be carried out with regard to:
 - Manipulation with habitats.
 - Manipulation with species.
- (3) It shall be allowed to carry out economic activities that have no adverse impact on the primary objective of the protection in the zone for active management, such as ecotourism or traditional extensive agriculture.
- (4) The successful management of this zone, as well as the further permanent maintenance thereof, may lead to the zone acquiring characteristics of a strict protection zone.

Zone of Sustainable Use. In accordance with Article 106 of the Law on Nature Protection, the Zone of Sustainable Use is defined as follows:

- (1) The zone for sustainable use shall be a significant part of the protected area with no high values for protection, with infrastructure facilities, objects of cultural heritage, and types of forest plantations that are not characteristic for the area, as well as inhabited places with the surrounding agriculture land.
- (2) Long-term undertaking of interventions and measures may lead to it acquiring the characteristics of zone for active management.