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Public Institution National Park Galichica

**Draft Amendments to the Management Plan
for National Park Galichica for the Period
2011 – 2020.**

Strategic Environmental Assessment (SEA)

Reference: J337

August 2015

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Pursuant to item 17 Article 3 of the *Regulation for Strategies, plans, programmes including their amendments, on which the policy for assessment of their influence over the environment and life and health of people* is mandatorily implemented, the Amendments to the Management Plan for National Park Galichica for the period 2011-2020 is a planning document for which a strategic assessment of impacts is mandatory.

The report is prepared pursuant to the content stipulated in the *Regulation for the content in the Report for Strategic Environmental Assessment* (Official Gazette of Republic of Macedonia no. 153, 20.12.2007).

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Object	DRAFT AMENDMENTS TO THE MANAGEMENT PLAN FOR NATIONAL PARK GALICHICA FOR THE PERIOD 2011-2020
Location	NATIONAL PARK GALICHICA
Contents/Phase	'REVISED' DRAFT REPORT FOR STRATEGIC ENVIRONMENTAL ASSESSMENT FOR: DRAFT AMENDMENTS TO THE MANAGEMENT PLAN FOR NATIONAL PARK GALICHICA FOR THE PERIOD 2011-2020
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РЕПУБЛИКА МАКЕДОНИЈА
МИНИСТЕРСТВО ЗА ЖИВОТНА СРЕДИНА И ПРОСТОРНО ПЛАНИРАЊЕ

ПОТВРДА

за положен стручен испит за стекнување на статус експерт за
стратегиска оцена на животната средина

КОВАЧЕВИЌ Јосиф БОРКА

дипломиран инженер технолог од Скопје, родена на 09.10.1972 година во Скопје, Република Македонија, на ден 28.03.2013 година го положи **стручниот испит за стекнување на професионално знаење за стратегиска оцена на животната средина**, пред Комисијата за полагање на стручен испит за стратегиска оцена на животна средина, при Министерството за животна средина и просторно планирање, и се стекна со **статус на експерт за стратегиска оцена на животната средина** и ги исполнува условите утврдени во член 68 од Законот за животна средина, со тоа се стекнува со право да биде **вклучена** во Листата на експерти за стратегиска оцена на животната средина што ја води Министерството за животна средина и просторно планирање на Република Македонија.

Оваа потврда се издава врз основа на член 68 од Законот за животна средина („Службен весник на Република Македонија“ бр. 53/05; 81/05; 24/07; 159/08; 83/09; 48/10; 124/10; 51/2011 и 123/12) и е со важност од пет години, почнувајќи од денот на издавањето на истата. За продолжување на потврдата за дополнителни пет години, треба да се поднесе барање за продолжување на потврдата до Министерството за животна средина и просторно планирање.

Министерство за животна средина
и просторно планирање

Министер,
Abdilaqim Adem



Број 07-1655/29
20.03.2013, година

Комисија за полагање на стручен испит за
стратегиска оцена на животната средина

Претседател,
Драган Ѓорѓев



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ABBREVIATIONS & ACRONYMS

AA	Appropriate Assessment
AEWA	African-Eurasian Migratory Waterbird Agreement
AMP	Amendments to Management Plan
BMP	Biodiversity Management Plan
BZ	Buffer Zone
CBD	Convention on Biological Diversity
CEIM	Civil Engineering Institute “Macedonia” JSC
CEMP	Construction Environmental Management Plan
CESMP	Construction Environmental & Social Management Plan
CORINE	Coordination of Information on the Environment
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DEFRA	Department of Environment, Food and Rural Affairs
EBRD	European Bank for Reconstruction & Development
EIA	Environmental Impact Assessments
EUNIS	European Nature Information System
ESMP	Environmental & Social Management Plans
ESIA	Environmental & Social Impact Assessments
EU	European Union
EUROBATS	Agreement on the Conservation of Populations of European Bats
FNRR	Fund for National and Regional Roads
HIA	Heritage Impact Assessment
HBI	Hydrobiological Institute – Ohrid
ICOMOS	International Council on Monuments and Sites
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
LNP	Law of Nature Protection
MAB	Man and Biosphere
MEPSO	Electricity Transmission System Operator for Macedonia JSC
MP	Management Plan
MoEPP	Ministry of Environment & Physical Planning
MoTC	Ministry of Transport & Communication
NBSAP	National Biodiversity Strategy & Action Plan



NNL	No Net Loss
NPG	National Park Galichica
NTS	Non-Technical Summary
OEMP	Operational Environmental Management Plan
OESMP	Operation Environment & Social Management Plan
O.G.	Official Gazette
O.G. of RM	Official Gazette of the Republic of Macedonia
OUV	Outstanding Universal Value
PE	Public Enterprise
PEBLDS	Pan - European Biological and Landscape Diversity Strategy
PEEN	Pan-European Ecological Network
PEMG	Public Enterprise for Management of Grassland
PESR	Public Enterprise for State Roads
PINPG	Public Institution National Park Galichica
PLB	Prespa Lake Basin
PRs	Performance Requirements
SEA	Strategic Environmental Assessment
SPA	Spatial Planning Agency
SPAs	Special Protection Areas
TBR	Transboundary Biosphere Reserve
TDZ	Tourism Development Zone
WHS	World Heritage Site
ZAM	Zone of Active Management
ZSP	Zone of Strict Protection
ZSU	Zone of Sustainable Use



NATIONAL PARK GALICHICA AMENDED MANAGEMENT PLAN (2015)

STRATEGIC ENVIRONMENTAL ASSESSMENT

NON TECHNICAL SUMMARY

1. Background

National Park Galichica (*the Park*) was proclaimed in 1958, with the aim of preserving the environmental heritage and natural appearance of Mount Galichica. Today, areas of the Park and its surroundings have attracted several international designations, including: UNESCO World Heritage Site, UNESCO Man & Biosphere Reserve, Emerald Site, Important Plant Area and Prime Butterfly Area.

The Park is managed by the Public Institution National Park Galichica (PINPG), which has developed the National Park Galichica Management Plan 2011 - 2020 (the "Management Plan"), to govern the protection and preservation of the Parks resources. As well as setting goals and objectives for management, the Management Plan contains a number of restrictions on activities in certain areas of the Park.

In September 2013, the Government of Macedonia issued a directive that the Management Plan was to be amended to take into account several development projects which were planned for the Park area, but which had not been taken into account in the Management Plan. As a result draft amendments have been developed - *Draft Amendment on the Management Plan for the National Park Galichica for the period between 2011-2020*.

During 2014 a Strategic Environmental Assessment (SEA) was prepared under the requirements of Macedonia's *Law on Environment*¹, and a draft SEA was submitted to the Ministry of Environment and Physical Planning (MOEPP) in November 2014. A public hearing was held on the draft SEA in January 2015, and a number of concerns and comments were raised by stakeholders. As a result a decision was made by PINPG to revise the SEA, and this document is the draft of the revised SEA. This draft revised SEA will be disclosed during July 2015, submitted to the MOEPP for review and opinion and a Public Hearing is planned to be held during July 2015.

1.1 Legal Framework to Strategic Environmental Assessment (SEA)

The SEA was conducted according to Macedonia's *Law on Environment*, and related regulations including *the Regulation on the contents of the report on the strategic assessment of the environment*².

In addition, the SEA has been structured to comply with the technical requirements of the EU SEA Directive³ and with the requirements of the EU Habitats Directive⁴.

1.2 Objectives & Approach of Strategic Environmental Assessment (SEA)

The objective of this SEA is to ensure that the protection status of the Park is retained in line with the Management Plan and legal framework, by assessing whether the Amendments to the Management Plan (as a result of the planned development projects) may have negative environmental effects, and to consider alternatives to avoid or reduce these.

The original draft SEA was prepared by Civil Engineering Institute "Macedonia" Joint Stock Company, Skopje. The revisions to the document were prepared by an international team, led by the UK-based firm Citrus Partners LLP, involving Macedonian and international ecologists, cultural heritage, social and SEA experts, and benefitted from the assistance and expertise of the PINPG. The work involved:

¹ Official Gazette of RM Nos. 53/05, 81/05, 24/07, 159/08, 48/10, 124/10, and 15/11, 123/12, 93/13, 42/14 and 44/15.

² Official Gazette of RM no. 153/07.

³ Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment.

⁴ Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.



- A comprehensive review of the Management Plan, the draft Amendments to the Management Plan, and examination of data and information on the baseline socio-economic, cultural heritage and ecological aspects of the Park area, including site visits to the Park;
- Meetings with the Project Sponsors for the five development projects included in the draft Amended Management Plan (AMP), as well as consultations with other concerned stakeholders in Macedonia;
- Internal workshops with PINPG and Macedonian ecological experts to agree assessment criteria and approach, and to develop measures to mitigate and compensate for the effects of the changes to the MP, including a technical workshop, held in Ohrid in May 2015.

The SEA focuses on impacts which are not easily addressed at the project level, or which needs to be addressed at a strategic level, or where there is a risk that it will not be possible to mitigate the effect within the current project proposal or Park's management regime. The key issues to be assessed were identified, based on issues raised in the various public meetings, held in Ohrid and Stenje in January 2014 on the original draft AMP and the previous draft SEA in January 2015, and taking into account concerns raised by PINPG, as well as expert judgement by the SEA study team.

Identification of the key habitats & species to be prioritised in the assessment took into account the listing of habitats in the EU Habitats Directive, and species listing in relevant EU Directives, Red Lists, IUCN ratings and various other international listings or designations of species. Species prioritisation also took account local/national endemism, national designations and the conservation priorities in Macedonia and in the Park. Throughout the assessment, a precautionary approach was used.

The mitigation recommendations follow the mitigation hierarchy, whereby the first option is to avoid the impact, e.g. by making alterations to the project design. Where avoidance is not possible or appropriate, recommendations are made to reduce the effect.

The SEA includes recommendations for issues to be taken up in the Project ESIA's, and where the SEA considers that a significant effect is not likely to be mitigated within the Project design, recommendations are made to offset the loss of biodiversity. To comply with the EU Habitats Directive, the loss of certain habitats must be offset by commensurate gains, and the SEA has examined how such losses could be offsets by management actions within the Park. For certain habitats and species, a net gain in biodiversity must be demonstrated.

2. Proposed Amendments to the Park Management Plan

2.1 Management Plan 2011 – 2020

A Management Plan for the Park was developed in 2008-2009 with the objectives of maintaining the natural values and ecological processes in the Park; ensuring that the Park's ecosystems are connected to other ecosystems in the region; and that building is controlled and that sustainable development is encouraged. The Management Plan establishes clear objectives and actions on Nature Conservation, Sustainable Tourism, Sustainable Use of Natural Resources and General Activities.

As a way of protecting the Park, the area of the Park has been split into different zones in the Management Plan, where some activities are allowed and others are prohibited. Specifically, the Park has four management zones, which are:

- **Zone of Strict Protection (ZSP):** where only approved scientific research activities are allowed and people can walk along the trails. All other activities are prohibited.
- **Zone of Active Management (ZAM):** where activities are allowed that relate to the management of habitats and species, such as ecotourism (e.g. walking, cycling, skiing, horse riding and camping) in



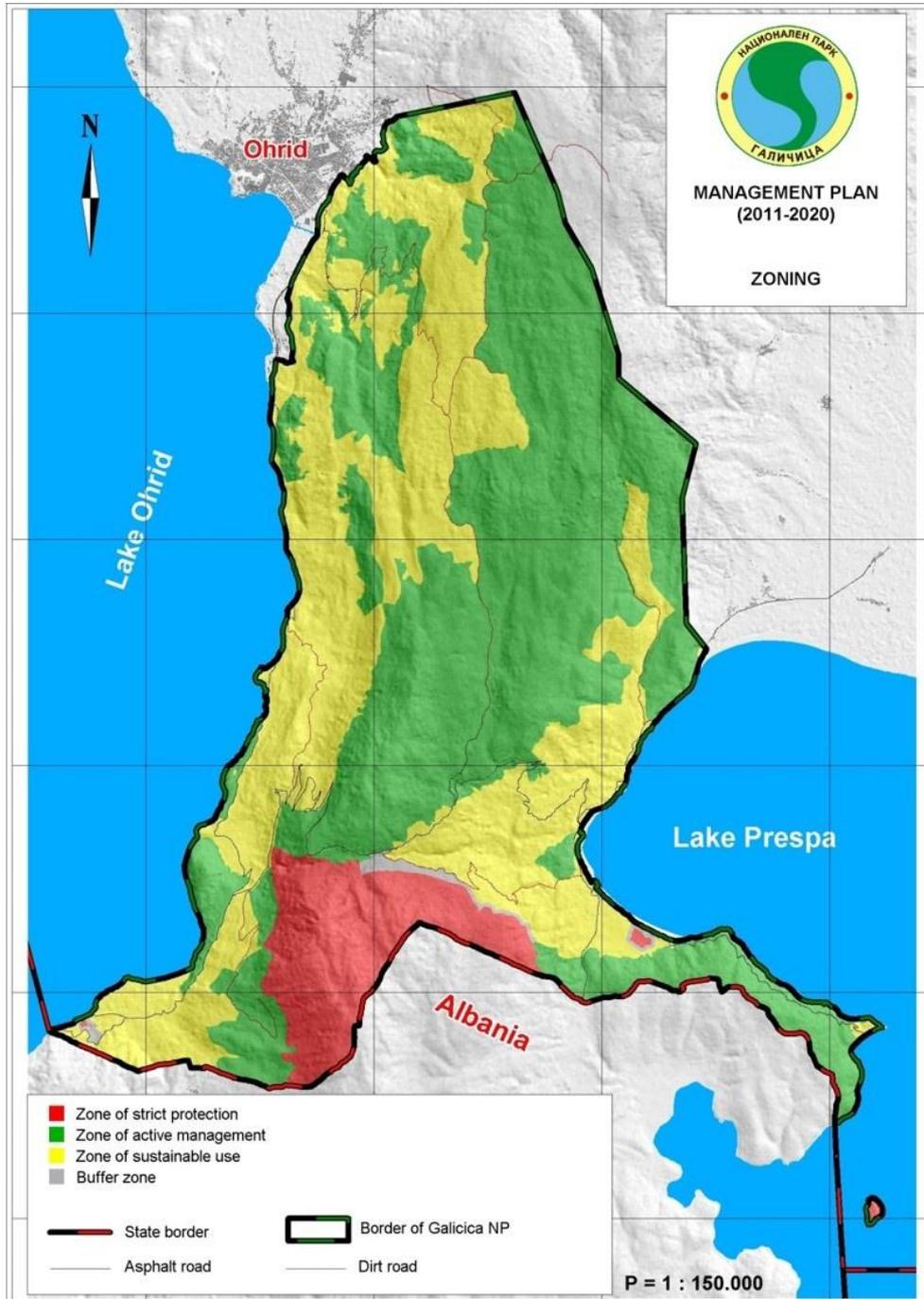
designated areas, as well as traditional agriculture. Activities that would negatively impact the protection of habitats and species, such as building new infrastructure or any kind of intensive agriculture, is prohibited.

- **Zone of Sustainable Use (ZSU):** a zone which does not have high values of protection. Building new infrastructure, buildings and facilities are allowed in this zone. The ZSU is typically in populated areas with surrounding agricultural land. The only activities that are prohibited in this zone are setting open fires, collecting animals, fishing, hunting and interfering with springs.
- **Buffer Zone (BZ):** which are urban areas where most activities are allowed, as long as they are in line with Macedonia's laws. Camping, arranged rest areas, setting open fires, collecting plants and animals, agriculture, fishing, hunting and interfering with springs are prohibited activities.

Figure 2.1 below shows the original zoning of the National Park Galichica from the NPG Management Plan 2011-2020.



Figure 2.1: Original National Park Galichica Management Plan Zoning (2011-2020)





2.2 Amended Management Plan & Planned Development Projects

In September 2013, the Government of Macedonia issued a directive that the National Park Galichica Management Plan was to be amended to take into account several planned development projects. The planned development projects are as follows:

- **Galichica Ski Centre:** which aims to be a four seasons regional sporting and recreational centre in the Park. Proposed summer activities include: lift accessed sightseeing and hiking; mountain cinema; camping; mountain biking; zip line; climbing wall; paragliding and hand gliding; trampoline and events. Proposed winter activities include: alpine skiing; children's activity zone and skidoo course; snow tubing; snowshoeing and Nordic skiing. There is a proposed mountain capacity of 3,500 people which is made up of 3,000 skiers and 500 non-skiers.

There are two planned base areas on the Lake Ohrid side at Gradiste Lakeside Village and the Upper Peštani Base, which will provide parking, apartments, hotels and access to the gondola lift to the Galichica Ski Centre's four-season recreation facilities. The gondola lift will leave the Upper Peštani Base and arrive at a mid mountain lodge, which will be situated centrally between a beginner ski zone, snow play area and an area designated for winter Nordic ski trails and snowshoe trails that in the summer could be used for mountain biking and hiking. The proposed main ski area will offer approximately 15 km of ski pistes and will be accessed by the gondola and further lifts. There will be a mountain top lodge and further Nordic ski area on the Central Plateau. There will also be an artificial snow making area. There is a further base planned at Oteshevo near Lake Prespa, however this is not planned in the first phases of development and will be re-evaluated at a later date.

A paved access road is also planned which will connect one of the lifts to the existing main pass road connecting the two lakes. A new 6.6 km gravel road will connect the mountain top lodge and mid mountain zone; while an additional gravel road for construction of the bottom terminal will be developed to connect the mid mountain zone to one of the lifts. Finally a power line and water pipeline will most likely be routed along the lift and piste corridors to reach the mid mountain and mountain top areas.

- **A3 Expressway Ohrid – Peštani – State Border of the Republic of Albania:** which is part of the route of the proposed Kosel – Albania Expressway. There are two "sections" of this proposed route in the Park. The first is from Ohrid to Peštani and the second is from Peštani to the border with Albania.

A3 Expressway Ohrid – Peštani Project: The existing road running along the Lake Ohrid shore (the R1301) cannot be upgraded sufficiently and the proposed expressway is needed to help the development of tourism around Ohrid, the Lake and surrounding area. The Ohrid to Peštani route is generally planned outside the boundaries of the urban settlements, passing through the hilly terrain of the slopes of Mount Galichica. The route runs mostly through modified forest habitat. The route connects the City of Ohrid with settlements within the NPG and along the lake shore including: Velestovo, Racha, Shipokno, Sveti Stefan, DolnoKonsko, GornoKonsko, Lagadin, Eleshec, Elshani and Peštani.

A3 Expressway Peštani – State Border of the Republic of Albania Project: The Peštani to Albanian Border section runs through natural areas of the Park, from Peštani past the village of Trpejca on the lake shore down to Ljubanishta at the southern end of Lake Ohrid. The proposed expressway then runs from Ljubanishta to SvetiNaum (also referred to as St. Naum) near the Albanian Border.

- **Three Tourist Development Zones (TDZs):** TDZs have been proposed at Ljubanishta, Oteshevo and Stenje. It is expected that these will be urban developments including hotels, apartments, restaurants, parks and other services and facilities related to tourism and visitor activities. The construction process will typically involve land clearance, excavations, building work, landscaping and construction traffic to deliver materials.



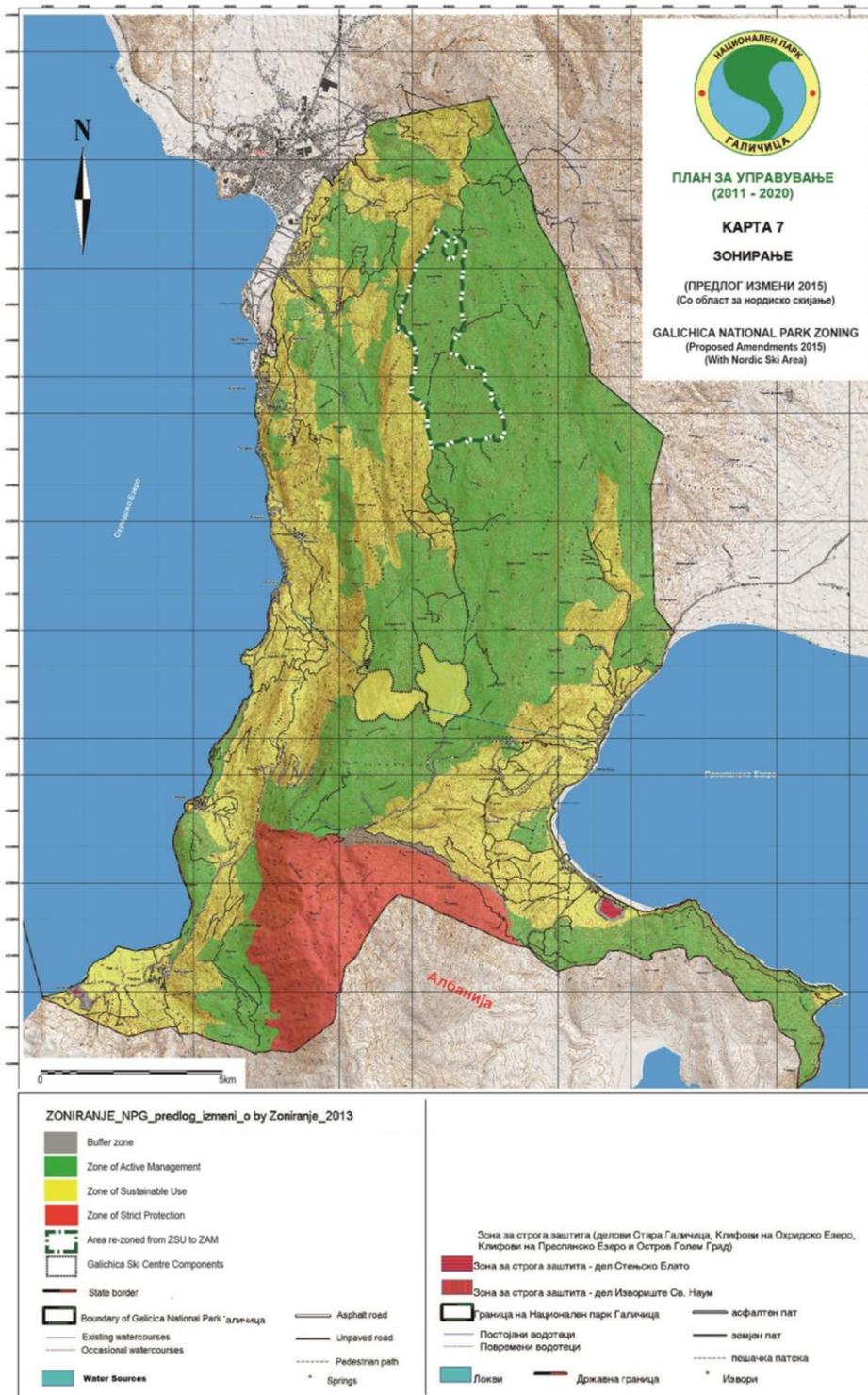
The key changes to the Management Plan are:

- Amending the zoning of the Park, where some areas will need to be re-zoned to allow project infrastructure to be developed;
- Committing to “No Net Loss” which means that the effects of the planned development projects on key habitats and species in the Park are assessed, and areas in the Park are identified for “offsetting”, which is a process where areas that may be negatively affected by the planned development projects are replaced with others, where possible;
- Updated project information and alternatives;
- Recommendations about how to assess the planned projects;
- Monitoring recommendations for the planned projects;
- Updates to the table which defines what activities are allowed and what activities are prohibited activities in each zone;
- Updates based on land ownership by the Macedonian Orthodox Church;
- An additional chapter which ensures that the outcomes of the SEA are fully taken into account in the planning of the developments.

The key change contained within the Amended Management Plan is the changes to the Park’s management zones, specifically that some areas need to be re-zoned from being in the Zone of Active Management (ZAM) to the Zone of Sustainable Use (ZSU) to allow project infrastructure to be developed. A total of approximately 604 ha from within the ZAM needs to be reduced in status to the ZSU. A total of 5.22 ha of Buffer Zone (mostly around the Stenje Marsh) is also infringed upon.

The Amended Management Plan seeks to compensate for this loss and ensure the same (if not an increased) level of protection is afforded to the Park. Approximately 854 ha have therefore been identified of alpine and subalpine habitat that are proposed to be up-zoned from Zone of Sustainable Use to Zone of Active Management, see Figure 2.2 below:

Figure 2.2: Proposed Amended Management Plan Re-zoning 2015





2.3 Description and Assessment of Alternatives to Amended Management Plan

A number of alternatives were considered before selecting the amendments to the Management Plan as the way forward. Alternatives considered were:

- “No-Change” which assumes that the 5 development projects are not implemented and the Management Plan is not amended. This could result in loss of economic and tourism development opportunities to the region and local communities, but it would avoid detrimental effects on the environmental quality, biodiversity and ‘natural beauty’ of the Park as a protected area, including the outstanding universal value associated with the World Heritage Site designation.
- Alternative management responses to accommodate the proposed development projects, including keeping the zoning of the Park as it is; reducing the area of the Zone of Active Management in the Park without committing to no net loss; or reducing the area of the Zone of Active Management and then replacing it by “up-zoning” a larger area from the Zone of Sustainable Use to the Zone of Active Management and committing to no net loss.

The SEA presents an outline of the alternatives considered in the development of the Galichica Ski Centre and the A3 Expressway (available at this time). It does not present a detailed multi-criteria alternatives analysis. This would be required at the stage of completing project level ESIA's. Where appropriate, the key issues at a strategic level which would help differentiate alternatives at a project level have been highlighted within the SEA, if appropriate.

No further information on the reasons for selecting the Tourism Development Zone (TDZ) alternatives or alternatives considered in the development of the TDZ's has been available for the SEA. The TDZ development is partially tied to it is understood to the Ski Centre, therefore the project level ESIA/assessments for the Ski Centre should will consider the TDZ's as ‘Associated Facilities’.

A core part of the approach to the SEA, including the analysis of alternatives, has identified further avoidance options which it recommends the ‘project level’ ESIA's, Appropriate Assessments and planning of the projects consider in order to reduce potential effects on the integrity of the National Park.

3. Environmental & social characteristics and challenges within Galichica National Park

3.1 Importance of the Park

The Park was proclaimed as a National Park in 1958 with the aim of preserving the flora and fauna heritage and natural appearance of Mount Galichica. The Park is a European biodiversity hotspot comprising important habitats and hundreds of species with Macedonian, EU and International legal protection. The Park therefore has been afforded various levels of legal protection and various designations including being a UNESCO World Heritage Site and part of the European ecological network the ‘Emerald network’.

The Ohrid-Prespa region has a moderate continental climate which means that the temperature varies between winter and summer

Galichica Mountain is made up of limestone rock and the landscape is described as karst. This means that the mountainside areas are exposed (without soil or vegetation growing on them), there are karst fields (large areas where the limestone is visible), dry valleys (with no streams or rivers), sinkholes (holes in the ground caused by water erosion) and caves.



There is one main river in the Park (Cherava River). The source and most of the river is in Albania. The two dominant water features in the Park are Lake Ohrid and Lake Prespa. Lake Ohrid is 31 km long and 15 km wide. Approximately two thirds of the lake is in Macedonia, with the remainder in Albania. Lake Ohrid is mainly composed of rainwater and spring water and is very clean and clear. Lake Prespa shares its borders with Macedonia, Albania and Greece. It is 54 m deep and is an important area for birds

If rainwater lands on Galichica Mountain, it will drain downhill and the water will quite quickly penetrate the ground through the cracks, sinkholes and caves. This is why there is not much surface water on Galichica Mountain. That said, there are a number of mountain springs on Galichica Mountain and many of these are used as a water supply to settlements in the Park. The most significant spring in the Park is at St. Naum, which is made up of a number of small springs that form a small lake. The water flow is relatively stable.

There is an underground connection between Lake Prespa and Lake Ohrid as Galichica Mountain, which sits between the two lakes, is made of limestone, which is a rock that allows water to flow through it slowly in channels and cracks. The water flows from Lake Prespa and towards Lake Ohrid. For instance, research has shown that about 50% of the water in the St Naum spring comes from Lake Prespa.

3.2 Biological Resources

The plants and animals (e.g. mammals, birds, amphibians, reptiles and insects) that live in the Park are rich and diverse and there are a significant number of species that are protected by national and international law. Research has shown that there are 5,330 different types of plants and animals in the Park, of which 114 are endemic (that they can only be found in the local area and do not exist anywhere else).

A collection of plants and animals can be grouped into different habitats, which are the types of area or environment in which particular types of plants and animals live in. These habitats can be influenced by the type of rock, soils, climate and by human influences, such as how the land is used and managed.

Each different habitat is determined by the type of plants that are most common in them (and these plants support a number of different animals). Key habitats and plant communities in the Park, and their current condition, include:

- Alpine and Subalpine Calcareous Grasslands, much of which is endangered and rare in Macedonia. Some of this habitat in the Park is in good condition and some is in moderate condition. (see Figure 3.1 below).

Figure 3.1: Alpine & Subalpine Calcareous Grasslands

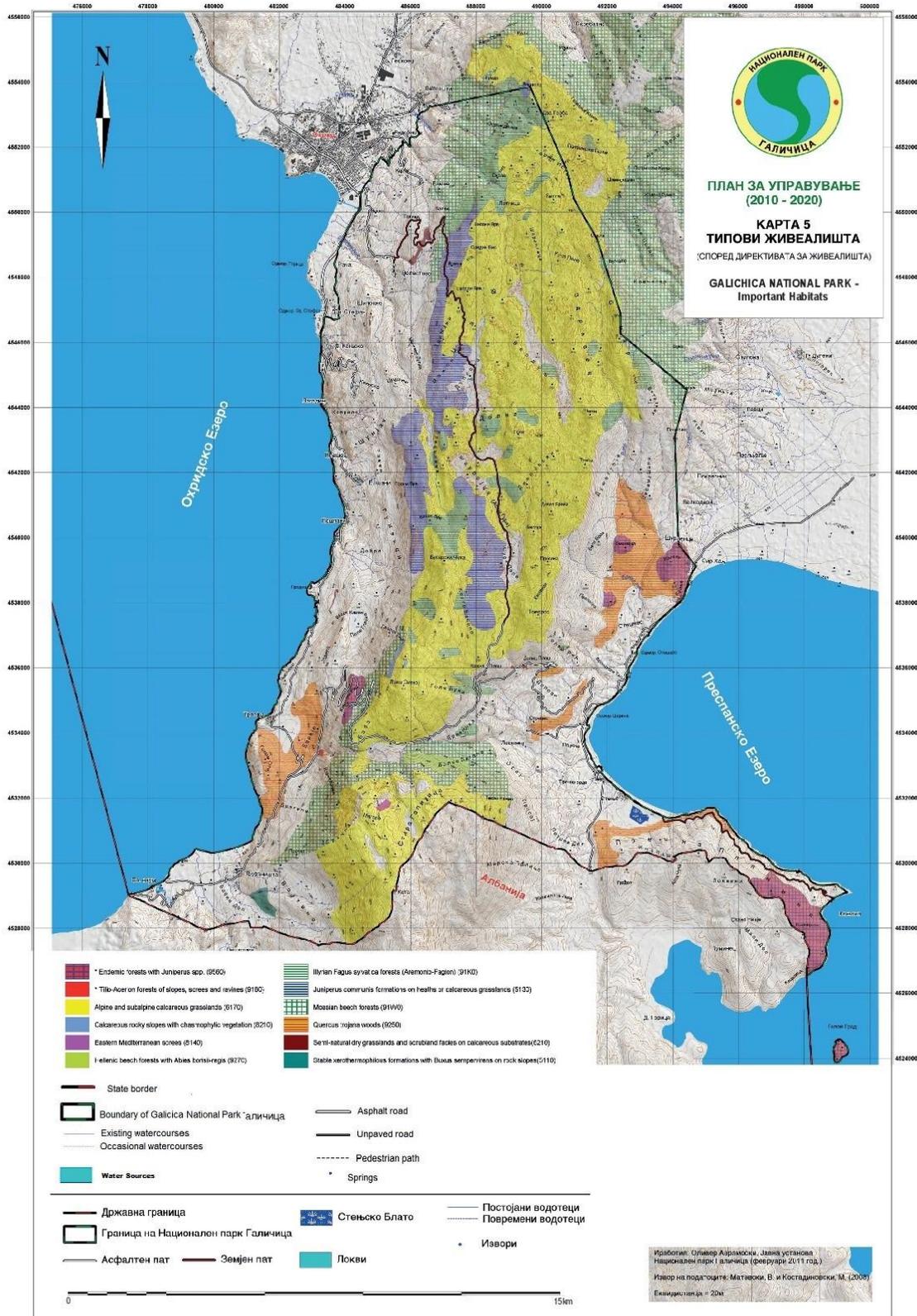


- Common Juniper Scrub, which is endangered but widespread throughout Macedonia. The habitat in the south of the Park is in good condition. In the north it is in moderate condition due to grazing pressures and a fire in 2008 which damaged it;
- Oak Forests, which are generally in good condition;
- Hop/Black Hornbeam Forests, which is rated as in good and moderate condition;
- Beech Forests, which has been reduced in size because of pressure from people for foresting and livestock production. The habitat that remains is in good condition;
- Oriental Hornbeam Woods, which is in moderate or poor condition;
- Juniper Woods, which is a priority habitat for protection. The habitat is in good or moderate condition;
- Reed beds and marsh, which is in good condition.

There are two important areas in the Park which animals are thought to use to travel from the forest areas to the shores of Lake Ohrid. These are located at CrnoBrdo (Black Mountain) and ZliDol (Evil Canyon).

The important habitats (as defined under Annex 1 of the EU Habitats Directive) within the National Park Galichica are shown in Figure 3.2 below:

Figure 3.2: Important Habitats Present in National Park Galichica (Annex 1 Habitats Directive)





3.3 Social & Socio-economic Context

The local population living in the Park area is mostly concentrated in the urban settlements and villages.

The villages in the Park area have basic communal infrastructure. Electricity, road and fixed telephony with internet are present in every village. Some of the small villages in the municipalities of Ohrid and Resen lie in the valleys and mountain areas and have fertile soil that is good for development of agriculture and stockbreeding. The mountain settlements, due to limited possibilities for economic development, are under the influence of the de-population process. There has been some informal development in the area. Agricultural activities in the Park have been decreasing in the past few decades. This has been a result of the migration of population to larger urban areas and settlements along the shoreline of Lake Ohrid, as well as due to the tourism-oriented way of life. The small villages along the shoreline of the Ohrid and Prespa Lakes have good conditions for the development of tourism, which is the most profitable industry in the area (67% of companies service tourism in the area).

3.4 Cultural & Archaeological Heritage

There are number of cultural heritage and archaeological objects in the Park, which include churches, monasteries, Roman remains, paintings, sculptures, frescoes and archaeological sites.

Tourism in the area began to be developed and hotel compounds were built on the previously untouched lakeshore. In 1979-1980 Ohrid was inscribed on the UNESCO World Heritage List as a World Heritage Site. Since independence, the area has been degraded by increased motor traffic and informal development, particularly across the lakeshore, which has negatively affected its aesthetic value.

3.5 Key Threats to Park's Resources

The Park's resources are being threatened by:

- Development along the shore line of Lake Ohrid and on Mount Galichica. The old villages are starting to become weekend resorts with vacation homes. This has pushed up the price of land (which leads to a decline in agriculture and traditional activities). The rise in people has put pressure on local resources, such as the demand for water, and there have been more incidents of pollution of the environment. Pressure is being put on habitats in the Park, which are being destroyed to make way for development, or are being cut-off from each other e.g. by building new roads.
- Forestry Activities within the Park. PINPG and the management they undertake in the Park is predominantly financed by forestry activities which in turn puts pressures on the Parks habitats.
- Unmanaged Tourism: Tourism and visitors to the Park have increased, some of which are unmanaged.
- Abandoning Agricultural Land. Changes in land use can change the habitats in the Park. Without animals to graze plants on the endangered grassland, the habitat changes and large areas are starting to become woodland.
- Changes to Aquatic Habitats. The Park's aquatic habitats are very sensitive to human activities, particularly when the water from springs or rivers is taken for human uses. This affects habitats and the species that live in them, and put pressures on endangered species in the Park.
- Threats to Grasslands and Pastures. Human activity has contributed to maintaining grasslands and pastures over the years by cutting down forests and using them for grazing. The grasslands and pastures support a number of endangered species. If forests start to grow back then the Park will lose important biological diversity.



- **Changes to Ecosystems.** Humans are using the forests less as a resource for firewood, food, fodder and tools. This causes more shrubs to grow in forests, which reduces the amount of sunlight that can reach the ground. This in turn reduces the type of plants that can grow in the shade. As less types of plants can grow, then less animals can be supported. Overall, this reduces the biodiversity of the area. The Park will need to continue to be managed to avoid these ecological changes.

4. Impacts from the Amended Management Plan, and Measures to Mitigate Them

Project Level Assessments

The SEA assumes that given the natural and cultural values and protected status of the National Park the following studies/assessments will be undertaken at a 'Project' level by the Project Sponsors:

- **Environmental & Social Impact Assessment (ESIA)** to meet legal requirements. Consideration of environmental & social impacts during detailed design of each scheme, to reduce impacts is required. The project-level Environmental and Social Impact Assessment (ESIA) should assess the impacts of the projects, and develop additional measures to be incorporated into their construction and operation environmental management plans, to reduce land take and unnecessary nuisances during construction. In addition, the projects needs to ensure that appropriate levels of protection are put in place for heritage assets, with detailed mitigation and monitoring to ensure that the outstanding universal value of the World Heritage Site is protected.
- **Environmental & Social Baseline Surveys/Studies:** As part of the SEA detailed baseline surveys have not been carried out to collect detailed information on the environmental and social resources within the project footprints – this would be undertaken as part of the ESIA at a project level.
- An '**Appropriate Assessment**'⁵ to meet the provisions of the EU Habitats Directive and Macedonian *Law on Nature Protection* – this may form part of the ESIA.
- Preparation and implementation of **Construction & Operational Environmental and Social Management Plans** including (*but not limited to*) a Biodiversity Management Plan, Stakeholder Engagement Plan.
- **Heritage Impact Assessment** in line with the ICOMOS guidelines⁶ for submission to the Ministry of Culture in order for submission to UNESCO.

4.1 Galichica Ski Centre Project

Land clearance for construction of the ski centre project will directly impact habitats through habitat loss and fragmentation. The land take for each ski centre component and the type of vegetation affected has been estimated; and they have mapped these habitats. The various habitat types and plant communities which will be affected by land take for the components of the ski centre based on the available NPG data⁷ are:

- Alpine and subalpine calcareous grasslands – 319 hectares will be impacted, including 126 hectares affected by the Nordic Ski Zone. This is a habitat protected by the EU Habitats Directive and losses to it must be avoided where possible. Any loss must be offset by a net gain in a similar habitat.

⁵ The Park is an Emerald site which forms a de-facto part of the Natura 2000 Network for non-EU Countries. To meet the principles of the EU *Habitats Directive*, which the Macedonian *Law on Nature Protection* transposes, an 'Appropriate Assessment' is therefore potentially required of plans and projects that could affect the site's integrity. Given the nature, scale and the location of the 5 development projects it is assumed an 'Appropriate Assessment' to meet the provisions of the *Habitats Directive* (and the *Law on Nature Protection*) is required at a project level. At a plan level a high-level 'Appropriate Assessment' style review of the AMP has been provided as part of this SEA.

⁶ ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties: A publication of the International Council on Monuments and Sites (January 2011).

⁷ Other habitat may be identified by the project-level field surveys.



- Common Juniper Scrub – 106 hectares will be impacted, most of which (92 hectares) is affected by the Nordic Ski Zone. This is a habitat protected by the EU Habitats Directive and losses to it must be avoided where possible. Any loss must be offset by a net gain in a similar habitat.
- Beech Forests – 87 hectares will be impacted, some of which (12 hectares) is affected by the Nordic Ski Zone. This is a habitat protected by the EU Habitats Directive and losses to it must be avoided where possible. Any loss must be offset by a net gain in a similar habitat.
- Over 40 hectares of other listed plant communities.
- Under 25 hectares of agricultural, urban or semi-urban land, with no significant loss of biodiversity.

Of the many species of plant and animal which will be affected by the loss of habitat and the operations of the Project, the impacts on two are of particular concern at a SEA Level (*others may be identified during the project-level environmental studies*):

- *Crocus cvijicii*- This small plant blooms directly after the snow melts, and is found on the alpine and sub-alpine grassland habitats in the Park. It is listed by IUCN as Vulnerable. As well as impacts from habitat loss, areas of crocus which survive the ski centre construction are at risk of trampling due to increased activity in the area. Additionally, the use of artificial snow is planned, and given the sensitivity of the crocus to the snow melt, any delay in the time of the snow melt will delay the flowering of the crocus, and the effects of this are unknown as details of this are not currently available for the SEA and would be dealt with at a project level.
- *Parnassius Apollo* (Apollo Butterfly); The Apollo butterfly (see Figure 4.1) is a large, slow flying, white butterfly which is prized by collectors. The larvae of the apollo butterfly feed on the *sedum* plants which are common across the grasslands. However, the mature butterfly feeds off flowering plants. The distribution of this butterfly is therefore restricted to areas where both *sedum* and flowering plants are found in proximity. Given its limited distribution, and the difficulty associated with establishing supplementary suitable habitats, this is a concern and needs further investigation during project development and project ESIA stage.

Figure 4.1: Apollo Butterfly



Since these are both protected species, in order to satisfy the intention of the Law on Nature Protection and the Habitats Directive, the ski centre project must take steps to investigate the distribution and likely Project effects on both species, and enact measures to avoid where possible. Where avoidance is not possible, then steps should be taken to reduce the effect of the Project. Where a residual effect remains, and further avoidance and minimisation is not possible, other investigations need carried out to explore practical options to offset the remaining loss.

One further possible effect on ecology may arise from changes in the hydraulic regime from the use of artificial snow. The increase of run off from the mountain during the winter, and the alteration in the seasonality of this run off will induce changes in the quantity and timing of surface water run off. This may affect plants and animals on the higher slopes, as well as those which depend on the run off in the streams and gullies further down the mountain. The detailed effects and their significance are not yet clear, and need further investigation at a project level, as some alteration of the ecological balance may result.

Other effects of the ski centre include:

- Landscape and visual impacts from the scheme, including as a result of the cleared areas of forest for the pistes, which will be visible throughout the year from parts of the coastal road along Lake Ohrid, and some from the Prespa side. The presence of some restaurants and other infrastructure will be visible from parts of the coastline, and the ski areas will be particularly visible from certain viewpoints and slopes at altitudes within the Park. At lower levels, development of new urban areas at Gradiste, Upper Peštani and at Lake Prespa, will impact the largely undeveloped nature of the shoreline. These effects are of particular concern in this setting, given its designation of a World Heritage Site for reasons of its '*superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance*'. The development of a highly visible ski facility in a National Park, which is part of a UNESCO World Heritage Site created partly for reasons of its dramatic landscapes, conflicts with the purposes of establishing the Park and the designation as World Heritage Site.



- Cultural heritage resources are at risk from disturbance - e.g. dust, noise and vibration, and the risk of contractor infringement of cultural properties - during construction. Also, the increase in visitors to the Ohrid coastline – and to an extent, the Prespa shoreline – will also put pressure on the management of the cultural and natural heritage of the area, with likely increase in visitors to the various heritage sites.
- There will be a potential socio-economic benefit from increased employment during construction, and from operation of the ski centre. The main effect will be the number of hospitality jobs created in the area once the ski facilities are up and running. One of the key characteristics of the area is the out-migration of young people to other parts of Macedonia for work. Development of a ski/hiking/biking industry in Galichica would reduce out-migration, and would be positive for the local economy.
- Additional pressures on PINPG, from increased needs to monitor effects and manage resources.

Measures to reduce these impacts, which should be considered for the impacts to ecology include:

- If the Ski Centre is to go ahead at the proposed location, some modifications to its design would significantly reduce the impact on the protected habitats. For example, elimination of the Nordic Ski Area would significantly reduce the impact on protected habitats. In particular, 126 hectares of alpine and subalpine calcareous grasslands, 92 hectares of *juniperus communis*, and 12 hectares of *Fagus sylvatica* beech forest would be saved.
- Alterations to the layout of the scheme could reduce the impact on the *Crocus cvijicii*. It is possible that a slight revision of the land take of the main ski area would reduce much of the loss of habitat of this species.
- The area of distribution of the Apollo Butterfly and its habitat should be further investigations, to see if any alteration to the land take of the ski project can be made to reduce the loss of habitat of this species.
- A study is needed on the possible effects of the use of artificial snow. The study should address: the effects on ecology and hydrology of prolonging the snow season; risks from additives in the water used to form the snow; water demand and possible water sources; and the effect on groundwater quality, quantity and other water users.
- The adoption of low visual impact design guidelines may reduce the visibility and intrusion caused by the buildings and other infrastructure on the mountain. Design measures could include: the use of natural materials and a natural colour scheme; careful design of lighting to reduce visibility outside of skiing areas.
- Additional support to PINPG to allow it to manage the risks from construction and operation of the road scheme, and to monitor the ongoing effects on the Park's resources.

Even after applying measures to reduce impacts, some effects remain. Significant areas of European level protected habitats will be lost, and will need to be offset, in order to satisfy the Habitats Directive. With the current design based on the available data, the loss of the following resources will need to be offset:

- Alpine and subalpine calcareous grasslands, 319 hectares;
- Common Juniper formations, 106 hectares;
- Beech Woods, 87 hectares.



4.2 A3 Expressway Ohrid – Peštani Project

The main impacts of this scheme and proposals are:

- Direct impacts on forest habitats and species from construction of road, and from its operation.
- Destruction of part of oak-hornbeam forest communities along coastline. However this type of forest is widely distributed in Macedonia and is heavily modified / degraded along the Ohrid coastline. Further assessment of this habitat type is required at a project level to determine mitigation and any offsetting measures required.
- Potential severance of of important ecological corridors used by animals to move from higher elevations on Mount Galichica to Lake Ohrid. This includes the Crno Brdo area (near to Konjsko, and affected by construction of the Ohrid – Peštani section).
- Effects on cultural and natural heritage from the road scheme, including those related to impacts on the landscape and views, which will impact the 'area of exceptional natural beauty and aesthetic importance', risks to the heritage resources from construction disturbances and increased traffic, and ongoing disturbances from noise, emissions, lights and from indirect effects such as increased growth of urban areas.
- The potential socio-economic benefits from increased employment during construction, and from any further developments that result.
- Additional pressures on PINPG, from increased needs to monitor effects and manage resources.

Measures to reduce these impacts identified in the SEA include the review of the technical solutions under part of the Crno Brdoto reduce/avoid visual and biodiversity effects, and the creation of underground passages for animals. Potential risks to the World Heritage Site's outstanding universal value, which should be addressed in the heritage impact assessment, may require additional scheme refinements. Additional support to PINPG is required to allow it to manage the risks from construction and operation of the road scheme, and to monitor the ongoing effects on the Park's resources.

4.3 A3 Expressway Peštani to the Albanian State Border Project

The main impacts of this scheme and proposals are:

- Direct impacts on forest habitats and species from construction of road, and from its operation. This includes destruction of 84 hectares of the Macedonian Oak forest between Peštani and State Border. This species is an important Balkan endemic and is listed as an Annex I Habitat in the EU Habitats Directive. Its loss is to be avoided.
- Destruction of part of oak-hornbeam forest communities along coastline. However this type of forest is widely distributed in Macedonia and is heavily modified / degraded along the Ohrid coastline.
- Severance of important ecological corridors used by animals to move from higher elevations on Mount Galichica to Lake Ohrid. These include Evil Canyon an important corridor which passes through the Macedonian Oak forest mentioned above.
- Effects on cultural and natural heritage from the road scheme, including those related to impacts on the landscape and views, which will impact the 'area of exceptional natural beauty and aesthetic importance', risks to the heritage resources from construction disturbances and increased traffic, and ongoing disturbances from noise, emissions, lights and from indirect effects such as increased growth of urban areas.



- The potential socio-economic benefits from increased employment during construction, and from any further developments that result because the planned projects go ahead.
- Additional pressures on PINPG, from increased needs to monitor effects and manage resources.

Measures to reduce these impacts, which should be considered for the impacts to ecology include the redesign of the Peštani - State Border Road Scheme to avoid (or reduce land take from) the Macedonian Oak forest, which would eliminate the fragmentation and destruction of this important habitat, and also preserve the ecological corridor. Other measures could be included in the detailed design, to reduce landscape impact and nuisances from traffic. This should include reevaluation as to whether the expressway along this section needs to be the current capacity proposed and whether the route should utilise the existing road corridor to reduce disturbance effects on the natural beauty and biodiversity resources of the area.

Potential risks to the World Heritage Site's outstanding universal value, which should be addressed in the heritage impact assessment, may require additional scheme refinements.

Additional support to PINPG is required to allow it to manage the risks from construction and operation of the road scheme, and to monitor the ongoing effects on the Park's resources.

Even after these measures, some important effects will remain. These include the need to offset any loss of biodiversity related to destruction of 84 hectares of Macedonian Oak habitats.

4.4 Tourism Development Zones

Concerns over the effects of the three Tourism Development Zones on ecological resources include:

Ljubanishta Tourism Development Zone is divided into three components – Ljubanishta 1, 2 and 3. Ljubanishta 3 poses risks to the ecological biodiversity St Naum Springs, which is part of NPG's Zone of Strict Protection. Any additional plans to develop tourism facilities in this area are of concern. In this case, avoidance is recommended. According to the Spatial Development Agency, the Ministry of Transport and Communication (who is responsible for this Tourism Development Zone initiative), may have decided not to develop Ljubanishta 3, although this has yet to be confirmed in writing. It is strongly recommended that this area is not rezoned and that plans for the development of Ljubanishta 3 are withdrawn.

The proposed **Stenje Tourism Development Zone** is located on the shore of Prespa lake, immediately adjacent to the Stenje marsh, which is a unique area of saturated ground, whose water levels and aerial extent rise and fall with the level of Prespa lake. It has been declared a Zone of Strict Protection, due to the high number of endangered and endemic species. The marsh is surrounded by a Buffer Zone, extending 50 metres from the border of the Zone of Strict Protection. The proposed Tourism Development Zone extends into the Buffer Zone. Should this development go ahead, there are risks to the hydraulic and groundwater regime around the wetland, as construction between the wetland and the lake will require excavations and dewatering, which risks lowering the water levels at the wetland, and possibly causing irreversible ecological damage and loss of biodiversity. Increased visitor numbers will introduce an element of new disturbance, and bring the risk of trampling small plants and animals and introducing litter. This wetland is regarded as important and unique in the area, and the risk to it is highly significant and will be difficult to mitigate adequately. Both the breach of the Buffer Zone, and that the development of Stenje Tourism Development Zone will include significant adverse risks to the biodiversity of the wetland. Avoidance of this area, by relocating the Tourism Development Zone away from the marsh, is strongly recommended.

Oteshevo Tourism Development Zone is a proposed development of accommodation and tourism infrastructure on an area of 59 hectares located on the southern slopes of Sirhansko Kale Hill, on the edge of Prespa Lake. The entire area is populated by a Hungarian Oak forest. This is part of a Zone of



Active Management, and although partly damaged by past fires, is reported to be recovering and in good condition. As part of the Zone of Active Management, it is not part of the Park's firewood collection plans. Loss of this area of forest will reduce the total amount of oak forest in the Park, however its effect on biodiversity within the Park will probably not be significant.

In addition, the key risks to the cultural and natural heritage of the area from the TDZs are:

- Irreversible threats to the St Naum spring and its unique ecosystem and biodiversity from development of the Ljubanishta 3 Tourism Development Zone;
- Irreversible loss or damage to the Stenje Wetland and its unique ecosystem, from development of the Stenje Tourism Development Zone at the proposed location.

Either of these reduces the uniqueness and variety of the Park's natural features and is considered a significant adverse effect which should ideally be avoided.

Cultural heritage resources are at risk from disturbance e.g. dust, noise and vibration, and the risk of contractor infringement of cultural properties - during construction of the buildings and facilities for these Tourism Development Zones. Air pollution can cause deterioration of buildings and monuments, and vibration and cause damage to buildings and sites. The increase in visitors to the Ohrid coastline and Prespa shorelines will also put pressure on the management of the cultural and natural heritage of the area, with likely increase in visitors to the various heritage sites, such as the St Naum springs, the monastery of Sveti Arhangel Mihail, and the monastery complex of Saint Bogorodica of Zahum, located on the Lake Ohrid shoreline. If the additional visitors are not managed well, the pressure on both cultural and natural resources is likely to have a significant adverse effect.

A key benefit will arise to the local economy, as the tourism developments are designed to accommodate additional visitors in the Park area, and will provide employment, temporarily during construction, and permanently once they were operating. There will be a significant knock on effect in the wider economy from the demand for goods and services. This is an important potential positive benefit, even if, as has been suggested, only Ljubanishta 1 and 2, and Oteshevo Tourism Development Zones go ahead.

There will also be additional pressures on PINPG, from increased needs to monitor effects and manage resources.

Measures to reduce the impacts on biodiversity should be considered for the impacts to ecology including:

- Confirming the decision not to go ahead with the Lubanishta 3 development, and to either cancel or relocate the development at Stenje;
- If the above mentioned two Tourism Development Zone project components are not cancelled, then the project designers must make rigorous consideration of the risks to the adjacent environmental resources in each case, and must build comprehensive mitigation measures into the project design to address the risks. The proposed controls and the remaining risks should be assessed by the Project ESIA in each case. The aquatic biodiversity of the Sveti Naum spring, and the Stenje marsh should receive particular attention. Any the loss of biodiversity will need to be offset – however these are unique features and offsetting would not be possible within the Park;
- The loss of the Hungarian Oak forest as a result of the Oteshevo Project cannot be mitigated except by avoidance, and biodiversity offsets would be needed to offset the loss.

To address the key risks to cultural and natural heritage, the projects need to ensure that appropriate levels of protection are put in place for heritage assets, with detailed mitigation and monitoring to ensure that the outstanding universal value is protected. Requirements may include: measures to preserve any nearby historic buildings, archaeological sites and other culturally important features; design guidelines to ensure that developments create places, spaces and buildings that work well, wear well and look



appropriate for the area, and to require that the design of the scheme values and protects diversity and local distinctiveness; and measures to protect and enhance the landscape where possible, particularly in designated areas.

Additional support to PINPG will be needed to allow it to manage the risks from construction and operation of the road scheme, and to monitor the ongoing effects on the Park's resources.

Even after applying measures to reduce impacts, there are some significant residual effects, namely:

- Loss of unique aquatic biodiversity in Sevt Naum Spring, if Lubanishta 3 goes ahead;
- Threats to the ecological integrity of the Stenje marsh, if Stenje Tourism Development Zone3 goes ahead;
- The loss of 59 Ha of Hungarian Oak for the Oteshevo Tourism Development Zone scheme, which needs to be offset.

Also, potential risks remain to the outstanding universal value, which will be addressed in the heritage impact assessment, and may require some alterations to the scheme design and its components.

4.5 Impacts of Rezoning of Park

The effect of each project on the Park's current zones means that a total of 604 hectares from within the Zone of Active Management needs to be reduced in status to the Zone of Sustainable Usage. The Amended Management Plan seeks to compensate for this by upgrading an area of 854 hectares of alpine and subalpine calcareous grassland in the north of the Park from the Zone of Sustainable Use to the Zone of Active Management.

The reduction in protection status associated with the re-zoning will permit a number of damaging activities in areas where they are currently prohibited. The reduction in protection levels means that PINPG's ability to protect these areas is weakened, even if some of the projects don't go ahead. This is regarded as a threat to biodiversity management and has potential implications for conservation of certain biodiversity features within the Park as a whole. However proposals to mitigate some of the impacts of rezoning have been presented in the SEA.

4.6 Cumulative Impacts

There is the potential for the planned development projects to have combined impacts on the environmental and social receptors and resources in the Galichica area. The combination of the planned development projects have the potential to affect:

- Key habitats, as the particular habitats affected by each project are different;
- Key species, from cutting-off and closing-in the habitats of some mammals; increasing overall disturbance in the Park and from putting pressure on species from habitat loss and urban development;
- The cultural and natural heritage of the Park area and its UNESCO World Heritage Site designation, from urban development along the shoreline, pressure on cultural heritage resources from dust and vibration and increased visitor numbers putting pressure on cultural sites;
- The local economy from provision of temporary employment and demand for goods and services;
- The quality of the environment, from air quality, noise and surface water quality impacts;
- PINPG resources, which are already stretched and the projects will put additional pressure on PINPG.



Although the entirety of the Park lies within Macedonia, its southern border is also the national border with Albania and several of the key features of the area are shared, including the Galichica mountain range (Macedonia and Albania); Lake Ohrid (Macedonia and Albania); and Lake Prespa (Macedonia, Albania and Greece). Any impact on a resource which crosses jurisdictions becomes a “transboundary impact”, and the following may occur due to the amended Management Plan:

- Transboundary impacts on ecological resources on Galichica Mountain;
- Changes in lake water quality;
- Landscape and visual effects;
- Increased traffic and greater cross-border tourism.

5. Offsets and Compensation Measures for Residual Effects

Some of the losses to habitats and species arising as a result of the proposed projects will not be sufficiently mitigated by the measures outlined. These relate mostly to biodiversity impacts, associated with the loss of certain habitats and species. Under the Habitat Directive and in line with good international practice, such Project-generated losses must be offset by equivalent gains to achieve the agreed “no net loss” (NNL) policy.

The table below summarises the biodiversity offsets that must be applied by the Project proponents in order to meet the Habitat Directive. This is based on the data available to the SEA and on the National Park Galichica from PINPG. The project level studies which require **field surveys of the affected areas may identify additional key habitats and species that after the application of the mitigation hierarchy required offsetting measures to be identified**. Implementing these will require significant additional study, and the mobilisation of resources and funding by the Project proponents, in corporation with PINPG. Long term monitoring will also be required.

Some impacts to biodiversity (habitats and species) cannot be offset – e.g. effects on the unique resources associated with Sveti Naum.

As is clear from Table 5.1, a number of aspects of the habitat loss cannot be offset within the Galichica National Park. For these, appropriate habitats to offset must be identified elsewhere, and agreements made with landowners, local authorities, and other agencies, in order to establish the required offset of habitat loss. Other forests habitats, after further research at a project level, may require compensation to be applied – offsetting of forest habitats within the Park is very challenging, especially due to financial reliance of PINPG on forestry activities.

Table 5.1: Summary of SEA Identified Offset Actions – Others may be identified within the Project Level ESIA⁸

Habitat Type	Offset Needed	Potential Offset Area	Management Action	Residual
Galichica Ski Centre				
Alpine and sub-alpine calcareous grasslands, HD 6170	1,344 ha upgraded by 1 Condition Level	An area of 1,600 ha identified in north of Park, with potential for improvement.	Allow managed grazing to occur within this demarcated area, to reduce success of other plants and maintain grassland.	None <i>assuming management actions etc are implemented effectively.</i>
Common Juniper, HD 5130	541 ha	An area of 541 ha identified in north of	PINPG to take action (fencing, signage,	None <i>assuming management actions</i>

⁸ The offsets to **key** habitats as anticipated by the SEA is based on the available data – it may be identified during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors are identified, additional impacts and mitigation determined and that additional residual effects may be identified. As a result, some of these key habitats may require additional offsetting measures (e.g. for **site specific species**).



Habitat Type	Offset Needed	Potential Offset Area	Management Action	Residual
		Park, with potential for improvement.	patrols, etc) to prevent grazing in this area, to allow juniper to establish.	<i>etc are implemented effectively.</i>
Beech Forests HD 91K0 Beech	783 ha	An area of around 300 ha is identified in the north of the Park, which has the potential for improvement.	PINPG places this area into active management, and devotes resources to managing the area (currently, no resources available to monitor and manage area).	Offset identified is insufficient. An additional 484 ha of offset needs to be identified outside the Park
A3 Expressway: Ohrid to Peštani section				
No offsets identified within SEA level assessment (see footnote).				
A3 Expressway: Peštani to Albanian State Border section				
Macedonian Oak	504 ha upgraded by 1 Condition Level	220 ha Macedonian Oak forest identified as having potential for improvement (within a total area of 400 Ha).	PINPG removes this 400 ha area from its firewood production plan. Not recommended unless compensatory support to PINPG is available.	This offset is effectively not achievable within the Park. Therefore an offset area of 504 ha needs to be identified elsewhere.
Ljubanishta TDZ				
Component 1 & 2: No offsets identified within SEA level assessment (see footnote).				
Component 3: The assessment identified a significant residual effect arising as a result of Ljubanishta3TDZ component. However, since the biodiversity effected includes unique aquatic habitat and endemic species it is not considered appropriate or possible to offset this loss.				
Stenje TDZ				
The assessment identified significant residual effects arising as a result of Stenje TDZ. However, since the biodiversity effected includes unique aquatic habitat and endemic species it is not considered appropriate or possible to offset this loss.				
Otoeshevo TDZ				
Hungarian Oak	540 ha upgraded by 1 condition level	540 ha available to south of Oteshevo, identified as having potential for improvement.	PINPG removes 540 ha of Quercetumfrainetto from its firewood production plan. Not recommended unless compensatory support to PINPG is available.	This offset is effectively not considered achievable within the Park. Therefore an offset area of 540 ha needs to be identified elsewhere.

6. Monitoring Plan

The implications of the proposed amendments to the Management Plan for PINPG's monitoring programme are significant and are covered in the Amended Management Plan. The SEA recommends monitoring for key habitats for each development project.

During construction of the projects, PINPG will need to liaise with the Project to ensure that monitoring is as planned. After construction, PINPG will need to expand its routine monitoring activities to include



specific monitoring actions designed to monitor the key resources under threat from each development and the implementation of the amended Management Plan.

PINPG will need significant additional resources to carry out monitoring and management tasks necessary to address the threats arising from the amendments to the Management Plan. To address this need, it is recommended that PINPG will need to consider establishing a Monitoring Unit within the Department for Conservation of Nature. However, this will be dependent on resources being made available from the State Budget and/or at the project level.

7. Public Consultation and Disclosure

Disclosure, public participation and public hearings have been held for the original draft Amendments to the Management Plan (in 2014) and the draft SEA (in 2015). Based on the comments received, further consultation has been carried out with key stakeholders and remarks and comments received have been considered during the preparation of this revised SEA.

This Non-Technical Summary (NTS) is part of the disclosure package of the revised SEA.

The SEA and Non-Technical Summary are to be disclosed on PINPG website: www.galicica.org.mk

Comments can be sent to:

Public Institution Galicica National Park

Velestovski pat bb

6000 Ohrid

Republic of Macedonia

e-mail: galicica@galicica.org.mk

www.galicica.org.mk

Contact person: Andon Bojadzi

The date of the Public Hearing and closing date for comments will be advertised in the Ohrid News and stakeholders who submitted written comments on the previous draft will be informed.



1. Introduction

This is the *revised* Report for the Strategic Environmental Assessment (SEA) of the *draft* Amendments to the National Park Galichica Management Plan (*herein referred to as the 'Amendments to Management Plan' report or 'AMP'*), prepared pursuant to the Decision on implementing a strategic assessment no. 02-273, from 26. 09. 2014 by the Public Institution National Park Galichica (PINPG), and adopted pursuant to provisions contained in the Macedonian *Law on the Environment*¹. The SEA is being carried out to fulfil the requirements of the *Law on Environment* and the European Union (EU) *SEA Directive 2001/42/EC*.

1.1 Background

National Park Galichica (*hereinafter referred to as 'the Park' or NPG*) was proclaimed in 1958, with the aim of preserving the flora and fauna heritage and the natural appearance of Mount Galichica. Today, the Park and its surroundings are recognised as an important resource for biodiversity and cultural heritage in the region. The Park has attracted several international designations including as an UNESCO World Heritage Site², an Emerald Site, an Important Plant Area, a Prime Butterfly Area and recently in 2014 being declared as part of the Ohrid-Prespa Watershed Transboundary Biosphere Reserve (TBR) within the UNESCO 'Man and Biosphere' (MAB) Programme.

The Park is managed by the PINPG. Under the requirements of Article 73 of the *Law on Nature Protection* (O.G. of RM No. 67/04 and amendments³) PINPG began developing in 2008 the National Park Galichica Management Plan (MP) (2011-2020). The objective of the MP was to:

- describe the origin and features of the natural values in the Park area;
- to set goals and priorities regarding their conservation;
- to design a realistic plan for achievement of the goals over a 10 year period.

The MP development process began in 2008 with significant financial and technical assistance from the Government of the Federal Republic of Germany, through KfW. The National Park Galichica Management Plan (2011-2020⁴) was approved in 2011.

In September 2013, the Government of Macedonia issued a directive that the MP was to be amended to take into account several planned development projects (see Section 1.2). These development projects were planned within the Park area but had not been taken account of in the development of the MP. In 2013 PINPG initiated a process of amending the MP following a decision by the NPG Management Board. Draft amendments were made to the MP with several changes to chapters and the revision of the Park's zoning. PINPG and the Ministry of Environment and Physical Planning (MoEPP) organised public debates on the draft amendments to the MP during January 2014. A deadline for submission of comments was set and public debates were held in Ohrid and Stenje on 09.01.2014 and 10.01.2014 respectively.

In May 2014 the Government determined that a SEA of the draft Amendments to the MP was required to be undertaken. A *draft* SEA was prepared⁵ and submitted to the MoEPP. The *draft* SEA was submitted to 55 stakeholders for comment and a Public Hearing was held in January 2015. The Governments of Greece and Albania were also invited to provide comments given the transboundary context of the National Park Galichica. In response to the consultation process a number of concerns and comments were received from stakeholders on the *draft* SEA. Stakeholder comments are summarised in Chapter

¹ Law on Environment (O.G. of RM No. 53/05, 81/05, 24/07, 159/08, 48/10, 124/10, 15/11, 123/12, 93/13, 42/14, and 44/15).

² Two thirds approximately of the NPG falls within the UNESCO World Heritage Site

³ Law on Nature Protection (O.G. of RM No. 67/04, 14/06, 35/10, 47/11, 148/11, 59/12, /13, 163/13 and 41/14).

⁴ Some figures within the NPG Management Plan state the time period as (2010-2020), however the final version of the Management Plan was approved in 2011.

⁵ Draft Report for Strategic Environmental Assessment for: Draft Amendments to the Management Plan for National Park Galichica for the Period 2011-2020: Technical Report; 0903-1127/3 (November 2014) – prepared by Civil Engineering Institute "Macedonia" JSC (CEIM).



11, they included an overriding theme that some stakeholders wanted the SEA to pay more consideration to the impacts of the projects that had resulted in the amendments to the Management Plan and on the compatibility with legislation and standards (e.g. IUCN categorisation) of implementing projects in a National Park with the current status of protection. Remarks were made regarding nature conservation effects and the effects on the UNESCO man & biosphere reserve status specifically and potential for objections from other stakeholders regarding potential effects on this designation.

Following review of the comments received the PINPG made the decision in March 2015 to withdraw the *draft* SEA report from the MoEPP. PINPG informed the MoEPP that having in mind the stakeholder comments, and specifically the letters received from two international financial institutions (KfW and the European Bank for Reconstruction and Development [EBRD]), they considered it necessary that the *draft* SEA report be revised to fully address the issues raised by stakeholders and then be resubmitted to the MoEPP for their approval. To expedite the preparation of the *revised* SEA the EBRD provided technical assistance to PINPG by engaging a consultant (*Citrus Partners LLP* [*'Citrus'*] and a team of Macedonian experts) to support PINPG in finalising revisions to the SEA and AMP.

This document is the draft of the *revised* SEA (*hereinafter known as the 'revised SEA'*) and is being prepared for disclosure to the stakeholders, a Public Hearing and then for submission to MoEPP for approval in accordance with the *Law on Environment*.

1.2 Rationale for Proposed Amendments to the Management Plan

The amendments to the MP of NPG for the period 2011-2020 were prepared during 2013-2014 at the request of the Government of the Republic of Macedonia for the purposes of enabling the construction of the following planned developed projects which had not been accounted for when the MP was originally prepared:

- A3 Expressway Ohrid to the Border with the Republic of Albania;
- Ski Centre in NP Galichica;
- 'Ljubanishta' Tourism Development Zone;
- 'Oteshevo' Tourism Development Zone;
- 'Stenje' Tourism Development Zone.

As noted, above a draft AMP was prepared and disclosed publically and subject to public debate. A *draft* SEA was then prepared, disclosed to stakeholders and subject to a public hearing. In light of the comments received on the *draft* SEA and updated information on the planned development projects in the Park there have been further amendments to the AMP during the preparation of this *revised* SEA which are also summarised within this report. The *revised* draft AMP⁶ will also be made available during the disclosure and public hearing process for the *revised* SEA. Following submission of the *revised* SEA to the MoEPP (Sustainable Development Department) the *revised* draft AMP will be submitted to the MoEPP (Nature Conservation Department) for approval. Following approval of the *revised* draft AMP by the MoEPP it will be submitted to the NPG Management Board for final ratification.

1.3 This Document & Its Structure

This *revised* SEA on the *draft* AMP for the National Park Galichica for the period between 2011-2020 has been prepared pursuant to the Decision on implementing a strategic assessment no. 02-273, from 26. 09. 2014 by the PINPG, and adopted pursuant to provisions contained in the *Law on the Environment*.

The *revised* SEA is being conducted on the *draft* AMP for the Park which was prepared by PINPG at the request of the Government of the Republic of Macedonia. The purpose of the AMP is to take into account

⁶ Draft AMP documents showing track changes.



information on the Park's assets, information on the proposed development projects, and the changes in the zoning proposed to enable the implementation of the projects, while minimizing the negative influences on the key natural assets of the Park. Further details on the original Management Plan and the draft amendments are presented in Chapters 3 & 4.

The *revised* SEA and the AMP sits within the framework of a number of other plans and programmes which relate to the Park and the wider area. An analysis of the planning context to the AMP is presented in Chapter 4.

The *revised* SEA is reported in the following sections:

- *Chapter 1: Introduction:* the section includes the background, the key principles and rational to the update of the AMP and preparation of the SEA, a summary of the SEA and AMP preparation process, the assessment methodology and presents the SEA team.
- *Chapter 2:* summarises the national and international SEA legal and policy framework.
- *Chapter 3:* provides the legal and planning context to the Galichica National Park.
- *Chapter 4:* presents the proposed amendments to the Management Plan and the description of the planned development projects which are the basis to the amendments. This Chapter provides an analysis of the planning context to the AMP and this SEA.
- *Chapter 5:* provides the environmental and socio-economic baseline for National Park Galichica, including: geographical features; hydrology and hydrogeology; climate; biodiversity (ecological and biological features); quality of environment (air quality, noise, water quality etc.); socio economics (including communities, infrastructure, employment and livelihoods, land use etc., community health, safety and security); and cultural and archaeological heritage.
- *Chapter 6:* provides the analysis of alternatives to the planned development projects and alternative management approaches.
- *Chapter 7:* provides the impact assessment including from the planned development projects and re-zoning and includes consideration of cumulative and transboundary impacts and effects to protected areas status. The Chapter concludes with a summary of potential significant impacts which require mitigation and management controls to be identified and implemented.
- *Chapter 8:* identifies recommended mitigation measures and management controls for potentially significant negative impacts and concludes with a summary of potential significant negative residual effects which require offsetting and compensation measures to be considered.
- *Chapter 9:* presents the approach to achieving No Net Loss to biodiversity and identifies the offsetting and compensation measures framework for the NPG and the planned development projects.
- *Chapter 10:* provides the environmental and social monitoring plans and recommendations for monitoring per planned development project. This Chapter also summarises the resourcing and funding implications and possible options for PINPG from implementation of the management and monitoring controls to deliver the AMP and identified in the SEA as a result of the planned development projects. As this Chapter presents the final set of recommendations for the planned development projects a high-level summary of the recommendations/requirements arising from the SEA to be taken on board during the planning and development of these development projects within the Park's boundary is provided.
- *Chapter 11:* summarises the public consultation and disclosure process for the SEA and AMP.

The SEA includes a standalone Non-Technical Summary and is supported by a number of Annexes.



1.4 Key Principles Addressed in the SEA

Strategic Environmental Assessment is required of all plans and programmes (as determined under the *Law on Environment*) which may have significant effects on the environment. The purpose of this SEA is to assess whether the Amendments to the MP (as a result of the planned projects) may have negative environmental effects and to consider alternatives to avoid or reduce these. The SEA plays an important role in producing the Amendments to the MP by informing the decision making process. The revised SEA has been prepared by an independent consultant team working closely with PINPG.

The key principles and requirements addressed during the preparation of the *revised* SEA and reflected in the assessment approach are summarised below:

- Meeting the following legal and policy framework (*see Chapter 2*):
 - Macedonian and EU SEA legal framework;
 - Relevant national environmental, social, health and safety laws and regulations, including national obligations under international law;
 - Relevant EU environmental standards including the pertinent requirements of the SEA, EIA, *Birds Directive* (2009/147/EC) and *Habitats Directive* (92/43/EEC);
 - EBRD's Environmental & Social Policy and Performance Requirements 2008 – *these requirements are generally in line with those of other International Financial Institutions.*
- Improved alignment with the National Park Galichica Management Plan (2011-2020), including the natural values, threats, visions and management objectives and strategies.
- Stakeholder comments and participation:
 - Review of the issues raised during the Public Hearings and addressing wider stakeholder comments received on the *draft* SEA (during January 2015);
 - Providing a process for stakeholders, including local residents affected by any of the planned developments, to participate in the NPG strategic and management planning process now and in the future.
- Incorporating into the SEA and AMP a clear commitment to the mitigation hierarchy and No Net Loss (NNL) of biodiversity in relation to future project development within the Park and the related rezoning of the Park. The EU *Habitats Directive* requires compensation for impacts on the Natura 2000 network. The Park is an Emerald Site and would likely be equivalent to a Natura 2000 Site. EBRD require NNL of biodiversity (habitats and species) and Net Gain where critical habitats/species are impacted. The Macedonian *Law on Nature Protection* is aligned with the EU *Habitats Directive*.
- Ensure the protection status of the Park is retained in line with the MP and legal framework. The levels of protection in the Park are regulated by zoning⁷ and the spatial plan. The planned development projects result in rezoning of a potential area of approximately 605 Ha⁸ of the Zone of Active Management (ZAM) to the Zone of Sustainable Use (ZSU). The estimated direct intrusion from the Project footprints is summarised in the table below. These figures include the proposed Nordic ski area on the central plateau of Galichica mountain as part of the Ski Resort. This Nordic ski area would potentially affect 221.5 Ha of ZAM. The ski lift to Prespa would also

⁷ There are 4 zones in the Park which are summarised in Section 3.6 of the SEA. The activities that can be performed in each zone are defined under the law and the MP. The four zones are defined as the Zone of Strict Protection (ZSP); the Zone of Active Management (ZAM); the Zone of Sustainable Use (ZSU) and the Buffer Zone (BF).

⁸ Please note this figure relates to the 'direct' footprint area of the planned projects and does not account for induced/indirect effects. Therefore the 'Area of Impact/Influence' in the SEA assessment is larger than the footprint to take account of the induced/indirect effects.



result in some additional loss of ZAM by the clearance of a corridor through the ZAM and the construction of structures to support the lift.

Table 1.1: Intrusion of Development Project ‘Footprints’ into National Park Galichica

Planned Development Project	Areas of Planned Development Projects (Hectares/ha)				
	Total Footprint in Park	ZSP ¹	ZAM	BZ ²	ZSU
TDZ Oteshevo	58.95	0	57.39	0	1.56
TDZ Stenje	7.92	0	0	5.0	2.92
TDZ Ljubanishhta	293.96	0	0.69	0.22	293.05
A3 Expressway	307.62	0	49.85	0	257.77
Ski Resort (including Central Plateau Nordic Ski Centre)	529.55	0	496.15	0	33.4
Total³	1,198	0	604	6	589

¹ Zone of Strict Protection (ZSP)

² Buffer Zone (BZ)

³ The total area of planned development projects in each zone have been rounded up to the nearest ha.

The AMP includes a proposal for additional changes to the protection zones, in particular a proposal to upgrade 854 Ha of grassland habitat in the northern part of the Park from the Zone of Sustainable Usage (ZSU) to the Zone of Active Management (ZAM), to compensate for the reduction in zoning level for the 604 Ha of ZAM to ZSU needed for the five planned development projects (see table above).

- Assessment of the planned development projects comprising:
 - Updated information on the planned development projects – based on available information from the Project Sponsors/Responsible Government agency;
 - Review and assessment of available baseline datasets to inform the assessment of negative and positive effects of the planned development projects within the Park and the amendments to the MP;
 - Review of alternatives considered during the development of the planned development projects as well as application of the mitigation hierarchy;
 - Development of mitigation measures, management controls and monitoring requirements.
- The AMP and SEA provide the framework within which development projects within the Park would be prepared and implemented. These documents therefore contain requirements for the planned (and future) development projects within the Park including:
 - Guidance for the minimum requirements for the Environmental Impact Assessments (EIAs)⁹ for development projects within the Park, such as:
 - the need to consider cumulative and transboundary impacts;

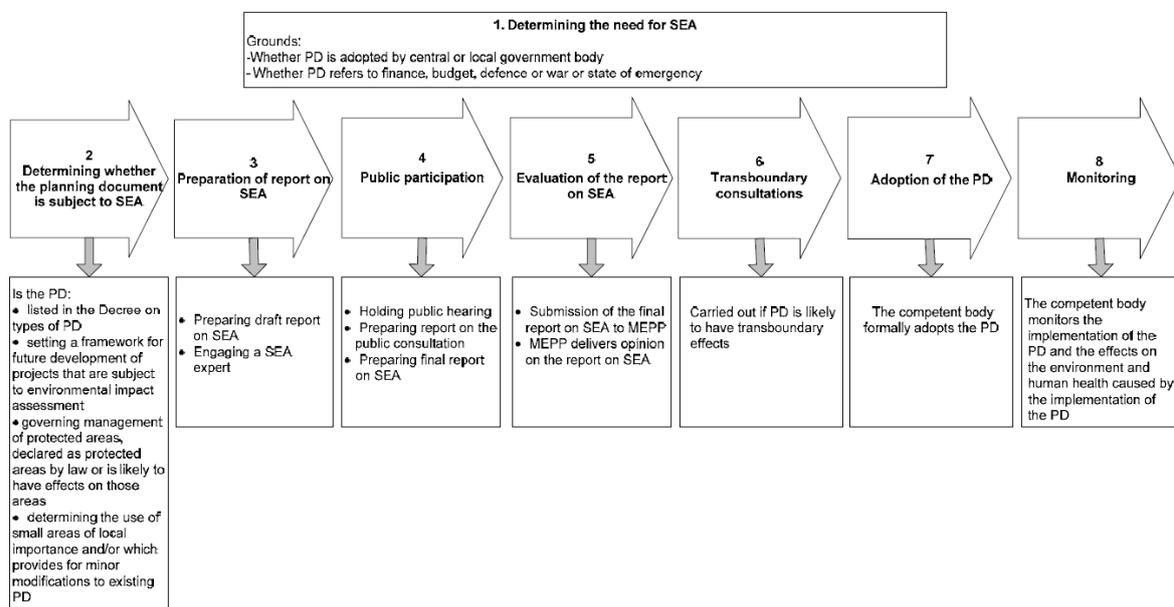
⁹ Macedonian legislation refers to ‘EIAs’, international standards also use the term ‘Environmental & Social Impact Assessments (ESIAs)’ these terms are used interchangeably in this SEA.

- commitment to the mitigation hierarchy, No Net Loss to biodiversity and as a last resort, offsetting/compensation for residual impacts in this regard;
 - monitoring requirements (during project planning, construction and operational phases etc.);
- Resourcing requirements/considerations to support the implementation and long-term management, monitoring and oversight of biodiversity (habitats and species) effects and offsetting/compensation measures;
 - Providing a framework for development plans/projects within the Park, including the criteria to scope and assess future development within the NPG. This framework set out in the SEA has informed the draft AMP and will inform the long-term visions and objectives for the NPG;
 - Clear conditions of acceptable activities within the Park, and within each management zone, and how these commitments should be incorporated into the EIAs for planned (and future) development projects within the Park.

1.5 Summary of the SEA Process

The SEA procedure in Macedonia is set out in the *Law on the Environment* and comprises a number of general steps as indicated in Figure 1.1 below.

Figure 1.1: Macedonian SEA Process¹⁰



This SEA has been developed in accordance with this procedure in principle. It has though involved the development of the original *draft* SEA subject to a Public Hearing and submission to MoEPP in January 2015. This draft SEA was withdrawn by PINPG in order to update the SEA and AMP in view of comments raised by stakeholders.

¹⁰ Source: MoEPP brochure prepared under the project "Supporting Strategic Environmental Assessment (SEA) practice in Macedonia" implemented in cooperation with the Netherlands Commission for Environmental Assessment and financially supported by the Dutch Government. The term PD in the process figure is an acronym for Planning Document.



PINPG have consulted with the MoEPP during the preparation of the revised SEA (meeting date 4th May 2015) and were advised the *revised* SEA report needs to be disclosed in draft and a Public Hearing held after a minimum of 15 days disclosure.

Table 1.2 below outlines the key steps in the overall development of the AMP and SEA and includes the planned disclosure and consultation process for the *revised* SEA:

Table 1.2: Summary of SEA & Process

Activity	Description
<i>Process already undertaken:</i>	
Need & Decision for Amendments to National Park Galichica Management Plan	Need to amend the Management Plan for the 5 development projects was discussed by the Government of the Republic of Macedonia at 2 sessions during 2013 (see Annex 1 – extract meeting minutes 24.06.13 & Annex 2 – extract from meeting minutes 03.09.13) – <i>Annex 1 forms the Government direction to PINPG to amend the MP.</i> The Management Board adopted the decision to launch the procedure to amend the MP on 02.09.13 (<i>Annex 4</i>).
Preparation of <i>draft</i> AMP	In 2013 PINPG initiated the process of amending the Management Plan. BIOEKO were selected to prepare the proposed Amendments to the MP during the period Oct 2013 to June 2014. Information on the projects was provided by the project sponsors/developers of the planning documents connected to these projects: Spatial Planning Agency (SPA) & Directorate for Technological Industrial Development Zones; Public Enterprise for State Roads (PESR); and Electricity Transmission System Operator for Macedonia JSC (MEPSO). The amendment process of the MP was implemented in line with the <i>Law on Nature Protection</i> and the interpretation by the MoEPP of the specific provisions under this law (i.e. Article 99 of the <i>Law on Nature Protection</i>).
Disclosure & Public Participation/Hearing of <i>draft</i> AMP	PINPG and the MoEPP (Nature Conservation Department) organised the public disclosure and hearing process between 19.12.13 and 22.01.14. This included 2 public meetings in the Municipalities of Ohrid and Resen (on 09.01.14 and 10.01.14 respectively).
Integration of comments and proposals from the Public Participation/Hearing into the <i>draft</i> AMP	The opinions, proposals and comments gathered during the public hearing process were then considered and integrated appropriately into the AMP. Subsequent to this process on the 09.06.14 MEPSO submitted to PINPG the final version of the Galichica Ski Centre & Master Plan; it was not possible at this stage to fully integrate the information within this updated document to the <i>draft</i> AMP. At this stage it was understood the additional features to the Ski Centre (e.g. Nordic Ski Area on Central Plateau of Galichica Mountain) did not potentially effect the protection regime in the Park – <i>However, during the revision of the SEA and updates to the AMP these changes have been reviewed in detail and additional information provided by MEPSO which have resulted in additional modifications being required to the AMP.</i>
Decision on need for Strategic Environmental Assessment of <i>draft</i> AMP	PINPG adopted the Government Decision No. 02-237 (dated 26.09.14) for the implementation of a SEA for the <i>draft</i> AMP according to the procedure and requirements contained within the <i>Law on Environment</i> .
Preparation of <i>draft</i> Strategic Environmental Assessment	PINPG contracted the Civil Engineering Institute “Macedonia” JSC (CEIM) to prepare the SEA.
Disclosure & Public Participation/Hearing of <i>draft</i> SEA – including Transboundary Consultations	The <i>draft</i> SEA was completed in November 2014. The draft was disclosed on the website of PINPG and an advert placed in the newspaper (i.e. Ohrid News). In line with the provisions under the <i>Law on Environment</i> and the <i>Decree on the public participation in the preparation of environmental regulations and other acts as well as environmental plans and programmes</i> (O.G. of RM No. 147/07) a Public Hearing was set for 22.01.15. The stakeholders who attended the Public Hearing and submitted written



Activity	Description
	<p>comments are summarised in Chapter 11 of this report.</p> <p>The <i>draft</i> SEA report was disclosed for 30 days and stakeholders had the right to submit comments within this period. The date for receipt of written comments was 31.01.15. Eleven written comments were received from stakeholders within the 30 day disclosure period and a further two sets of comments were received from PESR and the Ministry of Culture after this date and have been considered in the <i>revised</i> SEA.</p> <p>The Governments of Albania and Greece were also notified of the <i>draft</i> SEA and invited to provide comments. Representatives of the Albanian equivalent ministry to the MoEPP attended the Public Hearing.</p>
Integration of comments and proposals from the Public Participation/Hearing into the <i>draft</i> SEA	The <i>draft</i> SEA was updated following the public hearing and review of written comments from stakeholders.
Submission and subsequent withdrawal of <i>draft</i> SEA to MoEPP (Sustainable Development Department) by PINPG	<p>The updated version of the <i>draft</i> SEA Report was submitted on the 11.02.15 to the MoEPP for a formal opinion.</p> <p>However, following further review of the written comments regarding the <i>draft</i> SEA and specifically having regard to comments from 2 international finance institutions (i.e. EBRD and KfW) the PINPG in consultation with the Ministry of Transport and Communications, PESR, EBRD as well as representatives from the MoEPP determined the SEA needed to be revised further. PINPG therefore on the 12.03.15 submitted to the MoEPP a request to withdraw the SEA Report.</p>
Preparation of <i>revised</i> SEA following review of written comments received by stakeholders	To expedite the process of revising the SEA EBRD have provided technical assistance to PINPG by engaging a consultant to support them in finalising the revisions to the SEA and AMP.
Updates to <i>draft</i> AMP	A consultant (Citrus and a team of Macedonian experts) were engaged to prepare the revisions to the SEA and AMP. Meetings and engagements were held with the MoEPP (Sustainable Development and Nature Conservation Department) and the Government agencies responsible for the planned development projects (i.e. MEPSO, SPA and PESR) during the preparation of the <i>revised</i> SEA and updates to the AMP. A workshop was held in the Ohrid PINPG offices with the assessment team, a MoEPP representative and the representatives of EBRD & KfW. The Government agencies (MEPSO, PESR & SPA) were also invited to attend the workshop.
Disclosure and Public Participation/Hearing of <i>revised</i> SEA – including Transboundary Consultations	<p>The <i>Revised 'Draft'</i> SEA was submitted to the MoEPP and disclosed on PINPG's website during July 2015. A Public Hearing has been arranged at PINPG offices which is scheduled after at least 15 days from the date the document was disclosed. An advert will also be placed in the same newspaper etc. as the original <i>draft</i> SEA. The document including the Non-Technical Summary (NTS) has been made available in Macedonian and English and a Non-Technical Summary (NTS). The <i>draft</i> AMP will also be made available as part of the disclosure package.</p> <p>PINPG will also notify directly the stakeholders who provided written comments on the <i>draft</i> SEA of the <i>revised</i> SEA and Public Hearing.</p> <p>MoEPP have also been requested in a letter from PINPG to submit the Non-Technical Summary (Macedonian and English versions) to relevant transboundary representatives.</p>
<i>Process planned post disclosure of revised SEA:</i>	
Collation and review of public/stakeholder comments and integration of these into <i>revised</i> SEA and <i>draft</i> AMP	Following the Public Hearing and receipt of written comments the <i>revised</i> SEA and <i>draft</i> AMP will be updated.
Submit <i>final</i> SEA to MoEPP (Sustainable Development Department) for Approval	The <i>final</i> SEA will be submitted to the MoEPP (Sustainable Development Department) for formal opinion.
Submit updated AMP with <i>final</i>	The updated AMP will be submitted to the MoEPP (Nature Conservation Department) for



Activity	Description
SEA to MoEPP (Nature Conservation Department) for the purposes on obtaining their consent	formal opinion.
Adoption of the AMP by the NPG Management Board	Following receipt of formal positive opinion from the MoEPP (Nature Conservation Department) on the AMP the document shall be submitted to the NPG Management Board for formal adoption.

A summary of the legal requirements of relevance to the SEA are outlined in Chapter 2.

1.6 Assessment Methodology

Approach to Assessment

The approach to this strategic assessment is based on the Macedonian legal requirements, found in Article 65 of the *Law on Environment*, and more particularly in the *Regulation on the contents of the report on the strategic assessment of the environment (Official Gazette of RM no. 153/07)*. It also meets the requirements of the EU's SEA Directive 2001/42/EC. The legal framework of the SEA is explored more fully in Chapter 2. In summary, the assessment included:

- A comprehensive review of the *draft* SEA, the NPG Management Plan, Amended Management Plan, and consultation responses received on the *draft* SEA;
- Meetings and discussions with PINPG and other stakeholders in Macedonia (i.e. MoEPP (Sustainable Development & Nature Conservation Departments), MEPSO, PESR and SPA etc.);
- A review of baseline information included in the documentation and additional information held by the PINPG;
- Review of National Park Galichica Management Plan (2011-2020) to ensure better alignment with it in the SEA (e.g. *mitigation & monitoring proposals*) and AMP, including with regard to the natural values, threats, visions and management objectives and strategies;
- Agreement of biodiversity assessment criteria, and measures to compensate for the effects of the changes in the MP – this has included a high-level Appropriate Assessment style review of impacts on the Emerald network of which the Galichica National Park forms part on in the Republic of Macedonia;
- A site visit by the assessment team to the Park area;
- A technical workshop, held in Ohrid in May 2015.

The result is a document which blends the contributions of Macedonian ecological and SEA experts, the extensive knowledge and experience of the PINPG on the Park, together with international experts in biodiversity, environmental management, cultural heritage, social impact assessment, stakeholder engagement and the SEA process. The contributions made by the stakeholders during the consultation phase of the *draft* SEA and AMP have been taken into account during the revision of the SEA.

Assessment Team

The original *draft* SEA was prepared by Civil Engineering Institute “Macedonia” (CEIM) Joint Stock Company, Skopje.



This *revised* SEA has been prepared by a multidisciplinary team, building upon the work conducted for the *draft* SEA, and including team members from the *draft* SEA team, from PINPG, and other experts. The team included:

- Experts from the PINPG – Andon Bojadzi;
- Dr Svetozar Petkovski - Macedonian biodiversity and nature conservation expert (fauna);
- Dr Borka Kovacevik - Macedonian EIA and SEA expert;
- Dr Mitko Karadelev – Macedonian biodiversity and nature conservation expert (flora);
- Dr Joanna Treweek - international biodiversity expert;
- Marjan Mihajlov - Macedonian EIA and SEA consultant.

The team was led by the international consulting firm Citrus including:

- Liz van Zyl – SEA Team Leader;
- Dr Stephen McIlwaine – International SEA consultant;
- Clare Wyllys – International environmental and social consultant.

Scoping and Consultations

The key issues to be assessed were identified, based on:

- Issues raised in the various public meetings, including the public hearing and debates held in Ohrid and Stenje in January 2014;
- Concerns raised by PINPG;
- Expert judgement by the SEA study team.

As noted, this document is the *revised* SEA document which was modified based on comments raised by stakeholders at a Public Hearing held on the *draft* SEA in January 2015. More details on the consultations and issues raised are given in Chapter 11.

Approach to Developing Description of Projects and Alternatives

The assessment is concerned with the draft AMP, issued in July 2015. This AMP document contains the specific proposed changes to the Management Plan, including an outline of five planned development projects to be implemented in the Park, and the proposed re-zoning of the Parks management zones, needed to permit the projects to be implemented.

Consultations were held with the proponents of the five planned development projects, to collect documents and more detailed information on the five projects, including the various alternatives previously considered.

Internal workshops were held with the assessment team and PINPG to identify the main impacts from these projects.

Description of Baseline Environment

Information on the baseline social, physical and biological environment was collected using the data set already held by PINPG, and the assessment team. No additional field work or surveys were conducted. For most impacts, the Area of Impact was determined to be the area of NPG, and detailed data collection focused on the Park area. However, it is recognised that significant impacts on water quality could have effects throughout Lakes Ohrid and Prespa. Also, ecological changes affecting forests, larger mammals and certain other wildlife may also continue across the Park's borders, particularly towards the south.



Assessment Criteria for Key Habitats and Species

A key focus of the strategic assessment is the effect on biodiversity. A set of criteria were therefore developed by the assessment team and PINPG, in order to identify the key biodiversity features (habitats and species) that would be prioritised in the assessment:

Key Habitats:

- Included in the EU *Habitats Directive* – Annex 1 & Annex 1 Priority Habitats, including identifying specifically any high quality examples of above habitats;
- Core and suitable habitats for species that meet the criteria indicated below:

Key Species:

- Listed in EU *Birds Directive* (Annexes 1, 2.1 and 2.2);
- Birds of Conservation Concern (Red/Amber list and not based on IUCN criteria);
- Convention on Migratory Species if any relevant species likely to be present (Appendices 1 and 2, African-Eurasian Migratory Waterbird Agreement (AEWA), Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), Agreement on the Conservation of Populations of European Bats (EUROBATS));
- Included in the IUCN Global Red list at Vulnerable or above and including Data Deficient;
- Included in EU *Habitats Directive* (Annexes 2, 4 and 5), noting any priority species (priority species means species for the conservation of which the Community has particular responsibility in view of the proportion of their natural range which falls within the territory referred to in Article 2; these priority species are indicated by an asterisk (*) in Annex II);
- Nationally rare or declining species (Also with an IUCN status);
- Listed as a designated feature of any of the affected Protected Area Designations including the National Park / targeted by conservation measures in the National Park or other Key Biodiversity Area (KBA) designation;
- National or regional endemic species;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES appendices);
- CORINE (Coordination of Information on the Environment) list of threatened species;
- Emerald network species - Emerald Resolution No. 6, Appendix 1.

Impact Assessment

Assessment of Planned Development Project Impacts

Assessment of the impacts of each of the five planned development projects was based around consideration of the likely project activities during construction and operation. The aerial footprint of the projects was taken into account. However, when determining the footprint of project impact on vegetation, habitats and trees, a conservative approach was taken.

For example, when considering impacts of the road, a total land take of 150 m width along the entire length of the road was used to calculate destruction of vegetation, even though the road carriageway is only 14.5 m. This is to allow for the shelter belt, cuttings, embankments, temporary access, and for indirect impacts on the adjacent vegetation. In reality, much of this additional corridor, even where it is damaged during construction, will be restored again once the construction process is completed.



For the ski centre, including the Nordic ski area, the calculations allowed for a total destruction of all vegetation within the ski centre components footprints shown in Figures in Chapter 4, even though much of the area between ski pistes and outside the immediate corridor cleared for chair lifts and gondolas, will not be directly impacted, much of the natural vegetation will be retained, and some areas damaged during construction may be rehabilitated. This conservative approach allows for the indirect impacts from the summer and winter activities, and for the risk of some visitors/users straying outside the actual project footprint. This is in line with the precautionary principle applied to SEA and ESIA internationally.

This assessment is conducted at a strategic level, focusing on the strategic and macro-level impacts. Project impacts which are readily assessed and mitigation measures developed in project level ESIA's are mentioned, but are not the key focus of this assessment. A key question to be addressed at a SEA level, is whether any of the planned development projects impacts are not manageable at a project level. For biodiversity, this requires consideration of whether there is a risk of 'non-offsettable' impacts.

The impact assessment contains a 'high-level' Appropriate Assessment style review given the National Park Galichica forms part of the Emerald Network. A project-level Appropriate Assessment to meet the Macedonian *Law on Nature Protection* and the *Habitats Directive* will need to be carried out by the Project Developers/Sponsors at a project level. This is introduced in Chapter 7 but the summary table is presented in Chapter 9.

Assessment of Effects of Changes to the Park's Management Zones

Along with the five planned development projects, the amendments to the Management Plan include some proposed changes in the zoning regime, designed to reduce the prohibitions in the areas where the proposed projects are to be implemented. Although these are linked directly to each project, the effect of this rezoning is considered separately, as there are implications outside of the individual project effects.

Assessment of Cumulative Effects

Cumulative effects can result from the combined effects of individual impacts from a particular project (e.g. where noise, dust and visual impacts all act on the same receptor), or from the combined effects of several past, present or reasonably foreseeable future activities or projects in the same area acting in combination with the proposed project on the same receptors. Whilst an individual effect on a receptor/resource may not be significant, the resulting cumulative effect of combined impacts may be significant and require consideration of additional mitigation measures.

For this assessment, the only planned or reasonably foreseeable projects are those listed in the amended Management Plan (the five planned development projects), given the protected nature of the area, it is reasonable to assume that no other projects are likely to be implemented in the foreseeable future. The cumulative assessment considered which macro-level receptors are likely to be significantly impacted by each of the five planned development projects. For the receptors which had the potential to be affected by more than one project, an assessment was made of the likely combined effects. Given the varying or limited level of information available on some of the planned development projects, and the degree of uncertainty over the project activities and receptor responses at this stage, the cumulative impacts are assessed qualitatively using professional judgement.

Assessment of Transboundary Effects

Transboundary effects refer to those project impacts that may cause effects on environmental and social resources and/or receptors beyond the borders of the Republic of Macedonia, for example in Albania. Potential transboundary effects are identified and discussed, and recommendations are made regarding information exchange, notification and consultation with transboundary stakeholders.



Identification of Mitigation Measures

Application of the Mitigation Hierarchy

Where an impact is identified as potentially having a strategic effect, recommendations are made. These recommendations follow the mitigation hierarchy, whereby the first option is to avoid the impact, e.g. by alteration of one of the five planned development projects. Where avoidance is not possible or appropriate, recommendations are made to reduce the effect. These may include alterations to the project footprint or management, and in several cases, recommendations should go back to the Project Sponsor for consideration, before detailed design is affected. The application of the mitigation hierarchy also following the hierarchy for Appropriate Assessment for impacts on the Natura 2000 network under the Habitats Directive given the National Park Galichica is part of the Emerald network in the Republic Macedonia.

Some recommendations include issues to be taken up in the project ESIA's, including several recommendations for project reconfiguration, which must be re-considered by project Proponents. However, most impacts are best dealt with in the appropriate project Construction Environmental Management Plan (CEMP) or Operational Environmental Management Plan (OEMP). The SEA focuses on impacts which are not easily addressed at the project level, or which need to be addressed at a strategic level, or where there is a risk that it will not be possible to mitigate the effect within the current project proposal or the Park's management regime. However, for each project, specific issues which need to be addressed at the ESIA level are listed. It is important to note that the examination of a particular project in the SEA does not reduce the need for a rigorous project ESIA to be carried out.

Addressing Potentially Significant Biodiversity Residual Effects

In relation to biodiversity, where the SEA considers that a significant effect is not likely to be mitigated within the project design, recommendations are made to offset the loss of biodiversity. This applies to loss of biodiversity resources which are particularly conservation sensitive. To comply with the EU *Habitats Directive* and EBRD's Performance Requirement 6 the impacts on the 'Emerald' network and loss of certain habitats must be offset by commensurate gains. Several of the five planned development projects will cause loss of habitat, and the SEA has examined how these losses could be offsets by management actions within the Park. The detailed approach to determining biodiversity offsets is described in detail in Chapter 9.

The Emerald Network is based on the same principles as the Natura 2000 network, and represents its de facto extension into non-EU countries. The *Habitats Directive* requires for a Natura 2000 site for an assessment to show that proposed changes do not have any adverse effect on the site as a whole and its ecological functioning. If proposed developments have an effect on the Natura 2000 network then an 'Appropriate Assessment' (AA) under the *Habitats Directive* would be required- see *Chapter 2 for further information on AA*.

Part of the AA process under the *Habitats Directive* requires compensation for impacts on the Natura 2000 network, which the Emerald sites are viewed as a de-facto extension to in non-EU countries. For the purposes of this assessment the 'No Net Loss' (NNL) objective for biodiversity and compensation for impacts on the Galichica National Park (Emerald Site) is being applied – see Chapter 9.

Stakeholder Involvement

Some of the recommendations on reduction of project effects will require the involvement of a wider group of stakeholders outside the Park. This may include: other government agencies, local authorities, international donors and financial agencies, private landowners, etc. Several recommendations relate to activities which should be carried out by PINPG.



Amendments to Park Management Plan

It should be noted that the Park Management Plan has been further amended to address a number of the recommendations made in the SEA. Specifically, the revised Management Plan has a section on the commitment to *No Net Loss of Biodiversity*, and the need to reduce project impacts and offset biodiversity losses. The AMP also includes a proposal for additional changes to the protection zones, in particular a proposal to upgrade 854 Ha of grassland habitat in the northern part of the Park from the Zone of Sustainable Usage (ZSU) to the Zone of Active Management (ZAM), to compensate for the reduction in zoning level for 604 Ha of ZAM to ZSU needed for the five planned development projects.

1.7 Assumptions & Limitations

This SEA has been prepared by Citrus with all reasonable skill, care and diligence within the approved Terms of References for this assignment and taking account of the staffing and resources assigned to it the agreement. Citrus disclaims any responsibility to PINPG and others in respect of matters outside the scope of the assignment. The SEA draws on publically and readily available data and that held by PINPG, no field surveys were undertaken or within the scope of the ToR.



2. SEA Legal & Policy Framework

This Chapter sets out the legal and policy framework within which this SEA has been conducted. It includes Macedonian legislation, EU framework legislation¹ and other international legislation and guidance of relevance to strategic environmental assessment and to the issues in question, most prominently in relation to protection of biodiversity and cultural heritage.

2.1 Requirements for Strategic Environmental Assessment

Law on Environment (Official Gazette [O.G.] of RM Nos. 53/05, 81/05, 24/07, 159/08, 48/10, 124/10, and 15/11, 123/12, 93/13, 42/14 and 44/15)

Macedonia's environmental legal framework is defined by the *Law on Environment*, which contains Macedonia's fundamental environmental protection principles, which form the basis for environmental management and law regulating the environment.

SEA in Macedonia is mandated by Articles 65-75 (Chapter 10) of the *Law on Environment*, which outlines when SEA is necessary, exemptions, reporting requirements, expert qualification requirements, statutory consultation, public information and participation, transboundary impact assessment requirements, report evaluation, decision making, publication, and monitoring the effects of planning documentation implementation.

The contents of an SEA in Macedonia are determined by the *Regulation on the contents of the report on the strategic assessment of the environment (O.G. of RM No. 153/07)*. This Regulation requires that the SEA report includes the following which is in line with the requirements within the EU *SEA Directive*:

- an outline of the objectives of the plan or programme upon which the SEA is conducted, and its relationship with other relevant plans and programmes;
- a description of the relevant aspects of the current environment and its likely evolution in the absence of the plan or programme;
- a description of the environmental characteristics of areas likely to be affected;
- a description of any existing environmental problems, especially relating to the protection of wild birds and habitats;
- a description of the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;
- the likely significant effects on the environment in general, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. This should include secondary, cumulative, synergetic, short- term, medium and long- term, permanent and temporary positive and negative effects;
- the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;
- an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;
- a description of the measures envisaged concerning monitoring in accordance with the law;

¹ In line with FYR Macedonia's approach to development of the legal framework to comply with the EU legal framework, good international practice and the requirements of International Financial Institution EBRD who are considering financing the A3 Expressway Ohrid to Peštani Project the SEA has been prepared in line with the EU legal framework relating to SEA. EBRD Environmental & Social Policy 2014 states: 'The EBRD, as a signatory to the European Principles for the Environment is committed to promoting the adoption of EU environmental principles, practices and substantive standards by EBRD-financed projects, where these can be applied at the project level, regardless of their geographical location. When host country regulations differ from EU substantive environmental standards, projects will be expected to meet whichever is more stringent.'



- a non-technical summary.

The Regulation also requires that an SEA should take into account the planning hierarchy within which the plan or programme is set, including any higher level strategic assessment which may have been carried out. The summary of planning context (plans & programmes) within which the NPG MP is set, the planning context to the AMP and, where relevant, whether or not the AMP supports delivery of these plans and programmes is provided in Chapter 4.

Other Macedonian legislation that applies to SEA includes:

- *Decree on the public participation in the process of preparation of environmental regulations and other acts as well as environmental plans and programs (O.G. of RM Nos. 147/08 & 45/11);*
- *Decree on the strategies, the plans and the programs, including amendments to such strategies, plans and programs, which are subject to a mandatory procedure for assessment of their impact on environment and human health (O.G. of RM Nos. 153/07);*
- *Decree on the criteria on the basis of which the decisions as to whether a given planning document is likely to have a significant impact on the environment and human health shall be issued (O.G. of RM No. 144/07);*
- *Law on Construction (O.G. of RM Nos. 130/09, 124/10, 18/11, 144/12 & 70/13);*
- *Ordinance on the composition of the committee and the manner of its operation, the program and the manner of carrying out the expert exam, the amount of the fee for taking the expert examination as well as the amount of the fee for the establishment and maintenance of the list of strategic environmental assessment experts and the manner of acquiring and losing the status of strategic environmental assessment expert, as well as the manner and the procedure for inclusion and exclusion from the list of experts (O.G. of RM No. 129/07);*
- *Ordinance of conducting transboundary consultations (O.G. of RM No. 110/10);*
- *Ordinance on the form, content and application of the decision for conducting or not-conducting strategic environmental assessment and on the application forms for the need of conducting and not-conducting strategic environmental assessment (O.G. of RM No. 122/11).*

This SEA has been developed in full compliance with the above requirements.

EU SEA Directive 2001/42/EC

In addition to the above, this SEA complies with the technical requirements of the EU *SEA Directive 2001/42/EC* on the assessment of the effects of certain plans and programmes on the environment (the *SEA Directive*). Key requirements of this Directive include:

- Presentation of information that may be reasonably required to be taken into account in the decision-making process;
- Evaluation of the likely significant environmental effects of implementing the plan or programme;
- Evaluation of reasonable alternatives;
- Consultation with relevant authorities and the public, during the assessment;
- The assessment must be carried out during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.



2.2 Macedonian Legal Requirements

Law on Environment

The environmental legal framework is defined by the *Law on Environment* as discussed in Section 2.1 above. This Law transposes the requirements of various EU requirements, including those of Directive 2003/35/EC²; Council Directive 96/61/EC³; Directive 2001/42/EC⁴; and Council Directive 82/501/EEC⁵. The provisions for assessment of the effects of certain public and private projects on the environment (i.e. the EIA Directive, 85/337/EEC) are transposed in Chapter XI.

Law on Nature Protection (O.G. of RM Nos. 67/04, 14/06 and 84/07, 35/10, 47/11, 148/11, 59/12, /13, 163/13 and 41/14)

The legal basis for nature protection in the Republic of Macedonia is contained within the Constitution, the *Law on Nature Protection* (O.G. of RM Nos. 67/04, 14/06 and 84/07, 35/10, 47/11, 148/11, 59/12, /13, 163/13 and 41/14), the *Law on Environment* and in international agreements signed or ratified by the Country and other laws regulating the use of certain natural resources.

The *Law on Nature Protection* sets out principles of protection, restrictions regarding use of nature and natural resources, impact assessment, planning, compensation measures, protection of biodiversity, protection of internationally important species, wildlife conservation, genetic diversity, habitats and ecosystems, ecological networks, minimum environmental release⁶, restrictions for construction activities in riparian habitats and littoral areas, restriction of fishing in certain conditions, protected areas, management plans for protected areas, rangers, landscape diversity, organisation of nature protection including management of protected areas, financing inspection and supervision, penalties and final and transitional provisions. The law transposes the following Directives: Council Directive 92/43/EEC⁷, Council Directive 79/409/EEC⁸, Council Regulation (EC) No 338/97⁹ etc. The full transposition of the *Habitats Directive* (92/43/EEC) and the *Birds Directive* (79/409/EEC) is pending. Obligations arising from Article 6 of the *Habitats Directive* on the assessment of projects significantly affecting Natura 2000 sites are yet to be implemented in the national legislation.

The Law provides a good framework for developing a network of protected areas in line with the International Union for Conservation of Nature (IUCN) categorisation. In Article 53, it stipulates the establishment of a coherent ecological network. The obligation to set a national ecological network, (as part of the Pan-European Ecological Network - PEEN) derives from the fact that Macedonia is a signatory party of the Pan - European Biological and Landscape Diversity Strategy (PEBLDS, 1996).

To promote the system of protected areas, the Republic of Macedonia initiated the development of the Emerald Network comprising of areas of special interest for conservation (ASCI) in line with the Berne Convention on the Conservation of European Wildlife and Natural Habitat, and more specifically, its Resolutions No.4 (1996) and 6 (1998). Of the total number of 187 endangered habitats requiring special conservation measures listed in Resolution No. 4 (1996), 32 have been found in Macedonia. Of the total number of 927 species requiring special habitat conservation measures according to the Resolution No. 6 (1998), 167 are present in Macedonia. Within the period 2002-2008 35 sites were identified, described and submitted to the Secretariat of the Bern Convention.

² Directive 2003/35/EC of the European Parliament and Council providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amended with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC.

³ Council Directive 96/61/EC concerning integrated pollution prevention and control.

⁴ Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment.

⁵ Council Directive 82/501/EEC on the major-accident hazards of certain industrial activities.

⁶ Reference is made to the Law on Waters which needs to set a methodology for minimum environmental release.

⁷ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

⁸ Council Directive 79/409/EEC on the conservation of wild birds.

⁹ Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein
<http://www.sea-info.mk/docs/brochuresea.pdf>



For the sake of compatibility between the Emerald Network and Natura 2000, Emerald sites are categorised into three different types:

- Type A: Areas important for the protection of birds, which are in accordance with the Special Protection Areas (SPAs) of Natura 2000;
- Type B Areas important for other species and/or habitats, which are in accordance with the Special Areas for Conservation (SACs) of Natura 2000;
- Type C: Areas important for birds, other species and/or habitats.

The development of the Emerald Network is considered an important preparatory activity for the establishment of the Natura 2000 network and thus compliance with the *Habitats Directive* (92/43/EEC) and the *Wild Birds Directive* (79/409/EEC).

The *Law on Nature Protection* establishes a system of protected areas. This includes the category of 'Natural Monument' (or 'Monument of Nature').

Law on Protection of Cultural Heritage (O.G. of RM Nos. 20/04, 71/04, 115/7, 18/11, 148/11, 23/13, 137/13, 164/13, 38/14, 44/14 and 199/14)

The *Law on Protection of Cultural Heritage* provides a legal framework for the protection of goods of cultural and historical importance. The law defines several values for cultural heritage, which include archaeological, ethnological, historical, artistic, architectonic, urban, ambient, technical, sociological and other scientific or cultural.

The law protects cultural heritage according to its characteristics:

- immovable cultural heritage (such as monuments, monumental entireties and cultural landscapes);
- moveable cultural heritage (such as archaeological, ethnological, historical, art and technical items, archive material and library goods);
- intangible cultural heritage (such as folklore, language and toponyms).

The Law also classifies cultural heritage by whether it is endangered or non-endangered, and whether it is of special or cultural or historical significance:

- Special Significance:
 - Exceptional significance includes goods with the highest national significance and universal value, especially if it is unique or exceptionally rare.
 - Great significance includes goods that are of wider interest that are historically and culturally valuable and authentic, but not of exceptional significance.
- Significant: any other cultural heritage that is not of special significance.

Article 5 of the law specifies that cultural heritage should be protected regardless of whether it has been registered. Article 45 of the Law describes the National Registry of Cultural Heritage, a register that includes immovable, moveable and tangible cultural heritage; and cultural heritage of special significance. It also includes the requirement for registers for goods under temporary protection; cultural heritage in danger; and reserved archaeological zones.

Chapter IV of the law describes general prohibitions to cultural heritage in Macedonia, which includes prohibition against damage, destroy, seize, control, dissimulate and usurpation of cultural heritage.

The law gives the Ministry of Culture powers of decision and allows it to comment on urban planning. The National Institute (or National Conservation Centre) is responsible for all aspects of immovable cultural heritage management: identification, documentation valorisation, protection, preparing projects, research, conservation, restoration, presentation, publication and international co-operation. Local



Institutes (or local Conservation Centres) are responsible for built and archaeological immovable heritage; and museums and libraries are responsible for moveable cultural heritage in their area.

Article 175 requires that the status (significance and whether it is endangered) of immovable and moveable cultural heritage has been revalorised within 3 years of the implementation of the law (i.e. by 2007).

Article 129 describes how chance finds should be dealt with.

Law on Managing the World Natural and Cultural Heritage in the Ohrid region (O.G. of RM No. 75/10)

This law regulates the management of the natural and cultural heritage and the obligations of different organisations and Commission responsible for the management of the Ohrid UNESCO World Heritage Site area. The law recognises that the natural and cultural heritage of the area is threatened e.g. by major public and private projects, urban and touristic development etc. It outlines the requirements for management plans and reports on the state of world natural and cultural heritage in the region.

Law on Protection of Ohrid, Prespa and Dojran Lake (O.G. of SRM No. 45/77, 8/80, 51/88 and 10/90, and O.G of RM, 1993)

Lake Ohrid was proclaimed as a protected area under this law, within the category “monument of nature” covering an area of 200 km².

Law on Spatial and Urban Planning (O.G of RM Nos. 199/14 and 44/15)

This law prescribes the basis for the preparation of standards and norms regarding spatial planning, including a specification of parameters for environmental protection.

Law on Air Quality (O.G. of RM Nos. 67/04, 92/07, 83/09, 35/10, 47/11, 59/12, 163/2013 and 10/15)

This law sets out principles to avoid, prevent and reduce harmful effects of air quality on human health and the environment, prevention and abatement of pollution leading to climate change, and provision of appropriate information on the quality of ambient air.

Law on Environmental Noise Protection (O.G. of RM Nos. 79/07 124/10, 47/11 & 163/2013)

The *Law on Environmental Noise Protection* is harmonised with the European Directive 2002/49/EC on environmental noise. This law identifies noise exposure indicators, responsible authorities, strategic noise maps, and action plans.

Law on Waste Management (consolidated text O.G. of RM Nos. 68/04, 71/04, 107/07, 102/08, 143/08, 82/09, 124/10, 51/11, 123/12, 147/13, 163/13, 51/15)

The legal framework for waste management has been established by the 2004 Law on Waste Management in which relevant EU directives have been transposed. The Law regulates Policy on Waste; Hazardous Waste; Landfills; Waste Oils; PCB/PCT; Incineration of Non-hazardous Waste; Incineration of Hazardous Waste; Hazardous Substances Containing Batteries and Accumulators; Packaging and Packaging Waste; end-of life vehicles; and waste from the titanium dioxide industry. The Law on Waste Management also provides grounds for the adoption of several secondary legislative acts.

Law on Waters (O.G. of RM Nos. 87/08, 06/09, 161/09, 83/10, 51/11, 44/12 23/13, 163/13 and 180/14)

This law introduces the approach of integrated water management and aligns national legislation with EU legislation. The Law incorporates all aspects of water management: water resource use and allocation; protection against and control of pollution; protection against harmful effects of water and sustainable water management planning. The Law on Waters is a framework law and contains general standards and principles, rights, obligations and competences of the state administrative bodies, local self-government units, as well as the rights and obligations of legal and natural persons in the domain of water



management. The Law regulates issues referring to all surface and groundwater; water management facilities and services; institutional setup and water management financing, as well as conditions for manner of and procedures for the use or discharge into water, and international cooperation in the area of water management.

Health & Safety and Labour Law (O.G. of RM Nos. 92/07, 98/10, 93/11, 136/11, 60/12, 23/13, 25/13, 137/13, 164/13, 158/14 and 15/15)

National laws exist which cover Health Protection, Occupational Health & Safety, Labour Relations, Working Conditions, Employment, Wages, Social Protection, Land Acquisition, Child Protection and Equal Opportunities.

2.3 Other Relevant EU & International Guidance & Requirements

“The EIA Directive” on the assessment of the effects of certain plans and programmes on the environment (2014/52/EU)

The amended environmental impact assessment (EIA) Directive simplifies the rules for assessing the potential effects of projects on the environment that were part of the previous EIA Directive (85/337/EC) and its amendments. It requires an assessment to be carried out by the competent national authority for certain projects which have a physical effect on the environment.

The EIA must identify the direct and indirect effects of a project on the following factors: man, the fauna, the flora, the soil, the water, the air, the climate, the landscape, the material assets and cultural heritage, and the interaction between these various elements.

Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (“the Habitats Directive”) and Directive 2009/147/EC on the conservation of wild birds (“the Birds Directive”)

The two principal EU Directives relating to nature conservation are the *Habitats Directive* and the *Birds Directive*. Together they provide a legal framework for the protection of habitats and species of animals and plants. Both Directives promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The *Habitats Directive* led to the setting up of a network of Special Areas of Conservation to protect the 220 habitats and approximately 1000 species listed in Annex I and II of the Directive which are considered to be of European interest following criteria given in the directive. Together with Special Protection Areas which are designated under the *Birds Directive*, these form a network of protected sites across the European Union called Natura 2000.

The Emerald network is an ecological network to conserve wild flora and fauna and their natural habitats of Europe, which was launched in 1998 by the Council of Europe as part of its work under the Convention on the Conservation of European Wildlife and Natural Habitats or the ‘Bern Convention’. The Bern Convention has been ratified by the Government of the Republic of Macedonia. Pursuant to the Bern Convention the Government of RM have identified candidate Emerald Sites. One of these is the Galichica National Park (Code: MK0000001) which is indicated in the figure in Chapter 3. The Emerald Network is based on the same principles as the Natura 2000 network, and represents its de facto extension into non-EU countries.

The *Habitats Directive* requires for a Natura 2000 site for an assessment to show that proposed changes do not have any adverse effect on the site as a whole and its ecological functioning. If proposed



developments have an effect on the Natura 2000 network then an 'Appropriate Assessment' (AA) under the *Habitats Directive* would be required.

Appropriate Assessment under the *Habitats Directive* promotes the application of the mitigation hierarchy summarised below:

- Avoidance – preventing significant impacts on European sites from happening in the first place;
- Mitigation – reducing the impact to the point where it no longer has the risk of an adverse impact;
- *If necessary* – Compensation – putting in place compensatory measures.

Guidance on the AA process from the European Commission (2001) is formed around 4 key steps:

- Step 1 - Screening: Determine whether the plan, 'in combination' with other plans and projects, is likely to have a significant adverse impact on a European site;
- Step 2 - Appropriate Assessment: Determine the impact on the integrity of the European site of the plan, 'in combination' with other projects or plans, with respect to the site's structure, function and conservation objectives. Where there are adverse impacts, assess the potential mitigation of those impacts. Where there aren't, then the plan can proceed as it is;
- Step 3 - Assessment of alternatives solutions: Where the plan is assessed as having an adverse effect (or risk of this) on the integrity of a European site, examine alternative ways of achieving the plan objectives that avoid adverse impacts on the integrity of the European site;
- Step 4 - Assessment where no alternative solutions remain and where adverse impacts remain: Assess compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest, it is deemed that the plan should proceed.

Part of this process is that the *Habitats Directive* requires compensation for impacts on the Natura 2000 network. (For the purposes of this assessment the 'No Net Loss' (NNL) objective for biodiversity and compensation for impacts on the Galichica National Park (Emerald Site) is being applied.)

Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, 1998 (*Macedonia acceded in 1999*)

The *Aarhus Convention* grants the public rights regarding access to information, public participation and access to justice, in governmental decision-making processes on matters concerning the local, national and transboundary environment. It focuses on interactions between the public and public authorities.

UNECE Convention on Environmental Impact Assessment in the Transboundary Context ("Espoo Convention"), 1991 (*Macedonia acceded in 1999*)

The *Espoo Convention* sets out the obligations of parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.

UNECE Kyiv SEA Protocol to the Espoo Convention, 2003 (*Macedonia ratified in 2013*)

This protocol aims to ensure that environmental considerations are taken into account in an integrated manner to inform governments' strategic decision-making to support environmentally sound and sustainable development. This protocol also provides for extensive public participation in the governmental decision-making process. Macedonia's Law on the Ratification of the Protocol on Strategic Environmental Assessment was adopted in 2014.

Bern Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), 1979 (*Macedonia ratified in 1998*)



The Bern Convention aims to conserve wild flora and fauna and their natural habitats, to promote cooperation between states and to give particular attention to endangered and vulnerable species including endangered and vulnerable migratory species.

Ramsar Convention, 1971 (*Macedonia signed in 1999*)

The Ramsar Convention is an international treaty for the conservation and sustainable utilisation of wetlands, recognising the fundamental ecological functions of wetlands and their economic, cultural, scientific and recreational value.

Bonn Convention on Conservation of Migratory Species of Wild Animals, 1979 (*Macedonia signed in 1999*)

The Bonn Convention acknowledges the importance of migratory species being conserved and of Range States agreeing to take action to this end "*whenever possible and appropriate*", "*paying special attention to migratory species the conservation status of which is unfavourable and taking individually or in cooperation appropriate and necessary steps to conserve such species and their habitat*".

Convention on Biological Diversity (CBD), 1992 (*Macedonia ratified in 1997*)

CBD focuses on promoting sustainable development and establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.

Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), 1973 (*Macedonia acceded in 2000*)

CITES aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Convention concerning the Protection of World Culture and Natural Heritage, 1972 (*Macedonia succeeded in 1997*)

The convention links together the concepts of nature conservation and the preservation of cultural properties. It considers that the loss, through deterioration or disappearance, of any of these most prized assets constitutes an impoverishment of the heritage of all the peoples of the world. Parts of that heritage, because of their exceptional qualities, can be considered to be of Outstanding Universal Value (OUV) and as such worthy of special protection against the dangers which increasingly threaten them. The Convention focuses on the identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage of OUV.

The Convention also explains how the World Heritage Fund is to be used and managed and under what conditions international financial assistance may be provided.

Convention on the Safeguarding of Intangible Cultural Heritage, 2003 (*Macedonia ratified in 2006*)

This Convention focuses on protecting intangible cultural heritage which includes: language, music, song, performing arts, social practices, rituals and festive events, traditional crafts and knowledge and practices concerning nature and the universe.

Labour Relations and Workers' Rights

Macedonia has been a member of the International Labour Organisation since 1993 and has ratified 70 ILO International Labour Standards (Conventions) including the eight fundamental conventions relating to freedom of association, forced labour, discrimination and child labour.

European Bank for Reconstruction and Development Requirements



EBRD have specific environmental and social requirements which include the need to establish a strategic basis for investments that are in line with their Environmental and Social Policy (2014)¹⁰, comprehensive set of Performance Requirements (PRs), national legislation and relevant EU Directives, regardless of a project's jurisdiction. This includes the EU *SEA Directive* (2001/42/EC) as an essential element of the environmental assessment process. EBRD is committed to promoting European Union environmental standards as well as the European Principles for the Environment, to which it is a signatory, and which are also reflected in the PRs.

The protection and conservation of biodiversity is widely recognised in EBRD's Environmental and Social Policy. EBRD supports a precautionary approach to the conservation and sustainable use of biodiversity through the implementation of applicable international laws and conventions and relevant EU Directives. Guidelines addressing this approach are provided in EBRD's Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

¹⁰ EBRD's Environmental & Social Policy 2008 was updated and a new ESP approved on the 7th May 2014. The ESP 2014 applies to all projects initiated after 7th November 2014.

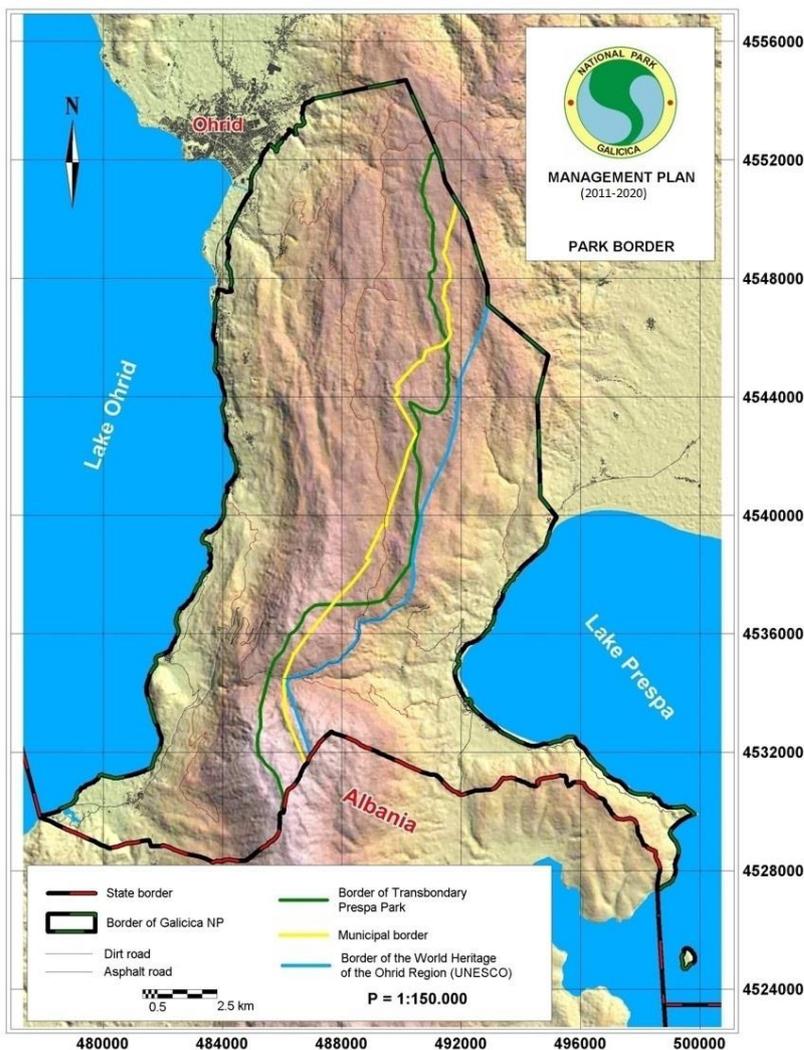
3. National Park Galichica

This Chapter sets out the background and legal and planning context to the National Park Galichica, the role of PINPG and the Park’s Management Plan (2011-20). Following this Chapter 4 goes on to summarise the Amendments to the Management Plan, the five planned development projects and an analysis of the planning context to the AMP (i.e. whether or not the AMP supports the delivery or not of other relevant plans and programmes etc.).

3.1 Background & History of National Park Galichica

The National Park Galichica is located in the south-western part of the Republic of Macedonia on the mountain range Galichica and is sited between Lake Ohrid and Lake Prespa (see Figure 3.1 below). The Park includes parts of the Istok and Petrin mountains, as well as the island Golem Grad in Lake Prespa.

Figure 3.1: National Park Galichica Boundaries¹



¹ Source: National Park Galichica Management Plan for the Period 2011-2020.



The Park was proclaimed as a National Park in 1958 with the aim of preserving the flora and fauna heritage and natural appearance of Mount Galichica. The area covered by the Park comprises over 24,000 ha². The boundaries for the Park were defined in Article 4 of the *Law on Declaration of the Mountain of Galichica a National Park* (O.G. No. 171/19 (referred to herewith as the 'Law on Declaration')). The description under the law of the Park boundary is contained below:

Figure 3.2: 'Law on Declaration' - Description of Park Border

Pursuant to Article 4 of the Law on Declaration of Part of the Mountain Galichica a National Park ("The official Gazette of the Republic of Macedonia", no. 171/19, hereinafter: "The Law on Declaration"), the park has the following area borders:

"The border of the national park Galichica starts with the border crossing near Sveti Naum, whence it extends to the north along the shore of the Ohrid Lake, up until the village Dolno Konjsko (the map is given below the text). From here, near the archaeological site "Antique Furnace" the border rises to the asphalt road P501 (Ohrid – Sveti Naum – border with Albania) whence it moves to the tunnel near the locality Sveti Stefan. Here the border takes a sharp turn to the East, it goes down the valley on the right side of the road and it rises up until the rocky section over the monastery Sveti Stefan. From here the border moves to the northeast down the earth slope through the settlement of Sveti Stefan, above the woods, it protrudes the track of the new road P501 (still under construction) and it follows the road up until the settlement of Racha, where once again it protrudes on the old roadway on the road P501. Moving to the north, along the left roadway of this road, the border crosses over Biljanini izvori to the place where it separates from the local road leading to the village Velestovo. From here, the border keeps going to the north up until the spring Bey Bunar, and then down the side street, which joins the street "Momchilo Jordanoski". Before the crossroad, the border takes a sharp turn to the east and, following the edge of the woods of coniferous trees, it protrudes to the sidewalk, along which it moves to the south, up until the spot height of 765 metres. Afterwards, following the sidewalk, the border moves to the south for a short while and then to the east up until the settlement Krsti, where it takes a sharp turn to the north and, following the road, it protrudes to the asphalt road leading to the village Ramne. Following the asphalt road Ohrid-Ramne, the border moves to the north, descending into the valley of the river Sushica. Here, the border takes a sharp turn to the east and shortly follows the dirt road leading to the church St Athanasius. Moving along the dirt road, the border crosses the river Sushica and then it moves along the dirt road to north-east, crossing the spot height of 826 m, up until the spot height 776 m, where the dirt road crosses the river Chardashnica. From this place, the border moves along the dirt road to the north, up until the bridge of the stream north of the monastery St Parascheva of the Balkans. From the bridge of the stream, the border moves to the northeast and it protrudes to the summit Vishesla (1563 m). From this point, the border moves to the southeast to the spot height of 1571 m, whence it protrudes to the spot height of 1554 m, and then to the summit of Skala (1576 m). Then the border moves across the top ridge of Samar, through the spot height of 1608 m and it protrudes to the spot height of 1646 m. From this point, the border moves to the east and it protrudes to the summit Kukolij (1319 m) and then it turns to the southwest and it protrudes to the summit Penicilin (1424 m). From this point, the border keeps going to the south and it protrudes to the spot height of 1141 m of the hill Sirhansko Kale. From this point, crossing the asphalt road, the border moves to the southeast up to the shore of the Prespa Lake. From this point, the border stretches down the west coast of the Prespa Lake up to the Macedonian-Albanian border, near the settlement Zandanana, including the island Golem Grad. From the settlement Zandanana, the border stretches to the west along the Macedonian-Albanian border, up to the starting point near the border crossing Sveti Naum. Within these borders, the area of the National park Galichica amounts to 24,151.4 hectares."

² There are differences in documentation and the cadastre related information regarding the Park area. The figure of approximately 24,151 ha was provided in a recent presentation from PINPG in March 2015 on the NPG Management Plan.



3.2 Public Institution National Park Galichica

3.2.1 Establishment of PINPG

In 2006, the Government of RM issued a decision (No. 19-4971/1-05) for the establishment of a public institution for the management and protection of the National Park Galichica. The full name of the institution is: Public Institution National Park Galichica (PINPG). The basis to this decision is contained within the *Law on Nature Protection* and the *Law on Institutions* (O.G. No. 32/05). Prior to the establishment of PINPG there were other forms of administration managing the National Park since its proclamation in 1958.

3.2.2 Management Responsibilities for National Park Galichica

The main activity of PINPG is the management and protection of nature, biological and area diversity and natural heritage, through:

1. *Protection of the natural habitats of national and international significance for cultural, scientific, educational and tourist-recreational goals;*
2. *Establishment of stability of the environmental processes and the biological and area diversity through a permanent conservation of the representative physical-geographic regions, biocoenosis, genetic resources and species in their authentic conditions;*
3. *Creation of conditions for development of tourism following the principle of sustainable development;*
4. *Achievement of the cultural, scientific, educational and recreational goals, which at the same time maintain the natural conditions of the national park;*
5. *Sustainable usage of the natural treasures in the interest of the current and future development, without significant damage of the parts of nature and as smaller as possible interruption of the natural balance;*
6. *Creation of conditions and taking measures for protection of the national park in order to conserve and to rationally manage certain components of the biological and area diversity, as well as sustainable and rational usage of the natural treasures;*
7. *Inspection, research and scientific treatment of the issues that are of interest for the protection of the national park;*
8. *Record-keeping and documentation of the natural and other values and beauties in the national park (location, degree of endangeredness, protective measures);*
9. *Adoption and implementation of strategies, programs, management plans, conditions and measures for protection of the national park;*
10. *Taking measures for protection of the established zones in the national park;*
11. *Provision of stimulus and support for the protection of the national park through raising the public awareness and especially in the educational process;*
12. *Pinpointing the components of biological and area diversity and their endangeredness;*
13. *Establishment of a regime for protection of the national park;*
14. *Prevention of harmful activities of physical and legal persons and disruption in the national park as a consequence of the technological development and performing of activities, i.e. provision of maximally affable conditions for protection and development of nature;*
15. *Stimulation of the scientific research in the area of protection of the national park;*
16. *Publication of scientific and professional materials, guides, slides, postcards and other informative and propaganda materials for the national park;*

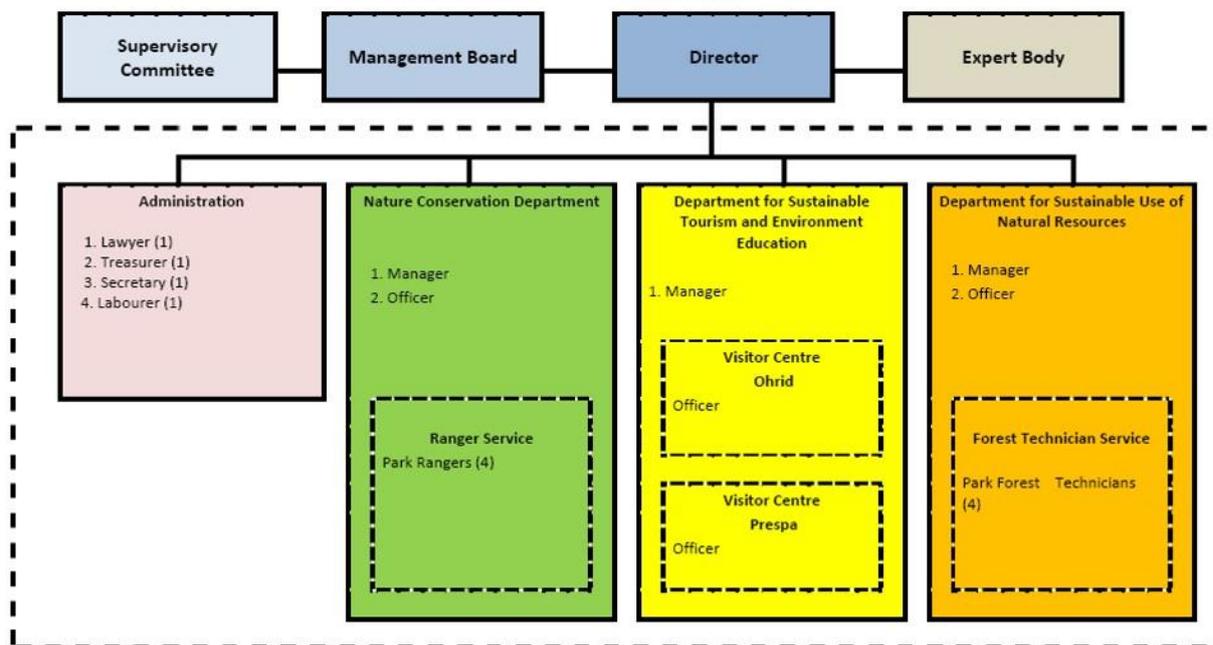
17. Stimulation and development of interest and attitude to the conservation of the national park through organization of exhibitions, film showing, lectures and other forms;
18. Production, purchase and sale of medical and aromatic plants, fruits and seeds;
19. Construction of infrastructure and organization of sources, taps, picnic sites and room for recreation and other;
20. Performance of protection, breeding and shooting of wild animals, as well as protection and collection of wild plants and fungus and other forest fruits;
21. Protection, breeding and traditional fishing of the fish stock;
22. Performance of other activities contributing to the protection and promotion of the national park.

The manner of management of the Park, i.e. the protection of nature, the biological, area diversity and natural heritage, is defined in the *Law on Nature Protection*, the *Law of Declaration* and detailed within the NPG Management Plan (2011-2020).

3.2.3 PINPG Organisational Structure & Resourcing

The *Law on Nature Protection* sets out the overall bodies which form the PINPG organisation and establishes the duties of the various bodies within PINPG. Figure 3.3 below shows the organisational structure and resourcing³:

Figure 3.3: PINPG Organisational Structure & Resourcing⁴



3.2.4 PINPG Funding

Financing of the PINPG is set out under Article 141a of the *Law of Nature Protection* which states:

“Public Institution National Park is financed by:

- 1) entry fee and visiting a national park;

³ This organisational structure and resourcing were provided by PINPG in March 2015, are indicated in the MP and may have been subject to change since this date.

⁴ Source: extracted from PINPG presentation ‘Management Planning in Galichica National Park, Macedonia’ (dated March 2015).



- 2) parking fee in a national park;
- 3) compensation for visiting of special objects in a national park;
- 4) compensation for the collection of wild plants and animals and fungi parts and sustainable use of natural resources (management of forest habitats and ecosystems in national parks, etc.);
- 5) fee for stay in a national park;
- 6) finances gained from performing activities in accordance with Articles 105 (manipulation with habitats and manipulation with species, ecotourism and traditional extensive agricultural activities) and 106 of this Law;
- 7) compensation for performing works and activities within the Park;
- 8) compensation for sailing in a national park;
- 9) compensation for use of the logo of the National Park on products and services for commercial use;
- 10) compensation from ecosystem services;
- 11) State Budget;
- 12) budgets of local government units on whose territory the Park is on;
- 13) other sources (donations, grants, loans, renewable loans, gifts, legacies, etc.).”

PINPG do not though receive funding from the State or local government budgets currently. Also, as PINPG has not been entrusted with ‘public authority’ the provisions of the *Law on Civil Servants*⁵ do not apply. Consequently the salaries of PINPG employees may not be paid by the State Budget.

The PINPG is currently funded from the following sources:

- entry fee and visiting the National Park;
- parking fee in the National Park;
- compensation for visiting of special objects in the National Park;
- compensation for the collection of wild plants and animals and fungi parts and sustainable use of natural resources (management of forest habitats and ecosystems in the National Park, etc.);
- fee for stay in the National Park;
- finances gained from performing activities in accordance with Articles 105 (manipulation with habitats and manipulation with species, ecotourism and traditional extensive agricultural activities) and 106 of the *Law on Nature Protection*;
- other sources (donations, grants, loans, renewable loans, gifts, legacies, etc.).

Funding mainly comes from revenues from firewood sales with this representing between 80% to 90% of PINPG’s annual budget. Total budget figures for PINPG are outlined in Figure 3.4 below. The PINPG resources therefore are heavily reliant on maintaining firewood production, the planned use of the forest resource and the prevention of illegal cutting. Maintaining firewood production as the financing source is a challenge for the Park, with two key ones being:

- The forest resources within the NPG present limited opportunities to sustainably increase the current volumes of firewood production – *therefore any planned projects which require additional resources from PINPG and/or reduce the current forestry stock would worsen the current situation which is already challenging*;
- The present use of the forests within the Park for firewood production is contradictory to the concept of a National Park (i.e. a natural area without any significant intervention with natural resources).

⁵ O.G. of RM No. 59/00.



Figure 3.4: PINPG Budget

	2009	2010	2011	2012	2013	2014
Total budget (K€)	/	470	403	369	414	356
Sales revenues %	100	100	100	100	100	/
Firewood	92,0	85,2	89,1	86,0	85,4	/
Rents & Services	8,0	14,8	10,9	14,0	14,6	/

PINPG have over recent years tried to identify and develop other sources of funding, as explained in further detail in the NPG Management Plan (2011-2020). In the projects carried out with KfW donor funding a key objective has been to enable the transfer of the focus of the sustainable use of forests to nature conservation and implementation of PINPG's other duties. However, achievement of this objective is challenging within the currently effective 'self-financing' of PINPG. PINPG will though explore opportunities to supplement the current funding with the development of the future planned projects (i.e. Ski Centre, TDZs etc.) in its boundaries (e.g. charging skiers for entry to Park in line with its current agreed charges to visitors; charging hotels to be resident in the Park etc.)

3.3 Ownership & Management of Land within the Park

Most of the land within the borders of the Park is in state ownership. At the moment PINPG does not have an updated census of the cadastral parcels in state or private ownership within the Park. The datasets available which are summarised below contain differing information:

- According to data from the Geodetic Authority in the municipality Ohrid dating from 1976, the area of the parcels within the borders of the Park that are in state ownership amount to 21,849 ha.
- According to the data of the statistical office in Ohrid from 1985, the area of the parcels within the borders of the Park in state ownership amount to 22,184 ha, with the remaining area in private ownership.

The large area of the land within the Park that is in state ownership can be permanently used by PINPG. The decision of the People's Board of the Municipality Ohrid dated 9.11.1961 (No. 03-8360/1) attributed the arable areas of municipal ownership to the then Management of the National Park Galichica. In a subsequent decision of the People's Board of the Municipality Ohrid of 15.5.1964 (No. 03-463/10), the woods and the woodland of municipal ownership were attributed to the Management of National Parks and Hunting Grounds – Skopje, including lands of the National Park Galichica.

In the past, the Government of the Republic of Macedonia has several times adopted decisions for abolishment of the right of usage of certain parcels within the borders of the Park. For example:

- Following the decision of the Government of the Republic of Macedonia from 14.06.2006⁶, the PINPG was denied the beneficiary right over several parcels in the CM Ljubanishta, with a total surface of 14,833 m².
- The Government of the Republic of Macedonia also abolished the beneficiary right over the parcels in the settlement Cherti Kamen and in the area of the populated areas Lagadin and Eleshec.

In 1976, the administrators of the NPG then, the Basic Organisation of Associated Labour (BOAL NPG) undertook a census of the cadastral parcels divided by the cadastral municipalities, however this was not exhaustive. This provided an inventory of parcels the PINPG have the right to use. This inventory has not been updated since 1976.

A significant change in the ownership structure has appeared following the amendments pursuant to the decision for denationalisation DN no. 19-620/03-2 of 20.03.2009 made by the Minister of Finance through the Committee for deciding upon the requests for denationalisation submitted by the heads of religious buildings of the religious communities in the Republic of Macedonia. Since then, the surface area of state

⁶ "The Official Gazette of the Republic of Macedonia", no.58/06.



owned parcels within the borders of the Park has decreased and now is thought to amount to 19,502 ha, whereas the surface of the parcels that are in private possession has increased. Currently approximately 79% of the total surface of the Park is estimated to be in state ownership.

The *Law of Nature Protection* (LNP) stipulates that:

“for the sake of implementation of the foreseen measures and activities for protection of the nature, the owner or the holder of the land is obliged to allow a free access of other persons and other use of its land”

Other articles within the LNP relate to the use of land, for example:

- Article 11 of LNP foresees limitation of the right for amendment on the usage of the land for the sake of protection of the nature.
- The law also foresees other prohibitions and limitations, such as the prohibition for usage of the nature in the cases stipulated by Article 12 of LNP, and prohibition for usage of the funds for protection of the plants for the sake of protection of nature (Article 13), as well as limitation or prohibition for usage of natural resources in the case of risks to conservation of certain habitats, etc.
- Under Article 135 of LNP, PINPG has the right to make agreements on the regulation of the mutual rights and obligations with the subject performing activities in the Park, for which permission has been given on the part of the Government of the Republic of Macedonia.

Apart from PINPG, the right to use or to manage parts of the state land in the Park pertains to other entities, such as: the Public Enterprise for Management of Grassland (PEMG); The Fund for National and Regional Roads (FNRR), the Public Enterprise for Management of Housing and Business Premises (PEMHBP) and others. At the time when this SEA plan was being prepared, PINPG did not have at its disposal an updated list of other entities that manage the state land within the borders of the Park.

3.4 National Park Legal & Protected Area Status

The National Park Galichica is a European biodiversity hotspot comprising important habitats and hundreds of species enjoying Macedonian, EU and International legal protection. The Park therefore has been afforded various levels of legal protection and various designations. The key ones are summarised below:

National Park (& IUCN Category II Relationship):

The National Park Galichica was proclaimed originally as a National Park in 1958 and re-proclaimed in 2010. Under the *Law on Nature Protection* and the *Law on Declaration* this part of Mount Galichica falls under the 'National Park' category of protected areas. The categories of protected areas in Macedonia largely coincide with the IUCN categories. The Macedonian category of 'National Park' is closely related to the IUCN Category II Protected Area. Under the IUCN Category II designation the primary management objective should be:

‘to protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation’ (IUCN 2008)

A related rule is that the primary management objective refers to at least three-quarters of the protected area – i.e. the “75% Rule” (IUCN 2008). This means that according to IUCN guidelines regarding the management of Category II protected areas sustainable use of natural resources is allowed in not more than 25% of the Park territory.

UNESCO World Heritage Site

In 1979 UNESCO inscribed the World Heritage Site of the Ohrid Region, at this stage it was inscribed under the **natural heritage** criteria:

- (vii): contains superlative natural beauty and aesthetic importance.

The World Heritage Site inscription was extended in 1980 when the cultural criteria were added:

- (i) to represent a masterpiece of human creative genius.



- (ii) to bear unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared.
- (iv) to be an outstanding example of a type of building architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

A significant part of National Park Galichica is situated within a UNESCO World Heritage Site (for Natural and Cultural Heritage of the Ohrid Region). Figure 3.5 below shows the borders of the UNESCO World Heritage Site 'Outstanding Universal Value' (OUV) area. Approximately 72% of the National Park Galichica is covered by the World Heritage Site nomination.

Figure 3.5: Boundaries of the UNESCO World Heritage Site (for Natural and Cultural Heritage of the Ohrid Region)



The natural beauty and aesthetics of the National Park Galichica contributed to the inscription of the World Heritage Site nomination. Culture within the NPG that influenced the UNESCO designation⁷ included the quality and diversity of physical cultural heritage and archaeology found along the coast of

⁷ UNESCO Criteria I, III and IV.



Lake Ohrid and surrounding area; the synthesis of ancient nature and archaeological remains of several civilisations⁸.

The UNESCO designation recognises the natural and cultural values of the region, where diverse and rich architectural heritage is inseparably intermingled with nature. The region is a cultural landscape that inseparably bonds history, the continuation of cultural traditions and social values.

Transboundary Designations

Although the entirety of the Park lies within Macedonia, its southern border is also the national border with Albania and several of the key features of the area are shared. Shared resources include:

- The Galichica mountain range, which extends southwards into Albania;
- Lake Ohrid, which is shared by Macedonia and Albania; and
- Lake Prespa, which is shared by Macedonia, Albania and Greece.

A recognition of the transboundary nature of the natural and cultural resources is seen in the number of transboundary plans, agreements and designations, including:

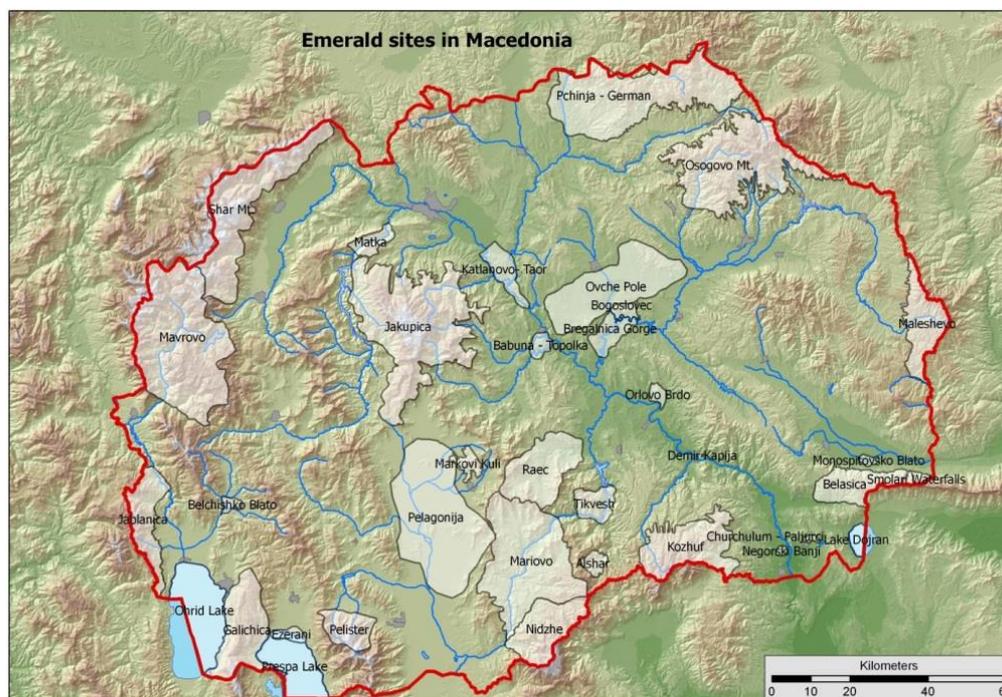
- Agreement between the Council of Ministers of the Republic of Albania and the Government of the Republic of Macedonia for the Protection and Sustainable Development of Lake Ohrid and its Watershed (Skopje, 2004);
- Agreement on the Protection and Sustainable Development of the Prespa Park Area (European Commission, 2014);
- National Park Galichica was included in the Transboundary Prespa Park in 2000 and 2010;
- Trilateral Strategy and Action Plan for the Prespa Lake Basin (2012-2016);
- Included in the Transboundary Biosphere Reserve for the Ohrid-Prespa Watershed (2014) within the UNESCO 'Man and Biosphere' (MAB) Programme.

EMERALD Network

The Emerald network is an ecological network to conserve wild flora and fauna and their natural habitats of Europe, which was launched in 1998 by the Council of Europe as part of its work under the Convention on the Conservation of European Wildlife and Natural Habitats or the 'Bern Convention'. The Bern Convention has been ratified by the Government of the Republic of Macedonia. Pursuant to the Bern Convention the Government of Republic of Macedonia have identified candidate Emerald Sites. One of these is the National Park Galichica (Code: MK0000001) which is indicated in Figure 3.6 below.

⁸ Cultural Heritage values of the World Heritage Site are described in detail in "Macedonian Cultural Heritage: Ohrid World Heritage Site" (2009), MoC, Skopje.

Figure 3.6: Macedonian Emerald Network



The European Union to fulfil its obligations arising from the Convention, particularly in respect of habitat protection, produced the *Habitats Directive* and subsequently set up the Natura 2000 network. The Emerald Network is based on the same principles as the Natura 2000 network, and represents its de facto extension into non-EU countries.

The National Park Galichica has also been declared as an Important Plant Area⁹ and a Prime Butterfly Area¹⁰.

3.5 Park Management Plan 2011 – 2020

Historically the main focus of management of the National Park was on forest restoration and the sustainable use of natural resources (i.e. equivalent to IUCN Management Category V or VI). From around 1972 a ten-year forestry management plan was the principle planning and management document. A Spatial Plan for the Park regulating land use was enacted in the late eighties. In 2011 the first Management Plan for the National Park Galichica was adopted.

The development of a Management Plan (MP) for the National Park is an obligation under the *Law on Nature Protection*. The MP development process commenced in 2008 with significant support from the Government of the Federal Republic of Germany through KfW. The development of the MP was managed by PINPG with support of external international and national experts. Other stakeholders participated throughout the development of the MP, key ones being the MoEPP, Resen and Ohrid Municipalities, the Spatial Planning Agency from Skopje and National Park Prespa etc. Various methods were used to ensure the involvement of other stakeholders, interested parties and the public. This included public meetings and the forming of the ‘National Park Galichica Environment Forum’ comprising representatives of the local communities.

The Management Plan comprises of 4 main Volumes:

⁹ An initiative started in relation with the European strategy on conservation of the plants, i.e. the Convention on biological diversity, ratified under the law on ratification (“The Official Gazette of the Republic of Macedonia”, no. 54/97).

¹⁰ The establishment of the Prime Butterfly Areas is an initiative in order to maintain other initiatives such as establishment of the environmental network Natura 2000, the Bern Convention, the Pan-European environmental network and the Pan-European strategy on biological and area diversity adopted on the 3rd Ministry Conference “Environment for Europe” held in 1995 in Sofia, Bulgaria.



- Volume 1 The Galichica Management Plan (2011-2020): This volume contains the basic Management Plan covering general information on the Park, environmental and social features, management visions and objectives, threats, management strategies, Zoning and programme of projects and actions for the Park's management.
- Volume 2 Studies: Studies were made as part of the preparation of the Management Plan to evaluate the natural values within the Park. These included studies on habitat, flora, fauna and non-forestry products within the Park.
- Volume 3 Strategies: Contains 4 strategies that were prepared as part of the Management Plan regarding Sustainable Tourism, Solid Waste Management, Environmental Education & Public Relations and Development of a System of Trails.
- Volume 4 Maps: Contains the Zoning and other important maps which support the Management Plan.

There is also a Forestry Management Plan within the suite of PINPG documentation.

A key element in the approach to management of the Park is the vision established by the Management Plan, an excerpt of this is provided below:

'Our National Park Galichica is a natural area of high value, known for its exceptional beauty and rich and rare biological diversity. The large scale ecological processes progress freely in most parts of the park, providing for long-term protection of the complement of species and ecosystems characteristic of the Park...

Respecting of this vision has been considered in the approach to the SEA and the amendment process for the AMP.

The management approach for the Park is formed around 4 key areas: **Nature Conservation** is the primary management objective; **Environmental Education** emerges as an important goal for the future; Support for the local communities through promotion and development of **nature-based tourism**; and, Abandon/downscale traditional contemporary practices of **natural resources consumption**.

The general ecological objectives reflected in the MP are summarised below and these have been considered in the assessment within this report:

- The Park's key natural values are in favourable status;
- The basic ecological processes evolve freely in most parts of the Park, providing for the long-term protection of the complement of species and ecosystem characteristics of the Park;
- The Park's ecosystems are connected to the ecosystems in the region, in a way that provides for a mutually functioning ecosystem and effective protection;
- Urbanisation in the Park is controlled and serves the purpose of sustainable development and quality of life enhancement in the local communities.

The management approach is focused towards 'evidence based management'. The Management Plan establishes clear objectives and programmes of actions and measures around 4 key areas, with nature conservation being a clear area of priority action:

- Nature Conservation – *monitoring of habitats and species is a key area. The NPG currently have good datasets on habitats and certain specific key species, however investment in monitoring of species is recognised as a key need to support an 'evidence-based management' approach;*
- Sustainable Tourism;
- Sustainable Use of Natural Resources;
- General Activities.

The Park currently is subject to a number of threats and opportunities, these are discussed within the Management Plan. Current key threats, which also under certain parameters could be viewed as opportunities as well, are summarised below as these are important in understanding the potential significance at a strategic level of the impacts from the AMP and the planned development projects:



- **Urbanisation:** the key threat to biodiversity of the Park is the pressure from and for urbanisation and specifically to ensure regional development through tourism use in the National Park Galichica. Some of the lake shore developments along the north-east shoreline of Lake Ohrid are understood to be illegal potentially.
- **Tourists:** in certain parts of the National Park where tourists have been given access issues have arisen (e.g. in the highlands area and specifically the trails within the Zone of Strict Protection there have been issues with tourist volumes and behaviour).
- Other threats overtime and in the past have included:
 - **Livestock Grazing:** this has decreased in recent years and now is very localised to the villages and not in main areas of the Park;
 - **Fires;**
 - **Firewood & Forestry** (legal & illegal);
 - **Erosion:** in certain areas.

3.6 Zoning of the National Park Galichica

Under the *Law on Nature Protection* the level of protection in the National Park (a protected area) is regulated by zoning and the spatial plan. There are 4 zones (summarised below) and the activities which can be performed in each zone are defined under the law and the Management Plan. The activities which can be carried out in each zone is described below, further definition of the activities within each zone in National Park Galichica is then provided in the tables towards the end of this Chapter:

- **Zone of Strict Protection (ZSP):** In the ZSP scientific research activities are allowed as long as they are in accordance with the primary objectives of the area.
- **Zone of Active Management (ZAM):** Activities related to the management of habitats and species are allowed in the ZAM. Activities of an economic character that do not have a negative impact on the primary objective of protection, such as ecotourism and traditional agriculture, are also allowed in the ZAM.
- **Zone of Sustainable Use (ZSU):** The ZSU is an important part of the protected area which does not have high values of protection. This zone would contained infrastructure facilities, structures of cultural heritage, types of planted forests not typical to the area, as well as populated areas with surrounding agricultural land. Long term interventions and measures could lead to the zone gaining features that are not typical for the zone of active management.
- **Buffer Zone (BZ):** When performing economic activities in the buffer zone, applying the measures for protection specific within *the Law on Nature Protection* in compulsory.

The Management Plan (2011-2020) established the following zones in the Park, as shown below and indicated in the figure. The establishment of the ZAM was in 2 phases with some central areas of the Park only becoming ZAM in 2013.

The zoning in the original Management Plan (2011-2020) gave the total 'natural area of ZSP plus ZAM as 14,392 ha (i.e. 59.6% of the Park area). This is below the IUCN threshold.

The tables and figures below show the zoning in the Park in 2013 and these areas are those indicated in the Management Plan (2011-2020):



Figure 3.7: Original Zoning of Galichica National Park (2013) (Extracted from Management Plan (2011-2020))

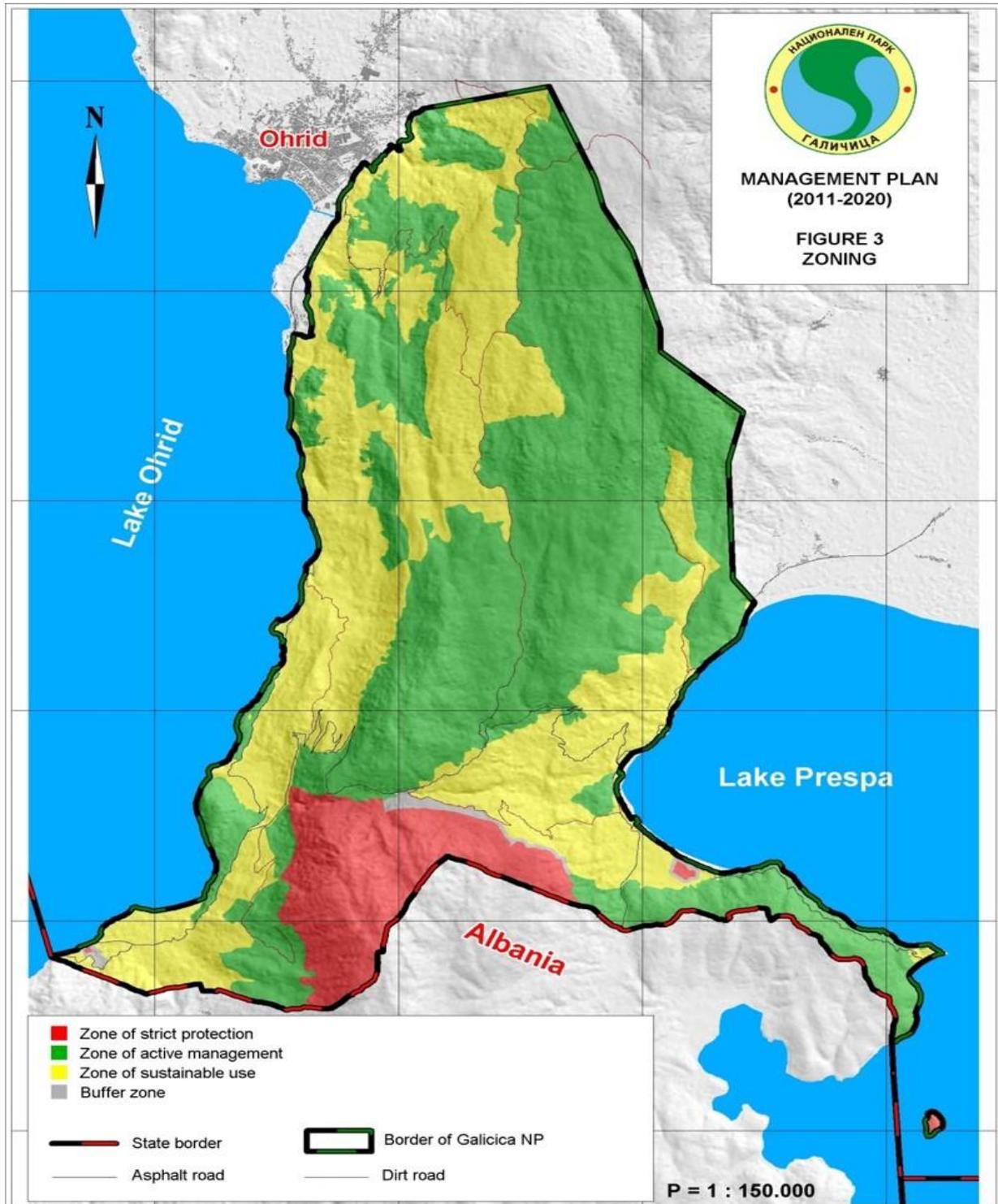




Table 3.1: Zone of Strict Protection (Extracted from Management Plan (2011-2020))

	Zone of Strict Protection
Size	2,117 ha
Attributes	Natural zone with insignificantly changed habitats of primary origin and insignificant human influence after the proclamation of the Park. Large numbers of key habitats, species and geomorphologic phenomena are present. Lacks infrastructure, with the exception of the internal radio communication panel.
Primary Management Objectives	Unhindered development of natural processes in order to achieve long term protection of the typical ecosystems and the related species.
Secondary Management Objectives	Scientific research activities. Visits are permitted to some parts of this zone under strictly controlled conditions, such as: walking along the trail on the island Golem Grad, boat sight-seeing of the springs at St. Naum organized by PINPG, and climbing the peak Magaro.

Table 3.2: Zone of Active Management (Extracted from Management Plan (2011-2020))

	Zone of Active Management
Size	12,275 ha
Attributes	Natural zone containing mostly habitats of secondary origin. After the proclamation of the Park, the human influence decreases gradually and has reached insignificant level. Large number of key habitats and species are present. Infrastructure facilities found here contain: telecommunication towers and auxiliary structures, asphalt and dirt roads, and smaller buildings owned by PINPG.
Primary Management Objectives	Unhindered development of natural processes that lead to long-term protection of the typical ecosystems and the related species.
Secondary Management Objectives	Environmentally harmonized spiritual, scientific, educational and recreational activities.

Table 3.3: Zone of Sustainable Use (Extracted from Management Plan (2011-2020))

	Zone of Sustainable Use
Size	9,612 ha
Attributes	This zone is intended for residential use and for economic activities. There are a number of key habitats and species which, also, to a great extent are included within the natural zone. There are many settlements, tourism complexes and considerable infrastructure facilities.
Primary Management Objectives	Environmental connection of habitats and controlled human influence over the natural zone.
Secondary Management Objectives	-

Table 3.4: Buffer Zone (Extracted from Management Plan (2011-2020))

	Buffer Zone
Size	147 ha
Attributes	Natural or semi-natural habitats or urbanized areas with or without significant human influence.
Primary Management Objectives	Control of human influence from the zone of sustainable use on the zone of strict protection.
Secondary Management Objectives	Environmentally harmonized spiritual, scientific, educational and recreational activities.



Table 3.5: Permitted & Prohibited Activities Per Zone (Extracted from Management Plan (2011-2020))

Activities	Zones			
	ZSP	ZAM	ZSU	BZ
Scientific research (upon previously obtained permit only)	YES	YES	YES	YES
Walking (along the trails)	YES	YES	YES	YES
Walking (outside the marked trails)	NO	NO	YES	YES
Cross-country skiing	NO	YES	YES	YES
Placing of information boards	NO	YES	YES	YES
Placing of signs	YES	YES	YES	YES
Arranged rest areas (tables, benches, eaves)	NO	YES	YES	NO
Camping on certain locations in the wilderness	NO	YES	YES	NO
Observation and view points	NO	YES	YES	YES
Setting open fires	NO	NO	NO	NO
Collection of fungi, fruits and plants (tea, juniper berries, mushrooms, etc.)	NO	NO	YES	NO
Collection of animals (butterflies, turtles, etc.)	NO	NO	NO	NO
Livestock grazing	NO	NO	YES	YES
Growing agricultural cultures in a traditional way	NO	NO	YES	NO
Grass cutting	NO	NO	YES	YES
Beekeeping – temporary placement of beehives	NO	YES	YES	YES
Beekeeping – accompanying facilities	NO	NO	YES	NO
Commercial forestry	NO	NO	YES	NO
Intensive agriculture production	NO	NO	YES	NO
Collection of dry wood and branches	NO	NO	YES	NO
Fishing	NO	NO	NO	NO
Hunting	NO	NO	NO	NO
Alpine skiing (on unarranged locations)	NO	YES	YES	YES
Alpinism on arranged locations	NO	YES	YES	NO
Mountain biking along arranged trails	NO	YES	YES	YES
Paragliding take-offs	NO	YES	YES	NO
Motor vehicles (off-road vehicles and motor bikes)	NO	NO	YES	YES
Horseback riding	NO	YES	YES	YES
Arranging of unarranged springs	NO	NO	NO	NO
Arranging of existing ponds	NO	YES	YES	YES
Arranging of water wells	NO	YES	YES	YES
New water catchment facilities for water from springs and water currents in the Park	NO	NO	NO	NO
New residential objects	NO	NO	YES	NO
New tourism intended facilities (hotels, restaurants, camping sites, etc.)	NO	NO	YES	NO
New facilities for other purposes (PINPG management	NO	YES	YES	YES



Activities	Zones			
	ZSP	ZAM	ZSU	BZ
facilities)				
New facilities for agricultural activities (warehouses, sheepfolds, pigsties, barns)	NO	NO	YES	NO
New infrastructure – pipelines and water supply	NO	NO	YES	NO
New infrastructure – for tourism purposes	NO	NO	YES	YES
New infrastructure – electric power supply	NO	NO	YES	YES
New infrastructure – asphalt roads	NO	NO	YES	YES
New infrastructure – dirt roads	NO	NO	YES	YES
New infrastructure – sewerage	NO	NO	YES	YES
New infrastructure – structures for erosion control	NO	YES	YES	YES



4. Proposed Amendments to NPG Management Plan & Description of Planned Development Projects

This Chapter summarises the proposed Amendments to the Management Plan (AMP), namely the rezoning of approximately 604 ha from within the Zone of Active Management to the Zone of Sustainable Use and the subsequent upgrading of approximately 854 ha of alpine and subalpine calcareous grassland (*Habitats Directive Annex 1 Habitat*) in the north of the Park from ZSU to the ZAM. The Chapter also provides a description of the planned development projects which are the basis to the amendments. An analysis of the planning context to the AMP is provided at the end of the Chapter.

4.1 Summary of Key Changes in the Amended Management Plan 2011 – 2020

In September 2013, the Government of Macedonia issued a directive that the National Park Galichica Management Plan (MP) was to be amended to take into account several planned development projects. Selected extracts from the Government Directive are below (see Annex 1 & 2):

'14. Public Institution National Park Galičica shall, by the end of January 2014, prepare and submit to the Government session, amendments to the Management Plan for the period 2011-2020, in order to enable the construction of ski center, construction of new road A3 Ohrid - St. Naum, establishment of touristic development zone Stenje, CM Stenje and touristic development zone Oteševo, CM Oteševo.'

'15. Agency for Spatial Planning shall within 7 days submit to the Public Institution National Park Galičica the planning area for touristic development zone CM Ljubaništa.'

In 2013 PINPG initiated a process of amending the MP following a decision by the NPG Management Board. Draft amendments were made to the MP with several changes to chapters and the revision of the Park's zoning. PINPG and the Ministry of Environment and Physical Planning (MoEPP) organised public debates in Ohrid and Stenje on the draft amendments to the MP during January 2014.

In May 2014 the Government determined that a SEA of the draft Amendments to the MP was required to be undertaken. A *draft* SEA was prepared¹ and submitted to the MoEPP. The *draft* SEA was submitted to 55 stakeholders for comment and a Public Hearing was held in January 2015. In response to the consultation process a number of concerns and comments were received from stakeholders on the *draft* SEA. Following review of the comments received the PINPG made the decision in March 2015 to withdraw the *draft* SEA report from the MoEPP. PINPG informed the MoEPP that having in mind the stakeholder comments, and specifically the letters received from two international financial institutions (KfW and the European Bank for Reconstruction and Development [EBRD]), they considered it necessary that the *draft* SEA report be revised and resubmitted to the MoEPP for their approval. The revision of the SEA resulted in subsequent amendments to the *draft* AMP. The process of amending the MP and preparation of the Amendments to the MP (AMP) report is summarised in Chapter 1.

Below is a summary of the key amendments to the Management Plan:

- The key change contained in the AMP relates to the amendment to the zoning of the National Park Galichica (see Section 4.2 below).
- Commitment to the mitigation hierarchy and No Net Loss (NNL), assessment of effects on key habitats and species due to intrusions by the planned development projects into habitats applying the principle of identification of areas for offsetting (where possible) within the Park.
- Updated project information and alternatives from the original *draft* AMP– especially with regard to the Galichica Ski Centre and the A3 expressway Ohrid to Peštani section.
- Recommendations for project appraisal processes (i.e. ESIA etc.) for planned projects within the Park.
- Monitoring recommendations for planned projects within the Park.

¹ Draft Report for Strategic Environmental Assessment for: Draft Amendments to the Management Plan for National Park Galichica for the Period 2011-2020: Technical Report; 0903-1127/3 (November 2014) – prepared by Civil Engineering Institute "Macedonia" JSC (GIM/CEIM)



- For the implementation of the project for development of Galichica Ski Centre it is suggested that Table 6-9 (“Permitted and prohibited activities in the zones”) of the MP is supplemented with the following special activity: *‘No additional infrastructure beyond that presented in the Galichica Ski Resort Master Plan & Feasibility Study (May 2014) can be developed within the area rezoned from ZAM to ZSU in the AMP associated with the Nordic Ski Area in the Central Plateau’*. This is to avoid the risk of incremental additional infrastructure being developed in the Central Plateau as an area of this has had to be rezoned from ZAM to ZSU as a result of the proposed ski centre.
- For the implementation of the project for development of TDZ “Stenje” it is suggested that Table 6-9 (“Permitted and prohibited activities in the zones”) of the MP is supplemented with a special activity *“new infrastructure in the Buffer Zone of the Zone of Special Protection – section “Stenjsko Blato”* in accordance with the urban planning documentation for the tourist development area “Stenje”. It should be noted that PINPG will seek to cooperate with the SPA which is the only authorized drafter of this type of document in order to identify limitations for the Buffer Zone around Stenjsko Blato which will reduce the impact of TDZ Stenje and they will be a part of the subsequent urban planning documentation for this TDZ.
- Based on the opinion of the Culture Heritage Protection Office with the Ministry of Culture (letter no. 17-440/2 from 31.12.2013) within the amendments are proposed changes in the Program 4.6A of the Management Plan for NPG.
- The Macedonian Orthodox Church – Ohrid Archbishopric, Diocese of Debar and Kichevo became the owner of a substantial amount of land within the Park after the adoption of the MP. This was in accordance with the Decision DN no. 19-620/03-2 dated 20.03.2009 which was adopted by the Minister of Finance through the Denationalisation Committee on deciding upon the requests upon denationalization submitted by the leaders of the religious institutions of the religious communities in RM. The opportunity has been utilized and amendments have been made of the MP in the chapter ownership (1. 2. 1).

Consequently, in the Amendment to the MP the following chapters of the MP have been changed:

- Amendment of the chapter “Ownership” (1.2.1), including Annex 2: Tables 8-2 and 8-3;
- Amendment of chapter on “Urbanisation and Infrastructure” (5.2.1.5);
- Amendment of the chapter “Management Objectives” (5.4), including Table 5-1 – *this includes some specific additional mapping requirements for the protected species in the area of the proposed footprint of the Galichica Ski Centre (e.g. Crocus Cvijic, Parnassius Apollo, Helichrysumzivojinii etc.)*
- Amendment of the chapter “Zoning and Regulations” (6.2) including AMP Figure 3 (MP Volume 4: Map 7 – Annex 35 of AMP) – *Figure also shown below under Section 4.2;*
- Amendments to Tables 6-5, 6-6, 6-7, 6-8, and 6-9. Specific amendments have been made to 6-9 (“Permitted and prohibited activities in the zones”) for the TDZ Stenje (re: Stenjsko Blato) and the proposed Galichica Ski Centre (re: the Central Plateau). This includes the amendment to Table 6-9 that in the Original Management Plan when the applicability of alpine skiing was reviewed for the Zone of Active Management assuming low-scale rural tourism it was allowed, given the proposed scale of the Galichica Ski Centre it has been determined by the PINPG that Alpine Skiing of this scale is not allowed in the ZAM. Also an amendment has been included to allow alignment with the *Law on Nature Protection* that cultivation crops using traditional approaches will be allowed in the ZAM.
- Amendments in the chapter “Programs of projects and activities” (6.4); and
- Amendment of Map 7 (Zoning) in Volume 4 of the MP.

An **additional chapter** has been included in the AMP this would therefore become *new* Chapter 9 of the NPG Management Plan Volume 1 titled *‘Management, Offsetting & Monitoring of Adverse Effects’*. This chapter ensures the outcomes of the SEA are fully taken account of in the AMP and provides the framework for the management, offsetting and monitoring of adverse effects of the amendments to the Management Plan and the planned development projects. The Chapter includes the following contents:

- Principles for Compensation & Offsetting for Project Effects;



- Summary of Development Project Offsets;
- Project Design & Preparation Recommendations/Assumptions – including related to ESIA, Heritage Impact Assessment (HIA), Appropriate Assessment style reporting etc.;
- Project Effect Management & Monitoring – including the proposed role and activities of PINPG;
- Independent Monitoring.

4.2 Changes to Park Management Zones

The key change contained within the AMP is the resultant changes to the NPG management zones.

Apart from the potential impacts to biodiversity described within this SEA, the inclusion of the 5 projects into the National Park Galichica and the associated amendments to the Management Plan results in some areas needing to be re-zoned from being in the Zone of Active Management (ZAM) to the Zone of Sustainable Use (ZSU) to reduce their protection rating and allow project infrastructure to be developed. This is because, according to the NPG Management Plan, the activities are permitted in the Zone of Sustainable Usage, but prohibited in the Zone of Active Management – as described in Chapter 3 above.

The estimated intrusion of each project on the Park’s original zones contained within the NPG MP (2011-2020) is summarised in the table below.

Table 4.1: Effect of Proposed Projects on Park Management Zones

Planned Development Project	Areas of Planned Development Projects (Hectares/ha)				
	Total Footprint in Park	ZSP	ZAM	BZ	ZSU
TDZ Oteshevo	58.95	0	57.39	0	1.56
TDZ Stenje	7.92	0	0	5.0	2.92
TDZ Ljubanishta	293.96	0	0.69	0.22	293.05
Express Road A3	307.62	0	49.85	0	257.77
Ski Resort (including Central Plateau Nordic Ski Area)	529.55	0	496.15	0	33.4
Total	1,198	0	604.08	5.22	588.7

[1] Note that these figures relate to the ‘direct’ footprint area of the planned projects and does not account for induced/indirect effects. Therefore the ‘Area of Impact’ in the SEA assessment is larger than the footprint to take account of the induced/indirect effects. The figures also do not include the confirmed areas of clearance associated with the Prespa Lift/Gondola and the construction access roads which are not detailed within the information provided on the Projects.

A total of approximately 604 ha from within the Zone of Active Management needs to be reduced in status to the Zone of Sustainable Use. A total of 5.22 ha of Buffer Zone (mostly around the Stenje Marsh) is also infringed upon – this has resulted in additional requirements being added to Table 6-9 in the AMP regarding activities allowed in this Buffer Zone. Project developments within the ZSU are permitted.

Within the current Park zoning regime, the majority of the components of the proposed projects can only be developed within areas designated as ZSU. This includes the Nordic Ski Areas within the Galichica Ski Resort Master Plan which will result in some specific infrastructure development, development of new trails and the introduction of winter and summer activities into the area. Some of these are potentially beyond the activities allowed within a ZAM (e.g. mountain biking outside trails). The reduction in the ZAM for the Nordic Ski Area in the Central Plateau results in a specific additional recommendation to the SEA and the AMP that enforces that ‘No additional infrastructure beyond that presented in the Galichica Ski Resort Master Plan & Feasibility Study (May 2014) can be developed within the area rezoned from ZAM to ZSU in the AMP associated with the Nordic Ski Area in the Central Plateau’.



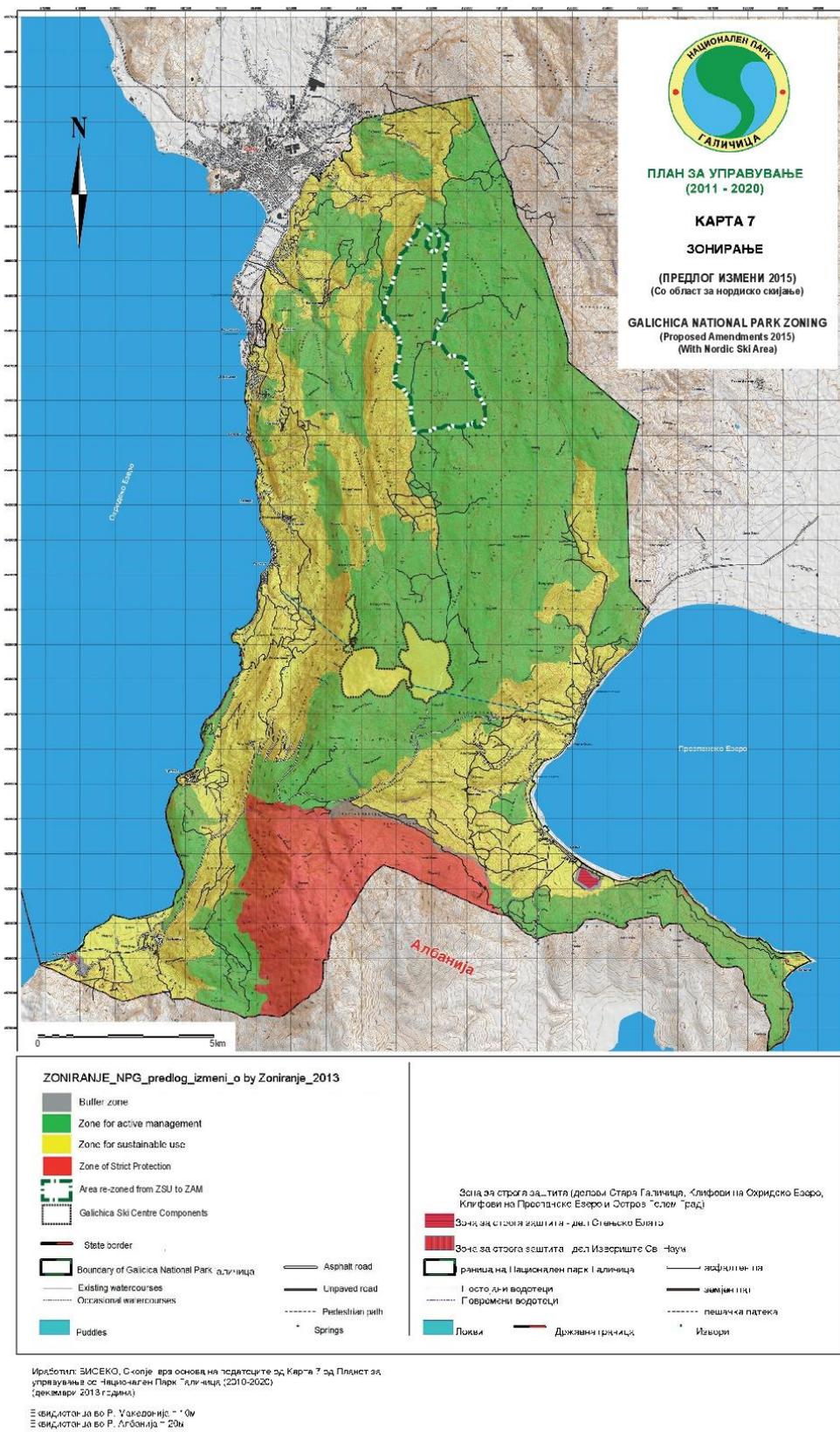
This restriction is to avoid incremental additional infrastructure in this sensitive area which contains habitat which falls under *Annex 1* of the *Habitats Directive*.

The amendments to the MP, contained within the AMP, seeks to compensate for this loss and ensure the same (if not an increased) level of protection is afforded to the NPG by upgrading an area of approximately 854 ha of alpine and subalpine calcareous grassland (*Habitats Directive Annex 1 Habitat*) in the north of the Park from the Zone of Sustainable Use to the Zone of Active Management (see Figure 4.1).

PINPG will move this into active management in order to preserve the condition of the area as a grassland habitat and prevent the natural succession pressures into shrub and woodland. The revised Park Zoning contained in the AMP and this SEA is shown in the Figure below (and contained in Annex 8).

The effects of the rezoning presented in the AMP are assessed in Chapter 7 of this SEA.

Figure 4.1: Galichica National Park Zoning – Proposed Amendments 2015





The Macedonian category of 'National Park' under which the National Park Galichica falls is closely related to the IUCN Category II Protected Area. Under the IUCN Category II designation the primary management objective should be:

'to protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation' (IUCN 2008)

A related rule is that the primary management objective refers to at least three-quarters of the protected area – i.e. the "75% Rule" (IUCN 2008). This means that according to IUCN guidelines regarding the management of Category II protected areas sustainable use of natural resources is allowed in not more than 25% of the Park territory.

The Park's management is focused in zoning under the *Law on Nature Protection (LNP)* and according to the IUCN criteria. However, whereas LNP makes use of the phrase "mainly unchanged area", IUCN applies the "75% Rule". In order to reach this threshold in the Park, that part of the territory should be free from the exploitation of natural resources, such as, cutting of wood, gathering tee and other medicinal plants, fruits like juniper bush, fungi, then hunting and alike. That part of the Park, which would be called "natural zone", would be a zone where recreational and tourist activities are allowed that are not contrary to the main objective (protection of the underlying ecological processes and the characteristic species and echo systems).

Nevertheless, the an issue raised in the NPG Management Plan is that, unlike most of the Category II protected areas, the Park boundaries encompass a number of settlements and, moreover, a considerable amount of infrastructure facilities have been constructed in the past. This context presents a real challenge to the Park in meeting the 75% threshold, considering that within the remaining 25% an opportunity should be given for direct use of the natural resources according to the principles of sustainable development, such as housing, infrastructure, agriculture, etc. The aim of the Management Plan in the context of the Park original was to achieve 60% of the Park as a natural area (i.e. ZAM & ZSP).

The zoning in the Park in 2011-2020 Management Plan from 2013 put the zoning as follows – with 24,151 ha under zoning:

- Zone of strict protection with an area of 2,117 ha;
- Zone of active management with an area of 12,275 ha;
- Zone of sustainable management with an area of 9,612 ha;
- A buffer zone with an area of 147 ha.

The summary of zoning with the Amendment Management Plan is:

- Zone of strict protection with an area of 2,117 ha;
- Zone of active management with an area of 12,525 ha;
- Zone of sustainable management with an area of 9,362 ha;
- A buffer zone with an area of 147 ha.

Therefore the total ZSP plus ZAM for the original Management Plan was 14,392 ha (i.e. 59.6% of the Park area). In the AMP the proposed zoning total for ZSP plus ZAM is 14,642 ha (i.e. 60.6%). The amendments including the re-zoning (e.g. upgrading of 854 ha of the ZSU to the ZAM) therefore move the NPG closer to the IUCN threshold.

4.3 Galichica Ski Centre

4.3.1 Introduction

Horwath and Horwath Consulting, in Zagreb, Croatia and Ecosign Mountain Resort Planners Ltd. at Whistler, Canada (together with Ecosign Europa Mountain Recreation Planners GmbH of Wolfurt, Austria as subcontractor), were assigned the task of providing professional planning services related to the



Drafting of a Feasibility Study and Master Plan for the Development and Construction of a Ski Centre in Galichica.

The Galichica Ski Centre Project's objective is to establish a regional sporting and recreational centre in the Park for all seasons. The following project information provides a summary of the planned Ski Centre and all information has been taken from the Feasibility Study and Master Plan (May 2014).

The Ski Centre build out is described below in 3 phases. All 3 phases have been considered in this SEA.

4.3.2 Background of Skiing on Mount Galichica

In the 1970s and 1980s, there were attempts to develop infrastructure for winter sports and recreational activities in the Mount Galichica range at Korita and on the northern slopes of Stara (Old) Galichica (specifically on the slopes below the peaks Lako Signoj and Tomoros).

At Stara Galichica, on the northern slopes of the beech forest under the peak Magaro, one zone was designated as a ski path. Some old barracks were refurbished as accommodation facilities and a building was built for electrical distribution. In the mid-1970s, one additional lodge was built by the Macedonian Youth Hostel Association. Three smaller ski lifts were then constructed along the ski path. In the 1980s all activities ceased, and the premises were abandoned.

In 2002, the Mountain Sports Club "Magaro" from Ohrid partially refurbished the electrical distribution building. In 2007, the Club "Magaro", in cooperation with the municipal organization of the Red Cross from Ohrid additionally adapted the building in order to serve as a mountain rescue station.

In the 1980s, a ski centre including a two-seater cableway, 1.1 km long (under the location Krlje Gola Buka), and three ski-lifts (under the peak Tomoros) were built at the location Dva Javori (Two Maples). This centre was operational for a few years only and is now abandoned. The former lift locations are shown in Annex 5.

4.3.3 Existing Activities & Facilities

Summer activities within the mountainous region of the Park include an extensive hiking trail network, some 4x4 roads, wilderness campsites and picnic areas.

Winter activities are limited as a result of weather dependent road access into the mountains and infrequent snow-ploughing of the road over the pass between the two lakes.

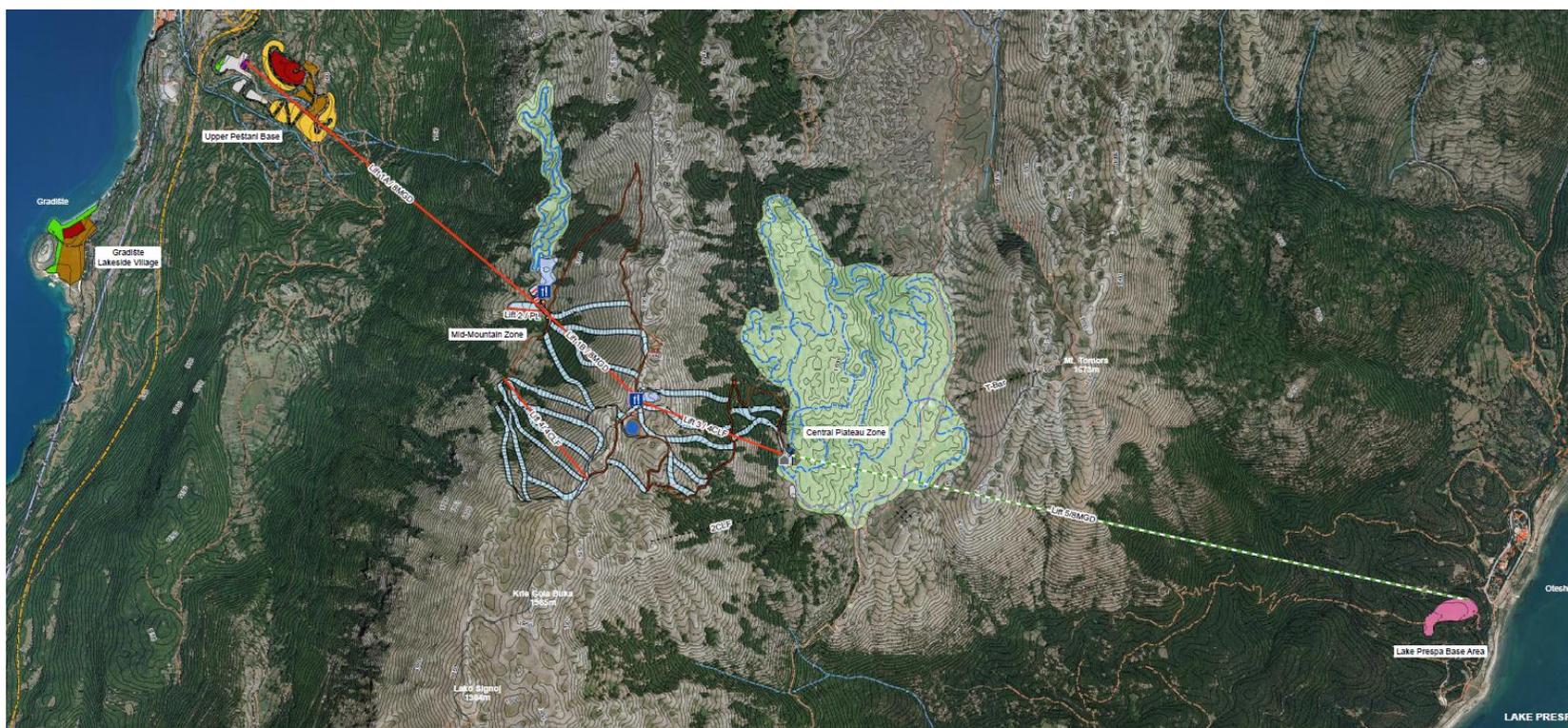
The only base area facility that is operational in the winter is the Mountain House Sharbojca, located 4.5 km north of the bottom of the old Tomoros Lift. This 2-level building is approximately 200 m² and sleeps 12 people in hostel style rooms on the second floor. The first floor has a kitchen and common seating area.

The majority of tourist facilities within the National Park boundary are located along the eastern shore of Lake Ohrid and include several campsites, overnight tourist accommodation, museums, churches and picnic areas. South of the City of Ohrid's extensive tourist facilities, several hotels, apartments and villas can be found in lakeside villages between Peštani and Rača. The Lake Prespa side of the Park is less developed than the Ohrid side with limited camping and overnight accommodation.

4.3.4 Galichica Ski Centre Components

All ski centre component locations can be seen in the figures below which are extracted from the Master Plan Figure VII.1 contained in Annex 7. A description of each component is presented below in this Chapter.

Figure 4.2: Proposed Galichica Ski Centre²

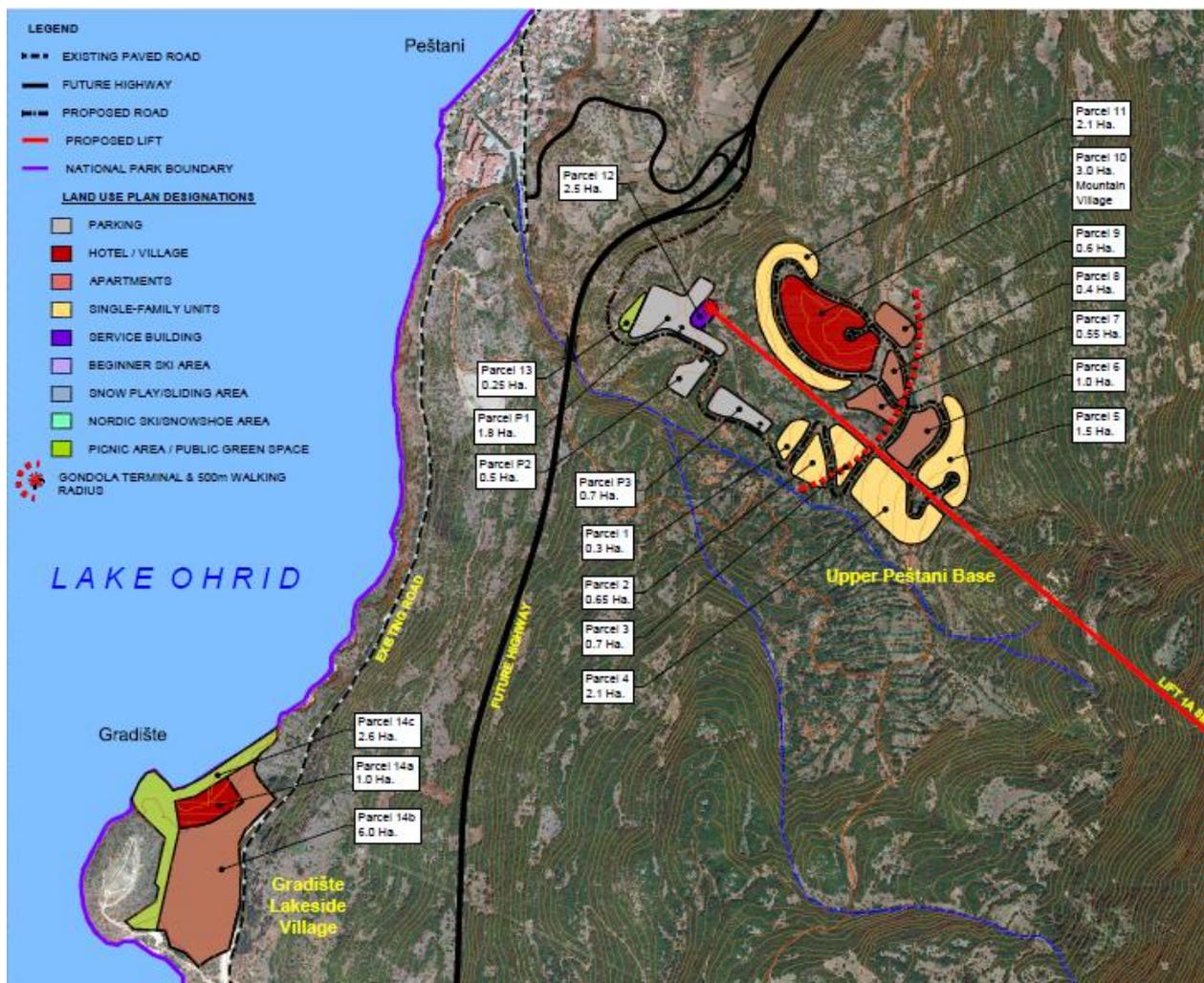


² Source for all figures in Section 4.3: MASTER PLAN FOR THE DEVELOPMENT AND CONSTRUCTION OF A SKI CENTER IN THE GALICHICA NATIONAL PARK – (May 2014 – Horwath & Ecosign)

4.3.5 Base Area – Lake Ohrid

The base area for the ski centre is indicated in the figure below and contains two main components: the Gradiste Lakeside Village and the Upper Peštani Base Area:

Figure 4.3: Galichica Ski Centre – Base Area Plan ‘Lake Ohrid’



Gradiste Lakeside Village

The Gradiste Lakeside Village development zone overall includes 9.6 ha of which could contain 1,600 beds. The proposed resort is spread over three parcels, with the following elements:

- hotel with a footprint of approximately 4,000 m² and total of 16,000 m² development area.
- 300 apartments on a 6 ha parcel, made up of 75 buildings (4 apartments each) with total of 24,000 m² development area.
- A lakeside area that will be landscaped with typical Mediterranean horticulture. This parcel contains the beach and additional resort facilities like swimming pools.

Upper Peštani Base

The Upper Peštani Base is planned at the base of Lift 1a (gondola terminal), which will provide year round access to the Galichica Ski Centre’s **four-season** recreation facilities. This site was identified in the base area development analysis due to the large area with gentle slopes suitable for development and potential connection to the proposed future highway, the A3 expressway just south of Peštani.

Three parking lots with a total area of 3 ha are accessed by 1,000 m of proposed road from the proposed future A3 expressway (just south of Peštani.). The parking lots will have a capacity of 935 cars and 12 buses which could generate approximately 3,000 visitors during peak periods.

The development area will be accessed beyond the day visitor parking area with 2.2 km of proposed road that climbs to an elevation of 900 m. There will be a cluster of hotels surrounding pedestrian areas that connect to the gondola terminal and surrounding hiking trails. There may be a spa, retreat centre, conference facilities, restaurants and retail space.

There will be low density single-family units and medium density apartments. The Master Plan notes these will be carefully integrated into the landscape with as much natural vegetation preserved as possible.

The Base Area Lodge will be designed on one level and will connect with the gondola terminal building. It will be made up of ticket facilities, restrooms, guest services, rentals, a café, small retail shop, office space and employee space.

There will be appropriate power and water supply, and sewage and waste disposal facilities.

4.3.6 Mid-Mountain Zone/Snow Play Area

The Mid-Mountain Zone components are shown in the below figure:

Figure 4.4: Galichica Ski Centre Mid-Mountain Zone



The mid mountain lodge (0.25 ha) will be situated centrally between the alpine ski trails, the beginner ski zone and snow play area in the mid-mountain zone. The lodge will provide staging facilities for all



summer and winter activities in this area as well as rentals, restrooms, lockers and seating areas for skiers and non-skiers, ski school, children's programs, a cafeteria style restaurant, a retail shop, ski patrol space, employee space and some office space. The building will have a total gross floor area of 1,500 m² which is planned over two floors.

A maintenance shop will be built (150 m²) which will accommodate two grooming machines and the snowmobiles, include a sign shop, and will be used for lift maintenance, electrical maintenance, etc. The maintenance facility should provide a washroom and employee area, as well as parts storage.

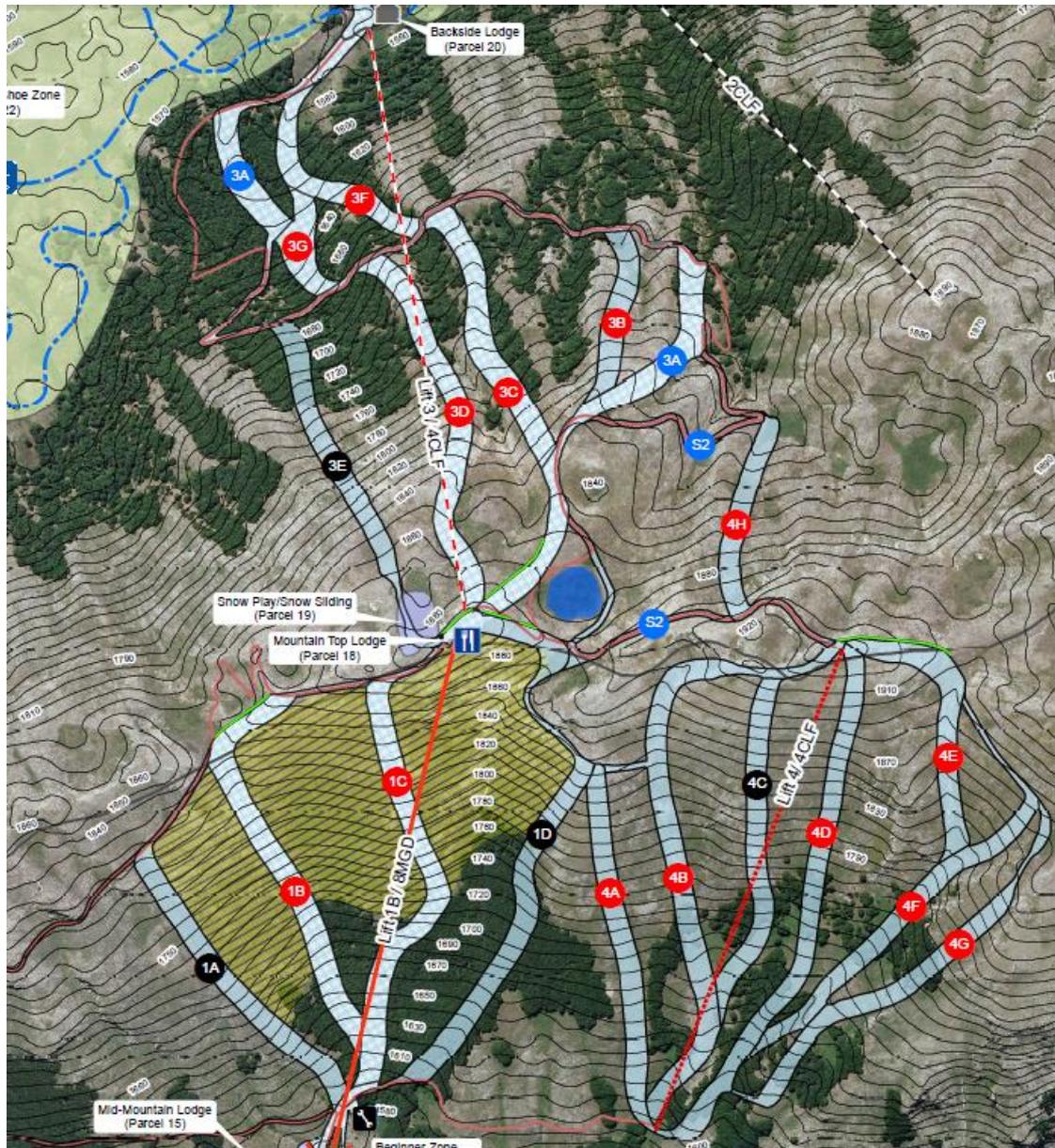
There will be a 2 ha area designated for snow play and a snow sliding zone (tubing, sledding, children's snowplay zone, children's snowmobile course etc.). A 21.5 ha area is designated for proposed winter Nordic ski trails and snowshoe trails that in summer could be used for mountain biking and hiking.

A small beginner centre will be situated between the mid-station of Lift 1 and the proposed mid-mountain lodge. This beginner centre would comprise of 1 moving carpet conveyor belt lift of about 50 meters length and Lift 2. The moving carpet conveyor belt lift will have a capacity of 1,000 passengers per hour and can accommodate approximately 60 skiers at one time.

4.3.7 Galichica Ski Centre - Main Ski Area

The main ski area for the proposed Galichica Ski Centre is indicated in the figure below:

Figure 4.5: Galichica Ski Centre Main Ski Area



The Mountain Top Lodge is an area of 0.2 ha and has two levels: the main level is at the same elevation as the gondola and snow front while the lower level can be accessed from the west side of the building from snow at lower elevation. The main level includes food service seating, kitchen and scramble and a small retail shop. Restrooms, storage, ski patrol space, employee space and a small office are planned for the lower level.

The proposed Galichica Ski Centre will offer approximately 15 km of ski pistes with a total surface of approximately 52.5 ha. The pistes typically vary between 30 and 60 m wide, “Ski ways” are mountain roads that are 6-10 m wide with longitudinal slope gradients between 8-12%. Subsequent to rough grading practices for each site, pistes require fine grooming and seeding to establish a grass cover. This grass cover prevents erosion and helps to minimize hazards and damage to skiers’ and snowboarders’ equipment and to the area’s snow grooming fleet during low snowpack periods.

Artificial snowmaking will be required as the natural snowpack varies from year to year. Estimated water requirements in the Master Plan for Phase I of the development (*see below*) are that approximately 38,500 m³ will be required per season and when the resort is fully operational, approximately 104,500 m³ of water will be required per season. There will be a snow making pond on the eastern/Lake Prespa side within the Main Ski Area, as indicated in the figure below. This will it is understood potentially be constructed on the site of a previous pond used for livestock watering some time ago:

Figure 4.6: Snowmaking Pond/Lake Indicative Location



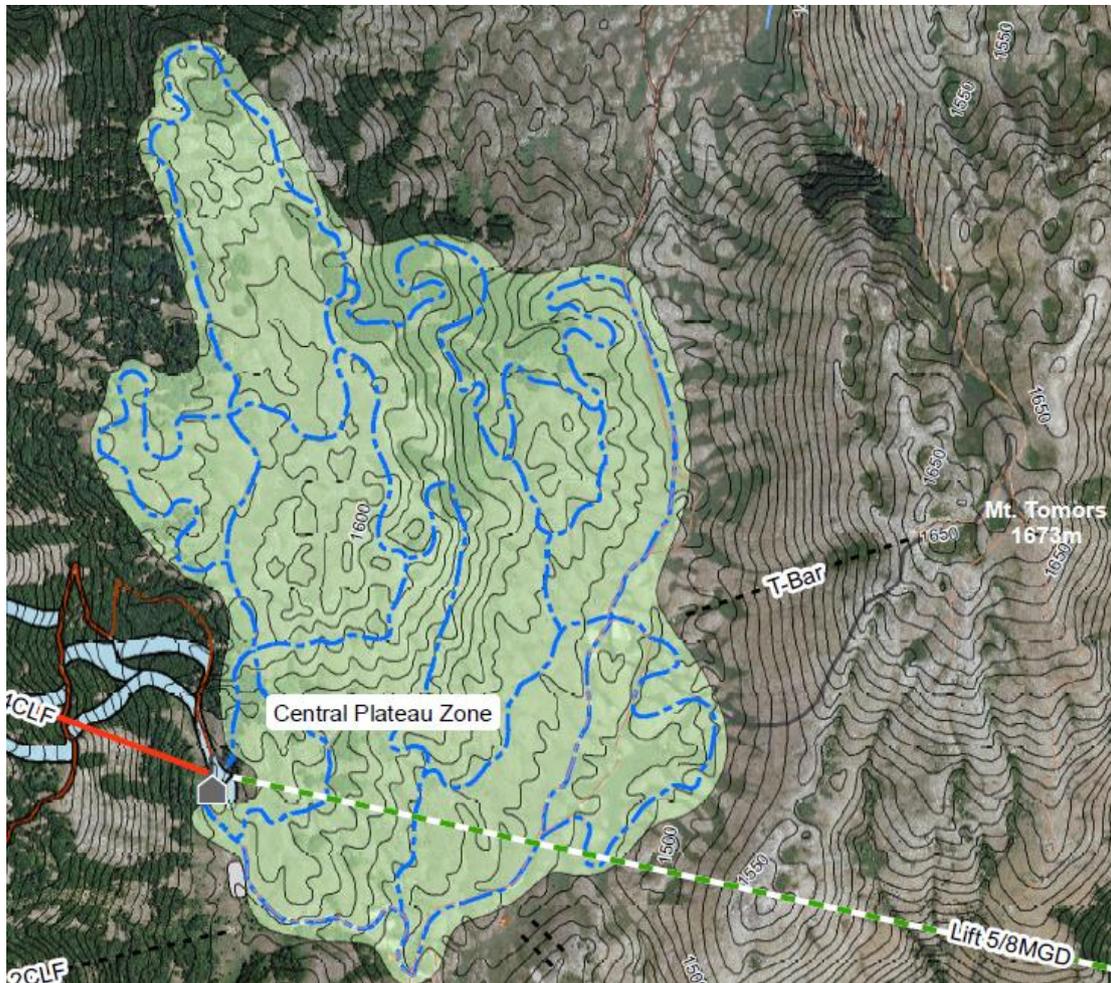
The following list describes the locations that will require significant earthworks according to the available information:

- Levelling of the mountain top area to 1,895 m elevation;
- Piste/skiway construction from the mountain top (1,895 m) towards the north down to the top of Piste 1A (1,815 m);
- Construction of a skiway on piste 1D between the 1,870 m contour and the 1,850 m contour;
- Construction of the beginner area and levelling of Piste 2A at the mid-mountain zone;
- Construction of a skiway at the lower section of piste 1D leading to the mid station.

4.3.8 Nordic Ski Area (Central Plateau Zone) & Upper Mountain Zone

Nordic / Cross-country ski trails will be developed on gentle terrain that is too flat for commercial skiing – the area is indicated on the figure below:

Figure 4.7: Galichica Ski Centre – Nordic Ski Area on the Central Plateau



Nordic skiing is proposed to the north of the mid-mountain zone on the Lake Ohrid side as well as at the Central Plateau (approximately 221 ha) at the top of Lift 5. The gently sloped terrain between the summit of Mt. Tomors and Krla Gola Buka is identified as the Central Plateau Zone. Lift 3 provides a connection to this area in the winter when the road over between the east and west side of the Park is closed. Cross country ski trails are typically 6m wide to allow for two-way circulation.

In the summer, this area is accessible by the pass road and has a small pullout area for parking. A building (Backside Lodge) is planned at the base of Lift 3 to provide services for skiers and other recreationalists in this area and will include a restaurant, restrooms and a small ski patrol space located at the bottom of Lift 3. The Backside Lodge could be considered for summer use by hikers and would also be used by Nordic skiers if the proposed cross-country trail network is developed.

A summer parking lot is proposed to the south of the Backside Lodge. In the winter, the existing unpaved access road will remain snow covered and be used as part of the winter recreation trail network.

The cross-country trail network will be maintained by the staff of the ski center and the mid-mountain lodge and skier services there can be used by Alpine and Nordic skiers.

The development of extensive Nordic facilities creates a secondary venue for competitions at the ski center and can contribute to attracting a broader range of resort guests.

4.3.9 Lake Prespa Base Area

The Oteshevo Base is located on the Lake Prespa side of the study area and is integrated into the bottom terminal of the potential future Oteshevo Connector Lift (lift 5), see the figure below:

Figure 4.8: Galichica Ski Centre Lake Prespa Base Area



The Oteshevo base is planned in a 5 ha parcel on the west side of the existing road along Lake Prespa and has been designed with a mix of accommodation with 968 beds and some surface parking. As the Oteshevo Gondola has been planned as a future development beyond Phase 3 of the ski area development, the base area plan will be re-evaluated at a later date if/when detailed planning for the gondola is underway.

4.3.10 Lifts

Lift/Gondola West – Ski Area to Lake Ohrid side

Lift 1 (gondola from Upper Peštani Base to Ski Area) will have capacity of 1,500 passengers per hour. The first section (Lift 1a) is for access from and egress to the base area of skiers and non-skiing visitors only. The second section provides return-cycle-skiing at west-facing slopes above Lake Ohrid. This section will be able to support approximately 740 skiers at one time. Lift right-of-ways are generally estimated to be 12 to 15 m in width.

Lift/Gondola East – Ski Area to Lake Prespa side

The proposed gondola is technically viable but has not been recommended in the initial investment as it is not feasible without a more substantial tourist destination being created at Lake Prespa. As an alternative to this access lift system, it has been suggested that road access from Oteshevo to the Central Plateau is provided. The existing road could be redeveloped and used for guests arriving from the Lake Prespa side to access the Galichica Ski Centre.

Other Lift Systems

There are other lifts proposed at the Galichica Ski Centre, these are summarised below:

- Lift 2 will be a surface button/platter lift and caters ideally for beginner's terrain. Lift 2 has a capacity of 600 passengers per hour and can support up to 140 skiers at one time. These lifts are generally aerial cable systems with steel towers and concrete foundations every 45 to 75 m.
- Lift 3 is envisioned to be a T-Bar lift located approximately 180 m south of the mid-station. A ski way will be built for skiers to get there and back again. This T-Bar has an hourly capacity of 1,000 passengers and will be able to support 170 skiers at one time.
- Lift 4 is located about 430 m south of the mid-station and can be accessed either from the top of Lift 1b or from the mid-mountain area via Lift 3. This lift is proposed as a fixed grip four-passenger chairlift



with an hourly rated capacity of 1,600 skiers. Lift 4 serves six pistes and will be able to comfortably support approximately 980 skiers at one time.

- Lift 5 provides skiing on the east side of the mountain and is proposed as a fixed grip quadruple chairlift with a rated capacity of 1,600 skiers per hour. This lift will support approximately 820 skiers at one time and provides 230 meters of vertical.

4.3.11 Infrastructure & Utilities

Access Road

The existing main pass road connecting the two lake areas in summer will be used by the Ski Centre. From there, the existing road leading to the central plateau will be used. This is a paved road which leads to the proposed bottom station location of Lift 3.

At the elevation of 1,560 m, a 6.6 km long new gravel road is planned, leading towards the location of the new mountain top (1,895 m) and from there down to the Mid-Mountain zone (1,580 m).

In Phase 2 the same road would be used for construction of Lift 3. For installation of Lift 4, a new road section is proposed from above the snowmaking pond (approximately 1,880 m elevation) along the ridge to the top station of Lift 4. For construction of the bottom terminal an approximately 430 m long gravel road section is proposed which connects from the Mid-Mountain Zone to the bottom of Lift 4.

Construction Road (Temporary)

In Phase 2 the same road would be used for construction of Lift 3. For installation of Lift 4, a new road section is proposed from the saddle above the snowmaking pond (approximately 1,880 m elevation) along the ridge to the top station of Lift 4. For construction of the bottom terminal an approximately 430 m long gravel road section is proposed which connects from the Mid-Mountain Zone to the bottom of Lift 4. The mountain access roads should be 1-1.5 lanes wide (5-8 m wide) over its entire length.

Power Line

It has been assumed that 3-phase power will be supplied to the base of the ski facility by the local electrical utility company. It is recommended that the power line is in a trench to avoid visual impact however an overhead line may be installed.

From the base area, a direct connection to the Mid-Mountain Zone is planned. From there it is proposed that there is a power line along Piste 1C to the Mountain Top, dimensioned big enough to support the ski system and restaurant infrastructure at build-out, and one power line along the proposed construction road to the bottom of Lift 4. If there is no power supply available on the Central Plateau, it is suggested they will connect from the mountain top along Piste 3D and 3G to the Backside Lodge and the bottom terminal of Lift 3 respectively. Transformers will be required on the mountain to convert the primary voltage to the required volts for the lift drive station and the requirements of the mountain restaurant. These electrical power supplies are for facilities including the lifts, snowmaking and general building use. Details need to be refined during the next stage of project development the Master Plan indicates.

Potable Water and Sewer

A pipeline from the base facilities to the Mid-Mountain locations will be required. This would pump water at just enough pressure and at a low volume to fill a reservoir in the Mid-Mountain zone. Then a pressure pump and pressure tank would be used to supply water to the buildings located at the Mid-Mountain zone.

For the mountain top restaurant scheduled for construction in Phase 2, connection to the fresh water supply with a small diameter water pipe will need to continue to the Mountain Top, fed by a booster pump. If a trench is opened to the top during Phase 1 construction, it is recommended in the Master Plan to install these pipes in Phase 1 to avoid unnecessary construction and soil disturbance in Phase 2.

Depending on whether or not there is enough potable water available at the Central Plateau, a water pipe connection from the Mountain Top to the Backside Lodge may also be required. For the water pipelines



described above, the same routing as for the power supply is suggested but depending on local regulations the water pipes may need to be in a separate trench.

A septic tank and drainage field may be installed at the Mid-Mountain zone for Phase 1. A temporary composting toilet could be installed at the Mountain Top. Ultimately, a sewage line from the Mountain Top to the base will be needed when business level increases towards build out (i.e. full Galichica Ski Centre development). For the Backside Lodge a septic tank and drainage field should suffice even at build-out.

The potable water and sewer lines should be installed on the same ski piste as the primary electrical power lines to minimise disruption to the piste system.

4.3.12 Galichica Ski Centre Proposed Winter & Summer Activities

The following activities are planned and their locations can be seen in the figure contained in Annex 6.

Summer Activities:

- Lift Accessed Sightseeing and Hiking;
- Nature Interpretive Hikes;
- Mountain Cinema in the Main Ski Area;
- Camping in the Upper Mountain Zone;
- Mountain Biking: mountain bikers will utilise Lift 1 (the Gondola) to access the mountain or they can ride the pass road to the Central Plateau and from there further up to the highest point. Mountain biking is proposed on existing paved and gravel roads, however some new single trails dedicated for bikers are also proposed to be built;
- Zip Line: is proposed to be installed starting from the top station of Lift 1 going down and crossing the proposed snowmaking pond to the southeast. Then after a short hike another Zip-Line could be installed to bring passengers back to the starting point;
- Climbing Wall: is proposed at the Mid-Mountain zone;
- Paragliding/Hang Gliding: the ski area's lift system can be used to allow paragliders to access a high elevation launch area;
- Euro Bungee Trampoline: which could be located on the Mid-Mountain or at the Mountain Top both during the summer and winter if desired;
- Events: such as conferences, seminars and weddings, these events could be held at the Mountain Top building.

Winter Activities:

- Alpine skiing;
- Children's Activity Zone: several Children's Activity Zones have been included in the design: one at the Mid-Mountain, the Mountain Top and another one at the top of Lift 1;
- Children's Skidoo Course: Mid-Mountain zone, requiring an area equivalent to two tennis courts for a "closed circuit" track for children;
- Snow Tubing: Mid mountain;
- Snowshoeing and Nordic Skiing: both mid mountain and upper mountain zones.



4.3.13 Estimated/Proposed Visitor Numbers

There is a proposed mountain capacity of 3,500 people which is made up of 3,000 skiers and 500 non-skiers who will participate in snow play, snow sliding, Nordic skiing or will simply be sightseeing on the gondola.

As non-skiers tend to spend less time at the Ski Centre, it is expected that there will be turnover throughout the day and the total number of sightseers during peak periods could be up to 1,000 visitors.

4.3.14 Proposed Phased Development

The proposed development of the Galichica Ski Centre is planned in three phases as follows:

Phase I:

- On Mountain:
 - Lift 1 (gondola);
 - The Beginner Zone (Lift 2 and Magic Carpets);
 - 7 pistes (4.2.km and 13.6 ha) for return-cycle skiing;
 - Mid-mountain lodge and activities for non-skiers, including outdoor patios, picnic zones, snow tubing or mini snowmobile track, pedestrian walkway, snowplay and sliding zones and a trail network for Nordic skiing and snowshoeing;
 - Maintenance building for the service of two grooming machines;
 - Artificial snowmaking facilities and water supply;
 - Utility supplies (power, water, communication lines);
 - New mountain access/construction road (6.6 km);
 - Viewing platform on Mountain Top
- Accommodation and base area facilities:
 - Gradiste Lakeside Village: including 200 hotel units/400 beds; 300 multifamily/apartment units/1,200 beds; 2.6 ha of public green space; and 925 m of paved road;
 - Upper Peštani Base: including 33 single-family/chalet units/198 beds south of gondola line; day visitor parking lot 1 for 1,604 visitors; paved 750 m access road connecting the proposed future highway; base service area service building adjacent to gondola station; and picnic area, viewpoint and network of pedestrian paths.

Phase 2:

- On Mountain:
 - Construction of Lift 3, a fixed-grip four passenger chairlift providing access to the east-facing terrain of the mountain;
 - 7 additional pistes;
 - One additional standard grooming machine;
 - 1.2km long new gravel road leading from mountain top to Lift 4 top station and from the Mid-Mountain zone to the Lift 4 bottom station;
 - Construction of the proposed 850m² Mountain Top lodge.
- Accommodation and base area facilities:



- Upper Peštani Base: 38 additional single-family / chalet units / 228 beds; 78 Apartments; 430 Hotel units / 860 beds; Day visitor parking lot for 446 visitors.

Phase 3 (Build out):

- On Mountain:
 - Implementation of Lift 4 to compliment the on-mountain lift infrastructure;
 - 8 additional pistes;
 - Implementation/expansion of snowmaking system;
 - Overall the ski resort offers 16 km (49ha) of groomed ski terrain on 22 pistes plus attractive off-piste terrain;
 - One additional winch-equipped grooming machine;
 - Add-on to the existing maintenance building (+150 m²);
 - Construction of the proposed 500 m² Backside Lodge.
- Accommodation and base area facilities:
 - Upper Peštani Base: 28 additional single-family / chalet units / 168 beds; 50 Apartments / 200 beds; 170 Hotel units / 340 beds; Day visitor parking for 955 visitors.

4.4 A3 Expressway Ohrid – Peštani - State Border of the Republic of Albania

4.4.1 Project Sponsor & Information

The Public Enterprise for State Roads (PESR) is responsible for the development of the A3 Expressway Ohrid to the State Border with the Republic of Albanian and for provision of information on the scheme to PINPG for the purposes of informing the SEA.

The following information has been provided by PESR:

- Updated draft Project Description for Expressway A3 Section Ohrid to Peštani (April & May 2015 – and topographic map showing proposed Ohrid to Peštani Expressway routing from PESR/ESIA Consultants (see figures below and Annex 9));
- Updated draft Analysis of Alternatives for Expressway A3 Section Ohrid to Peštani (April & May & June 2015 from PESR/ESIA Consultants;
- Satellite Map images of route corridor (and high-level route variants) for both expressway sections - Ohrid to Peštani & Peštani to the Albanian Border (May 2015);
- Technical report on the proposed road section 'Ohrid to Peštani' as part of the Expressway A3 Kosel – Ohrid – border with the Republic of Albanian (with map);
- Technical report on the proposed road section Peštani to the border with Albania as part of the Expressway A3 Kosel – Ohrid – border with the Republic of Albanian (with map – see Annex 10).

4.4.2 Background & Need for A3 Expressway

The A3 Expressway Ohrid to the Albanian State Border is part of the overall proposed Expressway 'Kosel-Ohrid-Border with Republic of Albania'. The road between Kosel-Ohrid-Albanian was gazetted as a Category A road in 2011 (O.G. of RM No.150/11). There is an existing road along the Lake Ohrid shore running from Ohrid to the Albanian Border/Sveti Naum (the R1301). The existing road simply cannot be upgraded to meet the requirements of a Category A road so the decision was made for the need for a new road.



Lake Ohrid is a popular tourist and holiday destination in south-western Macedonia. The town of Ohrid lies on the north-eastern side of the lake with various settlements along the eastern shoreline of the lake that include private houses and apartments, small farming plots and hotels and holiday resorts. There is an existing roadway (R1301) that runs from Ohrid southwards along the shoreline that provides access to these various settlements. The existing road extends on to the Albanian border, which lies due south of the lake. During the summer the demand for accommodation and access to the lake results in the road becoming gridlocked with major traffic jams. The existing road provides the only access to the lake and to the various settlements along the lake, this has become unsafe and there are multiple accidents in any given year.

The overriding need for the proposed expressway is to facilitate increased development of tourism in and around Ohrid, the Lake and the surrounding area, including the National Park Galichica. Stated objectives in building the new expressway include:

- To provide greater access to the area for the promotion of tourism, including by accommodating increased traffic flows, while reducing vehicle operating costs and journey time – *the Government of the Republic of Macedonia has plans to increase tourism; these include the 3 Tourism Development Zones and the Galichica Ski Centre outlined within this Chapter. Tourism is expected to grow by 3.5% annually implying additional transport infrastructure is required to support this growth.*
- Reduce pressure on existing shoreline road, avoiding summer peak time congestion and delivering improvements in safety and tourist/visitor experience.
- A regional potential benefit stated in project information is that the new expressway Kosel - Ohrid - St. Naum provides connection of Corridor X, branch Xd and corridor VIII in Macedonia with Corridor VIII in Albania and opening the Prespa-Ohrid tourist area to the appropriate destinations on the Adriatic, Ionian and Aegean Sea.

4.4.3 Project Delivery Sections

The proposed A3 Expressway between Kosel to Ohrid to the Albanian State has been divided into 3 delivery sections by PESR:

- Kosel to Ohrid Section;
- Ohrid to Peštani Section (Approx. 13.3 km) (*runs within the NPG*);
- Peštani to the Albanian Border (approximately 12,940 m) (*runs within the NPG*).

The proposals for the two sections that run through the National Park Galichica, Ohrid-Peštani and Peštani-the Albanian Border, are described within this SEA. The Ohrid to Peštani section has been assigned priority for construction because of the expected traffic growth along this section, largely estimated to be as a result of the growth of tourism.

The A3 Expressway - Ohrid to Peštani Section is under preparation by PESR as part of their current proposed roads programme. The Peštani to Albanian border section of the proposed A3 Expressway is still in the relatively early stages of development compared to the planned Ohrid to Peštani section. It is understood the Peštani to Albanian border Section is not presently in the current roads programme being delivered by PESR and the potential timing of its further development and preparation is still to be confirmed.

4.4.4 Ohrid to Peštani Section

The new expressway starts in Ohrid and runs through the National Park Galichica along the eastern slopes of Mount Galichica to the community of Peštani. The figures below indicate the route (also see Annex 9 for a higher resolution figure):

Figure 4.9: Planned Expressway Ohrid to Peštani Section – Part 1 (Ohrid to Velestovo)

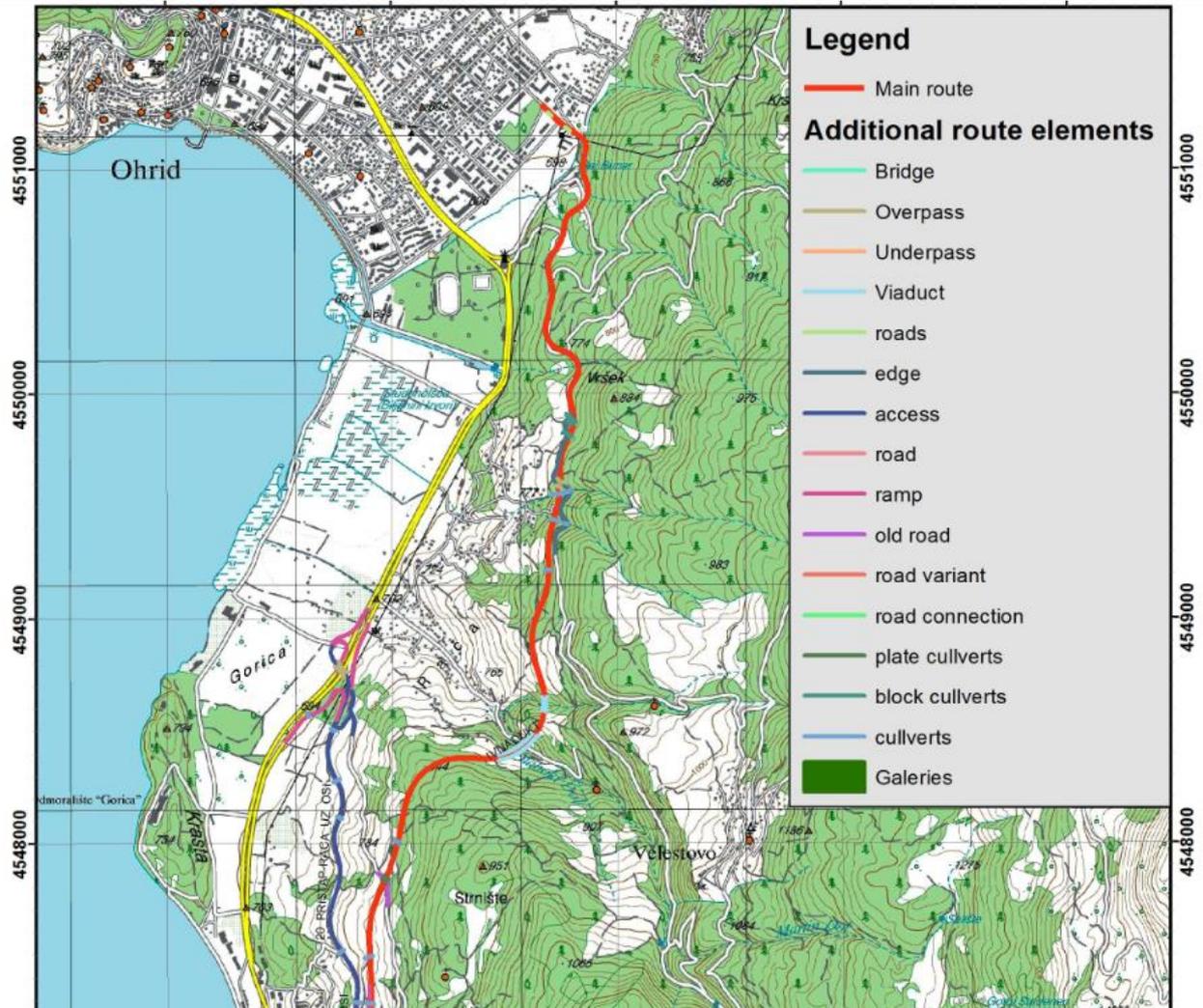
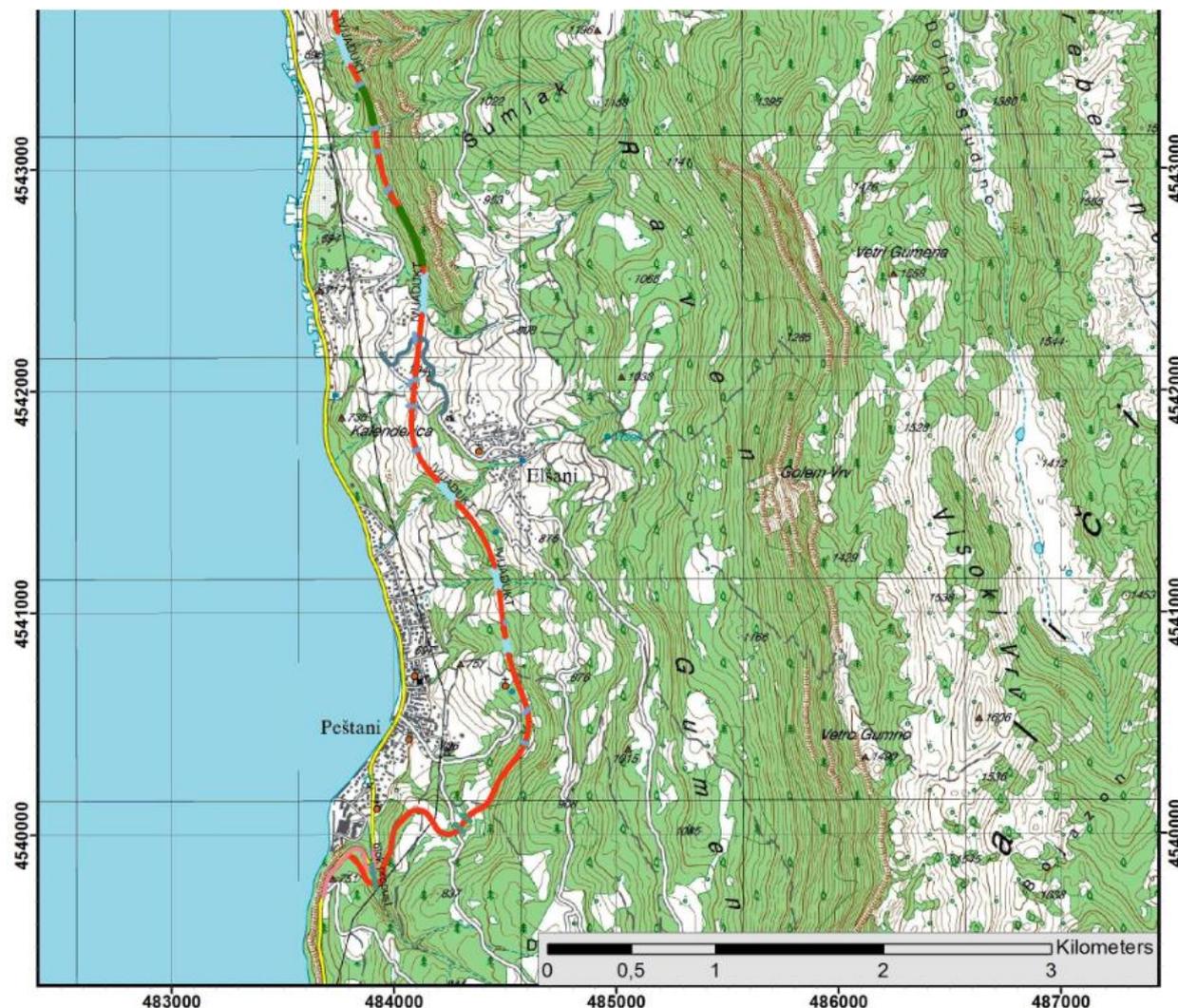


Figure 4.10: Planned Expressway Ohrid to Peštani Section – Part 2 (Velestovo to Crno Brdo)



(Note: for Legend see Figure 4.9)

Figure 4.11: Planned Expressway Ohrid to Peštani Section – Part 3 (Crno Brdo to Peštani)



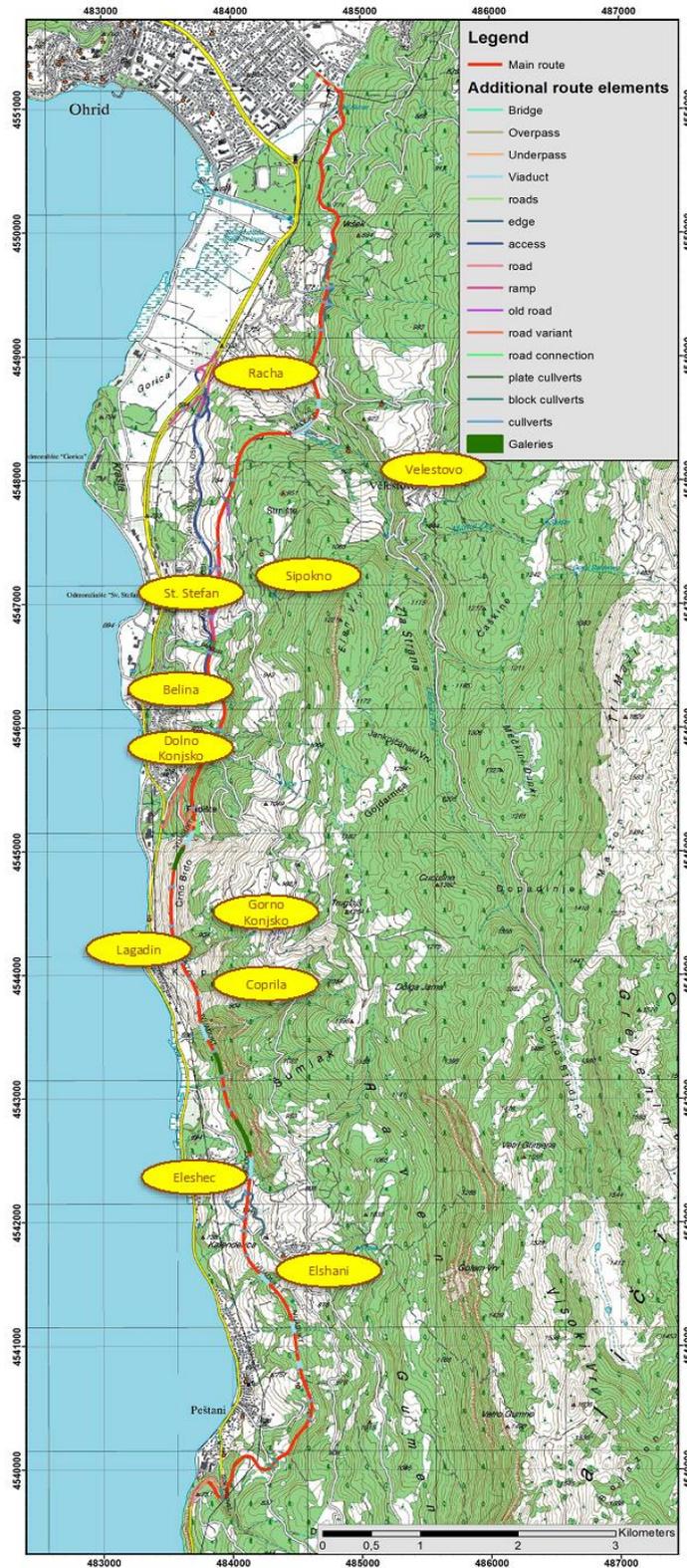
(Note: for Legend see Figure 4.9)

The new road section will be approx. 13.3 km long. It will be set back from the lakeshore from a maximum of 1.5 km in the vicinity of Racha, to running at its closest 250 m from the lakeshore at Crno Brdo. At this point the route runs through an original Zone of Active Management (ZAM) for the National Park under the NPG Management Plan (2011-2020). Part of this ZAM is proposed to be rezoned within the AMP. The overall route alignment passes through the original ZAM in the localities of Racha, Crno Brdo and Coprila.

This road section is estimated to start construction currently in mid 2016 with a 3 year construction period.

The route is generally planned outside the boundaries of the urban settlements, passing through the hilly terrain of the slopes of Mount Galichica. The route is mostly through forest vegetation. The route connects the City of Ohrid with settlements within the NPG and along the lake shore including: Velestovo, Racha, Shipokno, Sveti Stefan, Dolno Konsko, Gorno Konsko, Lagadin, Eleshec, Elshani and Peštani. These are indicated in the figure below:

Figure 4-12 Plan of Proposed A3 Expressway Ohrid to Peštani Section with Settlements





Summary of Proposed Route:

- The proposed Expressway starts at the intersection of Karposh Vojvoda Streets in *Ohrid* then passing over the catchment intakes Bej Bunar heading southwards and following an existing road (the road to *Velestovo*).
- Thereafter the routing heads towards *Racha* where the expressway crosses the valley on the upslope side of *Racha*, on two consecutive viaducts of 58 m and 198 m in length. Following the second viaduct the expressway turns sharply westward and then southwards again towards *Shipokno*.
- Just adjacent to *Shipokno* an intersection will be built connecting the new expressway to the existing road in *Racha*.
- The expressway continues southwards past *Belina* and where it passes the existing *Metropol Hotel* complex an intersection will be built, again providing access to the existing road.
- The expressway continues southwards into an area of steep slopes and rocky outcrops at *Crno Brdo* with a viaduct of 118 m followed by a gallery of 184 m – the gallery is through the section which was within the ZAM in the original NPG Management Plan (2011-2020). This is the point at which the new expressway is closest to the lake.
- A fourth viaduct of 118 m would then be constructed adjacent to the settlement of *Coprila* to cross a stream valley. The expressway routing then continues southwards crossing a fifth viaduct of 118 m and then a second gallery of 195 m, followed by a third gallery, which at 277 m is the longest gallery section.
- The gallery is then almost immediately followed by a sixth viaduct of 148 m, which is due east of *Eleshec*.
- The next intersection is planned just after this point to provide access to *Elshani*, which would be on the eastern side of the roadway. The seventh viaduct is planned for just southwest of *Elshani* and with a length of 88 m.
- The routing requires a further two viaducts (viaducts eight and nine which are 73 and 28 m respectively). The last two viaducts are due east of *Peštani*. The expressway would then end due south of *Peštani* where connecting roads would be provided to join the existing road.

Summary of Key Features along the Proposed Route – Structures, Junctions & Intersections:

As indicated in the route summary above there are 9 viaducts along this section with heights of these viaducts varying from 18 to 43 m. Galleries have been used for three sections where there are steep slopes (e.g. at *Crno Brdo*). Mechanical excavation and blasting will be required for the construction of these gallery structures. The route also incorporates box and tubular culverts.

There are a number of interchanges and road crossings planned along the route, the key ones are summarised below and indicated in the summary of the routing above:

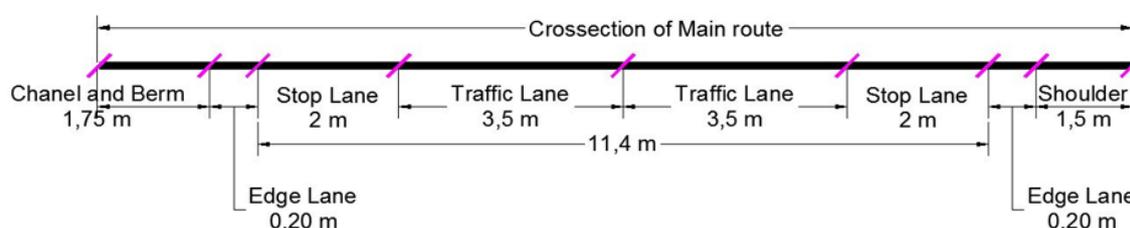
- Interchange in *Ohrid* with *ASNOM Street*.
- Road crossing with local road *Ohrid-Velestovo*.
- *Racha* traffic junction on regional road *R1301*.
- Surface interchange and access road near *Metropol Hotel*.
- Access road *Racha* to *St. Stefan Junction (A3 Expressway)*.
- Junction at *St. Stefan*.
- Road crossing with local road for *Konsko village*.
- Road crossing and surface intersection with local road *Eleshec-Elshani*.
- Road crossing for old road for *Konsko village*.
- Junction/connection with regional road *R1301* at the end of the expressway section.

Cross Section of Proposed Expressway & Connecting Roads:

Main expressway:

The road configuration for the expressway is two-way traffic with a maximum speed of 80 km/h. There will be two main lanes each with a width of 3.5 m, edge lanes each with width of 0.2 m and two emergency stopping lanes each with a width of 2 m. The total width of the carriageway profile thus amounts to 11.4 m and there is no physical separation (barrier) between the traffic lanes – the figure below shows the main expressway cross-section. A 40 m safety buffer / shelter belt is also required from the edge of the road corridor on both sides of the road.

Figure 4.13: Schematic of Main Expressway Cross-Section

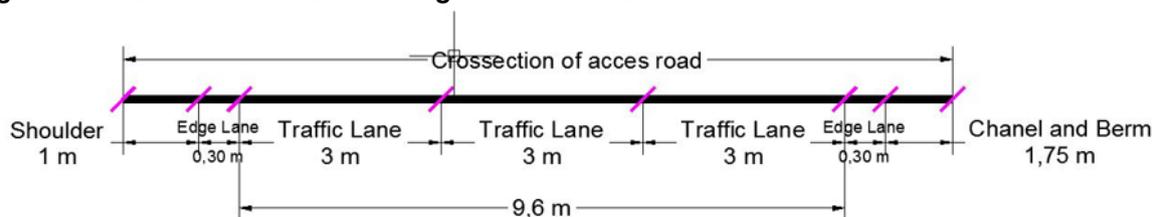


(Source: PESR/Chakar Partners (April 2015 – Project Description))

Connecting roads:

The connecting roads (i.e. those that connect the expressway to the other roads and settlements) are slightly narrower at 9.6 m because the connecting roads will have traffic lanes at a width of 3 m, edge lanes at 0.2 m but no emergency lanes. However, the connecting roads will have a third lane for passing slower vehicles – the figure below indicates the cross-section for these connecting roads.

Figure 4.14: Schematic of Connecting Road Cross-Section



Lighting, Road Furniture & Road Safety:

The key components of road furniture and lighting along this section are summarised below:

- Vertical signalisation: standard & non-standard traffic signs and panels placed within the road corridor at a distance of 1 m from the road edge.
- Horizontal signalisation: marked traffic lanes, stop land, direction of movement markings and arrows/diving islands etc.
- Lighted intersections at ASNOM Street in Ohrid, Velestovo, St.Stephen, Metropol, Elshani and Desaret (nr. Peštani). Lighting is proposed to be with 12 m high lanterns equipped with energy saving lamps and an automatic control system.
- Road safety: will be facilitated through the provision of road markings and road signs, the use of Armco railings on the roadside and mast lighting at the points of intersection. New Jersey style 'concrete' safety barriers will be used to protect embankments, bridges, viaducts and galleries.



- Fencing: the entire road section will be fenced with wire fencing to prevent people and animals from accessing the roadway. Given that the road is an expressway, no pedestrians, bicycles or mechanical equipment such as harvesters or tractors will be allowed on the road.

Drainage:

All runoff will be collected and transported by a road drainage system. Releases of runoff water from the route would be planned to occur at locations where there are planned facilities (such as bridges, culverts etc.). Oil separators will be placed at the end of drainage runs before discharge of runoff. Oil separators are standard equipment for such expressways and there are estimated to be approximately 52 planned along this road section.

Traffic Estimates:

Data on traffic forecast have been taken from the Traffic Study for the preliminary design road M5 Kosel - Ohrid and P-501 Ohrid - St. Naum - border with the Republic of Albania, 2010. The data considered in the traffic analysis in this study included: examination of existing traffic routes, existing state of the traffic in the area, the number of tourists, residents and the motorization level, the National Gross Domestic Product etc.

The analysis was done by the method of multiple forecast traffic and comparative analysis with Study of traffic on BECHTEL for Corridor VIII. Traffic dimensioning was made with authentic research methodology HCM-94 and AASHTO guidelines Washington DC 2001.

Total traffic forecast was made within the planned period of 25 years (2013 – 2038) with an estimated 4% annual increase in traffic and designed speed of 80 km/h. With the estimated year for commissioning set in 2014.

The redistribution of the expected traffic load on the existing and the future road network was done for two sectors of this section and the following forecast was prepared:

Section Ohrid – Lagadin

- Existing road 10,000 vehicles/day
- Expressway 15,000 vehicles/day
- Total: 25,000 vehicles/day

Section Lagadin – Peštani

- Existing road 5,300 vehicles/day
- Expressway 12,200 vehicles/day
- Total: 17,500 vehicles/day

By national law this categorizes the future traffic loading into class 1, as a road for motor vehicles and the technical group Category A.

The calculation of the capacity and the level of the traffic services in accordance with the distribution of traffic per sectors for the target year 2038 was made according to AADT (annual average daily traffic) - vehicles/day and maximal, medium and minimal traffic volumes - Q vehicles/hour; as indicated in the table below:

Table 4.2: Traffic Estimates per Sector (Ohrid-Lagadin & Lagadin-Peštani)

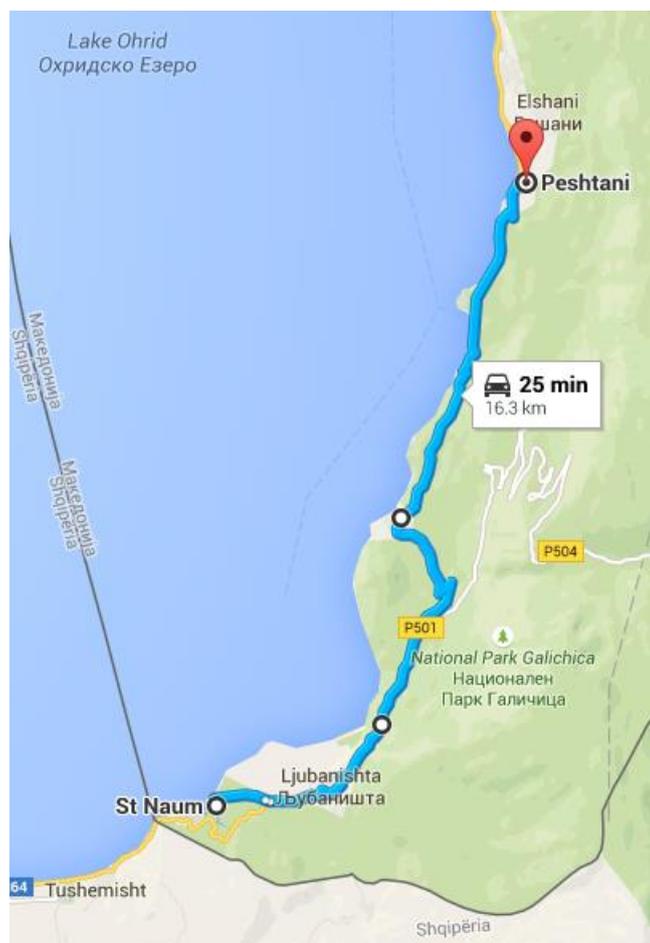
Sector	AADT max vehicles/day	AADT medium vehicles/day	AADT min vehicles/day	Q max vehicles/hour	Q medium vehicles/hour	Q min vehicles/hour
Ohrid-Lagadin/Metropol	16,440	15,000	13,560	2,192	2,000	1,808
Lagadin/Metropol-Peštani	13,371	12,200	11,029	1,783	1,627	1,470

4.4.5 Peštani to Albanian Border Section

The Peštani to Albanian border section of the proposed A3 Expressway is still in the relatively early stages of development compared to the planned Ohrid to Peštani section. It is understood the Peštani to the Albanian border Section is not presently in the current roads programme being delivered by PESR and the potential timing of its further development and preparation is still to be confirmed. The data available on this Section is presented below. As this road section would be an extension to the Ohrid to Peštani Section it is likely the approach to road safety, drainage, lighting and road furniture could potentially be similar but would be reviewed for the specific conditions of the route from Peštani to the Albanian border.

This road section runs through generally a less developed area, passing through natural areas of the NPG running from Peštani past the village of Trepjca on the lake shore down to the populated community of Ljubanishta at the southern end of Lake Ohrid. The proposed expressway then runs from Ljubanishta to Sveti Naum (also referred to as *St. Naum*) near the Albanian Border – see figure below which indicates the current route between Peštani and Sveti Naum (R1301/P501):

Figure 4.15: Existing Route – Peštani to Sveti Naum/Albanian Border



(Source: Google maps)

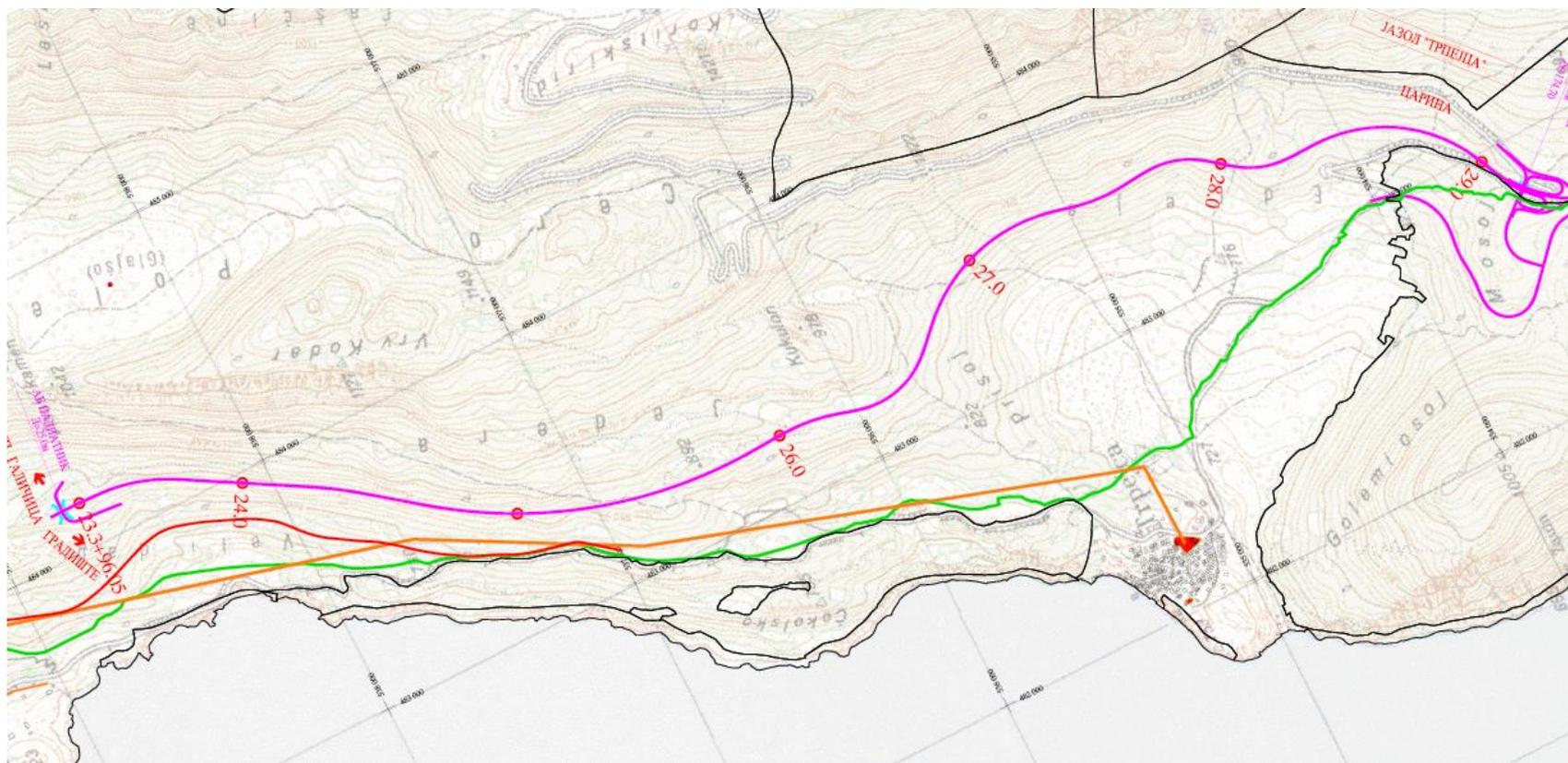
According to the submitted technical report and the maps (see the figures below and Annex 10), the section Peštani – the border with the Republic of Albania as part of the Express Road A3 Kosel – Ohrid – border with the Republic of Albania is composed of two parts with a total length of 12,940 m approx.:

- Part 1: Peštani – Ljubanishta has a length of 11,149 m approx.



-
- Part 2: Ljubanishta – Sveti Naum (near the border with the Republic Albania) is 1,791 m long approx.

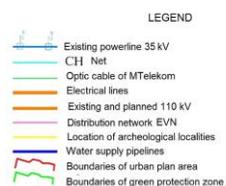
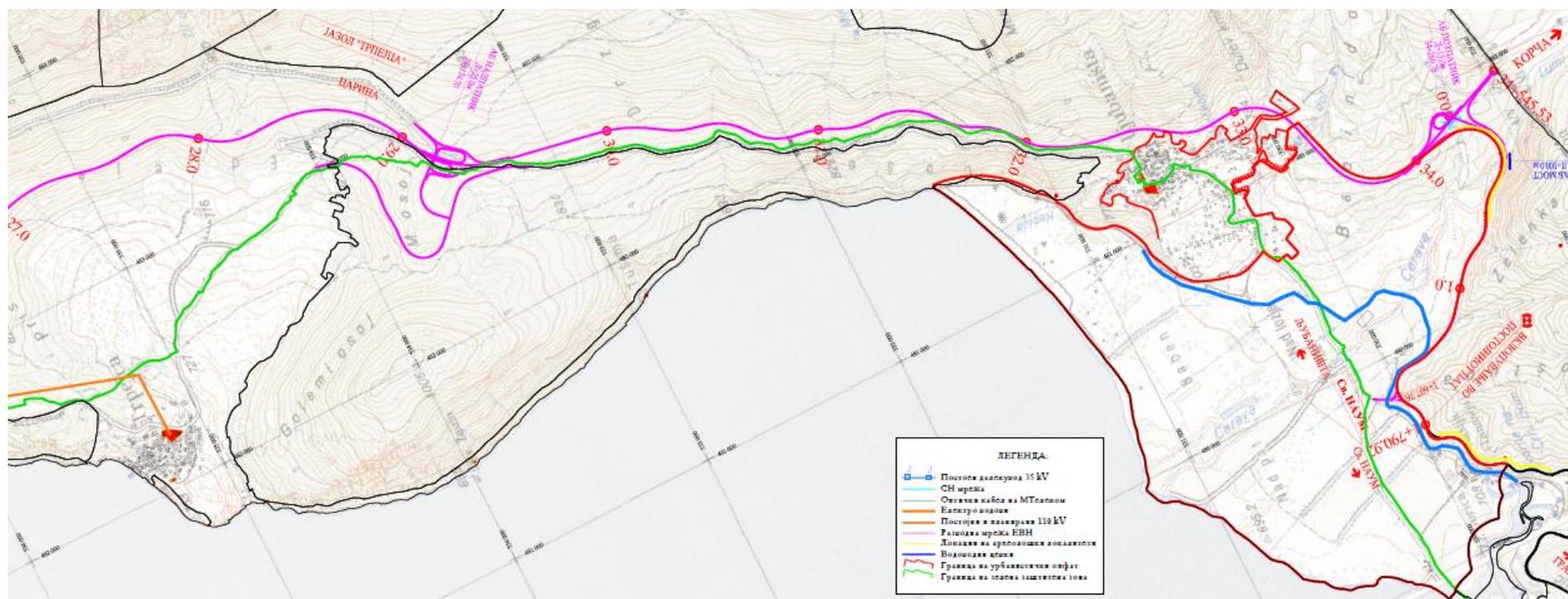
Figure 4.16: Proposed A3 Expressway Peštani to the Albanian Border - Peštani to Trpejca



LEGEND

- Existing powerline 35 kV
- CH Net
- Optic cable of MTelekom
- Electrical lines
- Existing and planned 110 kV
- Distribution network, EVN
- Location of archeological localities
- Water supply pipelines
- Boundaries of urban plan area
- Boundaries of green protection zone

Figure 4.17: Proposed A3 Expressway Peštani to the Albanian Border – Trpejca to Ljubanishta to Sveti Naum/Albanian Border





Cross-Section:

The width of the full profile of the road amounts to 14.40 m, and in some parts it is wider by 3.55 m because of the third lane for heavy goods vehicles. It is anticipated that a 40 m safety buffer / shelter belt is also required from the edge of the road corridor on both sides of the expressway for this stretch.

Road Connections/Junctions/Intersections:

The framework of the project for the section Peštani – the border with the Republic of Albania, envisages the following road connections & junctions:

- The junction Trpejca in which the regional roads R1301 Ohrid – Peštani – Trpejca – Ljubanishta and the Trpejca – Carina Local road is crossed with the newly planned express road A3;
- The junction Ljubanishta in which the newly planned route of the connection of the tourist sites along the south coast of the Ohrid Lake (i.e. TDZ at Ljubanishta) joins the newly planned express road;
- A connection/junction for joining the populated place Ljubanishta with the new express road A3;
- A surface junction/connection between the existing road Ljubanishta – to the border crossing near Sveti Naum, with the new regional road A3, which enables direct connection of the tourist sites Ljubanishta and Sveti Naum with the newly planned road.

Structures & Earthworks:

Additionally, within the framework of the project for the section Peštani – border with the Republic of Albania, it is foreseen that viaducts, bearing walls and embankments will need to be constructed (some of which are indicated in the figures above).

4.4.6 Shelter Belt/Buffer Zone for Expressway A3 Ohrid-Peštani-Albanian Border

Following the whole length of the road, there will be a shelter-belt / buffer zone. The width of the shelter-belt along the road, in which no buildings can be constructed or no construction works can be performed that are not functional to the road should amount to 40 metres for an express road (from edge of road corridor) and 20 metres for a regional road. Pursuant to the Law on Public Roads (The Official Gazette of the Republic of Macedonia, no. 84/08, 52/09, 114/09, 124/10, 23/11, 53/11, 44/12, 168/12, 163/13 and 187/13), the width of the shelter-belt is calculated from the outer edge of the road strip from each side of the road separately. In this strip, the woods and bushes obscuring the clarity of moving traffic may be cut down.

Based on this data, the total amount encompassed in the express road A3, Kosel – Ohrid – border with the Republic of Albania, including the access roads, amounts to approximately 325 ha out of which approximately 95% are within the borders of the National Park Galichica. This allows for the initial estimated 'direct footprint' of the expressway including the shelter belt – *loss of habitat in the NPG is further evaluated in Chapter 7 which includes for induced effects.*

A summary of extracted additional Technical Design Data from the original technical reports provided by PESR for the proposed A3 Expressway is provided in Annex 11.

4.5 Tourist Development Zones

Three Tourism Development Zones (TDZs) have been proposed which lie within the National Park Galichica boundary:

- 'Ljubanishta' Tourism Development Zone;
- 'Oteshevo' Tourism Development Zone;
- 'Stenje' Tourism Development Zone.

These TDZs are the initiative of the Ministry of Transport & Communication (MoTC). It is understood that these TDZs would be planned and zoned by the Spatial Planning Agency (SPA) at the request of MoTC



and would be implemented by private investors. A meeting was held during the revision process for this SEA with the SPA in May 2015. Key points regarding status of the TDZ's is provided below:

- Ljubanishta TDZ: this is divided into 3 components (*see below*) – Ljubanishta 1, 2 & 3. Urban Planning Documentation has been prepared by SPA and adopted by the MoTC for Ljubanishta 1 (January 2014). The planning documentation for Ljubanishta 2 is under development. According to the SPA the MoTC have indicated they will not be proceeding with Ljubanishta 3, which is proposed in the area of St. Naum Springs that is within the Zone of Strict Protection (ZSP) within the NPG. However, confirmation of whether MoTC have decided to not proceed with Ljubanishta 3 has not been provided at the point of preparing this SEA to PINPG.
- Oteshevo TDZ: the SPA have not yet been requested to commence preparation of the planning and zoning documentation for this TDZ.
- Stenje TDZ: the SPA have not yet been requested to commence preparation of the planning and zoning documentation for this TDZ. This TDZ breaches the Buffer Zone for a ZSP related to Stenje Blato/Marsh. SPA understand that possibly this TDZ will not proceed but MoTC have not provided confirmation of this in writing at the time of the preparation of this SEA.

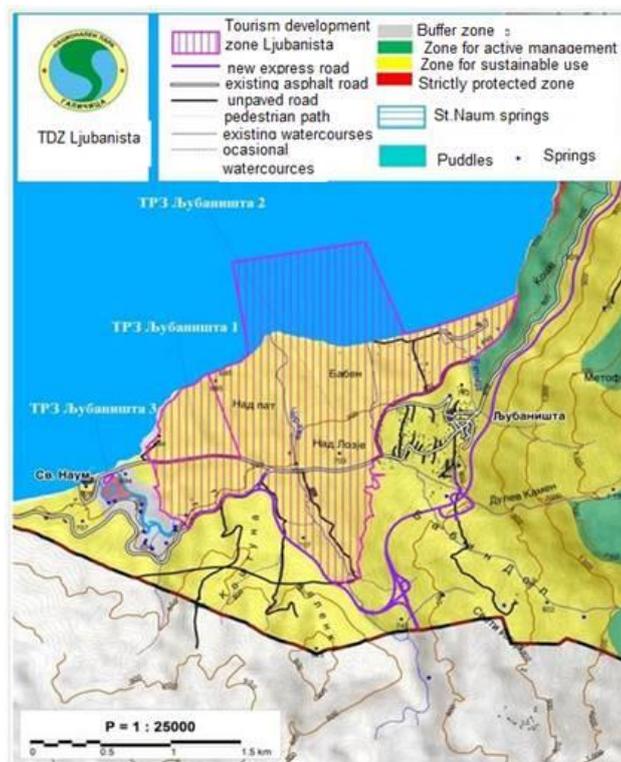
Due to the differences in the status and planning stage of the various TDZs there are some differences in the available information on these proposals. Detailed information on the TDZs is not available at this time, except some additional information provided within the Planning Documentation for Ljubanishta 1. It is expected that the TDZs will be urban developments that are likely to include: hotels, apartments, restaurants, Parks and other services and facilities related to tourism and visitor activities.

The construction process typically involved in the TDZs is likely to comprise: land clearance, excavations, building work, and landscaping and construction traffic to deliver materials. During operations impacts will arise from increased visitor numbers in the area and positive economic effects from increased tourism and employment locally.

4.5.1 'Ljubanishta' Tourism Development Zone

The Ljubanishta TDZ is divided into three components – Ljubanishta 1, 2 and 3; these are indicated in the figure below. The TDZ covers a part of Lake Ohrid which is outside the limits of the Park land boundary:

Figure 4-18 Ljubanishta TDZ – Overview Map with NPG Zoning



The total TDZ is estimated in the available information to contain approx. 336.1 ha out of which an estimated 20% lies in Lake Ohrid with most of the remaining in the National Park Galichica. The estimated intrusion into the Park's Zones of each part of the TDZ are summarised below³:

- Ljubanishta 1: 26.79 ha in the ZSU;
- Ljubanishta 2: 266.26 ha in the ZSU and 0.69 ha in the ZAM;
- Ljubanishta 3: 0.22 ha in the Buffer Zone to the ZSP.

Ljubanishta 1 and 2 will largely be established in the existing semi-urban, semi-agricultural areas surrounding the existing village. However, Ljubanishta 3 has been to be located in the area of the St Naum Springs, which is part of NPG's Zone of Strict Protection. This spring is a karstic spring, adjacent to an old monastery and is unique. Much of the aquatic biodiversity in the spring is endemic and is not represented in the adjacent Lake Ohrid. For these reasons, any additional plans to develop tourism facilities in this area are of concern. Even though the area is currently a pilgrimage site, and does attract visitors, any increased development physically adjacent to the protected area will induce additional risks.

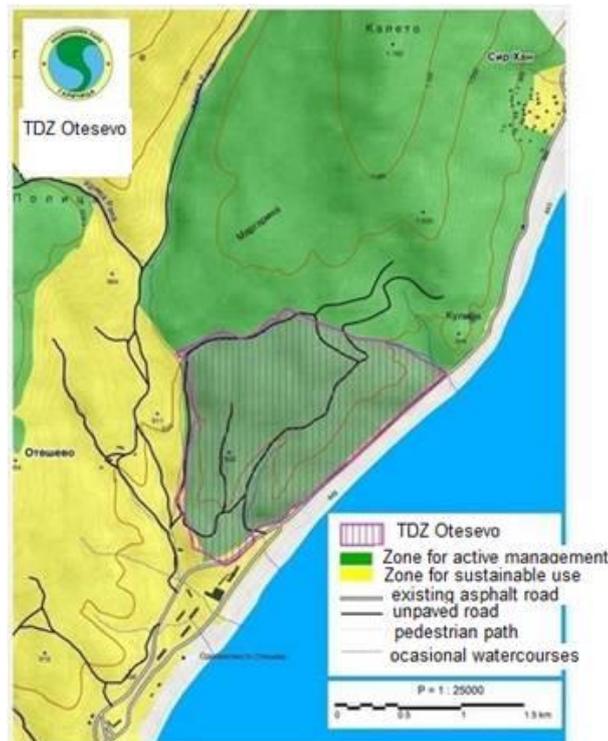
The Planning Document prepared by the SPA entitled: 'Urban Planning Documentation for Tourism Development Zone' Ljubanishta 1 (CM Ljubanishta Municipality of Ohrid, Republic of Macedonia – Jan 2014)' confirms the main purposes of the land for the TDZ as: Housing (Class A: Temporary); Commercial & Business (Class B), Greenery & Recreation (Class D) and Infrastructure (Class E). The Planning Document sets out also the measures for cultural heritage, nature and environmental protection.

³ Hectares associated with the 3 parts of Ljubanishta do slightly vary across the available documentation – however this is an insignificant variation and does not affect the outcomes of the SEA.

4.5.2 'Oteshevo' Tourism Development Zone

The figure below indicates the Oteshevo TDZ. This TDZ is within the borders of the NPG and located between Margarina and the Oteshevo Resort on the shores of Lake Prespa.

Figure 4.19: Oteshevo TDZ – Overview Map with NPG Zoning

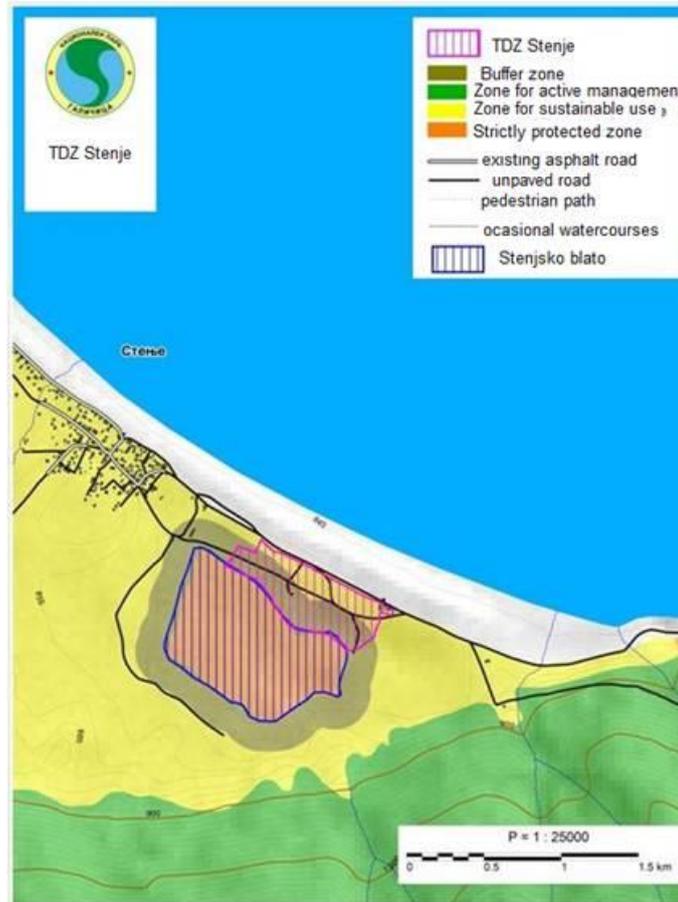


This is a proposed development of accommodation and tourism infrastructure on an area of approx. 58.95 ha located on the southern slopes of Sirhansko Kale Hill, on the edge of Lake Prespa. The entire area is populated by a Hungarian Oak forest characterised by the *Quercetum frainetto – cerris macedonicum* tree species, and associated communities. The TDZ is located on 57.39 ha of ZAM with the remaining 1.56 ha being within the ZSU.

4.5.3 'Stenje' Tourism Development Zone

The figure below indicates the Stenje TDZ which is in the borders of the NPG and located between the shore line of Lake Prespa and Stenje Marsh/Blato:

Figure 4.20: Stenje TDZ – Overview Map with NPG Zoning



The proposed Stenje TDZ is located on the shore of Lake Prespa, between the lake and the Stenje Marsh. The TDZ covers an area of 7.92 Ha. The Stenje Marsh has been declared a Zone of Strict Protection by NPG, due to the high number of endemic species and endangered such as rotifers, crustaceans, gastropod mollusks, dragonflies, reptiles and birds. The marsh is surrounded by a Buffer Zone, extending 50 m from the border of the Zone of Strict Protection (ZSP). The proposed TDZ extends into the Buffer Zone by 5 ha with the remaining TDZ being within the ZSU. The Stenje Marsh is a unique area of saturated ground, whose water levels and aerial extent rise and fall with the level of Lake Prespa.

4.6 Analysis of Planning Context to Amended Management Plan

The *Regulation on the contents of the report on the strategic assessment of the environment (O.G. of RM No. 153/07)* requires that an SEA should take into account the planning hierarchy within which the plan or programme is set, including any higher level strategic assessment which may have been carried out. The summary of planning context (plans & programmes) within which the NPG MP is set, the planning context to the AMP and, where relevant, whether or not the AMP supports delivery of these plans and programmes is provided below.

Several policy and strategic documents developed at a national, regional and local level have relevance to the Park area. They address the areas of:

- Managing conservation areas;
- Protection of the environment;
- Economic development;



- Sustainable development;
- Relevant fields – tourism, energy, transport, and social policy.

The adoption and the implementation of spatial and urban plans in the Republic of Macedonia are a part of a broader concept and process of providing of steady and sustainable spatial development, the main goal of which is to provide quality living conditions, socio-economic development and protection and promotion of the environment and nature.

Because of the direct and indirect connections between the Park Management Plan and other planning documents at a local, regional, national and/or international level, within the procedure of strategic assessment of the environment it is necessary to analyse their compatibility and concordance. This type of analysis should determine whether eventually there is a conflict in the concordance between the goals of the different planning documents and if it is determined that it exists, then it is necessary to define measurements for securing the compatibility.

This policy framework, including the National, Regional & Local Planning Documents (PD) listed below, was taken into account when preparing the SEA:

- Spatial Plan of the Republic of Macedonia (2002-2020);
- Spatial Plan of the Ohrid-Prespa Region (2005-2020);
- Draft Spatial Plan of National Park Galichica (2012);
- Management Plan for National Park Galichica (2011-2020);
- Second National Environmental Action Plan of RM (2006);
- Management Plan for the Basin of Lake Prespa (2014-2023);
- Strategy for Monitoring of the Environment (2004);
- National Biodiversity Strategy & Action Plan (NBSAP) for the Republic of Macedonia (2004);
- National Strategy for Sustainable Development of the Republic of Macedonia (2009-2030);
- National Water Strategy (2011-2041);
- National Strategy for Rural Tourism (2012-2017);
- National Transport Strategy (2007-2017);
- Trilateral Strategy and Action Plan for the Prespa Lake Basin (2012-2016);
- Program for Development of the South-western Plan Region (2010-2015);
- Study for revalorization and management plan for natural monument Prespa Lake (2013);
- Natural & Cultural Heritage of the Ohrid Region World Heritage Site Management Plan (2010)
- Action Plan and Program for Noise Management in municipality of Ohrid (2011);
- Local Environmental Action Plan for municipality of Resen (2003);
- Local Environmental Action Plan for municipality of Ohrid (2012).

The following table summarises the linkages between the key plans, programmes and strategies of relevance and the Park Management Plan. This provides the key planning context to the AMP and, where relevant, whether or not the AMP supports delivery of these plans and programmes.



Table 4.3: Summary Analysis of Key Planning Context to NPG Management Plan & AMP

National/Regional/Local Plans, Programmes and Strategies (Planning/Programme Document – PD)	Summary of Goals of the Plan, Programme or Strategy	Connection with National Park Galichica Management Plan & Amendments to Management Plan
<p>Spatial Plan of the Republic of Macedonia (2002-2020)</p>	<ul style="list-style-type: none"> ■ Spatial and economic development of the protected areas. ■ Infrastructural connection of the settlements and development of tourism based on the tenets of sustainable development and preservation of the environment. ■ Park is shown in the PD however the planned development projects are not. 	<p>Hierarchical – direct connection through planning of the development of the regions.</p> <p>Pursuant to the Spatial Plan of the Republic of Macedonia all of the activities in the area should be made compliant with the courses of the Spatial Plan of the country, especially the significant activities and those that, among other things, concern the planning and construction of all big infrastructural systems, such as the construction of roads, as well as larger capacities for tourist offer.</p> <p>The proposed changes in the NPG Management Plan are not envisaged in the Spatial Plan of RM. Additionally, the NPG Management Plan is not completely compliant with the goals and objectives of the Spatial Plan of the Republic of Macedonia. For example, the following issues need to be addressed and/or compensated for in the Amendment to the Management Plan (<i>this list is not exhaustive</i>):</p> <ul style="list-style-type: none"> ■ Preservation and protection of all spaces with exceptional and unique values of relevance to scientific, cultural, educational, training, recreational and other functions; ■ Preservation, protection and promotion of all specific representatives of individual ecosystems and outstanding biogeographically areas, especially representatives of individual types and landscapes; ■ For the purpose of preserving ambient, aesthetic and recreational resources of the space, focus should be placed on protection, promotion and adequate use of major natural entreties; ■ Full protection of flora and fauna through protection of major spatial units and guided use of natural resources in accordance with environmental conditions; ■ Provision of natural landscapes protection, ambient and areas surrounding cultural and historical monuments, in the framework of the comprehensive protection of those entreties; ■ Mandatory treatment of immovable cultural heritage in the process etc.
<p>Spatial Plan of the Ohrid-Prespa Region (2005-2020)</p>	<ul style="list-style-type: none"> ■ Ensuring the development of the local economy with the respect of planning determinations for the protection of the environment and sustainable local and regional development. 	<p>Providing the conditions for optimal functioning of the existing and planned infrastructural systems, settlements, production facilities and other systems. The proposed changes in the NPG Management Plan are not envisaged in</p>



National/Regional/Local Plans, Programmes and Strategies (Planning/Programme Document – PD)	Summary of Goals of the Plan, Programme or Strategy	Connection with National Park Galichica Management Plan & Amendments to Management Plan
	<ul style="list-style-type: none"> ■ Functional, economic, and social integration of the region. ■ Protection and promotion of the natural goods, and reasonable use of the produced goods. ■ Preservation of waters of first and second class quality. 	<p>the Spatial Plan of the Ohrid-Prespa region.</p> <p>Additionally, the Management Plan is not completely compliant with the aims and objectives of the Spatial Plan. For example, the following issues need to be addressed and/or compensated for in the Amendments to the Management Plan (<i>this list is not exhaustive</i>):</p> <ul style="list-style-type: none"> ■ Protection and promotion of the natural goods, and reasonable use of the produced goods in the Region. ■ Protection of Ohrid and Prespa Lakes as world natural heritage. ■ Protection of the Region as world cultural heritage (the city of Ohrid and its coastline from the monastery of St. Naum to the village of Radozhda have been placed under protection of UNESCO as world natural and cultural heritage). ■ Preservation of the ecological values, functions and biological diversity in the area of Prespa Park. ■ Integral protection of the natural spatial entirety of the National parks.
<p>Second National Environmental Action Plan of RM (2006)</p>	<ul style="list-style-type: none"> ■ Defines the framework for planning and managing of the environment, as well as the activities needed for implementation of measures for solving the problems in accordance with EU directives. ■ Contributes to the integration of the economic and social aspects in the field of the environment. 	<p>Sustainable development of the environment.</p> <p>Monitoring of the environment.</p> <p>The proposed amendments in the NPG Management Plan are not envisaged in the Second National Environmental Action Plan of RM, however, they are not inconsistent with it.</p>
<p>Management Plan for the Basin of Lake Prespa (2014-2023)</p>	<ul style="list-style-type: none"> ■ Strengthening of the capacity for regenerating the ecosystem and preserving the biodiversity at a local, national and trans-boundary level in the three neighbouring countries in the region with preparation of ecosystem-oriented approaches towards the practices of the main production sector within the basin, including: land utilisation, physical planning, water management, agriculture, forestry, fishing and management of the protected area. 	<p>Integration of the principles for sustainable management of biological diversity, agriculture, fishing and management of the protected area.</p> <p>The proposed changes in the NPG Management Plan are not envisaged in the MP of the Prespa Lake Basin, however, they are not inconsistent with it, provided the adverse effects are adequately addressed.</p>
<p>Strategy for Monitoring of the Environment (2004)</p>	<ul style="list-style-type: none"> ■ Monitoring of the situation in the environment and preparation of reports. 	<p>Establishment of monitoring in all mediums of the environment.</p> <p>The proposed amendments in NPG Management Plan are not envisaged in the Strategy for Monitoring of the Environment, however, they are not inconsistent with it, provided the adverse effects are adequately addressed. Monitoring recommendations for each of the planned developments are</p>



National/Regional/Local Plans, Programmes and Strategies (Planning/Programme Document – PD)	Summary of Goals of the Plan, Programme or Strategy	Connection with National Park Galichica Management Plan & Amendments to Management Plan
		proposed within the SEA.
National Biodiversity Strategy & Action Plan (NBSAP) for the Republic of Macedonia (2004)	<ul style="list-style-type: none"> ■ The overall aim of the NBSAP is: <i>To conserve biodiversity and use biological resources in a sustainable manner for the welfare of people, taking in consideration the unique natural value and the rich traditional of the Republic of Macedonia.</i> ■ The new NBSAP is in the process of being prepared at the time of writing the SEA. 	<p>The proposed amendments in the NPG Management Plan are not envisaged in the NBSAP for the Republic of Macedonia.</p> <p>Identification of endangered species and measures for protection have been considered within the amendment process and SEA.</p>
Trilateral Strategy and Action Plan for the Prespa Lake Basin (PLB) (2012-2016)	<ul style="list-style-type: none"> ■ Activity in the region contributing to the development of tourism (due to the presence of a National Park, natural lake, natural goods). ■ Development of tourism in the region while protecting the environment. ■ Socioeconomic development of the region due to tourism. ■ Promoting trans-boundary tourism. 	<p>Providing controlled development in PLB and reducing the impact on the environment.</p> <p>The proposed amendments in the NPG Management Plan are not envisaged in Trilateral Strategy and Action Plan for the Prespa Lake Basin, however, they are not inconsistent with it, provided the adverse effects are adequately addressed.</p>
Program for Development of the South-western Plan Region (2010-2015)	<ul style="list-style-type: none"> ■ Establishment of middle-term goals for regional development as well as the priorities, measures and programmes for implementation of the middle-term goals. 	<p>Tourism development in the area in question and in the Region.</p> <p>The proposed amendments in the NPG Management Plan are not envisaged in Program for the Development of the South-western Planning Region, however, they are not inconsistent with it, provided the adverse effects are adequately addressed.</p>
Natural & Cultural Heritage of the Ohrid Region World Heritage Site Management Plan (2010)	<ul style="list-style-type: none"> ■ Pursuant to paragraph 108 of the Operational Guidelines for the Implementation of the Convention, "each nominated property should have an appropriate management plan... which should specify how the outstanding universal value of a property should be preserved, preferably through participatory means" (UNSECO, 2005). Following such guidelines, the development of Ohrid Region's World Heritage Management Plan was launched in 2009. ■ This PD provides the Vision of the future of the cultural and natural heritage of the Ohrid region as world heritage. The basic aim of this PD is to give value, protect and promote the universal natural and cultural values of the Ohrid region. To that aim, the PD provides a vision for a long-term management of natural and cultural heritage of the Ohrid region, guidelines for its realisation, reflected through the general goals and proposed programmes and activities, acknowledged mechanisms and people in charge of the activities, deadlines 	<p>From the Park's total territory, 17,974 ha (or about 72%) also belong to Ohrid Region's World Heritage area. During the development of the National Park Galichica Management Plan the initial draft Ohrid Region's World Heritage Management Plan was still in progress. The NPG Management Plan and the subsequent proposed amendments to the NPG Management Plan have considered the drafts available of this PD in their development.</p> <p>The 2013 UNESCO mission recommended that Environmental and Heritage Impact Assessments should precede all development proposals that can potentially impact the OUV and that these, along with project proposals, should be submitted, in accordance to Paragraph 172 of the Operational Guidelines, to the World Heritage Centre for review prior to granting approval for implementation. The AMP and SEA also presume the need for ESIs and HIAs before the development projects can go ahead. The SEA considers the assessment of impacts at a strategic level on the World Heritage Site and the Outstanding Universal Value (OUV) area (<i>See Chapters 7 & 8</i>).</p>



National/Regional/Local Plans, Programmes and Strategies (Planning/Programme Document – PD)	Summary of Goals of the Plan, Programme or Strategy	Connection with National Park Galichica Management Plan & Amendments to Management Plan
	<p>for their implementation, as well as mechanisms for monitoring. The Plan raises the awareness for the region, its interpretation and use as educational mean and foundation for the local community in its cultural, social and economic life.</p> <ul style="list-style-type: none"> ■ The objective of the PD/Management Plan is to provide complete frame for implementation of decisions on conservation, management and exploitation of facilities for a period of ten years starting from the day of its adoption. ■ The Management Plan summarises the 'key values' of the National Park Galichica. ■ The 2013 UNESCO mission strongly recommended that a comprehensive action plan for the lakeshore be finalised and adopted (based on this draft Ohrid Management Plan), before consideration is given to additional coastal developments. The process of adoption of the draft Ohrid Management Plan is not confirmed. 	<p>The 2013 UNESCO mission strongly recommended that a comprehensive action plan for the lakeshore be finalised and adopted (based on this draft Ohrid Management Plan), before consideration is given to additional coastal developments. The process of adoption of the draft Ohrid Management Plan is not confirmed.</p>
<p>Local Environmental Action Plan for municipality of Ohrid (2012)</p>	<ul style="list-style-type: none"> ■ The Local Environmental Action Plan is a basis for achieving living and working environment based on the principles of sustainable development in which the local democracy should function, and it will develop an economy that will provide a better standard of living for citizens by reasonable utilization of resources and creating opportunities for future generations. 	<p>The proposed amendments in NPG Management Plan are not envisaged in the Local Environmental Action Plan for the municipality of Ohrid. However, they are not inconsistent with it, provided the adverse effects are adequately addressed.</p>



5. Description of Environmental and Socio-Economic Characteristics (Baseline)

5.1 Geographical Features - Topography, Geomorphology & Geology

5.1.1 Galichica Mountain Topography

Galichica Mountain is part of the Sara-Pind mountain range. It occupies the farthest south part of the geotectonic unit of the Western-Macedonian zone. The vast open surfaces towards Lake Ohrid and Lake Prespa demarcate its boundaries to the east and to the west, and contribute to its clear visual distinction as a separate entirety. To the north, the mountain range stretches to the Plakenska Mountain i.e. Ilinska Mountain over the pre-reef vale of Bukovo mountain pass, while to the south it descends to Korchansko Pole.

The current topography is mainly a result of the tectonic activities along the two main faults: the Kosel-Ljubanishta fault and the Oteshevo fault. Furthermore, the massive limestones, radial tectonics and the glacial and river erosion have also contributed to the final shaping of the relief. All these factors have played their part so that Galichica Mountain has developed an attractive relief, with features that distinguish it from all other mountains.

The mountain stretches along a north-south axis, and the elevation descends to the north. Owing to the Kosel-Ljubanishta fault, the mountain slopes towards the Ohrid valley fall steeply towards Lake Ohrid. The landscape is dominated by several slopes:

The slope below the peaks of Bugarska Chuka – Golem Vrv is the lowest peak according to the elevation of the exposed part, reaching a maximum height of 180 m, but it is the longest (4.5 km) of all the slopes on Galichica.

The slope along the shore of Lake Ohrid - from the "Desaret" Hotel to the locality of Kjoshe, rises directly above the lake waters as abrasion cliffs. The highest rises are those by the church of Holy Mother of God of Zaum, reaching a height of around 200 m.

Galichica Mountain forms a part of the NPG. The steep high slopes, numerous dry valleys, scree and talus deposits make Galichica seem a high and unapproachable mountain. Due to this type of relief, the existence of surface karstic forms and the rare forest vegetation existing over the western slopes, Galichica resembles the mountains from the Dinara karst.

Unlike the western slopes, those located farther east have a gentler inclination towards Prespa valley. They have been formed by the tectonic activity of the Oteshevo fault. In contrast to the rectilinear western side, the eastern one makes a large arch towards east. The slopes are covered with thick woods.

The crest of Galichica is a wide fluvio-denudacial limestone area, disrupted by the fault line from the village of Leskoec on the Prespa side to the village of Trpejca on the Ohrid side. This part is also the narrowest one on the massif, with a width of 9.75 km. The massif, and consequently the crest, is widest between the monastery of St. Stephen and the village of Gorno Dupeni, reaching a total of 14.5 km.

The Leskoec-Trpejca fault line separates the single massif into two parts. The southern part is known as Stara Galichica (Old Galichica), while the remaining part is generally called Galichica. The local inhabitants also divide the northern part of Galichica into two parts, calling one Petrino, and the other one Istok.

5.1.2 Elevation

The elevation of the Galichica mountain massif ranges from 695 m above sea level (the level of Lake Ohrid), and 850 m above sea level (the level of Lake Prespa), to 2,265 m above sea level at Kota F10. The absolute elevation amplitude is 1,570 m. The more significant peaks dominating the relief are:



Magaro – 2,254 m; Lako Signoj – 1,984 m; Goga – 1,737 m; Truglash – 1,264 m; Golem Osoj – 1,005 m; Pecilin – 1,421 m; Samar – 1,654 m; Kaletu – 1,182 m and Vishesla – 1,564 m.

5.1.3 Geomorphologic Occurrences

Based on the morphometric features (hypsoetry, exposures, angles of slope) it can be said that Galichica Mountain has an explicitly tectonic character raised between two lake basins. As a result of the geological composition (an almost total occurrence of Triassic limestone), the hypsoetric features (only 7.19 km² of the area is elevated above an altitude of 2,000 m) and the climatic context of Galichica Mountain, the dominant morphogenetic processes that have created the relief forms are: karstic, glacial and periglacial.

5.1.4 Geology & Soils

Karst Relief

Karst occurrences are the dominant genetic type of relief forms on Galichica Mountain. Galichica is a typical karst area where the Triassic massive and banked limestone layers spread across the crystalline schists. These surfaces have long been exposed to the influence of external (exogenous) factors which have strongly initiated the process of karstification. Surface karst-type micro and macro relief forms are present, from Karren, numerous sinkholes and karstic dry valleys to karst fields. From the underground karst forms, a dozen caves and two chasms have been registered.

Surface karst forms

Karren – The presence of Karrens is mostly noticed on mountain sides, i.e. the sloped and exposed mountainsides, without limestone soil substrate parts. Shallow, rillen Karren occur on these surfaces. The frequent occurrence of rinnenkarren and rundkarren is especially specific for Galichica. These are small indents in the discovered carbonate blocks. The presence of gryke i.e. the final stage of Karren development dominates the flattened slopes, the crests and between the sinkholes on the exposed carbonates parts. Generally speaking, Karrens are marginally present on Galichica Mountain, but especially typical is the presence of the type – rundkarren.

Sinkholes – The most distinctive and most distributed surface karst form is the sinkholes. These are mostly developed over the flattened parts of Galichica Mountain, i.e. the polygenetic surfaces, along the karst valleys, karst fields, but can also occur separately on the higher mountain parts. From the Lipova Livada pass (1,568 m), over Gola Buka, Truglajsh all through the farthest northern parts of the mountain, the entire area appears as though it has been carved with bombs. At certain locations, especially at the north-eastern parts of Galichica, the number of sinkholes is even larger than 20 - 50 over 1 km². That is why it can be said that this part of the mountain is a typical pock-marked karst.

Based on to their number, sinkholes are especially characteristic along the crests. Numerous sinkholes can also be found along the edges of the karst fields Sharbojca (Asan Gjura) and Suvo Pole. A large number of sinkholes with a diameter of 100 and more meters have been formed on the considerably flattened crest extending between Gola Buka (1,897 m) and Truglajsh (1,802 m). All of this denotes that the fluvio-denudacial surfaces on Galichica are completely karst. Dimension-wise, the sinkholes range from 3-5 m all the way up to 100 m, while according to their form the following types can be distinguished: conical, bowl-shaped or dish-shaped and seldom cylindrical. The bottom of the sinkholes is mostly covered with residual clay.

Karst fields – The largest surface karst form on Galichica Mountain is represented by karst fields (see figure below). There are four: Suvo Pole, Sharbojca (Asan Gjura), Vardulj and Gjafa. All of these stretch meridian-wise, in the same direction as Galichica Mountain. The bottom of all the fields is located at the approximately same elevation of 1480 to 1440 m above sea level. The figure below displays the karst fields on Galichica.

Figure 5.1: Karstic Field Suvo Pole (Dry Field) on Galichica



Underground karst forms

Around a dozen underground karst forms (caves and chasms) have been formed on Mount Galichica. Caves are found along the coast of Lake Ohrid, at the foot of the cliffs. These have been found south of the village of Trpejca and to the north at the village of Peshtani. Numerous wave-cut platforms as well as four smaller caverns have been formed on this area under the influence of the waves.

Naumova Peshtera – This is one of the most interesting registered and explored caves along the coast of Lake Ohrid. It is located in the immediate vicinity of Crna Peshtera. The cave entrance is extremely hard to find because of the dense vegetation growth. It has a north-west exposure and is located at 2 m above the level of Lake Ohrid. The entrance is 4 m wide, while it is only 0.8 m high. At 7 m from the entrance, the cave tunnel narrows down to 2.5 m, with a height of only 0.5 m. After the narrowing, the cave becomes considerably wider in a south-east direction. This part of the cave space is 1 m high. At 16 m from the entrance, the altitude of the cave ceiling is raised to 4 m. The same height is maintained throughout the entire length of the cave. Seen as a whole, the cave has a semi-circular shape. The entire length of Naumova Peshtera Cave is 27.7 m with an interior surface of 167 m².

Naumova Peshtera represents a very interesting speleological phenomenon with its geomorphologic features. At 2.8 m from the entrance the cave ceiling a 'skylight' has been formed which is 4.5 m wide. Near the entrance, the bottom of the cave is covered by lacustrine gravel, while further inside there is also silt material and significant deposits of guano from the bat colonies. The abundance of cave deposits is a particular feature of this cave. The first stalactite forms can be seen at the beginning of the cave, i.e. its north-east part. These are, however, particularly present in the southern part of the cave where they completely cover the cave ceiling. They have a milk-white and reddish colour. Stalagmites can also be found around this area.

Cave at the village of Leskoec (Prespa) – The cave is located in the immediate vicinity of the village of Leskoec, i.e. below peak Strnina (1,107 m). The entrance to the cave is at the bottom of a rocky slope, at an altitude of 1,070 m. The entrance has extremely small dimensions (0.6 x 1m), making it very difficult to



notice. The entire length of the cave at the village of Leskoec is 43 m, while both the main tunnel and the secondary cave tunnels, and reach a length of 48 m. The three cave tunnels cover a total surface of 69 m², i.e. the total surface of the interior reaches up to 96.25 m². The cave at the village of Leskoec represents a typical example of a cave where an underground water flow was present but no longer exists, i.e. it is completely dry and belongs to the dry, fossil cave type. Interesting cave deposits have formed at certain parts of the cave. The first cave deposits, represented by stalagmites are present along the eastern part of the cave tunnel wall. The cave deposits in the central part of the cave are especially interesting. Smaller cave pillars have also been formed here. The first two cave halls are almost have no cave deposits, but the last hall, however, especially its ceiling, is covered with 0.5 m long stalactites.

Voila Cave – also known as Skalana - is located 250 m west of the Ohrid - Suvo Pole route, towards the village of Konjsko. The entrance to the cave is located at an altitude of 1,450 m, and is difficult to notice because it is situated in a forested area.

The entire Viola cave is around 37 m long, although the exact length is uncertain. The depth of the cave, from the entrance to the bottom of its lowest gallery reaches up to 20 m. Voila Cave is the richest cave on Galichica Mountain when it comes to cave deposits. The cave deposits are especially present in the second wider part of the cave, towards the east. There are numerous stalactites, stalagmites and cave pillars here with a diameter over 10 cm. Cave deposits can also be seen throughout the separate tunnels of the cave. These are so numerous at several locations that they even hinder the entrance to the tunnel.

Samotska Dupka – this cave surpasses all the other caves on Galichica Mountain not only by its length of 224 m but also due to its other natural features. It is located on the eastern side of the Studino karst valley, at the upper part of a smaller karst vale, descending cross-wise towards Studino. Near the entrance, located at 1,430 m there is a large quantity of block material.

Samotska Dupka cave represents an extremely simple but very spacious cave canal which as an entirety stretches in a southwest-northeast direction. The entrance is formed at the foot of 10 m-high compact rocky slope. The cave's entrance is 3 m wide and it is highest of all caves located here with its 1.2 m. The total length of the main cave canal within Samotska Dupka cave is 207 m, while the total length including the secondary cave canals reaches up to 224 m. Samotska Dupka cave is basically a fossil river cave, i.e. a cave that used to have an underground water flow.

'Rblok Chasm - is located 2 km due east of the village of Peshtani, southeast of the village of Elshani where the chasm is more easily approached. Its precise location is at the area called Gumenci, at an altitude of 1,015 m. The chasm opening faces northeast-southwest direction. It has a length of 4 m, with a significantly smaller width of 1 m.

A vertical canal falls from the entrance towards the interior to a depth of 15 m. From here on, at an angle of 45° and a length of 4 m, the canal orientates towards the southeast. Then it turns to the southwest and ends in a 3 m-deep giant's kettle. The bottom of the giant's kettle is found 23 m from the chasm's entrance. The first larger widening can be entered through an extremely narrow slit at the southern part of this space. This hall is oval shaped (9 x 5 m) and has an exceptionally jagged bottom. Here the ceiling of the chasm reaches a maximum length of 6 m. At the south-western part of the hall there is an opening (2 x 1 m), which continues in a vertical channel with a length of 8.5 m, while at the opposite direction, at a northwest direction, it provides an entrance to the largest widening of the 'Rblok Chasm. This hall has an elongated shape facing a southwest-northeast direction. Its length reached up to 15 m, with a largest width of 6 m. The height of the ceiling at the centre part is 4 m. There is an opening (2.1 x 1 m) at the south-western part of the hall's bottom which stretches down south through a canal with a maximum length of 34 m. It has a cascading character with two dominant slopes each with an altitude of 4 m. At its farthest end, the canal, now opposite to its cascading fall, moves upwards at an angle of 45°. Towards the southwest, a secondary canal separates from the middle of the canal with a length of 9 m.

Soils and Substrates

Due to the variations in the ecological conditions: i.e. climate, orthographic, geologic-petrographic, hydrographic and vegetation, the Galichica massif includes numerous soil types and sub-types. The



Filipovski classification (2006)¹ provides a systematic categorisation of the soils within the Park. The descriptions of the soil types and sub-types used in this source are accepted and widely used. In addition, by Petkovski et al (1996)² provides precise quantitative data from the soil type analysis made for every soil type present at the Park. The table below summarises these soil classifications.

Table 5.1: Soil Classifications in the Park

Soil	Type	Sub-Type
Entisols	1. Leptosol type	
	2. Regosol type	
Fluvisols	3. Fluvial (alluvial) soil type (Fluvial fluvisol)	
Mollisols	4. Limestone-dolomite black soil type (Calcomelanosol)	a) Organo-mineral (typical)
		b) Organogenic
		c) Cambic
	5. Rankers type	
	6. Rendzina type	
Vertisols	7. Clay soil type	
Cambisols	8. Cinnamon forest soil type	
	9. Red soils types	
	10. Brown soils on limestones and dolomites type	
	11. Brown forest soil type	
Luvisols	12. Loessial soil type	

Seismicity

The Ohrid region is a seismically active area. Faults stretch along the eastern coast of Lake Ohrid towards Galichica Mountain and the eastern edge of the Ohrid field, and towards the north is the Drim seismogene zone. Seismic activities arising locally or from more distant sources can cause earthquakes throughout the Ohrid valley with intensities from 7 to 9 degrees according to the Mercalli scale. The solfatara "Duvlo", situated on the tectonically active northeast-south-western line, found in the Ohrid basin, near the village of Kosel, delineates the tectonically unstable position of the region.

Ohrid is located in the Drim seismogene zone, and the occurrence of earthquakes is possible in the Korcha, Ohrid, Debar and Peshkopeja areas. Seismologists have measured several epicentres in the immediate vicinity of Ohrid with the intensity from 8 to 9 degrees according to the Mercalli scale at St. Erazmus, below the village of Dolno Leskoec, at the locality of Biljanini Izvori, Ljubanishta and at Peshtani. Part of the area on the hill, the old town and part of the slope on Mount Petrino, in relation to the Ohrid, are slightly more resistant to earthquakes, while the farthest eastern part, the former swamp area, is more sensitive than the remaining plain.

5.2 Hydrology & Hydrogeology (including Lake Ohrid)

5.2.1 Surface Water

The Galichica massif is one of the driest massifs in the Republic of Macedonia when it comes to surface water and runoff. This is especially true of its higher parts and Stara Galichica. This condition has

¹ Filipovski, Gj. 2006. Klasifikacija na pochvite na Republika Makedonija. Skopje: MANU

² Petkovski, D., Mukaetov, D. I Andreevski, M. (1996): Pochvite na planinata Galichica. Makedonska zemjodjelska revija, God. 43, no. 1-2. Skopje

contributed to this part of the massif to be named as Suva Planina (meaning 'dry mountain') by the local inhabitants.

Rain falls on the Galichica Mountain range, and drains downhill, according to the topography, in streams and rivulats. However, the only permanent river flowing within the Park boundaries is Cherava River, and only its lower reaches pass through the Park before it enters Lake Ohrid, see the figure below. Its source and the most part of the river are located in the Republic of Albania. The two dominant surface water features in the Park area are Lake Ohrid and Lake Prespa.

Lake Ohrid

Lake Ohrid has a surface area of 358 km². Out of the total surface of the lake, approx. two thirds belong to Macedonia, whereas the rest to Albania. The lake has a length of 31 km, width of 15 km, middle depth of 151 m and a maximal depth of 286 m). According to the depth, it is ranked seventh among the lakes in Europe.

Figure 5.2: Lake Ohrid



There are 40 rivers that flow into the lake, out of which 23 are in the Albanian territory and 17 in the Macedonian territory. A large number of these dry out in the summer period (dry ravines) and are insignificant in terms of total flow into the lake. The most significant rivers, with a permanent inflow of water, that flow into the Ohrid Lake are: The Kosel River, the Velgoshka River (formed by Letnica and Sushica), Sateska River and Cherava. These rivers have small catchment areas, length and flow and when they flow into the lake they form a delta. The river Koselska and Velgoshka are close to Ohrid city.

Ohrid Lake is composed mainly of spring water, fed by both surface and sublacustric springs. The majority of the surface springs are located along the southern coast, around the monastery St. Naum, in the surrounding of Tushemishte and Starova and the city of Pogradec on the Albanian side. In the foot of Petrino, the most significant are the springs near Studenchista "Biljanini izvori" and near Bejbunar.

In the coastal valley part of the Ohrid catchment, as well as among Ljubanishta and St. Naum, there are certain springs that have not yet been examined and mapped. In this area, 20 springs have been registered so far, out of which five have a discharge of 1-2 l/s. Two of these have a discharge under 1 l/s. The karst springs near Ohrid, St. Naum and Velgoshti reach discharges of up to 20 l/s.

The coastal lake strip has been exposed by the harmful actions of flood waters and filling with flood sediments which appear as a consequence of erosion. These phenomena are manifested through the historic geological foundation, and the topographic conditions expressed through the steep inclines in the valleys, as well as absence of a good vegetation cover. On the strip Ohrid-Gorica-Peshtani under the



mountainside of Galichica are 5 registered torrents, which, although they have a surface catchment of 22.6 km², are not permanently flowing. From time to time they transport material (vegetation and rocks), which result from pulverization of the non-resistant baserock.

The numerous underground springs, which are present individually, as well as a collection of several such springs, marked as vruljas, all contribute to the lake inflow. They give rise to separate micro habitats, and are especially significant for the endemic flora and fauna in the lake.

Usage of Surface Waters

The large number of settlements along the slopes of Galichica and the needs of the people and numerous herds of sheep for drinking water in the past have encouraged usage of the available surface water. All the springs with a larger discharge have been adopted for water supply to the city of Ohrid and the villages in the Park. A number of small springs in the area have extremely small discharges and are typically contained in concrete reservoirs in order to secure drinking water for the settlements around the massif's slopes. This is the case with the springs at the locality of Vojtino above the village of Ljubanishta, the spring Vrshek above the village of Elshani, the spring Selishte above the village of Velestovo. The springs with the highest discharge in the locality of Letnica above the village of Ramne, have been captivated for the needs of the city of Ohrid.

Part of the mountain springs have been left as non-captive or have been transformed into fountains with watering places. Such are the springs at the locality of Vojtino (Kalino, Sveti Naum and Popo), then the springs Korita, Glajsho, Gorni Studinec, Velevovski Korita, Ponik, Gabresh and Ograzhdanik. In addition to the permanent springs on Galichica there are several temporary springs which appear during springtime and dry up at the beginning of the summer. The largest springs are those at the locality of Kilaec above Racha settlement, Bunarine below the locality of Letnica and the spring below the village of Leskoec on the Prespa side, then Suv spring at the locality of Ograzhdanik, Star spring at the Stara Racha valley and the springs under the village of Oteshevo and the locality of Stankov Dol.

Many of the other, smaller springs have been turned into watering places. In the pastures created for summer grazing, numerous waterholes (holes where water from melted snow or rain from the humid period of the year is retained), concrete tanks and wells have been created. Nineteen waterholes have been formed in the herding areas on Mount Galichica. However, during the past twelve years the waterholes have not been well maintained because most of them, especially the earthen ones, have become overgrown with vegetation and contain almost no water, even during the wet periods of the year. In addition to the waterholes, 19 wells and 2 concrete reservoirs have been built in the past, although most of these have dried up just like the waterholes.

St. Naum Spring

As a result of its large natural and hydrological significance, the spring at the monastery of St. Naum deserves special attention. It is located at the farthest south-eastern part of Lake Ohrid. It is composed of two parts. The first is elongated resembling a lowland river and according to its features is a typical representative of karst springs. Numerous underwater springs can be found at its bottom. In addition, coastal springs exist especially along the southern coast of the Lake. The second part, located downstream, is wider and has a circular shape. This has formed two islands. The farthest northern part of the spring is connected to Lake Ohrid through a channel which is 10 to 20 m long. The total surface of the small lake formed by the spring is 0.342 km². The small lake is formed by 15 coastal springs and around thirty underwater springs. The amount of water that flows from the springs is relatively stable and reaches from 6 to 8 m³. Due to the stability of the springs, the water level of the small lake scarcely changes. The changes of the water level of Lake Ohrid has no influence on the water level of this small lake. The surface of the water moves although when seen from the shore it appears still. The speed of the water current inside the small lake is 0.100 to 0.108 ms⁻¹, while at the effluent it is 1.32 ms⁻¹.

The depth of the small lake varies, but it mostly fluctuates between 2 and 3 m. Its largest depth is 3.5 m. The bottom is mostly made out of sludge and almost entirely overgrown with vegetation. Vegetation is lacking only around the underwater springs. The southern shore has smaller and larger limestone fractures. The northern shore is mostly sandy, while the sludge around the islands is mixed with organic detritus.

Lake Prespa

Lake Prespa is situated on the other side of the Galichica massif at an altitude of 853, see figure below. Lake Prespa, as well as Lake Ohrid, was formed during the Pliocene Epoch by lowering along the faults into the Earth's crust. The greatest depth of Lake Prespa is 54 m. There are numerous bird species from the CORINE list across the Lake Prespa region. Since 1995 Lake Prespa has been a Ramsar Site, due to its significant waterfowl habitats.

Figure 5.3: Lake Prespa



5.2.2 Groundwater

The hydrology of the underground waters in the Park is mostly conditioned by the parent substrate that is largely made out of limestone with a spongy structure and a high level of porosity. This parent substrate determines the hydrological conditions and processes. As a general observation, it can be said that the precipitation over the surface quickly penetrates the limestone all the way to the impenetrable silicate rocks below.

There is an underground hydrological connection between Lake Ohrid and Lake Prespa, which has been a topic of research for a great number of hydrologists. This link has been confirmed numerous times through different methods, including using tracers. About 50% of the water in the natural spring at St. Naum and Tushemishta (Albania) comes from Lake Prespa, and the remaining 50% comes from precipitation. The link between Prespa and these two natural springs is clear, however it is not clear whether there is an underground hydrogeological link between Prespa and the spring at Biljanini Izvori near Ohrid.

Data regarding the speed of water flowing under between Prespa and Ohrid Lakes, varies greatly. When experiments were conducted, with tracer placed into the waters of Lake Prespa and measured as it emerges at the natural spring at Tushemishta, the shortest transmission time detected so far has been 6 hours. However, in the majority of cases, water is retained under Galichica for at least a period of one year.



This underground retention of water over a longer period of time is indicative of the fact that the mountain contains large underground reservoirs which store the water penetrating from Lake Prespa, then release it into Lake Ohrid through channels and cracks. The variation in speed of the flow suggests that no one single channel exists under Galichica which connects the lakes but more likely, it passes through a series of numerous channels/cracks. The condition (openness for water flow) of these underground channels/cracks, and the amount of sediments deposited in the reservoirs, is thought to give rise to the significant changes of the water table at Lake Prespa.

5.3 Climate

The Ohrid-Prespa region has a moderate continental climate. The climate is influenced by the vicinity of the Adriatic Sea, the large bodies of water at Lake Ohrid and Lake Prespa, as well as the high mountains surrounding both valleys³.

The following four climatic zones are prevalent within the National Park:

- The warm continental climate zone of the Ohrid basin;
- The temperate continental climate zone of the Prespa basin peculiar for Galichica at altitudes up to 1,100 m;
- The cold continental climate zone at altitudes between 1,100 and 1,700 m;
- The high-mountainous climate zone at altitudes between 1,700 and 2,200 m.

The occurrence of the above mentioned climate zones is presented in the figure below:

³ Data for the climate section comes from a range of sources, including the draft GNP Amendments SEA (2014) and Ski Area Feasibility Study and Ski Area Master Plan, Ecosign Europa (2014).

Figure 5.4: Climate Zones in the Park



LEGEND	
	Warm continental climate zone
	Temperate continental climate zone
	Cold continental climate zone
	High-mountainous climate zone

(Source: Ski Area Feasibility Study and Ski Area Master Plan, Ecosign Europa (2014))



5.3.1 Climate in the Ohrid Region

Ohrid region and the Adriatic Sea are separated by a distance of 110 km. Despite the relative vicinity of the sea, its impact is not major. This is due to the high mountain massifs that spread between them. Through the scarce and relatively low mountain passes, however, as well as the valley of the Crn Drim River, the large quantity of water in Lake Ohrid has a greater impact than the Adriatic Sea, and acts as a thermal regulator. This influence is confirmed by the reduced annual temperature fluctuations, i.e. the higher temperatures during the winter and lower temperatures during the summer.

The Ohrid Basin

Precipitation in Ohrid valley is conditioned by the Mediterranean pluviometric regime. Most of the annual precipitation falls during the colder period of the year, reaching the maximum in late autumn, with a smaller component falling during the warmer period of the year, reaching the minimum during the summer months. A significant fact is that precipitation in Ohrid valley comes mostly from rainfall, and an insignificant amount from short-lasting snow. Ohrid valley is covered in snow for around only 19 days on average. Average seasonal precipitation and temperatures are shown in the table below.

Table 5.2: Layout of average temperatures (in °C) and precipitation (in mm) across seasons in Ohrid valley

	Season			
	Winter	Spring	Summer	Autumn
Temperature °C	2.6	10.1	19.8	12.0
Precipitation mm	224	175	96	208

From the above table, it can be seen that autumn is warmer than spring, with the average air temperature during the vegetation period (April to September inclusive) is 16.8°C. The distribution of precipitation is quite irregular. The largest amounts of precipitation occur during the winter (224mm) and fall (208mm) period, and the smallest during the summer period (96mm).

Ohrid valley is characterised by lasting sun exposure. On average there are 2,233 hours of sunshine per year or an average of 6 hours per day with a maximum reached in July, and a minimum in January. The average annual cloudiness is 5.2 tenths and has a regular annual variability. It decreases from January until July, and then it steadily increases towards December. Out of the total annual number of days, 24% are clear, 27% are partly cloudy, and 49% are overcast.

Ohrid valley is characterised by a specific wind regime, conditioned by the Lake. In addition to the winds occurring due to the general atmospheric changes, there are also winds with local character that are conditioned by the unequal heating of the air above the land and lake surface. Local winds influence the general layout and frequency of wind directions. The prevalent wind is the one coming from the north with an average annual speed of 2.4m/sec. This wind blows throughout the year, most frequently during evening hours.

Evaporation from the open water surface is larger than the precipitation. On average 836 l/m² evaporate a year, while the annual amount of precipitation is 708.3 l/m². Evaporation is highest in August, 137 l/m², and lowest in January, 27 l/m².

Fog is a rare occurrence in Ohrid valley. On average, 5 days a year are foggy, two of which in January, and one in November, December and February.

Dew occurs throughout the year, but the highest frequency is noticed from April to June and from September to November. On average, there are 113 days with dew.



5.3.2 Climate in the Prespa Valley

The larger part of the valley is under the water of Lake Prespa which to a certain degree also serves as a climate modifier like Lake Ohrid. However, the thermal regulation of the surrounding air is not as considerable as in Ohrid valley due to the higher altitude and the considerably lower amount of water resulting in a smaller capacity for accumulation and release of heat.

The thermal influence of the lake water is considerable from mid-October until January, when even despite the significantly higher altitude from Pelagonia, the mean monthly air temperature is 0.2 °C or 0.5° higher.

On the other hand, the impact on reducing the high summer temperatures can be felt only in the immediate vicinity of the lake and not the entire valley. For the remaining part of the year, air temperatures vary normally depending on the latitude and elevation.

The annual amount of precipitation in Prespa valley is higher than the precipitation in Ohrid valley, mainly due to the higher elevation. Precipitation is influenced by the Mediterranean pluviometric regime. The larger part of annual precipitation falls during the colder period of the year, reaching a maximum at late autumn and winter, and the minimum during the summer months and is shown in the table below. Precipitation in Prespa valley mainly comes from rain and some from snow. Prespa valley is covered in snow for around 35 days on average.

The layout of the average temperatures and precipitation across is shown in the table below.

Table 5.3: Layout of average temperatures (in °C) and precipitation (in mm) across seasons in Prespa valley

	Season			
	Winter	Spring	Summer	Fall
Temperature °C	1.1	8.8	18.0	10.1
Precipitation mm	223	175	90	229

From the data provided in the above table, it can be seen that autumn is warmer than spring, and the average air temperature during the vegetation period is 15.1°C. The distribution of precipitation is quite irregular. The largest amounts of precipitation occur during the winter (223mm) and fall (229mm) period, and the smallest during the summer period (90mm).

Prespa valley is characterised by lasting sun exposure. On average there are 2,295 hours of sunshine per year.

The average annual cloudiness is 5.0 tenths. The maximum is reached in December-January – 6.6 tenths, and minimum in July –2.5 tenths as shown in the table below. On average, there are 101 clear, 105 partly cloudy and 159 overcast days.

The relative air humidity has an opposite variability to the air temperature. It decreases from January until July and then increases as shown in the table below.

Prespa valley like Ohrid valley, is characterised by a specific wind regime influenced by the lake due to the unequal heating of the air above the land and lake surfaces. Local winds influence the general layout and frequency of wind directions. Dominant winds come from the north and east, with average annual speed of 1.4 m/sec as shown in the table below.

Fog is a rare occurrence in Prespa valley.



Climate in the Cold Continental (1,100-1,700 m) and High Mountainous (1,700-2,200 m) Zones

Average temperatures in the cold continental zone have been extrapolated to average -0.9°C in the winter season and 14.9°C in the summer.

The high mountainous zone averages -2.3°C in the winter and 11.3°C in the summer. The influence of the high mountainous climate zone is mostly felt in the zone of the high mountainous grassland areas of Old Galichica, but also on the remaining high peaks of Galichica. The predominantly rare low-grass and lodged semi-bushes and bushes of the vegetation existent in this area unambiguously confirms the presence of a harsh climate zone.

5.4 Ecological & Biological Features

5.4.1 Habitats and Plant Communities within the Park

The vegetation of Mount Galichica is rich and diverse. Three broad types of plant community occur:

- Native communities, whose distribution is related to the climatic conditions currently prevalent in the Park;
- Relict communities, which have been preserved in confined refugia, especially in mountain areas where the micro-climate continues to favour their survival;
- Communities, which are of secondary origin, and have adapted to the growing influence of anthropogenic activities.

The horizontal and vertical distribution of these communities is determined by several abiotic and biotic factors, including geographic position, geological history and substrate, relief and topography, soil type and climate, as well as anthropogenic influences.

The vegetation of Mount Galichica has been assigned to habitat types according to the EUNIS classification of 2004⁴. The figure below (and Annex 12) illustrates the distribution of the main plant communities and associations in the National Park, based on data and mapping information held by PINPG, taken from the Park Management Plan. These are also listed in Table 5.5, which relates each community to its EUNIS classification, and also lists its status with regard to the Bern Convention and the EU Habitats Directive. Several of the habitats within the Park appear in Annex 1 of the *Habitats Directive*, these are shown in the Figure 5.6 (and contained in Annex 13) and listed in Table 5.6. The condition of the vegetation has been rated by PINPG and other local experts according to the criteria described in the Chapter below. Condition is rated as Optimum, Good, Moderate or Poor, reflecting the state of the different communities as a result of land use, management or other threats, pressures and influences.

⁴ Davies, C. E., Moss, D., Hill, M.O. (2004). *EUNIS Habitat Classification Revised 2004*. European Nature Information System (EUNIS).



Figure 5.5: National Park Galichica Plant Communities (EUNIS) (2011-2020 NPG Management Plan)

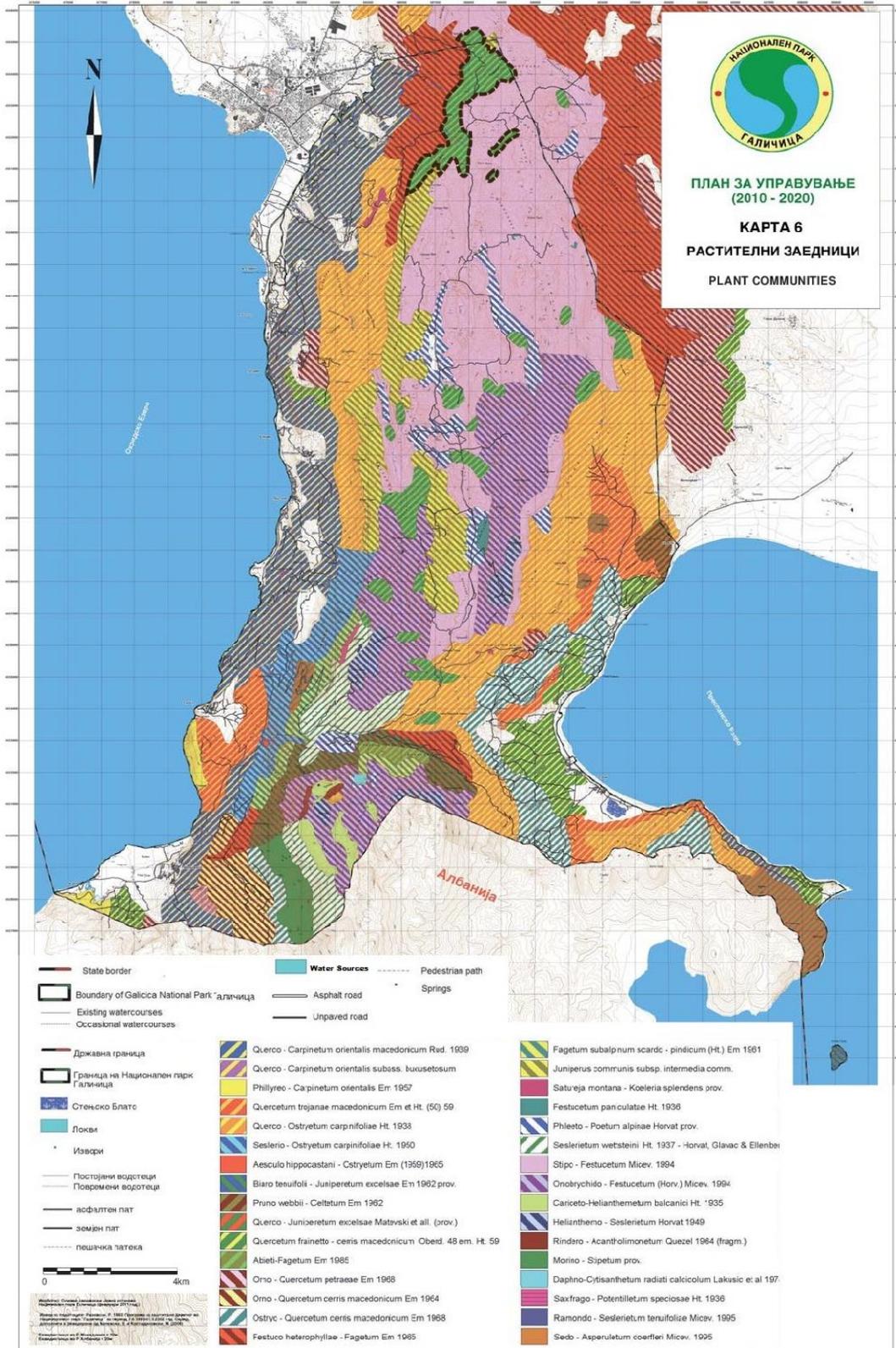
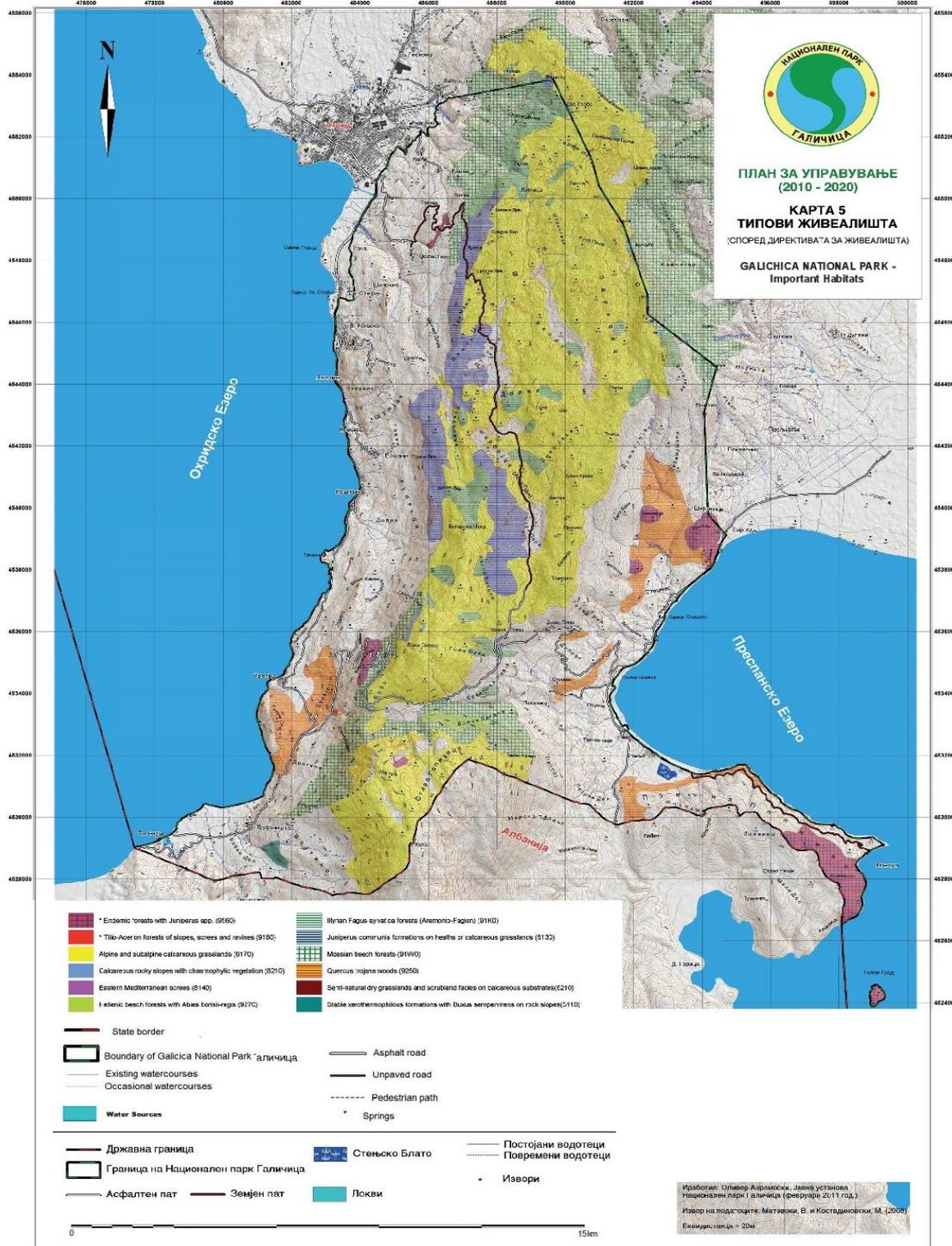




Figure 5.6: Annex 1 Habitats Present in the Park (EU Habitats Directive) (2011-2020 NPG MP)





The main habitats and plant communities in the Park are described briefly below⁵, including a description of the habitat condition. The habitats have been described using the following criteria and this is discussed further in section towards the end of this Chapter:

- Optimum: Excellent condition, no degradation, little evidence of human activity. No forestry activities.
- Good: Good condition, little evidence of human activity or degradation, no forestry activities.
- Moderate: Vegetation is healthy but there is evidence of damage or degradation (e.g. from fire, firewood collection, grazing, etc).
- Poor: Vegetation not in good condition, heavily degraded, urbanised or used for agriculture or heavy grazing.

Annexes 14-18 provide lists of the various species found in the habitats most likely to be affected by the proposed Projects described in Chapter 4. The lists are as follows:

- Annex 14– plant species associated with the habitats likely to be affected;
- Annex 15 – invertebrate species associated with the habitats likely to be affected;
- Annex 16 – amphibian & reptile species associated with the habitats likely to be affected;
- Annex 17 – bird species associated with the habitats likely to be affected;
- Annex 18 – mammal species associated with the habitats likely to be affected.

Included in each Annex listing is the conservation significance of each species, i.e. a note of whether the species is listed in any of a number of endangered species groupings or international conventions.

Additionally, the key species of conservation (based on Professional Judgement and the data available on the NPG)⁶ interest typical of each habitat type, are noted in the appropriate sections below.

5.4.2 Alpine and Subalpine Calcareous Grasslands

The Management Plan, which refers to three types of this habitat within the Park:

- Pelagonian closed calcareous Sesleria grasslands (EUNIS 2004: E.4.41723) i.e. the plant community *Seslerietum wettsteinii* Ht. 1937 - Horvat, Glavač & Ellenberg (1974);
- Pelagonian closed calcareous Sheep's fescue grasslands (EUNIS 2004: E4.41724) with the communities *Stipo-Festucetum* Micev. 1994 and *Onobrychido-Festucetum* (Horv.) Micev. 1994;
- Helleno-Balkan striped grasslands (EUNIS 2004: E4.437) represented in the Park through the plant communities *Rindero-Acantholimonetum* Quezel 1964 (fragm.), *Helianthemo-Seslerietum* Horvat 1949 and *Morino-Stipetum* prov.

These are described below.

Pelagonian closed calcareous Sesleria grasslands (EUNIS 2004: E4.41723).

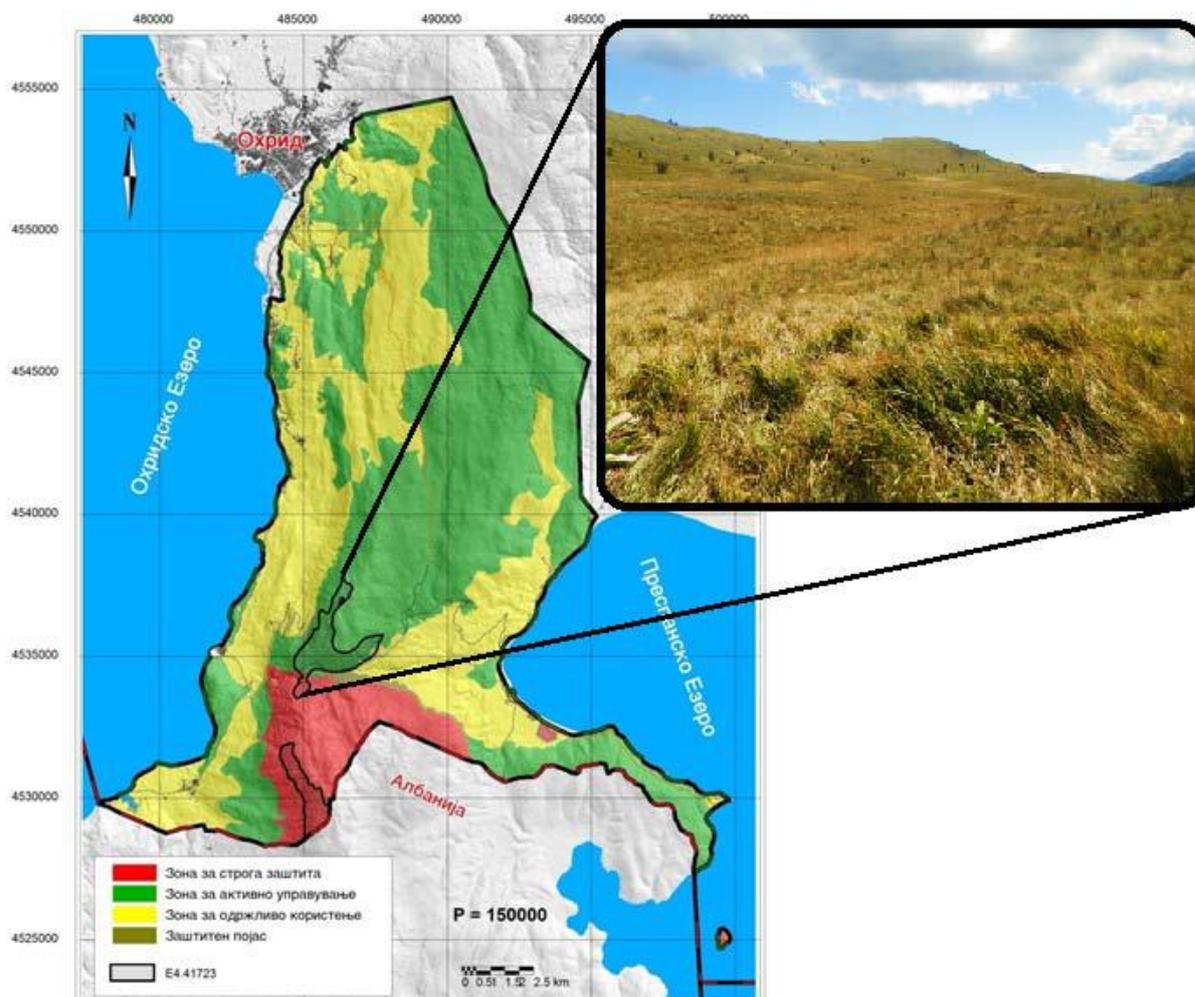
The habitat stretches over the pass between Baba and peak Lako Signoj at altitudes between 1,500 and 1,800 m above sea level. It covers a total surface area of around 572 ha, with 227 ha lying within the ZSP, 333 ha lying within the ZAM, and 8.4 ha lying within the ZSU. 58% of this habitat type therefore lies within the Park's higher protection zones in the original Management Plan, as shown in the figure below, together with a photo of a typical⁷ example.

⁵ The ZSU, ZAM & ZSP figures quoted in the narrative of this Chapter are based on the original zoning in the 2011-2020 National Park Galichica Management Plan.

⁶ During the project-level surveys and future surveys/monitoring by PINPG other species may be identified as key species of conservation for the key habitats.

⁷ For the purposes of this SEA, "typical" and "typically" is defined as "relating to representative species that would be expected to inhabit a habitat type/plant community".

Figure 5.7: 6170: Alpine and subalpine calcareous grasslands (Pelagonian closed calcareous *Sesleria* grasslands (EUNIS 2004: E4.41723)



The Pelagonian closed calcareous *Sesleria* grasslands are represented by the plant community ***Seslerietum wettsteinii* subas *daphnetosum*** Horvat 1937. According to the data from Horvat *et al.* (1974), as well as Micevski (1994), the following can be listed as the most significant characteristic species from the association: *Sesleria wettsteinii*, *Koeleria pyramidata*, *Iberis sempervirens*, *Scabiosa webbiana*, *Hieracium cymosum* agg., *Achillea fraasii*, *Freyera cynapioides*, *Hieracium auranthiacum*, *Dianthus cruentus*, *Senecio doronicum*, *Festuca hirtovaginata* var. *hirtovaginata*, *Festuca hirtovaginata* var. *hercegovinica*, *Avenula aetolica*, *Erysimum kuemerlei*, *Thymus ciliatopubescens*, *Poa molinieri*, *Cerastium decalvans*, *Daphne oleoides*, *Campanula glomerata*, *Dianthus minutiflorus*, *Euphorbia myrsinites*, *Ranunculus sartorianus*, *Silene bupleuroides* subsp. *stacticifolia*, *Bromus cappadocicus*, *Sideritis raeseri*, *Asyneuma limonifolium*, *Asperula aristata* subsp. *scabra*, *Pimpinella tragium* subsp. *lithophylla*, *Primula veris* subsp. *columnae*, *Anthyllis vulneraria* subsp. *pulchella*, *Carex laevis*, *Draba athoa*, *Teucrium montanum* subsp. *hirsutum*, *Acinos alpinus* subsp. *meridionalis*, *Polygala vulgaris*, *Sedum sartorianum* and *Paronychia macedonica*.

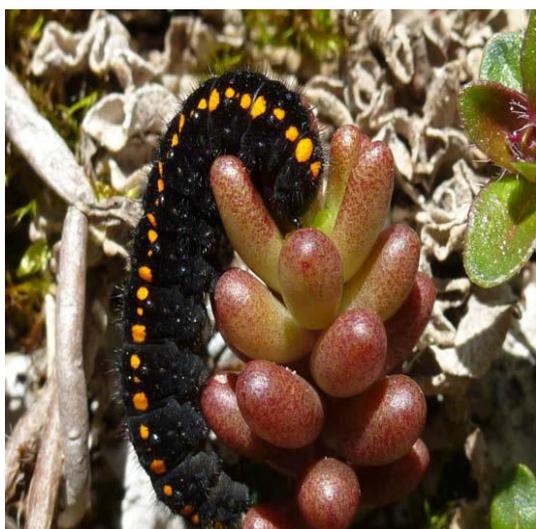
The presence of the following spider species is typical for this community: *Segestria senoculata*, *Dysdera longirostris*, *Theridion impressum*, *Theridion sisypium*, *Frontinellina frutetorum*, *Araneus angulatus*, *Larrinioides sclopetarius*, *Alopecosa mariae*, *Zelotes tenuis*, *Xysticus gallicus*, *Philaeus chrysops* and *Lycosa praegrandis*.

The following species from the Orthoptera order can be found within this type of habitat: *Decticus verrucivorus*, *Arcyptera microptera*, *Ephippiger ephippiger*, *Anterastes serbicus*, *Euchorhippus pulvinatus*, *Platycleis ebneri*, *Euchorhippus declivus*, *Saga pedo*, *Stenobothrus rubicundulus*, *Euthystira brachyptera*, *Podisma pedestris*, *Poecilimon affinis affinis*, *Mantis religiosa*, *Stenobothrus nigromaculatus*, *Paracaloptenus caloptenoides caloptenoides*, *Polysarcus denticaudus*, *Platycleis albopunctata*, *Stauroderus scalaris* and *Poecilimon jonicus jonicus*.

The following species from the order of Lepidoptera (butterflies) are typically found within this habitat: *Dasypolia temple*, *Apomea illyria*, *Catastia marginea*, *Titanio schranckiana*, *Parnassius apollo* (see Figure 5-8), *Lycaena dispar*, *Lycaena virgauraea*, *Eumedonia eumedon*, *Agrodiaetus amanda*, *Melitaea diamina*, *Erebia ligea*, *Erebia medusa*, *Aphantopus hyperantus*, *Lasiommata petropolitana*, *Pyrgus andromedae*, *Polyommatus eroides* and *Erebia oeme*.

Of particular note is the Predatory Bush Cricket (*Saga pedo*) and the Apollo Butterfly (*Parnassius apollo*), which are IUCN Globally Threatened Species included in the category Vulnerable - VU, as well as the Balkan Endemic Species Calcareous Mountain Snail (*Helix secernenda*).

Figure 5.8: *Parnassius apollo* - larvae and adult phase



Typical amphibians within this type of habitat include: the green toad (*Pseudepidalea viridis*), while the typical reptile is the smooth snake (*Coronella austriaca*).

The following bird species are found within this habitat: *Alauda arvensis*, *Anthus campestris*, *Buteo buteo*, *Carduelis cannabina*, *Carduelis carduelis*, *Circaetus gallicus*, *Emberiza cia*, *Falco peregrinus*, *Lanius collurio*, *Lullula arborea*, *Oenanthe oenanthe*, *Perdix perdix*, *Saxicola rubetra* and *Coturnix coturnix*.

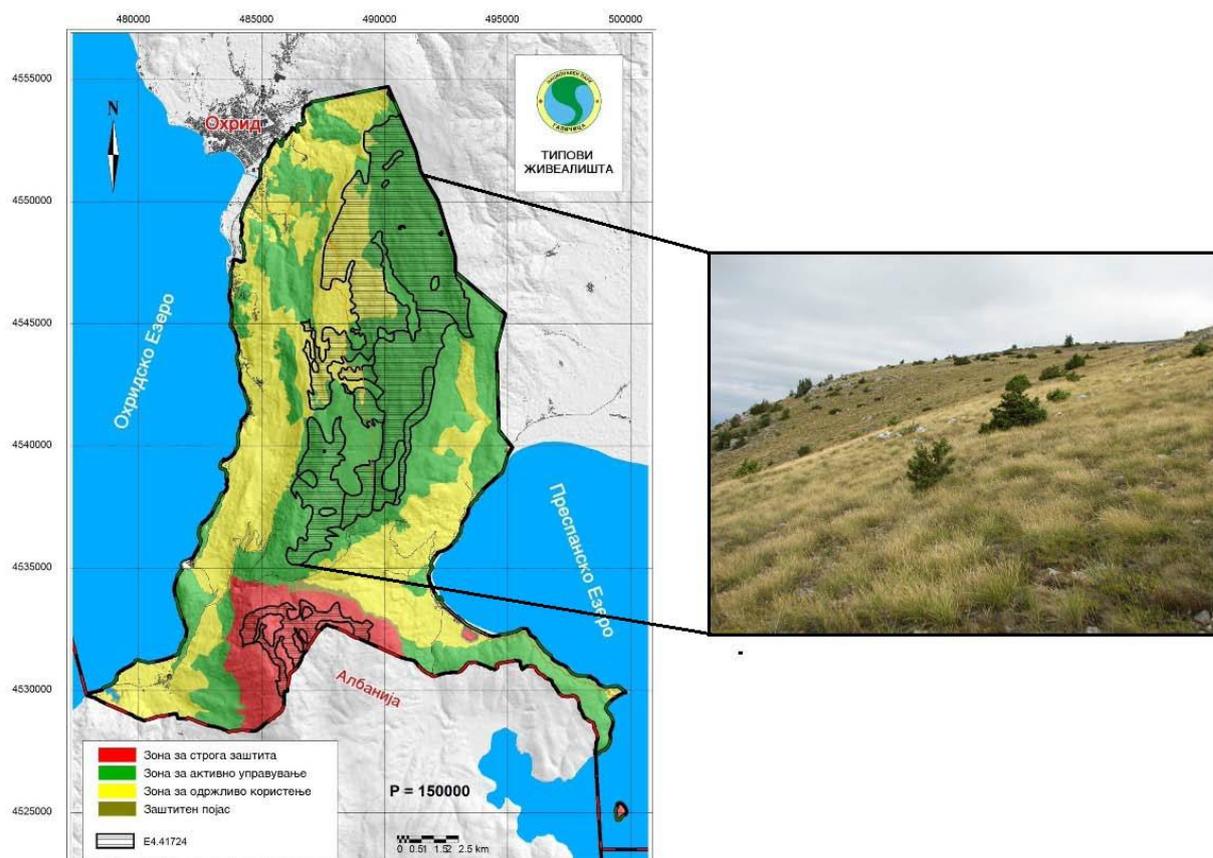
The following species of mammals are characteristically found within this habitat: chamois (*Rupicapra rupicapra balcanica*), European snow vole (*Chionomys nivalis*), European hare (*Lepus europaeus*), Lesser mole-rat (*Spalax leucodon*), red fox (*Vulpes vulpes*), Balkan mole (*Talpa stankovici*) and European pine vole (*Microtus subterraneus*).

This habitat type is considered quite rare in the Republic of Macedonia. It is only developed within the subalpine and alpine belt on several mountains in Western Macedonia. This habitat is also considered to be significant and endangered on a European level because it is included in Annex I of the *Habitat Directive* (6170 - Alpine and subalpine calcareous grasslands). In addition, several endemic, rare and significant plant species are associated with this community included on Galichica Mountain, such as: *Asphodeline taurica*, *Astragalus mayeri*, *Astragalus baldacii*, *Cytissus procumbens*, *Sempervivum galicum*, *Sideritis raeseri*, *Viola eximia* and others. In certain areas (i.e. towards the peak at Lako Signoj), the community is intersected by earthen roads where motor vehicles pass, although at relatively low frequency. Furthermore, due to the vicinity of roads, mountain tea (*Sideritis raeseri*) is gathered at this community with a high intensity on the locality Baba towards Lako Signoj. The area of this habitat above Vojtino was completely burned in 2007.

Pelagonian Closed Calcareous Sheep's Fescue Grasslands (EUNIS 2004: E4.41724)

This is the most widely distributed type throughout the subalpine belt within the Park. It stretches over a surface area of around 6,272 ha, where 530 ha belonging to the ZSP, 4,562 ha in ZAM, and 1,180 ha to the ZSU. Consequently, 5,092 ha lies within the natural zone in the Park under the original NPG Management Plan. The figure below illustrates the distribution within the Park, and a typical example.

Figure 5.9: 6170: Alpine and subalpine calcareous grasslands (Pelagonian closed calcareous Sheep's fescue grasslands - EUNIS 2004: E4.41724)



There are two subtypes within this habitat that are determined by two plant communities: *Onobrychido-Festucetum* (Horv.) (Micev. 1994) and *Stipo-Festucetum* Micev. 1994. The *Stipo-Festucetum* community is the most widespread community in the subalpine belt on Galichica Mountain, occurring above the upper forest boundary on calcareous rocky slopes with shallow soil. The lowest elevation where examples of this community have been found is 1,450m above sea level (above the village of Velestovo - Studenec, Vrvesh), where this community begins at the hill pastures from the Alliance *Saturejo-Thymion*, but it reaches an optimum between 1,500-1,600m (Krstec - Kucho Pole, Ramen Dol, Bigla, Istochko Pole, Gjafa - Asan Gjura - Suvo Pole - Kosto Bachilo), and above 1,650m, all the way up to 1,720m at the locality Tomoros, Bugarska Chuka, Stara Galichica - below Kazan. Special representative examples occur on the Prespa side of Galichica - Tomoros, Suvo Pole, Kucho Pole - Ramen Dol. This association is described by Bistra Mountain (Micevski, 1994) and it partly includes the community that Horvat *et al.* (1974) list under the name *Asyneumo-Stipetum*. Beside the ceanological importance, its physiognomy is determined by two characteristic taxa - *Stipa epilosa* and *Festuca hirtovaginata* var. *hercegovinica*, as well as the species *Sideritis raeseri* (see Figure 5-10) which was constantly present in all the compositions included in the research that was undertaken during 2008 on which the original NPG Management Plan was based.

Figure 5.10: *Sideritis raeseri* - Ohrid mountain tea



The following vascular plants are typically found within this community: *Stipa epilosa*, *Festuca hirtovaginata* var. *hercegovinica*, *Dianthus sylvestris* subsp. *bertisceus*, *Astragalus vesicarius*, *Silene bupleuroides* subsp. *staticifolia*, *Eysimum kuemmerlei*, *Thymus ciliatopubescens*, *Poa molinieri*, *Daphne oleoides*, *Bromus riparius*, *Sideritis raeseri*, *Galium oreophilum*, *Asyneuma limonifolium*, *Asperula aristata* subsp. *scabra*, *Pimpinella tragium* subsp. *lithophylla*, *Draba athoa*, *Teucrium montanum* subsp. *hirsutum*, *Acinos alpinus* subsp. *meridionalis*, *Polygala vulgaris*, *Minuartia verna* subsp. *collina*, *Sedum sartorianum* and *Paronychia macedonica*.

The community *Onobrychis -Festucetum* is found along the calcareous rocky slopes below peak Tomoros and at Petrinsko Pole, between 1,430-1,550m altitude. The following plant species are typically found associated with the *Stipo-Festucetum* community: *Helianthemum nummularium* subsp. *nummularium*, *Onobrychis montana* subsp. *scardica*, *Festuca adamovici*, *Phleum hirsutum*, *Festuca hirtovaginata* var. *hirtovaginata* et var. *hercegovinica*, *Avenula* sp., *Thymus ciliatopubescens*, *Poa molinieri*, *Cerastium decalvans*, *Daphne oleoides*, *Campanula glomerata*, *Dianthus minutiflorus*, *Carlina acaulis*, *Hieracium cymosum* agg., *Asperula aristata* subsp. *scabra*, *Pimpinella tragium* subsp. *lithophylla*, *Draba athoa*, *Acinos alpinus* subsp. *meridionalis*, *Anthyllis vulneraria* subsp. *pulchella*, *Carex laevis* and *Gentiana verna*.

The following spider species are found within this habitat: *Segestria senoculata*, *Dysdera longirostris*, *Theridion impressum*, *Theridion sisyphium*, *Frontinellina frutetorum*, *Araneus angulatus*, *Larrinioides sclopetarius*, *Alopecosa mariae*, *Zelotes tenuis*, *Xysticus gallicus*, *Philaeus chrysops* and *Lycosa praegrandis*.

The following Orthopteran species are typically found within this habitat: *Arcyptera microptera*, *Chorthippus apricarius apricarius*, *Chorthippus dorsatus x dichrous*, *Chorthippus mollis mollis*, *Chorthippus porphyropterus euhedrickei*, *Decticus verrucivorus*, *Ephippiger ephippiger*, *Euchorthippus pulvinatus*, *Euthystira brachyptera*, *Gampsocleis abbreviata*, *Mantis religiosa*, *Metrioptera oblongicollis*, *Oedipoda germanica*, *Oropodisma macedonica*, *Paracaloptenus caloptenoides caloptenoides*, *Pholidoptera macedonica*, *Platycleis albopunctata*, *Platycleis ebneri*, *Polysarcus denticaudus*, *Stenobothrus lineatus*, *Stenobothrus nigromaculatus*, *Stenobothrus rubicundulus* and *Troglophilus bukoviki*. Other arthropods at this habitat typically belong to the following species: *Libelloides lacteus* and *Libelloides macaronius* from the family Ascalaphidae i.e. Neuroptera order.

Figure 5.11: *Melitea diamina*



The following Lepidopteran (butterfly) species are typically found within this habitat: *Dasypolia temple*, *Apomea illyria*, *Catastia marginea*, *Titanio schranckiana*, *Parnassius apollo*, *Lycaena dispar*, *Lycaena virgaurea*, *Eumedonia eumedon*, *Agrodiaetus amanda*, *Melitaea diamina* (see figure above), *Erebia ligea*, *Erebia medusa*, *Aphantopus hyperantus*, *Lasiommata petropolitana*, *Pyrgus andromedae*, *Polyommatus eroides* and *Erebia oeme*.

The typical amphibian within this type of habitat is the Green toad (*Pseudepidalea viridis*) while the typical reptile is the smooth snake (*Coronella austriaca*).

The following bird species are found within this habitat: *Alauda arvensis*, *Anthus campestris*, *Buteo buteo*, *Carduelis cannabina*, *Carduelis carduelis*, *Circaetus gallicus*, *Emberiza cia*, *Falco peregrinus*, *Lanius collurio*, *Lullula arborea*, *Oenanthe oenanthe*, *Perdix perdix*, *Saxicola rubetra* and *Coturnix coturnix*.

The following mammal species typically occur within this habitat: chamois (*Rupicapra rupicapra balcanica*) (Figure 5.12), European snow vole (*Chionomys nivalis*), European hare (*Lepus europaeus*), Lesser mole-rat (*Spalax leucodon*), red fox (*Vulpes vulpes*), Balkan mole (*Talpa stankovici*) and European pine vole (*Microtus subterraneus*).

Figure 5.12: *Rupicapra rupicapra balcanica*



This habitat is considered significant and endangered in the European Union, and is consequently included in Annex I of the *Habitat Directive* (6170 - Alpine and subalpine calcareous grasslands). In addition, within this habitat numerous endemic and rare vascular plants are found, including *Alyssum galicicae*, *Anchusa barreliari* subsp. *serpentinicola*, *Arabis bryoides*, *Asperula doerfleri*, *Asplenium fissum*, *Asphodeline taurica*, *Astragalus mayeri*, *Centaurea tomorosii*, *Cytisus procumbens*, *Edraianthus horvatii*, *Erodium guicciardi*, *Festuca galicicae*, *Fritillaria ionica* var. *ochridana*, *Helichrysum zivojinii* (Figure 5-13), *Laserpitium ochridanum*, *Oxytropis purpurea*, *Potentilla speciosa*, *Prunus prostrata*, *Sempervivum galicicum*, *Sideritis raeseri*, and others.

Figure 5.13: *Helichrysum zivojinii*



The bush cricket (*Saga pedo*) is typically found within this habitat (see figure) and the Mountain Apollo (*Parnassius apollo*) which are both listed as Vulnerable (VU) on the IUCN Red List.

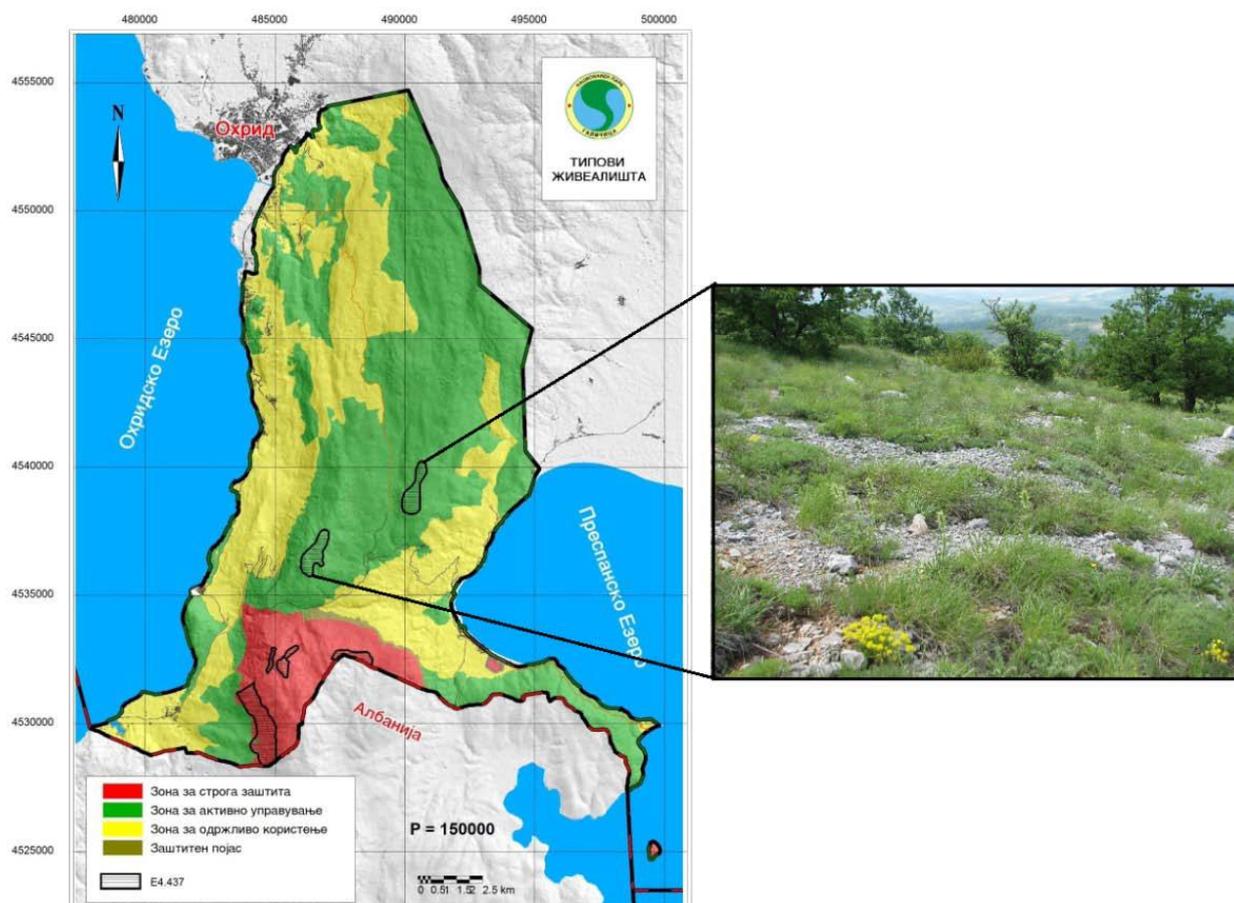
Figure 5.14: *Saga pedo*



Helleno-Balkanic stripped grasslands (EUNIS 2004: E4.437)

The Helleno-Balkanic stripped grasslands cover around 516.6 ha, with 323.3 Ha within the ZSP and 193.4 ha within the ZAM, which means the entire area of this habitat belongs to the natural zone of the Park. The distribution is shown in Figure 5-15 below, along with a typical example.

Figure 5.15: 6170: Alpine and subalpine calcareous grasslands (Helleno-Balkanic striped grasslands - EUNIS 2004: E4.437)



In accordance with EUNIS 2004, three plant communities are found within this habitat type: *Morino-Stripetum* prov., *Rindero-Acantholimonetum* Quenzel 1964 (fragm.) and *Helianthemum-Seslerietum* Horvat 1949. There are two examples of the community *Morino-Stripetum* prov. on calcareous rocky slopes in the locality of Vojtino, at Stara Galichica, within the boundaries of ZSP. The community *Rindero-Acantholimonetum* is also found only at Stara Galichica, within the ZSP. The community *Helianthemum-Seslerietum* Horvat 1949 occurs at the highest altitude belt on Galichica Mountain – Stara Galichica (Kazan-Magaro) and Mala Galichica (Lako Signoj – Bugarska Chuka), from 1.800-2.250m, at the flattened surfaces on the highest mountain tops and on the edges of abysses, where the climate conditions are most extreme.

Due to the strong winds, the peaks almost have no snow cover during the winter months, because the strong winds carry the snow away, and there is also a large difference between the day and night temperatures and all of these factors encourage the development of a specific vegetation adapted to these extreme ecological conditions. The following vascular plants are typically found within this community: *Sesleria juncifolia*, *Helianthemum canum* f. *scardicum*, *Globularia cordifolia*, *Paronychia chionaea*, *Achillea agaretifolia*, *Anthyllis aurea*, *Carex laevis*, *Ranunculus sartorianus*, *Gentiana verna*, *Saxifraga scardica*, *Trinia ramosissima*, *Silene multicaulis*, *Cerastium decalvans*, *Draba athoa*, *Minuartia verna*, *Oxytropis dinarica*, *Euphrasia minima* and *Festuca hirtovaginata* var. *hercegovinica*.

The following spider species are distinctive of this habitat: *Segestria senoculata*, *Dysdera longirostris*, *Theridion impressum*, *Theridion sisyphium*, *Frontinellina frutetorum*, *Araneus angulatus*, *Larrinioides*

sclopetarius, *Alopecosa mariae*, *Zelotes tenuis*, *Xysticus gallicus*, *Philaeus chrysops* and *Lycosa praegrandis*.

The following orthoptera are found: *Arcyptera microptera*, *Chorthippus apricarius apricarius*, *Chorthippus mollis mollis*, *Decticus verrucivorus*, *Podisma pedestris*, *Poecilimon jonicus jonicus*, *Poecilimon macedonicus*, *Psorodonotus fieberi macedonicus*, *Saga pedo*, *Stenobothrus fischeri*, *Stenobothrus lineatus* and *Stenobothrus rubicundulus*.

The following Lepidoptera (butterfly) species are typically found within this habitat: *Dasypolia temple*, *Apotea illyria*, *Catastia marginea*, *Titanio schranckiana*, *Parnassius apollo*, *Lycaena dispar*, *Lycaena virgaurea*, *Eumedonia eumedon*, *Agrodiaetus amanda*, *Melitaea diamina*, *Erebia ligea*, *Erebia medusa*, *Aphantopus hyperantus*, *Lasiommata petropolitana*, *Pyrgus andromedae*, *Polyommatus eroides* and *Erebia oeme*.

The typical amphibians within this type of habitat is the Green toad (*Pseudepidalea viridis*) while the typical reptile is the smooth snake (*Coronella austriaca*).

The following bird species are found within this habitat: *Alectoris graeca*, *Anthus spinoletta*, *Emberiza cia*, *Eremophila alpestris*, *Lullula arborea*, *Monticola saxatilis* and *Oenanthe oenanthe*.

The following mammal species typically occur within this habitat: chamois (*Rupicapra rupicapra balcanica*), European snow vole (*Chionomys nivalis*), European hare (*Lepus europaeus*), Lesser mole-rat (*Spalax leucodon*), red fox (*Vulpes vulpes*), Balkan mole (*Tulpa stankovici*) and European pine vole (*Microtus subterraneus*).

This habitat is considered significant and endangered in the countries of the European Union and is consequently included in Annex I of the *Habitat Directive* (6170 - Alpine and subalpine calcareous grasslands). The following vascular plants which are local endemics and are rare in the Republic of Macedonia can be found at this habitat: *Alyssum strybrnyi*, *Astragalus mayeri*, *Crocus cvijicii* (see Figure 5-16), *Cytisus procumbens*, *Cynoglottis barrellieri* ssp. *serpentinicola*, *Edraianthus horvatii*, *Helichrysum zivojinii*, *Sempervivum galicicum* и *Sideritis raeseri*.

Also found are spider species *Xysticus macedonicus* and *Zodarion ohridense* which are Balkan endemities. The various installed antennae systems on the peaks of Galichica Mountain, cause a certain degradation of this habitat and a partial destruction of certain part of the population of the distinctive communities within the habitat.

Figure 5.16: *Crocus cvijicii* - local endemite



Combined Habitat Type Alpine and Subalpine Calcareous Grasslands

Within the Park, these three habitats have a secondary origin, and occur mostly following continuing exploitation of the forest in the lowland areas, either for firewood or other needs, thus allowing these



habitats to gradually turn into grassland. The progressive exploitation of higher elevation forests for livestock production also causes a transition to grassland. Grazing of animals was very extensive in the past but has reduced significantly and is practiced largely only in the northern parts of the Park above Ohrid town and the villages south of it along the coastline.

For the purposes of the impact assessment in Chapter 7, these three sub-types are considered as one habitat *Alpine and Subalpine Calcareous Grasslands*, since this is the Annex I designation in the EU *Habitats Directive*.

Some of the calcareous grassland in the Park is in good condition, and some only in moderate condition. Ironically, much of the area in good condition was burned in a fire in 2006, which removed much of the shrubs and other plants which were succeeding, and allowed the grassland to thrive. The grassland rated in *moderate* condition is being degraded by the natural succession of juniper and other trees.

Species of Conservation Interest in Alpine and Subalpine Calcareous Grasslands

In this habitat type, the following species are of conservation interest:

Flora:

Galicica Yellow Everlasting - *Helichrysum zivojinii* (Local Endemic Species), Galicica Rock Bell - *Edraianthus horvatii* (Local Endemic Species), Cvijici's Crocus - *Crocus cvijicii* (Balkan Endemic Species), Tomorosian Centaury - *Centaurea tomorosii* (Local Endemic Species), Galicica Mountain Tea - *Sideriris raeseri* (Balkan Endemic Species), Galicica Sermountain - *Laserpitium ochridanum* (Local Endemic Species), Galicica Catmints - *Nepeta ernesti-mayeri* (Local Endemic Species), Galicica Sempervivum - *Sempervivum galicum* (Local Endemic Species)

Fauna:

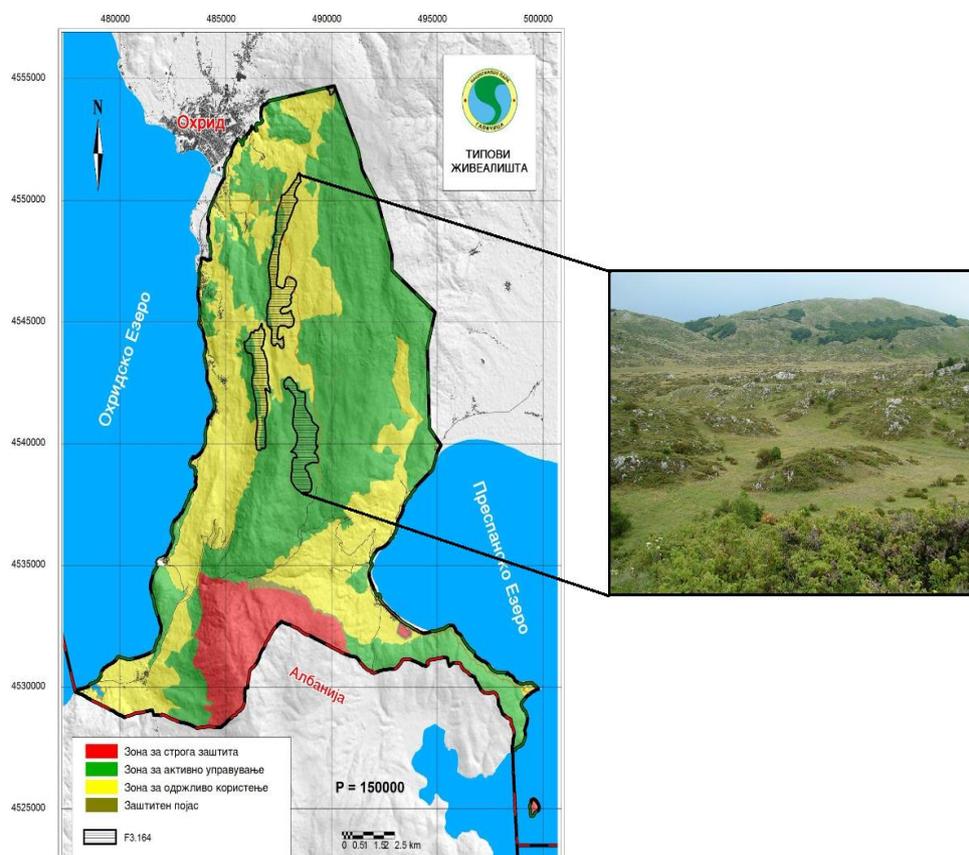
Predatory Bush Cricket - *Saga pedo* (HD IV, IUCN – VU)
Apollo Butterfly - *Parnasius apollo* (HD IV, IUCN – VU), Calcareous Mountain Snail - *Helix secernenda* (Balkan Endemic Species),
European Green Toad - *Pseudepidalea viridis* (HD IV),
Alpine Chough - *Pyrrhocorax graculus* (Relict Population), Red-backed Shrike - *Lanius collurio* (BD I),
Balkan Chamois - *Rupicapra rupicapra balcanica* (HD II/IV)

5.4.3 Common Juniper (*Juniperus communis*) Scrub (Habitats Directive 5130, EUNIS F3.12)

Juniperus communis is a Sub-Mediterranean juniper thicket whose formations are found developing on the heaths and alpine and subalpine calcareous grasslands, at higher elevations on Mount Galichica. *Juniperus communis* covers an area of around 1,000 ha within the Park, 546 ha (55%) of which lies within the ZAM, and 454 ha of which is in the ZSU. Its distribution is shown in Figure 5-17 below. This habitat appears on abandoned agricultural land and pastures in the oak belt and beech belt at an elevation of up to 1,500 m. It is most commonly found in places with shallow soil and appears as a pioneering plant community in the succession process of the forest.

Under the Park's current Management Plan, the natural ecological processes that support development of this community include colonisation of grasslands by shrubs such as *juniperus communis*. Where grazing does not occur or is prevented, the alpine and subalpine calcareous grasslands at higher elevations in the Park are gradually transform by succession to juniper. The figure below shows their distribution within the Park, and also shows an example of a typical area of juniper shrub. The present extent of juniper is limited to a large extent by grazing of goats and sheep by local communities, and partially by the occurrence of a number of fires in the last 5 – 10 years both of which have restricted juniper formation.

Figure 5.17: Juniper Distribution in the Park



This habitat appears on abandoned agricultural surfaces and pastures in the oak belt and beech belt. It is most commonly found on places with shallow soil and it appears as a pioneering plant community in the succession process.

The following vascular plants are typically found within this habitat: *Juniperus communis*, *Acinos alpinus* ssp. *meridionalis*, *Daphne oleoides*, *Frangula alnus*, *Cotoneaster integerrimus*, *Crataegus orientalis*; *Arabis surculosa*, *Artemisia alba*, *Asperula aristata* ssp. *condensata*, *Campanula patula*, *Centaurea deustiformis*, *Centaurea grisebachii*, *Cephalaria setulifera*, *Erysimum kummerlei*, *Festuca hirtovaginata*, *Filipendula vulgaris*, *Genista depressa*, *Globularia meridionalis*, *Helianthemum canum*, *Hieracium hoppeanum*, *Hypericum barbatum*, *Inula oculus-christi*, *Leontodon crispus* ssp. *crispus*, *Linaria peloponnesiaca*, *Linum catharticum*, *Lychnis viscaria*, *Melica ciliata*, *Minuartia verna*, *Myosotis arvensis*, *Onobrychis alba* ssp. *calcareo* var. *echinata*, *Pimpinella traagium* ssp. *lithophila*, *Plantago lanceolata*, *Poa bulbosa*, *Poa molineri*, *Polygala vulgaris*, *Potentilla detommassii* var. *holosericea*, *Salvia argentea*, *Salvia verbenaca*, *Sanguisorba minor* ssp. *muricata*, *Satureja montana*, *Sedum sartorianum*, *Thalictrum minus*, *Thesium linophyllum*, *Thymus ciliatopubescens*, *Tragopogon balcanicus* and *Trisetum flavescens*. The following species are typically found within this habitat: *Juniperus communis*, *Acinos alpinus* ssp. *meridionalis*, *Campanula patula*, *Festuca hirtovaginata*, *Leontodon crispus* ssp. *crispus*, *Pimpinella traagium* ssp. *Lithophila* and *Trisetum flavescens*. The dominant species within the habitat is *Juniperus communis*.

Typical amphibians associated with this type of habitat include the common toad (*Bufo bufo*) and the agile frog (*Rana dalmatina*). Typical reptiles are the slow worm (*Anguis fragilis*), common wall lizard (*Podarcismuralis*), smooth snake (*Coronella austriaca*), the Aesculapian snake (*Zamenis longissimus*) and horned viper (*Vipera ammodytes*).

The following bird species typically occur in this type of habitat: *Accipiter brevipes* (see Figure 5-18), *Anthus campestris*, *Buteo buteo*, *Caprimulgus europaeus*, *Carduelis cannabina*, *Carduelis carduelis*, *Carduelis chloris*, *Cuculus canorus*, *Emberiza cia*, *Emberiza cirrus*, *Emberiza citrinella*, *Emberiza hortulana*, *Garrulus glandarius*, *Hippolais pallida*, *Lanius collurio*, *Lullula arborea*, *Parus lugubris*, *Parus major*, *Phylloscopus orientalis*, *Prunella modularis*, *Serinus serinus*, *Sylvia borin*, *Sylvia cantillans*, *Sylvia curruca* and *Turdus merula*.

Figure 5.18: *Accipiter brevipes*



The following mammal species typically occur within this juniper habitat: chamois (*Rupicapra rupicapra balcanica*), European slow vole (*Chionomys nivalis*), European hare (*Lepus europaeus*), lesser mole-rat (*Spalax leucodon*), red fox (*Vulpes vulpes*), grey wolf (*Canis lupus*), brown bear (*Ursus arctos*), roe deer (*Capreolus capreolus*), Balkan mole (*Talpa stankovici*) and European pine vole (*Microtus subterraneus*).

This habitat is considered significant and endangered in the European Union and is included in Annex I of the *Habitat Directive* (5130 - *Juniperus communis* formations on heaths or calcareous grasslands). However, this type of habitat is extensive in Macedonia and does not have a priority status for nature conservation in the country, or within the Park. Some of the juniper areas towards the south of National Park Galichica are rated by PINPG as in good condition. However, those formations in the north are rated as being in Moderate condition due to grazing pressures and also a fire, which occurred in 2008 and damaged a wide area of grassland and juniper heathland along the central ridge of the northern part of the Park.



Species of Conservation Interest in *Juniperus communis* habitats

In this habitat type, the following species are of conservation interest:

Flora:

Sartorial Stonecrop - *Sedum sartorianum* (Apollo butterfly feeding plant)

Fauna:

Predatory Bush Cricket - *Saga pedo* (HD IV, IUCN – VU)

Apollo Butterfly - *Parnasius apollo* (HD IV, IUCN – VU),

Alpine Chough - *Pyrrhocorax graculus* (Relict Population),

Red-backed Shrike - *Lanius collurio* (BD I), Rock Partridge *Alectoris graeca* (BD I)

Fungi:

Hyphodontia juniperi (NT)

5.4.4 Helleno-Moesian [*Quercus frainetto*] forests (EUNIS 2004: G1.762)

The xerothermic oak forests have also developed on Mount Galichica. These are represented by the associations *Quercetum frainetto-cerris macedonicum* Ht. 1959 (Hungarian oak and Turkey oak forests), *Orno-Quercetum petraeae* Em 1964 (Sessile oak forests) and *Orno-Quercetum cerris macedonicum* Em 1964 (Turkey oak forests). They are found from 800 to 1,480 m and, at their upper boundary, they come into contact with the lower altitudinal limit of the beech forests. Particularly attractive and compact stands with the *Quercetum frainetto-cerris macedonicum* Ht. 1959 association are found on the side of Prespa – above Oteshevo and Carina, while Sessile oak forests rise higher, in the upper oak tree range. Larger compositions are found on the northern and north-eastern slopes of the Galichica massif, outside of the Park limits. This habitat occupies a surface of around 720 ha of the Park, with 202 ha (28%) lying within the ZAM. The area of the proposed Oteshevo TDZ coincides with one of the areas of Hungarian oak and Turkey oak forests (*Quercus frainetto*) within the ZAM.

This type of habitat is characterised by the community *Quercetum frainetto-cerris macedonicum* Ht. 1959, and the following species are used to diagnose the community: *Lathyrus laxiflorus*, *Helleborus odoratus*, *Stachys scardica*, *Acer tataricum*, *Rubus canscens*, *Quercus frainetto*, *Malus florentina*, *Trifolium pignanii*, *Physospermum cornubiense*, *Carex cuspidata*, *Verbascum austriacum*, *Quercus pubescens*, *Quercus cerris*, *Quercus petraea*, *Carpinus orientalis*, *Luzula forsteri*, *Lathyrus niger*, *L. venetus*, *Clinopodium vulgare*, *Silene italica*, *Fraxinus ornus*, *Potentilla micrantha*, *Cytisus nigricans*, *Poa nemoralis*, *Galium pseudoaristatum*, *Primula vulgaris*, *Corylus avellana*, *Aremonia agrimonoides*, *Acer obtusatum*, *Astragalus glycyphyllos*, *Geum urbanum* and others.

Invertebrates found typically in association with this habitat include: *Otiorhynchus pierinus*, *Phyllobius lateralis*, *Calosoma sycophanta*, *Carabus (Procerus) gigas*, *Lucanus cervus* and *Chiracanthium macedonicum*. There are no reliable data on amphibians and reptiles associated with it.

Bird species typically found in this habitat include: *Accipiter gentilis*, *Accipiter nisus*, *Aegithalos caudatus*, *Anthus trivialis*, *Asio otus*, *Athene noctua*, *Bonasa bonasia*, *Buteo buteo*, *Carduelis carduelis*, *Certhia brachydactyla*, *Cuculus canorus*, *Dendrocopos major*, *Dendrocopos medius*, *Dendrocopos minor*, *Dendrocopos syriacus*, *Emberiza citrinella*, *Erithacus rubecula*, *Ficedula albicollis*, *Fringilla coelebs*, *Garrulus glandarius*, *Jynx torquilla*, *Luscinia megarhynchos*, *Muscicapa striata*, *Oriolus oriolus*, *Otus scops*, *Parus caeruleus*, *Parus major*, *Parus palustris*, *Phylloscopus collybita*, *Phylloscopus sibilatrix*, *Phylloscopus trochilus*, *Picus canus*, *Picus viridis*, *Scolopax rusticola*, *Sitta europaea*, *Streptopelia turtur*, *Strix aluco*, *Sylvia atricapilla*, *Troglodytes troglodytes*, *Turdus merula*, *Turdus philomelos*, *Turdus viscivorus*, *Columba oenas* and *Columba palumbus*.⁸

Mammal species typically found in this habitat include: *Erinaceus roumanicus*, *Crocidura suaveolens*, *Myotis mystacinus*, *Nyctalus leisleri*, *Eptesicus serotinus*, *Plecotus auritus*, *Apodemus flavicollis*, *Canis lupus*, *Vulpes vulpes*, *Mustela nivalis*, *Martes foina*, *Meles meles*, *Ursus arctos*, *Felis silvestris*, *Lynx lynx*, *Sus scrofa* and *Capreolus capreolus*.

⁸ Within the SEA level assessment and the NPG current species data available it is not possible to provide further detail with regard the number of species in each taxonomic group, whether this is low/ high and whether there are any species confined to this habitat, or for which this habitat is particularly important.



A number of commercially significant mushrooms but also rare species are found within this habitat, such as *Amanita caesarea*, *Fistulina hepatica*, *Boletus aereus*, *Boletus edulis*, *Boletus rhodoxanthus*, *Hygrophorus olivaceus*, *Hygrophorus cossus*, *Tricholoma ustaloides*, *Craterellus cornucopioides* and others. Larger compositions are found on the northern and north-eastern slopes of Galichica Mountain, outside of the Park limits. The species *Amanita caesarea* and *Boletus rhodoxanthus* have been found on this habitat type at the locality of Pljuska. *Amanita caesarea* belongs to the red list of mushrooms for Europe and Macedonia. *Boletus rhodoxanthus* is a very rare species that can be found in Macedonia only on Shar Planina and Jakupica Mts. The population of this species in Europe is marked by a rapid decrease with widespread losses and much extinction on a national level.

This community includes a lot of plant representatives from the family *Orchidaceae* like *Gymnadenia conopsea* that are protected by the CITES Convention.

Most of the areas of this type of forest have been assessed by PINPG as being in Good Condition, although the area at the proposed Oteshevo TDZ is rated as Moderate, due to past fire damage. This type of tree is used by PINPG as part of its forestry (i.e. firewood collection) programme. Areas where recent forestry activities (tree felling) have occurred are rated as in Moderate rather than Good Condition.

Species of Conservation Interest in *Quercus frainetto* Forests

In this habitat, the following species are of conservation interest:

Flora: none

Fauna:

Stag Beetle - *Lucanus cervus* (HD IV), Eurasian eagle-owl - *Bubo bubo* (BD I), Syrian Woodpecker - *Dendrocopus syriacus* (BD I), Hazel Grouse - *Bonasa bonasia* (BD I), Spotted Woodpecker - *Dendrocopus medius* (BD I), European Nightjar - *Caprimulgus europaeus* (BD I), Wolf - *Canis lupus* (HD II/IV), Wildcat - *Felis silvestris* (HD IV), Balkan Lynx - *Lynx lynx balcanicus* (HD II/IV), Brown Bear - *Ursus arctos* (HD II/IV)

Fungi:

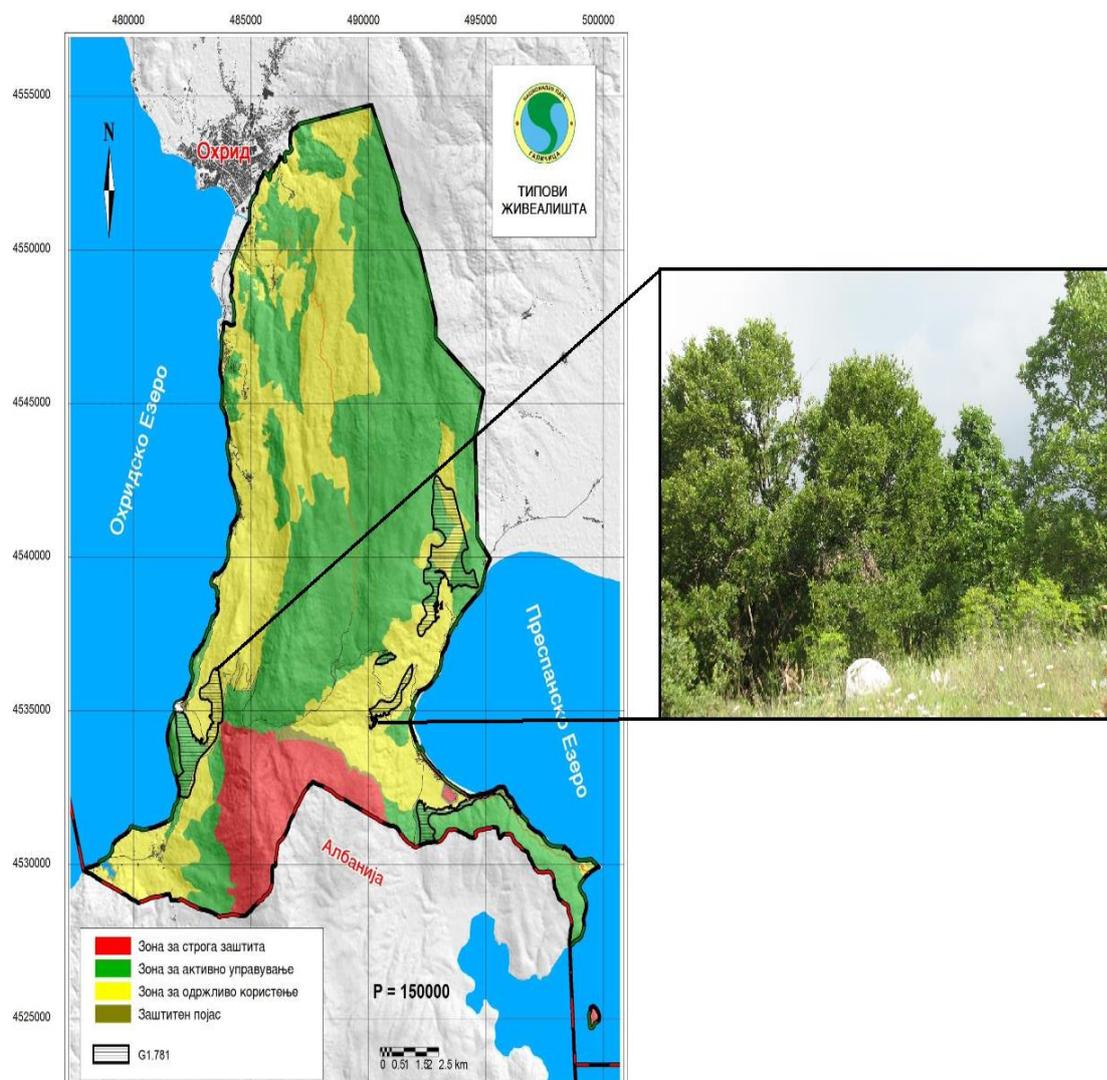
Amanita caesarea (EN-A2acd), *Boletus satanas* (VU- A2ac), *Boletus aereus* (VU- A2acd), *Boletus satanas* (VU-A2ac).

5.4.5 Hop/Black hornbeam forests (EUNIS 2004: G1. 7C11) & Helleno-Balkan Trojan oak woods (EUNIS 2004: G1.781 (Macedonian Oak));

Hop/Black hornbeam forests (EUNIS 2004: G1. 7C11) (ass. *Quercus - Ostryetum carpinifoliae* Ht. 1938), and Helleno-Balkan Trojan oak woods (EUNIS 2004: G1.781; ass. *Quercetum trojanae macedonicum* Em. et Ht. (1950) 1959 are found azonally, as a refugial in the zone of the climatogenic community, together with *Carpinus orientalis*. These habitats are found both on the eastern and western side of the mountain, at a height range from 850 to 1450 m and frequently overlap with the habitats of Oriental hornbeam, and Hungarian oak and Turkey oak forest.

Of particular importance is *Quercus trojana* (Helleno-Balkan Trojan Oak, sometimes known as Macedonian Oak), which is a rare species in the southern Balans, Italy (Apulia) and Turkey. This is distributed over a surface of around 1,093 ha of the Park, with 537.8 ha (49%) within the ZAM, and 555.2 ha within the ZSU. The distribution of Macedonian oak (*Quercetum trojanae macedonicum*) within the Park, and a typical example, is shown in Figure 5.19 below.

Figure 5.19: *Quercus trojana* (Macedonian Oak) Distribution in the Park



Quercetum trojanae (Horvat 1959) woodland is the most distinctive of all forest communities in the western Balkans. The most developed compositions in Macedonia are found on Galichica, the watershed of Treska, Jakupica, Prilepsko-Kozjak etc. It is present on both sides of the Galichica mountain – on the western side it comes to Golem Osoj, in the area around the village of Trpejca, while on the eastern side it is found at several locations: larger blocks between Oteshevo and Sirhan and on Prechna Mountain, and smaller ones above the locality of Carina. This is a pretty low forest, with small diameter trunks. The community is identified through the following species: *Quercus trojana*, *Fraxinus ornus*, *Juniperus oxycedrus*, *Acanthus balcanicus*, *Anthericum liliago*, *Anthoxanthum odoratum*, *Anthyllis vulneraria* ssp. *polyphyllaa*, *Bellis perennis*, *Carex halleriana*, *Crepis vesicaria*, *Galium rigidifolium*, *Geranium sanguineum*, *Helianthemum nummularium*, *Hieracium bauhinii*, *Medicago lupulina*, *Ononis pusilla*, *Poa angustifolia*, *Polygala comosa* and *Trifolium physodes*. Species *Fraxinus ornus*, *Juniperus oxycedrus*, *Quercus trojana*, *Dactylis glomerata*, *Galium rigidifolium* and *Veronica chamaedrys* are permanent, while *Quercus trojana* is the dominant species.

This habitat is one of the most important for fungi within the Park. The following species are most common and distinctive for this type of habitat: *Hyphoderma praetermissum*, *Panellus stypticus*,

Peniophora quercina, *Phanerochaete velutina*, *Stereum hirsutum*, *Trametes versicolor* and *Vuilleminia megalospora*. More rarely this habitat includes also the following types of fungi: *Cerrena unicolor*, *Exidia truncata*, *Gloeocystidiellum porosum*, *Laetiporus sulphureus*, *Lopharia spadicea*, *Peniophora cinerea*, *Stereum rugosum*, *Steccherinum fimbriatum*, *Trametes hirsuta*, *Stereum rugosum*, *Steccherinum fimbriatum* и *Trametes hirsuta*. The following species are rarely found: *Daedalea quercina*, *Datronia mollis*, *Dichomitus campestris*, *Eichleriella deglubens*, *Hymenochaete subfuliginosa*, *Hyphoderma mutatum*, *Hyphodontia arguta* and *Mycoacia aurea*. The occurrence of the species *Hexagonia nitida* (see Figure 5.20) is interesting since it is distinctive for the Trojan oak and is found only at this substrate in the Park.

Figure 5.20: *Hexagonia nitida*



There is no information available on spiders within this habitat.

The following Orthoptera species are found at this habitat: *Barbitistes ocskayi*, *Eupholidoptera chabrieri*, *Poecilimon jonicus jonicus*, *Tettigonia viridissima* and *Troglophilus bukoviki*.

The following species from the Lepidoptera order (butterflies) are typically found at this habitat: *Euxoa glabella*, *Amathes cohaesa*, *Hadena luteocincta*, *Episema korsakovi*, *Cirrhia cypreago*, *Pyrrhia victorina*, *Ochropleura flavina*, *Lithophane ledereri*, *Agrichola lactiflora*, *Simyra dentinosa*, *Maraschia grisescens*, *Parnassius mnemosine*, *Everes alcetas*, *Scolitantides orion*, *Maculinea alcon*, *Plebejus agyrogomnon*, *Agrodiaetus damon*, *Nymphalis xanthomelas*, *Neptis rivularis*, *Polyommatus eroides*, *Melanargia russiae* and *Zerinthia polyxena*.

Other registered invertebrates are: *Otiorhynchus pierinus*, *Phyllobius lateralis*, *Calosoma sycophanta*, *Carabus (Procerus) gigas*, *Lucanus cervus* (see Figure 5.21), *Chiracanthium macedonicum* and others.

Figure 5.21: *Lucanus cervus*



The typical amphibians found in this habitat include: the common toad (*Bufo bufo*), the agile frog (*Rana dalmatina*) and fire salamander (*Salamandra salamandra*) and the typical reptile representatives are the Hermann's tortoise (*Testudo hermanni*), slow worm (*Anguis fragilis*), European green lizard (*Lacerta viridis*), Erhard's wall lizard (*Podarcis erhardii*), European copper skink (*Ablepharus kitaibeli*), Balkan whip snake (*Hierophis gemonensis*), Aesculapian snake (*Zamenis longissimus*), four-lined snake (*Elaphe quatuorlineata*) and horned viper (*Vipera ammodytes*).

The following bird species are typically found in this habitat: *Accipiter gentilis*, *Accipiter nisus*, *Aegithalos caudatus*, *Anthus trivialis*, *Asio otus* (see Figure 5.22), *Athene noctua*, *Buteo buteo*, *Caprimulgus europaeus*, *Carduelis carduelis*, *Carduelis chloris*, *Certhia brachydactyla*, *Cuculus canorus*, *Dendrocopos leucotos*, *Dendrocopos medius*, *Dendrocopos minor*, *Dendrocopos syriacus*, *Dryocopus martius*, *Emberiza cirrus*, *Erithacus rubecula*, *Falco tinnunculus*, *Ficedula albicollis*, *Fringilla coelebs*, *Garrulus glandarius*, *Luscinia megarhynchos*, *Muscicapa striata*, *Oriolus oriolus*, *Otus scops*, *Parus caeruleus*, *Parus lugubris*, *Parus major*, *Parus palustris*, *Phylloscopus collybita*, *Phylloscopus orientalis*, *Phylloscopus sibilatrix*, *Phylloscopus trochilus*, *Picus viridis*, *Scolopax rusticola*, *Sitta europaea*, *Sylvia atricapilla*, *Turdus merula*, *Turdus viscivorus*, *Upupa epops* and *Columba palumbus*.

Figure 5.22: *Asio otus*



The habitat is home typically to the following mammal species: Northern white-breasted hedgehog (*Erinaceus roumanicus*), lesser white-toothed shrew (*Crocidura suaveolens*), whiskered bat (*Myotis mystacinus*), lesser noctule (*Nyctalus leisleri*), yellow-necked mouse (*Apodemus flavicollis*), wood mouse (*Apodemus sylvaticus*), edible dormouse (*Glis glis*), forest dormouse (*Dryomys nitedula*), lesser mole-rat (*Spalax leucodon*), European hare (*Lepus europeus*), grey wolf (*Canis lupus*), red fox (*Vulpes vulpes*), least weasel (*Mustela nivalis*), beech marten (*Martes foina*), European badger (*Meles meles*), brown bear (*Ursus arctos*), wildcat (*Felis silvestris*), wild boar (*Sus scrofa*), roe deer (*Capreolus capreolus*) (Figure 5.23) and lynx (*Lynx lynx*) .

Figure 5.23: *Capeolus capeolus*



The *Quercus trojana* woods are considered significant and endangered in the European Union and are consequently included in Annex I of the *Habitat Directive*. This habitat includes several species from the family *Orchidaceae*, then *Fritillaria ionica* var. *ochridana*, *Hyssopus officinalis* ssp. *pilifer*, *Convolvulus elegantissimum*, *Alkanna noneiformis* and other rare or endangered species. The primary fungi area "Dolovi" also falls within this habitat where the important population of the Mediterranean species *Hexagonia nitida* is found. Compositions of this habitat occur with various degrees of preservation. Lower parts of the Park are thicker and higher, while higher ones are quite thinned out with a well-formed grass floor. The compositions with Trojan oak found at the lower parts of Galichica are exposed to the largest anthropogenic pressure.

The condition of the Macedonian Oak forest at Golem Osoi, near Trepjca is rated by PINPG as partly Good and partly Moderate. The strip on the Prespa side of the mountain on the southern border of the Park is rated at Good, as there is no forestry and no human activity here. The other examples to the north and south of Oteshevo are rated partly as in Good condition, and partly as Moderate.



Species of Conservation Significance in Helleno-Balkanic Trojan oak (Macedonian Oak) Forests

In this habitat type, the following species are of conservation interest:

Flora:

Macedonian Oak - *Quercus trojana* (HD I:9250), Galicica Catmints - *Nepeta ernesti-mayeri* (Local Endemic Species)

Fauna: Southern Festoon - *Zerinthia polyxena* (HD IV), Clouded Apollo - *Parnassius mnemosine* (HD IV), Stag Beetle - *Lucanus cervus* (HD IV), Hermann's Tortoise - *Testudo hermanni* (HD II/IV), Four-lined Snake - *Elaphe quatorlineata* (HD II), European Nightjar - *Caprimulgus europaeus* (BD I), Spotted Woodpecker - *Dendrocopus medius* (BD I), Wolf - *Canis lupus* (HD II/IV), Wildcat - *Felis silvestris* (HD IV)

Fungi:

Hexagonia nitida (VU - A2ac), *Boletus lupinus* (EN -D)
Leucopaxillus compactus (VU-D1)
Leucopaxillus giganteus (VU C1, D1)
Phyllotopsis nidulans (NT)

Species of Conservation Significance in Hop/Black Hornbeam Forests

In this habitat type, the following species are of conservation interest:

Flora: none

Fauna:

Stag Beetle - *Lucanus cervus* (HD IV), Eurasian eagle-owl - *Bubo bubo* (BD I), Wolf - *Canis lupus* (HD II/IV), Wildcat - *Felis silvestris* (HD IV), Balkan Lynx - *Lynx lynx balcanicus* (HD II/IV), Brown Bear - *Ursus arctos* (HD II/IV)

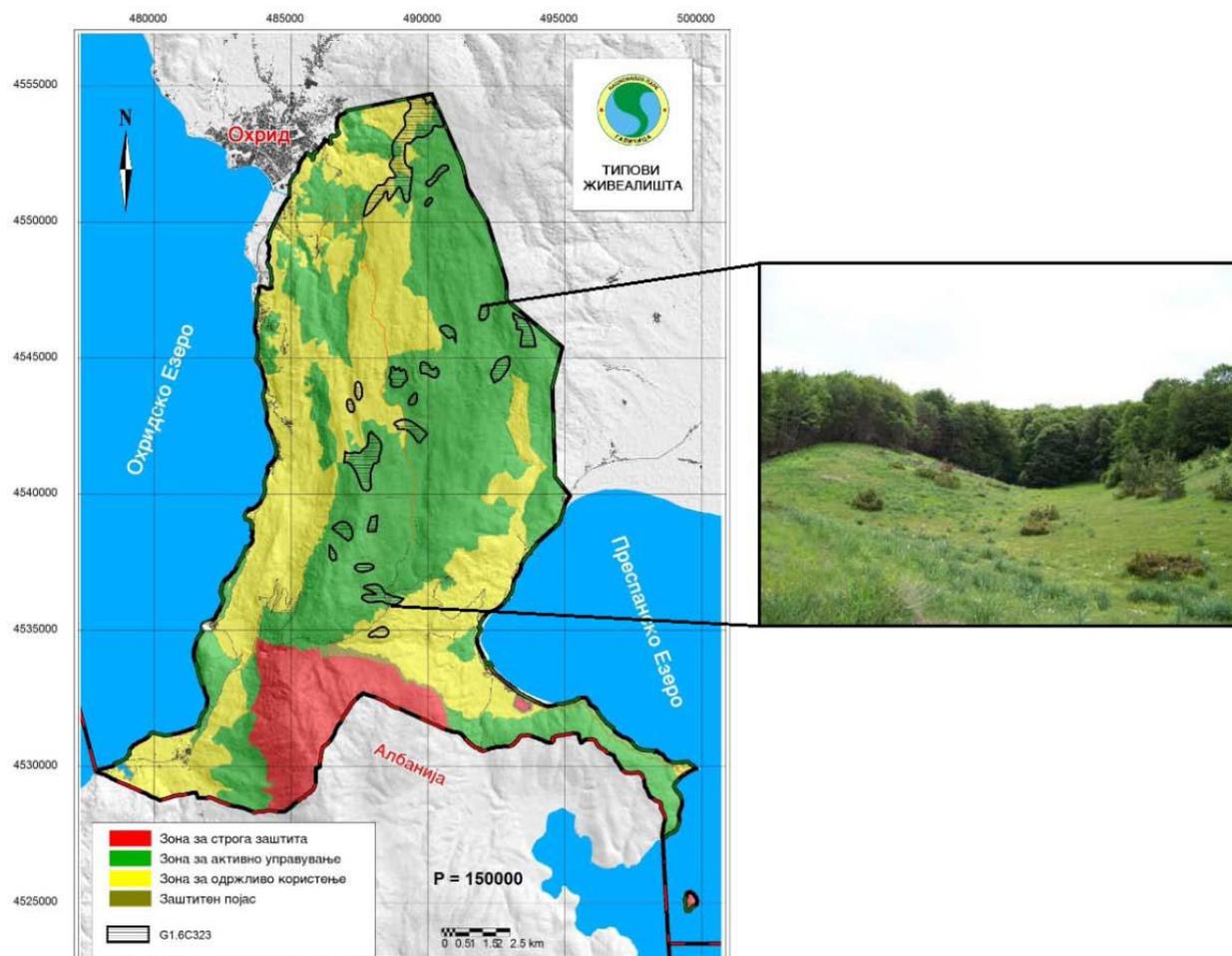
Fungi:

Boletus satanas (VU- A2ac), *Boletus aereus* (VU- A2acd)

5.4.6 Illyrian *Fagus sylvatica* Beech Forests

Illyrian *Fagus sylvatica* forests, (i.e. G1.6C323): and Illyrian *Acer obtusatum* beech forests, in accordance with EUNIS classification from 2004, together cover an area of 901 ha in the Park, with 626.2 ha lying within the ZAM and 274.9 ha belonging to the ZSU. This means that 79% of this habitat lies within the natural zone of the Park. The habitat is listed in Annex I of the *Habitats Directive* (91K0). Its distribution within the Park is summarised in figure Error! Reference source not found. below.

Figure 5.24: 91K0: Illyrian *Acer obtusatum* Beech forests - EUNIS 2004: G1.6C323



This type of habitat is characterised by the community *Aceri obtusati-Fagetum* Fabijanix, Fukarek et Sefanovic ex Fukarek, Stefanovic et Fabijanec 1967. In the Republic of Macedonia it is found on Jakupica Mountain, Bistra, Karaorman and other mountains in Western Macedonia. In Galichica Park it occurs on steep slopes with southern exposure, at an elevation of 1,200 to 1,500 m, on shallow soils with a carboniferous substrate. The community includes a large number of thermophile plant species, which indicate its connection with the thermophile deciduous forests from the alliance *Quercetalia pubescentis*. The following plant species are used to diagnose this plant community: *Fagus sylvatica*, *Acer platanoides*, *Daphne oleoides*, *Euonymus latifolius*, *Lonicera alpigena* ssp. *formanekiana*; *Achillea grandifolia*, *Arabis muralis*, *Campanula trachelium*, *Daphne laureola*, *Mercurialis perennis*, *Scorzonera hispanica*, *Sesleria robusta* и *Vicia incana*. *Fagus sylvatica* and *Sesleria robusta* occur as permanent species, while *Fagus sylvatica* is the dominant species in this plant community.

Spiders have not been researched in this habitat.

The following Orthopteran species are found in this habitat: *Euxoa segnilis*, *Scotia obesa scytha*, *Xylina merckii*, *Callopietria latreillei*, *Cryphia ochsi*, *Autophila anaphanes*, *Pseudoxestia apfelbecki*, *Grammodes geometrica*, *Prodotis stolidia*, *Pyrgus armoricanus*, *Pyrgus cinarae*, *Carcharodus lavatherae*, *Thymelicus heydeni*, *Thymelicus flavus*, *Leptidea duponcheli*, *Agrodiaetus ripartii*, *Arethusana arethusana* and *Maculinea arion*.

Other registered invertebrates at this habitat: *Rosalia alpina* (Figure 5.25), *Lehmannia szigethyae*, *Limax cephalonicus*, *Deroceras turcicum*, *Triloba sandrii*, *Calosoma sycophanta*, *Carabus (Procerus) gigas* and *Chiracanthium macedonicum*.

Figure 5.25: *Rosalia alpina*



The common toad (*Bufo bufo*), the agile frog (*Rana dalmatina*) and fire salamander (*Salamandra salamandra*) are the typical amphibians found in this type of habitat, and the typical reptile representatives are slow worm (*Anguis fragilis*), the common wall lizard (*Podarcis muralis*), European green lizard (*Lacerta viridis*), Aesculapian snake (*Zamenis longissimus*), and horned viper (*Vipera ammodytes*).

The following bird species are typically found in this habitat: *Accipiter gentilis*, *Accipiter nisus*, *Aegithalos caudatus*, *Buteo buteo*, *Cuculus canorus*, *Dendrocopos major*, *Dendrocopos medius*, *Dryocopus martius*, *Erithacus rubecula*, *Fringilla coelebs*, *Garrulus glandarius*, *Parus caeruleus*, *Parus major*, *Phylloscopus collybita*, *Pyrrhula pyrrhula*, *Sitta europaea*, *Sylvia atricapilla*, *Troglodytes troglodytes*, *Turdus merula*, *Turdus philomelos*, *Turdus viscivorus* and *Columba palumbus*.

The following type of mammals are typically found in this habitat: Northern white-breasted hedgehog (*Erinaceus roumanicus*), Eurasian pygmy shrew (*Sorex minutus*), whiskered bat (*Myotis mystacinus*), lesser noctule (*Nyctalus leisleri*), serotine bat (*Eptesicus serotinus*), brown long-eared bat (*Plecotus auritus*), red squirrel (*Sciurus vulgaris*), edible dormouse (*Glis glis*), hazel dormouse (*Muscardinus avellanarius*), forest dormouse (*Dryomys nitedula*), yellow-necked mouse (*Apodemus flavicollis*), Felten's vole (*Microtus felteni*), grey wolf (*Canis lupus*), red fox (*Vulpes vulpes*) (see Figure 5-26), least weasel (*Mustela nivalis*), beech marten (*Martes foina*), European badger (*Meles meles*), brown bear (*Ursus*

arctos), wildcat (*Felis silvestris*), Balkan lynx (*Lynx lynx balcanicus*), wild boar (*Sus scrofa*) and roe deer (*Capreolus capreolus*).

Figure 5.26: *Vulpes vulpes*



The habitat 91K0: Illyrian *Fagus sylvatica* forests is considered significant and endangered in the European Union and is listed in Annex I of the *Habitat Directive*. It typically hosts the Rosalia longicorn (*Rosalia alpina*) (see figure) that has a status of a vulnerable species at a global level (VU).

The favourable conditions for livestock production in the past are probably the main reason for the destruction of this community, which today is found only in the form of small fragments on the uplands from Suvo Pole to Istochka Mountain and on the slopes of the ridges (Lako Signoj, Bugarska Chuka, Samar and Tomoros). In the past, PINPG has introduced line spacing on several locations throughout this habitat with a low intensity and an interval of 10-15 years. The area on Prespa side (Ervenika Niva) falls completely within the boundaries of the former hunting reservation. Several areas of this habitat have earthen roads, mostly at the localities Ograzhdenik, Dolna, Shargule, Bigla, Sharaplica, Kosto Bachilo, Gereka and Dva Javori. During the 1980s forest lanes were introduced in the forest at the locality of Dva Javori for a ski track and a ski-lift (chairlift), which are now disused.

This habitat demonstrates great vitality, and intensive foresting is seen on the anthropogenic pastures around the enclaves. As a result of the expansion of anthropogenic activities, the habitat containing numerous plant and animal species which are distinctive of the grass communities, is gradually being reduced. This habitat, however, is most frequently exposed to fires that have caused significant damage, notably one fire event during 2007 which caused damage among almost all compositions. Consequently the natural succession process at this part of the habitat has been seriously slowed down. However, the condition of most of the remaining areas of Beech forest is rated by PINPG as Good.



Species of Conservation Interest in *Quercus frainetto* Forests

In this habitat, the following species are of conservation interest:

Flora: none

Fauna:

Stag Beetle - *Lucanus cervus* (HD IV), Eurasian eagle-owl - *Bubo bubo* (BD I), Syrian Woodpecker - *Dendrocopus syriacus* (BD I), Hazel Grouse - *Bonasa bonasia* (BD I), Spotted Woodpecker - *Dendrocopus medius* (BD I), European Nightjar - *Caprimulgus europaeus* (BD I), Wolf - *Canis lupus* (HD II/IV), Wildcat - *Felis silvestris* (HD IV), Balkan Lynx - *Lynx lynx balcanicus* (HD II/IV), Brown Bear - *Ursus arctos* (HD II/IV)

Fungi:

Amanita caesarea (EN-A2acd), *Boletus satanas* (VU-A2ac), *Boletus aereus* (VU-A2acd), *Boletus satanas* (VU-A2ac).

5.4.7 Helleno-Pelagonide Oriental Hornbeam Woods (EUNIS 2004: G1.7C221)

Helleno-Pelagonide oriental hornbeam woods (EUNIS 2004: G1.7C221) occur on the western foothills of Mount Galichica, between 700 to 1000 m, stretching along the shoreline just above Lake Ohrid (at Trpejca-Osoj-Peštani), and on some smaller areas on the side of Prespa – Mount Precna Planina.. This habitat includes the Sub-Mediterranean shrub communities which thrive in milder climates, represented by the *Phillyreo-Carpinetum orientalis* Em 1957, *Querco-Carpinetum orientalis macedonicum* Rud. 1939 and subass. *buxetosum* communities. Physiognomically, these are mainly shrub communities which comprise numerous Mediterranean and Sub-Mediterranean species, such as *Quercus pubescens*, *Carpinus orientalis*, *Phillyrea latifolia*, *Buxus sempervirens*, *Jasminum fruticans*, *Ficus carica*, *Asparagus acutifolius*, *Coronilla emeroides*, *Ephedra fragilis* subsp. *campylopoda*, *Pistacia terebinthus*, *Ruscus aculeatus*. The distribution of this type of forest is shown in Figure 5-5. Most of this type of forest has been rated as Moderate or Poor by PINPG, due to its proximity to urban areas along the Lake shoreline, and the existing road.

Species of Conservation Significance in Oriental Hornbeam Woods

In this habitat, the following species are of conservation interest:

Flora:

Galichica Catmints - *Nepeta ernesti-mayeri* (Local Endemic Species)

Fauna:

Stag Beetle - *Lucanus cervus* (HD IV), False Eros Blue - *Polyommatus eroides* (HD II/IV), Hermann's Tortoise - *Testudo hermanni* (HD II/IV), Four-lined Snake - *Elaphe quatorlineata* (HD II), Macedonian lizard - *Podarcis erhardii* (HD IV), Wolf - *Canis lupus* (HD II/IV), Wildcat - *Felis silvestris* (HD IV)

Fungi:

Bsoletus lupinus (EN -D)

Boletus impolitus (VU C1; D1), *Cortinarius rufoolivaceus* (DD)

5.4.8 Paeonian juniper woods (EUNIS 2004: G3.933).

Paeonian juniper woods (EUNIS 2004: G3.933) occur at similar altitudes on Mount Galichica. As the hornbeam. According to the EU's Directory of Habitats⁹, this is a priority habitat and should be given special attention when establishing the regimen of protection. Several types of shrub plant communities have developed within the limits of this habitat - *Pruneto-Celtetum* (Em 1989), *Biaro tenuifolii - Juniperetum excelsae* Em and *Querco-Juniperetum excelsae* Matevski et al. (prov.)(Syn.: *Juniperetum excelsae-foetidissimae* Em 1962). The most beautiful stands of this habitat are found on the island Golem Grad, on Precna Planina – near the village of Konjsko, above the village of Sirhan, and between

⁹ Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC, OJ L 206, 22.7.1992, p. 7).

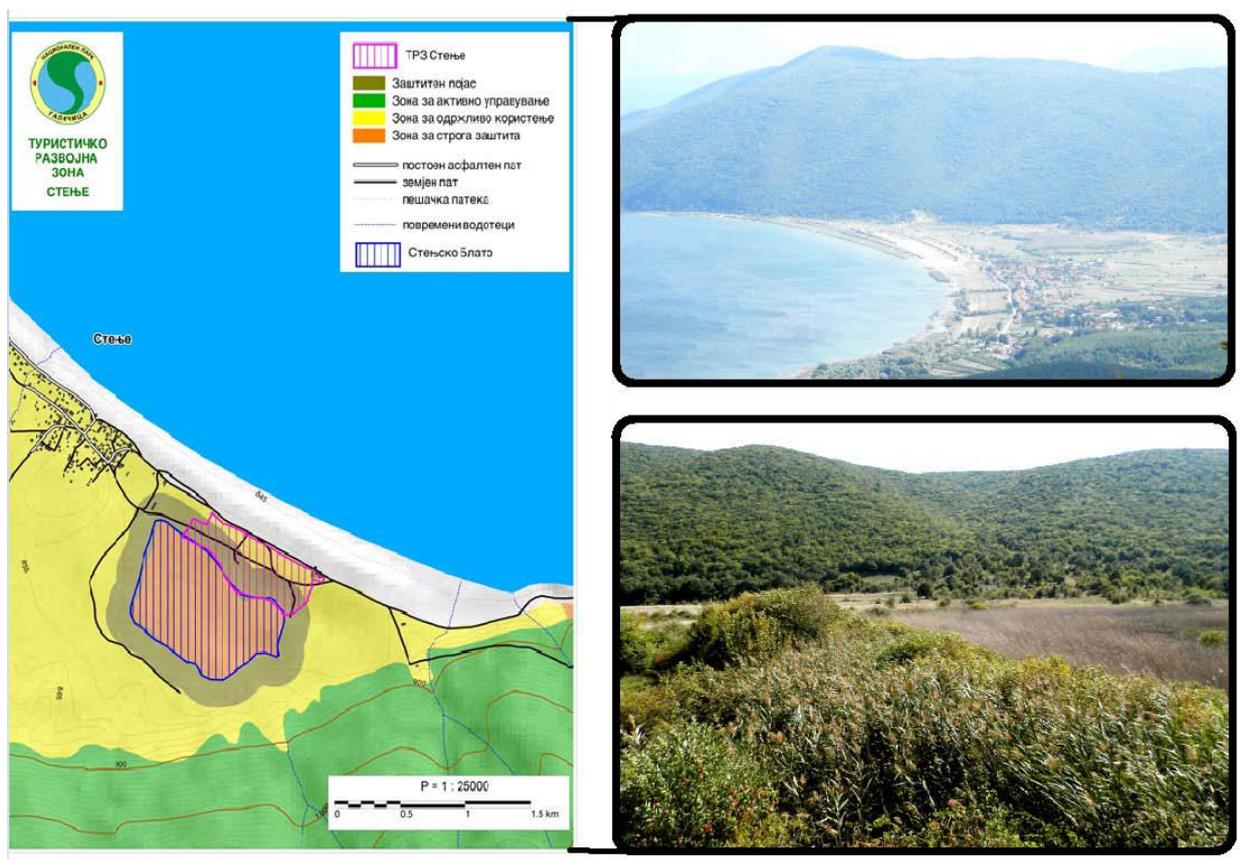
Koritski Rid and Zli Dol. Within the stretch of this height range, on the steep, vertical cliffs rising above Lake Ohrid (Sveti Zaum-Peštani) and Lake Prespa (Stenje-Konjsko, Golem Grad) chasmophytic communities of different floral composition of the chasmophytic communities developed in the Sub-Alpine zone are present. They include some endemic species as well (*Centaurea soskae*, *Centaurea galichicae*), which grow together with *Campanula versicolor*, *Sedum acre*, *Rhamnus rupestris*, *Centaurea graeca*, *Euphorbia characias* subsp. *wulfeni*, etc.

The areas of juniper in the Park are found at high altitudes along the central ridge. Those lying to the west of the road are reported to be in moderate condition, as they are damaged by past fires. Those to the east of the road are reported by PINPPG to be in good condition.

5.4.9 *Phragmites australis* reedbeds- EUNIS C3.21

The largest surfaces of the habitat *Phragmites australis* reedbeds (EUNIS C3.21) in the Park are found at Stenjsko Blato (marsh), which covers an area of around 17 ha. The distribution of this habitat at Stenje is shown in Figure 5.27 below.

Figure 5.27: *Phragmites australis* - EUNIS C3.21 at Stensko blato



The flora at the Stenje marsh is not completely explored. Data exist only for the algae species found at the marsh.

The following invertebrates are typically found at the Stenje marsh:

Rotifers: *Anuraeopsis fissa*, *Ascomorpha saltana*, *Asplanchna priodonta*, *Brachionus quadridentatus*, *Cephalodella* sp., *Colurella obtuse*, *Euchlanis dilatata*, *Euchlanis incise*, *Euchlanis pyriformis*, *Filinia longiseta*, *Keratella cochlearis*, *Keratella cochlearis* var. *tecta*, *Keratella quadrata*, *Lecane bulla*, *Lecane*

constricta, *Lecane crenata*, *Lecane curvicornis*, *Lecane flexilis*, *Lecane ludwigi* f. *laticaudata*, *Lecane luna*, *Lecane lunaris*, *Lecane quadridentata*, *Lepadella dactyliseta*, *Lepadella ovalis*, *Monommata longiseta*, *Mytilina ventralis* var. *macracantha*, *Notholca acuminata*, *Pedalia reducens*, *Platyas patulus*, *Platyas polyacanthus*, *Ploesoma truncatum*, *Polyarthra vulgaris*, *Rotatoria genera indet.*, *Scaridium longicaudum*, *Squatinella rostrum*, *Synchaeta oblonga*, *Synchaeta pectinata*, *Testudinella patina*, *Trichocerca birostris*, *Trichocerca brachyuran*, *Trichocerca elongate*, *Trichocerca longiseta*, *Trichocerca rattus*, *Trichocerca rosea* *Trichocerca tenuior* and *Trichotria tetractis*.

Aquatic gastropods: *Gyraulus crista*, *Lymnaea palustris* (see Figure 5.28), *Lymnaea peregra*, *Lymnaea stagnalis*, *Planorbarius corneus*, *Planorbis planorbis*, *Segmentina complanatus*, *Segmentina nitida*, *Viviparus viviparus*.

Calanoid copepods: *Arctodiaptomus kerkyrensis*.

Dragonflies: *Enallagma cyathigerum*, *Ischnura elegans* (see Figure 5.29), *Gomphus vulgatissimus*, *Leucorrhinia pectoralis*, *Onychogomphus forcipatus*, *Orthetrum cancellatum* and *Sympetrum fonscolombei*.

Figure 5.28: *Ischnura elegans*



Figure 5.29: *Lymnaea palustris*



The following amphibian species are found at the Stenje marsh: green toad (*Pseudepidalea viridis*), common toad (*Bufo bufo*), European tree frog (*Hyla arborea*), and marsh frog (*Pelophylax ridibunda*), while European pond turtle (*Emys orbicularis*) (see 5.30), grass snake (*Natrix natrix*) and horned viper (*Vipera ammodytes meridionalis*) are the typical reptiles.

Figure 5.30: *Emys orbicularis*



The following bird species are found at the Stenje marsh: Great reed warbler (*Acrocephalus arundinaceus*), moustached warbler (*Acrocephalus melanopogon*), sedge warbler (*Acrocephalus schoenobaenus*), Eurasian reed warbler (*Acrocephalus scirpaceus*), garganey (*Anas querquedula*), grey heron (*Ardea cinerea*), great egret (*Casmerodius albus*), little egret (*Egretta garzetta*) (Figure 5.31), Eurasian coot (*Fulica atra*), barn swallow (*Hirundo rustica*) and little grebe (*Tachybaptus ruficollis*).

Figure 5.31: *Egretta garzetta*



In the past, large quantities of construction waste and solid communal waste from the village of Stenje have been dumped at Stenje marsh, degrading the habitat. Furthermore, changes in the water level at Lake Prespa, i.e. the general hydrological conditions of the lake watershed have had a significant influence on the marsh. The past several decades have been marked by a constant reduction of the total surface area. As the water recedes, the surrounding arable areas have expanded at the expense of the marsh. The aquatic habitats have a high concentration of salts, and an exceptionally large number of plant and animal species live in there. The mutual interactions of these components result in one of the most important functions of the eco-system - circulation of matter and energy flow. Very few comprehensive researches on the biological diversity have been done for Stenje marsh, so additional research is needed (most likely during the ESIA phase of any proposed development which may effect) it in order to determine its value.

According to PINPG, the Stenje marsh, although it is in the ZSP, can no longer be considered to be in Optimum Condition, due to the past dumping of garbage in the area. PINPG rates its condition as Good. In accordance with the National Biodiversity Strategy and Action Plan of the Republic of Macedonia (Ministry of Environment and Physical Planning, 2004), activities such as encouraging the traditional usage of biological diversity and eco-tourism (strategic determination B.5) need to be undertaken, as well as implementing research projects (strategic determinations D.1.4, D.1.5; D.1.6.1) for evaluating the level of danger on marshy eco-systems etc.

Aside from Stenje, other small areas in the Park have developed a marsh type of vegetation, generally consisting of the reed strip (ass. *Scirpeto-Phragmitetum* W. Koch 1926). Marsh vegetation is also also found at the spring of "St. Naum", between from Stenje to Carina on Lake Prespa, and also in small areas along the coastline of Lake Ohrid, especially in the range between the auto camp Ljubanista and St. Naum.



Species of Conservation Significance in *Phragmites australis* reedbeds

In this habitat, the following species are of conservation interest:

Flora: none

Fauna:

Yellow-spotted whiteface *Leucorrhinia pectoralis* (HD II/IV), European Green Toad - *Pseudepidalea viridis* (HD IV), European tree frog - *Hyla arborea* (HD IV), European Pond Turtle - *Emys orbicularis* (HD II/ IV), Little Egret – *Egretta garzeta* (BD I), Great Egret - *Casmerodius albus* (BD I)

Fungi: none

5.4.10 Other Habitats with Limited Coverage in the Park

Several other habitat types have been identified, but occupy only a small area of the Park. These include:

- *Basic and ultra-basic intercontinental cliffs (EUNIS 2004: H3.2)*, which can be found along parts of the shoreline of Lake Ohrid;
- *Riverine [Salix] woodland (EUNIS 2004: G1.1-G1.2)*, found on the side of Lake Ohrid, in the foothills of Mount Galichica, along the River Cherava which flows into Lake Ohrid at Sveti Naum, below the village of Ljubansta, expressed as small stands of riparian vegetation. In the Park Management Plan, this area is part of the Zone of Strict Protection;
- *Thermophile woodland fringes (EUNIS 2004: E5.2)*. On some areas, mainly on Mount Galichica on the side of Prespa, along the periphery of the oak forests, specific communities develop (association *Trifolion sanguinei*), which in their physiognomy resemble a curtain in front of the entrances to the oak forests.

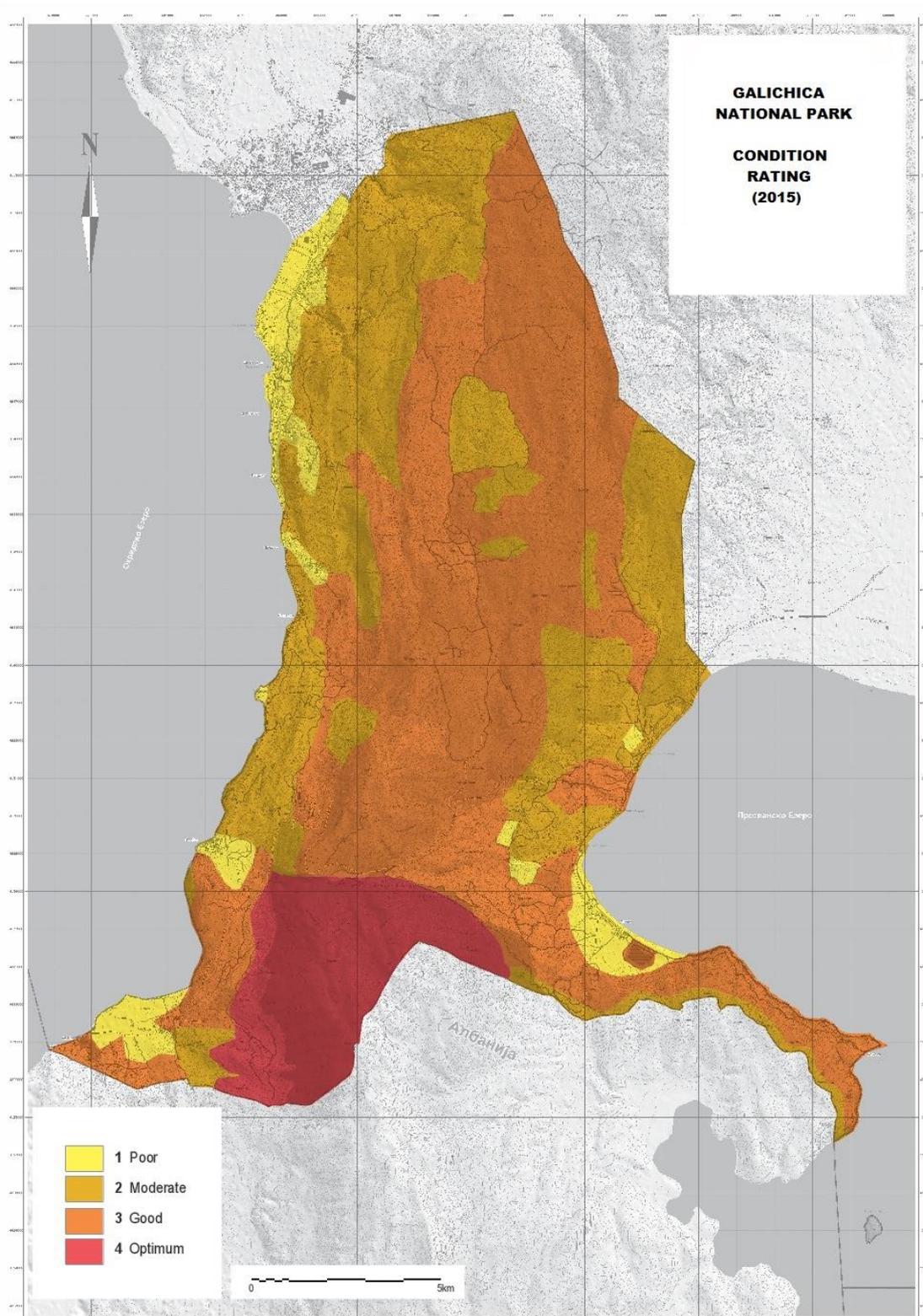
5.4.11 Condition of the Habitats

Using the PINPG's own forestry assessment catalogue and forestry plan, and using PINPG's detailed knowledge of the Park, as well as the view of other Macedonian experts familiar with the Park, a condition rating was given to all the habitats and vegetation in the Park in line with the table below during the SEA preparation. This is presented in the figure **Error! Reference source not found.** below. The ratings were assigned according to the following criteria:

Table 5.4: Habitat Condition Ratings

Condition Rating	Description	Criteria
4	Optimum	Excellent condition, no degradation, little evidence of human activity. No forestry activities. <i>(All areas of condition 4 are in the Park's ZSP).</i>
3	Good	Good condition, little evidence of human activity or degradation, no forestry activities.
2	Moderate	Vegetation is healthy but there is evidence of damage or degradation (e.g. from fire, firewood collection, grazing, etc). <i>All areas where PINPG conducts forestry activities (tree felling for firewood) are given this rating.</i>
1	Poor	Vegetation not in good condition, heavily degraded, urbanised or used for agriculture or heavy grazing. <i>Note – most areas with this rating are close to urban or agricultural areas, at low levels along the coastal strips.</i>

Figure 5.32: NPG Condition Rating Overview





5.4.12 Distinctiveness of the Habitats

Each habitat and plant community within the Park has been rated for distinctiveness. Distinctiveness is rated as shown below.

- High (score 6) (e.g. all Annex I *Habitats Directive*);
- Medium (score 4) (e.g. mixed deciduous woodland)
- Low (score 2) (e.g. degraded grasslands adjacent to the coastal road);
- Very Low (score 0) (e.g. totally degraded areas converted to car parks, arable etc);

The distinctiveness rating was attributed to each habitat/plant community by a team involving PINPG, and local ecological experts.

The Plant Communities & Annex 1 Habitat (*Habitats Directive*) within the Park are presented in the following two tables and shown in *Figure 5-5 & 5-6*, this includes assignment of distinctiveness per Plant Community.



Table 5.5: Plant Communities in the Park and their Relation to the EUNIS Classification 2004 Habitat Types and Other European Legal Instruments for Habitat Conservation

Habitat Type	Plant community	EUNIS 2004	Bern	Directive 92/43	Dist
Benthic communities of oligotrophic waterbodies	not determined	C1.11	not included	not included	6
Temporary lakes, ponds and pools	not determined	C1.6	not included	not included	6
Hard water springs	not determined	C2.12	not included	not included	6
[Phragmites australis] beds	<i>Scirpeto-Phragmitetum</i> W. Koch 1926.	C3.21	not included	not included	2-3
Helleno-Balkanica [Satureja montana] steppes	<i>Satureja montana-Koeleria splendens</i> prov.	E1.21	!34.3	6210	6
Oro-Moesian acidophilous grassland	<i>Festucetum paniculatae</i> Ht. 1936,	E4.391 (пров.)	not included	not included	2
Oro-Moesian [Festuca paniculata] grasslands	<i>Phleeto-Poetum alpinae</i> Horvat prov.	E4.39 (пров.)	not included	not included	2
Pelagonide closed calcicolous sesleria grasslands	<i>Seslerietum wettsteinii</i> Ht. 1937 - Horvat, Glavač & Ellenberg (1974)	E4.41723	not included	6170	6
Pelagonide closed calcicolous fescue grasslands	<i>Onobrychido-Festucetum</i> (Horv.) Micev. 1994 & <i>Stipo-Festucetum</i> Micev. 1994	E4.41724	not included	6170	6
Helleno-Balkanica stripped grasslands	<i>Morino-Stipetum</i> prov., <i>Rindero-Acantholimonetum</i> Quezel 1964 (fragm.), <i>Helianthemo-Seslerietum</i> Horvat 1949	E4.437	not included	6170	6
Pelagonide calciphile stripped grasslands	<i>Cariceto-Helianthemetum balcanici</i> Ht. 1935	E4.43821	not included	6170	6
Thermophile woodland fringes	<i>Chamaecytiso heuffelii-Trifolietum medii</i> Čarni, Kostad. & Matev. 2000, ass. <i>Vicia varia</i> comm., ass. <i>Vicia tenuifolia</i> comm.	E5.2	not included	not included	3



Habitat Type	Plant community	EUNIS 2004	Bern	Directive 92/43	Dist
Subalpine deciduous scrub	<i>Daphno-Cytisanthetum radiati calcicolum</i> Lakusic et al. 1978	F2.3	not included	not included	4
[<i>Buxus sempervirens</i>] thickets	<i>Quercus - Carpinetum orientalis</i> Rud. 1939 subsp. <i>Buxetosum</i>	F3.12	!31.8	5110	6
Sub-Mediterranean common juniper thickets	<i>Juniperus communis</i> subsp. <i>intermedia</i> comm.	F3.164	not included	5130	6
Riverine [<i>Salix</i>] woodland	<i>Salicetum albae-fragilis</i> Soo (1930) 1958., <i>Populeum albae balcanicum</i> Karpati 1962	G1.11	not included	not included	3
Moesian beech forests	<i>Seslerio – Fagetum</i> Blecic et Lakušic 1970	G1.69	!41.1	91W0	6
Southwestern Moesian subalpine beech forests	<i>Fagetum subalpinum scardo-pindicum</i> (Ht.) Em 1961	G1.6913	!41.1	91W0	6
Southeastern Moesian beech forests	<i>Calamintho grandiflorae – Fagetum</i> Em 1965, <i>Festuco heterophyllae – Fagetum</i> Em 1965	G1.692	!41.1	91W0	6
Hellenic beech forests with <i>Abies borisii-regis</i>	<i>Abieti – Fagetum macedonicum</i> Em 1985	G1.6A1	!41.1	9270	6
Illyrian <i>Acer obtusatum</i> beech forests	<i>Aceri obtusati – Fagetum</i> Fab., Fuk. & Stef. 1963	G1.6C323	!41.1	91K0	6
Helleno-Moesian [<i>Quercus frainetto</i>] forests	<i>Quercetum frainetto – cerris macedonicum</i> Ht. 1959	G1.762	!41.7	not included	3
Helleno-Moesian <i>Quercus petraea</i> forests	<i>Orno - Quercetum cerris macedonicum</i> Em 1964, <i>Orno – Quercetum petraeae</i> Em 1964, <i>Ostryo – Quercetum cerris macedonicum</i> Em 1968	G1.7641	!41.7	not included	3
Helleno-Balkan Trojan oak woods	<i>Quercetum trojanae macedonicum</i> Em et Ht. (50) 59	G1.781	!41.7	9250	6
Mesomediterranean Gallo-Italic hop-hornbeam woods	<i>Quercus – Ostryetum carpinifoliae</i> Ht. 1938	G1.7C11	!41.7	not included	3
Eastern Adriatic supra-Mediterranean hop-hornbeam woods	<i>Seslerio – Ostryetum carpinifoliae</i> Ht. 1950	G1.7C123	!41.8	not included	3



Habitat Type	Plant community	EUNIS 2004	Bern	Directive 92/43	Dist
Helleno-Pelagonide oriental hornbeam woods	<i>Phillyreo – Carpinetum orientalis</i> Em 1957, <i>Quercus-Carpinetum orientalis macedonicum</i> Rud. 1939	G1.7C221	I41.8	not included	2
Pelagonid horse-chestnut ravine forests	<i>Aesculo hippocastani – Ostryetum</i> Em (1959) 1965	G1.A46222	I41.4	9180	6
Paeonian Grecian juniper woods	<i>Pruneto – Celtetum</i> (Em 1989), <i>Biara tenuifolii – Juniperetum excelsae</i> Em и <i>Quercus – Juniperetum excelsae</i> Matevski et al. (prov.)(Syn.: <i>Juniperetum excelsae – foetidissimae</i> Em 1962)	G3.933	I42.A	9560	6
Cave entrances	not applicable	H1.1	I65	8310	6
Continental subtroglophile vertebrate caves	not applicable	H1.221	I65	8310	6
Troglobiont ivertebrate temperate caves	not applicable	H1.231	I65	8310	6
Calcareous and ultra-basic screes of warm exposures	<i>Drypetum spinosae</i> Ht. 1931	H2.6	not included	8140	6
Pelagonide calcicolous chasmophyte communities	<i>Edraianthus horvatii</i> comm., <i>Saxifraga – Potentilletum speciosae</i> Ht. 1936, <i>Sedo – Asperuletum doerfleri</i> Micev. 1995	H3.2A1	not included	8210	6
Balkan range ramonda cliffs	<i>Ramondo – Seslerietum tenuifoliae</i> Micev. 1995	H3.2A131	not included	8210	6



Table 5.6: Habitat Types in the Park Included in Annex 1 of Habitats Directive

No.	Habitat Directive		EUNIS classification of habitat types (2004)	
	code	habitat type title	code	habitat type title
1	6170	Alpine and subalpine calcareous grasslands	E4.41723	Pelagonide closed calcicolous sesleria grasslands
			E4.437	Helleno-Balkanic stripped grasslands
			E4.43821	Pelagonide calciphile stripped grasslands
2	6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates(Festuco-Brometalia) (* important orchid sites)	E1.21	Helleno-Balkanic [Satureja montana] steppes
3	5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	F3.12	[Buxus sempervirens] thickets
4	5130	Juniperus communis formations on heaths or calcareous grasslands	F3.164	Sub-Mediterranean common juniper thickets
5	9180	* Tilio-Acerion forests of slopes, screes and ravines	G1.A46222	Pelagonid horse-chestnut ravine forests
6	91W0	Moesian beech forests	G1.69	Moesian beech forests
			G1.6913	Southwestern Moesian subalpine beech forests
			G1.692	Southeastern Moesian beech forests
7	91K0	Illyrian Fagus sylvatica forests	G1.6C323	Illyrian <i>Acer obtusatum</i> beech forests
8	9250	Quercus trojana woods	G1.781	Helleno-Balkanic Trojan oak woods
9	9270	Hellenic beech forests with Abies borisii-regis	G1.6A1	Hellenic beech forests with <i>Abies borisii-regis</i>
10	9560	* Endemic forests with Juniperus spp. (9560)	G3.933	Paeonian Grecian juniper woods



No.	Habitat Directive		EUNIS classification of habitat types (2004)	
	code	habitat type title	code	habitat type title
11	8140	Eastern Mediterranean screes	H2.6	Calcareous and ultra-basic screes of warm exposures
12	8210	Calcareous rocky slopes with chasmophytic vegetation	H3.2A11	Pelagonide calcicolous chasmophyte communities
			H3.2A131	Balkan range ramonda cliffs
13	8310	Caves not open to the public	H1.1	Cave entrances
			H1.221	Continental subtroglophile vertebrate caves
			H1.231	Troglobiont invertebrate temperate caves



5.4.13 Flora and Fauna Species within the Park

As is evident from the above discussion, the National Park is rich in both biodiversity and endemism. The following table provides a summary overview of species numbers.

Table 5.7: Overview of Species Richness and Endemism in Park

Taxonomic Group		Number of Species	Endemic Species
Flora			
1.	Algae	117	27
2.	Fungi	435	-
3.	Lichens	143	-
4.	Vascular Plants	1,597	12
Fauna			
1.	Rotifers (Rorifera)	46	-
2.	Molluscs (Mollusca)	66	20
3.	Segmented Worms (Annelida)	23	1
4.	Chelicerates (Chelicerata)	277	9
5.	Crustaceans (Crustacea)	91	18
6.	Myriapods (Myriapoda)	26	1
7.	Insects (Insecta)	2,329	16
8.	Fish (Pisces)	26	11
9.	Amphibians (Amphibia)	10	-
10.	Reptiles (Reptilia)	21	-
11.	Birds (Aves)	293	-
12.	Mammals (Mammalia)	65	-



Taxonomic Group	Number of Species	Endemic Species
Fauna: Total	3,273	75
Species: Total	5,330	114

Annex 14-18 provides a list of the various species found in the habitats most likely to be affected by the proposed Projects described in Chapter 4. The lists are as follows:

- Annex 14– plant species associated with the habitats likely to be affected;
- Annex 15 – invertebrate species associated with the habitats likely to be affected;
- Annex 16 – amphibian & reptile species associated with the habitats likely to be affected;
- Annex 17 – bird species associated with the habitats likely to be affected;
- Annex 18 – mammal species associated with the habitats likely to be affected.

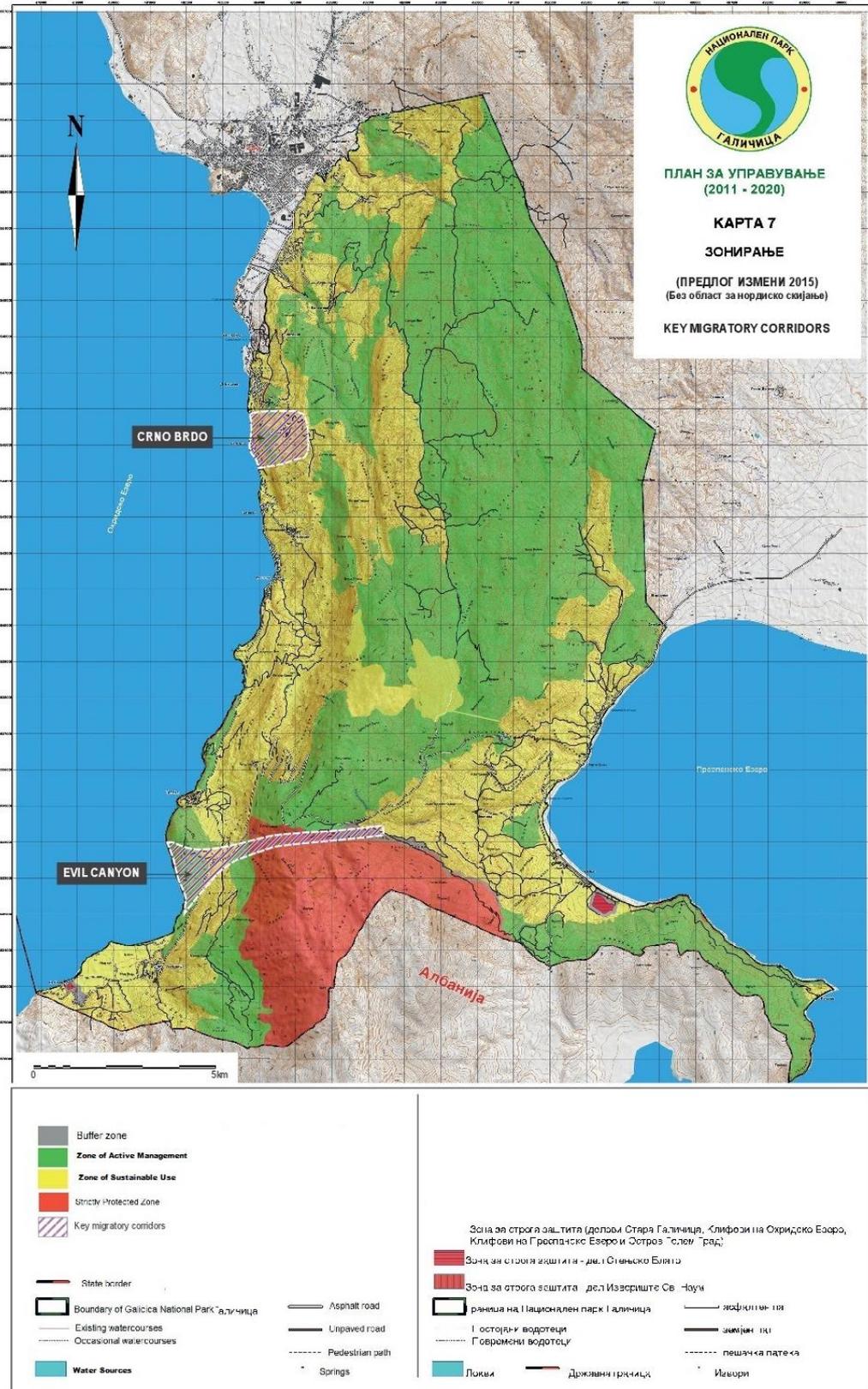
Important Migratory Corridors

There are two important corridors within the Park, which are identified to be used as potential key migratory corridors from within the Park (and specifically to Lake Ohrid) for certain animals:

- *Crno Brdo* (Black Mountain), just below the mostly generally deserted hamlet of Konjsko, is used as an access point for animals which inhabit the forested areas above, and potentially descend through the dense, steep oak wood to the lake side. PINPG has zoned part of this area as a Zone of Active Management, largely in order to protect this corridor. The corridor is not confined to a narrow track or path, but ranges across perhaps a 1 km width.
- Farther south, *Zli Dol* (Evil Canyon) is a river valley which stretches up from the shoreline south of Trpejca, to the high altitude forests in the Zone of Strict Protection, and provides the easiest access across the high central ridge. This canyon is used by a range of mammals – such as the wild boar - which frequent the higher altitude forests, but tend to come down to the lake side during particular seasons. At its lower altitudes, this corridor passes through the dense forest of Macedonian Oak.

These are indicated in the figure below:

Figure 5.33: Key Migratory Corridors





5.4.14 Protection Zones within the Park and Proposed Amendments

The figure below illustrates the four levels of protection within the Park. These zones are determined according to the *Law on Nature Protection* and the management objectives set out in the Management Plan.

The zoning in the Park in the 2011-2020 Management Plan from 2013 assigned the zoning as follows – with 24,151 ha Park area under zoning:

- Zone of strict protection with an area of 2,117 ha;
- Zone of active management with an area of 12,275 ha;
- Zone of sustainable management with an area of 9,612 ha;
- A buffer zone with an area of 147 ha.

As described in Chapter 4, around 604 ha of the Park is reduced from the Zone of Active Management to the Zone of Sustainable Use, in order to permit the activities associated with the five planned development projects. In addition, 854 ha of alpine and subalpine calcareous grasslands was upgraded from the Zone of Sustainable Use to the Zone of Active Management.

The summary of zoning proposed in the Amendment Management Plan is:

- Zone of strict protection with an area of 2,117 ha;
- Zone of active management with an area of 12,525 ha;
- Zone of sustainable management with an area of 9,362 ha;
- A buffer zone with an area of 147 ha .

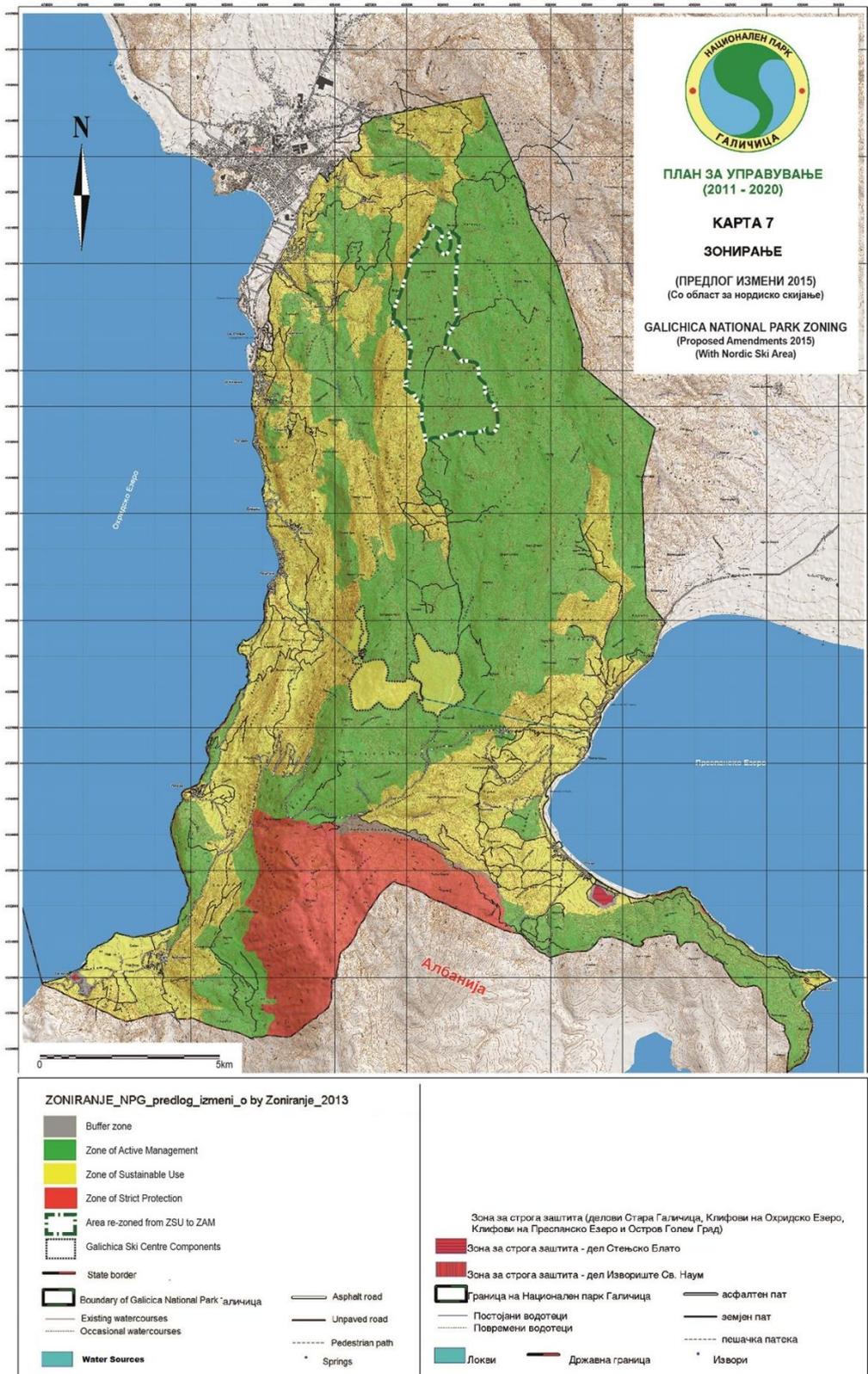
Therefore the total ZSP plus ZAM for the original Management Plan was 14,392 ha (i.e. 59.6% of the Park area). In the AMP the proposed zoning total for ZSP plus ZAM is 14,642 ha (i.e. 60.6%). The amendments therefore move the NPG closer to the IUCN threshold¹⁰.

Detailed description of the areas and the activities and actions that can be performed in each zone, and the activities which are prohibited in each zone, are given in the AMP and summarized within Chapter 3 & 4 of this SEA.

¹⁰ Dudley, N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN



Figure 5.34: Galichica National Park Zoning – Proposed Amendments to MP 2015





5.5 Socio-Economic

5.5.1 Overview

The local population living in the Park area is mostly concentrated in the urban settlements and villages. The main towns and villages are: Racha, Velestovo, Shipokno, St. Stefan, Dolno Konjsko, Gorno Konjsko, Lagdin, Eleshec, Elshani, Peštani, Trpejca and Ljubanishta along the coastal strip of Lake Ohrid and part of the Ohrid municipality; and Leskoec, Oteshevo and Stenje along the shore of Lake Prespa as part of the Resen municipality. The city of Ohrid is outside the Park area. Over the past 30 years there has been migration of the population from the higher settlements (e.g. Velestovo, Konjsko and Shipokno) into the settlements located near Ohrid Lake shore (Racha, Dolno Konjsko and Sveti Stefan).

Data in this section is taken from the last official census, taken in 2002, amongst various other sources, including the NPG Management Plan (2011-2020).

5.5.2 Settlements in the Vicinity of the Park

The territory of the Park lies within the administrative borders of the municipalities of Ohrid and Resen. Pursuant to the proposal for the new municipal border, 15,586 ha of the Park belongs to the municipality of Ohrid, and 9,368 ha is within the borders of the municipality of Resen.

City of Ohrid: The city of Ohrid is the largest settlement in the region of the Park. The city has a continuous history of human settlement going back for 7,000 years and is one of the oldest cities in the world. The total jurisdiction of the municipality of Ohrid is 389.93 km², with a population of 55,749 from 16,102 households. The urban zone of Ohrid is composed of the Old Town located in the middle of the urban area and composed of Varosh, Mesokastro and the fishing settlement Kaneo. The old part of the town has the biggest part of the cultural and historical monuments and localities. There are objects that reflect the old architecture, as well as the Institute and Museum of the city of Ohrid and the Debar and Kichevo Diocese. The old city nucleus includes the Old Ohrid Bazaar and the two city squares. One of them hosts the new monument for the protector of Ohrid, St. Clement of Ohrid and the square near the "Chinar" an oak which is more than 1,000 years old. The city marine is also part of the Old Town of Ohrid. The other parts of the urban whole of Ohrid mostly contain newly constructed settlements and the more significant objects and localities in the wider urban zone are the Sports Center "Biljanini izvori", the Hydro-Biological Institution (the oldest institution of this kind on the Balkan), Biljanini izvori, in the vicinity of the Institution, the channel Studenchishta, the bus station, the post office, as well as some trade centres and numerous super markets, banks, boutiques, automobile salons and lots of other facilities that are part of modern urban living.

The urban areas of Ohrid contain residential complexes, smaller hotels, motels and private boarding houses. On the margins of the city there is an industrial zone in the suburbs of Kosel and Leskoec with the biggest factories in Ohrid. Besides tourism, the industrial capacities and diverse economy make Ohrid attractive for business, so in the past few years more and more companies find partners there and penetrate the Macedonian and European markets through companies based in Ohrid.

Municipality of Resen: The municipality of Resen is in the Prespa valley in the South-Western part of Republic of Macedonia and it has an area of 550.77 km², with a population of 16,825 from 4,849 households. This municipality has a total of 44 settlements, including the city of Resen, 36 villages with less than 300 citizens, 6 villages with more than 300 citizens, one village with more than 800 citizens (Jankoec), and four villages without any permanent citizens (Ilino, Oteshevo, Petrino and Stipona).

Some of the small villages in the municipalities of Ohrid and Resen lie in the valleys and mountain areas and have fertile soil that is good for development of agriculture and stockbreeding. The mountain settlements, due to limited possibilities for economic development, are under the influence of the depopulation process. There has been some informal development in the area. The small villages along the shoreline of the Ohrid and Prespa Lakes have good conditions for the development of tourism.



5.5.3 Settlements and their Population in the Park

Census data from 2002 indicates that there is a total of 5,467 citizens residing in the Park, out of which 5,014 in the settlements within the administrative borders of the municipality of Ohrid and 453 citizens in the settlements in the municipality of Resen. The table below shows the population change in settlements in the Park from 1961-2002.

Table 5.8: Settlements in the Park and Population Change 1961-2002

Settlements	Residents, by year		
	1961	1994	2002
<i>Municipality of Ohrid:</i>			
Konsjko	660	590	551
Eleshec	*	*	69
Elshani	501	674	590
Lagadin	*	*	20
Ljubanishta	455	185	171
Istok	*	*	117
Peštani	1147	1346	1326
Ramne	407	589	632
Racha	*	*	1043
Sveti Stefan	*	*	112
Shipokno	80	212	5
Trpejca	416	360	303
Velestovo	1020	1103	53
Subtotal	4686	5059	5014
<i>Municipality of Resen:</i>			
Konjsko	84	4	3
Leskoec	239	13	12
Stenje	477	324	438
Oteshevo	14 residents in 1981		0
Subtotal	800	341	453
Total	5486	5400	5467

Key information on communities/villages within the Park is summarised provided below:

Velestovo:

- Velestovo is located approximately 7 km from the city of Ohrid. It is a mountainous village at 1,080 metres above sea level (masl).
- It has a population of 53 persons, 19 households and 102 dwellings.
- In the past, the main occupations of the population living in this settlement were agriculture, livestock breeding and some crafts.



- During the 1980s, migration towards Racha and beyond meant the population declined. Many of the older houses are in a poor state of repair, although newly built holiday houses have been built by those who had previously migrated overseas.
- The settlement has its own water supply system, but no sewage system. Waste is regularly collected by the municipal public enterprise of Ohridski Komunalec.
- There is an eight-year primary school in the village, attended by 117 pupils.
- In August, each year, there is Velestovo poetry night, a cultural event that attracts people worldwide whose origin is from this village. There is a 15th Century church in the village “Uspenie na Sv. Bogorodica”.

Ramne:

- Ramne has a population of 632 although the actual number of residents is much smaller.
- Most of the houses are old and abandoned, made of stone and unbaked mud bricks. New, modern, houses, used only occasionally, may also be found, and the former residents of Ramne have moved to the city in Ohrid and settled in the Vidobishta district. Despite abandoning the village as their place of permanent residence, some of them stay in the village for weekends or over summer.
- The village has a local water supply network and water is supplied by the water supply system for the city of Ohrid through the main pipeline from the springs of Letnicki Izvori to the reservoir in Studenchista.
- Most of its residents today gain their income from livelihood activities in Ohrid, with the exception of the several livestock breeders and medicinal herb and aromatic plants gatherers.

Racha:

- Racha is located approximately 1.5 km from the city of Ohrid, at 700 metres above sea level (masl).
- It has a population of 1043 made up of 283 households.
- There are 530 dwellings. A large proportion of the population originates from Velestovo. Some of the houses are rented during the holiday season however most residents get their income from the city of Ohrid and other local tourism.
- It is a relatively new settlement with water supply, sewage supply and asphalt roads.

Shipokno:

- Shipokno is an old settlement located approximately 5 km from the city of Ohrid, just above Sveti Stefan, at 930 masl.
- Shipokno has few residents, as there has been migration to the newer settlement of Sveti Stefan.
- Shipokno has electricity but there is only one well used for drinking water and no sewage system.

Sveti Stefan:

- Sveti Stefan (St. Stefan) is located on the existing Ohrid to Peštani road.
- There is a population of 112 persons from 27 households. There are 82 dwellings.
- There are several hotels and a cardiovascular hospital at this settlement.
- There is a 14th Century cave church in the settlement (from which it takes its name).

Dolno Knojsko:

- Dolno Knojsko is 5 km from the city of Ohrid and the majority of its residents moved from Knojsko.



- There is a population of 551 persons from 146 households. There are 284 dwellings. There are some holiday homes.
- There is a water system and sewage system.
- The Metropol and the Bellevue Hotels, and the Congress Centre (University Resort) are located in the immediate vicinity of the village. Residents' employment in tourist facilities is either of a seasonal or permanent nature. Some of the households gain income from leasing rooms throughout the tourist season. The demand of accommodation is closely related to the number of tourists and to the extent to which those accommodation facilities closer to the shore have been occupied.
- There is a primary school in the village for schoolchildren up to grade four. Older age children continue their schooling generally in Ohrid.

Konjsko:

- Konjsko is 11 km from the city of Ohrid at 1100 masl.
- The village is almost deserted as many of its original residents created a new settlement at Dolno Knojsko.
- There is a population of 22 persons from 9 households although there are 73 dwellings.
- The majority of residents are elderly people with pensions as income.
- There are some agricultural and livestock breeding activities for personal use.
- The village is reached through a narrow, asphalt paved road, branching from the existing Ohrid – Peštani - Sveti Naum road. The village is not easy to access in winter days of snowfalls.
- The village has no water supply and sewerage network. As a result of this several wells have been constructed for its collection. The municipal public enterprise of Ohridski Komunalec does not collect the waste from the village as it is not affordable.
- Most of the houses are old and ruined, but due to the appealing nature around the village and the view on the lake the interest for building weekend huts is increasing.

Lagadin:

- Lagadin is a tourist settlement which is approximately 30 years old.
- A number of private hotels and other tourist accommodation facilities, modern villas and restaurants have been constructed in the area.
- Based on the 2002 census, the settlement has 20 permanent residents. There is a population of 20 persons from 8 households and 192 dwellings.
- It has a water system and sewage system.

Eleshec:

- Eleshec is 13 km from the city of Ohrid at 700 masl. It was established in the 1960s from residents from Elshani. It now also has a number of holiday homes.
- It has a population of 69 persons from 20 households. There are 110 dwellings.
- There is a campsite which brings in a number of tourists in the summer.
- It has a water supply but not sewage system.

Elshani:

- Elshani is 14.5 km from the city of Ohrid at 878 masl and is approached by a small asphalt road.



- There is a population of 590 persons from 160 households. There are 319 dwellings.
- The majority of working age people in the village are employed in the city of Ohrid or at the tourist facilities along the lakeshore.
- In the village, within the remit of the Primary School of “Sveti Naum Ohridski” functions a four-year school. School children attend further education in the settlement of Racha and in the settlement of Ljubanishta. There are 2 churches and 2 chapels within the village.

Peštani:

- Peštani is located on the existing Ohrid-Peštani-Sveti Naum road 12 km from the city of Ohrid. It is a lowland village located on the lakeshore at 700 masl.
- There is a population of 1326 persons from 395 households. There are 846 dwellings.
- The settlement is old and livelihoods were originally fishing, livestock breeding, agriculture and woodcutting. The main income now is from tourism and services.
- The settlement has a water system with most houses use septic tanks for sewage.
- There is a branch of the Ohrid Health Centre and a branch of Macedonian Post. There is the Primary School of “Sveti Naum Ohridski” functioning in the village, which has its regional four-year schools in the villages of Dolno Konjsko, Elshani and Trpejca. Besides children from Peštani, this school is also attended by children from Konjsko, Elshani, Trpeica and Ljubanishta.
- The village has a number of restaurants, hotels, and several shops operating. Almost every household today rents rooms to tourist, especially during tourist season. The Desaret Hotel, the largest tourist facility in the village and its nearby vicinity, built in 1973, is situated on the southern end of the village. On the northern end, before reaching the village of Peštani, is the Eleshec Camping Site, while in the area of Gradishte is the largest camping site found in Macedonia.

Trpejca:

- Trpejca is located along the existing lake shore road and is a lowland village located on the lakeshore.
- It was originally a fishing village but is now a popular tourist area and has one school, two shops, and a new church.
- There is a population of 303 persons from 85 households. There are 265 dwellings.
- There is a primary school in the village for schoolchildren up to grade four, which functions within the primary school of “Sveti Naum Ohridski”, while older age children continue their schooling either in the village of Ljubanishta or in Ohrid.
- The water supply network in Trpejca is rather old, built some 30 years ago, and water is drawn from Lake Ohrid. There is no sewerage network in the village.

Istok:

- Istok is 5 km away from Ohrid, situated on the left-hand side of the road leading to Sveti Naum, just opposite the Granit Hotel.
- The settlement is next to the village of Dolno Konjsko and there is no visible boundary distinction between them.
- Based on the cadastral register books, the settlement forms an entity with the villages of Konjsko, Dolno Konjsko, Shipokno and the settlement of Sveti Stefan.
- Istok is considered an ‘upmarket’ settlement. It consists of nice-looking, modern houses, owned by people attracted by the vicinity of the lake and its view.



- Based on the census of 2002, the settlement has 117 residents, most of which are not permanent residents but occupy their residences during the tourist season.

Ljubanishta:

- Ljubanishta is located along the existing lake shore road and is located near to the border with Albania. The monastery of St. Naum and a military camp are located to the west of the settlement.
- The number of residents have declined from 455 in 1961 to 185 in 1994, and the census of 2002 the village has 171 permanent residents (94 males, and 77 females), mainly elderly people, resident in the settlement.
- There were 33 children in 2002 who gained their primary education either in the village of Peštani or in the city of Ohrid.
- Tourism and agriculture are the most important economic activities in the region. The Government has rented most of the arable land to the joint stock company of Gorica – a former agricultural co-operative.

Leskoec:

- Leskoec is located in the Resen municipality, approximately 24 km from Resen. To the west, the village district stretches all the way to the administrative border with the municipality of Ohrid, while to the south it stretches to the state border with Albania.
- The village is reached through a local, asphalt-paved 2 km long road which, from the locality of Carina branches off from the regional road (Makazi (connection with R505) - Carina – border with Albania).
- Leskoec is a mountain village at an altitude of 1,025 m. It is located to the west of Lake Prespa.
- The village has seen significant population decline, with 12 residents in 2001 (compared with 239 in 1961).
- During the last several years a small number of weekend huts have been built, mainly used in summer. In winter, during abundant snowfalls, the village cannot be accessed by motor vehicles.
- The village has no water supply, nor a sewerage network.

Oteshevo:

- Oteshevo is located on the shore of Lake Prespa. It is an abandoned village, the last census in which there were permanent residents was in 1981, when it had 14 residents of the Macedonian ethnic group.
- There is a hotel nearby.

Stenje:

- Stenje is located on the shore of Lake Prespa and has 438 inhabitants, living in around 130 households, of which 184 residents fall in the group of economically active population.
- The village has around 260 either renovated or newly-built houses, 100 of which are weekend huts. Almost all of them consist of a ground and an additional floor.
- Most of the working women from the village, besides some of the men, work for the textile factory of Stenje Tekst.
- Many village residents are involved in agriculture, particularly with apple growing.
- The village of Stenje has a tourist function. The small hotel of Riva operates in the village, besides the many households which lease rooms and apartments during the summer tourist season.



- The last several years, as a result of the reduction of the water level of Lake Prespa, the number of tourist visitor has reduced.
- Stenje is the biggest village within Park's boundaries on the side of Prespa. It is situated in the Prespa Valley at an altitude of 855.m on the western shore of Lake Prespa.
- The village is 25.km away from the town of Resen. To the south, the village district stretches to the state border with the Republic of Albania and to the shore of Lake Prespa.
- Children from Stenje gain their education, up to grade four, in the primary school of Braka Miladinovski located in the village. They continue their further education in the village of Carev Dvor and Resen.
- The village has an outpatient clinic operating and a cultural centre.
- The village has its own water supply network, while waste water is discharged into septic tanks. The municipal public enterprise of Proleter from Resen collects and disposes of the solid waste from the village on regular basis.

Konjsko:

- The village of Konjsko is situated on the endmost southwestern part of the municipality of Resen at an altitude of 857.m, on the shore of Lake Prespa. The village district stretches to the state border with the Republic of Albania. .
- The village is reached through the village of Stenje, continuing along a 9,4 km long dirt road.
- The village is in the stage of complete abandonment. It had 84 residents in 1961, 4 residents in 1991, while with the 2002 census only 3 permanent residents have been recorded. Some residents, however, have renovated their old houses and stay in the village over summer.
- The village has no water supply network, while waste water is discharged in individual septic tanks. Solid waste from the households is not being collected in an organised manner.
- Two km away traveling by water is the island Golem Grad – the only Macedonian island. It rises at a height of 30 m above the lake and occupies an area of 22 ha. Numerous archaeological remains from various historical periods are found on the island, witnessing that the island was once inhabited. To the end of the 60s of the past century local shepherds kept their herds on the island over winter.

Sir Han:

- Sir Han is a villa settlement on the eastern boundaries of the Park. Its beginnings date back to the 70s of the past century.
- The settlement now has around 30 weekend huts, but there are no statistical data available on the number of permanent residents. The bungalow resort of "Eksluziv" is located nearby the settlement.

5.5.4 Population Structure in the Park Area

A summary of the key parameters of population structure in the Park area is provided below:

- *Gender:* The gender structure of the population in both Ohrid and Resen is balanced.
- *Age:* The population structure is generally old, with nearly half the population over 50 years old (48%) and 10% over 70 years old in Ohrid. The birth rate in Ohrid has been decreasing.
- *Ethnicity:* There are three main ethnic groups in the area. The dominant group are Macedonian (80% in Ohrid, 76% in Resen), then Albanians (7% in Ohrid, 9% in Resen) and Turks (5.4% in Ohrid, 11% in Resen). There are also Roma, Vlachs, Serbs and Bosnians living in the area. These percentages of ethnic groups also represent the mother-tongue language spoken.



- In all settlements on the territory of the Park, the Macedonians are a dominant ethnic group, excluding the villages of Ramne, Peštani, Ljubanishta, and the settlement Sveti Stefan, on the Ohrid side of the Park; whereas in all remaining settlements, only Macedonians live.
- *Religion:* Most residents are Orthodox Christians. Although there are some Muslims in Ohrid City, the settlements in the municipality are populated by Orthodox Christians.
- *Literacy:* 2.6% of the population of the Ohrid municipality are illiterate; 3.2% of the population of Resen are illiterate. These levels are both below Macedonia's average of 3.6%.
- *Education:* 45% of the population in Ohrid municipality and 34% in Resen have a high school education. 30% of the population of Ohrid and 33% of the population in Resen have primary school education only. Many educated people from the Ohrid municipality have emigrated abroad which means that their educational and professional knowledge and experience have been lost to the local and regional area.
- *Employment:*
 - The employment rate of the economic active population in Ohrid municipality earning wages and incomes, was 65% (2002). The unemployment rate of 35% was higher than the average rate on national level of 32%.
 - The employment rate of the economically active population in Resen municipality was 69%. The unemployment rate was 30% which is lower than the national average.
 - The unemployment rates among ethnic Albanians and ethnic Turks in the two municipalities are significantly higher than for Macedonians. In the municipality of Resen, the unemployment among the ethnic Turks is higher than among ethnic Macedonians and ethnic Albanians. In the municipality of Ohrid, the unemployment is especially high among ethnic Albanians. From a total number of citizens beyond 15 years old in the municipalities, 46% are economically inactive in the municipality of Ohrid and 52% in the municipality of Resen.
- Pursuant to the data of the State Statistical Office on a national level in 2007, 57% of income is from regular and temporary employment, pensions contribute 15.5%, agriculture contributes 6.8%, income from abroad 4.8%; and social benefits 2.2%. The data show that in average households the incomes cover about 75% of the expenditures, whereas the remaining expenditures are covered with loans or through unregistered and informal incomes. Comparative data for 2003, 2005 and 2007 indicates a trend of permanent increase of traffic and travel expenditures.
- *Migration and Population Growth:* Whilst the population of Ohrid municipality has been growing, this has concentrated on Ohrid and the tourist-based villages along the coast of Lake Ohrid. Population in the more rural villages has been declining. In Resen, the overall population has been slowly decreasing. During the period 1961 – 1981, many villages were abandoned. The dominant type of migration has been rural-urban where the younger workforce has left jobs in agriculture, forestry and animal breeding and have moved to more urban areas in search of jobs in factories or services.

5.5.5 Utilities in the Local Area

The villages in the Park area have basic communal infrastructure. Electricity, road and fixed telephony with internet are present in every village. Mobile phone networks do cover the whole area where people live.

The settlements in the area are served by the main Post office in Ohrid. In Peštani there is also branch of the Ohrid Post Office, as well as local office of the main Police station in Ohrid.



In Municipality of Ohrid there are 163 km of local roads, of which 97 km are asphalt and cobbled streets. Macadam road is in length of 32 km, while unpaved roads are 16 km. Local roads connecting nearby villages and within the villages are asphalted.

Local transport is generally organised by individuals. There are several regular bus lines operating on a daily basis. Four companies conduct regular bus transport from Ohrid to Elshani, Peštani and Trpejca, and vice versa. During the summer these lines are strengthened with increased number of vehicles.

5.5.6 Health

In Municipality of Ohrid there are six public health institutions: Healthcare Centre Ohrid; General Hospital – Ohrid; Institute of Public Health – Branch Ohrid; Special Hospital for Orthopaedics and Traumatology “Sv. Erazmo”; Special Children’s Hospital and the Institute for prevention, treatment and rehabilitation of cardiovascular diseases “Sv. Stefan”. Also, there are more than twenty General Private Practices, more than ten Specialist Private Practices, some thirty Private Dental Offices and thirty Private Pharmacies.

There is a regional centre for social work located in Ohrid City which is responsible for registration and delivery of financial support for social security.

5.5.7 Schools

In the Municipality of Ohrid there are 9 Primary Schools (one is musical primary school), 3 High Schools, 1 State owned University and 1 Faculty of the state owned University from Bitola. Most of these schools are located in the City of Ohrid. The Primary School “Sv. Naum Ohridski”, is located in the village of Peštani, has three local branches in the following project’s settlements Konjsko and Elshani, and Trpejca. A regional branch from the local Primary School “Grigor Prichev” is located in Racha.

The decline in population carries with it a decline in children attending schools. In just one decade, the reduction of students in Primary and High Schools is 9%, however a law passed in 2007 has made High School Education obligatory for every generation from 2008.

In the City of Ohrid the Faculty of Tourism and Catering, part of Bitola’s University St. Kliment Ohridski, serves as national specialised university where professionals for catering and tourism are educated. The University of Information Science and Technology “St. Paul the Apostle” is gathering students from the region and wider. It is consisted of 4 Faculties (Faculty of Information Systems, Visualization, Multimedia and Animation; Faculty of Computer Science and Engineering; Faculty of Communication Networks and Security and Faculty of Machine Intelligence and Robotics).

5.5.8 Community Use of the Park & Park Related Livelihoods & Activities

Agriculture

Agricultural activities in the Park have been decreasing in the past few decades. This has been a result of the migration of population to larger urban areas and settlements along the shoreline of Lake Ohrid, as well as due to the tourism-oriented way of life.

In the past the local population used the Park areas for sheep keeping and the production of meat, wool and cheese. In the 1960s there were 30,000 sheep within the borders of the Park. In 2009 only three flocks totalling 700 – 1,000 sheep were registered, and were used mainly for production of cheese and lambs. Approximately 100 heads grazed the pastures of the karst field Gjafa in the period May – October.

Most of the sheep breeders are now elderly and there is a further decrease in the interest in sheep keeping. On the mountain, a small number of cattle are kept (about 120 heads in 2009). Most of the cattle graze on Gjafa, and smaller number use Sharbojca (Asan Gjura). After the adoption of the Law on Prohibition of Goat Keeping in 1948, the number of goats on the territory of the Park was brought down to zero.



The production of hay for livestock in the Park is also decreasing. In the past few years the local ranchers mow only the best locations in the Park. In the higher parts of the mountain (1,400 masl and beyond), the best locations are the karst fields (ex. Gjafa, Sharbojca and Vardulj) and the sinkholes where the snow accumulates for a longer period which keeps the soil humid. Some hay is also mowed at lower levels, such as the field at Glajsho.

Land which used to be planted with several species of grains, are now mostly abandoned. Agricultural production is limited to smaller areas near the villages with access to water for irrigation, where vegetables are grown (potatoes, onions, garlic, tomatoes, cabbages), as well as grains (corn, wheat). Sometimes the pits near the beech wood in Sharbojca are used for potatoes.

Trees were used as a construction and heating material. Sometimes, when there was an intensive need for agricultural land there was uncontrolled woodcutting and turning this land into pastures or arable land.

The plains near the coast of each lake are intensively used for production of fruits and grains. Unlike in the mountainous areas, the farmers here use herbicides, fungicides, insecticides and manure. There are only small areas that still use the methods of traditional extensive agricultural production. In the past, the production of fruits was combined with other agricultural crops between the trunks of the fruits (garden crops, hay or pasture).

Ecological succession is now changing the land that was previously used for agriculture. In the oak zones maples, hornbeams, and different species of oak form semi-open thicket areas that continuously grow. In the higher areas with beech woods, succession is slower as beeches grow in shady areas. In these places, the succession process requires development junipers bushes that provide areas for beech growth. Due to the lack of grazing, there is an accumulation of dry biomass leading to a greater risk of large fires.

The effects of the agricultural pollution on biological diversity in the Park has not been studied formally. However, the available information leads to the conclusion that the eutrophication of the Prespa Lake has a negative impact over the flora and fauna in the springs of St. Naum. The research of Patcheva (2005)¹¹, Manciger and associates (2006)¹² and others, showed that the concentration of the total phosphorus in the springs of St. Naum is about 2.5 times bigger than the concentration in the Ohrid Lake, and at the same time, by 2.5 times smaller than the concentration in the Prespa Lake. Having in mind that 43.5% of the springs in St. Naum derive from the Prespa Lake, the agricultural pollution in Prespa can have a negative role by enriching the inorganic nutrient content. The increase in the trophic state of the water in the springs may have negative impact over the flora and fauna, with algae being most sensitive to the water quality changes. This can lead to violation of the balance between different species of algae, and the most threatened ones would be the relict and endemic species that have adjusted to the eco conditions by staying unchanged for a long time period. Therefore, the enriching nutrients stimulate more development of macrophyte vegetation which covers the beds of the springs, thus threatening the species that develop under a special substrate on the bottom.

Forestry

One of the fundamental objectives of the establishment of the Park was to protect and enhance the forests. Today however, the operational expenditures of the Park are mostly covered through sale of firewood in the Ohrid and Prespa region. The production of firewood is planned through annual programmes for enhancement of the woods; these are part of the annual programmes for protection of the Park that are approved by the Ministry of Environment and Physical Planning. Annually, the Park produces 7,000 to 12,000 m³ (the prices in 2009 were 2.350 MK denars/38 EUR per m³ beech, and 2.450 MK Denars/40 EUR per m³ of oak).

Since 1972, a Plan for Forest Management/Enhancement has been prepared every ten years to organise the management of the woods. The last ten-year plan for forest management was prepared in 2003 and was valid until 2012. During the preparation of the NPG Management Plan, a new Plan for sustainable

¹¹ Patcheva, S. (2005). Komparativna analiza na fitoplanktonskata zaednica i trofickiot status na Ohridskoto i na Prespanskoto Ezero. PhD Dissertation, University Ss. Cyril and Methodius, Faculty of Natural Science and Mathematics, Institute of Biology, Skopje.

¹² Matzinger, A., Jordanoski, M., Veljanoska-Sarafiloska, E., Sturm, M., Muller and Wuest, A. (2006). Is Lake Prespa Jeopardizing the ecosystem of ancient Lake Ohrid. *Hydrobiologia* 553:89-109



use of part of the woods in the Park was prepared, using a contemporary approach and technology, including GIS, aerial footage, satellite recordings, specialised software etc.

The largest areas of the woods in the Park are managed as low-growth vegetation woods (about 9,000 ha), and only a small part as high-growth vegetation woods (about 600 ha). High-growth vegetation woods are not used for production due to high transport costs and low placement. A small part of the woods in the Park, about 90 ha, are plantations of allochthonous species (black locust, Douglas fir, common morel and Weymouth Pine). Due to the small amount of livestock in the Park, there is intensive development of thickets on the lower pastures (below 1,600 masl, with more than 4,000 ha).

Leisure and Tourism

The most profitable industry in municipality of Ohrid is tourism. Hotels and private apartments are set along the coast line, as well as all in the city of Ohrid. Some 67% of the companies are service oriented companies that directly support tourism in the area. Almost 40% of the total companies are retail trade (local markets and other type of shops) that open dominantly for the summer season. Approximately 74% of the total companies are micro entities, employing up to ten people.

The Ohrid-Prespa region is an important tourist area in Macedonia. The richness of its natural and cultural values, and the position of the Mountain Galichica between the Ohrid and Prespa Lakes, contributes to the attractiveness of the Park.

There is not any official tourist data on the park, however the number of visitors to this area is estimated at 200,000 annually. Data of the State Statistical Office for the period 2005-2007, shows that the South-Western part of Macedonia was visited by 236,434 people in 2005, 233,218 in 2006, and 255,257 tourists in 2007. These numbers present 45% of the overall number of visitors to Macedonia.

Most tourists are domestic (3.5 times more than compared to foreign tourists), however the number of foreign tourists has been increasing. The main international tourist visitors come from Serbia and Montenegro, Greece, Albania, Bulgaria, USA, Germany, UK, Austria and the Netherlands.

According to the research conducted by the Faculty of Tourism and Catering in Ohrid in 2008, vacation, leisure and the natural values of the Park present the main reasons for visits to the area. Visits to the Monastery St. Naum, as well as to the vicinity of the beaches on the Coast of Ohrid Lake are the most significant reasons for the visitors to visit the Park. Certain parts of the area, as well as the Monastery and the springs in St. Naum are a significant hot spot for visitors, not only from Macedonia, but also from the neighbouring countries, especially Albania and Serbia.

Local citizens from the settlements around the Park and the cities in the region also use the Park for leisure purposes. Assessments show that the visits to the Park are more frequent during summer, as well as during national and religious holidays. Visits by the local population also increase during the summer season when people pick Ohrid Tea, healing herbs and wood fruits.

Skiing

During 1970s and 1980s there were efforts to develop infrastructure for winter sports and leisure activities in the area of Korita and the northern slopes of Stara Galichica on the Ohrid side, and on the slopes below the mountains tops Lako Signoj and Tomoros on the Prespa side. Towards the end of 1960s on Stara Galichica, on the northern slopes of the beech wood below the mountain top Magaro, a zone was opened to serve as a ski track. The old sentry base was renovated to be used for accommodation. In the beginning it was managed by the Club of Radio Amateurs. Having in mind that the interest in Alpine skiing was increased, the former company for the distribution of electricity built some related accommodation units. In the middle of the 1970s another barrack was built by the Vacationer Association of Macedonia. Soon after the ski track was opened, national competitions were held in the giant slalom. Meantime, three smaller ski-lifts alongside the ski track were built. In 1981 there was a fire accident in the barrack of the radio amateurs and a young person was killed. After the accident, all activities stopped in the region, and the objects were abandoned. Due to lack of care and maintenance, the former objects became completely ruined, except for one part of the barrack that was built by the company for distribution of electricity. Namely, in 2002 the Sport Club "Magaro" from Ohrid partially renovated this facility and has been using it since for their needs. Afterwards, in 2007, the club "Magaro" in co-operation



with the municipal organisation of the Red Cross from Ohrid, additionally adapted the facility in order for it to serve as mountain rescue and relief station.

Towards the end of 1980s the region Dva Javori a ski centre was built equipped with a two-seat cable car 1.1 km long (under the region Krle Gole Buka) and three ski lifts (below the mountain top Tomoros). This centre was working only for a few years and due to lack of maintenance today is out of order and completely neglected.

There have been other initiatives for the establishment of infrastructure for development of winter tourism in these areas of the Park, such as the one in 2006 submitted by the company "Akvapura" for revitalization of the ski centre in the area Dva javori.

Walking and Hiking

In the past, PINPG and the local communities and NGOs have cleaned up and marked a large number of walking trails in the Park. However, due to irregular maintenance in certain parts these areas are now grown with vegetation or hard for recognition. In 2009 the following trails in the Park had appropriate infrastructure for support of the visitors (roadmaps, informative tables, rest areas etc.):

- bike trail from the Visitors' Centre in Ohrid to the region Dva Javori respectively village Konjsko;
- the path for eco education near the Visitors' Centre in Ohrid;
- the walking trail from the village Trpejca to the region Chokolsk,;
- natural historical field of the island Golem Grad;
- the mountain trail from the region Lipona Livada to the mountain top Magaro; and
- the path from the region Dva Javori to the mountain house Sharbojca and its two arms, to the mountain top Goga and the cave Samatska Dupka.

Among the other infrastructure for visitors in the Park, one should mention the mountain house Sharbojca, the new Visitors' Centre in Ohrid, the excursion places Korita and Jadera and the viewpoint Koritski Rid that were constructed or renovated during 2009. In 2009 on the area Pogled, near the village Velestovo a paragliding landing strip was established that was used for the World Cup in precise landing for paragliders. Beside this, in 2009 in the settlements of the Park and numerous other important places informative signs with educational contents were placed.

Hotels in the Park

The visitors of the Park have a number of catering and accommodation options in households and hotels in the Park or its vicinity. In 2009 the following are some of the places to stay:

- Hotel "Granit" LTD, settlement Istok;
- Hotel "Tutunski kombinat – Prilep", settlement Istok;
- Hotel "BRAND", settlement Istok;
- Hotel "Prestol", settlement Istok;
- "University Congress Center" – University Ss. Cyril and Methodius, village Dolno Konjsko;
- Hotel "Mak-cvet", village Dolno Konjsko;
- Hotels "Metropol" and "Belvi", village Dolno Konjsko;
- Hotel "Makoteks", Lagadin;
- Hotel "Lagadin Inn", Lagadin;
- Hotel "Dva bisera", Lagadin;



- Vila “Bisera”, Lagadin;
- Auto-camp “Eleshec”, settlement Eleshec;
- Hotel “Zlaten prsten”, settlement Peštani;
- Hotel “Desaret”, settlement Peštani;
- Auto-camp “Gradishte”, settlement Gradishte;
- Auto-camp “Ljubanishta”, village Ljubanishta;
- Hotel “Viomark”, tourist complex St. Naum;
- Auto-camp “Vasko Karangeleski”, tourist complex St. Naum;
- Auto-camp “Oteshevo”, tourist complex Oteshevo;
- Motel “Riva”, village Stenje, and others.

Hunting and Fishing

Hunting and fishing are prohibited in the Park. In 2009 the new *Law on Hunting* was adopted which regulates the species whose hunting is permanently prohibited. The law dictates that:

- Damages caused from the game whose hunting is permanently or temporarily prohibited are compensated from the Budget of Republic of Macedonia.
- Hunting grounds are established by the Government of Republic of Macedonia pursuant to the Spatial Plan of the country. The Spatial Plan of Republic of Macedonia in 2004 determines 11 hunting areas. The park is found on the territory of Ohrid-Prespa hunting area (Resen, Ohrid, Struga and Debar).

However, despite the prohibition, there are regular cases of poaching in the Park, although this is at a small scale. In the existing waterways in the area, fish can be noted only in the river Cherava. Some illegal fishing of smaller scale is noticed around the springs of St. Naum.

Use of Metals and Minerals

The Park does not have permanent facilities for the extraction of metals and minerals. Some reserves of clay can be found surrounding Stenje, but these are without any economic potential.

In the past, limestone was quarried from the Trpejchko Pole area. In the past, rocks quarried were exploited for construction or production of quicklime, for example, near Ohrid in the area Gluvchi Dol and Bej Bunar, in the area of the villages Oteshevo and Leskoec. In the 1960s large amounts of sand from the south coastal area of the Ohrid Lake and Ljubanishko Pole were exploited. Occasionally, illegal exploitation of sand by the local population around Stenje and Ljubanishta can be noted.

Environmental Education and Science and Research Activities

There has not been limited environmental education in the Park, mainly due to the mode of self-financing of the Park which mainly supports the employment of staff in the areas of forestry and infrastructure. However this is one of the main objectives of the NPG Management Plan and there are programmes and actions that PINPG are endeavoring to undertake with regards to education activities in the Park, but this is limited by the lack of resources.

Galichica Mountain with its natural rarity, and rich flora and fauna has been a subject of numerous studies and scientific research. During 2008 within the frames of KfW/NPG, research was conducted on the biodiversity and geo-morphological phenomena in the Park, led by renowned researchers from the Balkans and Macedonia.



Picking of Healing Herbs and Forest Fruits

Nearby communities from the Park area and the region pick several herbs and forest fruits for their needs and for trade. In the past PINPG implemented systematic control of the picking but did not collect money for the right to use this natural wealth.

5.6 Cultural & Archaeological Heritage

5.6.1 Historical Development of the Region

The Prehistoric and the Ancient Period

Humans have been present in the Park area since the Prehistoric Period. There is evidence of both palaphitte pile-dwelling settlements and settlements from 15 archaeological sites along the shores of Lake Ohrid. The remains are made up of wooden piles stuck into lake's bottom. All these settlements have an abundance of archaeological material (such as ceramics, stone artefacts and fragmented animal bones) which chronologically belong to the New Stone Age (the Neolithic), the Copper Age, the Bronze Age and the Iron Age of the Prehistoric Period.

A museum reconstruction of a pile-dwelling settlement can be found at in the Bay of Bones, at the site of Plocha Michov Grad near Gradishte, a pile-dwelling settlement dating to the Bronze and Iron Age, 1200 – 700 BC. Remains of other pile-dwelling settlements can be found in the vicinity of the village of Trpeica, at the locality of Na Dol in the Bay of the Male Goat and another on the shoreline of the village of Ljubanishta, occupying a part of the so-called Bay of the Bombs. It is thought that there is another prehistoric settlement on the southern shore of Lake Ohrid, at the locality of the Military Beach, to the west of the monastery of Sveti Naum.

Lychnidos

Ohrid (ancient Lychnidos) stretches along the northern shore of Lake Ohrid (Lychnid), and is one of the oldest cities in Europe. The rich material culture found on the eastern foot of the hill on which Ohrid is situated. In the time of basilicas, Lychnid, as in the time of the Old Macedonian – Hellenistic Era is rich in sumptuous architectural buildings. Architectural remains from other basilicas may also be nowadays seen in the region, which is a specific phenomenon of the times when Justinian I was the emperor of the Eastern Roman Empire.

The Middle Ages

From the end of the VI and the beginning of the VII century, a new ethnic population, the Slavs (the Berezites) developed a number of churches and monasteries. The place and role of Lychnid in the Late Ancient and Old Christian Period as a spiritual and cultural centre is expressed by the presence of monumental Old Christian Period basilicas, a part of which is located in the nearby vicinity of the city itself and in its immediate shoreline surroundings, as well as by the power of the Lychnid Episcopacy, outreaching its regional borders.

Tri-conchal churches found in the area are the inception of Middle Age sacral architecture. Several churches with monastery complexes, which are of special significance for spreading Slavic religious service on the territory of Macedonia, were built In the time of the missionary work in Ohrid and its surroundings of the Slavic enlightener and first Slavic episcope, Sveti Kliment, and of his collaborator, Sveti Naum.

As a most significant medieval sacral building stands the monastery complex with the church of Sveta Bogorodica Zahumska, besides the many cave churches with precious fresco paintings built along the rocky shore of the lake.

This period was discontinued by the early penetration of the Ottoman Empire in the region, around 1385.



The Ottoman Empire Period

The time the region of Ohrid was conquered by the Turks cannot be precisely established. Based on Turkish documents, 1395 is considered the year of Ohrid area falling under Turkish authority. As a certain fact of the presence of the Ottomans however, is the inscription on the church of Sveti Ilija in the village of Elshani dating from 1408.

Ohrid Archbishopric was the only medieval feudal institution continuing its life and functioning during the rule of the Ottomans.

The region does not suffer severe changes during this period and the condition of the buildings remains unchanged.

The Renaissance Period

In the 1880s, the Balkan Peninsula saw rebellion against the Ottomans (Bosnia and Herzegovina, Bulgaria and Macedonia), and a period of wars between Serbia, Montenegro and Russia on one side, and Turkey on the other. The population of Western Macedonia faced difficult conditions imposed by the Empire and relationship with Albania. This resulted in a wave of revolutionary turmoil which spread over to the Region of Ohrid as well.

The exact number of Ohrid residents at the end of the 19th Century is unknown. Based on the statistical records of a Bulgarian demographer, Ohrid had 8,760 Christian and 5,500 Muslim residents, of which 500 were declared as Albanians.

This region does not suffer severe changes during this period and its condition remains almost unchanged.

The period between the two world wars

This is a period of major changes in the structure of old city cores reflected by building larger-size buildings in an academic style that is with features of neoclassical style. This is not, however, the case with the areas outside the old city cores. Hardly any changes are seen on the territory of this region. The rural part of the region is rather poor, unlike the rural part of Struga where working abroad as migrant workers is much more expressed, as a result of which grandiose buildings, under the influence of Europe are being built.

Ohrid within the Socialist Federal Republic of Yugoslavia (SFRY)

Industrialisation of the region, its accelerated development and reconstruction started soon after the end of World War II. Conservation of sacred and religious buildings began during this period. This is also the period of first research conducted on the archaeological sites.

The old core city infrastructure in Ohrid was interfered with and the previously untouched lake shore within the National Park was built on with hotel compounds. These contributed to local tourism development.

Large industrial compounds were erected and the populations' living standard improved.

This is the period (1979-1980) of inscribing the region of Ohrid on the UNESCO World Heritage List.

The Region after Macedonia gained Independence

Soon after the Republic of Macedonia became an independent country it reinstated its statehood and, by gaining international recognition, Macedonia acquired conditions to directly participate in all international associations and organisations dealing with protection of cultural and natural heritage. This allowed the efficient implementation of the international standards in all fields of protection, as well as in all authorities in charge of preserving the region as world's cultural heritage.

In the 20th Century, with the change of the economic, social and societal circumstances, the function of some of the buildings changes, resulting in some of the sacred buildings become oriented towards culture (museums and museum buildings), tourism and hospitality and towards other activities, while some of the religious buildings function according to the needs, that is on the particular religious holidays.



The area has been degraded by increased amounts of motor traffic (both as a movement and occupying parking spaces around buildings) and by some informal development, particularly along Ohrid lakeshore.

In settlements, new urban plans being adopted take up unoccupied space by either allowing new building lots or expansion of existing buildings, thus endangering the view and space of the core city. Along the lake shore, inappropriately designed infrastructure and inadequate has negatively affected the aesthetic value of the lake shore.

In 1999, with the enactment of the *Law on Spatial and Urban Planning*, changes were made to the then current *Law on Protection of Monuments of Culture* by deleting articles 20, 43, 44 and 45. By deleting these articles of the *Law on Protection of Monuments of Culture*, the Institutions and Museums lost their competence for granting approvals when building individual residential buildings, reducing their competence to only giving opinion whether the façade of the buildings match the appearance of the surrounding buildings, without been given the possibility to express their opinion about the dimension and height of the buildings. In addition, others were not obligated to obey the opinion they gave on the façade fitness.

Private owners of protected buildings in some cases did not preserve or restore their buildings sympathetically and some religious owners of buildings did not obey the protection authorities and made unsympathetic interventions to the building interiors and exteriors.

With the adoption of the new *Law on Protection of Cultural heritage*¹³, the competence is again returned to the protection authorities, with the exception that opinion for the protection and conservation conditions are given by the Cultural Heritage Protection Office - Skopje.

The 2013 UNESCO mission to Ohrid noted that the cultural values of the property are embodied in the Historic City of Ohrid and also in elements of the region of Ohrid. Uncontrolled interventions and development, as well as extensive reconstructions, have eroded the conditions of authenticity and integrity, but still not to a degree where they have been fully compromised. Development pressure, direct and indirect impacts on visual integrity, as well as the densification and modernisation of historic fabric have been identified as the key factors impacting on the property's authenticity and on the visual qualities.

5.6.2 Recorded Cultural Heritage & Archaeology in the Park

The Park is rich in cultural heritage and archaeology, some of which is registered and protected under the *Law on Protection of Cultural Heritage*. Other objects in the Park have been listed and are not registered¹⁴.

The tables below describe the known cultural heritage and archaeology within the NPG boundaries¹⁵.

¹³ Official Gazette of the Republic of Macedonia no.20 of 02.04.2004.

¹⁴ Article 5 of the *Law on Protection of Cultural Heritage* states that cultural heritage should be protected regardless of whether it was registered.

¹⁵ The Cultural Heritage Protection Office, the Museum of Ohrid and Museum of Bitola were requested to provide a list of registered and listed cultural heritage objects in the NPG area, as recommended in the Ministry of Culture's comments on the previous SEA draft. The Museum of Bitola provided the Resen Region Protection and Conservation bases for Cultural Heritage of the Galichica National Park (2010), which is an inventory of cultural heritage and protection status' on the Lake Prespa side of the Park. The Cultural Heritage Protection Office provided a register of Cultural Heritage on the Ohrid Region only (not the Resen side of the Park) and this is provided is Annex 22. Data in the tables has also been compared to a version of the Ohrid Region Protection and Conservation bases for Cultural Heritage of the Galichica National Park (2010) (Version received unofficially). The information in these tables has been taken from translated documents and therefore there may be issues with the understanding of language, for example with the revalorisation of sites. Where objects have been revalorised (and this information has been provided), this has been stated in the tables. All registered and listed objects will need to be compared against information provided from the National Register once this has been received for the Resen area to ensure that it is up-to-date – this would be carried out at a project ESIA level ideally.



Table 5.9: Registered Cultural Heritage and Archaeology (from the original Park Management Plan (2011-2020) and the Prespa Region Protection and Conservation bases for Cultural Heritage of the Galichica National Park (2010))

Name	Place	Type	Classification
Pile-dwelling settlement "Bay of the Bones"/Ploca Micov grad	Peštani	Archaeological site	-
Assumption of Virgin Mary	Velestovo	Church	Significant
Sv. Stefan Pancir	Dolno Konjsko	Church	Significant
Monastery of Sv. Naum	Ljubanishta	Church	Exceptional Significance
Cave church Sv. Bogorodica of Peštani	Peštani	Church	Significant
Sv. Bogorodica of Zahum	Trpeica	Church	Exceptional significance
The village of Konjsko	Konjsko	Monumental entirety	Significant and endangered
St Petar	Golem Grad	Church	Exceptionally significant and endangered.

Table 5.10: Listed Rural Monumental Entireties

Place	Settlement	Condition
Village of Stenje / church, 2 barns and remaining of one object	Stenje	Medium
Beach limes, archeological locality and church	Stenje	Medium

Table 5.11: Listed Churches and Monasteries in the Park

Place	Settlement	Date	Condition	Classification
Sv. Petka	s. Velgoshti	-	Relatively favorable	Significant
Sv. Spas	s. G. Lakocherej	-	/	-
Sv. Ilija	s. Velgoshti	-	Relatively favorable	Significant
Sv. Kliment	"	-	Relatively favorable	-
Sv. Ilija	s. Elshani	-	/	Significant
Sv. Vrachi	s. Peštani	-	/	Significant
St. Gjorgji	Volkoderi	19 th Century	Ruined	-
St. Nikola	Konjsko	1937	Good	Not endangered, important
St. Ilija	Konjsko	-	Medium	Not endangered, important
St. Petar and Pavle	Konjsko	14 th Century	Medium	-
St. Nikola	Leskoec	1874	Medium	Endangered, important
St. Atanasie	Oteschevo	-	Ruined	-
St. Nikola	Pokrvenik	19 th Century	Recovery	Recovery
Isoica	Pokrvenik	Cult Place	/	
St. Atanasie	Stenje	17 th Century	Medium	Endangered, important



Place	Settlement	Date	Condition	Classification
St. Kiril and Metodij	Stenje	1911	Good	Not endangered, important
St. Petka	Stenje	1933-34	Good	Not endangered, important
St. Nikola	Shurlenci	On old grounds	Good	Endangered.

Table 5.12: Listed Memorial Busts and Plaques in the Park

Title	Place	Condition
Monument to Ilinden uprising insurgents and NOV fighters	Velgoshti	Good condition
Monument to fallen NOV fighter	Ljubanishta	Good condition
Memorial bust of Jasna Risteska	Ramne	/
Partizans cemetery	Studenchishta	/
Memorial fountain Sv. Ilija	Velgoshti	Good condition
Memorial fountain	Elshani	Good condition
Memorial dedicated to the events of Ilinden	Sirhan	
Memorial dedicated to the Prespa counselling in May 1943	Oteshevo	Good condition
Memorial for events of the NLW	Stenje	
Memorial dedicated to the dead fighters from the village	Stenje	
Memorial dedicated to the events of the NLW	Konjsko	

Table 5.13: Known Archaeological Sites in the Park

Name	Place	Dating	Type	Classification
arch. site "Churila"	s. Velgoshti	Medieval period	solitary tomb	
arch. site "Churila"	s. Velgoshti	Medieval period	church	Significant
arch. site "Antichka Furna"	Sv. Stefan	Roman period	brick-baking kiln	Significant
arch. site "Sv. Bogorodica Prechista"	s. Velestovo	Medieval period (XV century)	single-nave church and necropolis	Significant
arch. site "Buchila"	s. Ljubanishta	Neolithic, Roman and medieval period	settlement and necropolis	Significant
arch. site "Crkvishte"	s. Peštani	Medieval period (XIV century)	church	Significant
arch. site "Crna Peshtera" (Krston Zab)	s. Trpeica	Neolithic	cave (sanctuary)	Significant
arch. site "Elshani"	s. Elshani	Late classical period	necropolis	Significant
arch. site "Glajsho-Selishte"	s. Trpeica	Medieval period (developed)	settlement	Significant
arch. site "Gradishte-Osoj"	s. Trpeica-Osoj	Early medieval period	fortress	Significant
arch. site "Gradishte-Vilicite"	s. Ljubanishta-Galicica	Hellenistic period	fortified settlement	Significant
arch. site "Gradishte"	s. Konjsko	Hellenistic period	settlement (fortress)	Significant
arch. site "Gradishte"	s. Peštani (Gradishte)	Roman period	utvrden logor (kastrum)	Significant



Name	Place	Dating	Type	Classification
	camping)			
arch. site "invalidsko odmoralishte"	Sv. Stefan	Roman period	settlement with necropolis	Significant
arch. site "Kale"	s. Velgoshti	Late classical and medieval period	fortress	Significant
arch. site "Kale"	Ohrid (Petrinsko)	Byzantium	fortified settlement (Brucida)	Significant
arch. site "Kale"	s. Trpeica	Late classical period	settlement	Significant
arch. site "Kotelica"(sv. Nikola)	s. Velgoshti, Olmec	Medieval period (Slavic)	church and necropolis	Significant
arch. site "Kromidishta"	Nas. Racha	Medieval period	remains of small church and necropolis	Significant
arch. site "Kromidishta"	s. Velestovo	Medieval period	single-nave church and necropolis	Significant
arch. site "Kumbarevci"	s. Ramne	Medieval period	church and necropolis	Significant
arch. site "Kupejnica"	s. Elshani	Late classical period	settlement	Significant
arch. site "Makla"	s. Ramne	Medieval period	necropolis	Significant
arch. site "Malo Konjsko"	s. Konjsko	Developed medieval period	Slavic settlement	Significant
arch. site "Manastiri"	s. Ramne	Early medieval period, medieval period	Early Christian basilica	Significant
arch. site "Mantica-Bozojca"	s. Velgoshti	Early medieval period (Slavic)	church and necropolis	Significant
arch. lok "Na Lazoi"	s. Velgoshti	Roman period	necropolis	Significant
arch. site "Sv. Nikola-selski grobishta	s. Ljubanishta	Medieval period	church and necropolis	Significant
arch. Site "Nivata od vasil Buchkoski"	Sett. Shipokno	Roman period	necropolis	Significant
arch. site "Olmec-Kulishte"	s. Velgoshti	Iron Age 2 (Illyrian)	fortified settlement	Significant
arch. site "Racha"	Nas. Racha	Roman period, medieval period	necropolis	Significant
arch. site "Racha"	s. Velestovo	Late classical and medieval period	settlement, necropolis	Significant
arch. site "Rajca-Manastirishte"	s. Ljubanishta	Early Christian period	sacral facility	Significant
arch. site "Ramnenski Lozja"	s. Ramne	Roman period	settlement and necropolis	Significant
arch. site "Selishte"	s. Velestovo	Medieval period	Church and necropolis	Significant
arch. site "stara koliba-koshot"	s. Ljubanishta	Roman period	settlement	Significant
arch. site "Stara Racha"	s. Velestovo	Developed medieval period	church	Significant
arch. site "staro selo"	s. Peštani	Developed medieval period	settlement	Significant
arch. site "Sv. Atanasie"	s. Ljubanishta	Roman period	necropolis	Significant
arch. site "Sv. Atanasie"	s. Ramne	Medieval period	church	Significant
arch. site "Sv. bogorodica"	s. Ljubanishta	Medieval period	church	Significant
arch. site "Sv. Ilija"	s. Ljubanishta	Medieval period	Church and necropolis	Significant
arch. site "Sv. Ilija"	s. Ramne	Developed medieval period	church	Significant
arch. site "Sv. Martinija"	s. Konjsko	Developed medieval period	remains of church	Significant



Name	Place	Dating	Type	Classification
arch. site "Sv. petka"	s. Ljubanishta	Medieval period	necropolis	Significant
arch. site "Sv. petka"	s. Konjsko	Developed Medieval period	sacral facility	Significant
arch. site "Sv. varvara"	s. Ramne	Medieval period	Church and necropolis	Significant
arch. site "Sv. vrachi"	s. Ramne	Medieval period	Church and necropolis	Significant
arch. site "Tushe Varnica"	s. Ramne	Developed Medieval period	facilities	Significant
arch. site "Turski Grobishta"	s. Ljubanishta	Late classical period	necropolis	Significant
arch. site "Džamishte"	s. Peštani	Medieval period	church	Significant
arch. site "Džamijata"	s. Velgoshti	Medieval period	remains of old church Sv. Petka	rema Significant
arch. site "Zad Kula"	s. Velgoshti	Medieval period	settlement	Significant
arch. site "Zaum"	s. Trpeica	Late classical, Early Christian	settlement	Significant
arch. site "Zaliv na bombite"	Vill. Peštani	Bronze Iron Age	palafitte settlement	Significant
arch. site "Zaliv na prchot"	vill. Trpeica	Bronze Iron Age	palafitte settlement	Significant
Arch. local. Umishta	Volkoderi	Roman period	settlement	Non endangered, important
Arch. local. St. Spas	Evla	Middle ages	church	Non endangered, of great importance
Arch. local. Bljudo	Konjsko	Middle ages	church	Non endangered, important
Arch. local. Staro selo	Konjsko	Middle ages	church	Non endangered, of great importance
Arch. local. depot of medieval coins	Konjsko	Middle ages	/	/
Arch. local. Kamara	Oteshevo	late Antiquity	Vila rustika	Non endangered, important
Arch. local. Pirk	Oteshevo	Mak.hel. period	settlement	Non endangered, of great importance
Arch. local. St. Atanas	Oteshevo	Middle ages	Church	Non endangered, important
Arch. local. Sirhan – Tunelot	Oteshevo	Roman period	gravestone stele	/
Arch. local. Kale	Petrino	Roman period	settlement	Reserved archaeological area, of great importance
Arch. local. Visoi	Pokrvenik	late Antiquity	settlement	Non endangered, important
Arch. local. Kula	Stenje	Middle ages	Citadel	Non endangered, important
Arch. local. Lozjata	Stenje	Neolithic period	Settlement	Non endangered,



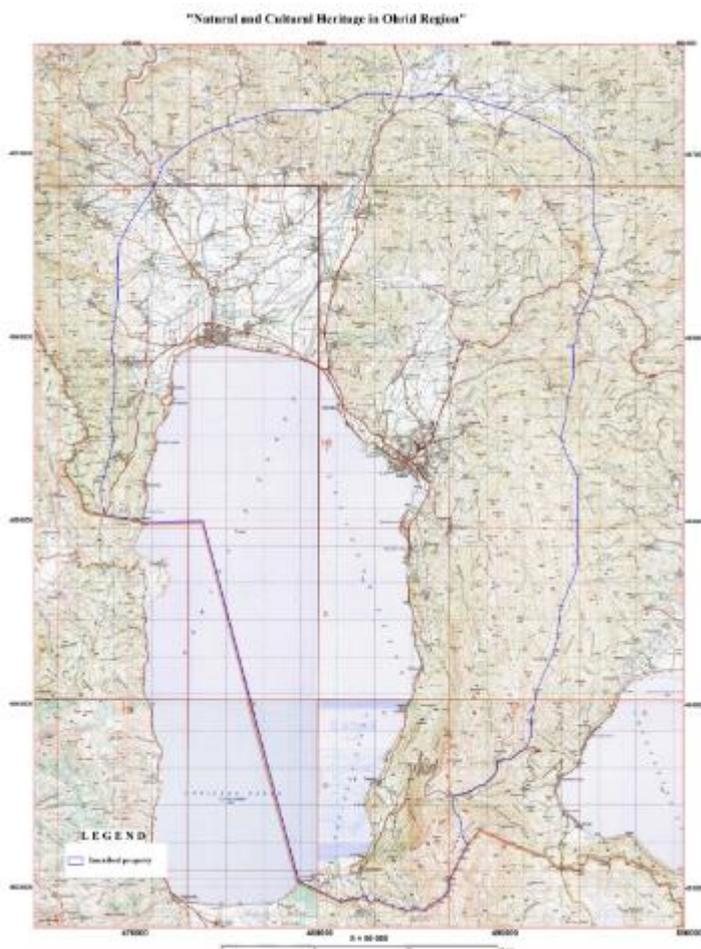
Name	Place	Dating	Type	Classification
				important
Arch. local. Pevchinja (Gradishte – Varnici)	Stenje	Roman period	Settlement and necropolis	Non endangered, important
Arch. local. St. Atanas	Stenje	Early Christian period and Middle ages	Basilica and necropolis	Non endangered, important
Arch. local. Chetkarica	Stenje	late Antiquity	Settlement	Non endangered, important
Arch. local. Trafostanica	Stenje	Middle ages	Necropolis	Non endangered, important
Arch. local. Kale	Shurlenci	Middle ages	Citadel	Reserved archaeological area, of great importance
Arch. local. Golem Grad island	Konjsko	Macedonian Hellenistic, Roman period, medieval period	Settlement	Reserved archaeological area, of exceptional importance.

5.6.3 UNESCO World Heritage Site

Part of the Park (nearly 72%) is situated within a UNESCO World Heritage Site (for Natural and Cultural Heritage of the Ohrid Region).

The figure below shows the borders of the UNESCO area (a total area of 83,350 ha, of which 17.974 ha are within the NPG boundary).

Figure 5.35: Boundaries of the UNESCO World Heritage Site (for Natural and Cultural Heritage of the Ohrid Region)



Outstanding Universal Value (OUV) of the Region

The criteria for outstanding universal value (OUV) have evolved over time. However, the underlying concepts have remained stable. The UNESCO world heritage site designation is based on the following statement of outstanding universal value (OUV):

“The best preserved complete ensemble encompassing archaeological remains from the Bronze Age up to the Middle Age; Religious architecture from the 7th-19th century and urban structure representing the vernacular architecture from the 18th-19th century; Byzantine arts displayed by more than 2500 m³ of frescoes and over 800 famous icons of worldwide fame; The Lake Ohrid is a natural phenomenon, providing a unique refuge for numerous endemic and relict freshwater species of flora/fauna”

Culture within the NGP that influenced the UNESCO designation¹⁶ include the quality and diversity of physical cultural heritage and archaeology found along the coast of Lake Ohrid and surrounding area; the synthesis of ancient nature and archaeological remains of several civilisations¹⁷.

¹⁶ UNESCO Criteria I, III and IV

¹⁷ Cultural Heritage values of the World Heritage site are described in detail in “Macedonian Cultural Heritage: Ohrid World Heritage Site” (2009), MoC, Skopje.



The UNESCO designation recognises the natural and cultural values of the region, where diverse and rich architectural heritage is inseparably intermingled with nature. The region is a cultural landscape that inseparably bonds history, the continuation of cultural traditions and social values.

The harmonisation of architecture and the natural environment in the region is the result of generations living in the area and their traditional activities. Examples of the cultural landscape include:

- The monastery complex of Sveti Arhangel Mihail – Sveti Naum, situated on the southernmost part of Lake Ohrid.
- The monastery complex of Saint Bogorodica of Zahum, located on the Lake Ohrid shoreline, encircled by rocky terrain rising high behind the church, and with endemic green vegetation.
- The Roman castrum raising above the rocky shore, alongside which lies the reconstructed palaphitte settlement in the Bay of the Bones of the Neolithic Age, is also a symbiosis of natural features of the rocky terrain intermingling with the stone walls of the castrum.
- The village settlements of Trpejca and Ljubanishta are distinctive for their original way of fishermen settlements on the shoreline area. Rural settlements situated on the mountain foothill still exist, although those situated on the mountain falls have been abandoned and their residents moved to the cities

The OUV includes the numerous examples of painting, sculpture, applied arts, and non-material cultural heritage:

- Painting: mosaics, fresco paintings, icons, wall decorations, manuscript illumination, graphics, canvas paintings;
- Sculpture and carvings: sculptures, stone plastics, iconostases, bishop thrones, and other church moveable art, wood-carving decorations;
- Applied arts: ceramic objects, glass, wood, metal, textile, leather, paper and other works of traditional art handicrafts;
- Non-material cultural heritage: traditional customs and religious and cultural events.

Particular cultural and artistic value can be found at:

- Early Christian basilica and Mosaic floor - Studencista
- Frescoes at the monastery of St. Naum, the church of Sveta Bogorodica of Zahum, the cave church of Sveti Stefan, the cave church Sveta Bogorodica of Peštani, the church of Assumption of Virgin Mary – Velestovo,
- The old settlement of Golem Grad – Lake Prespa where ceramic and stone weapon artefacts show the presence of Neolithic humans, gold and silver jewellery from the 4th to 1st Century BC, Roman settlements, medieval churches and the settlement has not been renovated since the Middle Ages. There are six churches, including the two of the Early Christian Period, found and studied so far. The ensembles of the church of Sveti Petar are the most preserved.

Current management of the OUV of the Ohrid World Heritage Site

All properties inscribed on the World Heritage List must have adequate protection and management mechanisms in place. How a country chooses to protect and manage its properties can vary, so long as it does so effectively.

Recent urbanisation along the shoreline has started to affect the OUV of the Ohrid World Heritage site. UNESCO statements seem to confer concerns that the current draft management plan is not adequate to



maintain the property's OUV¹⁸. There is no clear guidance or plan for the lakeshore and its OUV attributes.

5.7 Quality of the Environment

5.7.1 Ambient Air Quality

The sources of air pollution in and around the Park are likely to include:

- Industrial facilities outside the Park;
- Traffic;
- Emissions from heating of the buildings in winter, firewood is the main source of fuel.

Moderately high levels of potentially of particulates would therefore be expected from residential areas locally during colder weather, and high levels of combustion gases would be expected along the roadway, especially during times of heavy traffic (summer tourist season), and during calm weather.

There are no permanent ambient air measuring points in the Ohrid - Prespa region. However, in the Municipality of Ohrid, air quality is measured at one measuring point by the Hydro Meteorological Service of Macedonia (HSM). According to data available from this station for the period of 2003-2007, the middle-month concentrations of SO₂ are far below the legal limit value of 125 µg/m³ (average for one month). The highest measured concentrations are 29 µg/m³ measured in April 2006, and 29 µg/m³ in February 2007.

Supplementary measurements of NO₂, NO_x, SO₂, CO and benzene were carried out at a series of locations along the coastline of Lake Ohrid during 2007, in to provide baseline measurements for the road scheme between Peštani and Ohrid. The locations are shown in the figure below (where blue markers show measurement locations along the existing Regional road R1301; and pink dots show measurement locations along the A3 projected road route), and the results are reported in the following table below.

Table 5.14: Air Quality Results

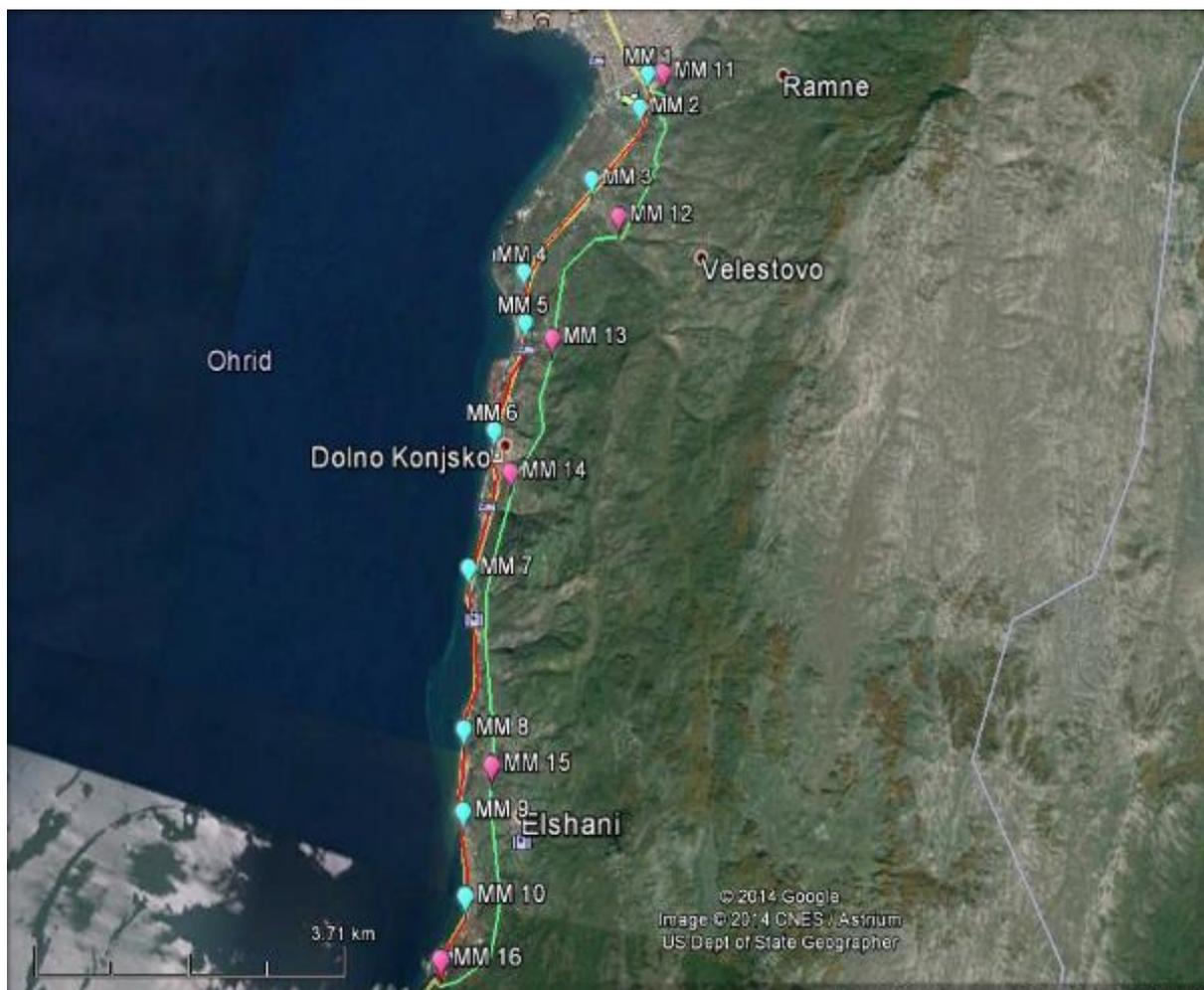
Measuring points	Concentration of PM 10 (µg/m ³)	CO mg/m ³	NO _x mg/m ³	NO ₂ mg/m ³	SO ₂ mg/m ³	Aromatic Hydrocarbons mg/m ³
Existing Road						
Bej Bunar	< 2.0	0.3	0.16	0.06	< 0.01	1.9
Racha 1	< 2.0	0.1	0.16	< 0.01	< 0.01	0.95
Racha 2	< 2.0	2.4	< 0.1	< 0.01	< 0.01	0.31
Inex Gorica	< 2.0	0.3	0.17	0.18	< 0.01	0.31
Sileks	< 2.0	1.1	0.15	0.04	1	0.31
Dolno Konjsko	< 2.0	0.5	< 0.1	0.08	< 0.01	0.31
Lagadin	11.0	1.8	0.2	< 0.01	< 0.01	0.31
Camp Elshani	< 2.0	1.9	0.18	0.06	< 0.01	0.31
Peštani entrance	< 2.0	0.2	0.19	< 0.01	< 0.01	0.31
Peštani	3.0	1.7	0.15	0.1	< 0.01	0.31
Proposed Road (A3 Expressway)						
Ohrid	< 2.0	1.6	0.15	0.05	< 0.01	0.31
Racha	< 2.0	2.2	< 0.1	0.07	< 0.01	0.31
Sileks	< 2.0	2.0	< 0.1	< 0.01	< 0.01	0.31

¹⁸ UNESCO Periodic Report 2014.

Measuring points	Concentration of PM 10 ($\mu\text{g}/\text{m}^3$)	CO mg/m^3	NO _x mg/m^3	NO ₂ mg/m^3	SO ₂ mg/m^3	Aromatic Hydrocarbons mg/m^3
Dolno Konско	< 2.0	0.8	0.16	< 0.01	< 0.01	0.31
Elshani	< 2.0	0.5	0.18	0.11	< 0.01	0.31
Peštani	< 2.0	1.0	< 0.1	< 0.01	< 0.01	0.31
Limit value in Regulation	50 $\mu\text{g}/\text{m}^3$	10 mg/m^3	0.2 mg/m^3	0.2 mg/m^3	0.35 mg/m^3	0.005 mg/m^3

The results show that concentrations of PM₁₀, CO, NO_x and SO₂ are all below the limit values at all 16 measuring points. Concentrations of NO_x are close to the limit on some occasions. However, concentrations of aromatic hydrocarbons significantly exceed the limit values at all measuring points, with the highest value at Bej Bunar of 1.9 mg/m^3 which is 380 times the allowable concentration of 0.005 mg/m^3 . However, given the baseline condition this high result does not make sense, so it is strongly suspected that this measurement is erroneous.

Figure 5.36: Locations of measurement locations on the existing road and route designed





5.7.2 Noise

The maximum values of noise level in the environment for regions exposed to intensive traffic noise are:

- L (day) 60 dBA;
- L (evening) 55 dBA;
- L (Night) 50 dBA.

One of the main problems facing the municipality of Ohrid, especially the old part of Ohrid city is increased noise levels. In 2011, the Municipality of Ohrid prepared a Programme for Noise Management. The purpose of this program is to determine the sources and the receptors of the noise, the hot spots and the periods with increased level of noise, and determine measures for protection and monitoring. Within the framework of this programme, several measurements were taken in several locations in the old part of the city, in the central city area, near frequent thoroughfares and tourist sites. Noise measurements were also taken in the populated areas Peštani and Lagadin near the catering businesses on the Regional road R1301, as shown in the figure below. According to this data, the measured values surpassed the allowed level of noise at all measuring locations. Noise sources include local urban activities, the catering businesses and traffic. The Municipality of Resen has no noise monitoring data.

In addition, noise measurements were taken along the existing road R1301, and at certain points along the projected route A3 Ohrid – Peštani, in August 2014, to determine levels of traffic noise. For the Regional road R1301, measurements were performed at 6 sites during day time, evening and night time. The results are presented in the table below.

Table 5.15: Noise Levels – Existing Road R1301

Number of measuring point	Coordinates	Measured [Leq dBA]			MDK [Leq dBA] ¹⁹		
		Day	evening	night	day	evening	night
1. Bej Bunar	41° 6'21.65"N 20°48'55.15"E	62,9 (±1,41 dB) ²⁰	64,7 (±1,88 dB)	60,5 (±2,23 dB)	70	70	60
2. Racha 2	41° 5'34.27"N 20°48'30.22"E	68,8 (±1,50 dB)	68,2 (±1,88 dB)	66,5 (±3,16 dB)	60	60	55
3. Sileks	41° 4'30.51"N 20°48'10.40"E	68,1 (±1,70 dB)	70,2 (±1,92 dB)	58,1 (±3,57 dB)	50	50	40
4. Dolno Konjsko	41° 3'51.19"N 20°48'4.65"E	69,2 (±2,23 dB)	70,0 (±2,35 dB)	62,9 (±5,00 dB)	50	50	40
5. Camp Eleshec	41° 1'59.70"N 20°48'18.77"E	66,2 (±2,50 dB)	62,8 (±3,57 dB)	58,3 (±7,09 dB)	50	50	40
6. Settlement Peštani	41° 0'59.87"N 20°48'36.79"E	63,9 (±2,23 dB)	65,7 (±3,16 dB)	54,7	50	50	40

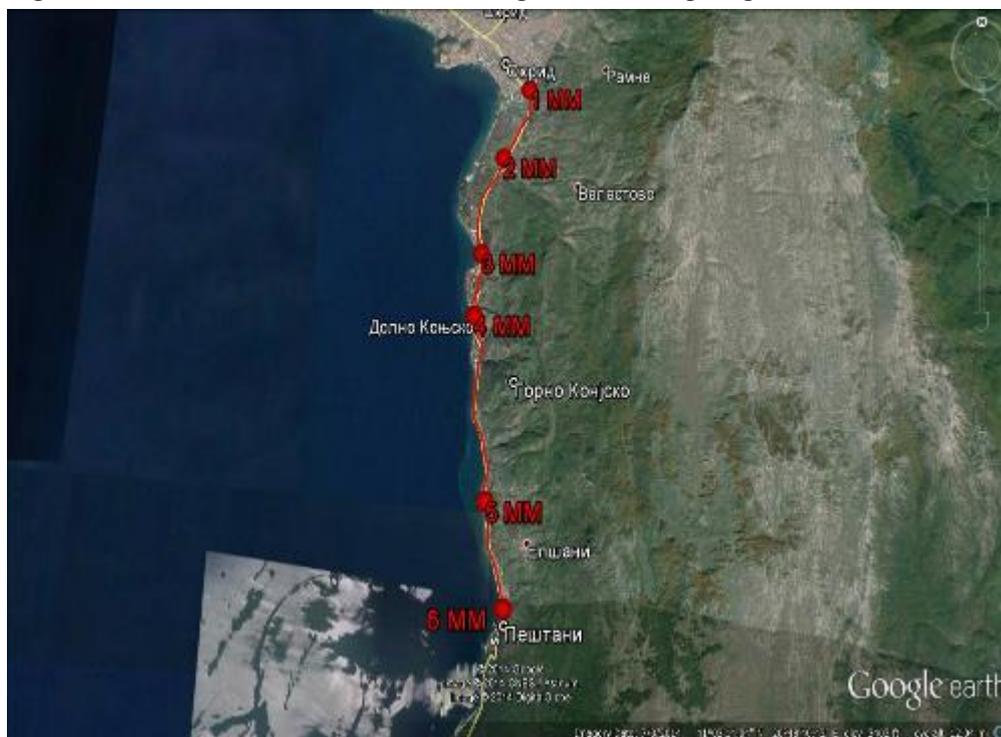
Noise at all measuring points exceeds the maximum allowable values according to the *Regulation on Limit Values of Noise Levels in the Environment (Official Gazette of RM no. 147/08)*, except for the measuring point No.1 Bej Bunar.

¹⁹ Noise Limits for Traffic Exposed Regions

²⁰ Measurement uncertainty calculated based on the number of motor vehicles that passed past the roadside during the measurement. It is calculated

with the formula $X = \frac{10}{\sqrt{n}}$ dB, where "n" is the number of vehicles.

Figure 5.37: Location of Noise Measuring Points along Regional Road R1301



Three additional measuring points were selected along the proposed A3 Ohrid to Peštani road as shown in the figure below. These were chosen as they are close to the settlements of Megdani, Racha and Elshani. Measurements were made during day time and night time. The results of noise measurements are presented in Table 5.16 below.

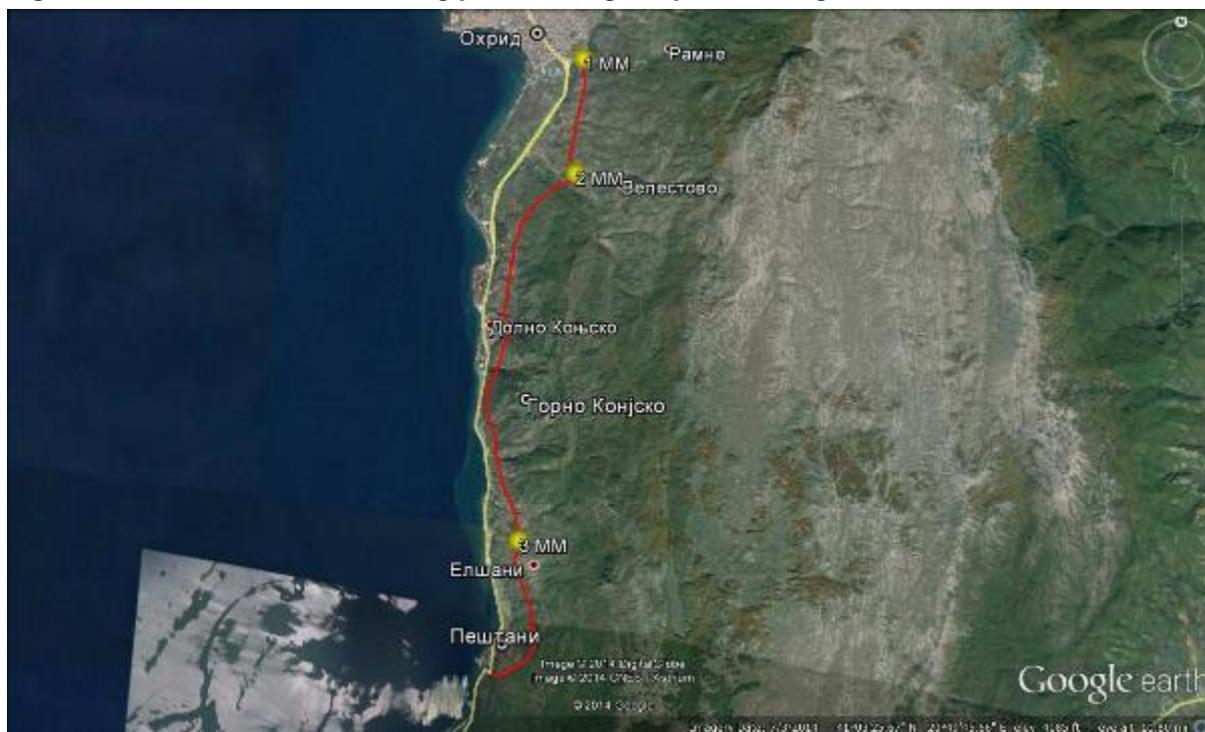
Table 5.16: Results of measurements – designated route A3 Ohrid-Peštani

Number of measuring point	Coordinates	Measured [Leq dBA]		MDK [Leq dBA]		
		day	night	day	evening	night
1. Megdani	41° 6'26.90"N 20°49'7.10"E	42,3	42,4	60	60	55
2. Racha	41° 5'26.45"N 20°49'7.91"E	41,8	39,0	60	60	55
3. Elshani	41° 1'41.76"N 20°48'44.14"E	39,3	33,4	55	55	45

The measurements and the results of the level of noise emitted near the projected route through the National Park Galichica show that at all measuring points the noise level is within the maximum permissible values.

It can be concluded therefore, that road traffic on the existing highway, is a significant source of noise, and is likely to be of nuisance value to local communities.

Figure 5.38: Location of measuring points along the planned alignment A3 Ohrid - Peštani



5.7.3 Water Quality

The quality of the water in the Ohrid Lake and the rivers of the catchment area are monitored by the PNI Hydrobiological Institute – Ohrid and the Institute of Health Protection – Ohrid. There are 31 designated measuring points between St. Naum and Radozda. The areas of confluence with the Rivers Cherava, Velgoshka, Koselska and Sateska are monitored. Water samples for analysis were taken also from the littoral zone of the lake.

Water is classified into four classes according to the Regulation, as shown in the table below. The analysis is conducted by the Centre for Public Health – Ohrid, to determine the health and hygiene-epidemiological safety of the waters in relation to its use for sports and recreation, fishing and irrigation. Quality is highest for Class 1, reducing through to Class 4.

Table 5.17: Limit values for physicochemical parameters and categorisation of surface water

Parameters	Class 1	Class 2	Class 3	Class 4
pH	6,8 – 8,5	6,8 – 8,5	6,0 – 9,0	6,0 – 9,0
Dissolved oxygen mg/l	>8	6 – 8	4 – 6	
BPK 5 mg/l	<2	2,01 – 4	4,01 – 7	7,01 – 15
Saturation	90 – 105	75 – 90	50 – 75	30 – 50
Supersaturation		105 – 115	115 – 125	125 – 130
Chemical oxygen demand KMnO4 – COD mg/l	10	12	20	40

Sanitary indicators were recorded in the summer near the tourist sites Metropol, Grad Hotel, City beach, Daljan and the river Grashnica inflow as shown in the figure below.

Figure 5.39: Map of measurement points Ohrid littoral



The Biological Institute - Ohrid monitors pelagial water quality in the Ohrid and Prespa Lakes in accordance with the Ohrid - Prespa Regional Water Monitoring Program. Besides physical and chemical parameters, the concentration of nutrients in the water, expressed by total phosphorus and nitrogen, are



regularly monitored. The results are displayed in the annual reports on environmental quality of the MOEPP as summarised in the table below.

Table 5.18: Processed data of Quality of the Environment in the Republic of Macedonia, annual reports MOEPP for Ohrid Lake – pelagic zone

Physical-chemic parameters	2002	2003	2004	2005	2009	2010	2011
Dissolved O ₂ mg/l	8,92-9,92	9,27	9,42	9,16	8,78	8,72	8,492
Total phosphorus µg/l TP	0,00716	0,007	0,00502	0,0075	0,007	0,007	5,976
Total azote µg/l TN	-	0,0055	0,59	0,473	-	-	-
pH	-	-	8,28	8,15	-	-	-
Alkalinity mg/l CaCO ₃	-	-	123,56	-	-	-	-
Chlorophyll a g/l	-	-	1,04	0,91	-	-	-
BPK 5 mg/l O ₂	0,7	0,505	-	-	-	0,70	-
HPK mg/l KMnO ₄	0,6	2,32	-	-	-	2,86	-
Clearness m	10-15	12-15	-	-	-	-	-

In summary, these suggest Class 1 (in terms of oxygen levels) and Class 2, according to total phosphorus levels.

During the entire period of study, the Ohrid Lake has preserved its oligotrophic character (i.e. it lacks nutrients and has high levels of dissolved oxygen, generally indicating a lack of biological life) However, the concentration of nutrients in the waters of Lake Prespa is higher, indicating that it has more biological activity, and may have a higher risk of eutrophication.

In terms of the overall picture, although Ohrid Lake is oligotrophic, it is mildly polluted in certain spots, and in Grashnica, Daljan, Pristanishte, evidence of eutrophication is already present. According to the categorisation of the watercourses, the lakes, the accumulations and the ground waters, the rivers of the catchment area of the Ohrid Lake are classified in the II category.

According to the trophic classification, the water of the Sateska River is mainly in Class 2 & 3, the waters of the Koselska River are in Class 2, those of the Velgoshka River are mainly in Class 3 & 3-4 in the summer period and the water of the Chernava River is in Class 3. The littoral zone of the Ohrid Lake has a permanent quality of Class 1, apart from in front of the mouth of the Velgoshka River, in spring and summer, in Class 2. The types of pollutants indicate antropogenous influence. The Chernava River has a great amount of faecal pollution in Ohrid Lake.

The two mutually connected lakes, The Micro Prespa Lake and the Macro Prespa Lake together compose an internal mountain drainage-basin, which does not have a natural surface outflow. Drainage only happens through the underground channels through which the water of the Macro Prespa Lake (nearly 845 m altitude) drains on the west, to the Ohrid Lake which is lower at about 150 m. At its north coast, the Ohrid Lake has a natural outflow in the river Crn Drim in Struga.

The dominant water courses in the Macedonian part of the region are the Istochka River, The Great River, Brajchinska River, Kranska River and Kurbinska River. According to the typology proposed by WFD, 16 water courses are identified as bodies of water; 13 as rivers, one as a strongly changed water body and two as artificial bodies of water. The Prespa Lake is marked as one trans-boundary body of water. In the region of Prespa are identified 6 underground bodies of water.

In 2012 three sanitary-hygienic inspections were conducted of the beaches and the buildings in the tourist areas and the populated areas along the coast of the Prespa Lake. The inspections were performed by a specialist doctor of hygiene and health ecology, employed in the PHI Centre for Public Health Bitola, Department of Preventive Health Protection, from the Sector of Hygiene and Health Ecology from Resen. The following conditions have been described:



The village of Stenje is on the western coast of the Prespa Lake near the border with the Republic of Albania. The village has 438 inhabitants, but this number is exceeded in the summer period. The drinking water comes from the local water-supply unit. The wastewaters are collected in individual absorption pits, and the solid waste is collected by the PCE once a week. There is a long sandy beach which is partially ordered. There are not any showers, sanitary sewers and taps with flowing potable water. Near the tourist populated area Oteshevo there is not any potable water. Due to the intense anthropogenic influence expressed first and foremost through agriculture, the quality of water in the Prespa Lake is on the limit between Class 2 & 3 (the second and the third category) of pollution.

5.7.4 Wastewater Treatment

The city of Ohrid has a sewerage network, out of which only 20% is separated into 'storm' and 'foul'. Wastewater collected in the network is treated at the treatment station near the village of Lozhani. However, twenty percent of the city is covered by an open sewage system, and the effluent drains into Ohrid Lake.

Of the populated areas in the Municipality of Ohrid, the following have a combined sewer system: Dolno Konjsko (60% coverage), Lagadin (90% coverage) and the populated area of Istok (80% coverage). These populated areas are joined to the collection network in order to protect Ohrid Lake. The areas not connected to the networks use separate seepage pits, generally non-professionally constructed, and usually with one, common collective absorption chamber. These carry a risk of polluting of the groundwaters²¹.

The city of Resen has a separated sewage system. There is a sewage collection network in almost the whole territory (2,900 houses, or 95 % of the area). Wastewater is taken to the wastewater treatment plant with a capacity of 12,000 m³, constructed near the village Ezerani (7 km south of Resen). The sewage is modern, with a high degree of technical correctness. Twenty-five percent of the city is covered by an open sewage network and the wastewater drains into the Great River. The open sewage network sometimes causes flooding in the streets and parts of the city even during light rainfall. Sewage networks exist in the villages of Ezerani (95% coverage), Jankovec (40% coverage) and Carev Dvor (95% coverage), and the effluent drains to the wastewater station in the village Ezerani. The villages: Aravati, Asamati, Bolno, Brajchino, Dolno Dupeni, Grnchari, Drmeni, Konjsko, Nakolec, Stenje and Podmochani, do not have sewage networks, i.e. they use seepage pits²².

5.7.5 Waste Management

Domestic solid waste generated in the urban areas is collected at specific collection points in containers. Industrial waste, construction waste and secondary raw materials are collected in separate areas and are transferred to certain specially designated locations. In the territory of the municipality Ohrid, municipal waste is deposited in the "Bukovo" landfill, and construction materials in the "Maucher" landfill. However, out of a total population in the territory of the municipality, only 31% is covered by collection services. A collection service is maintained in the areas of the city of Ohrid, the weekend populated places and the villages Peštani, Trpejca, Ljubanishta, Orman, Dolno Lakocherej and Racha. There is minimal separation of the waste at source (plastic bottles and paper only). Waste from Kosel, Vapila, Openica, Zavoj and Rasino is taken to the regional landfill at Bukovo.

Waste from the city of Resen and the neighbouring villages is dumped near the village of Zlatari, in a dumpsite which is not properly equipped. Waste is collected in the village areas: Asamati, Gorna Bela Crkva, Grnchari, Dolna Bela Crkva, Dolno Dupeni, Drmeni, Jankoec, Kozjak, Krani, Kurbinovo, Lavci, Ljubojno, Nakolec, Oteshevo, Pokrvenik, Stenje, Carev Dvor, Shtrbovo and Shurlenci. The collection coverage in the municipality Resen is around 80% (in terms of waste quantities, not population)²³.

In order to sustain the establishment of an efficient system for organic waste management in the region of Prespa, a pilot-project has been prepared "Organic (bio-degradable) waste management in the Prespa

²¹ ibid 74

²² ibid 74

²³ ibid 76



region". The project is expected to establish an efficient system of organic waste management originally due at the beginning of 2013. This will be achieved through the construction of a central plant for composting and a certain number of transit stations for collection of the waste composed of rotten apples.

5.8 Threats and Likely Changes to the Baseline Situation

PINPG note the following key threats to the current resources of the Park:

5.8.1 Urbanisation & Infrastructure Development

An intensive urbanisation process is taking place across the fertile soils along the Park's shoreline belt. An intensive process of internal migration started in the late 1960s, from the Park's mountain villages to the cities or to the Park's lower parts, along the shoreline of Lake Ohrid. As a result, completely new settlements were erected, such as Racha, Sv. Stefan, Istok, Dolno Konjsko and Eleshec. Part of the emerging settlements, e.g. Eleshec and Lagadin, are, for the most part, only periodically inhabited. At the same time, the old settlements, such as Leskoec, Oteshevo, Shipokno and Konjsko, were almost completely deserted.

During the last two decades, urbanisation has been gaining ground increasingly, both in the shoreline section and the mountainous part. The old, desolate villages gradually become weekend resorts. Most of the new inhabitants permanently reside outside the Park boundaries and stay in the area mostly during the summer season or over weekends. Modernisation of the Park's mountainous settlements is accompanied by a growing infrastructure, higher water consumption and increased pollution, both by household wastewaters and solid waste (utility waste and construction debris). Owing to the high level of interest in construction lots in these settlements, the price of former agricultural land is constantly increasing, which adds to a decline in interest in agriculture or other traditional economic activities among the local population.

This process of rapid urbanisation is continuously followed by numerous attempts of illegal construction, state land usurpation and inconvenient infrastructure installation. Particularly disturbing are the constant attempts of construction of facilities along Lake Ohrid shoreline, especially in and around the Zone of Strict Protection, on the stretch from Peštani to Gradishte, from Gradishte to Trpejca and the locality of Nadol, south of the village of Trpejca.

The growing urbanisation within the Park, though concentrated within a relatively small area, may produce disproportionate and serious consequences to its biological diversity. The adverse effects of urbanisation include habitat destruction and fragmentation caused by the expansion of the existing and construction of new infrastructure (roads, electricity, water supply and telecommunication installations and alike), increased interference with natural resources (particularly water), pollution (solid waste, construction debris, waste waters, air pollution, noise, etc.).

Accordingly, current trends lead to the conclusion that growing urbanisation will be one of the most serious future threats for the integrity of the biological diversity, particularly in certain parts of the Park, including those that are exceptionally important for the conservation of some of the Park's key values. Thus for example, the shoreline cliffs along Lake Ohrid shoreline provide habitat for the keeled lizard (*Algyroides nigropunctatus*) numbering among the Park's key values (Balkan endemic). This species has a disjunctive range, and the small population in the park is found at the eastern boundary line of its distribution. Hence, even minor pressures upon the habitat may seriously affect this sensitive population. The construction of facilities and infrastructure alongside the cliffs on the stretch from Peštani to Gradishte and in the vicinity of the village of Trpejca hinders the communication of meta populations in the Park and thereby potentially jeopardises this species' survival in the area.

5.8.2 Abandonment of Agricultural Land

Changes in the patterns of human use of land are most dramatically reflected in agricultural land. In the past, until 1980's, vast surfaces in the karst fields, karstified vales and hollows had been tilled and planted with cultures, primarily cereal crops and, to a lesser extent, with vegetable crops. Also, the land near the



villages which provided at least minimum conditions for growing crops had been tilled regularly. Traditional methods of extensive agriculture that included rotation of the crops has been applied, leaving the soil periodically under fallow and use of manure. Late in the last century, as a result of the social and economic changes, the agricultural activities declined drastically. This led to the abandonment of the agricultural land, especially the marginal agricultural land which is predominant in the Park.

With the decline in grazing, many large areas under pasture have begun to return to forests. For example, in the alpine pastures zone, the Sub-Mediterranean habitats of Common Juniper gradually press out the habitats of Pelagonide closed calcicolous sesleria grasslands and Pelagonide closed calcicolous pastures with fescue. Similarly, the habitats of Helleno-Balkanic steppes with *Satureja Montana* gradually become black hornbeam forests (EUNIS 2004: G1. 7C11) or Helleno-Pelagonide oriental hornbeam woods (EUNIS 2004: G1.7C221).

5.8.3 Changes to the Aquatic Habitats

The Park's aquatic habitats are exceptionally sensitive to the impact of human activities. Human intervention on stagnant and running waters in the past has had varying and adverse effects on the Park's biological diversity. Past interventions in the waters of the Letnicki Izvori springs for the needs of the hydro-power plant in the village of Ramne and the water supply system of Ohrid have potentially contributed to the disappearance of stone crayfish (*Austropotamobius torrentius*) and stream trout (*Salmo lumii*), both of which are listed as globally endangered species. In the last few decades, most of the abundant springs were capped for the needs of the villages within the Park. Some of the remaining springs were equipped with fountains or troughs, but this presents less negative consequences for the biological diversity.

The natural and manmade ponds in the Park are important habitats for many groups of animals in the Park, especially some species of invertebrates, amphibians, birds and large mammals. Nevertheless, due to the reduced scope livestock breeding activities, there is no interest in maintaining these ponds which renders many of them dry or with reduced capacity. This has direct effects on part of the Park's animal kingdom.

5.8.4 Threats to the Grasslands & Pastures

Threats to grasslands include the spread of communities from secondary origin spread by human use of the land. Man has created conditions in the past for grass communities to be established at forest sites, very likely by means of uprooting, scorching or long-lasting and excessive exploitation of forests. The long use of forests in the plains belt, as firewood or otherwise, has gradually turned such habitats into mountain pastures, while the gradual exploitation of upper belt forests caused their purposeful turning into mountain pastures for livestock breeding needs. Man has actively contributed to their further maintaining, by preventing forest succession through livestock grazing, but also through controlled burning.

Many of the pastures under threat are among the natural habitat types that are of EU interest, and are considered as key values of the Park. In addition to their inner importance (importance *per se*), these habitats are also important for the conservation of species included in the other attachments to the Directive on Habitats or other key values. For example, as new human activities emerge in these habitats, an increase of areas of Sub-Mediterranean Habitats with Common Juniper in the mountain zone, and a significant increase of Common Juniper population has been observed during the last few decades (*Juniperus communis*). Also, improved access to the Park is thought to potentially have lead to a considerable increase of the interest in gathering the Ohrid Tea (*Sideritis raeseri*) – either for commercial or for private household purposes. Despite the lack of quantitative data, it is estimated that the pressure upon this key species is considerable, and it is exposed to a threat of its population being diminished.

The aforementioned examples lead to the conclusion that the consequences suffered by the biological diversity and caused by the forest succession at the expense of pastures are truly complex and multiple and may have contradictory relations with the protection objectives.



5.8.5 Changes to Ecosystems

The decline in human use of forest resources such as firewood collection, collection of fruits and berries, provision of fodder, gathering of raw materials for tools and equipment, is altering the stability of ecological processes in some areas. Without this human impact, the process of succession develops towards a gradual merger of fragments and individual shrubs, known as crown overlap. The increased occurrence of overlaps in forests results in a decreased amount of sunlight reaching the ground cover, where now only a small number of shade-loving plants are encountered. These changes are accompanied by a drastic decline in the abundance of bird species and absence of invertebrates which prefer open, warm habitats. This stage of succession may remain in effect over a longer time period, particularly in case of absence of seed stock from shade-loving woody plants.

The effects of forest management and protection upon the biological diversity in the Park are still not quite known. The extensive resurrection measures undertaken by the Park have resulted in large and continuous forest complexes being created in some parts of the Park. While there are favourable ecological conditions prevailing in them that allow for the development of species inhabiting the inside of the forests, the use of clear-cutting leads to the formation of large same-age forest complexes without a floor structure, or rather a reduced number of environmental niches or micro-habitats, which ultimately results in a reduced biological diversity (locally).

The effects of the changes in the Park's forest management methods and objectives are multiple and still not quite well known. The application of standard modern forestry measures in the past have mainly exerted positive influence on the Park's biological diversity, but they also present insufficiently known risks. Furthermore, one should take into consideration that the final effects will depend on processes developing at landscape level i.e. across the entire territory of the area and broader in the region, and certainly, on processes developing within long time frames.



6. Analysis of Alternatives

6.1 Introduction

The Macedonian and EU SEA legal framework require that the SEA shall “*outline the reasons for selecting the alternative*”. In the case of this SEA for the amendments to the Management Plan (AMP) the following alternatives are discussed:

- *The ‘No-Change’ Scenario*: this assumes the 5 planned development projects, which the National Park Galichica (NPG) Management Plan is being amended to accommodate, are not implemented and the NPG Management Plan is not required to be amended.
- *Alternative Management Approaches*: alternative management responses to accommodating the proposed projects in the NPG Management Plan are summarised and the key reasons for selecting the proposed AMP are outlined. This section also summarises the further alternative options for consideration by the Project Sponsors of the planned development projects which the SEA has identified that would seek to avoid and/or minimise certain potential significant residual effects.
- *Galichica Ski Centre Alternatives*: from the Feasibility Study & Master Plan documentation provided by MEPSO an outline is provided of the alternatives considered and selected as part of the current ski centre proposal.
- *A3 Expressway Alternatives*: an outline is provided of the route and technical alternatives considered to-date in the development of the Ohrid to Peštani section. A high-level outline of route options considered to date for the Peštani to the Albanian Border section is also provided. This is based on information made available by PESR.

No further information on the reasons for selecting the Tourism Development Zone (TDZ) alternatives or alternatives considered in the development of the TDZ’s has been available for the SEA. The TDZ development is partially tied it is understood to the Ski Centre, therefore the project level ESIA/assessments for the Ski Centre will consider (it is assumed) the TDZ’s as ‘Associated Facilities’,

Whilst the SEA presents an outline of the alternatives considered in the development of the Galichica Ski Centre and the A3 Expressway (available at this time) it does not present a detailed multi-criteria alternatives analysis. This would normally form part of the project level ESIA. The key issues at a strategic level which differentiate alternatives at a project level are highlighted within the SEA, if appropriate.

6.2 No-Change Scenario

The ‘no-change’ scenario relates to the alternative of not implementing the 5 planned development projects within the NPG and therefore not undertaking the proposed amendments to the Management Plan. With this alternative there would be no development of the Galichica Ski Centre, the A3 Expressway or the TDZs within the Park. There would therefore be no need to amend the zoning or management of the Park. It is assumed the current baseline situation is the ‘natural’ Park areas would continue as is and the incremental risk of urbanisation along the lake shore would continue but albeit in line with the current situation. The consequences of a ‘no-change’ scenario are outlined below, which assumes the Government directive (*Annexes 1 & 2*) requiring PINPG to amend the Management Plan is withdrawn:

- *Loss of touristic development and related economic development (for the Region and local communities)*: Each of the projects to differing degrees will produce beneficial effects on the local and regional economy, both by the provision of employment and demand for goods and services. The project may also reduce the current ongoing issue of out migration from the local communities along the lake shores and within the Park. The ‘no-change’ scenario will mean these benefits are not delivered apart from those felt from the incremental increases over time of tourism associated with



the piecemeal development of the lake shore. However, development of the tourism (and other economic development) will be limited to a degree by the existing road's capacity.

- Loss of employment opportunities from increased access and tourism: The development of the projects will provide short-term construction employment and in the longer term employment from tourism and associated visitor demand and supply needs. The ability of local communities to more easily access employment opportunities in urban centres (such as Ohrid) may increase employment locally and reduce out-migration from these communities potentially. The 'no change' scenario may mean the current under employment in the locality and the out-migration of young people would continue.
- Avoidance of disturbance to 'natural' areas within the Park and to biodiversity: The introduction of the projects within the Park is likely to result in negative effects on habitats and species. Some of the potentially affected habitats are of conservation interest nationally and protection afforded at a European level (e.g. Annex 1 Habitats under the *Habitats Directive*). Specifically, the ski centre is to be implemented in a location which is a natural area, relatively untouched with very limited visitors. By not implementing the projects, ecological processes will be able to progress freely¹ in these natural areas withstanding climate change effects on certain habitats (such as alpine and subalpine habitats). Some elements of the TDZs affect unique biodiversity features (e.g. Stenje Marsh and St.Naum) which are irreplaceable and impacts to these resources at a strategic level are considered to not be offsetable.
- Avoidance of effects on animals (including fragmentation): The introduction of the Ski Centre and A3 Expressway (particularly the Pestani to Albanian border section) may result in an increase of disturbance to animals and represent barriers in the landscape which could affect wider ranging animal movements. The 'no change' scenario would generally mean less disturbance and the current movements of wider ranging mammals being unaffected. However, the increase of urbanisation along the lake shore has resulted in unmitigated impacts which could potentially be affecting animal movements to the lakeshore.
- Avoidance of lowering of protection zoning for existing areas within the Park: The 'no change' scenario would mean the zoning of protection from ZAM to ZSU in areas affected by the proposed projects would not be required.
- Avoidance of introduction of additional infrastructure into the National Park and area of Outstanding Universal Value of the World Heritage Site: Urbanisation along the northern section of shoreline of Lake Ohrid has already effected the natural and cultural landscape in the area. This is evident compared to the lake shore south of Peštani. The 'no change' scenario would minimise the introduction of additional infrastructure into the Park, it is considered the southern section of Lake Ohrid (i.e. south of Peštani) is specifically sensitive to the introduction of additional infrastructure.
- Avoidance of effects on Protected Status of the Park: The protected status of the Park under a number of designations is potentially affected by the current threat from urbanisation. Therefore a 'no change' scenario where the 5 planned projects are not implemented may represent reduced effects on the protected status. Mitigation and compensation measures along with a rezoning plan presented in the AMP will reduce residual adverse effects though.
- Avoidance of disturbance to local communities & effects on Environmental Quality: The Projects will result in some localised effects on the local communities and Environmental Quality, some positive (e.g. reduced congestion on lake shore road) and some negative (e.g. introduction of additional noise sources). The current 'no change' scenario will therefore have both positive and negative effects.
- Avoidance of Additional Pressure on PINPG Resources: PINPG has currently very limited resources and largely is financed by its forestry activities which in turn represent a threat to the biodiversity of the Park. The introduction of the projects and the implementation of the AMP may put additional pressure on the PINPG. The projects also present though a potential opportunity to increase PINPGs capacity, especially if they are developed (as recommended in the SEA) to include adding PINPG

¹ In line with the vision of the National Park Galichica Management Plan (2011-2020) – which remains unchanged in the proposed Amendments to the Management Plan which is the subject of this SEA.



staff/resources at the project level, to be financed by the projects. Additional revenue opportunities for PINPG could reduce the dependency on forestry activities within the Park.

In summary, the 'no-change' scenario would result in loss of economic and tourism development opportunities to the region and local communities, however this scenario would avoid detrimental effects on the environmental quality, biodiversity and 'natural beauty' of the Park as a protected area, including the OUV associated with the World Heritage Site designation. Even with the 'no-change' scenario, the risks of incremental urbanisation of the lake shore along the Ohrid to Peštani section remain, as does the need for PINPG to finance the management of the Park's resources by forestry activities. So even with the 'no-change' and the 'with projects' scenarios, urbanisation and forestry pressures remain potentially the greatest threat to the Park.

6.3 Alternative Management Approaches

Alternative management responses to accommodating the proposed projects have been considered during the development of amendments to the NPG Management Plan. The key area where there are some options is the re-zoning of the Park to accommodate the proposals. These are outlined below:

- i) Retaining the Zoning 'as is': this would mean the projects could largely not go ahead as under the current zoning they are not allowed to, accept possibly with significant amendments to the routing of the A3 expressway and relocation of the TDZ's. It is unclear if such amendments would be technically feasible for either the A3 Expressway or TDZs. The Ski Centre would probably not be feasible without being in the highlands of the Park which are generally ZAM or in the Zone of Strict Protection. Therefore it is considered this option is not potentially technically feasible as it would not respond to the Government directive PINPG received regarding amendment of the Management Plan to accommodate the projects.
- ii) Reducing the Zoning by 604 ha of ZAM with No Commitment to Achieving No Net Loss (i.e. no offsetting framework): In the *original draft amendments to the Management Plan* (prepared in 2013-14), and the subject of the previous SEA disclosed in Nov'14, the zoning proposed was to simply reduce the protection level of the ZAM to ZSU for the areas which the planned projects intruded into. This proposal did not include a commitment to achieve No Net Loss or an offsetting framework for key habitats. With this option there is an overall lowering of the protected area falling under ZAM and ZSP zoning by 604 Ha and no framework to compensate for biodiversity losses (either at the SEA or project level).
- iii) Rezoning by reducing 604 ha of ZAM to ZSU and then 'up-zoning' 854 ha from ZSU to ZAM to compensate for the loss and ensure an equivalent (if not greater) level of protection and commitment to>NNL: This option identifies a larger area of habitat (854 Ha) to have the level of protection increased from ZSU to ZAM in order to ensure the reduction from ZSU to ZAM of the areas affected by the projects (604 Ha) is compensated for. Offsetting principles and a framework for loss of biodiversity for the planned projects to work within is provided within this option in order to support a commitment to achieving No Net Loss. However, even with this option losses to certain habitats, including Annex 1 (under the *Habitats Directive*) habitat types (i.e. forestry), still cannot be offset within the Park.

In accordance with good international practices, option 'iii' has been selected to reduce the risk of adverse effects on the integrity of the Park by upgrading zoning in a larger area and making the commitment to deliver as far as possible No Net Loss of biodiversity as it relates to project development.

A core part of the approach to the SEA, including the analysis of alternatives, has identified further avoidance options which it recommends the 'project level' ESIA's, Appropriate Assessments and planning of the projects consider in order to reduce potential effects on the integrity of the National Park. These are identified and further detailed in subsequent chapters of the SEA (i.e. Chapters 7-9) and are summarised below:

Further Avoidance Options for Projects to Consider Recommended by this SEA:

- Galichica Ski Centre: Consideration of alternatives to layout to avoid impacts on protected species (e.g. *Crocus cvijicii* and the Apollo Butterfly) and alternatives to demonstrate the loss of habitats



associated with the Nordic Ski Area is justified. A3 Expressway: Ohrid to Peštani Section: Further consideration and/or refinement of alternative technical solutions to reduce disturbance & visual effects to Crno Brdo ZAM (and OUV) and also ensure options for migration of mammals to the lake shore are integrated appropriately into the final project design and ESIA.

- A3 Expressway: Peštani to Albanian State Border Section: Alternative route & junction location (or technical solution e.g. tunnelling) to avoid/minimise habitat loss to Macedonian Oak (Annex 1 Habitat 9250 under the *Habitats Directive*). Alternative solutions to ensure migratory route to lake shore associated with Evil Canyon and the ecological function of this corridor is maintained.
- Tourism Development Zone: 'Ljubanishta 3': The SEA recommends that Ljubanishta 3 is removed from the Ljubanishta TDZ², and that the TDZ should contain Ljubanishta 1 & 2 only. The ZSP and Buffer Zone have not been amended within the Management Plan and would require a further amendment to the Plan. A major residual impact would exist with the development if component 3 of the TDZ went ahead. This effect of component 3 is most likely not offsetable as this is a unique habitat and resource.
- Tourism Development Zone: 'Stenje': Alternatives to locating the TDZ within the Buffer Zone to the ZSP (i.e. move it to another shore location on Lake Prespa) **and** the 'no development' alternative for Stenje TDZ scheme are recommended to be considered. In its current location it is considered that the potential adverse effects arising from this TDZ are not-offsetable.
- Tourism Development Zone 'Oteshevo': Options should be considered to reduce the impact on the ZAM and Hungarian Oak. This area of ZAM has been rezoned as ZSU in the rezoning proposed in the AMP.

6.4 Galichica Ski Centre Alternatives

Information in this section has been based on the Feasibility Study & Master Plan for the development and construction of the proposed Ski Centre in Galichica³.

A decision was made at a Government level to develop a Ski Centre in the Galichica mountain range in Macedonia. During the development of the ski centre various alternatives have been considered regarding selection of the location for the ski area and related facilities. Various alternatives were reviewed in the decision process to arrive at the Galichica Ski Centre Master Plan outlined in Chapter 4.

The ski centre Master Plan has been developed over a period of years and stages through a number of studies. The key stages of the process have included an 'Inventory and Development Analysis' which led to a 'Preliminary Development Concept'. It was on this concept the *original AMP* was initially prepared. An 'update' to the concept was then carried out and resulted in the final ski centre proposal as presented in Chapter 4. The development of the ski centre Master plan and the key alternatives considered are summarised below along with an outline of the selected alternatives per stage.

The SEA presents an 'outline' of the process and further details are available within the Feasibility Study & Master Plan, including regarding the objectives of the ski centre which influenced the selection and planning process.

Basic criteria and requirements have been considered for a ski area development in the selection process for locating the ski centre within the Galichica National Park, this has included a set of goals for the development, such as creating a four-season recreational tourist area.

6.4.1 Inventory & Development Analysis

During this stage the main elements (in summary) of 'alternative' considerations during the technical development process of the ski centre comprised:

² See Chapter 4 – this is a reflection of the project update provided by the Spatial Planning Agency during the preparation of this SEA. If component 3 went ahead given the probable timescales involved any further change to the Management Plan could probably occur during the future work to update the Management Plan by 2020.

³ Feasibility Study & Master Plan for the Development and Construction of a Ski Centre in Galichica: Horwath and Horwath Consulting/Ecosign Mountain Resort Planners Ltd./Ecosign Europa Mountain Recreation Planners GmbH (May 2014)



- Selection of 'Main Ski Area' Zone i.e. West/South/North/East Zones of Galichica Mountain;
- Alternative 'Ski Pods' in Each Zone;
- Alternative 'Base Areas' in Each Zone;
- The analysis of ski pods and base areas also included consideration of the '*risks of environmental degradation and the level of threat to the natural values in the Galichica National Park*'.

'Main Ski Area' Zone & Ski Pods & Base Areas

Topographic characteristics heavily influence the quality and feasibility of a ski area site. The first step of the 'alternatives' process was therefore to identify which area/zone of the Galichica mountain would be appropriate to locate a ski area within. Key differentiators and considerations in identifying and assessing the alternative areas (and the 'ski pods' and 'base areas') included:

- *Aspect* – i.e. the horizontal direction of slopes and gradient affect the solar radiation during the winter and spring ski season.
- *Elevation* – i.e. affects the ski lifts to service the slopes and ultimately the vertical rise for skiers which is a determining factor is desirability of a ski area. Elevation also affects the snow and length of the ski season – for example terrain below a certain level may not be suitable for commercial skiing.
- *Slope Gradient* – i.e. slope gradients are a critical factor in ski area development. Different types of skiing/snowboarding can be carried out for different slope gradients (e.g. slope gradients of 8% to 25% were identified as 'Green' slopes for beginner and novice skiing).
- *Base Slopes* – base area slopes are analysed in order to identify appropriate sites for base area development. Different types of 'base area' facilities (e.g. hotels, parking etc.) can generally only be developed on appropriate slope gradients with slopes over 40% being seen as uneconomic for such facilities etc.
- *National Park Zoning & Protection Status* – The zoning within the National Park Galichica was considered in the development of the ski centre and consideration of alternatives. The protection status afforded to the area, such as from being a World Heritage Site, was also considered within the development of the ski centre.
- *Climate & solar data* – i.e. Climate is an important factor in the planning of any ski centre.
- *Existing base area and ski facilities within the Galichica Mountain.*

Four main areas (or 'zones') were identified within the Galichica study area of the 'North Zone', 'East Zone', 'South Zone' and 'West Zone' and a total of 57 ski pods were identified and analysed originally. In each zone ski pods were identified and compared (see Figures below).

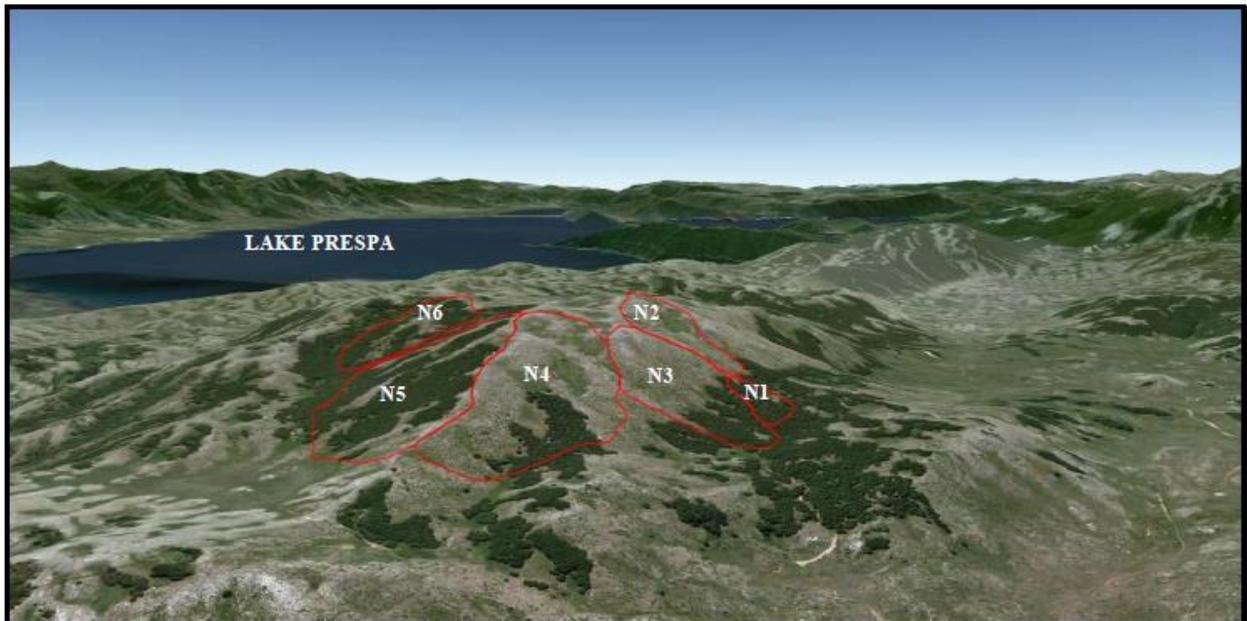
Ski pods were identified and assessed using the mountain planning parameters and design objectives described in the 'Development Analysis' of the Feasibility Study. These included: ski pistes; skier/snowboard densities; skier skill class distribution; skier carrying capacity; terrain etc. The developable ski terrain within each pod (i.e. amount of ski piste) was a consideration along with the gradient and lift capacity etc.

Consideration was also given to the National Park Galichica management zones the ski pods fell within and their interaction with the World Heritage Site, as summarised below (this uses the original NPG Management Plan Zoning (2011-2020):

North Zone:

- 6 predominantly north facing ski pods entirely within the Zone of Active Management and the World Heritage Site (WHS). Great ski terrain for mainly intermediate and low intermediate skiers;
- Ski terrain has potential development capacity of approximately 1,200 skiers.

Figure 6.1: North Zone ‘Ski Pods’



Overview of the identified ski pods at the North Zone

East Zone:

- 4 ski pods identified on the west-facing slopes of Mt. Tamaros on skiing terrain for intermediate and high intermediate skiers entirely within the Zone of Active Management and the World Heritage Site.
- Ski terrain has potential development capacity of approximately 1,170 skiers.

Figure 6.2: East Zone ‘Ski Pods’



View towards Mt. Tomoros with the 4 identified ski pods of the East Zone

South Zone:

- 22 ski pods identified with potential for alpine skiing entirely within the Zone of Strict Protection (ZSP) except for 2 ski pods which both fall within the ZSP and Buffer Zone. This is therefore a difficult zone environmentally as falls within the ZSP.
- 17 ski pods entirely within the World Heritage Site, 4 ski pods outside the WHS and 1 predominantly outside the WHS.
- Ski terrain has potential development capacity of approximately 3,650 skiers.

Figure 6.3: South Zone 'Ski Pods'

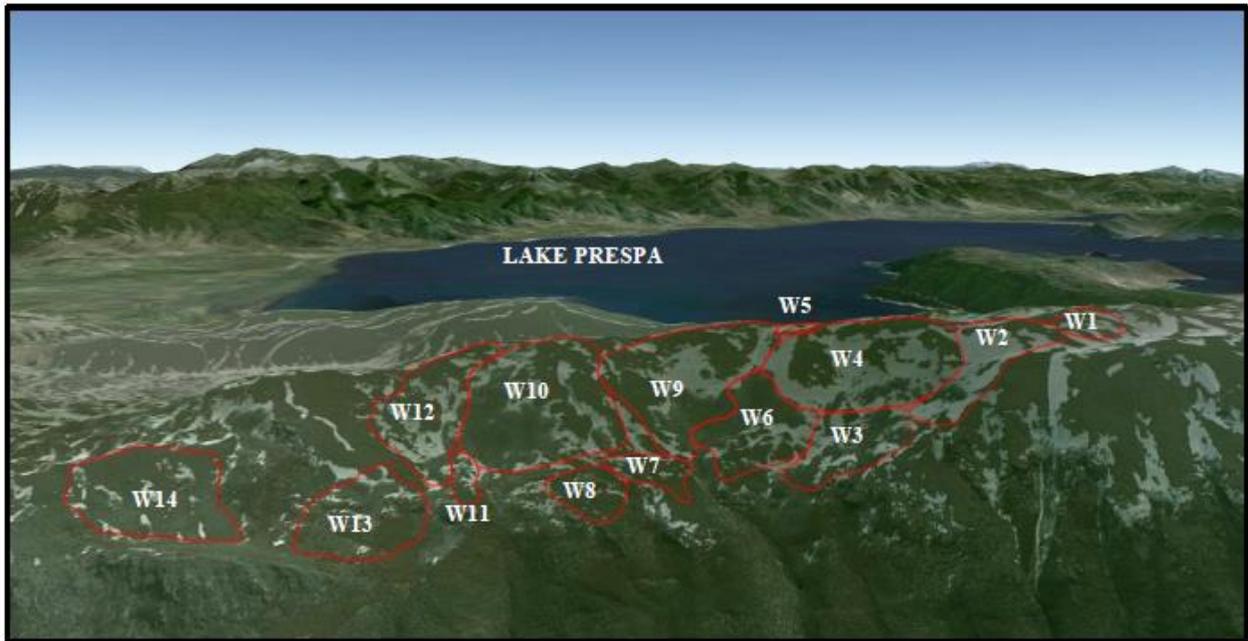


Overview of the identified ski pods in the South Zone.

West Zone:

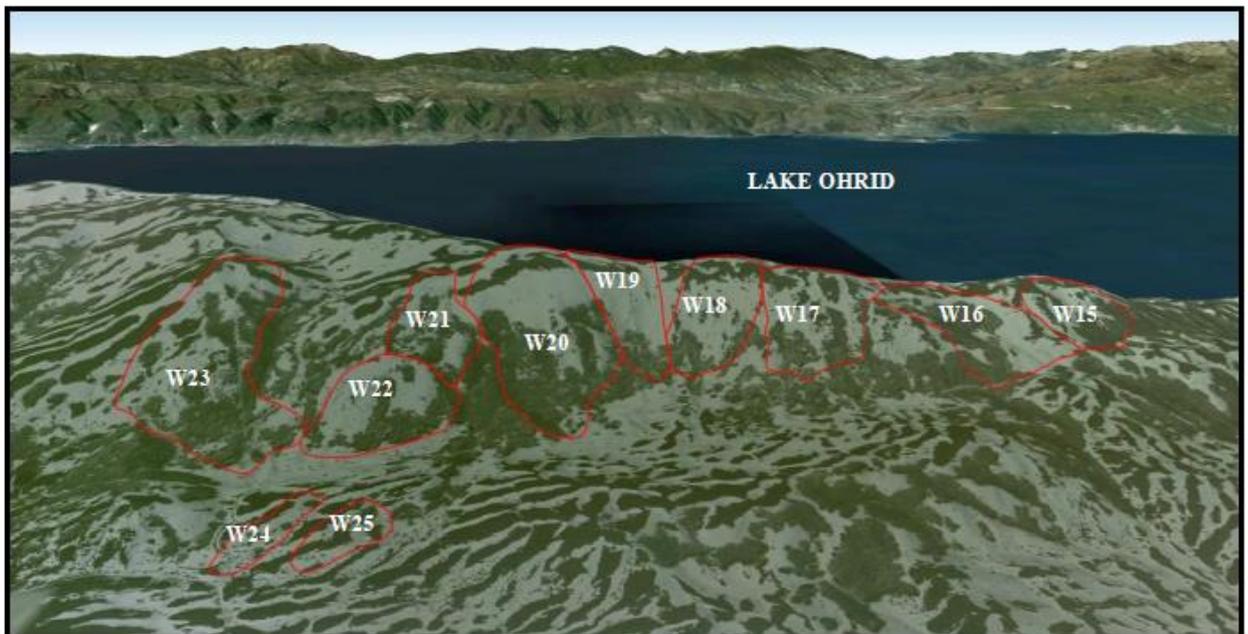
- 25 ski pods identified with east and west facing slopes entirely within the Zone of Active Management and the World Heritage Site.
- Zone has greatest potential for skier capacity of approximately 4,740 skiers.

Figure 6.4: West Zone ‘Ski Pods’ – West Facing Pods



Overview of the west-facing ski pods in the West Zone

Figure 6.5: West Zone ‘Ski Pods’ – East Facing Pods



Overview of the east-facing ski pods in the West Zone

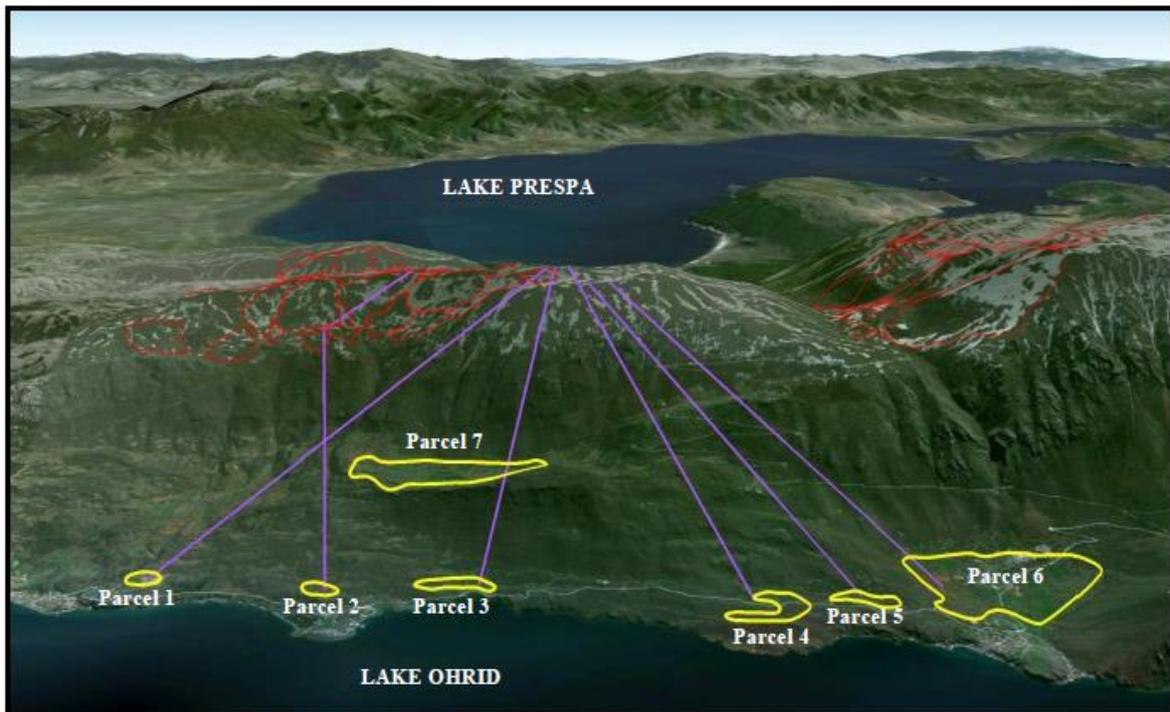
Alternative ‘Base Areas’ in Each Zone

An analysis was undertaken to identify ‘base area’ potential sites for facilities to support the ski centre, such as parking, commercial, accommodation etc. Eighteen parcels of land were identified and analysed for various parameters against each other. The base areas were considered alongside ski lift/gondola

options. These parameters included slope gradients, proximity to ski pods, suitability to support other summer & winter activities, views, exposure to wind & sun, access etc.

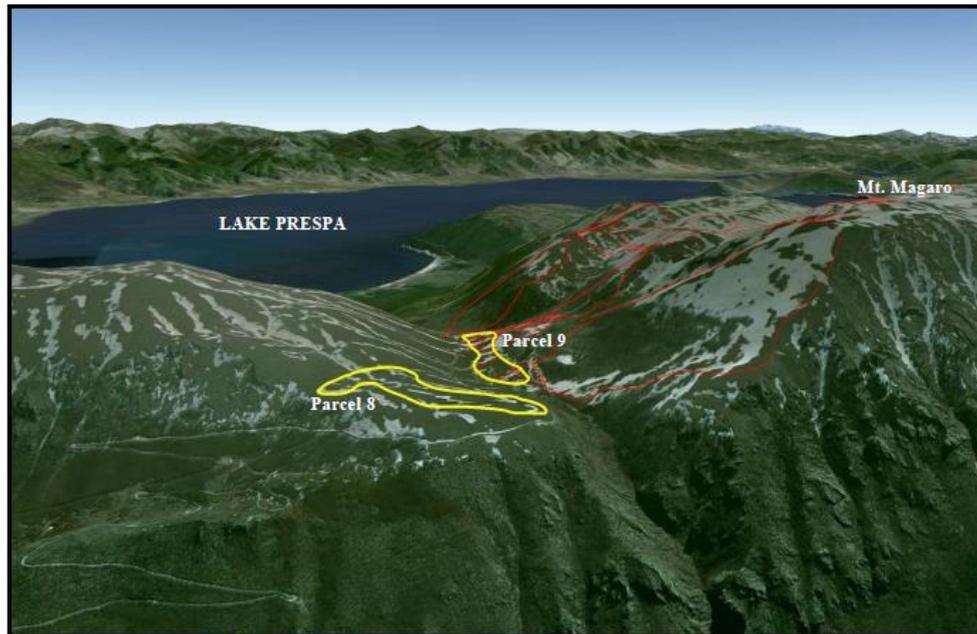
The eighteen parcels for the base area were categorised into 6 general areas and reflected in the figures (below). All base area parcels are within the World Heritage Site and are spread between the ZSU or ZAM generally:

Figure 6.6: Area 1 – Lake Ohrid



Potential Base Area Development Parcels and Access Gondola Concepts from Lake Ohrid

Figure 6.7: Area 2 – Mt. Magaro



Parcel 8 and 9 located on the saddle between Lake Ohrid and Lake Prespa

Figure 6.8: Area 3 – Krle Gola Buka Summit



Parcel 10 and 11 located around the summit of Krle Gola Buka

Figure 6.9: Area 4 – Central Plateau



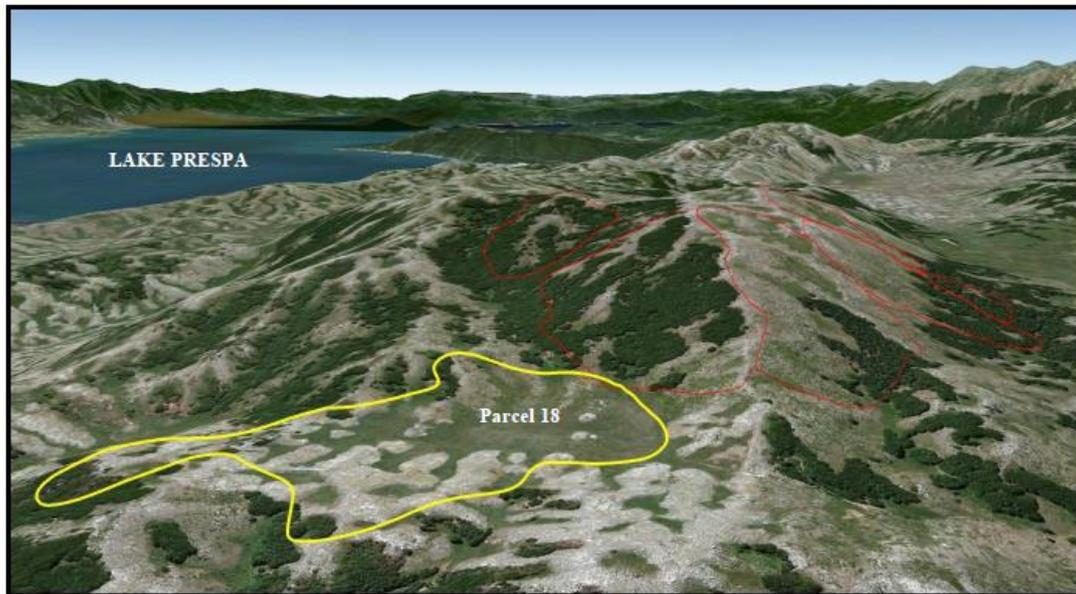
Potential Base Parcels at the Center Plateau

Figure 6.10: Area 5 – West Plateau



Base Area Parcel 16 and 17 on the West Plateau

Figure 6.11: Area 6 – North Study Area



Potential Base Area Parcel of the North Study Area

6.4.2 Preliminary Development Concept & Update

Based on the Development Analysis, consideration of alternative zones, ski pods and base areas, the 'West Zone' was identified at this stage with a gondola system to base area facilities at Lake Ohrid. The original 'Preliminary Development Concept' (2013) comprised of a main ski area in the 'West Zone' and gondola system down to Lake Ohrid. At this stage the concept differed from the selected Master Plan in 2014 now being taken forward, reviewed in this SEA and described in Chapter 4 in a number of ways with the key differences being: Base areas on Lake Ohrid revised to comprise Upper Peštani & Gradiste village; Nordic Skiing in the Central Plateau; the Lake Prespa Base Area; and 2 main gondolas (one from Lake Ohrid and the other from Lake Prespa).

An update to the preliminary development concept was then undertaken as further information was made available (e.g. topographic, further data on Lake Prespa area etc.). The zones were analysed and the base areas reviewed. The analysis of base areas was focused on reviewing potential for Lake Prespa connection to the ski centre and further expansion of the base area on the Lake Ohrid side. The analysis focused on the parcels within the 4 areas below (with the additional of Area 7 on Lake Prespa to the previous stage of analysis):

- Area 1 – Lake Ohrid
- Area 4 – Central Plateau
- Area 5 – West Plateau
- Area 7 – Lake Prespa (see figure below⁴)

⁴ Figures for other areas can be found in the Master Plan and Feasibility study for Galichica Ski Centre (May 2014).

Figure 6.12: Area 7 – Lake Prespa



Potential Base Area Development Parcels and Access Gondola Options from Lake Prespa

From this update, the selected ski zone taken forward was the 'West Zone' and the base areas with gondola access were the four the areas of: Lake Ohrid; Central Plateau (*added Nordic Ski Area*); West Plateau and Lake Prespa. **A decision which informed this re-selection of the 'West Zone' was to ensure the development was outside the Zone of Strict Protection.** The current proposed ski centre is presented within Chapter 4.

Further development of the ski centre considered different types of lift system, accommodation & visitor facilities and activities proposed within the ski centre in the summer and winter (see Chapter 4).

6.5 A3 Expressway Alternatives

The two road projects are at different stages of development and more route development and refinement has occurred for the Ohrid to Peštani Section. A summary is provided below of the alternatives understood to have been and undergoing consideration currently for these route sections. The selected routes for the selections are presented in Chapter 4 and not repeated here.

6.5.1 Ohrid to Peštani Section

During the development of the Ohrid to Peštani Section there have been the following main groups of 'alternatives' considered to inform key decisions on the route and design of the road. A summary of the alternatives considered and an outline of the criteria applied to inform the selection are provided within this section:

- Ohrid to Peštani Expressway Route Alternatives;
- 'No Project' Alternative;
- Sub-Variant Alternative Route to Avoid/Minimise Impacts to ZAM (at Crno Brdo);
- Sub-Variant Alternative Technical Solutions to Avoid/Minimise Impacts to ZAM (at Crno Brdo).



Final analysis of the 'sub-variant' as Crno Brdo is ongoing at the time of preparing this SEA as noted below. The detailed alternatives analysis will be presented in the project-level ESIA.

Ohrid to Peštani Expressway Route Alternatives

During the development of the proposed expressway 3 route alternatives have been developed and analysed: Alternatives A, B & C. These three alternatives were developed in sequence. Figures overleaf show these alternatives with a summary of them presented below:

Alternative A:

- First proposed routing for a 'National Road' between Kosel-Ohrid-Albanian Border with a 'total' route length of 39 km and being a 2 lane highway with a road width of 7.1 m, except where there is a steep gradient and a third climbing land was proposed.
- The expressway section between Ohrid to Peštani with this alternative would have been 14.95 km. With 80% of route having a gradient of 8%.
- Route starts at Vrshek with a direct connection to the city of Ohrid and traffic diverted from existing lake shore road onto expressway at St. Stefan's. Following the Metropol junction just before Crno Brdo the route would have veered eastwards and climbed with Elshani and Peštani being bypassed on the eastern side.
- Alternative contains 4 intersections and connecting roads with 6 viaducts (total length 525m) and 8 overpasses and underpasses (total length 236m).

Alternative B:

- The expressway section between Ohrid to Peštani with this alternative would have been 14.5 km with a maximum gradient of approximately 4%.
- This alternative contained a modification at the starting point in Ohrid and was developed to avoid the elevations proposed with Alternative A. The gradient of this alternative is shallower than Alternative A and therefore no third lane is required on sections for passing slower vehicles. Therefore this alternative runs closer to the lake shore. A gallery solution was introduced through Crno Brdo.
- Alternative contains 3 junctions, one at grade intersection and 4 connecting roads with 9 viaducts (total length 1046m), 8 overpasses and underpasses (total length 156m) and a gallery. Even though this alternative is shorter than Alternative A it is estimated to be more expensive due to the viaducts and structures.
- Alternative also traverses the Zone of Active Management (ZAM) at Crno Brdo in the National Park Galichica Management Plan (2011-2020). Given this alternative intruded into the ZAM and the steepness of the slopes to lake shore at Crno Brdo sub-variants were then considered to avoid and minimise impacts on the ZAM; these are described below.

Alternative C:

- During public consultation on Alternatives A & B the public generally showed a preference towards Alternative B. However, a number of concerns were raised regarding accessibility to properties and connection to the expressway at Elshani. Other stakeholders raised concerns such as potential effects on natural habitats. In response to the consultation findings Alternative C was developed with the key changes from Alternative B being:
 - Alteration of route at Bej Bounar to address water supply concerns;
 - Additional of underpasses and gravel road to improve access to Konjsko;
 - Improved access to Racha and the reservoir;
 - New junctions to expressway at Elshani, Eleshec and Velestovo.
- This route length is 13.32 km with a maximum gradient of 4.5%. The initial and final section of this expressway will have 3 lanes with a design speed of 40 to 50 km/h and the remaining part having 4 lanes and a design speed of 80 km/hr.



- Alternative contains 6 intersections and connecting roads with 9 viaducts (total length 973m), 5 overpasses and underpasses (total length 108m) and 3 galleries (654m).
- Even though this alternative is shorter than Alternative A and B it is estimated to be more expensive due to the viaducts and structures.
- Alternative C is the selected option and described in Chapter 4. This was selected on the basis of the criteria presented in the following Section.

Figure 6.13: Ohrid to Peštani Expressway Section – Route Alternatives A, B & C (A = pink; B = light blue; C = dark/bright blue⁵)



Figure 6.14: Ohrid to Peštani Expressway Section – Route Alternative A

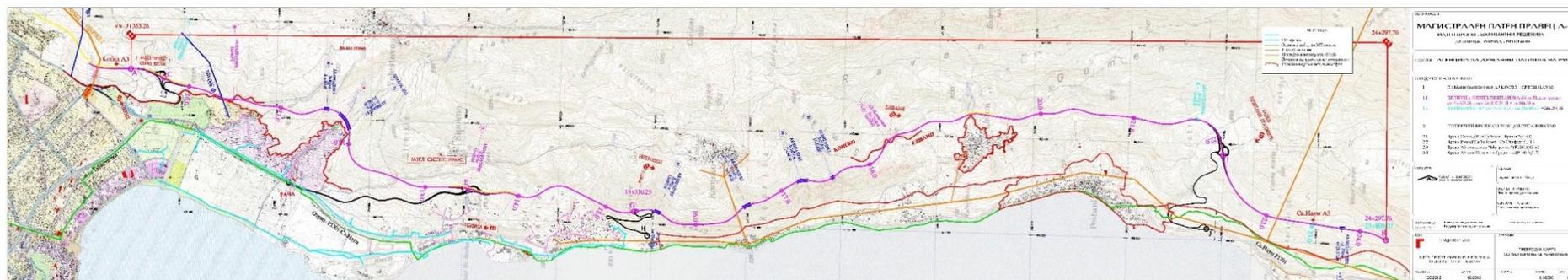


Figure 6.15: Ohrid to Peštani Expressway Section – Route Alternative B

⁵ Alternative C is Figure 6-16 is shown as pink/purple colour though.

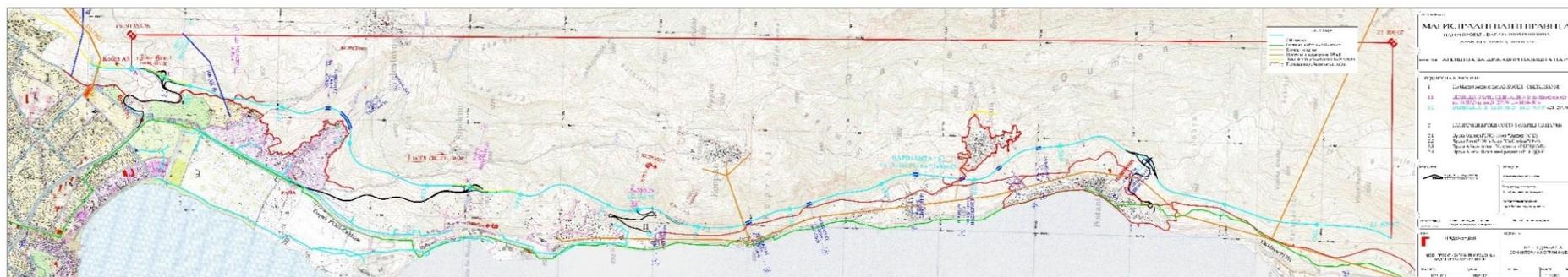
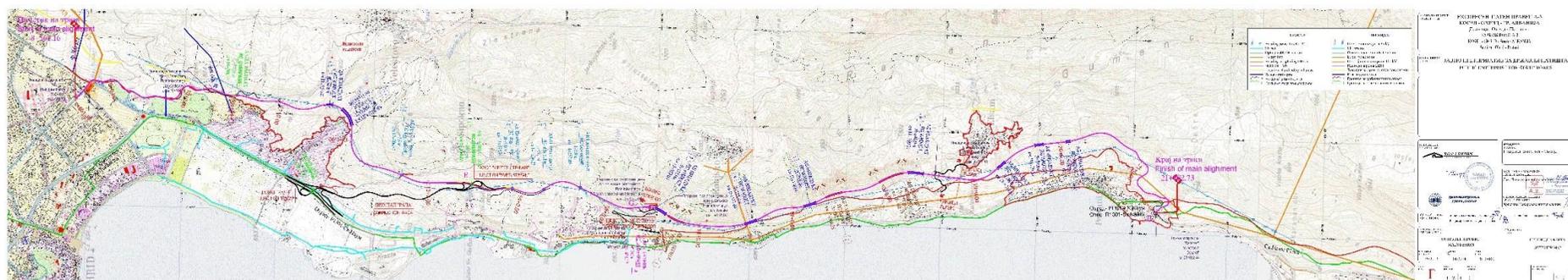


Figure 6.16: Ohrid to Peštani Expressway Section – Route Alternative C





Criteria for Comparative Analysis of Route Alternatives

A comparative analysis has been undertaken by PESR (and their consultants) of the route alternatives A, B & C. Four main criteria with sub-criteria topics (as summarised below) have been used:

Main Criteria:	Sub-Criteria topics considered in comparison:
Technical	<ul style="list-style-type: none"> ▪ Length ▪ Gradient ▪ Structures etc.
Economic	<ul style="list-style-type: none"> ▪ Construction Cost
Environmental	<ul style="list-style-type: none"> ▪ Biodiversity (including habitat fragmentation) & Intrusion/Effect on Zone of Active Management ▪ Air Emissions, Noise & Vibration ▪ Soils ▪ Landscape
Social	<ul style="list-style-type: none"> ▪ Cultural Heritage ▪ Land Use & Land Take ▪ Access to Expressway ▪ Visual

The final analysis of alternatives will be presented in the project level ESIA. Key differentiators with the route alternatives based on the available information are outlined below which it is understood were considered in the overall selection of Alternative C:

- **Technical:** Due to the length and gradients associated with Alternative A this is the most technically challenging route and therefore would require an additional passing lane for the particularly steep section. *Overall Alternative C would be the preferred option with regard to the **technical** criteria.*
- **Economic:** Even though Alternative C has the shortest route section due to the viaducts, structures etc. it is estimated to have the highest potential construction cost. *Overall Alternative A would be the preferred option with regard to the **economic** criteria – based on available information from PESR.*
- **Environmental:**
 - All alternatives intrude to differing degrees into the ZAM of the National Park and effect a range of natural habitat (e.g. mainly forestry, including oak-hornbeam forests some of which is degraded) with limited differences identified in available documentation in this regard. Alternative C is considered in the available documentation on the project to have the least impact on biodiversity in terms of sensitivity of habitats however there is no material difference between effects on the ZAM and landscape between the options. In addition a more detailed analysis of types and conservation value of habitats and species affected by each route alternative is required – it is assumed this will be provided in the ESIA.
 - The proximity of the alternatives to communities along the route is the governing factor in potential air emission, noise and vibration effects. There appears to be no material differences between the three alternatives with regard to air emissions, noise and vibration withstanding there will be some localised variations. Also, there appears to be no material differences between the impacts to surface water between the alternatives.
 - Alternative C is estimated to have the best cut to fill balance of the 3 alternatives.
 - Alternative C is the shortest route length and results in an overall slightly reduced footprint.

- Overall Alternative C would be the preferred option with regard to the **environmental** criteria – however this should be taken in the context that all routes for this project will have an impact on the natural environment regardless of the route selected.
- Social:
 - Alternative C reduces the potential risks in undiscovered archaeological sites as the route avoids the localities of Ramne and Elshani.
 - All three routes pass through forest areas, Alternative C would result in slightly less expropriation potentially and connect to 6 local settlements rather than 4 connections proposed with Alternatives A & B.
 - The expressway will have a potentially significant visual impact regardless of the alternative chosen.
 - Overall Alternative C would be the preferred option with regard to the **social** criteria.

In summary Alternative C was selected to take forward by the Project Sponsor and the reasons for this are outlined above (based on available information to the SEA team and PINPG).

'No Project' Option

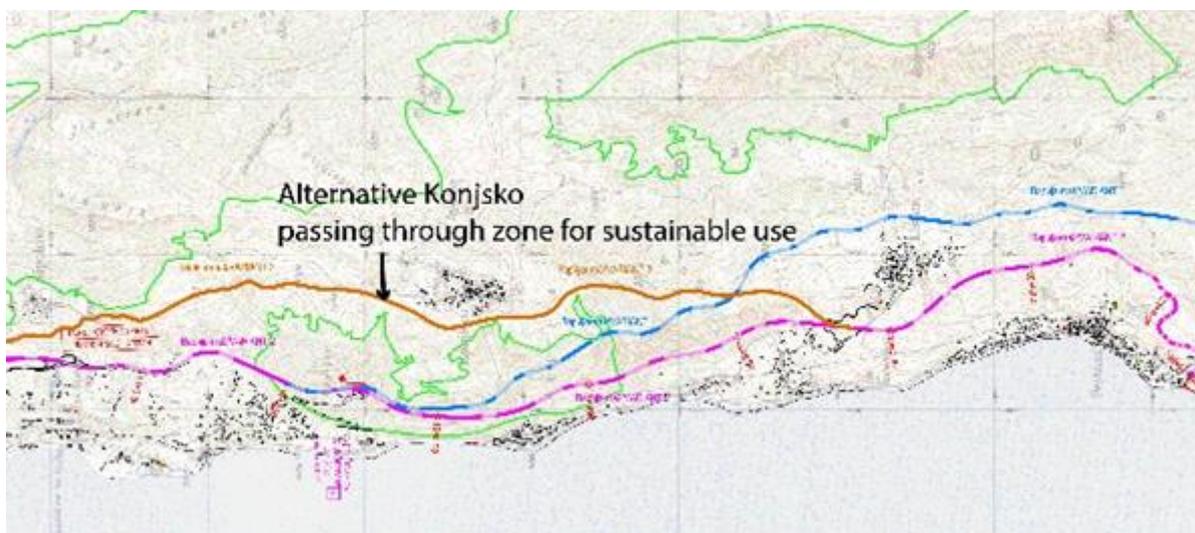
The option to not develop the expressway between Ohrid to Peštani would see the continued use of the existing regional road with no change in capacity. This could potentially mean the increases in traffic could not be accommodated and may influence the tourist numbers attracted to the area. Lack of increased capacity would lead to a comparative increase in congestion (especially during the peak tourist season) and could potentially increase risk of road accidents. The economic and tourism related benefits locally and regionally of the expressway project would not be realised with this option.

Sub-Variant Alternative Route to Avoid/Minimise Impacts to ZAM (at Crno Brdo)

A sub-variant was identified and assessed to the route for the Crno Brdo stretch given the sensitivity of this section:

Alternative Route to Avoid the ZAM: As the route passes through the ZAM of the National Park an alternative route was investigated to avoid the area of Crno Brdo. This is shown in the figure below and used the existing road to Gorno Konjsko.

Figure 6.17: Alternative Route to Avoid ZAM



It is understood the key reasons for not selecting this sub-variant included:

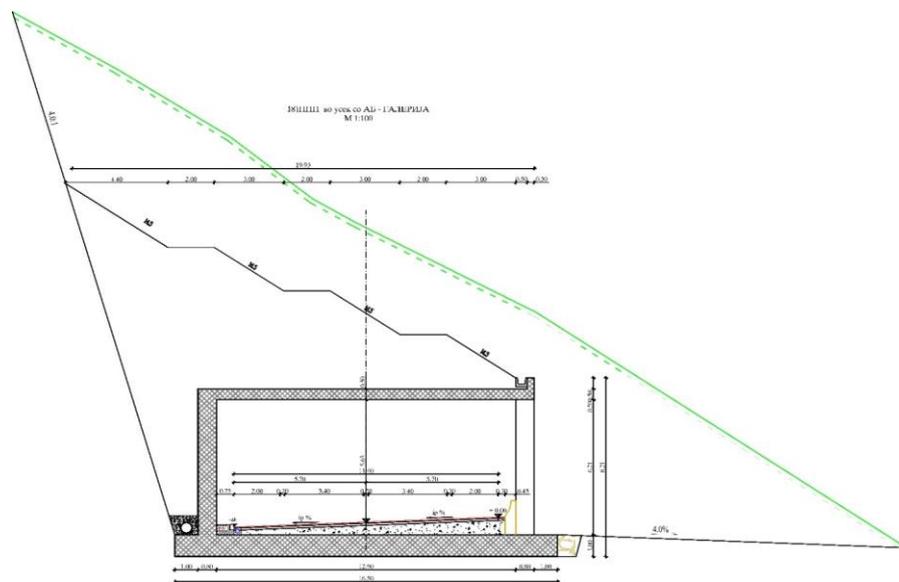
- Expressway length would be extended and would result in gradients exceeding 6% in places therefore additional lanes would be required for passing of slower vehicles.
- Connections with Metropol Hotel, Racha and St.Stefan would not be possible and therefore would mean the objective to maximise access to the lake shore may not be fully realised.

Sub-Variant Alternative Technical Solutions to Avoid/Minimise Impacts to ZAM (at Crno Brdo)

The area of Crno Brdo is one of the last remaining areas where 'natural' landscape runs down to the lake shore road. It was identified in the NPG Management Plan originally as a ZAM and is prominent in the landscape. Therefore different technical solutions have been considered through this section of the selected route. These are noted below:

- One Tunnel: bored and cut & cover options are understood to be under review.
- Two 'Smaller' Tunnels: due to the constructability issues 2 tunnels of a smaller diameter.
- Typical Cut Section: standard typical open cut to provide the expressway.
- Gallery: See Figure below (provided by PESR).

Figure 6.18: Indicative Cross Section of Gallery



The design for this section presented in Chapter 4 contains the Gallery option. However, the technical options for the Crno Brdo section are being reviewed further in the project level ESIA. Specifically the SEA recommends that the option of a bored tunnel is revisited for the Crno Brdo stretch due to the potential for natural heritage, landscape and biodiversity issues – see Chapters 7 to 10.

6.5.2 Peštani to the Albanian Border Section

Two routes have been developed sequentially for this section of the expressway, one at the design stage (Alternative A) and the second one (Alternative B) during the development of the design as a major project, see figure overleaf. Given the similarities in the routes there appear to be no material differences. It is assumed a more detailed assessment would be undertaken at the project level ESIA stage.

This Section runs through a predominantly natural area of the Park with very limited development. Therefore this area is very sensitive to the introduction of any infrastructure. There are also a number of significant biodiversity resources within this area of the Park which could be considered critical habitat and would likely be affected by this expressway section (e.g. Annex 1 under the *Habitats Directive* Macedonian Oak, the 'Evil Canyon' etc.). Therefore the SEA makes a number of recommendations regarding the future



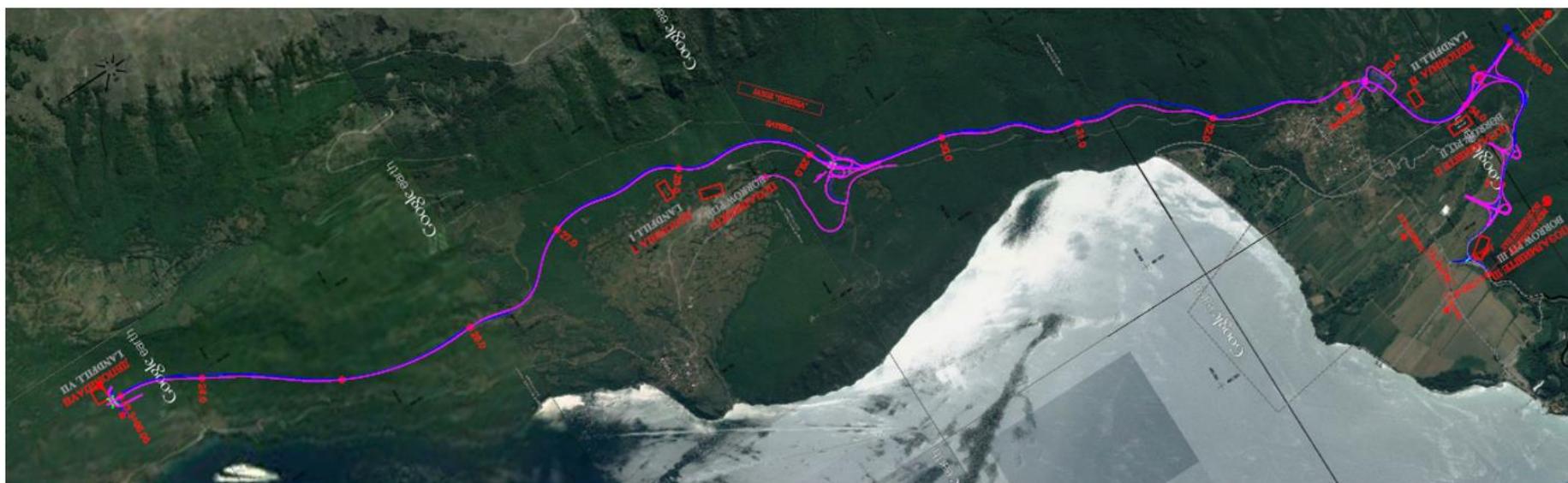
development of this route section (see Chapters 7 to 10), including in relation to the following recommendations for the consideration of alternatives:

- A3 Expressway: Peštani to Albanian State Border Section: Alternative route & junction location (or technical solution e.g. tunnelling) to avoid/minimise habitat loss to Macedonian Oak (Annex 1 Habitat 9250 under the *Habitats Directive*). Alternative solutions to ensure wildlife migratory corridor to the lake shore associated with Evil Canyon and the ecological function of this corridor is maintained.

Also, the SEA recommends the option to utilise the current lakeshore road corridor and if a full expressway is required for capacity reasons for this stretch between Peštani to Albanian State Border is reviewed as part of the projects development and ESIA.

Figure 6.19: Alternative Routes for Peštani to Albanian State Border Section

- ЛЕГЕНДА/LEGEND:
- ВАРИАНТА А/ VARIANT A
 - ВАРИАНТА Б/ VARIANT B
 - ВИАДУКТ/VIADUCT
 - НАДПАТНИК/OVERPASS
 - ПОДПАТНИК/UNDERPASS





7. Assessment of Impacts of the Amended Management Plan

7.1 Introduction

This section focuses on the impacts of the proposed amendments to the Management Plan.

One of the key aims of SEA is to ensure environmental considerations are integrated into the preparation of the AMP with a view to promoting sustainable development. The findings of the SEA assessment of the planned projects has been used to inform the amendments of the Management Plan and to understand the implications of the proposed amendments, such as from re-zoning.

Firstly, the assessment describes and assesses the impacts of each of the projects which are proposed in the Park and are the reason for the amendments to the Management Plan (i.e. changes from the Management Plan 2011 – 2020). Then, the cumulative and transboundary impacts are assessed. The cumulative assessment covers the effects resulting from the combined effects of the planned development projects which have resulted in the amendments to the Management Plan.

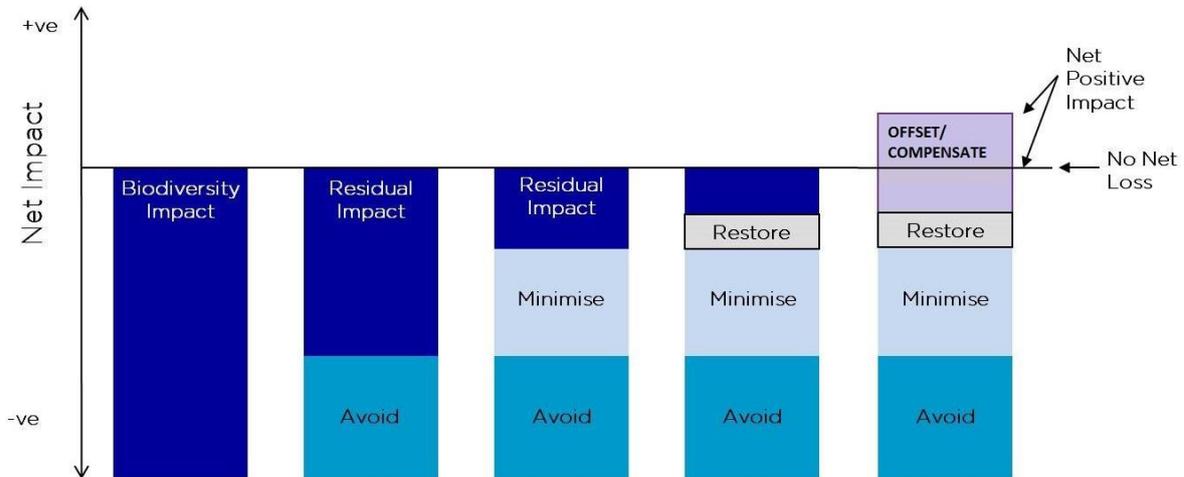
The Park is a protected area and represents a key biodiversity hotspot in Europe with important natural and cultural heritage values. The protection afforded to the Park with its many nominations and designations demonstrates its value and the need to safeguard the vision for its management primarily around allowing natural ecological processes to develop. It is essential in the SEA the implications for the Park as a whole resource and its management are therefore assessed. Potential effects on 'Protected Status' regarding the key designations of the World Heritage Site, the National Park and the Emerald Network are assessed therefore within this section. This provides a cumulative assessment on the implications for the Park on a 'whole of site' view point from the amendments to the Management Plan which result from the planned development projects.

The assessment includes a 'high-level' Appropriate Assessment style review given the National Park Galichica forms part of the Emerald network. Site level Appropriate Assessments will be required to be carried out for each project, prior to development.

The methodology for assessment is described in Chapter 1. Table 8.1 in Chapter 8, summarises the impacts described and the recommended means of mitigating them.

The SEA adopts the mitigation hierarchy where an impact is identified as potentially having a strategic effects, recommendations are made. These recommendations follow the mitigation hierarchy (see figure below), where by the first option is to avoid the impacts. This an international standard assessment approach supported by the *EIA Directive*, *SEA Directive* and the *Habitats Directive*.

Figure 7.1: Mitigation Hierarchy¹



As the planned developments are proposed within the National Park effectively the SEA on the AMP becomes one of the key strategic level documents which set the framework within which the projects should be planned, implemented, managed and monitored. The SEA therefore identifies in Chapter 8 recommendations where significant impacts could be further avoided, minimised, mitigated and, as a last resort, compensated for at a 'project level' (i.e. it is outside the remit of the SEA or the PINPG to implement the mitigation hierarchy within the projects planning).

The SEA focuses on impacts:

- which need to be addressed at a strategic level; or
- which are not easily addressed at the project level; or
- where there is a risk that it will not be possible to mitigate the effect within the current project proposal or the Park's management regime.

Therefore the SEA identifies both:

- The management, mitigation, monitoring and compensatory/offsetting measures resulting from the AMP; **and**
- Recommendations on the specific issues which need to be further addressed at a project level in the ESIA and other project level assessments.

Given the values of the National Park part of the intention in the SEA is to use the mitigation hierarchy to try and ensure the integrity of this Protected Area is maintained and that the status of species population does not decline. Under the mitigation hierarchy where a significant residual effect remains compensation/offsetting needs to be considered. This is of specific relevance to the achievement of No Net Loss (NNL) for biodiversity (see Chapter 1 and Chapter 9). Where a residual effect of a potentially significant nature is identified during the SEA the option of compensation measures has been considered to determine whether or not an effect is offsettable or non-offsettable within the Park – *this in detail has been considered in relation to loss of biodiversity in Chapter 9*. Therefore the SEA identifies in Chapter 9:

- where there is a need for offsets potentially at a project level in order to meet NNL;
- presents a framework for the Park within which offsets could be delivered which has been reflected within the amendments to the Management Plan;
- identifies from a strategic level assessment basis potential residual effects which cannot be offset within the current Park Boundaries and solutions would need to be sort by the individual projects

¹ Original image source <http://www.thebiodiversityconsultancy.com/mitigation-hierarchy/>



outside of the Park to offset this loss. *There are habitats affected which the SEA have identified the loss of cannot potentially be offset within the Park.*

The SEA assumes that given the natural and cultural values and protected status of the National Park within which the projects are proposed to be developed and given the scale and type of the 5 projects the following studies/assessments will be required to be undertaken at a 'Project' level by the Project Sponsors. As the SEA is approved by the MoEPP it is assumed that they will have to authority to ensure requirements laid out in the SEA are implemented at the project level :

- **Environmental & Social Baseline Surveys/Studies:** As part of the SEA detailed baseline surveys have not been carried out to collect detailed information on the environmental and social resources within the project footprints – this would be undertaken as part of the ESIA at a project level. The SEA is based on publically and readily available information, much of which is held by PINPG, on the National Park Galichica. Regarding habitats and species it is important to note this contains good data on the main plant communities and habitats and provides a basis to indicate 'typically' species that might be present within these plant communities and habitats. However, project level surveys are required to confirm a) the habitats and plant communities present in the project footprint and the area of impact; and b) the species present and /or accessing these areas in order to inform the ESIA and determine mitigation, management and compensatory measures at a project level. It is likely there may be other plant communities, habitats and species identified within these areas beyond that provided in the SEA.
- **Environmental & Social Impact Assessment (ESIA)** to meet legal requirements - It is important to note that the examination of a particular project in the SEA does not reduce the need for a rigorous project ESIA to be carried out.
- An **'Appropriate Assessment'**² to meet the provisions of the EU Habitats Directive and Macedonian *Law on Nature Protection* – this may form part of the ESIA.
- **Heritage Impact Assessment** in line with ICOMOS³ guidelines for submission to the Ministry of Culture in order for submission to UNESCO.

7.2 Impacts of Galichica Ski Project

7.2.1 Sources of Impact

The ski centre project and its various components are described in Chapter 4. If completed as proposed, the ski centre will consist of some major pieces of infrastructure, established largely in what are currently natural, undeveloped areas of the Park. On Galichica mountain, there will be significant land clearance for the ski pistes, buildings and facilities, chairlifts and other infrastructure. At the lower levels, land will be cleared for the gondola bases, restaurants, service centres, hotels and apartments. The low level areas will be connected to the mountain areas via a gondola. To construct this, a narrow strip will be cleared to allow support posts and emergency access. Following land clearance, construction plant will be used to transport and erect the various facilities and structures. Construction activity, noise, emissions and general increased human activity will result. Most of the land take for the scheme will be in presently natural heavily vegetated areas where there is very limited or no human activity.

During operation, the mountain areas will be used for skiing and snowboarding in the winter, and hiking and mountain biking (amongst many other activities potentially) in the summer. Vastly increased human activity in the central mountain area will be the main source of impact, with hiking and biking trails gradually created and worn throughout the area.

² The Park is an Emerald site which form a de-facto part of the Natura 2000 Network for non-EU Countries. To meet the principles of the EU *Habitats Directive*, which the Macedonian *Law on Nature Protection* transposes, an 'Appropriate Assessment' is therefore potentially required of plans and projects that could affect the site's integrity. Given the nature, scale and the location of the 5 development projects it is assumed an 'Appropriate Assessment' to meet the provisions of the *Habitats Directive* (and the *Law on Nature Protection*) is required at a project level. At a plan level a high-level 'Appropriate Assessment' style review of the AMP has been provided as part of this SEA.

³ Guidance on Heritage Impact Assessments for Cultural World Heritage Properties A publication of the International Council on Monuments and Sites (ICOMOS) January 2011



One additional concern is the use of artificial snow. Significant quantities of water will be needed to produce the artificial snow, and the source of water supply for this has not been identified. Significant effects on the surrounding water resources could result. Also, the effective prolonging of the snow season on the mountain, and the additional quantities of run off, will potentially disturb the ecological and hydrological balance.

7.2.2 Ecological Effects

Land clearance for construction of the various facilities will cause destruction of vegetation and plant communities and reduce availability of habitat for associated animal species. Restoration of areas not needed for the permanent infrastructure may be restored following construction but successful outcomes cannot be guaranteed at this stage. Flora, and immovable and small fauna will be destroyed, although mobile fauna (such as small mammals) may escape away from the cleared area.

The habitats and plant communities potentially affected by land clearance have been mapped by PINPG. Based on the information supplied for the project, a calculation has been made of the land area potentially impacted by each project component, and the type of vegetation affected. The calculation takes the conservative and precautionary approach of assuming that the vegetation is completely destroyed within the entire footprint, even in areas where only part of the area needs cleared. For example, it has been assumed that the entire area where ski pistes would be established would be cleared, even through significant areas of vegetation may remain between ski pistes. This is to take account of the degradation and fragmentation of the habitat throughout the entire area, and to also take account of indirect effects.

The table below summarises the various habitat types and plant communities which will be affected by land take for the components of the ski centre.



Table 7.1: Land Take Requirement For Each Component of Ski Centre (in Ha)

Component	Total (Ha) Approx. Including ancillary areas, roads etc.	Alpine and subalpine calcareous grasslands (HD 6170)	Juniperus communis formations on heaths or calcareous grasslands (HD 5130)	Illyrian Fagus sylvatica forests (HD 91K0)	Quercus - Carpinetum orientalis	Seslerio – Ostryetum carpinifoliae	Stipo- Festucetum	Quercus – Ostryetum carpinifoliae	Orno – Quercetum petraeae	Ostryo – Quercetum cerris macedonicum	Quercetum frainetto – cerris macedonicum	Agriculture or urban areas
Gradiste Lakeside Village	10											10
Upper Peštani Base	23				11							12
Mid-Mountain Zone/Snow Play Area	24	10	14									
Main Ski Area	250	175		75								
Nordic Ski Area (Central Plateau Zone) & Upper Mountain Zone	230	126	92	12								
Gondola W	7				2.8	2.8						1.4
Gondola E	10						1.5	3	1	4.5		



Access Road	12	1.8			5.4	1.8		3				
Construction Road (Temporary)	6	6										
Lake Prespa Base Area	5									3	2	
Total	577	318.8	106	87	19.2	4.6	1.5	6	1	7.5	2	23.4

Note – the above areas were calculated using information from the Ski Centre Master Plan, but taking a conservative approach to allow for indirect effects.



1. Impacts on Annex I Habitats

Three of the habitat types affected are listed in Annex I of the *Habitats Directive* (HD):

Alpine and sub-alpine calcareous grasslands (HD 6170). This grassland type is no longer common in Europe. A large area – around 7360 ha - of the central plateau of the Park consists of these grasslands, where past fires and grazing pressure has kept the natural succession of shrubs and trees at bay. In NPG, as in the EU as a whole, these grasslands typically revert to forest if left undisturbed. This habitat area is found in the higher altitudes where the main ski area and Nordic Ski Areas are planned (see Chapter 4 figures). Around 319 ha will be directly impacted by the ski project, i.e. 4.3% of the total extent of this habitat in the Park. Table 7.1 makes it evident that the Nordic Ski Area alone accounts for approx. 230 ha of the impact on this habitat type.

Many plant species of conservation interest are typically found in these grasslands, including: *Centaurea tomorosii*; *Edraianthus horvatii*; *Helichrysum zivojinii*; *Laserpitium ochridanum*; *Nepeta ernesti-mayeri* and *Sempervivum galicicum*. The Crocus cvijicli (flowering crocus) and *Sideritis raeseri* (ground cover) are present exclusively within this habitat. Typical fauna inhabitants of this habitat type include the Predatory Bush Cricket (*Saga pedo*) and the Apollo Butterfly (*Parnassius apollo*), which are IUCN Globally Threatened Species included in the category of Vulnerable - VU, as well as the Balkan Endemic Species Calcareous Mountain Snail (*Helix secernenda*). The alpine chough, horned lark and peregrine falcon are typical of these areas, and the typical mammals are: Balkan Chamois (*Rupicapra rupicapra balcanica*), Red Fox (*Vulpes vulpes*), Brown Hare (*Lepus europaeus*), European Snow Vole (*Chionomys nivalis*), Lesser Mole Rat (*Spalax leucodon*) and Balkan Mole (*Talpa stankovici*).

Juniperus communis formations on heaths or calcareous grasslands (HD 5130). Within the NPG, this habitat type develops on abandoned agricultural land and pastures within the oak and beech forest belts at altitudes up to 1,500 m. No endemic or key species are typical of this habitat type, but they may potentially be present and would need to be confirmed during the surveys for the project level studies and ESIA. The Nordic Ski Area and the childrens show play areas in the central plateau lie within the areas of juniper. An estimated 106 ha of juniper habitat will be impacted, out of an area total of 1,000 ha in the NPG (i.e. almost 11%).

Illyrian Fagus sylvatica forests (HD 91K0). Also found in the central plateau, in the areas where the main ski zones will be established, is this type of beech forest, also an Annex I Habitat. It typically develops on steep mountain slopes with southern exposures, at elevations between 1,200 and 1,500 m asl. Dominant species of this plant community are the Common Beech (*Fagus sylvatica*), while the species Bosnian Maple (*Acer obtusatum*) and Sesleria (*Sesleria robusta*) are regularly present in this habitat type. Section 5.4 describes the other species typical of this type of forest habitat.

Of the 901 ha of *Fagus sylvatica* habitat present in the Park, about 87 ha (around 9.7 %) will be impacted. Under the *Habitats Directive*, the loss of Annex I habitats such as the above, must be avoided where possible, and minimised in all cases. In particular, if it is unavoidable that areas of these habitat types are affected, the residual loss of biodiversity must be offset. See Chapter 9 for further discussion on biodiversity offsetting.

2. Impacts on Other Plant Associations

Several other plant associations will also be impacted by the ski centre, as shown in Table 7.1. Of these, the only one impacted to an extent more than 8 ha is *Quercus - Carpinetum orientalis*. This is a type of oak forest which is present in the area to be developed at Upper Peštani, and along the gondola alignments to the east and west of the central ski areas. Neither this, nor the other plant communities listed – mostly different types of oak forest - are of particular distinctiveness or conservation significance. The impacts on them, and measures to avoid and mitigate such impacts should be developed and described during the project level ESIA. Based on the SEA data it is likely that minimisation and restoration measures will be adequate to compensate for their loss, however the ESIA studies would need to review this. If necessary, they may be offset by 'trading up' to include compensatory management measures for plants and habitats which are of particular interest for the PINGP, in the content of its Park Management Plan.



3. Impacts on Specific Species

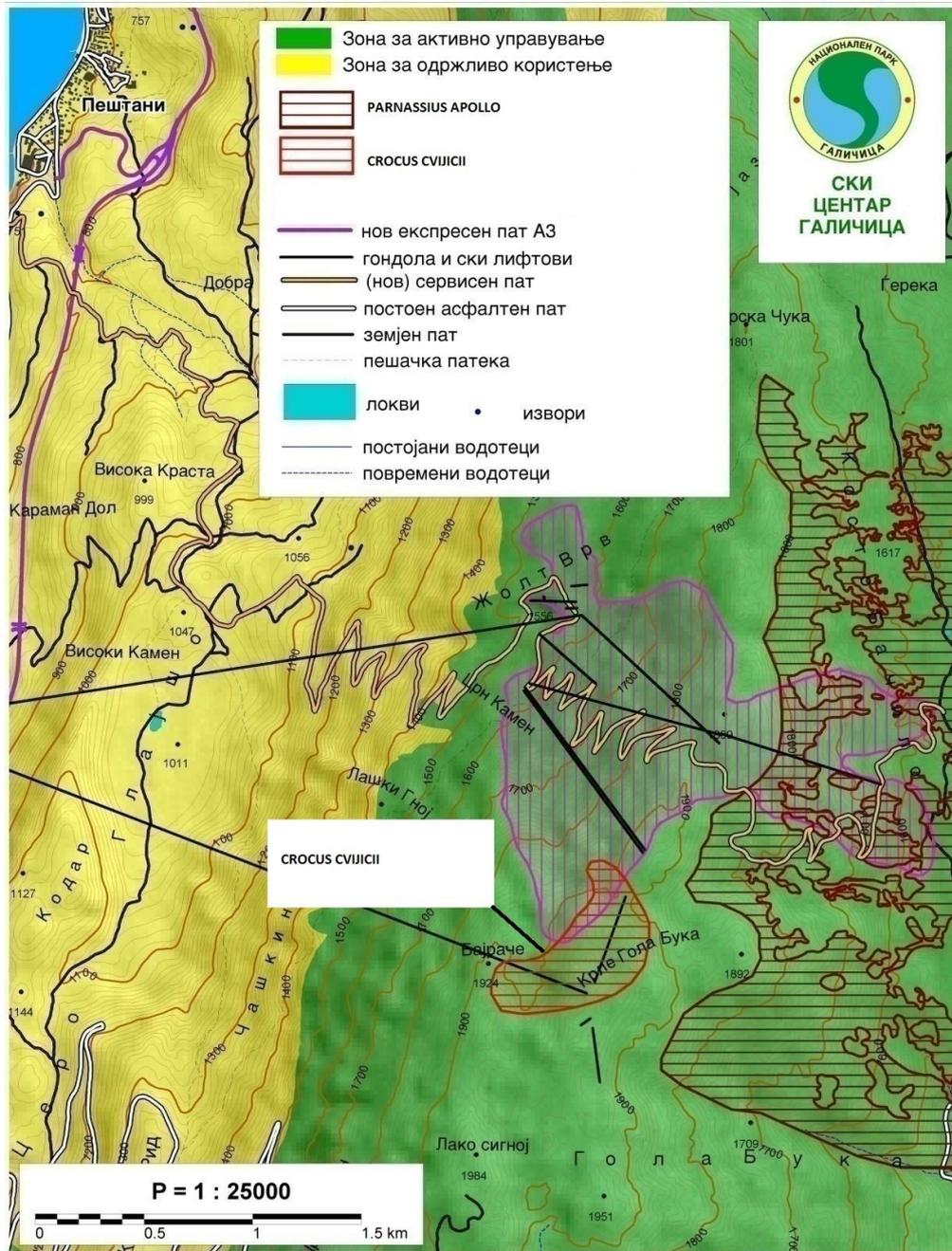
Of the many species of conservation interest that are protected within the Park, two have been identified within the PINPG data to be of particular concern. These are:

- *Crocus cvijicii* (plant blooming after snow-melt);
- *Parnassius apollo* (Apollo Butterfly).

These have been identified as a particular cause for concern because they have a large part of their distribution within the Park affected by proposed Galichica Ski Centre project, with implications for their long term viability and conservation. In addition this is thought to be the area with the core population of the Apollo Butterfly. Both are associated with alpine and sub-alpine calcareous grassland, are listed by IUCN as Vulnerable and are at risk from the ski-centre development. .

The figure below shows the known distribution of the crocus, based on current information (*this would need to be studied in more detail within the ESIA to confirm extent*). As well as destruction by excavation, those parts of the crocus's distribution which survived the ski centre construction would be at risk of trampling due to increased activity in the area, both during the ski season, and more particularly from hikers and bikers in the winter. Additionally, the use of artificial snow is planned and this could potentially smother plants before they have a chance to flower. Given the sensitivity of the crocus to the snow melt, any delay in the time of the snow melt will delay the flowering of the crocus, and the effects of this are unknown.

Figure 7.2: *Crocus Cvijicii* & *Parnassius Apollo*



The larvae of the apollo butterfly feed on the *sedum* plants which are common across the grasslands. However, the mature butterfly feeds off flowering plants. The distribution of this butterfly is therefore restricted to areas where both *sedum* and flowering plants are found in proximity. There is not yet enough information to determine to what extent the loss of part of their habitat in the area of the ski centre will reduce the available habitat for them in the Park as a whole. Other areas of Galichica, farther north, are known to have favourable conditions for the butterfly, but their numbers in these areas – based on available data – are currently low, suggesting they are sub-optimal in some way that has yet to be confirmed.



The apollo butterfly is a slow moving species and easy to catch. The ski centre development will significantly increase the number of people in the distribution area of this species and increase its exposure to capture. The butterfly is much prized by collectors and fetches around 50 Euros in Macedonia. Given the high sale price associated with it, and the ease of capture, the risk to the population in the ski centre area is significant. Given its limited distribution, and the difficulty associated with establishing supplementary suitable habitats, this is a concern and needs further investigation during project development and ESIA stage.

Since these are both protected species, in order to satisfy the *Habitats Directive*, the ski centre project must take steps to investigate the distribution and likely Project effects on both species, and enact measures to avoid where possible. Where avoidance is not possible, then steps should be taken to reduce the effect of the Project. Where a residual effect remains, and further avoidance and minimisation is not possible, other investigations need to be carried out to explore practical options to offset the remaining loss. On the basis of current evidence it is not possible to confirm that adverse impacts on either of these species would be offsetable and this would have to be demonstrated with good evidence before impacts were considered acceptable without compromising the long term viability of these species in the Park.

One further possible effect on ecology may arise from changes in the hydraulic regime from the use of artificial snow. This has already been mentioned in relation to the crocus. The increase of surface water run off from the mountain during the winter, and the alteration in the seasonality of this run off will induce changes in the quantity and timing of surface water run off. This may affect plants and animals on the higher slopes, as well as those which depend on the run off in the streams and gullies farther down the mountain. The detailed effects and their significance are not yet clear, and need further investigation, as some alteration of the ecological balance may result.

7.2.3 Effects on the Cultural and Natural Heritage of the Area

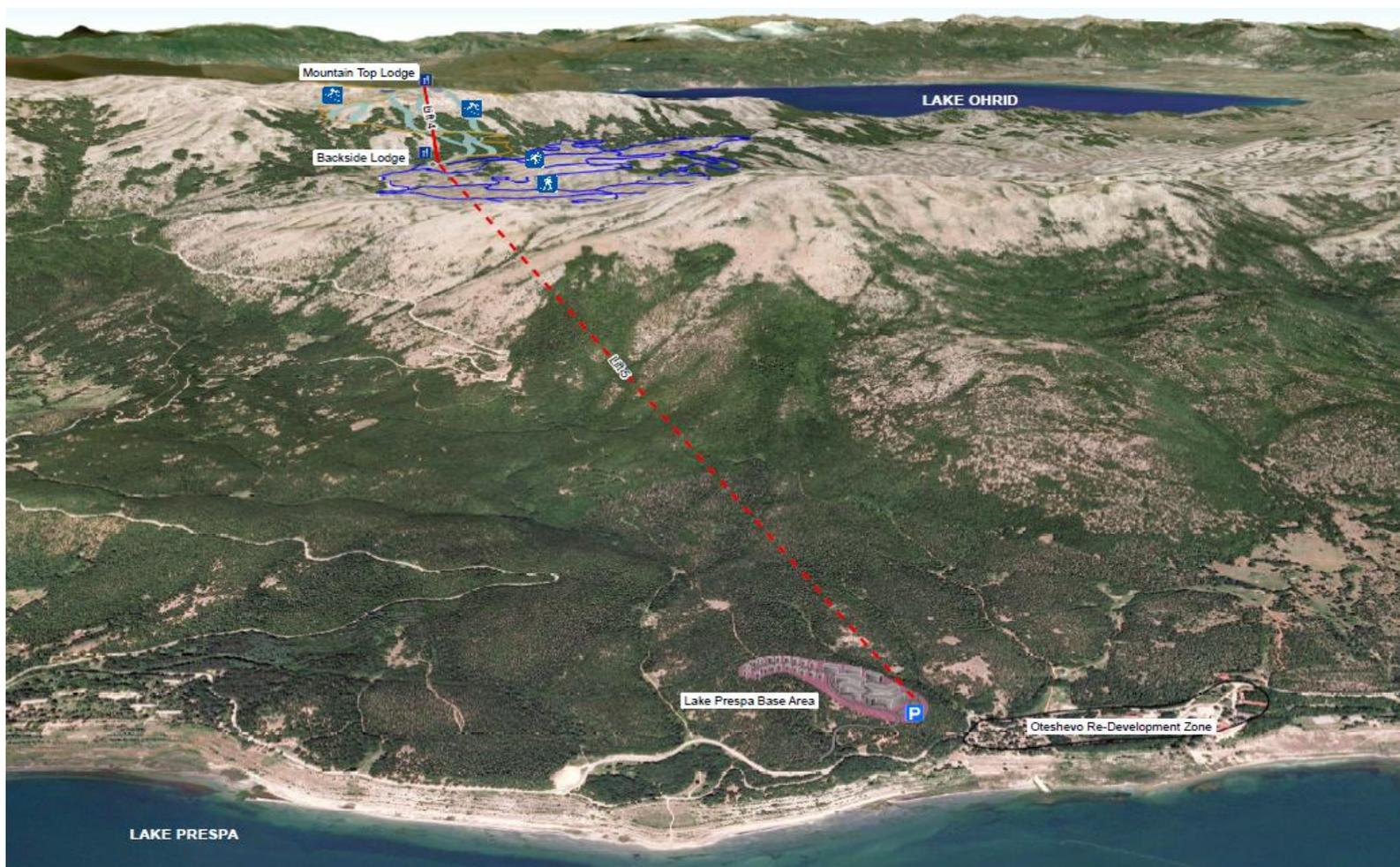
Figures 7.5 and 7.6⁴ show the location of the skiing areas on the western (Lake Ohrid side) and eastern slopes (Lake Prespa side) of Galichica mountain. Cleared areas of forest for the pistes will be visible throughout the year from parts of the coastal road along Lake Ohrid, and some from the Prespa side. The clearances for gondolas and some of the chairlifts will also be visible as linear cuttings on the mountain slopes. The presence of some restaurants and other infrastructure will be visible from parts of the coastline and coastal villages along Lake Ohrid, and from parts of the Prespa area. The ski areas will be particularly visible from certain viewpoints and slopes at altitudes within the Park. At lower levels, development of new urban areas at Gradishte, Upper Peštani and at Lake Prespa, will impact the largely undeveloped nature of the shoreline. The planned development for Gradishte is likely to cause a particularly stark juxtaposition of new development in a forested area on the shoreline. If the project is implemented as currently planned, it will represent a significant visual intrusion into the landscape of the area.

⁴ Source: Master Plan for the Development and Construction of a ski center in the Galichica National Park (May 2014 Horwath & Ecosign)

Figure 7.3: Visualisation from Western Side (Lake Ohrid)



Figure 7.4: Visualisation from Eastern Side (Lake Prespa)





Although these effects are not atypical of ski centres, they are of particular concern in this setting, given its designation of a World Heritage Site for reasons of its '*superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance*'. The development of a highly visible ski facility in a National Park, which is part of a UNESCO World Heritage Site created partly for reasons of its dramatic landscapes, conflicts with the purposes of establishing the Park and the designation as World Heritage Site. While the adverse effects on the landscape may be reduced to an extent by appropriate design of the facilities following a full landscape and visual impact study, they are likely to remain highly significant. There is no way to significantly reduce the visibility of the forest clearances for pistes, gondolas and chairlifts. The various stakeholders who have supported the various designations of the area – including the UNESCO World Heritage Committee, UNESCO Man and Biosphere Reserve (UNESCO) etc. – are may raise further concerns, even if the ski centre goes ahead in a reduced format.

Cultural heritage resources are at risk from disturbance - e.g. dust, noise and vibration, and the risk of contractor infringement of cultural properties - during construction. Air pollution can cause deterioration of buildings and monuments, and vibration and cause damage to buildings and sites. The developments envisaged as part of the ski centre scheme may impact historic landscapes. The increase in visitors to the Ohrid coastline – and to an extent, the Prespa shoreline – will also put pressure on the management of the cultural and natural heritage of the area, with likely increase in visitors to the various heritage sites, such as the St Naum springs, the monastery of Sveti Arhangel Mihail, and the monastery complex of Saint Bogorodica of Zahum, located on the Lake Ohrid shoreline, as well as greater numbers walking and driving through the Park.

7.2.4 Effects on the Local Economy

The key cited benefit of the ski centre will be its contribution to the economy of the region, in terms of employment. The project will bring some temporary employment during the construction process. However, the main effect will be the number of hospitality jobs created in the area once the ski facilities are up and running. The project is being planned as a 'four season' facility, i.e. serving skiers and winter sports visitors during the snow season, and converting to facilitate mountain bikers and hikers during the summer. As noted earlier, one of the key characteristics of the area is the out-migration of young people to other parts of Macedonia for work. Development of a ski/hiking/biking industry in Galichica could reduce out-migration, and would be positive for the local economy. This is the main beneficial effect against which the various adverse effects should be weighed.

7.2.5 Environmental Quality

Air Quality: Increased visitor numbers to the area, generated by the ski centre development, will bring increased vehicle traffic, and associated exhaust emissions. Given the current generally high quality of the airshed, there will be a detrimental effect, but it is not of strategic concern and should be examined as routine in the ESIA.

Noise: Noise generated during construction of the ski facilities, will have an effect on nearby fauna, and may encourage them to move away from the area. Construction of the accommodation and service facilities in Gradishte, Upper Peštani and Oteshevo will have a more significant effect on local settlements, but these will be temporary and readily mitigated. Noise generated by visitors in these areas will represent an increase over the current baseline and will have an ongoing effect, but will be typical of urban areas, and readily managed. The effect of increased traffic noise associated with increased visitor numbers was discussed earlier.

During operation, noise will be generated from increased human activity on the mountain, especially during ski season. Given the low baseline levels of human-generated noise in the Park, this will have an effect, although this will be local, as noise levels will not be at a level and a frequency to carry far. As noted the key receptors are the wildlife in the area, as there are no dwellings at these elevations. This can be investigated appropriately at the project level ESIA stage.

Hydrology and Lake Ohrid: One key possible effect of the ski project is related to the generation of artificial snow. A significant amount of water will be required for snow generation. At present, no investigations have been conducted to determine possible sources for this. Options presumably include



establishing wells in the mountain (although groundwater levels are likely to be low and abstraction expensive), and pumping from one of the Lakes (which could also be expensive, given the distance). Establishment of an artificial pond for storage is part of the proposal. Whatever the source of water, given the relatively dry nature of the Galichica area (with rainfall at the elevation of Lake only around 700 mm), the effects on other uses of the chosen water resource may be significant. Depending on the source chosen, other uses could include abstraction for domestic purposes and/or use of water by plants and animals. Because of the complex hydrology of the area, a robust investigation needs to be made into possible options to delivering the amounts of water needed, and the impacts of this on other uses, including ecological uses. There could be significant effects of large scale water abstraction, which may not become immediately apparent. Possible impacts – quantity and quality - on the lakes themselves should be considered. Given the uncertainty, this should be considered as an issue of concern, which needs addressing by the project design, well before detailed design begins and before outline permitting approvals are given.

7.2.6 Impacts on PINPG

Construction and operation of the ski centre facilities, and the new urban areas at Gradishte, Upper Peštani and Prespa, will bring significant additional risks to nature protection in the Park. It is PINPG's responsibility to monitor and manage the Park's natural resources. A Construction Environmental & Social Management Plan (CESMP) will be developed for each of the scheme's phases, which should include significant biodiversity components to deal with issues such as relocation of plants and animals, offset requirements, etc. The PINPG will need to be aware of the construction activities and will need to establish the means to supervise or monitor the effects on biodiversity, and implementation of necessary measures to management and monitor these. Post construction, the ski, biking and hiking activities will largely be within the Park, and will bring human activity into the Park at levels which are orders of magnitude higher than what the Park is used to. This will put unprecedented pressure on PINPG, which currently does not have the means and resources to adequately manage the risks to the Park. Without significant additional resourcing, PINPG will not be able to adequately monitor and manage the effects on biodiversity of the ski centre project, and the long term reputation of the Park and area as an outstanding feature of natural heritage, will be at risk. This is a key concern.

7.3 Impacts of A3 Expressway Ohrid – Peštani - State Border

The proposed A3 Expressway between Ohrid and the Albanian State Border has been portioned into 2 Sections which effectively are separate delivery projects; **Ohrid to Peštani** and **Peštani to the Albanian State Border**. These two proposed road sections run through markedly different land uses and habitats in the Park. The Ohrid to Peštani section runs through a generally degraded natural area along the more developed lake shore which has been subject to incremental urbanisation. Whereas the Peštani to the Albanian Border section runs through a natural area with development being very localised to the few settled communities. Some of the effects and the potential significance of these arising from the two roads sections therefore are markedly different; therefore in the impact assessment these differences have been drawn out where appropriate.

7.3.1 Sources of Impact

The road will require land clearance along a 26.24 km road corridor (13.3 km for the Ohrid to Peštani section and 12.94 km for the Peštani to Albanian State Border section). As explained in Chapter 4 the actual carriageway width is 14.5 m, but the terraforming to form embankments and cuttings will increase the width of land clearance needed. Vegetation and soil cover will be removed. Areas of forest will be felled. Existing roads, tracks, dwellings, etc. along the road corridor will be removed. The construction process will require: the use of heavy plant and equipment; excavations; ground preparation and contouring; quarrying and establishment of borrow pits to provide material for the road sub-surface; and laying of the road surface. Ancillary works will include erection of fencing, signage, lighting, construction of drainage channels, junctions, restoration of temporary construction sites, rehabilitation of vegetation, and so on. Once construction is complete, the road will be open to the flow of traffic, with periodic



maintenance and upgrade of infrastructure as required. For this strategic assessment, a total width of 150 m has been used to calculate the area of land being impacted, either directly or indirectly.⁵

7.3.2 Ecological Effects

1. Direct and Indirect Impacts on Forest Habitats and Species

Land clearance for road construction (including cuttings, embankments, buffers and access roads as well as the carriageway itself) will remove plant communities and reduce the area of habitat available to associated species. Areas not needed for permanent road infrastructure may be rehabilitated following construction but loss of habitat is long-term or effectively permanent where well established trees are removed. Populations of some animals may decline, though more mobile animals may be able to escape to alternative habitat. Adjacent vegetation may be affected by dust and pollution deposition from construction activities and then from vehicle exhaust emissions during operation. Associated populations of animals will be affected by noise and disturbance during construction and operation and by lighting at road junctions and from vehicles, which can disrupt behaviour patterns.

Indirect or induced effects are likely due to the presence of the road and increased human activity along the corridor. The introduction of a road corridor may increase the risk of urbanisation of the strip of land between the lake shore/existing road and the new expressway. Further indirect impacts could occur as a result of habitat fragmentation and isolation due to barrier effects. This is expected to affect some of the populations of large mammals, particularly in the Peštani to Albanian State Border section.. Given the relatively undeveloped and uninhabited southern part of the Ohrid lake shoreline this may be a more significant issue for the Peštani to the Albanian Border Section.

The proposed road passes through natural vegetated areas. This is predominantly the situation for the Peštani to Albanian State Border section. However the lake shore area which the Ohrid to Peštani section runs through is markedly more developed. The habitats and plant communities along the proposed road corridor have been mapped by PINPG. This shows that that the road project will take land mainly from two types of plant communities:

- *Quercus - Carpinetum orientalis macedonicum* (Oak-hornbeam forest);
- *Quercetum trojanae macedonicum* (Macedonian Oak forest) (Annex 1 Habitat 9250) – **only the Peštani to Albanian State Border Section passes through this habitat;**

Oak-hornbeam forests (G1.A1C31) are relatively widespread in Macedonia and have been given a low distinctiveness rating of 2 (see Section 5.4 for a discussion of habitat distinctiveness). A large part of the road scheme between Ohrid and Trpejca lies within or close to this type of forest. Typical flora species associated with this type of forest were described in Chapter 5.4.

Although the road width is only 14.5 metres, a total width of 150 m (75 m from each side of the centre line) has been used to calculate the area of land potential subject to direct & induced effects, in order to account for fencing, kerbing, slopes and embankments, as well as any pollution deposition and noise disturbance adjacent to the operational road.. By this calculation, the total area of oak-hornbeam forest impacted by the road scheme Ohrid – State border, is 281 Ha, most of which lies in the Ohrid-Peštani section. Chapter 8 discusses avoidance and impact reduction suggestions.

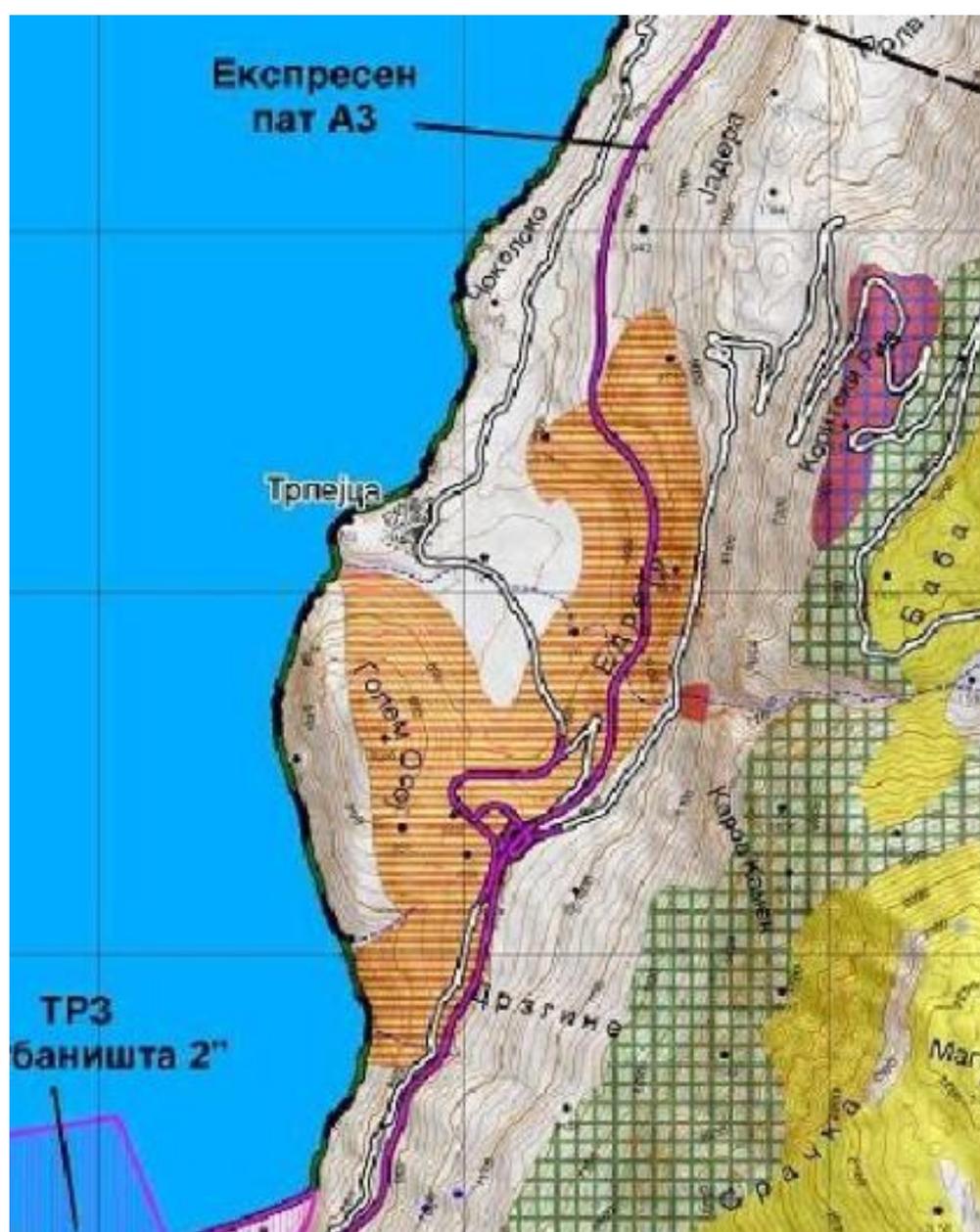
Macedonian Oak (Annex 1 Habitat 9250): The Peštani – Albanian Border stretch of the proposed road scheme also passes through an area of Macedonian Oak. This forest type has been given a high distinctiveness rating of 6, as it is an important Balkan endemic, with limited extent, and an Annex 1 Habitat under the *Habitats Directive*. There are several types of flora and fauna species of conservation significance associated with this type of forest, see Section 5.4.

By using the approach outlined above, the current road alignment for the **Peštani to Albanian border section** will impact 84 ha of the Macedonian Oak, out of a total of estimated 1,093 Ha in the entire Park.

⁵ This considers good practice, such as the principles defined in <http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section2/ha20508.pdf>

As shown on figure below, the currently proposed alignment passes through the forest in a manner so as to cause significant fragmentation of the forest. The forest is dense and mostly undisturbed and is in good condition. The road will cause significant adverse effects on the forest itself, as well as the plant and species communities in the area. The effect on migratory species who use this forest to access the lakeside is discussed later.

Figure 7.5: A3 Expressway – Peštani to Albanian State Border Section Intrusion into Macedonian Oak Habitat 9250





The loss and fragmentation of the Macedonian Oak forest is regarded as a highly significant and irreversible adverse impact with strategic implications, and one to be considered seriously by the **Peštani to Albanian State Border section** road design to determine if road realignment or re-design can eliminate or reduce the effects. This impact is not compatible with the conservation objectives of the Park and is considered to be potentially non-offsetable.

2. Impacts on the Migration of Landscape Species

Linear developments, such as road schemes, often give rise to barrier effects, where moving animals are prevented from crossing to access shelter, food or drink. There are two important areas along the entire expressway corridor that are thought to be used potentially as key migratory corridors. Moreover these two areas will **potentially be affected by the proposed projects which have resulted in the amendments to the Management Plan** for such species (these are shown on the figure below):

- *Crno Brdo* (Black Mountain): In the section **Ohrid to Peštani** there are only a few very isolated areas where forests/natural areas now come down to the lake shore, the key one being in this section the area of Crno Brdo. This area is just below the mostly deserted hamlet of Konjsko and is thought to be used as an access point for animals which inhabit the forested areas above, and descend through the dense, steep oak wood (along the valley edges) to the lake side. PINPG has zoned part of this area as a Zone of Active Management, largely in order to protect this corridor. The corridor is not confined to a narrow track or path, but ranges across perhaps a 1 km width. This corridor will be crossed by the Ohrid – Peštani road scheme. Potentially mammals may be using the key routes down to the lake shore along the valleys on the edges of this area due to the steep slope in the central part of Crno Brdo.
- *Evil Canyon*: Farther south, Evil Canyon is a river valley which stretches up from the shoreline south of Trpejca, to the high altitude forests in the Zone of Strict Protection, and provides the easiest access across the high central ridge. This canyon is likely used by a range of mammal species – such as the wild boar - which frequent the higher altitude forests, but tend to come down to the lake side during particular seasons. This corridor will be crossed by **the Peštani – Albanian State Border** road scheme. At the elevation of the proposed road, the corridor passes through the Macedonian Oak forest, described above.



In the current design, the proposed road scheme could affect animals from safely crossing at both these important locations. As well as being potentially prevented from accessing the lake side safely, animals which attempt to cross risk injury and death from collision with vehicles. Fencing of the road may reduce some road kill, but will prevent passage. While the existing road also causes a barrier effect, it is a smaller road and traffic on this is much slower moving. By contrast, the proposed road is an expressway with a design speed far greater than this, the effects of which will be significantly greater.

Minimising the fragmentation of these important migratory corridors is therefore key. It is standard practice that passage across important ecological corridors is maintained for linear projects.

It should be noted that the current proposal in the Ohrid to Peštani road design, which includes a gallery section at *Crno Brdo* - see Chapter 4. It is unlikely that this proposal will fully mitigate this fragmentation impact as galleries do not allow passage across the road. The preferred option from an ecological perspective would include a tunnel; given the steep slopes in the central part of Crno Brdo to the lake, it may be more appropriate in relation to migration for the road design to focus attention on the valleys on either side of Crno Brdo to reduce impacts on migratory corridors. The choice of technical solution for this section is presented in Chapter 6. A key issue being around also limiting the construction disturbance to the ZAM and habitat destruction from constructing a gallery.

Avoidance of the potential effect on the significantly important Evil Canyon for migration could be addressed in the further road scheme design by using of technical solutions such as a tunnel on the **Peštani to Albanian State Border section** (see Chapter 8).

7.3.3 Effects on the Cultural and Natural Heritage of the Area

As described in Section 5.4, the area of the Park and Lake Ohrid is part of the UNESCO World Heritage Site for Natural and Cultural Heritage of the Ohrid Region, the criteria for the original inscription of which was *'contains superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance'*. The setting of Lake Ohrid against the dramatic backdrop of Galichica is outstanding, and apart from a coastline strip extending south from Ohrid town, the coastline is remarkably undeveloped – this is particularly the case for the southern section of the lake. The few small villages of Peštani, Trpejca and Ljubanishta along this coastal strip are limited and confined, and the current road is narrow and winding, following the contours of the coastal strip, and therefore acts as much less of an intrusion into the natural setting. However, the existing road and the related cut rock face is noticeably through the Crno Brdo stretch. The stretch between Peštani and the Albanian State Border is particularly undeveloped and has a more rural feel than the section north of Peštani.

The effect of a high speed, express road with the terraforming slopes, cuttings, embankments, lit junctions, and the associated noise, could significantly alter the natural beauty of the area. The clearance of a strip of forest vegetation will be visible along the coastline, from the Lake and from viewpoints higher in the National Park. This will leave a permanent scar on the forested slopes – given the natural status of the southern section this will be a specific issue of significance for the **Peštani to State Border** section. Any lighting of junctions will disturb visibility of the night sky, currently largely unpolluted by light outside the villages. The noise of the road traffic will be noticeably higher than from the current road, given the higher design speed. The higher elevation of the proposed road will ensure that it is visible from a significantly wider area than the current road. The Crno Brdo stretch is prominent visually as a natural area in the landscape for **the Ohrid to Peštani** stretch given the development that has occurred along this stretch. Visual and landscape effects of road construction therefore may be noticeable and care is required in the design (e.g. tunnel vs gallery), construction techniques and restoration of this section.

A further effect is the potential for induced expansion of the urban strip of the coastal corridor. The current road effectively limits this to elevations within access of the road. The proposed expressway potentially may raise the upper limit of urbanisation and could potentially encourage development of the urban fabric to higher levels along the mountain side.

Cultural heritage resources, whilst potentially not directly disturbed, are at risk from disturbance - e.g. dust, noise and vibration, and the risk of contractor infringement of cultural properties - during construction. Air pollution can cause deterioration of buildings and monuments, and vibration and cause



damage to buildings and sites. Any urban development induced by the road scheme can impact historic landscapes.

While these effects are typical of road schemes through rural areas, the generally undisturbed nature of the lakeside - particularly the stretch between **Peštani and Ljubanishta** – and its consequent designation as an area of Outstanding Universal Value (OUV) raises the significance of these effects to levels of strategic concern, the risks of which need to be understood and carefully considered within Heritage Impact Assessments at a project level.

7.3.4 Effects on the Local Economy

The road itself will have little direct effect on the local economy other than marginally improving communications for local people between villages and Ohrid, and likely some employment during the construction period.

However, the road will improve access between Ohrid and the Albanian border, and will facilitate the development of the lake side, particularly for tourism and residential (holiday) uses. If the associated development of the tourism industry does materialise – see later for discussion of the Tourism Development Zones - more employment opportunities for local people will be created. Since one of the key characteristics of the area is the out-migration of young people to other parts of Macedonia for work, additional local employment could reduce out-migration, which would be positive for the local economy. The potential induced effects of the road scheme in opening up the area to easier access and potential development is a key characteristic of the scheme, with potentially significant positive consequences for the local economy.

7.3.5 Environmental Quality

Air Quality: At this stage there is insufficient information to determine the net effect of the road on air quality. This will be addressed in the project level ESIA's. Therefore a qualitative narrative discussion is provided which is considered sufficient for the SEA level. Traffic congestion on the existing road during peak visitor seasons (weekends and summertime) is known to degrade the air quality temporarily along the existing road. The new road should alleviate some of this congestion and reduce the level of exhaust gases along the coastal strip. However, if the improved road connection generates increases in traffic volume over time, then the total quantity of exhaust gases emitted may rise. On balance, unless traffic levels rise significantly, this is unlikely to be a strategic issue although some very localised impact on vegetation and fauna along the edges of the road is potentially likely. The effect on air quality near dwellings and settlements close to the new road, using up to date baseline measurements, should therefore be investigated in more detail in the project level ESIA's.

Noise: The road will give rise to increased levels of background road noise in the wider area, as discussed earlier. However, the noise effects of the road traffic - in terms of breach of the relevant noise standards at key receptors – are likely only to impact dwellings close to the road. Noise levels will be studied in the road designs and project-level ESIA's, and where necessary, steps taken to buffer noise emissions and dampen the noise received at the receptors. These effects should be investigated, and mitigation measures developed where necessary, by the road design and the ESIA.

Hydrology and Lake Ohrid: Rainfall levels in the Galichica area are low, at around 700 mm / year at lake level. However, there remains a risk that run off from the road scheme, during both the construction and operation phases, will generate run off contaminated either by construction debris or sediments (during construction) hydrocarbons or erosion sediments (during road operation). If allowed to drain into the descending streams, and into Lake Ohrid, the water quality in the lake – currently rated as Class I, could be effected potentially.

However, this will be investigated and should be readily mitigated in the road design. The design will take account of the flow of water from the mountainside in rivers and streams, across the road, and must permit free passage of water to the lake. A competent hydrological study followed by appropriate design of bridges, culverts and other road drainage features at key locations, should ensure that no adverse effects on the surface water regime arise. The road designs will also need to take account of the



groundwater regime, especially where cuttings are made in the limestone base rock, to ensure that excessive seepage onto the road does not occur.

These risks are not considered of strategic concern at this stage, provided they are addressed adequately in the detailed designs and project level ESIA's.

7.3.6 Impacts on PINPG

Construction and operation of the two road sections will bring additional risks to nature protection in the Park. It is the PINPG's responsibility to monitor and manage the natural resources and threats on them. Several key road construction activities - land clearance, excavations, establishment of access roads and construction yards, etc. – will need to be carefully monitored, and a Construction Environmental & Social Management Plans (CESMP) will be developed by the Projects (i.e. **Ohrid to Peštani & the Peštani to Albanian State Border**) to ensure that the project developer monitors and manages these risks. There will be a biodiversity component to the CESMP, which deals with issues such as relocation of plants, re-vegetation of cleared areas, management of impacts to wildlife/wildlife movements, offset requirements, etc. PINPG will therefore need the ability to agree mitigation and management measures with the project developers and contractors, and to monitor the effects on biodiversity during construction and operation. This will put unprecedented pressure on PINPG. PINPG will need support in strengthening its ability to manage impacts, including working with the road design and construction teams, if biodiversity effects are to be adequately managed and monitored.

7.4 Impacts of Tourism Development Projects

7.4.1 Sources of Impact

As described in Section 4, three Tourism Development Zones (TDZs) have been proposed. Although no detailed plans are available, it is expected that these will be urban developments which will likely include hotels, apartments, restaurants, parks, and other services related to tourism and visitor activities. It is understood that they will likely be planned and zoned by the Spatial Planning Agency (SPA), and implemented by private investors. The construction process will be typical, involving land clearance, excavations, building work, and construction traffic to bring in materials and supplies. During operation, impacts will arise largely from increased visitor numbers in the area.

7.4.2 Ecological Effects

Ljubanishta TDZ. The Ljubanishta TDZ is divided into three components – Ljubanishta 1, 2 and 3. Ljubanishta 1 and 2 will largely be established in the semi-urban, semi-agricultural areas surrounding the existing village. There are no major concerns over ecological effects from these developments. However, Ljubanishta 3 has been proposed for the area of the St Naum Springs, which is part of NPG's Zone of Strict Protection. This spring is a karstic spring, adjacent to an old monastery and is unique. Much of the aquatic biodiversity in the spring is endemic and is not represented in the adjacent Lake Ohrid. For these reasons, any additional plans to develop tourism facilities in this area are of concern. Even though the area is currently a pilgrimage site, and does attract visitors, any increased development physically adjacent to the protected area will induce additional risks. While adverse effects could be mitigated to an extent by good design, any biodiversity components lost as a result of this development would be irreplaceable and impacts on them not offsettable. This means further impacts would have to be avoided to conserve the species concerned with any degree of assurance, ie impacts should be avoided. According to the SPA the Ministry of Transport and Communication, whose initiative this TDZ is, has decided not to develop Ljubanishta 3, although this has yet to be confirmed in writing. It is strongly recommended that this area is not re-zoned and that plans for the development of Ljubanishta 3 are withdrawn.

Stenje TDZ: The proposed Stenje TDZ is located on the shore of Prespa lake, between the lake and the Stenje Marsh. The zone covers an area of 7.82 ha, covered with Common Reed (*Phragmites australis*). The Stenje Marsh is a unique area of saturated ground, whose water levels and aerial extent rise and fall with the level of Prespa lake. It has been declared a Zone of Strict Protection by NPG, due to the high



number of endemic species and endangered such as rotifers, crustaceans, gastropod mollusks, dragonflies, reptiles and birds. The marsh is surrounded by a Buffer Zone, extending 50 m from the border of the Zone of Strict Protection. The proposed TDZ extends into the Buffer Zone. The AMP therefore contains an amendments allowing a special activity in this Buffer Zone of 'new infrastructure in the Buffer Zone of the Zone of Strict Protection – section "Stenjsko Blato"'.

Construction between the wetland and the lake will require excavations and dewatering, which risks lowering the water levels at the wetland, and possibly causing irreversible ecological damage and loss of biodiversity. In addition, with large numbers of visitors being accommodated directly adjacent to the marsh, it is inevitable that some will seek to access the wetland, introducing an element of new disturbance, and bringing the risk of trampling small plants and animals and introducing litter. This wetland is regarded as important and unique in the area, and the risk to it from the TDZ is highly significant and will be difficult to mitigate adequately. Avoidance is the best option, and according to the SPA the MoTC have not at the moment requested they commence the preparation of the planning and zoning documentation for this TDZ. Both the breach of the Buffer Zone, and the development of Stenje TDZ will include significant adverse risks to the biodiversity of the wetland. Withstanding the amendments to the Management Plan the SEA recommends relocating the TDZ away from the marsh to avoid adverse impacts.

Oteshevo TDZ. This is a proposed development of accommodation and tourism infrastructure on an area of 59 Ha located on the southern slopes of Sirhansko Kale Hill, on the edge of Prespa Lake. The entire area is populated by a Hungarian Oak forest characterized by the *Quercetum frainetto – cerris macedonicum* tree species, and associated communities. This is part of NPG's Zone of Active Management (ZAM), and although partly damaged by past fires, is reported to be recovering and in good condition. As part of the ZAM, it is not part of the Park's firewood collection plans. The Hungarian Oak is not protected, and although loss of this area of forest will reduce the total amount of oak forest in the Park, its effect on biodiversity within the Park will not be significant. However, under the current Park Management Plan 2011 – 2020, development of residential infrastructure, tourism facilities and new facilities for other purposes is not allowed within the ZAM. This area of ZAM has been rezoned as part of the AMP.

7.4.3 Effects on the Cultural and Natural Heritage of the Area

The key risks to the cultural and natural heritage of the area are:

- Irreversible threats to the St Naum spring and its unique ecosystem and biodiversity from development of the Ljubanishta 3 TDZ;
- Irreversible loss or damage to the Stenje Wetland and its unique ecosystem, from development of the Stenje TDZ at the proposed location.

Either of these reduces the uniqueness and variety of the Park's natural features and is considered a significant adverse effect which should ideally be avoided.

An additional, more general effect arises from development of new urban areas in a largely undeveloped area. Oteshevo and Stenje are proposed for an area along the Lake Prespa shoreline in areas which are currently largely natural and undeveloped. The planned development at Oteshevo is likely to cause a particularly stark juxtaposition of new development in a forested area on the Prespa shoreline. Although the Ljubanista developments effectively amount to an extension of a current village settlement, if these TDZs are implemented as currently planned, they will represent new developments in the natural landscape of the area. This is of particular concern in this setting, given the area's designation as a World Heritage Site for reasons of its 'superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance'. Too much development risks giving rise to adverse effects on the landscape. These may be reduced by appropriate design of the facilities following a full landscape and visual impact study, however, the effect on the area is likely to remain significant.

Cultural heritage resources are at risk from disturbance - e.g. dust, noise and vibration, and the risk of contractor infringement of cultural properties - during construction of the buildings and facilities for these TDZs. Air pollution can cause deterioration of buildings and monuments, and vibration and cause



damage to buildings and sites. The increase in visitors to the Ohrid coastline and Prespa shorelines will also put pressure on the management of the cultural and natural heritage of the area, with likely increase in visitors to the various heritage sites, such as the St Naum springs, the monastery of Sveti Arhangel Mihail, and the monastery complex of Saint Bogorodica of Zahum, located on the Lake Ohrid shoreline, as well as greater numbers walking and driving through the Park. If the additional visitors are not managed well, the pressure on both cultural and natural resources could potentially give rise to a significant adverse effect.

7.4.4 Effects on the Local Economy

The tourism developments are designed to accommodate additional visitors in the Park area, and thereby help contribute to the local economy. Each would provide employment, temporarily during construction, and permanently once they were operating. There will potentially be a significant knock on effect in the wider economy from the demand for goods and services. If managed well, and provided much of the goods and services were provided by the local area, these developments could provide an important boost to the local economy. This is an important potential positive benefit, even if, as has been suggested, only Ljubanishta 1 and 2, and Oteshevo TDZs go ahead.

7.4.5 Environmental Quality

Risks to environmental quality – air quality, noise, water resources and water quality – will arise as a result of these TDZs, but the risks and potential effects are typical and will be studied at the ESIA and project design stages, and should be readily managed.

Two issues deserve particular mention. Given the proximity of each TDZ to one of the lakes, and the importance of the water quality of Lakes Ohrid and Prespa to the overall natural amenity of the area, the risk of discharge of contaminated water from each TDZ needs to be investigated and steps taken to contain the risk. During construction, debris, oil and grease and other sediments will arise, and if not managed adequately, could run off or infiltrate into the adjacent lake. During operation, wastewater will be generated by each development and if inadequately treated, and allowed to discharge into the lake, could have significant adverse impacts on lake quality. A zero-discharge policy, prohibiting any run off and discharge, even of treated wastewater, into the lakes is one possible measure which should be considered.

7.4.6 Impacts on PINPG

Construction and operation of each of the proposed TDZs will bring significant additional risks to nature protection in the NPG. PINPG will wish to monitor risks to the Stenje wetland during construction and operation, and to the St Naum Spring, if the adjacent TDZs go ahead. Additionally, if the forest at Oteshevo is cut down for the Oteshevo TDZ, PINPG will wish to agree and supervise the compensation and offsetting measures which will be required. Post construction, establishment of the TDZs will bring additional human activity into the Park at levels which are orders of magnitude higher than what the Park is used to. PINPG will therefore need the ability to agree mitigation and management measures with the project developers and contractors, and to monitor the effects on biodiversity during construction and operation. This will put unprecedented pressure on PINPG. Without significant additional resourcing, PINPG will not be able to adequately monitor and manage the effects on biodiversity of the TDZs, and the long term reputation of the Park and area as an outstanding feature of natural heritage, will be at risk.

7.5 Impacts of Re-zoning

Apart from the practical risks to biodiversity described above, the inclusion of the 5 projects into the Park Management Plan means that some areas need to be re-zoned from being in the Zone of Active Management (ZAM) to the Zone of Sustainable Use (ZSU) to reduce their protection rating and allow project infrastructure to be developed. This is because, according to the Park Management Plan, the following activities are permitted in the Zone of Sustainable Usage, but prohibited in the Zone of Active Management:



- Walking outside marked trails;
- Collection of fungi, fruit and plants;
- Livestock grazing;
- Traditional agriculture;
- Mowing grass;
- Beekeeping facilities;
- Commercial forestry;
- Intensive agriculture;
- Collection of wood and branches;
- Motor vehicles;
- New residential facilities;
- New tourism facilities;

Within the current Park zoning regime, the proposed projects can only therefore be developed within areas designated as ZSU.

The effect of each project on the Park's current zones is summarised in the table below. A total of 604.08 ha from within the Zone of Active Management needs to be reduced in status to the Zone of Sustainable Usage. This consists mostly of areas of alpine and subalpine calcareous grassland, juniperus communis shrubs and Fagus sylvatica beech trees, which are found in the area where the proposed ski centre will be located. It also includes an area of around 57 ha of Quercus frainetto oak woodland which will be destroyed for the Oteshevo TDZ project, and an area of 84 ha of Macedonian which will be destroyed if the Peštani-State Border road project goes ahead as currently planned. A total of 5.22 ha of Buffer Zone (around the Stenje Marsh and the Sveti Naum spring) will also be enfringed. Project developments within the ZSU are permitted.

Table 7.2: Effect of Proposed Projects on Park Management Zones

Planned Development Project	Areas of Planned Development Projects (Hectares/ha)				
	Total Footprint in Park	ZSP	ZAM	BZ	ZSU
TDZ Oteshevo	58.95	0	57.39	0	1.56
TDZ Stenje	7.92	0	0	5.0	2.92
TDZ Ljubanishta	293.96	0	0.69	0.22	293.05
Express road A3	307.62	0	49.85	0	257.77
Ski Resort (including Central Plateau Nordic Ski Centre)	529.55	0	496.15	0	33.4
Total	1,198	0	604.08	5,22	588.7

[1] Note that these figures relate to the 'direct' footprint area of the planned projects and does not account for induced/indirect effects. Therefore the 'Area of Impact/Influence' in the SEA assessment is larger than the footprint to take account of the induced/indirect effects. The figures also do not include the confirmed areas of clearance associated with the Prespa Lift/Gondola and the construction access roads.

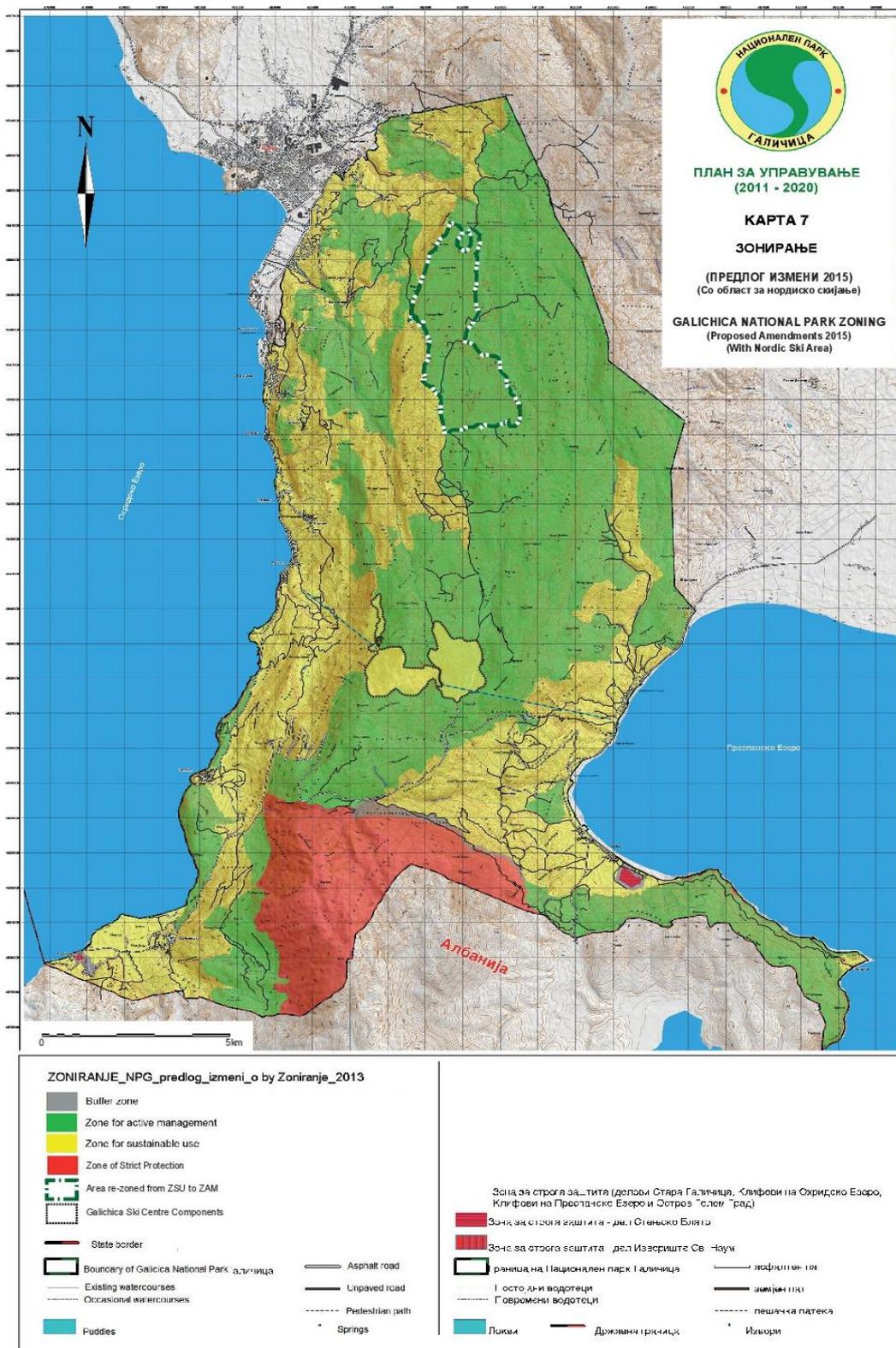
However, the amended Management Plan seeks to compensate for this by upgrading an area of 854 ha of alpine and subalpine calcareous grassland in the north of the Park from the Zone of Sustainable Use to



the Zone of Active Management. PINPG will move this into active management in order to preserve the condition of the area as a grassland habitat and prevent the natural succession pressures into shrub and woodland. The areas where the Park Zoning is to be changed are shown in figure below:



Figure 7.7: Galichica National Park Zoning – Proposed Amendments 2015





As described, activities are permitted in the ZSU which are not permitted in the ZAM. The reduction in protection status associated with the re-zoning from ZAM to ZSU will therefore permit a number of damaging activities in areas where they are currently prohibited. Specifically, the re-zoning will allow the various elements of the proposed infrastructure to be developed, and project activities to occur in these areas. Although the only areas to be rezoned are those relating to the proposed projects, and much of the impact of the rezoning will therefore occur as project impacts, described above, nevertheless the reduction in protection levels means that PINPG's ability to protect these areas is weakened, even if some of the projects don't go ahead. This is regarded as a threat to biodiversity management and has potential implications for conservation of certain biodiversity features within the Park as a whole.

7.6 Cumulative Impacts

This section considers the potential for cumulative interactions between the various Projects proposed for the Galichica area, and the social and environmental receptors and resources affected. The table below lists the known projects proposed in the Park area, and notes which will potentially have an interaction with each of the key environmental and social receptors. From the table, it is clear that several projects impact the same receptors, and therefore have the potential to cause cumulative effects. These likely cumulative effects are considered in turn.

Table 7.3: Interactions Between Proposed Projects and Key Resources of Galichica Area

	Road	Ski Centre	Ljubanishta TDZ	Oteshevo TDZ	Stenje TDZ	Induced Developments	Potential Cumulative Impacts
Annex I Habitats		√					
Other Key Habitats	√ (Macedonian Oak)	√	√ (Aquatic habitat)		√ (Wetland habitat)		
Protected Species	√	√ (Apollo Butterfly, Crocus cvijicii)	√ (Aquatic species)		√ (Wetland species)		
Cultural and Natural Heritage	√	√	√	√	√	√	Yes
Local Economy	√	√	√	√	√	√	Yes
Environmental Quality	√	√	√	√	√	√	Yes
PINPG	√	√	√	√	√	√	Yes

7.6.1 Cumulative Impacts on Protected Habitats

The impacts on the various habitats and plant communities arising from each of the proposed projects have been discussed above. The comparison in Table 7.3 shows that several projects have the potential to affect key habitats. However, the particular habitats affected by each project are different. Any direct cumulative effect will therefore be slight. Cumulative effects are more related to the wider impact on the area's natural heritage and overall ecological functioning of the Park, rather than cumulative effects on specific habitats. This effect is discussed further below in *Section 7.5 below*



Project specific impacts on key habitats may be significant, but are more appropriately assessed at the Project/ESIA level. Some specific cumulative effects that need to be considered in the project level ESIA's identified during the SEA process include:

- Potential cumulative effects on the alpine and sub-alpine habitats from the combination of the ski centre, the trend in climate change effects on these habitats and the potential increase in people being present in the locality from an increase of tourism in the summer months has the potential to be significant. The ski centre ESIA needs to be evaluated this effect in more detail.
- The current forestry activities in the Park will need to be carefully balanced by PINPG to avoid significant cumulative effects from the loss of forestry coverage, especially with regard to the A3 Expressway project. It would be advisable in the ESIA's for the A3 Expressway sections for this cumulative effect to be considered and inform whether compensatory measures are required.

7.6.2 Cumulative Impacts on Protected Species

The Project impacts on key protected and vulnerable species from each of the proposed projects have been discussed above. The comparison in Table 7.3 shows that several projects have the potential to affect key species. As each of the projects effects different types of habitat generally there is variation in the potential species effected. At a Project level species surveys are required of project footprints and areas of impact to determine protected species present using the affected areas. At the SEA level whilst potential strategically significant cumulative effects are related to the wider impact on the area's natural heritage, there are some areas where potentially significant cumulative issues to protected species may occur which the projects individual survey, mitigation & monitoring plans and PINPG monitoring plans need to consider:

- Cumulative effects arising from fragmentation and barrier effects to wider ranging mammals – this is potentially a significant issue in relation to the combined effect of the ski centre and the A3 Expressway **Peštani to State Border** section;
- Increasing overall disturbance within the Park – especially will be a potentially key issue in the southern section of the Park where the A3 Expressway **Peštani to the State Border** and Ski Centre occur in a currently 'quiet' area and there is a key migration corridor of Evil Canyon;
- Urbanisation threat and the planned developments - The current main threat in the Park is urbanisation (see Chapter 4) the combined effect of this and the 5 Projects planned within the Park provide additional pressure on an already sensitised baseline;

Project impacts on protected species may be significant and surveys are required to confirm presences and use of affected areas, but are more appropriately assessed at the Project/ESIA level.

7.6.3 Cumulative Impacts on Cultural and Natural Heritage

Perhaps the key cumulative effect of the implementation of the Projects is on the overall cultural and natural heritage of the Park area. The various cultural and natural heritage resources and the project impacts on them were described in Section 5.5. The UNESCO world heritage site designation for the Ohrid area is based on the following statement of Outstanding Universal Value (OUV):

"The best preserved complete ensemble encompassing archaeological remains from the Bronze Age up to the Middle Age; Religious architecture from the 7th-19th century and urban structure representing the vernacular architecture from the 18th-19th century; Byzantine arts displayed by more than 2500 m³ of frescoes and over 800 famous icons of worldwide fame; The Lake Ohrid is a natural phenomenon, providing a unique refuge for numerous endemic and relict freshwater species of flora/fauna"

The cultural resources within the Park that influenced the UNESCO designation⁷ include the quality and diversity of physical cultural heritage and archaeology found along the coast of Lake Ohrid and surrounding area; the synthesis of ancient nature and archaeological remains of several civilisations⁸.

⁷ UNESCO Criteria I, III and IV



All properties inscribed on the World Heritage List must have adequate protection and management mechanisms in place. However, the recent urbanisation along the shoreline has already started to affect the OUV of the Ohrid World Heritage site, and UNESCO does not consider that the current draft management plan is adequate to maintain the property's OUV⁸. Implementation of each Project will place additional pressure on the cultural heritage resources. The construction phases will generate dust and vibration, which will affect cultural properties close to the development. The road, TDZs and the ski centre will all encourage greater numbers of visitors to the area, and increased access to the Park. The more visitor amenities there are, the more overnight stays will result, and the more likely visitors will be to access the higher and less accessible areas of the Park, which are currently less impacted by human activity. The number of visitors to the various cultural sites will also rise.

These project effects will be cumulative rather than additive, since the combination of the road and the TDZs increases both ease of access, and the ability to stay longer in the area. The combination of the road and the ski centre increases ease of access and visitor numbers to the higher altitudes. Although the ski centre project includes its own residential areas, the proposed TDZs will further facilitate the stay of greater visitor numbers in the area. The longer people stay in the area, the more varied an experience they will seek, and the more likely they are to visit multiple sites and multiple areas. All in all, pressure on the Park's resources will increase.

The fact that the Park area has attracted multiple designations due to its cultural and natural heritage is a testament to the uniqueness of the area, and the need to protect it. The more project implementation occurs, the more visitors and access increases, and the higher the resulting impact on the resources. There are no estimations of 'carrying capacity' for the Park, and it is difficult to determine at which point increased pressure becomes a risk to the integrity of the Park's resources. Careful management of the effects will be needed at a project level, with clear restrictions on access, and certain activities. In addition, a plan to monitor the pressures and effects on the Park and its resources will need implemented, in order that adaptive management approaches can be adopted, in case of over use.

Given the current lack of an adequate plan to manage the cultural heritage resources of the area, UNESCO's unease about the current plans, and the lack of clear guidance to monitor and manage pressure on the lakeshore and the OUV attributes, the proposed amendments to the Park Management Plan, and the proposed Projects envisaged therein, will give rise to a significant adverse cumulative effect. The implementation of significantly additional management controls, including adaptive management approaches, based on resource monitoring, is likely to be the best way to address this.

7.6.4 Cumulative Impacts on Local Economy & Tourism

The table, and the discussion on project impacts, indicates that each project will likely have a beneficial effect on the local economy, both from the provision of temporary employment and demand for goods and services during their construction, and from the longer term demand for goods and services from visitors to the area. The social baseline has demonstrated that the area suffers from under employment and significant out-migration of young people. The cumulative effect of these projects – all of which are designed to attract tourism and visitors to the area – should be to increase local employment, and will likely have some effect on reducing out-migration. As tourism in the area develops, the provision of additional tourism infrastructure – hopefully outside the protected areas in the Park – may continue, and the local economy of the area may continue to develop.

The above benefits will be particularly realised if the local communities are able to supply the demand for service industry workers that is needed.

The Park Management Plan focuses on 4 key areas in its objectives and management – one of these is sustainable tourism. The combined effects of the projects to increase tourism goes beyond the 'nature-based' tourism concept potentially which is the underpinning basis of the NPG management of this area. The ski centre and TDZs further planning need to be developed accommodate for the NPG Management Plan sustainable tourism strategic and planned actions and programmes. It is likely these projects could

⁸ Cultural Heritage values of the World Heritage site are described in detail in "Macedonian Cultural Heritage: Ohrid World Heritage Site" (2009), MoC, Skopje.

⁹ UNESCO Periodic Report 2014.



help deliver of some more nature-based tourism activities. However, the number of visitors proposed by the combined projects need to be carefully balanced with the overall carrying capacity of the Park as a natural and cultural resource.

7.6.5 Cumulative Impacts on Environmental Quality

All proposed projects will have their own effects on air quality, noise and will give rise to risks on surface water quality. These effects will likely be mostly additive. However, all projects are associated with the increase in human activity in areas of the Park where currently activity is low. Even if each project complies with the various emissions and discharge standards, the combined result will be that more pollution load is applied to the receiving environment. Biological receptors which have been used to the low levels of contaminants in the air and water will be particularly susceptible to the increased pollution levels which will inevitably arise. There will undoubtedly be some changes in the distribution of species which are particularly sensitive to pollution. This may apply to species affected by air quality, which will particularly apply to the new urban areas and the road corridor. Species affected by noise will also avoid the residential areas and the road corridor, and will be particularly disturbed during construction activities. Additionally, the water quality in the streams and in Lake Ohrid (and to a lesser extend Lake Prespa) could be affected, if polluted runoff, or wastewater is discharged to the lakes. Since the lakes are currently oligotrophic, with very low levels of nutrients, any changes in water quality may disturb the distribution of aquatic flora and fauna along the shorelines of the lakes.

The more development occurs in the area, the larger these changes will be. While they are not predictable at this stage, the PINPG will need to be vigilant to pick up changes as they begin to occur, and to identify any actions that are needed to maintain a healthy balance in the various ecological systems.

7.6.6 Cumulative Impacts on PINPG.

The expanse of the National Park is the responsibility of PINPG. PINPG has developed the Park Management Plan, and under the Law of Nature Protection, and it is their responsibility to implement the Management Plan. As discussed in Chapter 3, PINPG currently has very limited resources. Even before the Management Plan is amended, PINPG's resources are stretched, and there are several aspects of their Management Plan which they are currently not able to implement, due to a lack of staff and resources. As is clear from the above discussions and the impact assessment, the modifications to the Park Management Plan and the implementation of the Projects will put significant additional pressure on PINPG. The additional actions which will need carried out include;

- Working with the project designers and ESIA teams to agree constraints, and mitigation measures;
- Working with construction supervision teams to monitor the construction impacts and implementation of the CESMP;
- Identifying and supporting the implementation of biodiversity offsets;
- Ongoing monitoring of the threats and changes to biodiversity in the Park as a result of Project implementation.

Since the projects will likely not be implemented simultaneously, the involvement of the PINPG will be needed over a period of time.

Given PINPG's key role in managing and preserving the resources of the Park, and in keeping with Macedonia's international commitments to preserve and protect its biodiversity and cultural heritage, the additional pressure on PINPG's resources is considered a significant cumulative risk.



7.7 Effects to Protected Area Status – IUCN II, WHS, Emerald Site (including High-level Appropriate Assessment review)

The Park is a protected area and represents a key biodiversity hotspot in Europe with important natural and cultural heritage values. The implications for the integrity of the Park as a 'whole resource' and its 'Protected Status' regarding the key designations of the World Heritage Site, the National Park and the Emerald Network are assessed therefore within this section. As the National Park Galichica forms part of the Emerald Network, efforts have been made to carry out a 'high-level' review consistent with the requirements for Appropriate Assessment under the EU Habitats Directive. This section therefore considers the implications of amendments to the Management Plan for the integrity of the Park as a whole and also provides further consideration of the potential cumulative and in combination effects that might arise from these amendments and the effects of planned development projects.

Effects on the integrity of Natura 2000 sites are generally made in the context of sites' conservation objectives and the ecosystem processes and functions that need to be safeguarded to ensure that these objectives can be met. The Park Galichica's Management Plan sets out certain key objectives and this section uses these objectives as the basis for defining integrity and assessing potential impacts on it.

7.7.1 Status as a National Park (related to IUCN Category II).

The Park Management Plan notes that, *pursuant to Article 2 of the Law on Nature Protection, the National Park is "a spacious, mainly unchanged area of land or water, with a unique variety of natural values, which encompasses one or more preserved or insignificantly altered ecosystems, primarily intended for conservation of the authentic natural, cultural and spiritual wealth"*. This concept of National Parks in Macedonia is closely related to that of IUCN, Category II Protected Area, i.e.:

"Natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities" (IUCN, 2008¹⁰)

In both of these definitions, the concepts of a "mainly unchanged area" and "naturalness" are central, and are used by IUCN in defining protected area categories (IUCN 1994¹¹). According to IUCN, the categorization of protected areas is based on the primary management objective. With regard to the Category II designation (National Park), the primary management objective should be "*To protect natural biodiversity along with its underlying ecological structure and supporting environmental processes and to promote education and recreation*" (IUCN, 2008). A related rule is that the primary management objective refers to at least three-quarters of the protected area – "75% Rule" (IUCN, 2008).

This means that according to IUCN guidelines regarding management of Category II protected areas, sustainable use of natural resources is allowed at not more than 25% of the Park territory. Therefore, the original Park Management Plan of **2011-2020 points out that the Park currently does not meet IUCN criteria related to Category II (National Park) Protected Areas**. Any additional development, and any further reduction in protection status of the Park, i.e. as a result of reducing the area under the ZAM, will further threaten the protected status of the area. The total ZSP plus ZAM for the original Park Management Plan was 14,391 ha (i.e. 59.6% of the Park area). In the AMP the proposed zoning total for ZSP plus ZAM is 14,642 ha (60.6%). One outcome of the amendments is therefore to move the NPG slightly marginally closer to the IUCN threshold.

7.7.2 Status as a World Heritage Site

With regard to cultural heritage, all properties inscribed on the World Heritage List must have adequate protection and management mechanisms in place, although how a country chooses to protect and manage its properties can vary, so long as it does so effectively. Recent urbanisation along the shoreline has already started to affect the OUV of the Ohrid World Heritage site, and a UNESCO mission in 2013

¹⁰ Dudley, N. (Editor) (2008). *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: IUCN.

¹¹ IUCN (1994). *Guidelines for Protected Areas Management Categories*. Gland: Switzerland.



concluded that the current draft management plan is inadequate to maintain the property's OUV¹². UNESCO recommended that Environmental and Heritage Impact Assessments should precede all development proposals that can potentially impact the OUV and that these, along with project proposals, should be submitted, in accordance to Paragraph 172 of the Operational Guidelines, to the World Heritage Centre for review prior to granting approval for implementation. In addition, the 2013 UNESCO mission strongly recommended that a comprehensive action plan for the lakeshore be finalized and adopted (based on the draft Ohrid Management Plan), before consideration is given to additional coastal developments. The World Heritage Committee can place a property on an "in danger" list if it believes the property is threatened by serious and specific dangers. If the OUV of a listed property is destroyed, the World Heritage Committee will delete it from the World Heritage List altogether.

The OUV of the Park is at risk from current and planned developments, and from a lack of adequate management. Given the fact that the amended Park Management Plan will further weaken PINPG's ability to manage the pressures on development, and actively facilitates five significant new development Projects, all of which generate specific additional threats to the Park's heritage and OUV, the Park's continued status as a World Heritage Site is likely to be at risk, unless significant additional management controls are implemented to manage the future effects of the proposed Projects.

7.7.3 Status as an Emerald Site (& High-level 'Appropriate Assessment' Review)

The Park is an Emerald site and forms a de-facto part of the Natura 2000 Network for non-EU Countries. To meet the principles of the EU Habitats Directive which the Macedonian *Law on Nature Protection* transposes, an 'Appropriate Assessment' is therefore potentially required of plans and projects that could affect the site's integrity. Given the nature, scale and the location of the 5 development projects it is assumed an 'Appropriate Assessment' to meet the provision of the Habitats Directive and the Law on Nature Protection is required at a project-level. At a plan level a high-level 'Appropriate Assessment' style review of the AMP has been provided below this is considered appropriate for the SEA,

In effect, Appropriate Assessment under the *Habitats Directive* promotes the application of the mitigation hierarchy as summarised below:

- Avoidance – preventing significant impacts on European sites from happening in the first place;
- Mitigation – reducing the impact to the point where it no longer has the risk of an adverse impact; and
- *If necessary* – Compensation.

The SEA has used the mitigation hierarchy as a framework for considering ecological impacts in line with the requirements of the EU Habitats Directive and has followed the 4 key steps within the guidance from the European Commission (see Chapter 2) as presented below. This provides a strategic level view on the implications for the Park as a 'whole' focusing on potential impacts on the site's integrity and protected status, drawing on information contained with Chapters 6, 8-10:

¹² UNESCO Periodic Report 2014.



Table 7.4: High-Level Appropriate Assessment Review

Appropriate Assessment Step:	SEA Review Statement:
<p>Step 1 - Screening: Determine whether the plan, 'in combination' with other plans and projects, is likely to have a significant adverse impact on a European site</p>	<ul style="list-style-type: none"> ▪ Revision to the National Park Galichica Management Plan is proposed to accommodate proposed development projects and requires some areas to be re-zoned, reducing current levels of protection in some areas. The amendments were not motivated by a desire to improve management towards achievement of conservation objectives. ▪ The AMP and the planned development projects, which resulted in its amendment, could give rise to 'in combination' which have the potential to cause significant adverse impacts on the NPG Park. The adoption of mitigation and compensation measures is required to reduce the potential adverse impacts and maintain the integrity of the site. On this basis the review has proceeded to Step 2.
<p>Step 2 - Appropriate Assessment: Determine the impact on the integrity of the European site of the plan, 'in combination' with other projects or plans, with respect to the site's structure, function and conservation objectives. Where there are adverse impacts, assess the potential mitigation of those impacts. Where there aren't, then the plan can proceed as it is.</p>	<p>Based on the findings within the SEA the proposed amendments to the Management Plan and the development projects that might arise, will cause habitat destruction and other indirect and induced effects, including habitat fragmentation, introduction of new barriers and increased levels of human disturbance. These impacts vary across the projects, with the Ski Centre and the A3 Expressway Peštani to the State Border with Albania representing a particular risk. It is concluded that these projects could give rise to significant adverse effects that could affect the integrity of the site as a whole.</p> <p>Potential impacts that require mitigation include:</p> <ul style="list-style-type: none"> ▪ Damage or destruction of key habitats or ecosystems– e.g.: <ul style="list-style-type: none"> ○ A3 Expressway Peštani to State Border with Albanian: destruction of Macedonian oak (<i>Quercus trojana</i>) Annex I Habitat (9250) ○ Galichica Ski Centre: destruction of Annex I habitats Alpine & Subalpine calcareous grasslands (6170); Beech Forests (Illyrian <i>Fagus Sylvatica</i> Forests) (91KO); Juniper (<i>Juniperus communis</i> formations) (5130) ○ Galichica Ski Centre: degradation of Annex I habitats due to physical damage as a result of summer use ▪ Galichica Ski Centre & A3 Expressway Peštani to Albanian State border section: Potential barrier and fragmentation effects on European Protected Species such as brown bear and European lynx with requirements for extensive, unfragmented and undisturbed habitat. ▪ Population decline due to habitat loss, degradation and disturbance, including species in several categories of conservation concern – at a project level further detailed surveys are necessary to confirm potential effects on protected species. Within the SEA impacts on two species (<i>Crocus cvijicii</i> and the Apollo Butterfly) have been identified as a result of the Ski Centre for which specific mitigation strategies need to be developed. There may be other endemic and European Protected species that also require specific mitigation. <p>The TDZ's Ljubanishta 3 and Stenje TDZ also present significant localised issues on unique resources and Zones of Strict Protection – as noted below.</p>
<p>Step 3 - Assessment of alternatives solutions: Where the plan is assessed as having an adverse effect (or risk of</p>	<p>This SEA is retrospective, taking place subsequent to the Government's decision to provide development consent for the 5 projects. It has therefore not been possible to identify strategic alternatives that would remove impacts on the site at source. Alternatives considered</p>



Appropriate Assessment Step:	SEA Review Statement:
<p>this) on the integrity of a European site, examine alternative ways of achieving the plan objectives that avoid adverse impacts on the integrity of the European site.</p>	<p>in the SEA have therefore focused on further amendments to the Management Plan that could be put in place to support key ecosystem processes and the conservation of the Park's habitats and species populations. Recommendations for project-level alternatives that should be considered have also been made (See below list). Alternative management and mitigation responses in response to amendment of the Management Plan have been considered in Chapter 6.</p> <p>Further risks come from the actual projects and are outside the scope of the NPG Management Plan to a degree. However at a project level the SEA has identified further avoidance options which it recommends the 'project level' ESIA's, AA and development consider in order to reduce risk on the integrity of the National Park. These presented in the subsequent chapters and are in summary:</p> <ul style="list-style-type: none"> ▪ Galichica Ski Centre: Alternatives to layout to avoid impacts on protected species (e.g. <i>Crocus cvijicii</i> and the Apollo Butterfly) and alternatives to demonstrate the loss of habitats associated with the Nordic Ski Area is justified. ▪ A3 Expressway: Peštani to State Border with Albania Section: alternative route & junction location (or technical solution e.g. tunneling) to avoid/minimise habitat loss to Macedonian Oak (Annex 1 Habitat 9250). Alternative solutions to ensure migratory route to lake shore associated with Evil Canyon and the ecological function of this corridor is maintained. ▪ A3 Expressway: Ohrid to Peštani Section: further consideration and/or refinement of alternative technical solutions to reduce disturbance effects to Crno Brdo ZAM and also ensure options for migration of mammals to the lake shore is integrated into the final project design and ESIA. ▪ Tourism Development Zone: Ljubanishta 3: SEA suggests alternative which removes the development of component 3 of this TDZ which is a ZSP and a unique resource is considered. Ultimately the SEA recommends that Ljubanishta 3 is removed from the Ljubanishta TDZ, and that TDZ should contain Ljubanishta 1 & 2 only. The ZSP and Buffer Zone have not been amended within the Management Plan and would require a further amendment to the Plan. A major residual impact potential would exist with the development if component 3 of the TDZ went ahead. This effect of component 3 is most likely not offsetable as this is a unique habitat and resource. ▪ Tourism Development Zone: Stenje: Alternatives to locating the TDZ within the Buffer Zone to the ZSP (i.e. move it to another shore location on Lake Prespa) and the 'no development' alternative for Stenje TDZ scheme need to be considered. In its current location it is considered that the potential adverse effects arising from this TDZ are not-offsetable. The Buffer Zone has not been removed as the Stenje Marsh is a ZSP in the AMP however a provision has been allowed for certain activities in the Buffer Zone. ▪ Tourism Development Zone: Oteshevo: Options should be considered to reduce the impact on the ZAM and Hungarian Oak. This area of ZAM has been rezoned as ZSU in the rezoning proposed in the AMP.
<p>Step 4 - Assessment where no alternative solutions remain and where adverse impacts remain: Assess compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest, it is deemed that the plan should proceed.</p>	<p>Compensatory measures are considered necessary due to residual adverse impacts on Annex I habitats and European Protected Species as well as other species of conservation concern. Under the requirements of the EU Habitats Directive it would have been necessary to demonstrate that the planned projects were necessary for imperative reasons of overriding public interest for social, health or environmental reasons. For the purposes of this assessment It has been necessary to assume that the Government Directive (see Chapter 1 & 4), which resulted in the request to PINPG to amend the management plan to accommodate the proposed development projects, represents the outcome of a robust process confirming that the planned development projects are in the public interest. This would need to be revisited through project level Appropriate Assessments, which would need to confirm officially 'Overriding Public</p>



Appropriate Assessment Step:	SEA Review Statement:
	Interest' with respect to appropriate criteria and then confirm requirements for compensatory measures. A summary statement of the conclusions to this high-level review is provided below.



Revision to the National Park Management Plan is proposed to accommodate proposed development projects and requires some areas to be re-zoned, reducing current levels of protection in some areas. The proposed projects, if implemented, would have residual impacts due to habitat destruction and other indirect and induced effects, including habitat fragmentation, introduction of new barriers and increased levels of human disturbance. Impacts that need to be considered include:

- Destruction of habitats or ecosystems;
- Reduced quality of habitat;
- Reduced populations of species in several categories of conservation concern;
- Reduced integrity of the National Park as a whole.

Resources to manage the National Park are currently limited and there have not been any comprehensive surveys for many of the species populations that might be affected by changes in the management plan. This lack of reliable, up to date information means that it has not been possible to carry out a comprehensive detailed review of the implications of revision of the Plan and potential impacts resulting from the planned projects for all potentially affected species, including many that are endemic to the local area or the Balkans and many others that are protected within the EU and/or nationally. **More comprehensive baseline surveys, assessments of impacts and mitigation recommendations are therefore needed at the project-level before any project design alternatives are finalised.** Two species have been singled out for particular consideration in this review, both of which are affected by the proposed **Ski Centre** (the *Crocus cvijicii* and the Apollo Butterfly) because they are known to have distributions that are significantly overlapped potentially by proposed developments, however there may be others that would be disproportionately affected that have not yet been identified. ESIA's for the individual projects would need to review implications for European Protected Species, endemic species and others of conservation concern that might be affected and this will require consideration at a local scale and at the scale of the Park as a whole.

Within the SEA it has only been possible to carry out a high level assessment of the implications of the Management Plan revision for Annex I equivalent habitats, based on discussion with specialists. This resulted in the key conclusions that impacts on some forest types will be significant and long-term due to the time needed for restored habitats of the affected types to mature and develop levels of biodiversity equivalent to those currently associated with them. Some impacts may be non-offsetable in practical terms, as the surveys needed to identify suitable sites for implementation have not been carried out in detail. Risk of non-offsetable impacts therefore needs to be considered in depth at Project ESIA-level before project design alternatives are finalised.

Implications of proposed changes need to be considered for the integrity of the Park ecosystem as a whole, including any increases in levels of habitat fragmentation, disturbance by people, hydrological change or increased levels of physical damage or pollution. This is particularly important for "landscape species" that require large areas of undisturbed and unfragmented habitat to meet their habitat needs. However it is also a potential issue for less mobile animals such as tortoise species that may have increasingly fragmented and isolated populations within the Park.

Under the requirements of the EU Habitats Directive to carry out appropriate assessments of plans and projects affecting Natura 2000 sites (which the Emerald sites are de-facto an extension of in non-EU Countries), a plan-level AA may have been appropriate. It has not been possible to carry out a comprehensive assessment in this case as the SEA post-dates the Government Directive, however a retrospective assessment has been made in spirit of the Directive & the *Law on Nature Protection* to identify mitigation and management solutions that will minimize impacts of the Plan amendments on the integrity of the Park Galichica and make some provision for the management that will be needed to sustain key ecological processes in the Park if planned developments proceed.

The key conclusions of this assessment are:

- the proposed plan changes and associated development projects will have a potentially significant adverse effect on the integrity of the Galichica National Park, if alternatives to avoid impacts as noted



in Table 7-1, mitigation and compensation measures are not assessed and implemented at a project level.

- The rezoning option selected for the AMP of 'upzoning' 854 ha from ZSU to ZAM to compensate for the loss of 604 ha of ZAM ensures an equivalent (if not greater) level of protection is suggested to mitigate for some of the adverse impacts that have been identified.
- Despite re-zoning, significant residual impacts are likely for some habitats and species and for the integrity of the Park as a whole. A compensation framework based on a commitment to NNL is therefore required and must be used at Project level. This is based on good practice principles for offsetting and a biodiversity offset framework and habitat metric.
- At a project level the SEA has also identified further avoidance options which it recommends the 'project level' ESIA, AA and development consider in order to reduce risk on the integrity of the National Park. The Projects/issues of specific concern are as to their potential to contribute to significant effects on the integrity of the Park from the SEA of the AMP are: the Galichica Ski Centre; the A3 Expressway : Peštani to Albanian State Border; the location of the Stenje TDZ; and the Ljubanishta TDZ Component 3 at St. Naum.

Appropriate assessment promotes a hierarchy of:

- avoidance: preventing significant impacts from happening in the first place;
- mitigation: reducing the impact to the point where it no longer has the risk of an adverse impact (on site integrity or the status of protected species);
- if necessary, then putting in place compensatory measures.

The issues above will need to be addressed at project ESIA and Appropriate Assessment level to provide the necessary assurance that all possible efforts have been made to avoid impacts, that effective compensation will be achievable and that the necessary resources are in place to ensure that the integrity of the Park can be maintained, given full consideration of cumulative and in combination effects. It is considered the AMP and SEA provide a zoning proposal, recommendations and a framework which if adopted should assist in protecting the integrity of the Park and reduce the implication on its protected status from the planned development projects.

7.8 Transboundary Impacts

Although the entirety of the Park lies within Macedonia, its southern border is also the national border with Albania and several of the key features of the area are shared. Shared resources include;

- The Galichica mountain range, which extends southwards into Albania;
- Lake Ohrid, which is shared by Macedonia and Albania;
- Lake Prespa, which is shared by Macedonia, Albania and Greece.

Recognition of the transboundary nature of the natural and cultural resources is seen in the number of transboundary plans, agreements designations, namely:

- Agreement between the Council of Ministers of the Republic of Albania and the Government of the Republic of Macedonia for the Protection and Sustainable Development of Lake Ohrid and its Watershed (Skopje, 2004);
- Agreement on the Protection and Sustainable Development of the Prespa Park Area (European Commission, 2014);
- Galichica included in Transboundary Prespa Park in 2000 and 2010;
- Trilateral Strategy and Action Plan for the Prespa Lake Basin (2012-2016);
- Included in Transboundary Biosphere Reserve for the Ohrid-Prepa Watershed, 2014.



Any impacts on transboundary resources or Project effects which cross jurisdictions will therefore become transboundary impacts. By reviewing the discussion on the impacts assessment above, the following transboundary effects may occur as a result of the adoption of the amended Management Plan, including implementation of the projects.

7.8.1 Transboundary Impacts on Ecological Resources on Galichica Mountain

Implementation of the development projects, in particular the ski centre, may have impacts on particular species (e.g. mobile fauna chamois, etc.) which inhabit the higher elevations of the Park and cross between Macedonia and Albania. If species populations become less included to frequent the areas of the ski centre (or other Project areas), they may move farther south into Albania. However, these effects should not be overly significant at a transboundary level.

7.8.2 Changes in Lake Water Quality

Any major change to the water quality of either Lake Ohrid or Lake Prespa, for example as a result of polluted runoff, will not be restricted to the Macedonian side of the Lake. These impacts were discussed in Section 7.5, and it was noted that the risk of pollution to the lakes should be readily managed, and only a very significant, prolonged release of pollution would have transboundary effect. This is therefore not a significant concern for the SEA.

7.8.3 Landscape and Visual Effects

Despite the landscape setting of the Park being an important aspect of its importance, Project effects, even of the ski centre, will not be overly visible from either Albania or Greece. If the new A3 express road were planned to light in its entirety, it would likely be visible from the Albanian side of the Lake, just as the lights along the Albanian coast road are visible from Galichica. However, only the junctions are planned to be lit, and at a distance for around 15 km, any visual effects from the proposed projects will not be significant.

7.8.4 Cross-border Access

The A3 express road will increase access between Ohrid town and the Macedonian side of Lake Ohrid, and south-western Albania, particularly the areas of Pogradec and Korce. Although not on a major through route, there is likely to be increased local traffic between these border regions of Albania and Macedonia. This will be a benefit to trade links and other cooperation between the areas, and may encourage greater cross-border tourism. This is regarded as a positive effect, albeit with limited scope.

7.8.5 Risk to Transboundary Protected Areas

The above section discussed the risks to the protected area status of the area, from the cumulative effects of the several development proposals. Given that some of the designations are transboundary in nature – as noted above – there is a reputational risk to Macedonia that the changes to the Park Management Plan and the prioritisation of development over the protection of natural and cultural heritage, mean that it is no longer able to fulfill its obligations in respect of the various transboundary agreements to which it is party. It is likely to be the cumulative effect of the several projects, rather than the implementation of any one in particular, which give rise to concern among Macedonia's transboundary parties.

Process for Transboundary Consultation

In summary, the physical effects (positive and negative) of adoption of the proposed amended Management Plan are not likely to have significant transboundary effects. However, the cumulative risk to the cultural and natural heritage of the area, may give rise to concerns among the various international partners, both neighbouring countries and international agencies. Given the transboundary agreements in place, the transboundary stakeholders should be consulted on the changes to the Park Management



Plan, and any implications on the various transboundary agreements. Consultation was carried out on the draft AMP and draft SEA previously.

7.9 Summary of Potential Significant Impacts

The impacts described above, together with the measures recommended to address the impacts, are summarised in Tables 8.1, 8.2 and 8.3 in Chapter 8.



8. Mitigation Measures / Management Controls

8.1 Introduction – Project Assessments & Management Controls

The SEA assumes that given the natural and cultural values and protected status of the National Park within which the projects are proposed to be developed and given the scale and type of the 5 projects the following studies/assessments will be undertaken at a 'Project' level by the Project Sponsors:

- **Environmental & Social Baseline Surveys/Studies:** As part of the SEA detailed baseline surveys have not been carried out to collect detailed information on the environmental and social resources within the project footprints – this would be undertaken as part of the ESIA at a project level.
- **Environmental & Social Impact Assessment (ESIA)** to meet legal (and future/potential lender) requirements, including a Stakeholder Engagement Plan (SEP).
- An '**Appropriate Assessment**'¹ to meet the provisions of the EU Habitats Directive and Macedonian *Law on Nature Protection* – this may form part of the ESIA.
- Preparation and implementation of **Construction & Operational Environmental Management Plans** including (*but not limited to*) a Biodiversity Management Plan.
- **Heritage Impact Assessment** in line with the ICOMOS guidelines for submission to the Ministry of Culture in order for submission to UNESCO.

8.2 Measures & Recommendations for Potential Significant Negative Impacts

8.2.1 Ski Centre Measures & Management Actions

1. Mitigation of Ecological Effects

It is not surprising that the effects on biodiversity of a ski centre to be developed in the middle of a National Park have been shown to be significant. Even if the scheme were redesigned significantly to reduce its biodiversity impact, there will be residual loss of biodiversity requiring substantial efforts to offset. The analysis presented in Chapter 9 below suggests that much of the offset required will need to be outside the Park, and will therefore require investment of time and money on the part of the Project Sponsor, as well as significant coordination with other bodies.

Firstly, the Project Sponsor is advised to re-consider whether the Galichica National Park is the best location for this ski centre proposal or if some further re-design/reduction in the scale of the development in NPG could be considered viable (e.g. removal of the Nordic Ski Area in the central plateau). A relocation of the scheme to an area with less biodiversity and heritage value (or reduction in the proposed scheme in NPG) would result in significantly lower impacts and significantly lesser efforts needed to mitigate, manage and offset these impacts, the cost of which are still unknown and have yet to be confirmed as being considered as part of the scheme costing.

If the ski project does go ahead, some of the effects described in Section 7.2 can be avoided. Recommendations are as follows:

- The Project should consider whether the Nordic Ski Area is a necessary component of the scheme, given its impacts on three Annex I Habitats. The following Chapter – Chapter 9 - discusses the biodiversity offsets that will be necessary to offset the loss of biodiversity for each

¹ The Park is an Emerald site which form a de-facto part of the Natura 2000 Network for non-EU Countries. To meet the principles of the EU *Habitats Directive*, which the Macedonian *Law on Nature Protection* transposes, an 'Appropriate Assessment' is therefore potentially required of plans and projects that could affect the site's integrity. Given the nature, scale and the location of the 5 development projects it is assumed an 'Appropriate Assessment' to meet the provisions of the *Habitats Directive* (and the *Law on Nature Protection*) is required at a project level. At a plan level a high-level 'Appropriate Assessment' style review of the AMP has been provided as part of this SEA.



of these. These offsets will come at a significant cost in time and effort, as well as financial resources, and the Project Sponsor should make the calculation as to the cost and benefit. If the Nordic Ski Area could be removed from the scheme, and the area left as it is, the biodiversity impacts will be significantly reduced. In particular, 126 Ha of alpine and subalpine calcareous grasslands, 92 Ha of *juniperus communis*, and 12 Ha of *Fagus sylvatica* beach forest **all Annex 1 Habitats** under the *Habitats Directive* will be saved.

- The Project Sponsor should work with PINPG during scheme design, to investigate the area of the *Crocus cvijicii*. If, as is suspected, a slight revision of the land take of the main ski area can be made, much of the loss of habitat of this species can be avoided. This would be a significant 'positive' change to the current Master Plan, and could be made at little cost to the efficacy of the ski facility.
- The Project Sponsor should work with PINPG during scheme design, to investigate the area of distribution of the Apollo butterfly and its habitat. If any alteration to the land take of the ski project can be made to reduce the loss of habitat of this species, it will reduce the measures needed to offset the effects, and the time and effort needed on the part of the Project Sponsor. This would be a significant positive result, and could be made at little cost to the efficacy of the ski facility.
- Further study is needed on the possible effects of the use of artificial snow. The study should address:
 - Ecological and hydrological effects of prolonging the snow season;
 - Risks from additives in the water used to form the snow;
 - Water demand, possible water sources, and the effect on groundwater quality, quantity and other water users.

2. Mitigation of the Effects on Cultural and Natural Heritage

The only way to significantly reduce the effects on the visual amenity and landscape from the ski centre Project is to not implement the project. However, if the project goes ahead, then the adoption of low visual impact design guidelines may reduce the visibility and intrusion caused by the buildings and other infrastructure on the mountain, although there is no mitigation possible to significantly reduce the visual effect of forest clearance for ski pistes, gondolas and chairlifts. Design measures could include:

- Use of natural materials and natural colour scheme on external building surfaces;
- Careful design of lighting to reduce visibility outside of skiing areas.

The Terms of Reference for the next phase of the Project Design should include a requirement to address visual impact, and the ESIA should assess this. In addition, the project needs to ensure that appropriate levels of protection are put in place for heritage assets, with detailed mitigation and monitoring to ensure that the OUV is protected. Requirements include:

- An ICOMOS Heritage Impact Assessment for the project, to consider effects on the OUV of the World Heritage Site and development of mitigation measures to protect the OUV of the area;
- Historic buildings, archaeological sites and other culturally important features should be preserved;
- New developments should create places, spaces and buildings that work well, wear well and look appropriate;
- The landscape should be protected and enhanced where possible, particularly in designated areas;
- Diversity and local distinctiveness must be valued and protected;
- Vibration damage mitigation should be put in place;



- Implementation of a chance finds procedure during construction, as per the requirements of Article 129 of the *Law on Cultural Heritage* which states that the construction team should report any archaeological discoveries under Article 129, Paragraph 2; stop construction work activities and secure the site from potential damage, destruction and unauthorised access; and maintain the discovered items in place and in the condition they were found.

3. Maximisation of Benefits to the Local Economy

If the ski centre project goes ahead, the benefits to the local economy from project construction will be maximised if there is a commitment to source labour, materials and other services from the local area where possible. A requirement to this effect should be given to the bidders for the construction contract.

The ability of the local area to benefit in the long term will depend on their ability to service the subsequent ski and nature tourism industry. Consideration should be given to providing training, micro financing and capacity building to communities and businesses in Ohrid and the area, in advance of the project implementation. Ohrid and Prespa Municipalities, together with business and community groups should discuss how this could be actioned.

The Park Management Plan focuses on 4 key areas in its objectives and management – one of these is sustainable tourism. The effect of the ski centre to increase tourism goes beyond the ‘nature-based’ tourism concept potentially which is the underpinning basis of the NPG management of this area. The ski centre and TDZs further planning need to be developed to accommodate for the NPG Management Plan sustainable tourism strategic and planned actions and programmes. It is likely these projects could help deliver of some more nature-based tourism activities. However, the number of visitors proposed by the ski centre and other projects (e.g. TDZs) need to be carefully balanced with the overall carrying capacity of the Park as a natural and cultural resource.

4. Mitigation of Effects on Environmental Quality

Noise and air quality impacts from the ski centre development will be addressed in the ESIA and are not of strategic concern. However, possible impacts from the creation and use of artificial snow should be investigated at the design stage. A study into the risks of artificial snow should be conducted, to include:

- Investigation of the alternative methods of creating and using artificial snow, and their environmental risks, including the effect of additives to the water;
- Examination of the potential sources of water for snow-making, taking into account the availability, sustainability, vulnerability of each considered resource;
- Examining the considering environmental risks from the use of each considered resource, particularly on groundwater levels, groundwater quality, and on other users of the resource in question;
- Examining the effect of prolonging the effective snow season, and increasing the run off from the ski areas, on the biological resources and ecological conditions on the mountain, and in the streams and rivers which drain the mountain, and on Lake Ohrid or Lake Prespa.

5. Mitigation of Effects on PINPG

During the design process and construction phase, PINPG should:

- Make available to the Project Sponsor, any relevant information on the biological and ecological resources of the area in question, including locations of resources of particular value or sensitivity;
- Meet with the design teams and the ESIA teams to make clear PINPG’s concerns over impacts, and to discuss the Project’s proposals to avoid and reduce negative effects;
- Review the CESMP and BMP, and Terms of Reference for the Supervising Engineer, and make comments and concerns known to the Project Sponsor;



- Meet regularly (monthly) with the Project Team and the Supervising Engineer to discuss implementation of the CESMP, BMP, project effects on biological resources, and any other concerns;
- During operation, the PINPG should include in its ongoing monitoring activities, specific actions to monitor the key resources under threat.

It is clear that PINPG will need additional resources – likely to include both staff and equipment – to carry out these tasks. Given that the Park Management Plan is being changed due to the pressure for development, and that the additional pressure on biodiversity and PINPG is a direct result of the ski Project, the provision of additional resources to PINPG should be an integral part or the decision to amend the Park Management Plan. A commitment from central government or from the ski centre Project Sponsor, should be sought, for the supplementation of PINPG's budget, and/or for other ways to finance the additional responsibilities which PINPG must take on, if the biodiversity pressures on the Park are to be managed. At a project level for the ski centre it is recommended an allowance is made to provide financial support for 1-2 full-time equivalent staff members and resources (e.g 1 field vehicle) during the pre-construction, construction and operational monitoring phase of the project (also see Chapter 10).

8.2.2 A3 Expressway Measures & Management Actions

1. Mitigation of Direct and Indirect Impacts on Forest Habitats and Species

Macedonian Oak. The first step in application of the mitigation hierarchy is to attempt to avoid impacts in the first place. Construction of the road project between **Peštani and the State Border** will fragment the Macedonian Oak forest, and have effects beyond the actual area of direct land take. It takes many years to develop mature oak forest, making restoration unrealistic within a reasonable timeframe, such that residual impacts may be non-offsetable in all practical terms. Significant attempts should therefore be made to avoid this level of impact. Possible solutions are:

- Tunnel the road **underneath** the forest, in order to avoid any surface land take of forested area. This would be the most effective means of allowing the scheme to go ahead, but without impacts on the forest. The cost of a tunnel should be investigated, and weighed against the importance of the loss of the forest in the alternatives analysis within the project level ESIA; and
- Re-align the road to skirt around the eastern edge of the forest and remove the junction from the central part of the forest. This would avoid fragmentation of the forest and would reduce the overall land take. However, significant biodiversity effects on an important habitat will potentially remain.

It is recommended that these design alternatives are investigated in detail by the road designer, and described in the **Peštani-Albanian Expressway** ESIA, together with an assessment of the effects, and estimation of the costs involved. Given the importance of the Oak, it is not acceptable that the only reason to select an option with significant effects on the forest is cost. The default scheme should be one which avoids the forest, and selection of any other alternative must be clearly justified on grounds other than cost. The following Chapter – Chapter 9 - discusses the biodiversity offsets that will be necessary to offset the loss of biodiversity for the Macedonian Oak Annex 1 Habitat.

Other Impacts. Many of the other ecological impacts may be mitigated in the following ways:

- Realigning the road scheme to avoid areas of dense vegetation, forest and other areas of important habitat. This should be investigated by the road designers, and discussed in the project ESIA's;
- Constraining the contractor to clear working areas, to minimise the total area of land cleared, quarries/borrow pits & dump sites to be located outside the Park – particularly forest areas. This can be dealt with in the ESIA's and Construction Environmental Management Plan (CEMP);
- Development and implementation of a Biodiversity Management Plans (one for each road section) which requires transplanting and relocation of certain communities and plant and animal species identified in the ESIA as at risk, and capable of being relocated to suitable locations;



- Limiting the degree of lighting used at night, to the minimum required for safety purposes.

The discussion and assessment of alternatives section of both of the roads project ESIA's should demonstrate that real attempts were made to re-align the schemes to avoid impacts. Close cooperation between the designers and the ESIA teams is necessary to make this an effective exercise.

2. Mitigation of Impacts on Landscape Species

Both the Ohrid – Peštani and Peštani – State Border road sections include several stretches of forest which are potentially important corridors for movement of animals from the upper slopes of Galichica Mountain, to the lake shore. The most effective means of mitigating these impacts is for the road to avoid severing the migration corridors. This can be achieved by:

- **Peštani to Albanian Border** Section: Tunnelling under the Evil Canyon migratory passage section of the Macedonian Oak forest south of Trpejca. Note that this is within the area of Macedonian Oak, an area where it is strongly recommended to avoid construction for reasons of habitat protection. Creation of a tunnel here will address **significant impacts** on the forest and the migration routes, and should be seriously considered. Macedonian Oak is an Annex 1 habitat under the *Habitats Directive*. Effects on it could contribute to serious potential effects on the integrity of the Park (see Section 7.7 on Effects to Protected Status);
- **Ohrid to Peštani** Section: Further consideration and/or refinement of alternative technical solutions to reduce disturbance effects to the Crno Brdo ZAM and also ensure options for mitigation for migration of mammals to the lake shore is integrated into the final project design and the ESIA². Due to the steep slopes it may be possible for the ESIA to further evaluate whether potentially mammals may be using the key routes down to the lake shore along the valleys on the edges of this area due to the steep slope in the central part of Crno Brdo. The ESIA for this road section needs to clearly present the technical options and the basis to using a gallery, which will have no effect in maintaining a safe migration corridor, and will potentially result in large areas of construction disturbance. The technical options need to include further justification as to why a bored tunnel (i.e. not a cut and cover option) is not considered a technically or financially feasible option for this route section.

In the case where disruption of either of these migratory routes cannot be avoided, a clear discussion of the reasons should be provided, together with justification why the above measures could not be taken and clear justification for the selected options. Then, steps should be taken to allow some degree of passage. Creation of large animal friendly tunnels under the road, with vegetation signaling to encourage animals to use them, is one option. This is standard practice, and is the least that would be expected to be addressed. It is expected that this will appear a strong recommendation in the ESIA's and provisions included in the Biodiversity Management Plans for the road sections, in the event that full avoidance cannot be ensured. Ecological experts and experts within PINPG should be consulted during the design of these measures.

3. Mitigation of Effects on the Cultural and Natural Heritage of the Area

As discussed in Chapter 7, the road will cause some effects on the cultural and natural heritage of the area, in particular the section between **Peštani and the State Border**. The project needs to ensure that appropriate levels of protection are put in place for heritage assets, with detailed mitigation and monitoring to ensure that the OUV is protected. A combination of measures may be considered to address these effects, including:

Peštani to Albanian Expressway Section:

- Re-consideration of the road scheme south of Peštani to determine to what extent the road scheme is necessary, and to what extent a full expressway is necessary, taking into account traffic projections;

² This also needs to consider the visual and landscape effects as it is in the OUV and this section is a relatively prominent natural area in this stretch along the lake shore.



- Re-design of the alignment, especially south of Peštani, to reduce land take and terraforming, and the need for large road junctions. The initial alignment shows little signs of consideration of environmental impacts. The road designers should be given the environmental baseline information, with the key resources identified, and specifically tasked with a re-examination of the entire design with a view to reducing environmental impacts on key resources, including forests, Macedonian Oak, migration corridor and landscape.

Ohrid to Peštani Section:

- Reviewing the technical solution for Crno Brdo to reduce the visual and landscape effects – this must consider the ability to delivery realistic effective restoration to blast/cut slopes and the construction disturbance which may result from certain technical solutions.

Both A3 proposed road sections:

- An ICOMOS Heritage Impact Assessment (HIA) for the road developments that may affect the OUV of the World Heritage Site and mitigation to protect the OUV of the area;
- Design of lighting so as to reduce the light pollution emanating away from the road;
- Inclusion into the design of the need to use noise barriers such as re-vegetation, to reduce the noise emanating from the scheme, even where it is below the required limits;
- Development and implementation of a CEMP which includes monitoring of construction effects, in close cooperation with PINPG and the contractor;
- Measures to protect and preserve historic buildings, archaeological sites and other culturally important features;
- Measures to protect and enhance the landscape where possible, particularly in designated areas;
- Vibration damage monitoring and mitigation for properties close to the road;
- Implementation of a chance finds procedure during construction, as per the requirements of Article 129 of the *Law on Cultural Heritage* which states that the construction team should report any archaeological discoveries under Article 129, Paragraph 2; stop construction work activities and secure the site from potential damage, destruction and unauthorised access; and maintain the discovered items in place and in the condition they were found.

4. Mitigation of Effects on the Local Economy

The benefits to the local economy from project construction will be maximised with a commitment to source labour, materials and other services from the local area where possible. A requirement to this effect should be given to the bidders for the construction contract.

The ability of the local area to benefit in the long term will depend on their ability to service the subsequent tourism industry. Consideration should be given to providing training, micro financing and capacity building to communities and businesses in Ohrid and the area, in advance of the project implementation.

5. Mitigation of Effects on Environmental Quality

The risks to environmental quality (related to air emissions, noise, run off and the passage of surface water) described in Section 7.1 are typical of roads projects, and would be addressed by a competent Project design. Specifically, the road design should include a hydrological study to determine what drainage features are needed to ensure continuity of surface water flow. The ESIA will assess how they are addressed in the design, and will develop mitigation measures where necessary in line with standard practice.



6. Mitigation of Effects on PINPG

During the design process and construction phase for each road component, PINPG should:

- Make available to the Project Sponsor, any relevant information on the biological and ecological resources of the area in question, including locations of resources of particular value or sensitivity;
- Meet with the design teams and the ESIA teams to make clear PINPG's concerns over impacts, and to discuss the Project's proposals to avoid and reduce negative effects;
- Review the Construction Environmental & Social Management Plan (CESMP) and Biodiversity Management Plan (BMP), and Terms of Reference for the Supervising Engineer, and make comments and concerns known to the Project Sponsor;
- Meet regularly (monthly) with the Project Team and the Supervising Engineer to discuss implementation of the CESMP, BMP, project effects on biological resources, and any other concerns;
- During operation, the PINPG should include in its ongoing monitoring activities, specific actions to monitor the key resources under threat.

It is clear that PINPG will need additional resources – likely to include both staff and equipment – to carry out these tasks. Given that the Park Management Plan is being changed due to the pressure for development, and that the additional pressure on biodiversity and PINPG is a direct result of these changes, the provision of additional resources to PINPG should be an integral part of the decision to amend the Park Management Plan. A commitment from central government should be sought, for the supplementation of PINPG's budget, and/or for other ways to finance the additional responsibilities which PINPG must take on, if the biodiversity pressures on the Park are to be managed. At a project level (for each road section) it is recommended an allowance is made by PESR to provide financial support for 1 full-time equivalent staff member and resources (e.g 1 field vehicle) during the pre-construction, construction and operational monitoring phase of the project (also see Chapter 10).

8.2.3 Tourist Development Zones

1. Mitigation of Ecological Effects

As discussed, some of the TDZ projects will give rise to significant effects on important resources which cannot be mitigated, except by avoidance. Some of the biodiversity affected is unique and effectively irreplaceable. Impacts on it are considered by specialists to be likely to be non-offsetable. The following avoidance measures are recommended:

- The Ministry of Transport is encouraged to confirm in writing its decision to cancel the development of Ljubanishtha 3. This will ensure that no impacts occur on the valuable area of the St Naum Spring, and the Zone of Strict Protection, as a result of this development.
- The Ministry of Transport is encouraged to confirm in writing its decision to cancel the development at Stenje. This will ensure that no impacts occur on the valuable area of the Stenje reed bed, its Zone of Strict Protection, and the Buffer Zone surrounding it, as a result of this development.

If the above mentioned two TDZ project components are not cancelled and plans are re-opened to develop them, then the project designers must make rigorous consideration of the risks to the adjacent environmental resources in each case, and must build rigorous mitigation measures into the project design to address the risks. The proposed controls and the remaining risks should be assessed by the Project ESIA in each case. In addition, the loss of biodiversity will need to be offset. Given the lack of similar habitats inside the Park, offsets will likely need to occur outside the Park.

Ljubanishtha TDZ

At a minimum, the ESIA and the resulting mitigation measures should address:



- Risks to the water quality of the spring and Lake Ohrid during construction, and from visitors during post-construction, e.g. from contaminated run off, oil and fuel leaks, waste, etc.;
- Risks to the aquatic flora and fauna from debris, visitor activity, changes in water quality or changes in the flow regime.

Stenje TDZ

At a minimum, the ESIA and the resulting mitigation measures should address:

- Means to limit groundwater drawdown and a change in the groundwater regime during construction, e.g. from excavations and dewatering;
- Risks from increased visitors to the reed bed, including threats from trampling, litter, and other effects of residential construction and/or facilities adjacent to the reed bed.

Oteshevo TDZ

It is noted that the key ecological risk of the Oteshevo TDZ project – the loss of the Hungarian Oak forest – is a direct result of the land take for the development, and cannot be mitigated except by avoidance, in the case of the project being cancelled. Chapter 9 discusses the biodiversity offsets that would be needed to offset the loss, notwithstanding the fact that oak forests take many decades to mature. The remaining project impacts should be considered in the project ESIA.

2. Mitigation of Effects on the Cultural and Natural Heritage of the Area

Some of the key risks on cultural and natural heritage are related to threats to ecological resources, which have been addressed above. However, both the project construction, and the increased visitor numbers resulting from the developments may also threaten the integrity of some of the adjacent heritage resources. The projects needs to ensure that appropriate levels of protection are put in place for heritage assets, with detailed mitigation and monitoring to ensure that the OUV is protected.

Requirements include:

- An ICOMOS Heritage Impact Assessment should be carried out for each project to identify effects on the OUV of the World Heritage Site and recommend mitigation to protect the OUV of the area;
- Measures to preserve any nearby historic buildings, archaeological sites and other culturally important features;
- Design guidelines to ensure that developments creates places, spaces and buildings that work well, wear well and look appropriate for the area, and to require that the design of the scheme values and protects diversity and local distinctiveness;
- Measures to protect and enhance the landscape where possible, particularly in designated areas;
- Vibration damage monitoring and mitigation should be put in place;
- Implementation of a chance finds procedure during construction, as per the requirements of Article 129 of the *Law on Cultural Heritage* which states that the construction team should report any archaeological discoveries under Article 129, Paragraph 2; stop construction work activities and secure the site from potential damage, destruction and unauthorised access; and maintain the discovered items in place and in the condition they were found.

The ESIA's will identify additional measures to be taken during construction to protect the various sites. These may include:

- Access restrictions and signage to ensure the contractor does not enter sensitive areas; and
- Limits to dust, noise and vibration levels during construction, and strict monitoring of these.



3. Maximisation of Benefits to the Local Economy

For each of the TDZs, the benefits to the local economy from project construction will be maximised if there is a commitment to source labour, materials and other services from the local area where possible. A requirement to this effect should be given to the bidders for each construction contract.

The ability of the local area to benefit in the long term will depend on the communities' ability to service the demand for tourism services and facilities in the area. Consideration should be given to providing training, micro financing and capacity building to communities and businesses in Ohrid and the area, in advance of the development of the TDZs. Ohrid and Prespa Municipalities, together with business and community groups should discuss how this could be actioned. Nature-based tourist activities in line with the NPG Management Plan should be developed as part of the TDZ proposals and discussed with PINPG.

4. Mitigation of Effects on Environmental Quality

Noise and air quality impacts from the development of the TDZs will be addressed in the relevant project ESIA and are not of strategic concern. However, the possible impacts on the Lakes from contaminated run off and/or wastewater need to be addressed in the project designs, and assessed competently in the ESIA's. Mitigation measures during construction are likely to include strict measures to store and maintain plant and equipment away from the Lake shores and to take steps to prevent run off water containing construction dust and debris from draining to watercourses entering the lakes. To minimize discharge during operation, it is strongly recommended that the project designs adopt a zero-discharge policy, i.e. ensuring that all wastewater is captured and treated, and that even the treated effluent is not discharged directly into either Lake. Any storm water that may become contaminated should also be captured and treated, at least to remove sediments, before discharge to the Lake.

4. Mitigation of Effects on PINPG

During the design process and construction phase of each Project, PINPG should:

- Make available to the Project Sponsor, any relevant information on the biological and ecological resources of the area in question, including locations of resources of particular value or sensitivity;
- Meet with the design teams and the ESIA teams to make clear PINPG's concerns over impacts, and to discuss the Project's proposals to avoid and reduce negative effects;
- Review the CESMP and BMP, and Terms of Reference for the Supervising Engineer, and make comments and concerns known to the Project Sponsor;
- Meet regularly (monthly) with the Project Team and the Supervising Engineer to discuss implementation of the CESMP, BMP, project effects on biological resources, and any other concerns;
- During operation, the PINPG should include in its ongoing monitoring activities, specific actions to monitor the key resources under threat.

It is clear that PINPG will need additional resources – likely to include both staff and equipment – to carry out these tasks. Given that the Park Management Plan is being changed due to the pressure for development, and that the additional pressure on biodiversity and PINPG will be a direct result of the TDZ developments, the provision of additional resources to PINPG should be an integral part of the decision to amend the Park Management Plan. A commitment from central government or from Project Sponsors should be sought, for the supplementation of PINPG's budget, and/or for other ways to finance the additional responsibilities which PINPG must take on, if the biodiversity pressures on the Park are to be managed. At a project level (for each TDZ) it is recommended an allowance is made to provide financial support resources during the pre-construction, construction and operational monitoring phase of the project (also see Chapter 10).



8.3 Project Design & Appraisal

For each Project, it is necessary that the Project Sponsors provide the scheme designers with information and maps on the key environmental resources, and specifically task the designers with considering ways to reduce effects. Discussions between the designers and PINPG on the concerns of PINPG would be a useful start. In each case, this will take an additional instruction from the Project Sponsor, but may result in impact avoidance measures that are more effective and less costly for the Project Sponsor in the long run.

Also, as mentioned repeatedly above, the ESIA for each of the above projects need to include substantial assessments, and close cooperation with the project designers, in order to ensure that all realistic alternatives are considered, and that the appropriate steps are taken to minimise environmental and social effects in line with required outcomes for the various values (social and ecological) that are protected within the Park. It is recommended that the Terms of Reference for each Project ESIA includes specific mention of the elements of concern which need to be addressed. Below is a list of key issues that need to be addressed in each scheme design and/or ESIA:

- A description of alternatives to the proposed Project, especially those which would have lesser effects on biodiversity and/or cultural and natural heritage. This should include a clear justification for the selection of any alternative which has greater environmental or social impacts than other alternatives;
- Individual projects should ensure that appropriate levels of protection are put in place for heritage assets, with detailed mitigation and monitoring to ensure that the OUV is protected. This includes a requirement that each Project should conduct an ICOMOS Heritage Impact Assessment (HIA) to show how the Project affects the OUV of the World Heritage Site and to propose mitigation to protect the OUV of the area;
- The ESIA and the Biodiversity Management Plans should describe clearly the measures required to reduce the effects on biodiversity at both construction phase and during operation. These measures would also form part of the project level Appropriate Assessments. Where measures are not sufficient to address all effects, the residual effects should be clearly stated. Where biodiversity offsets are required, these should be described clearly, with their location, extent, specific actions that are needed, and noting the various land and other agreements and permissions that are a necessary part of biodiversity offsetting. The commitments of the Project Sponsor going forward should be stated, along with a clear delineation of responsibilities;
- Each Project should develop design guidelines to address the protection and enhancement of landscape where possible, particularly in designated areas.

8.4 CESMPs & OESMPs

As part of the ESIA process, a Construction Environmental & Social Management Plan (CESMP) and an Operation Environment & Social Management Plan (OESMP) are developed. These contain specific actions to address the environmental concerns raised in the ESIA. CEMPs, OESMPs and other Environmental & Social Management Plans (ESMPs) can sometimes be generic and ineffective, and are often shelved as part of the ESIA documentation, without being developed into a clear list of commitments and actions which are passed on to the Project Sponsor, the designer, the contractors and the Project operators. In the case of these Projects, it is important that the CESMPs and OESMPs are rigorous, and are passed on to those responsible for their implementation.

For each of the Projects mentioned, the CESMP & OESMP should contain a Biodiversity Management Plan, which sets out the specific actions the Project Sponsor and the contractor must take to reduce and control impacts on biodiversity. The BMP should include clear maps of constraint areas – areas where the contractor is allowed to access, as well as areas where no construction access or activity is allowed. They may also contain actions on transplanting or relocating flora or fauna before construction begins. BMPs may also include requirements to allow the passage of animals, restrictions on the timing of activities, restrictions on working hours, restrictions on noise and lighting, and other provisions. Where



the ESIA determines that biodiversity offsets are required, the CEMP should also refer to a Biodiversity Offsets Plan, which sets out the details of the offsets that have been determined necessary, including their location, the actions to be taken, indicators, and a monitoring regime and responsible parties.

8.5 PINPG Measures & Management Actions

The above assessment makes clear that if PINPG is to monitor the AMP implementation resulting from the projects and also have oversight of the Project impacts on the resources of the Park, it needs to allocate time and resources to dialogue with the Project Teams, to practical field monitoring of impacts and resources, and possibly to take part in the design and implementation of biodiversity offsets within the Park. For each Project, the following will likely be required from PINPG:

- Make available to each Project Sponsor at the outline design stage, any relevant information on the biological and ecological resources of the area in question, including locations of resources of particular value or sensitivity;
- Meet with the design teams and the ESIA teams to make clear PINPG's concerns over impacts, and to discuss the Project's proposals to avoid and reduce negative effects;
- Review the CESMP and BMP, and Terms of Reference for the Supervising Engineer, and make comments and concerns known to the Project Sponsor;
- Meet regularly (monthly) with the Project Team and the Supervising Engineer during construction, to discuss implementation of the CESMP, BMP, project effects on biological resources, and any other concerns;
- Possibly be involved in the design and implementation of biodiversity offsets, depending upon how these are to be implemented;
- During operation, the PINPG should expand its ongoing monitoring activities and implement specific monitoring actions to monitor the key resources under threat for each Project.

Monitoring of Park resources is one of the activities included in the Park Management Plan. According to the Management Plan, the first phase of monitoring activities (2011 - 2014), was designed to monitor parameters of the highest priority for existing facilities. In 2014, the monitoring regime was to be reviewed and updated, based on the experience gained – *this is still under review it is understood*. In order to address the Project impacts, the SEA has informed the AMP and during the next update of the Park Management Plan (by 2020) be updated to include specific monitoring actions related to the risks and threats from each Project.

It is clear that PINPG will need additional resources – likely to include both staff and equipment – to carry out these tasks. Given that the Park Management Plan is being changed due to the pressure for development, and that the additional pressure on biodiversity and PINPG is a direct result of these changes, the provision of additional resources to PINPG should be an integral part of the decision to amend the Park Management Plan. A commitment from central government should be sought, for the supplementation of PINPG's budget, and/or for other ways to finance the additional responsibilities which PINPG must take on, if the biodiversity pressures on the Park are to be managed. As noted above and in Chapter 10 provision should be made it is recommended in individual project budgets provide financial support to the PINPG to enable them to meet the additional pressures placed on them by the projects and in ensuring the management of the Park's resources.

8.6 Mitigation of Impacts of Re-zoning in the Amendments to the Management Plan

As noted in Chapter 4 and Chapter 7, the reduction in protection level to around 604 ha of the Park (changed from ZAM to ZSU), has been offset by an upgrade in protection level of 854 ha of the Park from ZSU to ZAM. The overall area of the Park in active management has therefore increased very slightly.

The risk of the Park re-zoning being seen as a precedent for future reductions in protection status was described in Chapter 7. The key means to address this risk is to ensure that no future revisions to the



zoning regime, which reduce the protection status, are permitted. The Park now has 60.6% of its area in active management (up by around 1% from previously). The Government of Macedonia should be encouraged to view this amendment to the Park Management Plan as its last opportunity to reduce the protection status. The provision made in the revised Management Plan for five development Projects should take the pressure off attempts to further reduce the area of the Park under active protection. Should proposals for additional projects be brought forward, it is likely that Macedonian stakeholders as well as Macedonia's partners and international stakeholders will raise further concerns on effects on integrity of the Park.

8.7 Mitigation of Cumulative & Transboundary Effects

The risks of cumulative impacts affecting the Park's resources were discussed in Chapter 7. These impacts are best addressed by reducing the overall impact of each Project, as recommended in the sections above.

The effect of the Projects, including their cumulative impact, should be monitored over time, in order to identify if any changes or revisions to the operating parameters of the Projects is necessary to control adverse effects. An ongoing monitoring regime with sufficient resourcing for PINPG is recommended and discussed more fully in Chapter 10.

No additional measures are required to address transboundary impacts, other than the AMP and Project-level measures discussed above, and the various measures that will be identified at the Project-ESIA stage. However, the ongoing Monitoring Plan will identify if there are ongoing concerns over impacts, and should pick up any issues which might grow to have a transboundary nature. Recommendations for transboundary consultations and communications are made in Chapter 11.

8.8 Summary of Significant Residual Adverse Effects

Tables 8.1 – 8.3 summarise the impacts describe Chapter 7, together with the mitigation measures outlined above. Where there remains a residual effect, this is highlighted.



Table 8.1: Summary of Project Impacts Assessed at the “SEA Level” – Galichica Ski Project

Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ³
Ecology	Destruction and indirect impacts to three Annex I Habitat types, namely 320 ha of <i>alpine and subalpine calcareous grasslands (HD 6170)</i> , (around 4.3% of the total amount of this type of habitat in the Park); 106 Ha of <i>Juniperus communis</i> formations on heaths and calcareous grasslands (<i>HD 5130</i>), around 11% of the total amount of this type of habitat in the Park; and 87 ha of Illyrian <i>Fagus sylvatica</i> forests (<i>HD 91K0</i>), around 9.7% of the total amount of this type of habitat in the Park.	<p>If the project goes ahead, it is not possible to avoid this loss of biodiversity.</p> <p>The project design and the ESIA should examine means to reduce the area of habitat loss, including by revising the location of some project components to avoid key areas. For example, by forgoing the Nordic ski area, around 126 ha of grassland, 92 ha of juniper formations, and 12 ha of beech forest, can be avoided.</p> <p>The ESIA will also recommend control measures to be included in the CESMP and OESMP to reduce indirect impacts.</p>	<p>Even after applying measures to reduce impacts, significant areas of Annex I habitats will be lost, and will need offset, in order to satisfy the Habitats Directive. With the current design, the following areas need offset, see Chapter 9 for more discussion of offsets:</p> <ul style="list-style-type: none"> ■ Alpine and subalpine calcareous grasslands, 319 ha; ■ <i>Juniperus communis</i> formations, 106 ha; ■ Illyrian <i>Fagus sylvatica</i>, 87 ha.
	Destruction and indirect impacts to around 42 ha of other types of vegetation, not listed in Annex I of the Habitats Directive, and not regarded as particularly conservation significant in the Park.	ESIAs to recommend means to reduce area of impact and require post-construction restoration measures to affected areas.	
Impact on Specific Species	Risk to <i>Crocus cvijicii</i> from removal of specific area of its habitat and from indirect impacts (trampling) from ski centre. Additional possible effect – to be determined - from delay in snow melt season from use of artificial snow.	<p>Project Sponsor in cooperation with PINPG should conduct a study to identify distribution area of <i>Crocus cvijicii</i>, and consider alterations to the Project, and other measures such as fencing and signage around the known area of crocus.</p> <p>Some relocation actions may need to be included in the CEMP.</p>	<p>If, after further study, other actions are needed to offset impacts on the crocus, the Project Sponsor should agree these with PINPG. If it is not possible to offset this loss within the Park, the Project Sponsor must work with MOEPP and other authorities to identify offsets and locations elsewhere.</p>
	Removal of habitat of <i>Parnassius apollo</i> and risk of capture from	Project Sponsor should work with PINPG to	

³The Residual Effect is that anticipated by the SEA based on the available data – it may be during the ESIAs from surveys of the actual project footprints and affected areas that additional sensitive receptors are identified, additional impacts assessment and mitigation determined and that additional residual effects may be identified. Some of these may require additional offsetting measures (e.g. for site specific species).



Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ³
	increased visitor numbers.	investigate the area of distribution of the apollo butterfly and its habitat. Alteration to the ski project should be considered to reduce the loss of habitat. Some other actions to reduce risks may be proposed in the ESIA.	to offset impacts on the apollo butterfly, the Project Sponsor should agree these with PINPG. If it is not possible to offset this loss within the Park, the Project Sponsor must work with MOEPP and other authorities to identify offsets and locations elsewhere.
Cultural and Natural Heritage	Changes to landscape and visual amenity due to forest clearances for the ski pistes, gondolas, chairlifts, and other infrastructure. These changes will be visible from the Ohrid and Prespa lakesides and threaten the 'exceptional natural beauty and aesthetic importance' of the area.	The ESIA should investigate the visual impact in more detail, using the design information. Each project to conduct ICOMOS HIA, and develop measures and design guidelines to maintain local landscape distinctiveness. ESIA to propose design measures relating to the use of materials and colour, and lighting, to reduce the visual impact of the ski facilities. ESIA to include Chance Finds Procedure and construction monitoring of noise, dust and vibration.	There will likely remain a degree of unavoidable residual impact on the natural landscape of the area.
Local Economy	Potential for increased employment in provision of labour and services during construction. Potential for increased employment and service provision from facility operation and other induced developments associated with skiing/hiking/biking industry in area.	Enhancement: Contractor to be given requirements to encourage employment of local people, and to source materials, suppliers and services from local area as far as possible. Local authorities and community groups to take actions to support local community ability to provide labour and services, e.g. training, micro financing, capacity building, etc. Develop project to accommodate the sustainable tourism strategy within the NPG Management Plan.	NA
Environmental Quality	Effects of vehicle emissions, noise from traffic and visitor activity on mountain. These risks are not considered critical or strategic.	These will be addressed in the ESIA, which may propose additional mitigation measures if necessary.	No significant residual effects are predicted at the SEA level.



Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ³
	Changes in the water balance and drainage regime from the use of artificial snow. Risks include effects on water resources and water use from the abstraction of water to supply the artificial snow machines.	The Project Sponsor should instigate an independent assessment of the risks of using artificial snow, to address the effect of additives, potential sources of water and the effects of this water use on them. The effect of a prolonged snow season on the ecology and hydrology should also be addressed. This study should propose measures to mitigate these risks, and the ESIA should assess the result.	The ESIA will determine whether any significant residual risks remain, following the snow study and implementation of its recommendations.
Impacts on PINPG	Pressure on the resources of PINPG, including needing to liaise with project design, share information, and increase its monitoring activities during construction and operation.	PINPG will only be able to carry out these obligations with significant additional financial and human resources. Currently, it is not clear how these additional resources will be financed. Allocation in project budgets and planning for PINPG financial support is recommended as indicated in Chapter 8 above.	No residual impacts expected provided additional resources are found.



Table 8.2: Summary of Project Impacts Assessed at the “SEA Level” – A3 Expressway Ohrid – State Border

Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ⁴
Forest Habitats & Species (Effects on habitats & species require further analysis at an ESIA level)	Loss of <i>Quercus-Caprinetum orientalis macedonicum</i> (Oak-Hornbeam Forest), and indirect impacts on surviving forest alongside roadway. Total area impacted estimated at 281 ha (most of which is affected by Ohrid-Peštani Project).	Local realignment of road alignment where possible, to minimise area of forest interaction. Review options for technical solution through Crno Brdo to reduce disturbance. Strict measures in CESMP to restrict contractor access and activity to reduce impacted area. Implement BMP, including pre-construction relocation and transplanting as identified in ESIA. Limit night-lighting during construction and operation.	No residual effect of a significant nature, even where forest area is destroyed, as Oak-Hornbeam forests are common in Macedonia and are not considered a key or distinctive or protected habitat.
	Destruction of area of dense, natural <i>Quercetum trojanae macedonicum</i> (Macedonian Oak) forest. Fragmentation of natural forest area, and other indirect impacts on surviving forest alongside roadway. Total area impacted estimated at 84 ha. All related to Peštani – State Border road Project . Impacts may be effectively non-offsetable due to the long time needed for forest of this type to mature and the lack of suitable sites for restoration.	Avoid impacts by tunneling the road scheme for under this forest to prevent any direct land take in forest area. Or – realign road to skirt around eastern edge of forest thereby reducing fragmentation and forest land take.	No residual impacts if road is tunneled under forest. If tunneling not possible, then any impact on forest needs to be offset. With current realignment, area to be offset is 84 Ha.
Migration of Landscape Species	Disruption of important migratory corridor at <i>Crno Brdo</i> (Ohrid – Peštani Section), severing an important (up to 1 km wide) access corridor between upper mountain area and Lake shore. Road passes through Zone of Active Management at this location. This is one of only two remaining locations where wild animals can still access the Lake in times of water shortage.	Further consideration and/or refinement of alternative technical solutions to reduce disturbance effects to the Crno Brdo ZAM and also ensure options for mitigation for migration of mammals to the lake shore is integrated into the final project design and the ESIA. Tunnel option (not cut and cover) should be reviewed and full justification provided if this is not a technically and/or financially feasible option. Consider whether the valleys either side of	If road is tunneled (not cut and cover though) the residual effect will be minimised. If this is not possible and measures (such as routes under/over the road) cannot provide sufficient safe routes for animals this may result in a significant residual effect. Even with the used of culverts etc as crossing measures there remains a risk of animal kill as not all animals will use

⁴The Residual Effect is that anticipated by the SEA based on the available data – it may be during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors are identified, additional impacts assessment and mitigation determined and that additional residual effects may be identified. Some of these may require additional offsetting measures (e.g. for site specific species).



Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ⁴
		<p>Crno Brdo could be key routes.</p> <p>The gallery option may present barrier issues and also result in extensive construction disturbance – its choice needs to be robustly justified in the ESIA and measures integrated to allow for animal passage to the lake.</p> <p>If avoidance not possible, at least create culverts and tunnels under the road at several places along migration corridor, with vegetation signaling to guide animals to safe passage – give the steep slopes in places this will have to be carefully considered.</p>	<p>culverts. The location and number of culverts/crossings needs to be examined in the ESIA and should be based on consideration of requirements in dry years where animals visiting the lake shore may peak, not in average conditions.</p>
	<p>Disruption of important migratory corridor at Evil Canyon through Macedonian Oak forest, severing access along canyon/valley between upper mountain area and Lake shore, used by range of mammals. Road passes through Zone of Active Management at this location.</p>	<p>It is strongly suggested to avoid the impact by tunneling the road through the Macedonian Oak forest which is in the Zone of Active Management.</p> <p>If avoidance not possible, at least create culverts and tunnels under the road at several places along migration corridor, with vegetation signaling to guide animals to safe passage.</p>	<p>If road is tunneled, the residual impacts will be potential not significant.</p> <p>If not, there remains a risk of animal kill and population reduction as not all animals will use culverts. The location and number of culverts needs examined in the ESIA.</p>
Cultural and Natural Heritage	<p>Linear intrusion (introducing clearance of vegetation, terraforming, lighting, noise and air emissions) and increased access to relatively natural, undeveloped area between Peštani and the State Border.</p> <p>Induced effect of increased urbanisation (and raising upper elevation of possible development) along entire stretch of road from Ohrid – State Border.</p>	<p>Reconsider the design of the scheme between Peštani and the State Border, in case extent of scheme may be reduced.</p> <p>Detailed design of scheme south from Peštani to be commissioned to reduce land take and amounts of terraforming needed and specifically to alter alignment to reduce forest land take, including considering a tunnel under the area of Macedonian Oak currently in the ZAM. Alternatives to be examined and discussed in ESIA, including clear justification if significant adverse effects on ecology, including the Macedonian Oak forest, and migratory corridors, are not avoided.</p> <p>Reconsider the visual and landscape effect of</p>	<p>The landscape effects of the scheme from Peštani to the State Border need to be assessed in more detail in the project design and ESIA, to determine their effect on the landscape and natural heritage.</p> <p>Further analysis is required at a project level to determine if there are residual visual and landscape effects of a potentially significant nature from the introduction of a gallery at the Crno Brdo section of the Ohrid to Peštani section if this option is taken forward.</p>



Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ⁴
		<p>the gallery technical solution at Crno Brdo for the Ohrid to Peštani section.</p> <p>Each road project to conduct ICOMOS HIA, and develop measures and design guidelines to maintain local landscape distinctiveness.</p> <p>ESIA to include Chance Finds Procedure and construction monitoring of noise, dust and vibration.</p> <p>CESMP to address noise, light, re-vegetation, etc., to minimise effects.</p>	
Local Economy	<p>Potential for increased employment in provision of labour and services during construction.</p> <p>Potential for increased employment from induced developments.</p>	<p>Enhancement: Contractor to be given requirements to encourage employment of local people, and to source materials, suppliers and services from local area as far as possible.</p> <p>Local authorities and community groups to take actions to support local community ability to provide labour and services, e.g. training, micro financing, capacity building, etc.</p>	NA
Environmental Quality	<p>Effects of vehicle exhaust emissions and traffic noise. Effects of possible contaminated surface water run off and/or disruption to natural drainage paths. These risks are not considered critical or strategic.</p>	<p>The road design will address these and the ESIA will assess them and proposed additional mitigation measures if necessary.</p> <p>The road design should include a hydrological study to determine what drainage features are needed to ensure continuity of surface water flow.</p>	No significant residual effects are predicted at the SEA level.
PINPG	<p>Pressure on the resources of PINPG, including needing to liaise with project design, share information, and increase its monitoring activities during construction and operation.</p> <p>PINPG should liaise with Project Sponsor and design teams: (i) to provide relevant information on the biological and ecological resources; (ii) discuss PINPG's concerns over impacts; (iii) to discuss the Project's proposals to avoid and reduce negative effects;</p>	<p>PINPG will only be able to carry out these obligations with significant additional financial and human resources. Currently, it is not clear how these additional resources will be financed.</p> <p>Allocation in project budgets and planning for PINPG financial support is recommended as</p>	No significant residual effect provided additional resources are found.



Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ⁴
	<p>PINPG to review the CESMP, BMP and Terms of Reference for the Supervising Engineer, and make concerns known to the Project Sponsor;</p> <p>PINPG to meet regularly (monthly) with the Project Team to discuss implementation of the CESMP, BMP, project effects on biological resources, and any other concerns; and</p> <p>During operation, PINPG should include in its ongoing monitoring activities, specific actions to monitor the key resources under threat.</p>	indicated in Chapter 8 above.	

Table 8.3: Summary of Project Impacts Assessed at the “SEA Level” – Tourism Development Projects

Resource	Strategic Concern/Impact	Measure to Address Concern	Predicted <u>SEA Level</u> Residual Effect ⁵
Ecology	Risk to unique ecology associated with karstic spring at St Naum, form development of Ljubanishta 3 scheme. The aquatic biodiversity is high, with many local endemic species. This area is designated as ZSP.	<u>Avoidance</u> : Cancel planned development of Ljubanishta 3 scheme component.	No residual effect provided Ljubanishta 3 scheme is cancelled. A major residual impact exists, however, if the scheme goes ahead. This impact is most likely non-offsettable.
	Risk to 7.82 Ha of unique habitat of Stenje Wetland (reed bed), and the endemic species associated with it, from the proposed Stenje TDZ . Threats arise from changes in groundwater regime from TDZ construction, and from litter and visitor activity adjacent to the reed bed, and the risk of visitor access to the reed bed area itself. This area is designated as ZSP.	<u>Avoidance</u> : Cancel planned development of Stenje TDZ scheme, or relocate it away from the reed bed area.	No residual effect provided Stenje TDZ scheme is cancelled or relocated. A major potential residual impact exists, however, if the scheme goes ahead. This impact is most likely non-offsettable.
	Removal of 59 ha of Hungarian Oak at Sirhansko Hill, from development of Oteshevo TDZ . This area is designated as ZAM.	The only means of avoiding this impact is to cancel development of the Oteshevo TDZ.	If the scheme goes ahead, the loss of 59 ha of Hungarian Oak needs to be offset.

⁵The Residual Effect is that anticipated by the SEA based on the available data – it may be during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors are identified, additional impacts assessment and mitigation determined and that additional residual effects may be identified. Some of these may require additional offsetting measures (e.g. for site specific species).



Cultural and Natural Heritage	<p>Irreversible threats to the St Naum spring and its unique ecosystem and biodiversity from development of the Ljubanishta 3 TDZ.</p> <p>Irreversible loss or damage to the Stenje Wetland and its unique ecosystem, from development of the Stenje TDZ at the proposed location.</p>	<p>Avoid impacts by cancelling plans to develop Ljubanishta 3 TDZ component, and cancelling or relocating Stenje TDZ.</p> <p>Each project to conduct ICOMOS HIA, and develop measures and design guidelines to maintain local landscape distinctiveness.</p> <p>ESIA to include Chance Finds Procedure and construction monitoring of noise, dust and vibration.</p>	Discussed above.
Local Economy	<p>Potential for increased employment in provision of labour and services during development construction.</p> <p>Potential for increased employment and service provision from facility operation and other induced developments associated with increased tourism in area.</p>	<p>Enhancement: Contractors to be given requirements to encourage employment of local people, and to source materials, suppliers and services from local area as far as possible.</p> <p>Local authorities and community groups to take actions to support local community ability to provide labour and services, e.g. training, micro financing, capacity building, etc. during project operation.</p> <p>Develop project to accommodate the sustainable tourism strategy within the NPG Management Plan.</p>	NA
Environmental Quality	Effects of vehicle emissions, noise from traffic and visitor activity on mountain. These risks are not considered critical or strategic.	May be addressed in the ESIA, which may propose additional mitigation measures if necessary.	No significant residual effects are predicted at the SEA level.
	Risks to water quality in Lake Ohrid and Lake Prespa from discharge of contaminated run off or wastewater into either lake from TDZs located on the lake shoreline.	Adopt a zero discharge policy and require contractor to take steps to prohibit untreated run off from entering watercourses or lake. All domestic wastewater to be treated, prohibit discharge of treated wastewater to lake by identifying alternative discharge paths.	No significant residual impacts are expected, provided recommended mitigations are taken.
Impacts on PINPG	Pressure on the resources of PINPG, including needing to liaise with project design, share information, and increase its monitoring activities during construction and operation.	PINPG will only be able to carry out these obligations with significant additional financial and human resources. Currently, it is not clear how these additional resources will be	No residual effects anticipated, provided additional resources are found.



		financed. Allocation in project budgets and planning for PINPG financial support is recommended as indicated in Chapter 8 above.	
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9. Offset & Compensation Measures for Biodiversity Residual Adverse Effects

9.1 Introduction

As presented earlier in the SEA, some project development in the Park will not be fully mitigated resulting in residual impacts. Tables 8.1 to 8.3 list the residual impacts – i.e. those impacts which are expected to remain significant even after implementation of the recommended mitigation measures. These relate mostly to biodiversity impacts, associated with the loss of certain habitats and species.

Under the *Habitat Directives*, and the requirements of international lenders¹, the losses to habitats and species in the Park as a result of the direct and indirect effects of the proposed projects and of future effects from the associated re-zoning of the Park's protection zones, must be offset by equivalent gains to achieve the agreed "no net loss" (NNL) policy. For the purpose of this analysis, NNL means:

- For habitats: the extent, distinctiveness and condition is equivalent after the re-zoning and with Projects in place;
- For species: there is an equivalent amount of suitable habitat available (extent and quality), which means that populations are maintained or increased over time. The status of species populations in the Park does not decline nor do the status of the species decline in Macedonia or globally;
- For the Park as a whole, this means that there must be equivalent capacity to achieve NNL outcomes for habitats and species over time. Where NNL cannot be established within the Park, an additional suitable area **outside the Park** may need to be identified. Where NNL is to be achieved by increasing the protection levels of areas within the Park (i.e. re-zoning within the Park), this would have to deliver increased value on a smaller area to achieve NNL, i.e. there would have to be 'trading up' to higher levels of protection over more of the Park to avert future loss to inappropriate development and it would be necessary to demonstrate beyond reasonable doubt that this re-zoning would increase value over a smaller land area (i.e. introduction of developments into the Park effectively reduces the 'natural' areas of the Park).

Additionally, according to the EBRD's Performance Requirement No 6, for critical habitats and species, it is required to demonstrate *net gain* for impacts on critical habitat/species. Net gain means a demonstrable improvement over the baseline.

To comply with the EU *Habitats Directive* and EBRD's Performance Requirement 6 the impacts on the 'Emerald' network and loss of certain habitats must be offset by commensurate gains. Several of the five planned development projects will cause loss of habitat, and the SEA has examined how these losses could be offsets by management actions within the Park.

This section identifies how NNL can be demonstrated for the specific habitats and species where residual impacts remain.

An important aspect of offset planning to achieve NNL at an SEA level, is to establish whether there is a risk of "non offsetable" impacts. These are impacts that cannot be offset for whatever reason (e.g. affected habitats/species are very rare and risks of extinction or irreversible decline are very high, requirements of affected habitats/species are not known, no suitable sites can be identified, restoration methods are unproven, political or economic circumstances make it unlikely that offsets can be delivered etc.).

A related requirement is to establish whether there are likely to be sufficient opportunities to offset impacts of the type and scale predicted. This depends on many factors and will vary between project type. Whereas detailed assessment of losses and gains will take place through project-level ESIA, it is nevertheless important at a **strategic level to understand the likely risks and opportunities**.

¹ Including EBRD's Performance Requirement 6



It is envisaged that project-level impacts and offset requirements will require detailed assessments to be undertaken. This section outlines a proposed framework for offset design and delivery, including fundamental principles and guidance on the types of metrics that could be used to quantify losses and gains of biodiversity.

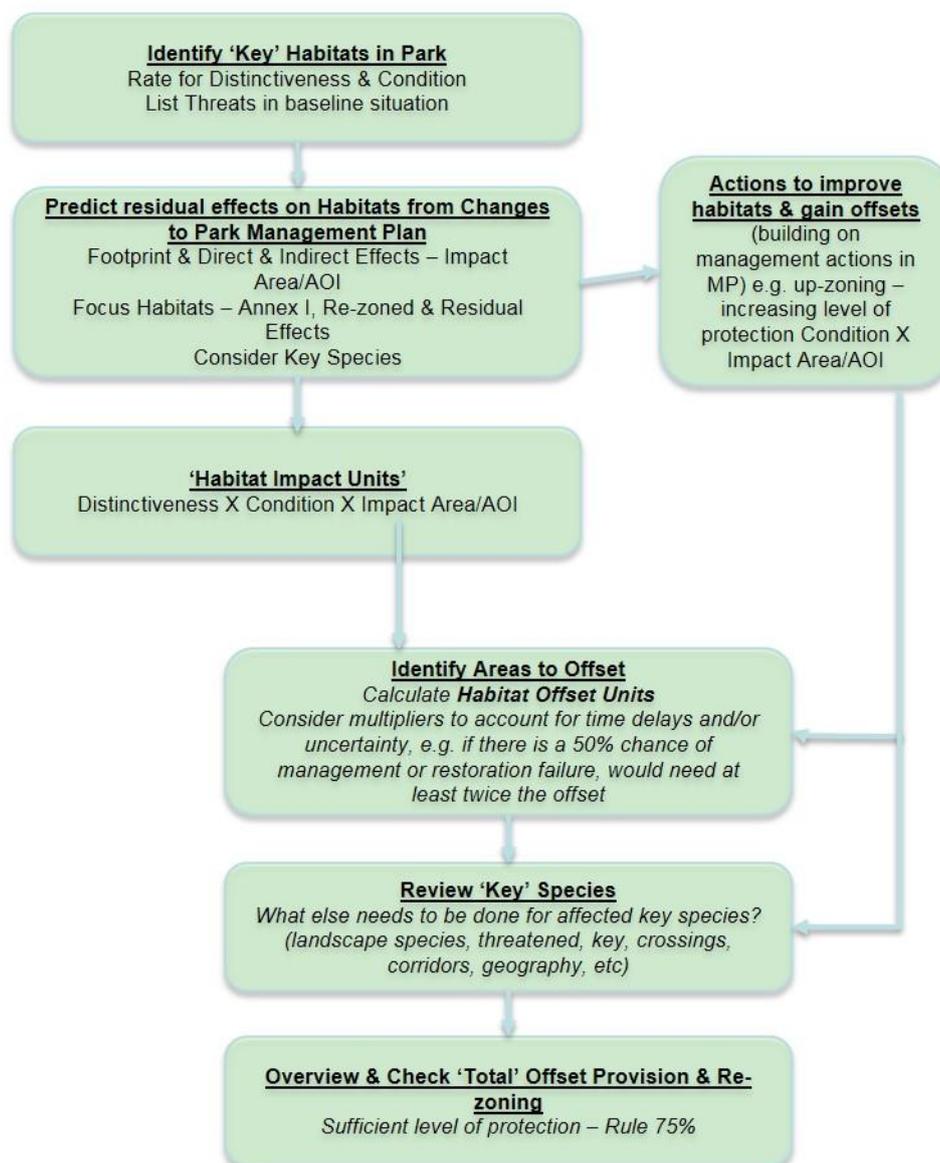
The need for offsets at a project level will depend on the ability to identify measures to avoid or minimise impacts through the mitigation hierarchy. At this strategic level, worst case scenarios are used to establish the potential requirement for offsets. However “key” species have been identified and the selection of these is based partially on their likely sensitivity to impacts from potential projects and their likely ability to recover. Please note: *Additional residual impacts to biodiversity (habitats and species) may be identified at a project level based on the field surveys and consideration of a more detailed level of assessment, some of these residual effects will need to be compensated for and this should be outlined in the project level ESIA.*

9.2 Approach to Ensuring No Net Loss of Biodiversity

The following approach has been used in this SEA to identify firstly the approximate areas of offset likely to be needed to compensate for impacts on Annex I habitats within the Park. This is based on the approach developed by Treweek et al., (2010). Additional approaches may need to be adopted at an ESIA project level to deal with certain conservation priorities in the Park, for example to ensure that populations of priority species are increased or to quantify levels of averted risk achievable through protection. However, it is assumed that impacts on key habitats and species populations should be offset.

The approach is summarised in the flow chart in Figure 9.1.

Figure 9.1: Biodiversity Offset Methodology



Firstly, the key habitats and plant communities within the Park were identified and rated for distinctiveness. The definition of key habitats and species is set out in Section 1.5. Distinctiveness is rates as shown below.

- High (score 6) (e.g. habitats 6170, 5130, 91KO, 9250, other Annex I Habitats);
- Medium (score 4) (e.g. mixed deciduous woodland);
- Low (score 2) (e.g. degraded grasslands adjacent to the coastal road);
- Very Low (score 0) (e.g. totally degraded areas converted to car parks, arable etc).

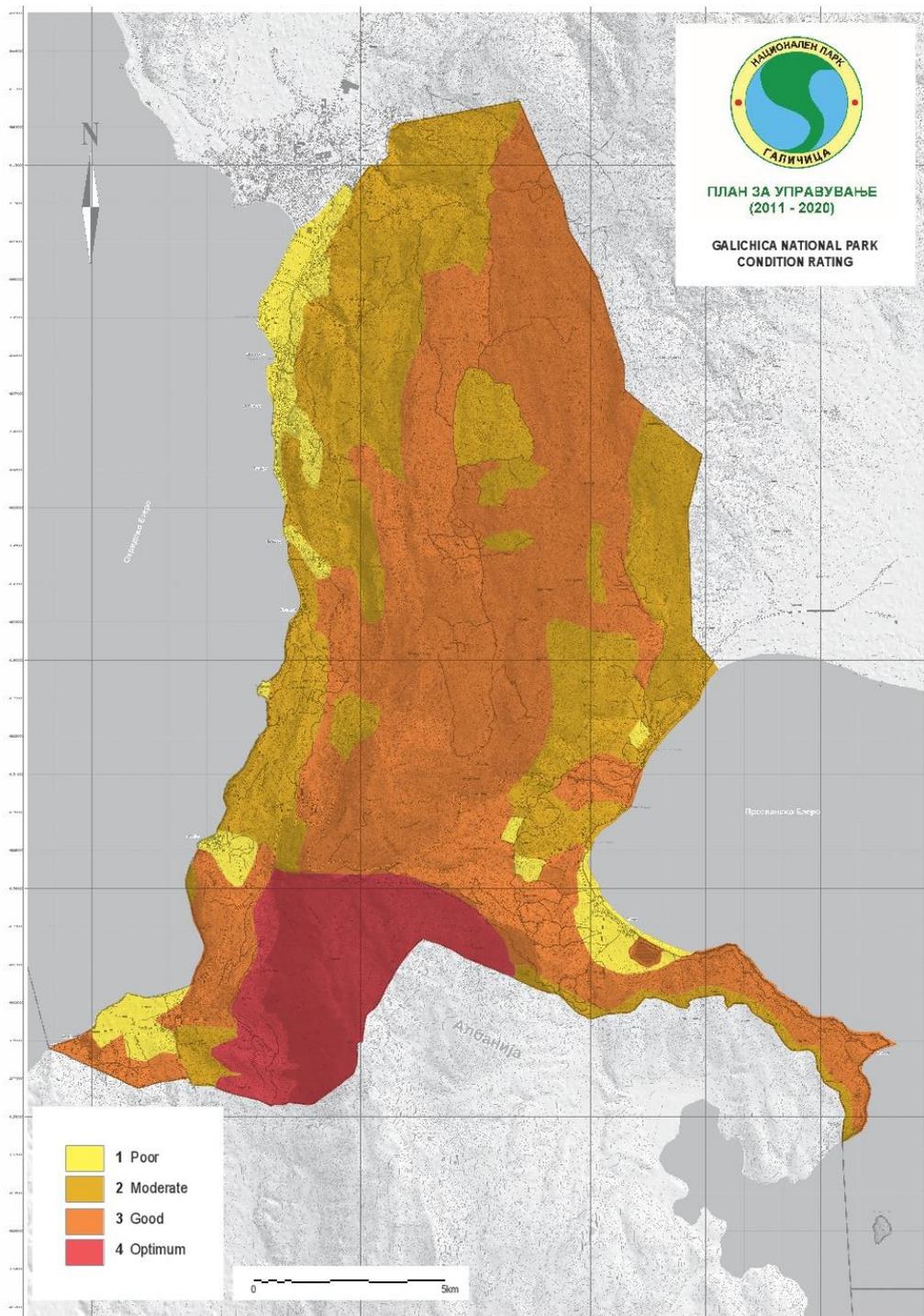
The habitats and plant communities identified within the Park are listed in Section 5.4, and described further. These tables include the distinctiveness rating attributed to each habitat/plant community by a team involving PINPG, and Macedonian ecological experts. The key characteristics, requirements and threats on each type were identified and agreed.



The residual effects from the changes to the Park Management Plan from the projects on each habitat area, and key species '*typically*' occurring in these key habitats were then identified. Specifically, the project aerial footprint (expanded to allow for indirect impacts in the project area) on each habitat type was identified, using a precautionary approach, i.e. assuming that all vegetation within the project footprint would be destroyed, even where only partial removal is required, and where restoration is likely to occur post-construction. Land needs for access, construction and buffer zones were taken into account.

A Condition Rating was given to each habitat area. This was done by PINPG with Macedonian ecological specialists, taking into account the assessment of each unit of forestry, previously conducted by PINPG, as well as the local knowledge of PINPG staff and three other Macedonian ecological experts familiar with the Park. A summary of the Condition Rating is presented in the figure below, although this Figure does not show all the detail of the smaller forestry plots.

Figure 9.2: Galichica National Park Condition Rating



A numerical calculation of the *Impact Score* was then made, which takes into account the area of impact (ha) on each habitat type, the distinctiveness and condition of the habitat affected. A *Habitat Impact Unit* is calculated for each area of affected habitat, as the multiple of the Distinctiveness (from 0 – 6), Condition (from 1 – 4), and the area impacted. In other words, the area impacted is multiplied by a multiplier as shown in the table below. The *Habitat Impact Unit* gives an indication of the ‘amount’ of biodiversity value which needs to be offset.



Table 9.1: Table Showing Biodiversity Multiplier

		Biodiversity Distinctiveness			
		Very Low (0)	Low (2)	Medium (4)	High (6)
Condition	Optimum (4)	0	8	16	24
	Good (3)	0	6	12	18
	Moderate (2)	0	4	8	12
	Poor (1)	0	2	4	6

The next stage is to identify the potential management actions which could be taken to deliver gains and create an 'offset'. Example actions could include:

- Reversing existing threats or pressures;
- Re-zoning to a higher level of protection, provided this is supported by costed management actions;
- Changing grazing pressures or prohibiting grazing;
- Restoring degraded grasslands;
- Replanting woodlands;
- Changing woodland management regimes.

This stage entails identifying possible offset areas, i.e. other areas of habitat within the Park, similar to what is being impacted, where actions can be taken to improve the extent or condition of the habitat. Realistic possibilities were identified by PINPG, using its existing maps of the habitats and plant communities, and its forestry assessment, where either the extent or condition of an area of habitat could be improved by actions which fit within PINPG's overall aims for each habitat type, as set out in the Park Management Plan. The following rules were adopted, when considering potential offsets.

- Offsets for impacts on highly distinctive habitats must be "like for like" (i.e. offsets must improve existing habitat of the same type or land that can be restored to that type. Creation of new areas where the habitat has not previously occurred is unlikely to be acceptable for these habitats, except for some aquatic habitats such as reed beds which are readily created);
- Offsets for impacts on habitats with medium distinctiveness should be like for like or better (offsets can target habitats of the same type or one with higher distinctiveness);
- Offsets for impacts on habitats with low distinctiveness can target any habitat that occurs within the Park;
- Proposed offset areas must be accessible by individual animals of the impacted population (by themselves or with assistance);
- Additional conservation actions were considered where possible at the SEA level;
- Any replacement habitat must have equivalent connectivity to impacted habitat or be located to ensure that connectivity is maintained (e.g. for species such as lynx, locate offsets to maintain movement corridors through the landscape).

A quantification was then made of the potential habitat offsets available, using the concept of *Habitat Offset Units*. This is a process similar to the calculation of *Habitat Impact Units*, which takes into account the following:

- The distinctiveness of the potential offset area (rating from 0 – 6);
- The current condition of the habitat in the potential offset area (rating from 1 – 4);



- The possible condition following the management actions (rating from 1-4).

A factor was also applied to allow for the amount of time needed for a new habitat to establish. The factors used are given in the table below, taken from the UK's Department of Environment, Food and Rural Affairs (DEFRA) guidance (2012)².

Table 9.2: Table Showing Restoration Time Multiplier

Years to Target Condition	Multiplier	Example Habitat Type Application
5	1.2	
10	1.4	Grasslands
15	1.7	Juniper
20	2.0	
25	2.4	
30	2.8	
> 32	3.0	Beech and Oak Forest

One further multiplier was used, to account for the uncertainty of the restoration outcome.

Table 9.3: Table Showing Uncertainty of Restoration Outcome Multiplier

Uncertainty of Success	Multiplier
Very high	10
High	3.0
Medium	1.5
Low	1.0

By applying the above to each potential area of offset, a determination was made as to the potential for adequately offsetting each area of impacted habitat within the Park. Once this determination was made, a separate consideration was made as to whether the key species affected needed to have additional measures taken, over and above offset of their habitats. This was made by PINPG staff together with three Macedonian ecological experts with intimate knowledge of the Park and its biodiversity.

Offsets for habitats and species will need to be revisited at a project level in the ESIA's based on actually survey data of the footprints and area of impact. Potentially additional habitat and species types could be identified and potential additional residual effects identified which may require offsets. The SEA identifies potential residual effects on key habitats and the key species which may 'typically' occur in these habitats – this considered to be sufficient to meet the strategic level assessment requirements.

Based on the above, an offset delivery plan was made, including mapping of the exact areas where offsetting might occur, and listing the specific management actions needed to deliver the offset.

The offsetting of residual effects predicted for each affected 'key' habitat is discussed below³.

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69531/pb13745-bio-technical-paper.pdf).

³ The predicted *Residual Effect* is that anticipated by the SEA based on the available data – it may be during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors are identified, additional impacts and mitigation determined and that additional residual effects may be identified. Some of these may require additional offsetting measures (e.g. for site specific species).



9.3 Biodiversity Offsets

9.3.1 A3 Expressway Road Project – Peštani to Albanian State Border⁴

As indicated in Section 7.1, the road scheme between Peštani and the State Border, as currently proposed, will require the destruction of 84 ha of Macedonian Oak (*Quercetum trojanae macedonicum – Habitat 9250 under the Habitats Directive*). As this is a Balkan endemic, and because the area in question is an integrated, natural area of good condition forest, destruction of this forest should be avoided. It takes decades for this type of forest to mature, making it challenging to maintain the extent of the habitat in the Park for the next 30 years. Significant residual impacts would occur that are challenging, if not to a degree impossible to offset within a reasonable timeframe. Steps should therefore be taken to avoid destruction of this forest entirely - see Section 8. At the very least, re-alignment of the road scheme is recommended to minimise the area of forest destroyed to the maximum extent possible. If a decision is made to proceed for reasons of **over-riding public interest**, an offset is required and this needs to be designed to account for the long time needed to establish mature forest of the type and condition affected. It will be necessary to provide assurance that the impacts are, in fact offsetable given the availability of sites on which to deliver offsets, and the chances of maintaining the necessary management for a long period of time (at least 40 years).

In order to calculate the degree of offset appropriate to satisfy the Habitat Directive's requirement for 'no net loss', the methodology described above is applied with the following parameters;

Table 9.4: Offset Calculation for Macedonian Oak

Parameter	Rating
Area impacted (ha)	84
Distinctiveness of area impacted	6
Condition rating for area impacted	2 (assume decreases to 0 as a result of project)
Factor for uncertainty (re-forestation)	1.0 (good experience with Macedonian Oak)
Time Factor for Mature Growth	3.0 (to allow for 40 years from sapling to mature trees)
Habitat Impact Unit	3024
Area of Offset (ha)	504 (assuming 1 condition grade improvement as a result of management actions)

An area of 504 ha must therefore be found, where an alternative area of new Macedonian Oak may be cultivated and preserved, (or where the condition of an existing area of degraded Oaks may be improved by 1 degree of condition rating).

Around 100 ha of Macedonian Oak is present at the southern border of the Park on the Prespa side, but this is already in *good condition*, and already within the Zone of Active Management. There is no realistic possibility of significantly improving its condition to account for an offset.

An area of about 450 ha of Macedonian Oak is present on the slopes on the Prespa side of Galichica Mountain. Most is contained in a contiguous area above Oteshevo, the rest in fragmented zones to the south. According to PINPG's recorded condition assessment, around half of these oaks are already in *good condition*, and half are designated as *poor condition*, largely due to cutting for firewood, by PINPG.

⁴ For Ohrid to Peštani Section - It may be at a project level impacts to natural habitats and specific species (identified during field studies/ESIA) require offsetting measures. This would be determined and assessed under the project ESIA. It is considered at the strategic level impacts to the main habitat types along this section mainly associated with vegetation removal could potentially be mitigated within the corridor/Park. However, fragmentation effects at Crno Brdo require more detailed analysis at a project level (design & ESIA).



Around half are in the Zone of Sustainable Usage, and the rest in the Zone of Active Management. Those in the ZSU are in an area planned for selective cutting within the next 10 years. The only means of realistically improving their condition, is by suspending the forestry plan, and preventing their cutting for firewood. This would allow around 220 ha (the half of the area rated as condition 2 (poor) to be included in an offset, by improving its condition to condition 3 (good).

Therefore, only around 220 ha of existing Macedonian Oak forest are potentially available within the Park, as an offset for forests destroyed by the roads project, in the event that the A3 expressway Peštani to Albanian State Border Section project was unable to find alternative mitigation measures. The figure below shows the area of Macedonian Oak within which this offsetting is available. Note that the area shown is over 400 ha, however, as discussed, not all the forest within this area is realistically improvable by management actions. An area of around 200 ha is estimated to be able to have its condition improved by the cessation of forestry activities. Note therefore that this area is **insufficient** to offset all the impacts generated by the road project in its current form.

Note also that the **management action required to improve the condition of the forest is the removal from these areas from PINPG's firewood cutting plan**. This would have severe implications on the financial income of PINPG. At this time, this action is **not supported** by PINPG given their reliance on this as a major source of Park revenue. **It is therefore considered, that there is no realistic option to offset the damage to the Macedonian Oaks within the Park, without significant cost to the PINPG requiring financial compensation. As a result, the future developer would be required to identify potential offset options that are located outside of the Park to achieve NNL of biodiversity.**



Table 9.5: Ski Project Offset Calculation for Annex I Habitats

Parameter	Rating			
	Alpine and sub-alpine calcareous grasslands	Juniperus communis (Juniper bushes)	Illyrian sylvatica forests	Fagus (Beech)
Area impacted (ha)	320	106	87	
Distinctiveness of area impacted	6	6	4	
Condition Rating for area impacted	3	3	3	
Factor for uncertainty (re-forestation)	1.0 (good hope of restoration)	1.0 (good hope of restoration)	1.0 (good hope of restoration)	
Time Factor for Mature Growth	1.4 (assumes 10 years to mature state)	1.7 (assumes 15-20 years to mature state)	3 (to allow for 40 years from sapling to mature trees)	
Habitat Impact Unit	8064	3244	3132	
Area of Offset (ha)	1344	541	783	

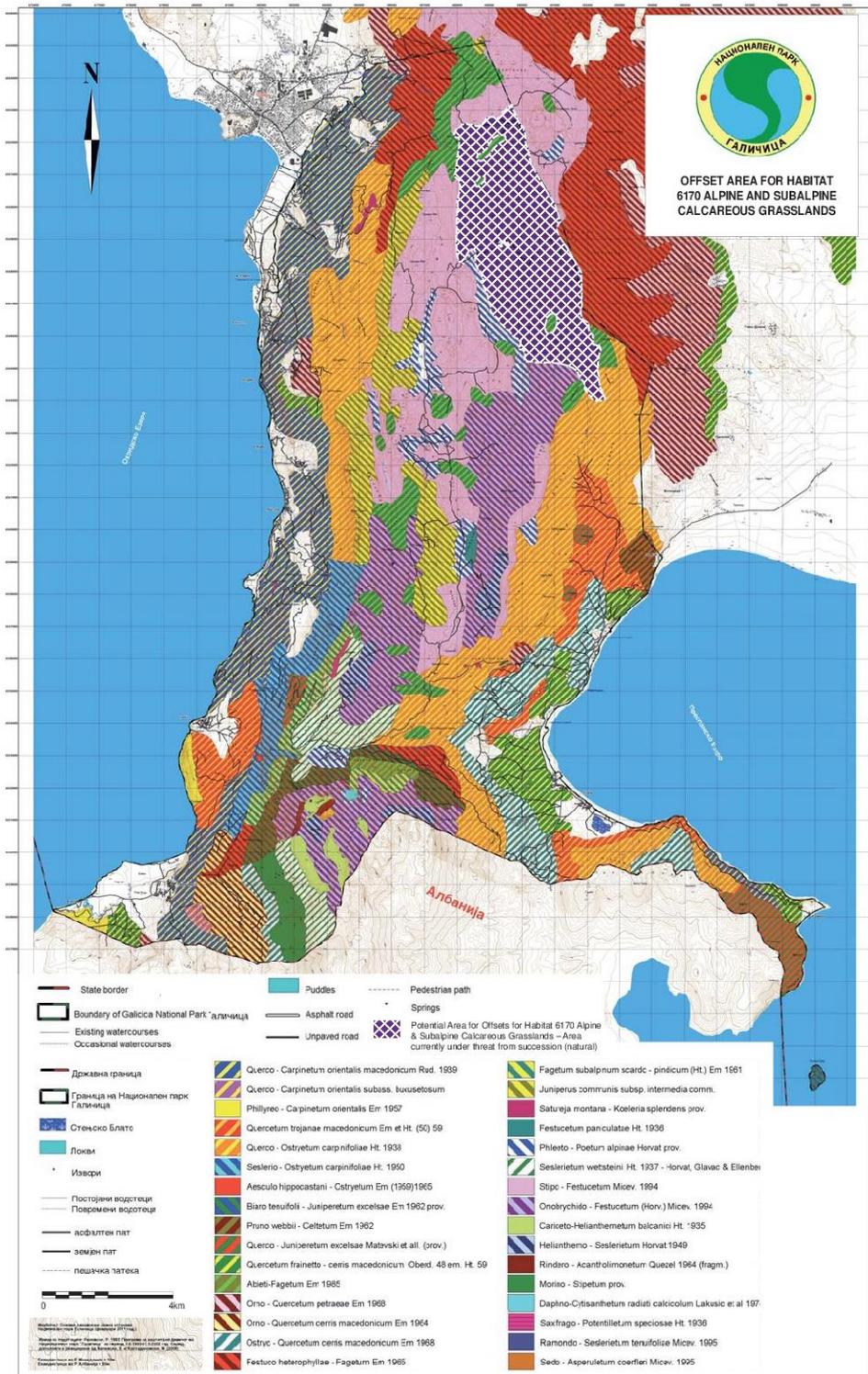
Alpine & Subalpine Calcareous Grasslands (Habitat 6170 under the Habitats Directive): There is around 7,360 ha of this habitat type in the Park. It is not a stable habitat in that, if left alone, it will naturally be colonised (likely by *juniperus communis*) and then succeeded by other trees, and will eventually become forest, most likely beech forest at the elevations in question in the Park. Some of the calcareous grassland in the Park is in good condition, and some only in moderate condition. Ironically, much of the area in good condition was burned in a fire in 2006, which removed much of the shrubs and other plants which were succeeding, and allowed the grassland to thrive. The grassland rated in moderate condition is being degraded by the natural succession of juniper and other trees. Part of the grassland area is in the ZAM and part in the ZSU. In the ZSU, grazing is allowed, which goes towards preserving the grassland as the juniper and other trees are cut back by the grazing animals. In the ZAM, grazing is not allowed, which allows the natural succession to continue, leading to degradation of the habitat as a grassland.

Figure 9-3 below shows an area of around 1,600 ha which is within the ZAM and is slowly losing its characteristics as a grassland due to natural colonisation by juniper habitat, in accordance with the Management Plan of the Park. In order to provide suitable offsets for the grassland damaged by the ski centre, preservation of selected areas of grassland could be made a management priority by NPG. In this case, a decision to allow grazing at an appropriate level could be made (*within a 1-5 year period*). Grazing would prevent the succession and maintain the grassland communities. Although grazing is not automatically allowed within the ZAM, it could be permitted as a specific management action approved by the PINPG and managed through a license. If sufficient community grazing animals were not available (a likely scenario due to the reducing interest in local communities in grazing), then the ski centre project could purchase animals for the NPG to deploy and manage. The total area available within the area shown is around 1,600 ha, more than the 1,344 ha required to offset the effect of the ski centre development.

The management action is to introduce and manage grazing animals into the area shown. PINPG notes that it is unlikely that sufficient grazing will occur naturally, even if restrictions were lifted, since the amount of managed grazing by the communities in area is reducing significantly over time. It is possible therefore, that PINPG will have to manage the grazing. This would be an added cost to the PINPG which would have to be covered by the offset.

Offsets for the areas of grasslands damaged by the ski centre are therefore available within the area of the Park, although there will be a cost to the project and to the PINPG for management of the grazing animals.

Figure 9.4: Potential Offset Area for Habitat 6170 Alpine & Subalpine Calcareous Grasslands

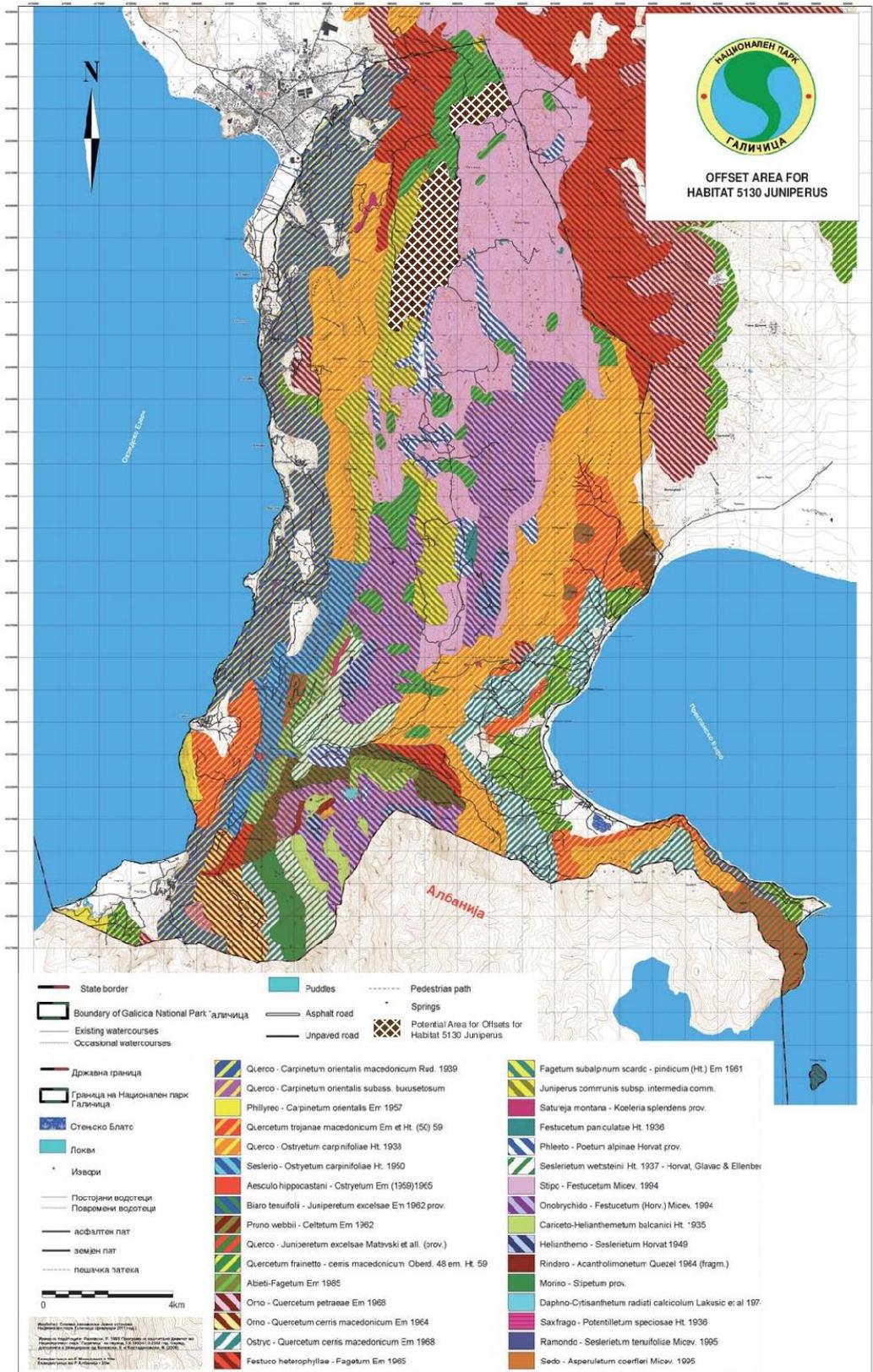




Juniperus (Habitat 5130 under the Habitats Directive): Of the 1,000 ha of juniper habitat in the Park, 106 ha will be adversely impacted by the ski centre project, and if this area is not avoided or reduced, then an area of 541 ha will be required for offsetting. Figure 9.4 shows an area of alpine and sub-alpine calcareous grassland which is currently within the ZSU, and where grazing is allowed by the local communities. The area had some juniper growth in the past, but a fire in 2006 destroyed most of these. If an offset is needed for *Juniperus communis*, this area could be demarcated to allow the juniper shrubs to succeed naturally. To do so, would require a decision by PINPG to prevent grazing in the area. However, PINPG staff have confirmed that the removal of grazing from this limited area would not have a significant impact on the local communities, as grazing pressures have reduced in the Park due to lack of interest and fewer people managing animals as a livelihood. Also, there are sufficient other areas available for grazing. It should be pointed out that the allocation of this area of grassland for juniper succession does not conflict with the offset identified earlier for the calcareous grasslands, as there is sufficient grassland not under active management to allow both offsets to be implemented concurrently.

Offsets for the juniper areas damaged by the ski project are therefore possible within the Park, provided that grazing is managed appropriately. The management action is to demarcate the area shown and prevent grazing in it, allowing juniper to succeed naturally.

Figure 9.5: Potential Offset Area for Habitat 5130 Juniperus

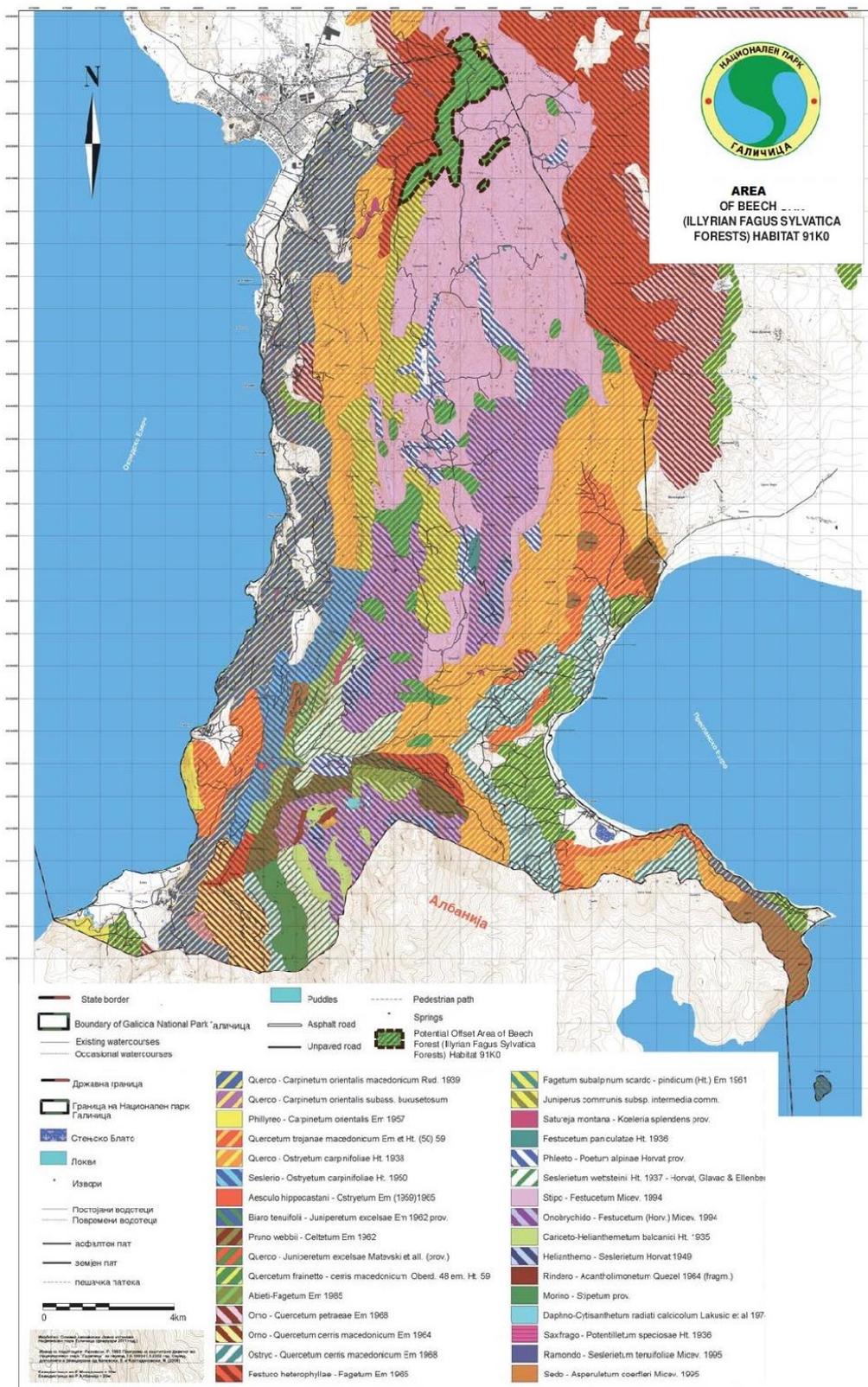




***Fagus sylvatica* (beech forest)** (*Habitat 91K0 under the Habitats Directive*): 87 ha of beech will be impacted by the ski centre. As noted in Table 9.5, 783 ha of new managed beech forest is required to offset this. This significantly larger offset area is needed to take account of the longer time required for beech trees to grow to maturity. There are currently around 901 ha of this type of beech forest in the Park. Figure 9.5 shows an area of around 300 ha in the north of the Park, which is currently degraded by past fires. PINPG has given this area a condition rating of 2 (*moderate*), but currently does not have the resources to improve the condition of these forests. If an offset for beech forest is required, then this area could be placed into active management by PINPG, which would improve its condition rating to *good* over time, if additional resourcing were provided. Other areas of beech exist in the central plateau farther south, but these are in better condition and cannot realistically be improved by management actions.

Therefore, there are around 300 ha of potential beech offsets available within the Park. The management intervention is for PINPG to place this area into active management, and allow its condition to improve from past fire damage. However, there is insufficient area within the Park to provide the amount of offsetting required by the ski centre project. Therefore, if the full 87 ha of impact on beech habitat is to be offset, an additional 483 ha of habitat outside the Park would also be required. To date, this beech habitat has not been identified.

Figure 9.6: Area of Beech (*Fagus Sylvatica*) (Habitats 91K0)





9.3.3 Ljubanishta TDZ

The assessment identified a significant residual effect arising as a result of Ljubanishta 3 TDZ component. However, since the biodiversity effected includes unique aquatic habitat and endemic species it is not considered appropriate or possible to offset this loss.

9.3.4 Stenje TDZ

The assessment identified significant residual effects arising as a result of Stenje TDZ. However, since the biodiversity effected includes unique aquatic habitat and endemic species it is not considered appropriate or possible to offset this loss.

9.3.5 Oteshevo TDZ.

A total area of around 58 ha of Oak forest of the *Quercetum frainetto – cerris macedonicum* variety will be destroyed by the Oteshevo TDZ project. This is in the area of ZAM and is therefore not part of NPG’s firewood collection plans. Although previously damaged by fire, this area is naturally restoring well and is rated by PINPG as being in *good condition*. If the loss of this forest is to be offset by replanting new forests, or by improving the condition of other areas of existing beech forest, then a total area of 540 ha of new or improved oak forest need to be created. The following table summarises the parameters used in the calculation. The larger offset area is related to the good condition of the impacted forest, and the time required for similar habitat to mature from saplings.

Table 9.7: Oteshevo TDZ Offset Calculation for *Quercetum frainetto* Forest

Parameter	Rating
Area impacted (ha)	60
Distinctiveness	3
Condition Rating of area impacted	3
Factor for uncertainty (re-forestation)	1.0 (good hope of restoration)
Time Factor for Mature Growth	3.0 (to allow for 40 years from sapling to mature trees)
Habitat Impact Unit	1620
Area of Offset (ha)	540

There are 2 large areas of similar type of beech forest to the south of Oteshevo, near Prespa lake, which is currently in moderate condition (rating 2), as they are used for firewood production by PINPG. These have sufficient area to be accounted as an offset if PINPG were able to upgrade them by one condition rating from 2 (moderate) to 3 (good). However, in order to do this, PINPG would have to remove them from it tree cutting plan, and would therefore suffer a significant financial penalty as a result. At this time, PINPG does not support this, and this cannot therefore be counted as a potential offset option due to the potential impact on the Park, unless the TDZ project could guarantee to compensate NPG for the loss of income.

9.4 Summary of Biodiversity Offset Plan

Offsetting is required due to potentially significant adverse impacts on natural/critical habitats, Annex 1 habitats and other vegetation types protected within the National Park Galichica. Although delivery of offsets within protected areas is controversial, the Park has different zones of protection, use and management, some of which are sub- optimal in terms of conservation outcomes. The current funds needed to manage biodiversity in the Park are also insufficient to support the full range of conservation management activities, and as a result PINPG must carry out some economic activities within the Park to



generate essential funds, including forestry. This means that habitats protected in the National Park are not all in optimal condition, creating some opportunities to enhance them through management improvements, with resulting gains in biodiversity. The SEA has evaluated scope for delivery of offsets given the current distribution of habitats in the Park and their condition, based on available information and consultation with specialists. However, more detailed investigations would be needed at a project level to confirm that impacts are offsetable and to identify the precise management interventions that would be needed to deliver effective offsets. A detailed assessment of costs of offset implementation and ongoing management would also be needed, as well as a detailed implementation plan with clear institutional frameworks and finance provision.

The following table summarises the offsets that are considered to be potentially deliverable, based on available information. It can be seen that for the Projects as currently proposed, offsets for the following habitats would not be fully achievable within the Park:

- **Macedonian Oak**
- ***Fagus Sylvatica***
- ***Quercetum frainetto***

Alternative locations for potential offsets for these habitats will therefore need to be identified elsewhere. The detailed surveys and assessments required to identify such areas would have to be undertaken before the offsetability of impacts could be confirmed. In all cases, achieving required outcomes will require financial investment for many years. The implementation frameworks needed to ensure adequate financial provision and support active management will need to be articulated in Biodiversity Offset Management Plans, which would have to be developed at ESIA stage for each project.



Table 9.8: Summary of SEA Level Offset Actions⁵

Habitat Type	Offset Needed	Potential Offset Area	Management Action	Risk of residual impact with offsets in place.
A3 Expressway: Ohrid to Peštani section				
No offsets identified within SEA level assessment (see footnote).				
A3 Expressway: Peštani to Albanian State Border section				
Macedonian Oak, HD 9250	504 ha upgraded by 1 Condition Level.	220 ha Macedonian Oak forest identified as having potential for improvement (within a total area of 400 ha). <u>Additional areas would have to be identified outside the Park to meet the full offset requirement.</u>	PINPG removes this 400 ha area from its firewood production plan, requiring equivalent compensation to PINPG to compensate for lost income. Additional finance may be needed to support any additional management. Investment in appropriate management actions will be necessary for 30 to 40 years. <u>Given PINP are a self-financing agency it is not possible to recommend this offset unless long-term compensatory support to PINPG is put in place to compensate for the loss of forestry revenue.</u>	The long time needed to establish high quality mature oak forest means that impacts are not offsetable in the short term within the Park. The long time for establishment increases risk of failure due to changes in management, political support or finance. Chances of success are more certain within the Park than outside it, where it would be necessary to establish a suitable offset delivery framework through an organization with suitable management skills. However, this is not possible given the current reliance of Park funding on forestry. <u>SEA Conclusion: This offset is effectively not achievable within the Park. Therefore an offset area of 504 ha would need to be identified by the Project outside the Park.</u>
Galichica Ski Centre				
Alpine and sub-alpine calcareous	1,344 ha upgraded by 1	An area of 1,600 ha identified in	The baseline situation for this Annex I	None- <i>Assuming management actions etc</i>

⁵ The offsets to **key** habitats is that anticipated by the SEA based on the available data – it may be during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors are identified, additional impacts and mitigation determined and that additional residual effects may be identified. Some of these may require additional offsetting measures (e.g. for **site specific species**).



Habitat Type	Offset Needed	Potential Offset Area	Management Action	Risk of residual impact with offsets in place.
grasslands, HD 6170	Condition Level	north of Park, with potential for improvement.	habitat is decline in area and condition due to climate change and lack of active management, allowing natural succession to scrub. The offset would involve arresting natural succession in a demarcated through active grazing management, possibly through management agreements with livestock farmers or alternatively through purchase of livestock to be managed by Park Authorities. There will be a requirement for ongoing investment in suitable management for at least the planned lifetime of projects causing impacts.	<i>implemented effectively.</i> (Residual impacts are possible if management is ineffective or if levels of physical damage due to trampling and other recreational use are higher than expected. Note there is a residual risk that associated species populations may fail to colonise restored habitat in new locations, exposing them to significant residual impacts despite offsetting.)
<i>Juniperus communis</i> , HD 5130	541 ha	An area of 541 ha identified in north of Park, with potential for improvement in condition by altering grazing levels, allowing natural recolonisation.	PINPG to take action (fencing, signage, patrols, etc) to prevent grazing in this area, to allow juniper to establish.	None- <i>With proposed interventions it should be possible to ensure>NNL of this habitat type within the Park despite changes in the Management Plan and the implementation of proposed development projects.</i>
<i>Fagus sylvatica</i> , HD 91K0	783 Ha	An area of around 300 ha is available in the north of the Park, which has the potential for improvement. An additional 483 ha of suitable land needs to be identified outside the Park to meet the full offset requirement.	PINPG places this area into active management, and devotes resources to managing the area (currently, no resources available to monitor and manage area). Access to additional suitable land outside the Park is needed, together with funds to support replanting or management, for example removal of forest exploitation.	Offset identified insufficient – an additional 483 ha of offset needs to be identified outside the Park. Until suitable areas outside the Park have been identified, a residual impact would remain. Even with offsets, a temporal loss of this forest type will occur. While the proposed method factors this into the offset calculation using a multiplier, there is nevertheless a period of time within which forest habitat available to associated animal populations will be reduced. This could affect the viability of some species populations and this should be investigated in further detail at Project ESIA level.



Habitat Type	Offset Needed	Potential Offset Area	Management Action	Risk of residual impact with offsets in place.
Ljubanishta TDZ				
<p>Component 1 & 2: No offsets identified within SEA level assessment (see footnote).</p> <p>Component 3: The assessment identified a significant residual effect arising as a result of Ljubanishta 3 TDZ component. However, since the biodiversity effected includes unique aquatic habitat and endemic species it is not considered appropriate or possible to offset this loss.</p>				
Stenje TDZ				
The assessment identified significant residual effects arising as a result of Stenje TDZ. However, since the biodiversity effected includes unique aquatic habitat and endemic species it is not considered appropriate or possible to offset this loss.				
Otoeshevo TDZ				
<i>Quercetum frainetto</i>	540 ha upgraded by 1 condition level	540 ha available to south of Oteshevo, identified as having potential for improvement through cessation of forestry activities. Alternatively suitable land would have to be found outside the Park.	<p>PINPG removes 540 ha of <i>Quercetum frainetto</i> from its firewood production plan.</p> <p>Compensatory support to PINPG is required.</p> <p><u>Given PINP are a self-financing agency it is not possible to recommend this offset unless long-term compensatory support to PINPG is put in place to compensate for the loss of forestry revenue.</u></p>	<p>It was not possible to identify suitable areas for restoration of this type of forest outside the Park in this study. Unless an assured compensatory payment mechanism is in place to ensure that PINPG is compensated for lost income from its firewood production plan, or alternative offset locations can be found, there will be residual impacts.</p> <p><u>SEA Conclusion: This offset is effectively not achievable within the Park. Therefore an offset area of 540 ha would need to be identified by the Project outside the Park.</u></p>



10. Monitoring Plan

10.1 Monitoring by PINPG

The Park Management Plan contains a number of aspirations related to monitoring of the ecosystems and trends within the Park. The monitoring programme was developed in 2010, and initially consisted of the following high priority parameters;

- Monitoring of non-living nature (i.e. climate parameters);
- Monitoring of water and water ecosystems (i.e. ten physio-chemical and six biological parameters from the spring at Sveti Naum);
- Monitoring of forest plant communities/habitats (i.e. three specific Annex I forest habitats);
- Monitoring of grass plant communities/habitats (i.e. two types of Annex I grasslands);
- Monitoring of plant species (four specific listed plants species);
- Monitoring of animal species (14 animal species);
- Monitoring of fungi (three species).

A review and upgrade of the Monitoring Programme was due in 2014, launching the second stage of the Programme for 2014-2019 –*this is still under review*.

The implications of the proposed amendments to the Management Plan for PINPG's monitoring programme are significant and relevant sections of the Management Plan are amended within the AMP. With regard to the **Project construction phases**, although the CESMP for each project will include monitoring requirements to be carried out by the Project Sponsor or their contractor, PINPG will need to liaise with the Supervising Engineer (or those responsible for construction phase monitoring and biodiversity issues), to ensure that the appropriate parameters are monitored, that the methodology used is consistent with that used by PINPG, and that the results are accessible by PINPG.

For **post-construction monitoring**, PINPG will need to expand its routine monitoring activities to include specific monitoring actions designed to monitor the key resources under threat from each development and the implementation of the AMP. The SEA recommends that the Park monitoring programme be reviewed following adoption of the Amended Management Plan, to allow for revision to monitoring requirements and specific monitoring actions related to the risks and threats from each Project as their ESIA's etc. are developed.

10.2 Monitoring Regime for Projects

During the preparation of each Project ESIA, it is expected that detailed habitat and species surveys will be undertaken. Each Project ESIA will then develop a Construction Environmental & Social Management Plan (CESMP) which will contain relevant monitoring actions. The CESMP may include a Biodiversity Management Plan (BMP), as well as a Biodiversity Offsetting Plan. The CESMP is a Project permitting requirement, and by submitting the CESMP as part of an ESIA, the Project Sponsor is committing to implementing the monitoring actions. Implementation of the CESMP is the responsibility of the Project Sponsor, although in many cases, CESMP implementation will be included in the responsibilities of the Contractor, with oversight from PINPG. Due to the sensitive nature of these Projects in Galichica National Park, the Project Sponsor (or the Contractor) will likely be required to bring in experienced biodiversity experts to undertake any biodiversity-related mitigation and/or monitoring actions, as outlined in the ESIA, BMP or Biodiversity Offsets Plan.

It will not be PINPG's responsibility to implement the CESMP or the associated monitoring actions. However, it is strongly recommended that Project Sponsors include provisions to ensure that the PINPG review the draft CESMP and ensure that its view of monitoring requirements is taken into account (and in



line with the AMP). PINPG should also review the Terms of Reference for any ecological expertise that is required, e.g. for CESMP or BMP implementation.

PINPG should also meet regularly with the Contractor and with those implementing CESMP/BMP to discuss the resources under threat, the implementation and effect of the mitigation actions, early effects of the Project, and PINPG's concerns. It is suggested that a regular meeting regime (e.g. monthly) is set up for each Project construction, attended by the Project Sponsor, the Supervising Engineer, the Contractor, the ecological experts associated with CESMP or BMP implementation, and PINPG.

For each Project, the Operation Environmental & Social Management Plan (OESMP), which is developed as part of the ESIA will include monitoring requirements for the post-construction / operation phase, which will be the responsibility of the Project Owner to implement. In addition For each Project, PINPG should develop its own risk-based plan to monitor the effects on the Park of implementation of the AMP and the projects, and should build these into its ongoing monitoring programme.

The following tables provide lists of the key biodiversity parameters and species which are most under threat from each proposed Project. These lists were developed by Macedonian ecological experts, based on the AMP and the values of the National Park. It is expected that each Project CESMP and OESMP, will include monitoring of these parameters.

However, note that these lists are based on the data available for the SEA, and focus on the strategic level effects. They represent the minimum set of parameters which should be monitored. It is likely that during the detailed design and ESIA phase, additional receptors will be identified from the surveys of the actual project footprints and affected areas. Each Project monitoring programme should take account of any additional parameters identified.

All monitoring data compiled at a Project level should be made available to PINPG to augment the current data set on the National Park.



10.3 Project Monitoring Recommendations¹²

Table 10.1: Galichica Ski Centre Monitoring Recommendations

Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species:
<p>HD Code: 6170 – Alpine and subalpine calcareous grasslands</p> <p>EUNIS: E4.41724 - Pelagonide closed calcicolous fescue grasslands</p>	<p>Refer to map & table 13-13, page 385, Book II, Part I of the Management Plan. Distributed on large areas on the mountain plateau.</p>	<p>Flora: Galichica Yellow Everlasting - <i>Helichrysum zivojinii</i> (Local Endemic Species), Galichica Rock Bell - <i>Edraianthus horvatii</i> (Local Endemic Species), Cvijici's Crocus - <i>Crocus cvijicii</i> (Balkan Endemic Species), Tomorosian Centaury - <i>Centaurea tomorosii</i> (Local Endemic Species), Galichica Mountain Tea - <i>Sideriris raeseri</i> (Balkan Endemic Species), Galichica Sermountain - <i>Laserpitium ochridanum</i> (Local Endemic Species), Galichica Catmints - <i>Nepeta ernesti-mayeri</i> (Local Endemic Species), Galichica Sempervivum - <i>Sempervivum galicicum</i> (Local Endemic Species)</p> <p>Fauna: Predatory Bush Cricket - <i>Saga pedo</i> (HD IV, IUCN – VU)</p> <p>Apollo Butterfly - <i>Parnasius apollo</i> (HD IV, IUCN – VU), Calcareous Mountain Snail - <i>Helix secernenda</i> (Balkan Endemic Species),</p> <p>European Green Toad - <i>Pseudepidalea viridis</i> (HD IV),</p> <p>Alpine Chough - <i>Pyrrhocorax graculus</i> (Relict Population), Red-backed Shrike - <i>Lanius collurio</i> (BD I), Balkan Chamois - <i>Rupicapra rupicapra balcanica</i> (HD II/IV)</p> <p>Fungi: none</p>	<p>Alpine Chough - <i>Pyrrhocorax graculus</i> (Relict Population),</p> <p>Balkan Chamois - <i>Rupicapra rupicapra balcanica</i> (HD II/IV)</p>

¹ Additional habitats and species may be identified during the ESIA project level surveys which would mean monitoring of these may also be necessary during the pre-construction, construction and operation of the projects. Specifically impacts on species of conservation concern found/indicated to be present or occurring in an area of impact for a project have to be assessed in more detail as part of Project ESIA's. The mitigation, monitoring and offsets within the SEA are based on available data and focus on the strategic level effects. It may be during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors, impacts, residual effects and offsets are identified and therefore the project specific monitoring programme would need to be developed. Based on the AMP and the values of the National Park the parameters identified below are considered the key ones to ensure protection of the Park's biodiversity.

² In order to prioritise and focus monitoring resources for the Park as a whole Tables 10.6 and 10.7 list the key habitats and species identified in Tables 10-1 to 10-5 their national and international status and their priority for monitoring, based on the following criteria. Table 10.8 outlines recommended species monitoring methodologies and frequencies



Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species:
<p>HD Code: 5130 – Juniperus communis formations on heaths or calcareous grasslands</p> <p>EUNIS F3.164 - Sub-Mediterranean common juniper thickets</p>	<p>Refer to map & table 13-18, page 395, Book II, Part I of the Management Plan. Distributed on the central mountain plateau.</p>	<p>Flora: Sartorial Stonecrop - Sedum sartorianum (Apollo butterfly feeding plant)</p> <p>Fauna: Predatory Bush Cricket - Saga pedo (HD IV, IUCN – VU)</p> <p>Apollo Butterfly - Parnasius apollo (HD IV, IUCN – VU),</p> <p>Alpine Chough - Pyrrhocorax graculus (Relict Population),</p> <p>Red-backed Shrike - Lanius collurio (BD I), Rock Partridge Alectoris graeca (BD I)</p> <p>*Fungi: Hyphodontia juniperi (NT)</p>	<p>Alpine Chough - Pyrrhocorax graculus (Relict Population),</p> <p>Balkan Chamois - Rupicapra rupicapra balcanica (HD II/IV)³</p> <p> </p> <p>*According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013</p>
<p>HD Code: 91KO - Illyrian Fagus sylvatica forests</p> <p>EUNIS: G1.6C323 - Illyrian [Acer obtusatum] beech forest</p>	<p>Refer to map & table 13-23, page 414, Book II, Part I of the Management Plan. Distributed on scattered patches on the mountain plateau.</p>	<p>Flora: Acer obtusatum, Sesleria robusta</p> <p>Fauna: Rosalia Longicorn - Rosalia alpine (HD II/IV, IUCN – VU), Large Blue - Maculinea arion (HD IV),</p> <p>Lehmania szigethyae (Local Endemic Species), Lymax cephalonicus (Balkan Endemic Species), Deroceras turcicum (Balkan Endemic Species),</p> <p>Agile Frog - Rana dalmatina</p> <p>(HD IV), Wall Lizard - Podarcis muralis (HD IV), Green Lizard – Lacerta viridis (HD IV),</p> <p>Middle Spotted Woodpecker - Dendrocopus medius (BD I), Black Woodpecker - Dryocopus martius (BD I), Hazel Grouse - Bonasa bonasia (BD I), Wolf - Canis lupus (HD II/IV), Wildcat - Felis silvestris (HD IV), Brown Bear - Ursus arctos (HD II/IV), Balkan Lynx - Lynx lynx balcanicus (HD II/IV)</p> <p>*Fungi: Clavariadelphus pistillaris (VU - A3acd)</p>	<p>Wolf - Canis lupus (HD II/IV), Wildcat - Felis silvestris (HD IV)</p> <p>Brown Bear - Ursus arctos (HD II/IV), Balkan Lynx - Lynx lynx balcanicus (HD II/IV)</p>

³ This species is very threatened throughout Europe, affected by poaching, disturbance from tourism including mountain biking, hiking (potential impacts on breeding success) and by use of roads/ barriers. Project level ESIA should confirm how widely throughout all the higher altitude areas species occurs or whether it is localised and potentially adversely affected by ski resort.



Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species:
			*According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013
Oak-hornbeam forest EUNIS: G1.7C221 - Helleno-Pelagonide oriental hornbeam woods	Refer to map & table 13-26, page 425, Book II, Part I of the Management Plan. Distributed on lower altitudes along the shore of Ohrid Lake.	Flora: Galicica Catmints - <i>Nepeta ernesti-mayeri</i> (Local Endemic Species) Fauna: Stag Beetle - <i>Lucanus cervus</i> (HD IV), False Eros Blue - <i>Polyommatus eroides</i> (HD II/IV), Hermann's Tortoise - <i>Testudo hermanni</i> (HD II/IV), Four-lined Snake - <i>Elaphe quatorlineata</i> (HD II), Macedonian lizard - <i>Podarcis erhardii</i> (HD IV), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV) *Fungi: <i>Bsoletus lupinus</i> (EN –D) <i>Boletus impolitus</i> (VU C1; D1), <i>Cortinarius rufoolivaceus</i> (DD)	Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV) *According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013
EUNIS: G1.7C123 - Eastern Adriatic supra-Mediterranean hop-hornbeam woods	Refer to map & table 13-28, page 431, Book II, Part I of the Management Plan. Distributed along the southern central plateau.	Flora: none Fauna: Stag Beetle - <i>Lucanus cervus</i> (HD IV), Eurasian eagle-owl - <i>Bubo bubo</i> (BD I), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV), Balkan Lynx - <i>Lynx lynx balcanicus</i> (HD II/IV), Brown Bear - <i>Ursus arctos</i> (HD II/IV) *Fungi: <i>Boletus appendiculatus</i> (VU C1; D1)	Eurasian eagle-owl - <i>Bubo bubo</i> (BD I), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV), Balkan Lynx - <i>Lynx lynx balcanicus</i> (HD II/IV), Brown Bear - <i>Ursus arctos</i> (HD II/IV) *According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013
EUNIS: G1.7C11- Mesomediterranean Gallo-Italic hop-hornbeam woods	Refer to map & table 13-27, page 428, Book II, Part I of the Management Plan. Distributed along the eastern and western plateau.	Flora: none Fauna: Stag Beetle - <i>Lucanus cervus</i> (HD IV), Eurasian eagle-owl - <i>Bubo bubo</i> (BD I), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV), Balkan Lynx - <i>Lynx lynx balcanicus</i> (HD II/IV), Brown Bear - <i>Ursus arctos</i> (HD II/IV) Fungi: * <i>Boletus satanas</i> (VU- A2ac), <i>Boletus aereus</i> (VU- A2acd)	*According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013



Table 10.2: A3 Expressway Monitoring Recommendations

Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species ⁴
A3 Expressway – Ohrid to Peštani Section			
Crno Brdo (Black Mountain): An additional specific Monitoring Plan within the project ESIA is required for Crno Brdo (including for migration corridor to lake, landscape species and road corridor animal incidents/deaths) and other areas which were originally within the NPG Management Plan (2011-2020) Zone of Active Management (ZAM). (Also see below entries relating to Crno Brdo).			
Oak-hornbeam forest EUNIS G1.7C221 - Helleno-Pelagonide oriental hornbeam woods	Refer to map & table 13-26, page 425, Book II, Part I of the Management Plan. Distributed on lower altitudes along the shore of Ohrid Lake.	Flora: Galicica Catmints - <i>Nepeta ernesti-mayeri</i> (Local Endemic Species ⁵) Fauna: Stag Beetle - <i>Lucanus cervus</i> (HD IV), False Eros Blue - <i>Polyommatus eroides</i> (HD II/IV), Hermann's Tortoise - <i>Testudo hermanni</i> (HD II/IV), Four-lined Snake - <i>Elaphe quatorlineata</i> (HD II), Macedonian lizard - <i>Podarcis erhardii</i> (HD IV), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV) *Fungi: <i>Boletus lupinus</i> (EN –D) <i>Boletus impolitus</i> (VU C1; D1)	Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV) Balkan lynx? *According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013
EUNIS: G1.7641 - Helleno-Moesian [<i>Quercus petraea</i>] forests Ass. Orno-Quercetum petraea and Ass. Ostryo-Quercetum cerris	Refer to map & table 13-24, page 418, Book II, Part I of the Management Plan. Fragmented in a few areas. Located above the Crno Brdo hill and the village of Konsko . The is located on the Prespa side of the park above Oteshevo settlement.	Flora: none Fauna: Stag Beetle - <i>Lucanus cervus</i> (HD IV), Eurasian eagle-owl - <i>Bubo bubo</i> (BD I), Middle Spotted Woodpecker - <i>Dendrocopus medius</i> (BD I), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV), Balkan Lynx - <i>Lynx lynx balcanicus</i> (HD II/IV), Brown Bear - <i>Ursus arctos</i> (HD II/IV),	Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV), Balkan Lynx - <i>Lynx lynx balcanicus</i> (HD II/IV), Brown Bear - <i>Ursus arctos</i> (HD II/IV).

⁴ "Landscape species" are typically sensitive to barrier effects from roads and to human disturbance. They need large areas of undisturbed and unfragmented habitat. Species potentially requiring landscape connectivity across roads etc. include bear, wolf, lynx and wildcat.

⁵ In project ESIA consideration is required as to whether species is endemic and restricted to lake shore zone as to consider potential for disproportionate exposure to development impact.



Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species ⁴
		*Fungi: Boletus satanas (VU- A2ac), Boletus aereus (VU- A2acd)	
EUNIS: G1.762 - Helleno-Moesian [Quercus frainetto] forests	Refer to map & table 13-25, page 422, Book II, Part I of the Management Plan. Fragmented on three areas. The first one is located above the Crno Brdo hill and the village of Konsko . The second affected area is located on the Prespa side of the park close to Oteshevo settlement .	Flora: none Fauna: Stag Beetle - <i>Lucanus cervus</i> (HD IV), Eurasian eagle-owl - <i>Bubo bubo</i> (BD I), Syrian Woodpecker - <i>Dendrocopus syriacus</i> (BD I), Hazel Grouse - <i>Bonasa bonasia</i> (BD I), Spotted Woodpecker - <i>Dendrocopus medius</i> (BD I), European Nightjar - <i>Caprimulgus europaeus</i> (BD I), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV), Balkan Lynx - <i>Lynx lynx balcanicus</i> (HD II/IV), Brown Bear - <i>Ursus arctos</i> (HD II/IV) *Fungi: <i>Amanita caesarea</i> (EN-A2acd), <i>Boletus satanas</i> (VU- A2ac), <i>Boletus aereus</i> (VU- A2acd), <i>Boletus satanas</i> (VU-A2ac).	*According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013
A3 Expressway – Peštani to Albanian State Border Section			
'Zli Dol (Evil Canyon): Additional specific Monitoring Plan within project ESIA required for 'Evil Canyon' migration corridor to lake shore (including for migration corridor to lake, landscape species and road corridor animal incidents/deaths etc.).			
Macedonian oak forest EUNIS G1.781 <i>Quercus trojana</i> woods. Reference to EU HD Annex I: 9250 - <i>Quercus trojana</i> woods	Refer to map & table 13-29, page 434, Book II, Part I of the Management Plan. Divided into four fragmented areas. The affected one is along the shoreline of the Lake Ohrid above the village Trpejca.	Flora: Macedonian Oak - <i>Quercus trojana</i> (HD I:9250), Galicica Catmints - <i>Nepeta ernesti-mayeri</i> (Local Endemic Species ⁶) Fauna: Southern Festoon - <i>Zerinthia polyxena</i> (HD IV), Clouded Apollo - <i>Parnassius mnemosine</i> (HD IV), Stag Beetle - <i>Lucanus cervus</i> (HD IV), Hermann's Tortoise - <i>Testudo hermanni</i> (HD II/IV), Four-lined Snake - <i>Elaphe quatorlineata</i> (HD II), European Nightjar - <i>Caprimulgus europaeus</i>	European Nightjar - <i>Caprimulgus europaeus</i> (BD I), Spotted Woodpecker - <i>Dendrocopus medius</i> (BD I), Wolf - <i>Canis lupus</i> (HD II/IV), Wildcat - <i>Felis silvestris</i> (HD IV)

⁶ In project ESIA consideration is required as to whether species is endemic and restricted to lake shore zone as to consider potential for disproportionate exposure to development impact.



Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species ⁴
Reference to EU HD Annex I: 6210 – Seminal dry grasslands and scrubland facies on calcareous substrates		heracleoticum (Balkan endemic sp.) Fauna: Balkan Euxoa - Euxoa glabella (Balkan endemic sp.), False Eros Blue - Polyommatus eroides (HD II/IV), Balkan Green Lizard - Lacerta trilineata (HD IV), Syrian Woodpecker - Dendrocopus syriacus (BD I) Fungi: none	*According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013

Monitoring Recommendations for Tourist Development Zones

Given the diversity and uniqueness of the area potentially affected by **Ljubanishta TDZ Component 3** if this component went ahead on this extremely sensitive site this would require a complex and detailed survey and monitoring plan. This would need to be prepared with detailed input from PINPG and require more detailed surveys prior to determining what needs to be monitored. However, the table below sets out the minimum set of species which should be monitored. Given the possible indirect impacts from Ljubanishta Components 1 & 2 on the St Naum Springs, it is considered that even if these Components were to go ahead without Component 3, the same species and parameters should be monitored. In each case, a project level monitoring programme should be prepared which considers risks to water quality during construction and aquatic flora and fauna from debris, visitor activity, changes in water quality or flow regime. Developments of components 1 & 2 should not present issues of a strategic nature, however induced effects on the area where Ljubanishta 3 was proposed would need to be carefully considered.

Note that all TDZ monitoring recommendations should be regarded as provision, and in need of further definition following review of more detailed information on the Tourist Development Zones, as it becomes available.

Table 10.1: Monitoring Recommendations for Ljubanishta TDZ

Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species:
C1.11 Benthic communities of oligotrophic waterbodies	St. Naum Springs, refer to map & table 13-5, page 360, Book II, Part I of the Management Plan. Close to the Albanian border on the Ohrid side of NPG.	Flora: none Fauna: <u>Gastropods</u> (Local Endemic Species): Ohridohauffenia sanctinaumi, Ohrigocea stankovici, Pyrgohydrobia sanctinaumi,	



		<p>Gyraulus fontinalis.</p> <p><u>Ostracods</u> (Local Endemic Species): Paralymnocythere ochridense, Candona hartmanni, Candona sketi</p> <p><u>Malacostraca</u> (Local Endemic Species): Niphargus sanctinaumi</p> <p><u>Fishes</u>: Ohrid Nase - Chondrostoma ohridana (Local Endemic Species), Ohrid Gudgeon - Gobio ohridanus (Local Endemic Species, IUCN-VU), Ohrid Stone Loach - Barbatula sturanyi (Local Endemic Species) Ohrid trout - Salmo letnica (Local Endemic Species)</p> <p><u>Reptiles</u>: European Pond Turtle - Emys orbicularis (HD II/ IV)</p> <p><u>Birds</u>: Ferruginous Duck - Aythya nyroca (BD I), Dipper - Cinclus cinclus (BD I), Great Egret - Casmerodius albus (BD I), Little Egret - Egretta garzetta (BD I)</p> <p>Fungi: none</p>	
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Table 10.2: Monitoring Recommendations for Stenje TDZ

Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species:
EUNIS: C3.21 - Phragmites australis beds	Refer to map & table 13-6, page 363, Book II, Part I of the Management Plan. Located southern of the village of Stenje .	<p>Flora: none</p> <p>Fauna: yellow-spotted whiteface Leucorrhinia pectoralis (HD II/IV), European Green Toad - Pseudepidalea viridis (HD IV), European tree frog - Hyla arborea (HD IV), European Pond Turtle - Emys orbicularis (HD II/ IV), Little Egret – Egretta garzeta (BD I), Great Egret - Casmerodius albus (BD I)</p> <p>Fungi: none</p>	Little Egret – Egretta garzeta (BD I), Egret - Casmerodius albus (BD I)



Table 10.3: Monitoring Recommendations for Oteshevo TDZ

Key Habitat for Monitoring	Notes on Location of Habitat	Key Species for Monitoring/Habitat	Notes/Comments & Landscape Species:
<p>EUNIS: G1.7641 - Helleno-Moesian [Quercus petraea] forests</p> <p>Ass. Orno-Quercetum petraeae</p> <p>and</p> <p>Ass. Ostryo-Quercetum cerris</p>	<p>Refer to map & table 13-24, page 418, Book II, Part I of the Management Plan. Fragmented in a few areas. Located above the Crno Brdo hill and the village of Konsko. The is located on the Prespa side of the park above Oteshevo settlement.</p>	<p>Flora: none</p> <p>Fauna: Stag Beetle - Lucanus cervus (HD IV), Eurasian eagle-owl - Bubo bubo (BD I), Middle Spotted Woodpecker - Dendrocopus medius (BD I), Wolf - Canis lupus (HD II/IV), Wildcat - Felis silvestris (HD IV), Balkan Lynx - Lynx lynx balcanicus (HD II/IV), Brown Bear - Ursus arctos (HD II/IV),</p> <p>*Fungi: Boletus satanas (VU- A2ac), Boletus aereus (VU- A2acd)</p>	<p>Wolf - Canis lupus (HD II/IV), Wildcat - Felis silvestris (HD IV), Balkan Lynx - Lynx lynx balcanicus (HD II/IV), Brown Bear - Ursus arctos (HD II/IV).</p> <p> </p> <p> </p> <p> </p> <p>*According to Macedonian Red List of Fungi (unofficial) – Karadelev & Rusevska 2013</p>
<p>EUNIS: G1.762 - Helleno-Moesian [Quercus frainetto] forests</p>	<p>Refer to map & table 13-25, page 422, Book II, Part I of the Management Plan. Fragmented on three areas. The first one is located above the Crno Brdo hill and the village of Konsko. The second affected area is located on the Prespa side of the park close to Oteshevo settlement.</p>	<p>Flora: none</p> <p>Fauna: Stag Beetle - Lucanus cervus (HD IV), Eurasian eagle-owl - Bubo bubo (BD I), Syrian Woodpecker - Dendrocopus syriacus (BD I), Hazel Grouse - Bonasa bonasia (BD I), Spotted Woodpecker - Dendrocopus medius (BD I), European Nightjar - Caprimulgus europaeus (BD I), Wolf - Canis lupus (HD II/IV), Wildcat - Felis silvestris (HD IV), Balkan Lynx - Lynx lynx balcanicus (HD II/IV), Brown Bear - Ursus arctos (HD II/IV)</p> <p>*Fungi: Amanita caesarea (EN-A2acd), Boletus satanas (VU- A2ac), Boletus aereus (VU- A2acd), Boletus satanas (VU-A2ac).</p>	

In order to prioritise and focus monitoring resources for the Park as a whole Tables 10-6 and 10-7 list the key habitats and species identified in Tables 10-1 to 10-5, their national and international status and their priority for monitoring, based on the following criteria. Table 10.8 outlines recommended species monitoring methodologies and frequencies.



Habitat monitoring priorities are based on Habitats Directive Annex 1 status and the EU wide Article 17 Conservation Status condition assessment (EEA 2014). Annex 1 habitats that are listed as Priority Status in the Directive, as amended, and with a Favourable Conservation Status of Unfavourable are prioritised.

The extent of habitats in the whole of the Park should be mapped with high precision, using a combination of remote sensing and targeted field survey, and with condition assessment (see Chapter 5.4.1) recorded for each targeted Annex 1 habitat parcel on a five yearly cycle. Outside of Annex 1 areas EUNIS habitat categories, level 4, should be used as the basis for mapping. EUNIS habitat categories are not used to prioritise monitoring, as the classification is intended for descriptive rather than evaluation purposes.

Table 10.6: Habitat Monitoring Priorities

Habitat Directive		Article 17 EU Assessment 2007-12	
Code	Habitat Type Title (* = Priority on Annex 1)	Conservation Status	Monitoring Priority
6170	Alpine and subalpine calcareous grasslands	Unfavourable - inadequate	High
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates(Festuco-Brometalia)	Unfavourable - inadequate	High
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	Unfavourable - inadequate	High
5130	Juniperus communis formations on heaths or calcareous grasslands	Unfavourable - inadequate	High
9180	* Tilio-Acerion forests of slopes, screes and ravines	Unfavourable - bad	Very High
91W0	Moesian beech forests	Unfavourable - inadequate	High
91K0	Illyrian Fagus sylvatica forests	Unfavourable - inadequate	High
9250	Quercus trojana woods	Unfavourable - inadequate	High
9270	Hellenic beech forests with Abies borisii-regis	Unfavourable - inadequate	High
9560	* Endemic forests with Juniperus spp. (9560)	Unfavourable - inadequate	Very High
8140	Eastern Mediterranean screes	Favourable	Low
8210	Calcareous rocky slopes with chasmophytic vegetation	Favourable	Low
8310	Caves not open to the public	Unfavourable - inadequate	High



Species monitoring priorities are assessed separately from habitat priorities, although the links between habitats and species highlighted in Tables 10-1 to 10- can be used to optimise monitoring programmes, especially in remote areas of the Park with difficult access. The 76 species identified by local experts and set out in these tables are listed by taxonomic group in Table 10.7 and prioritised for monitoring purposes based on the following criteria.

Species with a national or international threat or protective status that may trigger critical habitat status under International Finance Institution Performance Standards (e.g. such as EBRD's) or special consideration under legal instruments. Annex 2 species under the Habitats Directive and Annex 1 species under the Birds Directive are given higher priority than Annex 4 of the Habitats Directive. IUCN Vulnerable, Data Deficient and Not Yet Assessed species are given higher priority than species of Least Concern.

Endemic species are given priority for monitoring; they may trigger Critical Habitat status under endemism or restricted range criteria. Many of the species identified as a high priority for monitoring are local endemic species. No information on current abundance and local distribution is available for these species. Screening should be undertaken to select a subset of local endemics for targeted monitoring. In addition to monitoring of population size and distribution of these species an objective should be to identify hotspots of endemics that may require special conservation measures.

Flagship species with large ranges in the landscape are also given priority for monitoring.

It must be emphasised that a definitive evaluation of species for Critical Habitat status has not been undertaken for the SEA.

National Red Lists for Macedonia are not yet available⁸ (IUCN, 2014), except for a draft Fungi list. Although this list includes nationally endangered species recorded within the park the degree of conformity of this list with rigorously applied IUCN criteria has yet to be established. Since fungi monitoring is extremely challenging as a consequence of natural variability in annual abundance over long time periods monitoring priority of fungi has been assigned “medium”.

The SEA Macedonian experts identified all of the relevant species based on current knowledge. However the area has outstanding biodiversity and is relatively in areas under-recorded; it is therefore likely that other species of conservation importance may be discovered. General surveillance programmes and the inclusion of a wider species range in targeted monitoring programmes should be supported and the monitoring scope expanded in the future as required – including at a project level.

Table 10.7: Species Monitoring Priorities

Taxonomic Group	Scientific Name	Common Name	Status	Monitoring Priority
Amphibian	<i>Hyla arborea</i>	European tree frog	HD IV	Low
	<i>Pseudepidalea viridis</i>	European Green Toad	HD IV	Low
Bird	<i>Alectoris graeca</i>	Rock Partridge	NT	Medium
	<i>Aythya nyroca</i>	Ferruginous Duck	BD I, NT	Medium
	<i>Bonasa bonasia</i>	Hazel Grouse	BD I, LC	Medium

⁸ IUCN (2014). National Red Lists/Books of Threatened Species in South-Eastern Europe, http://cmsdata.iucn.org/downloads/focus_national_red_listsbooks_of_threatened_species_in_see.pdf downloaded on 23 June 2015



Taxonomic Group	Scientific Name	Common Name	Status	Monitoring Priority
	<i>Bubo bubo</i>	Eurasian eagle owl	BD I, LC	Medium
	<i>Caprimulgus europaeus</i>	European Nightjar	BD I, LC	Medium
	<i>Casmerodius albus</i>	Great Egret	BD I, LC	Medium
	<i>Cinclus cinclus</i>	Dipper	BD I, LC	Medium
	<i>Dendrocopus medius</i>	Middle Spotted Woodpecker	BD I, LC	Medium
	<i>Dendrocopus syriacus</i>	Syrian Woodpecker	BD I, LC	Medium
	<i>Dryocopus martius</i>	Black Woodpecker	BD I, LC	Medium
	<i>Egretta garzetta</i>	Little Egret	BD I, LC	Medium
	<i>Lanius collurio</i>	Red backed Shrike	BD I, LC	Medium
	<i>Pyrrhocorax graculus</i>	Alpine Chough	Relict Population, LC	Medium
Fish	<i>Barbatula sturanyi</i>	Ohrid Stone Loach	Local Endemic Species, LC	Medium
	<i>Chondrostoma ohridana</i>	Ohrid Nase	Local Endemic Species, NYA	High
	<i>Gobio ohridanus</i>	Ochrid Gudgeon	Local Endemic Species IUCN VU D2	High
	<i>Salmo letnica</i>	Ohrid trout	Local Endemic Species IUCN DD	High
Fungus	<i>Amanita caesarea</i>	Amanita caesarea	EN-A2acd	Medium
	<i>Boletus aereus</i>		VU- A2acd	Medium
	<i>Boletus appendiculatus</i>			Low
	<i>Boletus impolitus</i>		VU C1; D1	Medium
	<i>Boletus lupinus</i>		EN D	Medium
	<i>Boletus lupinus</i>		EN -D	Medium
	<i>Boletus satanas</i>		VU- A2ac	Medium
	<i>Boletus satanas</i>		VU- A2ac	Medium
	<i>Clavariadelphus pistillaris</i>		VU A3acd	Medium
	<i>Cortinarius rufoolivaceus</i>		DD	Medium
<i>Hyphodontia juniperi</i>			Low	



Taxonomic Group	Scientific Name	Common Name	Status	Monitoring Priority
Aquatic Invertebrate	<i>Candona hartmanni</i>	An ostracod	Local Endemic Species	High
	<i>Candona sketi</i>	An ostracod	Local Endemic Species	High
	<i>Gyraulus fontinalis</i>	A gastropod	Local Endemic Species	High
	<i>Ohridohauffenia sanctinaumi</i>	A gastropod	Local Endemic Species	High
	<i>Ohrigocea stankovici</i>	A gastropod	Local Endemic Species	High
	<i>Paralymnocythere ochridense</i>	An ostracod	Local Endemic Species	High
	<i>Pyrgohydrobia sanctinaumi</i>	A gastropod	Local Endemic Species	High
Terrestrial Invertebrate	<i>Deroceas turcicum</i>		Balkan Endemic Species	Medium
	<i>Euxoa glabella</i>	Balkan Euxoa	Balkan endemic sp.	Medium
	<i>Helix secernenda</i>	Calcareous Mountain Snail	Balkan Endemic Species	Medium
	<i>Leucorrhinia pectoralis</i>	Yellow spotted whiteface	HD II/IV	Medium
	<i>Lucanus cervus</i>	Stag Beetle	HD IV	Low
	<i>Lymax cephalonicus</i>		Balkan Endemic Species	Medium
	<i>Maculinea arion</i>	Large Blue	HD IV	Low
	<i>Parnassius mnemosine</i>	Clouded Apollo	HD IV	Low
	<i>Polyommatus eroides</i>	False Eros Blue	HD II/IV	Medium
	<i>Lehmania szigethyae</i>		Local Endemic Species	High
	<i>Parnassius apollo</i>	Apollo Butterfly	HD IV IUCN – VU	High
	<i>Rosalia alpina</i>	Rosalia Longicorn	HD II/IV IUCN – VU	High
	<i>Saga pedo</i>	Predatory Bush Cricket	HD IV IUCN – VU	High
<i>Zerinthia polyxena</i>	Southern Festoon	HD IV	Low	
Mammal	<i>Canis lupus</i>	Wolf	HD II/IV	Medium
	<i>Felis silvestris</i>	Wildcat	HD IV	Low
	<i>Lynx lynx balcanicus</i>	Balkan Lynx	HD II/IV	High
	<i>Rupicapra rupicapra balcanica</i>	Balkan Chamois	HD II/IV	High



Taxonomic Group	Scientific Name	Common Name	Status	Monitoring Priority
	<i>Ursus arctos</i>	Brown Bear	HD II/IV	High
Plant	<i>Acer obtusatum</i>	Bosnian maple		Low
	<i>Ajuga piscoi</i>	Balkan bugle	Balkan endemic sp.	Medium
	<i>Alkanna noneiformis</i>	Species	Balkan endemic sp.	Medium
	<i>Centaurea tomorosii</i>	Tomorosian Centaury	Local Endemic Species	High
	<i>Crocus cvijicii</i>	Cvijici's Crocus	Balkan Endemic Species	Medium
	<i>Edraianthus horvatii</i>	Galicica Rock Bell	Local Endemic Species	High
	<i>Helichrysum zivojinii</i>	Galicica Yellow Everlasting	Local Endemic Species	High
	<i>Laserpitium ochridanum</i>	Galicica Sermountain	Local Endemic Species	High
	<i>Melampyrum heracleoticum</i>	Balkan cow wheat	Balkan endemic sp.	Medium
	<i>Nepeta ernesti-mayeri</i>	Galicica Catmints	Local Endemic Species	High
	<i>Quercus trojana</i>	Macedonian Oak		Low
	<i>Sedum sartorianum</i>	Sartorial Stonecrop	Apollo butterfly feeding plant	High
	<i>Sempervivum galicum</i>	Galicica sempervivum	Local Endemic Species	High
	<i>Sesleria robusta</i>			Low
	<i>Sideriris raeseri</i>	Galicica Mountain Tea	Balkan Endemic Species	Medium
Reptile	<i>Elaphe quatorlineata</i>	Four lined Snake	HD II	Medium
	<i>Emys orbicularis</i>	European Pond Turtle	HD II/ IV	Medium
	<i>Lacerta trilineata</i>	Balkan Green Lizard	HD IV	Low
	<i>Podarcis erhardii</i>	Macedonian lizard	HD IV	Low
	<i>Testudo hermanni</i>	Hermann's Tortoise	HD II/IV	Medium



Table 10.8 below shows the recommended methodologies and frequencies for the 24 species recommended as a high priority for monitoring.

This list falls into six groups based on taxonomy. Except for the mammals and terrestrial invertebrates, for which methodologies vary with species, these groups can generally be monitored with standard methodologies across the groups.

Table 10.8: Species Monitoring Methodologies (High Priority Species)

Taxonomic Group	Scientific Name	Recommended Methodology
Fish	Chondrostoma ohridana	Electrofishing, annual. Explore new methods of eDNA species identification from water sampling.
	Gobio ohridanus	
	Salmo letnica	
Aquatic Invertebrate	Candona hartmanni	Sampling, annual. Sample design to be developed using data on existing distributions.
	Candona sketi	
	Gyraulus fontinalis.	
	Ohridohauffenia sanctinaumi	
	Ohrigocea stankovici	
	Paralymnocythere ochridense	
	Pyrgohydrobia sanctinaumi	
Terrestrial Invertebrate	Lehmania szigethyae	(Special methodology needed with expert input)
	Parnasius apollo	Transects with timed counts weekly in flight period. Sample design to be developed using data on existing distributions.
	Rosalia alpina	Inspection of sun-exposed dying and dead beeches in potential habitats in July and August for alive adults and count of emergence holes.
	Saga pedo	Counts of first instar nymphs by lines of surveyors moving through suitable grassland in early May.
Mammal	Lynx lynx balcanicus	Camera trapping with remote data collection. Permanent as long as the population persists.
	Rupicapra rupicapra balcanica	



	Ursus arctos	Scat and print searching in snow in spring. Camera traps located at positive sites. Sufficient density and duration to determine population estimate and age profile.
Plant	Centaurea tomosii	Sample design for each species developed through GIS analysis of existing distributions to determine environmental requirements (e.g. altitude, geology, aspect, vegetation); modelling of the park to map all suitable areas and sampling of these with randomly placed transects. Adequate sample density to give accurate population estimates, with focus on endemic hotspots.
	Edraianthus horvatii	
	Helichrysum zivojinii	
	Laserpitium ochridanum	
	Nepeta ernesti-mayeri	
	Sedum sartorianum	
	Sempervivum galicicum	



10.4 Resourcing and Funding Implications for PINPG for Implementation of Management and Monitoring Controls

Establishment of a Monitoring Unit

PINPG will need significant additional resources to carry out the additional monitoring and management tasks necessary to address the threats arising from the amendments to the Management Plan. To address this need, it is recommended that PINPG should establish a Monitoring Unit within the Department for Conservation of Nature; however this will be dependent on resources being made available from the State Budget and/or at the project level.

The Monitoring Unit could implement the Park Monitoring Programme and help build up additional and complementary scientific data on the status and long-term trends of the Park's ecosystems. Some of the issues that should be examined through the Monitoring Programme include how the condition and function of certain habitat types are influenced by the Project activities which are facilitated by the new zoning regime. Information gained through medium to long term natural resource monitoring will have multiple applications for management decision-making, research, education, and promoting public understanding of Park resources.

Project-Related Monitoring/Liaison Tasks

Part of the task of the Monitoring Unit could be to liaise with the Projects, as recommended in Chapter 8. If a monitoring unit is not established then resources per project would be necessary within the existing Nature Conservation Department of PINPG.

For each Project, the following will likely be required from PINPG:

- Make available to each Project Sponsor at the outline design stage, any relevant information on the biological and ecological resources of the area in question, including locations of resources of particular value or sensitivity;
- Meet with the design teams and the ESIA teams to make clear PINPG's concerns over impacts, and to discuss the Project's proposals to avoid and reduce negative effects;
- Review the CESMP and BMP, and Terms of Reference for the Supervising Engineer, and make comments and concerns known to the Project Sponsor;
- Meet regularly (monthly) with the Project Team and the Supervising Engineer during construction, to discuss implementation of the CESMP, BMP, project effects on biological resources, and any other concerns;
- Be involved in the design and implementation of biodiversity offsets, depending upon how these are to be implemented;
- During operation, the PINPG should expand its ongoing monitoring activities and implement specific monitoring actions to monitor the key resources under threat for each Project.

Biodiversity Monitoring Programme and Resource Inventory

The primary purpose of natural resource inventories is to assess and document the current condition and knowledge of natural resources in the Park. Natural resource inventories are extensive point-in-time surveys to determine the location or condition of a resource, including the presence, class, distribution, and status of biological resources such as plants and animals, and abiotic resources such as air, water, soils, landforms, and climate. Inventories may involve both the compilation of existing information and the acquisition of new information. Inventories allow comparison of existing conditions to the natural or desired state of parks and establish a solid baseline for making scientifically sound management decisions and long-term monitoring plans. As well as impacts monitoring, PINPG's Monitoring Unit should also conduct an inventory of the Park's natural resources.

With the establishment of Monitoring Unit, PINPG will strengthen its own capacity and ability to implement on long term Monitoring and Inventory Programs. The Unit should establish and develop a network with



related Units of other National Parks in the region and wider, in order to exchange and increase the knowledge and experience. The Unit should establish relation and collaboration with external experts in subject areas and obtain and undergo training for a specific area. The Monitoring Unit should also provide education and promotion of the Park resources to the public.

Staff and Resources of Monitoring Unit

To resource this unit, it is suggested that the following resources are the minimum additional human resource necessary to conduct the Project liaison and monitoring:

- 1-2 full-time equivalent officer for the Galichica Ski Centre for the pre-construction, construction and operational phases of the Ski Centre (plus provision of a vehicle and other support resources).
- 1 full-time equivalent officer for **each** A3 Expressway Sections for the pre-construction, construction and operational phases of the road (plus provision of a vehicle and other support resources).
- 1 full-time equivalent officer for the 3 TDZ for the pre-construction, construction and operational phases of the zones (plus appropriate provision of a vehicle and other support resources).

The officers should be appropriately qualified in biology or ecology or a related subject, and should have practical experience in biodiversity and/or Park management. GIS experience will be an asset. Ideally, the Unit would be staffed by two full time officers, dedicated to the operation of the Unit, and allowing other PINPG staff to carry out their own activities.

The officer(s) should be equipped with a dedicated vehicle to allow him/her/them to access all areas of the Park at any time. The post(s) should come with dedicated office space including dedicated computers, phone line, and a GIS management/mapping system to allow the mapping and recording of the Park's resources and impacts on them.

Supplying Additional Resources to the PINPG

Given that the Park Management Plan is being changed due to the pressure for development, and that the additional pressure on biodiversity and PINPG is a direct result of these changes, the provision of additional resources to PINPG should be an integral part of the decision to amend the Park Management Plan.

In addition, a commitment from central government should be sought to supplement PINPG's budget, and/or for the identification of other ways to finance the additional responsibilities which PINPG must take on, if the biodiversity pressures on the Park are to be managed.

10.5 Summary of Monitoring of Recommendations/Requirements per Project

As this Chapter presents the final set of recommendations for the planned development projects, below is a high-level summary to aid navigation to the key SEA recommendations for each Project. The full SEA recommendations for the AMP and projects are contained in Chapters 6 to 10 of this SEA.

The SEA assumes that the following studies/assessments will be carried out for the planned developments in the Park:

- Environmental & Social Baseline Surveys/Studies
- Environmental & Social Impact Assessment (ESIA)
- An 'Appropriate Assessment'⁹
- Preparation and implementation of Construction & Operational Environmental & Social Management Plans

⁹ The Park is an Emerald site which form a de-facto part of the Natura 2000 Network for non-EU Countries. To meet the principles of the EU *Habitats Directive*, which the Macedonian *Law on Nature Protection* transposes, an 'Appropriate Assessment' is therefore potentially required of plans and projects that could affect the site's integrity. Given the nature, scale and the location of the 5 development projects it is assumed an 'Appropriate Assessment' to meet the provisions of the *Habitats Directive* (and the *Law on Nature Protection*) is required at a project level. At a plan level a high-level 'Appropriate Assessment' style review of the AMP has been provided as part of this SEA.



- Heritage Impact Assessment (HIA)

Galichica Ski Centre:

- Alternatives to layout to avoid impacts on protected species (e.g. Crocus cvijicii and the Apollo Butterfly) and alternatives to demonstrate the loss of habitats associated with the Nordic Ski Area is justified.
- Potential visual and landscape effects on the area of OUV from the introduction of a Ski Centre in an area of natural beauty, requires more detailed analysis in the Project ESIA/HIA.
- Relevant mitigation recommendations contained in Section 8.2 & Table 8.1.
- Project level contribution to provide financial support for 2 full-time equivalent staff members and resources (i.e. 1 field vehicle) during the pre-construction, construction and operational monitoring phases of the project. PINPG role in project planning and monitoring should be clearly set out by projects and agreed with PINPG.
- Offsetting & Compensation measure for impacts on the following habitats as outlined in Chapter 9:
 - Alpine & Subalpine Calcareous Grasslands (Habitat 6170 under the Habitats Directive) - 1,344 ha upgraded by 1 Condition Level ; estimated this could be offset within the Park.
 - Juniperus (Habitat 5130 under the Habitats Directive) – 541 ha upgraded by 1 Condition Level ; estimated this could be offset within the Park.
 - Fagus sylvatica (beech forest) (Habitat 91K0 under the Habitats Directive): 783 ha offset area required (upgraded by 1 Condition Level). An area of around 300 ha is available in the north of the Park, which has the potential for improvement. An additional 483 ha of suitable land needs to be identified outside the Park to meet the full offset requirement.
- Monitoring recommendations contained in Chapter 10 and Table 10.1.

A3 Expressway – Ohrid to Peštani Section:

- Further consideration and/or refinement of alternative technical solutions to reduce disturbance effects to Crno Brdo ZAM and also ensure options for migration of mammals to the lake shore is integrated into the final project design and ESIA. Potential visual and landscape effects on the area of OUV from the different potential technical solutions at Crno Brdo requires more detailed analysis in the Project ESIA/HIA.
- Relevant mitigation recommendations contained in Section 8.2 & Table 8.2.
- Project level contribution to provide financial support for 1 full-time equivalent staff member and resources (i.e. 1 field vehicle) during the pre-construction, construction and operational monitoring phases of the project. PINPG role in project planning and monitoring should be clearly set out by projects and agreed with PINPG.
- Monitoring recommendations contained in Chapter 10 and Table 10.2.

A3 Expressway – Peštani to Albanian State Border Section:

- Alternative route & junction location (or technical solution e.g. tunneling) to avoid/minimise habitat loss to Macedonian Oak (Annex 1 Habitat 9250). Alternative solutions to ensure migratory route to lake shore associated with Evil Canyon and the ecological function of this corridor is maintained.
- Potential visual and landscape effects on the area of OUV from the introduction of a route through the natural beauty of this section and the different potential technical solutions requires more detailed analysis in the Project ESIA/HIA.
- Relevant mitigation recommendations contained in Section 8.2 & Table 8.2.
- Project level contribution to provide financial support for 1 full-time equivalent staff member and resources (i.e. 1 field vehicle) during the pre-construction, construction and operational monitoring



phases of the project. PINPG role in project planning and monitoring should be clearly set out by projects and agreed with PINPG.

- Offsetting & Compensation measure for impacts on Macedonian Oak (Habitat 9250) as outlined in Chapter 9 - An area of 504 ha needs to be identified, where an alternative area of new Macedonian Oak may be cultivated and preserved, (or where the condition of an existing area of degraded Oaks may be improved by 1 degree of condition rating). This offset is effectively not achievable within the Park. Therefore an offset area of 504 ha would need to be identified by the Project outside the Park.
- Monitoring recommendations contained in Chapter 10 and Table 10.2.

Ljubanishta TDZ:

- SEA suggests alternative which removes the development of component 3 of this TDZ which is a ZSP and a unique resource is considered. Ultimately the SEA recommends that Ljubanishta 3 is removed from the Ljubanishta TDZ, and that TDZ should contain Ljubanishta 1 & 2 only. The ZSP and Buffer Zone have not been amended within the Management Plan and would require a further amendment to the Plan. A major residual impact potential would exist with the development if component 3 of the TDZ went ahead. This effect of component 3 is most likely not offsettable as this is a unique habitat and resource. Offsets and monitoring plan for Ljubanishta TDZ would have to be developed at a project level and agreed with PINPG.
- Relevant mitigation recommendations contained in Section 8.2 & Table 8.3.
- Project level contribution to provide financial support for 1 full-time equivalent staff member and resources (i.e. 1 field vehicle) during the pre-construction, construction and operational monitoring phases of the 3 TDZs (Ljubanishta/Stenje/Oteshevo). PINPG role in project planning and monitoring should be clearly set out by projects and agreed with PINPG.
- Monitoring recommendations contained in Chapter 10 and Table 10.3.

Stenje TDZ:

- Alternatives to locating the TDZ within the Buffer Zone to the ZSP (i.e. move it to another shore location on Lake Prespa) and the 'no development' alternative for Stenje TDZ scheme need to be considered. In its current location it is considered that the potential adverse effects arising from this TDZ are not-offsettable. The Buffer Zone has not been removed as the Stenje Marsh is a ZSP in the AMP however a provision has been allowed for certain activities in the Buffer Zone.
- Relevant mitigation recommendations contained in Section 8.2 & Table 8.3.
- Project level contribution to provide financial support for 1 full-time equivalent staff member and resources (i.e. 1 field vehicle) during the pre-construction, construction and operational monitoring phases of the 3 TDZs (Ljubanishta/Stenje/Oteshevo). PINPG role in project planning and monitoring should be clearly set out by projects and agreed with PINPG.
- Monitoring recommendations contained in Chapter 10 and Table 10.4.

Oteshevo TDZ:

- Options should be considered to reduce the impact on the ZAM and Hungarian Oak. This area of ZAM has been rezoned as ZSU in the rezoning proposed in the AMP.
- Relevant mitigation recommendations contained in Section 8.2 & Table 8.3.
- Project level contribution to provide financial support for 1 full-time equivalent staff member and resources (i.e. 1 field vehicle) during the pre-construction, construction and operational monitoring phases of the 3 TDZs (Ljubanishta, Stenje & Oteshevo). PINPG role in project planning and monitoring should be clearly set out by projects and agreed with PINPG.
- Offsetting & Compensation measure for impacts on the Hungarian Oak (*Quercetum frainetto*) for 540 ha upgraded by 1 condition level. This offset is effectively not achievable within the Park. Therefore an offset area of 540 ha would need to be identified by the Project outside the Park.



- Monitoring recommendations contained in Chapter 10 and Table 10.5.



11 Public Consultation & Disclosure¹

11.1 Requirements for Consultation & Disclosure

11.1.1 Strategic Environmental Assessment

SEA in Macedonia is mandated by Articles 65-75 (Chapter 10) of the *Law on Environment*² which outlines key requirements, including relating to statutory consultation, public information and participation and transboundary consultation.

This *revised* SEA has been prepared in compliance with the Macedonian legal framework and the technical requirements of other key EU and relevant international legal instruments, including the EU SEA Directive 2001/42/EC, Aarhus Convention, Espoo Convention and the UNECE Kyiv Protocol to the Espoo Convention (see Chapter 2).

The original *draft* SEA (disclosed in November 2014) went through a standard consultation and disclosure process as prescribed under Macedonian legal requirements and outlined in Chapter 1. Consultation of this *revised* SEA is required to follow the same process.

11.1.2 Amendments to the Management Plan

The development of the Management Plan for the National Park is an obligation under the *Law on Nature Protection* (see Chapters 2 & 3). Stakeholders participated in this process (as noted in Chapter 3) and the adoption process included the MoEPP (Nature Conservation Department) and the PINPG Management Board. The *original* Amendments to the Management Plan in line with relevant legal requirements for public participation in Governmental decision-making (as prescribed in some of the legal instruments above) was prepared, disclosed to the public and Public Hearings undertaken. The disclosure and consultation process for the *original* AMP between 19.12.2013 and 22.01.2014 is described in Chapters 1 and 4.

11.2 Disclosure & Consultations to Date

Chapter 1 Table 1-2 contains a summary of the AMP and SEA process to-date. Below is a summary of the public disclosure and consultation process relating to the development of the AMP and the SEA (both original and revised versions). This is followed by a summary table of the responses to the stakeholder comments received on the '*original*' *draft* SEA in January 2015.

Disclosure, Public Participation and Public Hearings of the '*original*' *draft* AMP:

The *draft* Amendments to the Management Plan prepared during Oct 2013 to June 2014 was disclosed on 19.01.2013 for over 30 days until 22.01.2014. Public Hearings were held in the Municipalities of Ohrid and Resen on 09.01.2014 and 10.01.2014, respectively. Opinions, proposals and comments gathered during the Public Hearing process were considered and integrated appropriately into the AMP. The '*original*' SEA process was undertaken in late 2014 based on the content of this version of the AMP.

Disclosure, Public Participation and Public Hearings of the '*original*' *draft* SEA:

The '*original*' *draft* SEA was completed in November 2014 and disclosed on the website of PINPG. An advert was placed in the newspaper (i.e. Ohrid News) see Figure 11.1 below:

¹ This Chapter shall be updated in the final version of the SEA following the disclosure of the *revised* SEA, the Public Hearing and receipt of comments.

² Law on Environment (O.G. of RM No. 53/05, 81/05, 24/07, 159/08, 48/10, 124/10 and 15/11, 123/12, 93/13, 42/14 and 44/15)



Figure 11.1: SEA Disclosure & Public Hearing Notification in Ohrid News

Маркетинг | Импресум | Контакт

OHRIDNEWS.com
информирај се

ВЕСТИ СПОРТ ЗАБАВА КУЛТУРА ПРАЗНИЦИ ОТВОРЕНА ЖИВОТ OHRIDNEWS TV БАРАЈ

ОГЛАСИ ПОКАНА ЗА УЧЕСТВО НА ЈАВНА РАСПРАВА ПО НАЦРТ ИЗВЕШТАЈОТ ЗА ВЛИЈАНИЕ НА ЖИВОТНАТА СРЕДИНА НА ПЛАНОТ ЗА

ПОКАНА

за учество во јавна расправа по нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2011-2020 година

Јавната установа Национален парк Галичица ја поканува заинтересираната јавност на јавната трибина по нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2011-2020 година која ќе се одржи на 22.01.2015 година, во 13:00 часот во просториите на Јавната установа Национален парк Галичица во Охрид.

Нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2011-2020 година е достапен на службената веб страница на ЈУНПГ (<http://galicica.org.mk/dokumenti/SOVZV.pdf>).

ЈУНП „Галичица“

The Public Hearing on the 'original' draft SEA was undertaken on the 22.01.15 on the premises of the PINPG in Ohrid (see Figure 11.2 below).

Figure 11.2: Photos from the Public Hearing (22.01.2015)



The meeting was attended by a variety of representatives of stakeholders. The complete list of participants at the Public Hearing is provided in Annex 19. The Public Hearing was attended by representatives from a variety of stakeholder holders, including national Governmental authorities, transboundary government representatives, international financial institutions, Non-Governmental organisations etc. Presentations and responses were prepared and given by representatives from: PINPG; BIOEKO (*consultant who developed the original AMP*); and the Civil Engineering Institute “Macedonia” JSC (*consultant who prepared the ‘original’ draft SEA*).

Annex 20 contains a summary of the Public Hearing and minutes of the session. Some of the points raised in the Public Hearing included:

- Comments were made regarding the effects of the actual ‘planned projects’; there appeared to be an overriding theme that some stakeholders wanted the SEA to pay more consideration to the impacts of the projects that had resulted in the amendments to the Management Plan;
- Remarks were made regarding the need to understand the actual restrictions to be placed on projects constructed within the Park and the natural beauty of the Park;
- Remarks were made noting the impacts on nature in the Park and urging PINPG not to implement the re-zoning amendments;
- Remarks/questions on the weather conditions and whether there was sufficient ‘snow’ for the ski centre;
- Comments that rural tourism should be the focus rather than mass tourism as associated with the ski centre;
- Lack of definition of activities/mitigation to neutralise/minimise negative impacts and this is important given the Park could lose some of its values as a National Park, as well as the Ohrid region in terms of its protected status (i.e. National Park and World Heritage Site status). Raised point that damage will arise if the proposed amendments were adopted and re-zoning occurred;



- MoEPP representative from Albania raised concern that they had not received the documentation, but it was noted by PINPG that the MoEPP of Macedonia has informed them of the SEA and the Public Hearing;
- Comments on the compatibility with legislation and standards (e.g. IUCN categorisation) of implementing projects in a National Park with the current status of protection. Remarks were made regarding nature conservation effects and the effects on the UNESCO man & biosphere reserve status specifically and potential for objections from others regarding effects on this designation;
- Remarks asking if there had been an assessment of net gains and losses from these projects to the National Park;
- Queries clarifying process to submit written comments and the process of responding to these comments;
- Queries clarifying the Government direction which required the amendments of the Management Plan to allow development of the 5 planned projects.

The remarks and comments received as part of the above Public Hearing have been considered in the preparation of this *revised* SEA.

Eleven sets of written comments were received during the 30 day period, with 2 other stakeholder letters being received after the 30 day period. The findings of the Public Hearing and the comments received during the 30 day disclosure period were reviewed and the '*original*' draft SEA finalised but not disclosed. Some limited responses to the stakeholder comments were provided, however one of the 'Key Principles Addressed' during this revised SEA (see *Chapter 1*) was to '*Review of the issues raised during the Public Hearings and addressing wider stakeholder comments received on the draft SEA (during January 2015)*'. Therefore Section 11.2.1 contains a summary table of the stakeholder comments received on the '*original*' draft SEA and provides a summary of how this SEA has considered these comments.

11.2.1 Summary of Responses to Stakeholder Comments Received

Eleven sets of written comments were received during the 30 day period, which 2 others being received after the 30 day period. These organisations are listed in Table 11.1.



Table 11.1: Summary of Stakeholder Comments³ on 'Original' Draft SEA (Jan'15) & Response in this SEA Report

Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
Ministry of Environment & Physical Planning (MoEPP)	<p>The MoEPP provided <u>positive opinion</u> on the <i>draft</i> SEA Report in Jan'2015 whilst at the same time recommending the following comments to be further elaborated. MoEPP provided list of obligations for public participation in the process of the SEA.</p> <p>General comments:</p> <ul style="list-style-type: none"> ▪ The ZSP & ZAM will be decreased for 1.4% compared to the current borders of these zones; ▪ NPG has been identified/proclaimed as: area under world cultural and national heritage (UNESCO Convention on world cultural and natural heritage) and is under international protection; Emerald area of ASCI; and Important Area for plants and butterflies. <p>Specific comments:</p> <ul style="list-style-type: none"> ▪ In Chapter 2.3 listed are strategic documents/plans which do not have any relation with the Management Plan for NPG; ▪ Chapter 4 - "Goals of the SEA lay within the <i>Law on management of the world's cultural and natural heritage Ohrid Region</i> and National Strategy for Development of Tourism in RM", is not correct, as Goals of the SEA are defined within the <i>Law on Environment</i>; ▪ Most of the data in the Chapter 5.4 about ecological and biological characteristics are derived from the document "Proposal for changes of the Management Plan of NPG 2011-2020", while many other research and scientific reports shall be consulted and considered as well; ▪ Chapter 8 - the review of alternatives actually does not provide alternatives to the proposed infrastructure projects; thus the goal/purpose of the SEA Report is questioned; ▪ If few species are listed as most valuable in the area of NPG, than the potential impact of infrastructure projects over these species should be analysed and protection and conservation measures should be proposed; 	<ul style="list-style-type: none"> ▪ The percentage change in the ZSP and ZAM has been considered in the revised SEA and AMP. The ZSP & ZAM area has increased by 1% in the revised documents (see Chapter 4). ▪ The protected status afforded to the NPG is reflected in the <i>revised</i> SEA and impact assessment (Chapter 7) contains an assessment of effects on protected status. ▪ Reference to strategic documents which MoEPP considered not relevant to the NPG Management Plan have been removed from the <i>revised</i> SEA (see Chapter 4). ▪ In the <i>revised</i> SEA the requirements for SEA are reflected as being established by the <i>Law on Environment</i> (See Chapter 2). ▪ Chapter 5-4 has drawn on the full-dataset available to PINPG (e.g. contained within the NPG Management Plan and specialist species level studies undertaken on the Park) and the data and experience of the Macedonian biodiversity & nature conservation experts within the team (<i>as noted in Chapter 1</i>). Descriptions and condition data on habitats (including forests) within the Park has been developed and condition assigned based on updated forestry records, experience of expert team and other relevant guidance etc. ▪ The alternatives analysis within the <i>revised</i> SEA has been significantly developed to include alternatives considered to date for the ski centre location and layout within the Park, and the A3 expressway (Ohrid to Peštani). An alternatives discussion on options for the re-zoning in the AMP has also been summarised. Options to the TDZs have not been made available to PINPG by the relevant agency so could not be included within the SEA. ▪ Based on the level of biodiversity data available for the SEA an assessment has been carried out focusing on identification of any 'non-offsetable' effects. Mitigation, offsetting and monitoring recommendations are proposed in the SEA (see Chapters 8, 9 & 10). Recommendations for the detailed project level ESIA's for species are

³ Please note summary of comments based on 'unofficial' translations of stakeholder letters.



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<ul style="list-style-type: none"> ▪ MoEPP comments that statement on page 202 that “key measure for protection of biodiversity is additional research of the impact of infrastructure projects over the biodiversity before they are planned and realised” is not a key measure for protection of biodiversity; ▪ Chapter 9.8 envisages detailed analyses of the habitats, flora and fauna in the areas of the infrastructure projects as described in the draft proposal for changes of the Management Plan for NPG. MoEPP recommends including research of the wild species populations' size and density as well as current status of the habitats which are in the areas of the infrastructure projects. ▪ Chapter 11 – Monitoring of the biodiversity should be further developed with elaboration of the monitoring plan for biodiversity before the initiation of the infrastructure projects, during their construction and at least 3 years after their finalisation. Also Table 35 should be further elaborated with list of the key species of flora, fauna and fungi, and habitats which will be monitored. 	<p>made, including general ones (e.g. application of the mitigation hierarchy) and specific ones (e.g. for the ski centre based on further study and measures need to be implemented to avoid effects on the Crocus cvijicii and Apollo butterfly; for the A3 Expressway (Peštani to Albanian State Border) measures to avoid and/or minimise impacts on migratory route connected to the Evil Canyon (Zli Dol) down to the lake shore etc.). Re-zoning and a framework for offsetting are proposed in the <i>draft AMP and revised SEA</i> to ensure protection of biodiversity and achievement of No Net Loss of biodiversity.</p> <ul style="list-style-type: none"> ▪ In order to define the current status of habitats within the Park and affected by the proposed infrastructure projects - habitats within the Park have been assigned a distinctiveness and condition rating. A recommended monitoring plan is included within the SEA which would require at a project level further research to be carried out on wild species (including populations' size and density etc.) ▪ <i>Revised SEA</i> Chapter 10 – a more detailed monitoring plan has been included in the SEA (including recommendations for project level monitoring during pre-construction, construction and operational monitoring phases). The plan includes the key biodiversity parameters and species 'at a strategic level' which are potentially most under threat from each proposed project. Additional habitats and species may be identified during the ESIA project level surveys which would mean monitoring of these may also be necessary during the pre-construction, construction and operation of the projects. Specifically impacts on species of conservation concern found/indicated to be present or occurring in an area of impact for a project have to be assessed in more detail as part of Project ESIA's. The mitigation, monitoring and offsets within the SEA are based on available data and focus on the strategic level effects. It may be during the ESIA's from surveys of the actual project footprints and affected areas that additional sensitive receptors, impacts, residual effects and offsets are identified and therefore the project specific monitoring programme would need to be developed. Based on the AMP and the values of the National Park the parameters identified in Chapter 10 are considered the key ones to ensure protection of the Park's biodiversity.
Ministry of Finance	<ul style="list-style-type: none"> ▪ The development of <i>draft SEA Report</i> for NP planning document is according to the <i>Law on Environment</i> and this Ministry has no comments on its content. 	<ul style="list-style-type: none"> ▪ (noted)



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
Ministry of Education & Science	<ul style="list-style-type: none"> This Ministry supports the activities described in the <i>draft</i> SEA Report and has no comments on its content. 	<ul style="list-style-type: none"> (noted)
Public Enterprise (PE) Makedonijapat	<ul style="list-style-type: none"> This PE does not have comments on the content of <i>draft</i> SEA report because it is professionally prepared by GIM. 	<ul style="list-style-type: none"> (noted)
PE for Managing & Protection of the Multipurpose Area (JASEN)	<ul style="list-style-type: none"> This PE has no comments on the <i>draft</i> SEA Report and states it fully complies with the <i>Law on Environment</i>. The PE supports projects which promote development of tourism (the new Management Plan proposes development of 4 touristic areas: Oteshevo, Stenje, Ljubanishta and ski-centre). Recommendation is given to maintain the forest areas in a sustainable way emphasising the forests protection, management and use. 	<ul style="list-style-type: none"> Comments noted – the recommendation to maintain forest areas in a sustainable way emphasising the forests protection, management and use has been considered along with PINPG current financial reliance on forestry in the re-zoning and proposed offsetting framework for habitats.
(State) Agency for Promotion & Support for Tourism of Macedonia	<ul style="list-style-type: none"> This agency actually proposes to the NPG to plan a location for the project “Flying in the nature” within the new Management Plan with appropriate infrastructure. The Agency will prepare the project design; this project does not have negative impact over the environment. 	<ul style="list-style-type: none"> (noted)
Hydrobiological Institute – Ohrid (HBI)	<ul style="list-style-type: none"> HBI confirms the complexity of the <i>draft</i> SEA Report and its main content is in compliance with the <i>Law on Environment</i>. Recommendation provided that when implementing specific projects in the future, to fully comply with the legislation, with purpose to ensure there will not be any negative impact over the status of the NP. 	<ul style="list-style-type: none"> (noted) – It is assumed any planned development within the Park would need to be carried out in line with the Macedonian legal framework.
KfW	<p>KfW raised the following technical issues, questions on the <i>draft</i> SEA report and questions posed in the public debate (i.e. Public Hearing) (email received 30.01.15):</p> <p><i>Technical Issues</i> included:</p> <ul style="list-style-type: none"> Terminology in the English version; Unclear statements; Not all abbreviations are listed (PD, PLB, MEPSO) and some are coming from Macedonian terminology (in particular the one for the zones); Mistake with regards to the percentage of the ZSU on p.16; Some statements in the report are not clear if they are referring to the actual MP or to the draft amendments to the MP. Table 1 has no 	<ul style="list-style-type: none"> The technical issues raised have been considered in preparation of the <i>revised</i> SEA. The document has been prepared in English and then translated into Macedonian. A further check has being carried out on the translation to try and avoid some of the potential technical issues raised. <p>The ‘<i>Questions</i>’ are raised on the <i>original draft</i> SEA, these have though been considered in this <i>revised</i> SEA and the following observations are made:</p> <ul style="list-style-type: none"> Re. 1: It is noted that the ‘principles’ referred to in the <i>original draft</i> SEA are in accordance with the <i>Law on Environment</i> where environmental protection is presented as part of sustainable development. The main pillars of sustainable developments, including Environmental and Social, considerations have been centrally considered in the preparation of this SEA. The assessment has tried to draw out the potential strategic level environmental and social effects of the proposed projects which have



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<p>reference in the report. That is the case for many tables in the report.</p> <p><u>Questions (summarised herewith) :</u></p> <ul style="list-style-type: none"> ▪ 1. During the reading of the report we got an impression that sustainable development concept is not being fully and integrally considered. What is the reason for this? ▪ 2. Preservation has been named in the same Principle. Do you think by changing the zones, biodiversity will be preserved? ▪ 3. The report states reduction of Zone of Active Management is only 1.4%. Do you think the impact on the biodiversity and eco-systems can be measured in %? ▪ 4. The report is practicing most often "will" instead of "would", "should". Why is this case? ▪ 5. Sometimes the impression is that EIA and SEA procedures and directives are being mistaken (Table 3). ▪ 6. What is a directed sustainable development (Chapter 4.1, bullet 5) ▪ 7. On p.42 you are mentioning what the goals of the strategic assessment entail. Can you describe the meaning of this part? Under this same title, Public participation and implementation of projects are being mentioned. Why Projects? ▪ 8. On p. 67 it is written: By analyzing the spatial data of the proposed project scopes and the habitats within the Park 4 types of endangered habitats have been identified in accordance with the Habitat Directive of the European Union that will be included in the execution of the projects. Is it certain those Projects will be executed? If yes, why preparing this report? <p>Questions to be posed during the public debate:</p> <ul style="list-style-type: none"> ▪ 9. You have mentioned under Chapter 7 the main goals of the Management Plan are to "provide stability of environmental processes and the biologic and area diversity, protection of natural habitats, conservation; "Do you think, the Draft amendments and the changes of the zones will affect negatively these goals? ▪ 10. There is very clear statement in the Report (Chapter 7 related to the Goals of Nature and Environment) which states: "The implementation of the foreseen projects because of which are made the amendments to the zones in the NP Galichica, as well as the change of the zoning were not harmonized with the implementation of these goals for protection of the nature and the environment in the national park." After such a statement including statements on cumulative effects and once you have developed the Table on Impact on p.160 one would expect, you recommend not 	<p>resulted in the amendments to the Management Plan.</p> <ul style="list-style-type: none"> ▪ Re. 2 & 3: <ul style="list-style-type: none"> ○ In the <i>original draft</i> SEA the ZAM affected was simply downgraded to ZSU resulting in a reduction of the level of protection afforded to the Park overall. In the <i>revised</i> AMP and SEA 854 ha of ZSU has been upgraded to ZAM and 604 ha has been downgraded from ZAM to ZSU in the areas affected by the proposed projects. There a slight increase of 1 % additional habitat within the ZAM. ○ Whilst it is accepted that re-zoning does not protect biodiversity per-se ensuring additional habitat is placed under an increased zone of protection should assist along with the implementation of the proposed offsetting framework to help preserve biodiversity on a 'whole of Park' basis and contribute to the protection of the integrity of the whole site. ○ The use of percentages as one measure is to consider alignment with the IUCN "Rule 75%" which is an aspiration of the Park's Management Plan. It is not considered simply as a measure of impact on biodiversity and eco-systems. This is why the impact assessment, mitigation & management controls and offsetting framework has considered the effects on key biodiversity features (including those identified as important under the <i>Habitats Directive</i>). This SEA also considers effects on the various key protected status afforded to the NPG. ▪ Re. 4 & 6: noted (<i>specific to original draft SEA</i>). ▪ Re. 5: Chapter 2 explains both the SEA and EIA Directives and clearly notes this report is being prepared in line with the SEA Directive and in accordance with the <i>Law on Environment</i> which transposes it. Whereas the ESIA's for the project level assessment it is assumed would be prepared in line with the EIA Directive. ▪ Re. 7: In line with MoEPP comments on 'goals of SEA' - In the <i>revised</i> SEA the requirements for SEA are reflected as being established by the <i>Law on Environment</i> (See Chapter 2). ▪ Re. 8: The Government issued directives to PINPG requesting they amend the Management Plan to accommodate the development of the 5 proposed projects. This SEA assesses the effect of the AMP which has



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<p>having the draft amendments to the MP. On contrary the report includes a "Neutralization and a Monitoring Plan"? Can you explain, why you have decided to include those despite having many clear statements and conclusion which are clearly showing the draft amendments will no doubt harm the environmental balance?</p> <ul style="list-style-type: none"> ▪ 11. Having in mind the risks as described in the SEA report, such as loosing of the status of National Park or even losing the Ohrid region World Heritage protected status under UNESCO are pointed in the report, we would like to ask what is the strategy if these risks do materialize? 	<p>been amended as a result of these planned projects. Therefore the potential effects of the proposed projects on the key habitats (including ones listed in the <i>Habitats Directive</i>) have been considered within the SEA. The SEA findings have also been used to also inform the <i>proposed</i> amendments to the Management Plan.</p> <p>Observations are provided below on the '<i>Questions to be posed during the public debate</i>':</p> <ul style="list-style-type: none"> ▪ Re. 9: The revision to the Management Plan is proposed in order to accommodate the proposed development projects and has required some areas to be re-zoned, reducing current levels of protection in some areas. To compensate for this the AMP has increased the level of protection to a larger area and also provided a framework for offsetting potential effects on key habitats and species. This has partly been done to try and ensure the vision of the NPG Management Plan and its management objectives are upheld as far as possible. It is considered that the AMP and SEA provides a zoning proposal, recommendations and a framework which if adopted should assist in protecting the integrity of the Park and help meet the goals of the Management Plan. ▪ Re. 10: It is considered that the AMP and SEA provides a zoning proposal, recommendations and a framework which if adopted should assist in protecting the integrity of the Park and help meet the goals of the Management Plan. However, it is recognised in the SEA (See Chapter 7 Table 7-4) that the amendments to the Management Plan were not motivated by a desire to improve the management towards achievement of this goal (including for the conservation objectives). ▪ Re. 11: See Chapter 7: Section 7.7 – Effects to Protected Status. PINPG will continue within its resources and remit as far as possible to manage the Park to ensure the protection status as a National Park and within a World Heritage Site are retained. However, it should be recognised the development projects proposed and other developments which have occurred along the lake shore of Lake Ohrid are outside the remit of PINPG and the AMP – these have resulted from Government decisions by other agencies or from informal developments.
European Bank Reconstruction & Development (EBRD)	<p>EBRD provided a number of comments on the <i>draft</i> SEA which are summarised below and mainly referenced the need for alignment with the requirements of the EU <i>SEA Directive (2001/42/EC)</i>:</p> <ul style="list-style-type: none"> ▪ EBRD referred to their environmental and social requirements and the 	<ul style="list-style-type: none"> ▪ The <i>revised</i> SEA has been prepared in line with national and EU SEA legal requirements, including those contained within the <i>SEA Directive</i> and the <i>Habitats Directive</i>. ▪ <u>Environmental Baseline</u>: Chapter 5-4 has drawn on the full-dataset



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<p>needs for the strategic basis of the proposed projects (including the A3 Expressway Ohrid to Peštani Section which EBRD are considering extending financing to) to be in line with the national & EU SEA legal framework.</p> <ul style="list-style-type: none"> ▪ <u>Environmental Baseline</u>: baseline data sections of the SEA be revisited to include the existing biodiversity dataset on the National Park Galichica. ▪ <u>Consideration of Alternatives</u>: Raised issues with the lack of consideration of the alternatives beyond the 'Null Alternative' and urged the SEA analysis to include any project alternatives (even at this early stage). This was recommended by EBRD in order to demonstrate that the mitigation hierarchy has been/will be followed, to ensure that biodiversity and ecosystem functions are not degraded and/or lost from the landscape etc. ▪ <u>Impact Assessment</u>: Comment given the importance afforded to the NPG by the various national and international designations it is essential that the SEA considers the impacts on it sufficiently and this was required to establish a robust basis to the re-zoning of the Park. Key areas of impact noted in comments that needed consideration were: <ul style="list-style-type: none"> ○ Impacts on flora & fauna, and priority biodiversity features to ensure No Net Loss of biodiversity, protected habitats and the ecological functions they support; Impacts on cultural and historical heritage; impact on landscape; and transboundary impacts. ○ Cumulative impact assessment – including the need to consider the induced impacts as a result of increased access from the proposed project developments. ▪ <u>Assessment under the Habitats Directive</u>: Clarity requested on: how the SEA meets the provisions of the <i>Habitats Directive</i> (under Art. 6(3)) given the NPG is an Emerald Site; recommends the SEA references future assessments that are to be prepared and/or are required to meet the <i>Habitats Directive</i> due to the potential re-zoning; and clarifies details of assessments that may need to be carried out at an individual development project level. ▪ <u>Mitigation, Monitoring & Offsetting Requirements for Development Projects</u>: EBRD recognised and supported the need for the projects to undertake detailed studies to assess project specific environmental and social impacts it was suggested in the comments that: The SEA should 	<p>available to PINPG (e.g. contained within the NPG Management Plan and specialist species level studies undertaken on the Park (where available in the NPG dataset) and the data and experience of the Macedonian biodiversity & nature conservation experts within the team (as noted in Chapter 1). Descriptions and condition data on habitats (including forests) within the Park has been developed and condition assigned based on updated forestry records, experience of team and other relevant guidance etc.</p> <ul style="list-style-type: none"> ▪ <u>Consideration of Alternatives</u>: Additional information on alternatives considered to-date on the ski centre planning and the A3 Expressway (Ohrid to Peštani Section) has been used to prepare a more robust consideration of alternatives in Chapter 6. Alternative approaches to zoning and the inclusion of the No Net Loss commitment and offsetting have also been presented within Chapter 6. No further detailed information on alternatives was available for the 3 TDZ projects and only limited information is available on the A3 Expressway (Peštani to Albanian State Border Section) on alternatives (due to it being in the early stages of development in comparison to the other Section). The SEA from the application of the mitigation hierarchy identified some further options which it recommends the project level studies consider further in order to avoid certain significant effects – these are contained in Chapter 7 & 8 (and summarised in Table 7-4). ▪ <u>Impact Assessment</u>: The impact assessment has been significantly amended and includes consideration of the key areas identified in the impact assessment. The assessment also includes the commitment to NNL and sets out an offsetting framework within the Park. Strategic level impacts which cannot be offset within the Park for any of the Projects or within the AMP are clearly identified. ▪ <u>Assessment under the Habitats Directive</u>: Section 7.7 contains a 'high-level review' consistent with the requirements for the Appropriate Assessment under the provisions of the <i>Habitats Directives</i>. This section provides an overarching assessment of potential effects on protected status and the 'whole site' integrity. Assumptions are included within Chapter 7 on the assessments that would be expected at a project level (including an 'Appropriate Assessment' to meet the provisions of the EU <i>Habitats Directive</i> and the Macedonian <i>Law on Nature Protection</i>). ▪ <u>Mitigation, Monitoring & Offsetting Requirements for Development Projects</u>: The AMP and SEA has made a commitment to re-zone 854 ha from ZSU to ZAM to offset 604 ha downgraded from ZAM to ZSU (the



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<p>make an overarching commitment to offset the planned conversion of the nearly 400 hectares of ZAM to ZSU; and this commitment to future offsets could include the identification of areas within the Park where current protection status could be enhanced/augmented, or even the possibility of expanding the current Park boundaries to ensure that any rezoning of the NPG will result in No Net Loss of biodiversity.</p>	<p><i>figure increased due to the addition of the Nordic Ski Area in the Galichica Ski Centre</i>). The SEA also contains an offsetting framework where it identifies areas in the Park where offsets for key habitats affected by the re-zoning and projects could be offset. It also identifies potential residual effects on some key habitats which at a strategic level it is considered cannot be offset within the Park. The possibility of expanding the National Park Galichica boundary was raised with the MoEPP in a meeting; it was considered this was not possible within the remit of the AMP or the timescale required given this would require potentially amendments to the legal framework which establishes the Park boundary.</p>
<p>FRONT 21/42 (on behalf of a group of Civil Society Organisations including MES & EcoSvest)</p>	<p>A group of 4 CSOs drew conclusions in their letter to NPG that <i>draft</i> SEA Report contains several statements for negative impact of the 4 infrastructure projects over the biodiversity and ecosystem's integrity in the NP; therefore, they referred to Art. 73 of the <i>Law on Environment</i>, the CSOs request the PINPG not to change the Management Plan. This conclusion is based on the following comments:</p> <ul style="list-style-type: none"> ▪ All biodiversity data presented in the draft SEA Report derives from the current Management Plan of the NPG; no new / additional researches have been undertaken to explore the more comprehensive information on the wildlife (movement trajectories, and locations for nesting, reproduction and hibernation). Only based on such detailed research, conclusion may be drawn about the impacts. ▪ The draft SEA Report already states that ski-centre will negatively affect the wider habitats of several conservation species; it is observed that the proposed scope of the ski-centre has even broader content, thus increasing the negative impact over the biodiversity even more. More specifically, the new broader scope of the ski-centre will have negative impact over 2 habitats listed in Annex I of the Habitat Directive (6170 Alpine and sub-alpine calcareous grasslands, and 91KO Illyrian forests of <i>Fagus sylvatica</i>). ▪ It is not analysed how the artificial snow will impact the waters / hydrology of the Ohrid Lake through the water flows from Galichica. ▪ The express road A3 will lead to fragmentation of the habitats, especially it will decrease the functionality of the habitat <i>Quercus trojana</i> as a corridor (listed in Annex I of <i>Habitats Directive</i>). ▪ The draft SEA Report does not provide details of the character of the 	<ul style="list-style-type: none"> ▪ The content of the letter from the CSOs has been noted in the preparation of this <i>revised</i> SEA. ▪ The <i>revised</i> SEA recommends and assumes that more detailed studies on flora and fauna species will be undertaken at a project level. This will be used to prepare a detailed project level Environmental & Social Impact Assessment (ESIA). ▪ The effects of the ski centre on key habitats (including those listed in Annex 1 of the <i>Habitats Directive</i>) and the related amendments to the Management Plan have been evaluated in the SEA (at a strategic level) and an offsetting framework is presented in the SEA for consideration at a project level. The need for an 'Appropriate Assessment' to meet the provisions of the <i>Habitats Directive</i> is identified in the SEA. ▪ This SEA presents available information on artificial snow and recommendations for its more detailed analysis at a project level, plus the potential key implications. The information provided to-date to PINPG does not include information of where the water to produce the artificial snow would be sourced from – it is understood this would be identified at the next stage of ski centre development. The detailed assessment of how and if it is likely the artificial snow could potentially impact the waters/hydrology of Lake Ohrid would be evaluated in the ESIA at a project level for the ski centre it is assumed. ▪ The fragmentation effects of the A3 Expressway and specifically the Macedonian Oak (<i>Quercus trojana</i>) habitat are evaluated in the SEA and recommendations for the Peštani to the Albanian State Border Section made in this specific case. ▪ The information provided to PINPG on the TDZ has been used as the



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<p>construction activities nor for the planned facilities in all 3 touristic zones (TZ). Consequently it is not possible to assess the negative impact over the environment based of the construction activities of all 3 TDZ. This should be elaborated aiming to prevent from any future inconveniences when starting the construction and operational phases of the 3 TDZs. In this regard, the draft SEA report shall also propose the buffer zones around the 3TDZs.</p> <ul style="list-style-type: none"> ▪ Finally, the plans for TDZs and part of the express road enter into the strict protection zones where such activities are not allowed. This means that the changes in the new plan propose changes of the borders of the management zones, thus degrading the strict protection zones into a lower category. Such degradation of management zones is completely against the Law on Nature, Art. 104, 105 and 106. ▪ The CSOs at the end of letter, request from NPG to respond in writing according the Aarhus Convention. 	<p>bases of the SEA with regard to this planned project.</p> <ul style="list-style-type: none"> ▪ The intrusions of the planned projects into the ZSP have been evaluated. It should be noted the planned A3 Expressway does not intrude into the Zone of Strict Protection. The intrusions of the TDZ's into the Buffer Zone and ZSP have been identified and recommendations made in the SEA with regard to Stenje TDZ and Ljubanishta (Component 3) TDZ. ▪ PINPG provided originally a written response to the CSOs in the timeframe of the <i>original draft</i> SEA in early 2015. This SEA provided further response within this table.
MEPSO	MEPSO states they do not have current nor plan for infrastructure project / facility in the relevant area of the NP.	<ul style="list-style-type: none"> ▪ (noted)
PE State Roads (PESR)	With this letter, the PESR submitted a CD with technical characteristics as defined in the project design of the latest approved alignment of the Express Road A3 section Ohrid – Peštani. PESR requests the NPG to consider this alignment when finalising the SEA Report.	<ul style="list-style-type: none"> ▪ (noted)
Ministry of Culture (Administration for Protection of Cultural Heritage)	<ul style="list-style-type: none"> ▪ 1: The SEA Report discusses cultural heritage with terminology which is not in line with the Law on Protection of Cultural Heritage. This should be carefully corrected. This remark of the Administration for protection of the cultural heritage is further explained with some examples: "Table 3 Goals of SEA talks about "Cultural monuments and registered archaeological sites", chapter 5.6 talks about "Cultural and archaeological heritage" without having in mind that registered archaeological sites and the archaeological heritage are also consistent part of the cultural heritage. The document (SEA report) also does not make difference between registration and listing of cultural heritage. " ▪ 2: Within the boundaries of the Park there are several protected goods that present cultural heritage part of the National registry on cultural heritage, but there are also goods which are by reason presumed as 	<p><i>Comment 1:</i></p> <ul style="list-style-type: none"> ▪ The Law on Protection of Cultural Heritage (O.G. of RM Nos. 20/04, 71/04, 115/7, 18/11, 148/11, 23/13, 137/13, 164/13, 38/14, 44/14 and 199/14) has been reviewed and the terminology from the law has been described in Section 2.2 of the SEA. ▪ This terminology has been applied when describing the local cultural heritage and archaeology, particularly in Section 5.6.2 (Recorded Cultural Heritage and Archaeology in the Park), which also separates registered and listed cultural heritage. <p><i>Comment 2:</i></p> <ul style="list-style-type: none"> ▪ The Ministry of Culture in Skopje was contacted and suitable information



Stakeholder	Summary of Key Points Raised in Stakeholder Comments (Jan'15)	How/Where this has been considered in this (revised) SEA Report
	<p>cultural heritage. The SEA report should make a difference between “protected goods” that present cultural heritage and “goods which are by reason presumed as cultural heritage” (listed goods).The Report should be corrected to distinguish between the existing values listed in the National Registry of Cultural Heritage and identified heritage (listed in the Evidence of cultural heritage).</p> <ul style="list-style-type: none"> ▪ 3: Chapter 5.6 – Archaeological and cultural heritage contains data from the Spatial Plan for Ohrid-Prespa Region. This document, besides data on protected goods contains data on goods that are suggested to be protected which needs to be confirmed by a proclamation act. Since there is no revalorization on the most of the goods and there is no valorization on the suggested goods, the data given in the Report do not correspond to the official data from the National registry, meaning the data are not correct particularly those on status of the object and category. All data used in the report should come only from official document of the Administration. ▪ 4: The Report describes localities which are beyond the current borders of the NPG and even though, only for some types of heritage. This should be corrected in a way to list the entire heritage objects and only within the borders of the NP. ▪ 5: Chapter 9.9 Impact on the cultural and historical heritage lists obligation of the Administration for protection of cultural heritage prescribed in art.39 of the Law. However, there should be noted that the Report on the state of the world’s natural and cultural heritage of Ohrid Region is prepared by the Administration for Environment and Administration for protection of the cultural heritage, every sixth year. In line with this, it is not clear based on which opinion it is going to be defined the participation of the Institute for protection of cultural heritage and Museum of Ohrid City in the realization of the express road and development zones (touristic zones). <p>6: Chapter 10 – Protection and mitigation measures, is actually focused on the old part of Ohrid City; it does not contain measures for the cultural heritage within the borders of the NPG.</p>	<p>from the National Registry was requested. A response has been received and considered within the preparation of this SEA.</p> <ul style="list-style-type: none"> ▪ The Museum of Bitola provided the Resen Region Protection and Conservation bases for Cultural Heritage of the Galichica National Park (2010). The Ohrid version of the same document has unofficially been reviewed and was used to clarify the same information that was provided in the Original Park Management Plan. ▪ From the available information, Section 5.6.2 provides tables of known cultural heritage and archaeology in the Park, and distinguishes between “Registered” and “Listed”. These lists have not been compared with the existing values listed in the National Registry as this information has not been received yet. <p><i>Comment 3:</i></p> <ul style="list-style-type: none"> ▪ The valorisation and revalorisation values from the National Registry were requested but have not been provided. It was not possible to compare any data with official data from the National registry. ▪ As the official document has not been made available, the SEA has reported from information provided on the valorisation and revalorisation of sites provided by the Museum of Bitola (2010). The same document from the Museum of Ohrid (2010) was unofficially reviewed. <p><i>Comment 4:</i></p> <ul style="list-style-type: none"> ▪ The section has been re-written and now concentrates on cultural heritage within the Park borders. <p><i>Comment 5:</i></p> <ul style="list-style-type: none"> ▪ This comment is noted. This statement has been removed from this version of the SEA. <p><i>Comment 6:</i></p> <ul style="list-style-type: none"> ▪ This comment is noted and mitigation and recommendations now concentrates on cultural heritage in the Park and the outstanding universal value of the World Heritage Site.





11.3 Revised SEA Disclosure Process & Public Hearing

During the preparation of this SEA further consultation/engagement has been carried out with some key stakeholders, including:

- Ministry of Environment & Physical Planning (MoEPP) – Sustainable Development Department (*to whom the SEA will be submitted for opinion and adoption/rejection*);
- Ministry of Environment & Physical Planning (MoEPP) – Nature Conservation Development Department (*to whom the AMP will be submitted for opinion and adoption/rejection*);
- Spatial Planning Agency (SPA) – *responsible for planning and zoning documentation for the Tourist Development Zones (TDZs)*;
- Electricity Transmission System Operator for Macedonia (MEPSO) – *original Project Sponsor for Galichica Ski Centre Feasibility Study & Master Plan stage*;
- Public Enterprise for State Roads (PESR) – *Project Sponsor for the A3 Expressway (Ohrid to Peštani and Peštani to Albanian State Border Sections)*;
- European Bank for Reconstruction & Development ((EBRD)⁴ – *international financial institution who are considering providing loan to PESR for the A3 Expressway Ohrid to Peštani Section project*;
- KfW – *international financial institution who have provided significant technical and financial support from the Government of the Federal Republic of Germany to PINPG, including for the development of the original National Park Galichica Management Plan (2011-2020)*.

During the preparation of the *revised* SEA letters requesting information were submitted to the Ministry of Culture, the Museum of Bitola and the Museum of Ohrid in relation to data held by them (e.g. inventories) on cultural heritage resources (etc.) within the National Park Galichica.

The *revised* 'draft' SEA was submitted to the MoEPP and disclosed on PINPG's website (http://www.galichica.org.mk/home_page.html) during June/July 2015. A Public Hearing has been arranged at PINPG offices which is scheduled after 15 days disclosure. An advert will be placed in the same newspaper as the original draft SEA (i.e. the Ohrid News). The SEA document and Non-Technical Summary has been made available in Macedonian and English. The draft AMP will also be made available as part of the disclosure package on PINPG's website.

PINPG will also notify directly the stakeholders who provided written comments on the *draft* SEA.

MoEPP will also be requested in a letter from PINPG to submit the Non-Technical Summary to relevant transboundary representatives as they see appropriate.

Following the Public Hearing and receipt of written comments the *revised* SEA will be updated. The final version of the SEA will be submitted to the MoEPP (Sustainable Development Department) for formal opinion. The final SEA will include a summary of the issues raised on this draft SEA followed by PINPG response.

The updated AMP will be submitted to the MoEPP (Nature Conservation Department) for formal opinion. Following receipt of formal positive opinion from the MoEPP (Nature Conservation Department) on the AMP the document shall be submitted to the NPG Management Board for formal adoption.

⁴ Also, to expedite the process of revising the SEA EBRD have provided technical assistance to PINPG by engaging a consultant to support them in finalising the revisions to the SEA and AMP.



12. References

1. Management Plan for the National Park Galichica for the period 2010-2020
2. Draft-Amendments to the Management Plan for National Park Galichica for the period 2011-2020 (July 2015 & July 2014 Versions)
3. Plan for watershed management of Prespa Lake
4. Spatial Plan of the Republic of Macedonia (2002-2020)
5. Spatial Plan of the Ohrid-Prespa region (2005-2020)
6. Project for express road infrastructure
7. Master Plan for the ski resort Galichica
8. Second National Environmental Action Plan of the Republic of Macedonia (2006)
9. Development Program of the Southwest Region (2010-2015)
10. Strategy for Regional Development
11. Strategy for Sustainable Development
12. Biodiversity Strategy
13. Strategy for Environmental Monitoring
14. National Strategy for Tourism Development
15. Trilateral strategy and action plan for tourism in the catchment area of Prespa Lake
16. Local Environmental Action Plan for the Municipality of Ohrid
17. Regulation on standards and norms for urban planning (Official Gazette of RM no. 78/06, 14/07, 12/09 and 93/09).
18. Draft Report for SEA for Draft Amendments to the Management Plan for National Park Galichica for the Period 2011-2020: Technical Report: 0903-1127/3 (November 2014) – prepared by Civil Engineering “Macedonian” JSC
19. Feasibility Study & Master Plan for the Development & Construction of Ski Centre in Galichica (Horwath & Horwath Consulting and Ecosign Mountain Resort Planners) (May 2014)



13. Annexes

- Annex 1 Government directive on Amendment to MP: Extract from the draft Minutes – 142nd session of the Government of the Republic of Macedonia, held on 24.06.13
- Annex 2 Government directive on Amendment to MP: Extract from the draft Minutes –152nd session of the Government of the Republic of Macedonia, held on 03.09.13
- Annex 3 MoEPP interpretation of legal provisions under Law on Nature Protection (Art.99) covering starting procedure for amending NPG MP
- Annex 4 Management Board of NPG decision to launch procedure for amendments to MP
- Annex 5 Existing Mountain Facilities Plan
- Annex 6 Galichica Ski Centre Summer and Winter Recreation Plan
- Annex 7 Galichica Ski Centre – Master Plan Overview
- Annex 8 Galichica National Park Zoning – Proposed Amendments 2015
- Annex 9 Topographic Map of proposed Ohrid to Peshtani expressway routing relative to the various settlements along the route (provided May 2015)
- Annex 10 Overview map of draft project of the road section Peshtani – border with the Republic of Albanian as part of the express road A3 Kosel – Ohrid – border with Republic of Albania
- Annex 11 Technical Data on A3 Expressway (from Technical Reports previously provided by PESR)
- Annex 12 Plant Communities Present in the Park (EUNIS Classification)
- Annex 13 Annex I Habitats Present in the Park (EU Habitats Directive)
- Annex 14 Plant Species
- Annex 15 Invertebrate Species
- Annex 16 Amphibians and Reptiles
- Annex 17 Bird Species
- Annex 18 Mammal Species
- Annex 19 List of Participants (Public Hearing – 22.01.2015)
- Annex 20 Summary of Public Hearing & Record of Minutes (in Macedonian) (22.01.2015)
- Annex 21 Сите мислења по COBЖС Stakeholder Comments on SEA Disclosure (Jan 2015)
- Annex 22 National Register of Cultural Heritage in Ohrid Region of National Park



**Annex 1 Government directive on Amendment to MP: Extract from the draft Minutes –
142nd session of the Government of the Republic of Macedonia, held on 24.06.13**



Република Македонија
Влада на Република Македонија

ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК
ГАЛИЧИЦА

Примено 01.07.2013

ОРГ. СЛ.	СЛ. БРОЈ	СЛ. ДАТУМ	СЛ. ПОСРЕДСТВО	СЛ. ПОСРЕДСТВО
09	395			



ДО МИНИСТЕРСТВО ЗА ТРАНСПОРТ И ВРСКИ

СКОПЈЕ

ИЗВАДОК

од Нацрт – записникот од Сто четирисет и втората седница
на Владата на Република Македонија,
одржана на 24.06.2013 година

Бр. 41-4050/1
Скопје 24.06.2013 година

Влада на Република
Македонија
Генерален секретаријат
на Владата на Република
Македонија

Бул. Илинден бр.2,
1000 Скопје,
Република Македонија
Тел. (02) 3118 – 022

www.vlada.mk

„ТОЧКА 35: Информација за изработка на Урбанистичко планска документација за туристичко развојна зона Стење, КО Стење и туристичко развојна зона Отешево, КО Отешево, општина Ресен

Владата ја разгледа Информацијата за изработка на Урбанистичко планска документација за туристичко развојна зона Стење, КО Стење и туристичко развојна зона Отешево, КО Отешево, општина Ресен и ја усвои со следниве заклучоци:

1. Се задолжува Јавната установа Национален парк Галичица, во најкус рок да донесе Одлука за изменување на Планот за управување со Национален парк Галичица, Одлука за ребаланс на буџетот на Јавна установа Национален парк Галичица и дополнување на Планот за јавни набавки, со цел измена на планот за управување на Националниот парк Галичица во насока, во опфатите утврдени за туристички зони да се овозможи градба.
2. Се задолжува Јавната установа Национален парк Галичица, најдоцна до 30.06.2013 година, да спроведе постапка за јавна набавка на конулантски услуги за изготвување на студија за ревалоризација, како и да изготви измени на Планот за управување со Национален парк Галичица.
3. Се задолжува Министерството за животна средина и просторно планирање во соработка со Јавната установа Национален парк Галичица, најдоцна до 30.09.2013 година, да организираат јавна расправа во однос на студијата.
4. Се задолжува Јавната установа Национален парк Галичица, најдоцна до 30.10.2013 година да ја донесе Одлуката за донесување на измените на Планот за управување со Национален парк Галичица.

ЗАМЕНИК НА ГЕНЕРАЛНИОТ
СЕКРЕТАР

Илхам Исмени

ДОСТАВЕНО И ДО:

- Министерството за животна средина и просторно планирање
- Јавната установа Национален парк Галичица

Подготвил: Владимир Лазаревски
Контролирал: Љубица Р. Димовска
Одобрил: Митра Спасовска



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Per
Bm

5. Се задолжува Министерството за образование и наука да стапи во контакт со Кембриџ Универзитетот со барање за доставување на побараните учебници, покрај печатена верзија да се достават и во дигитална содржина.
6. Се задолжува Државниот испитен центар да ја доуреди законската регулатива во делот на воведување на минимум критериуми за доделување на лиценца за директор како и уредување на можноста за одземање на истата.
7. Се задолжува Државниот просветен инспекторат да предвиди измени и дополнувања на постоечката законска регулатива во насока на предвидување на казни за директорите во случај на уништување или кражба на компјутерите и за истото да извести на последната седница од ноември.
8. Се задолжува Државниот просветен инспекторат квартално да предлага креативни решенија во насока на подобрување на образовниот процес.
9. Се задолжува Министерството за образование и наука на последната седница од ноември на седница на Економскиот совет да достави информација со оперативни заклучоци за интерактивното учење.
10. Информација-квартален извештај (април, мај, јуни 2013 г.) за работата на Државниот просветен инспекторат и за реализација на активна настава – интерактивно учење во основните и средните училишта во Република Македонија која беше предложена како материјал за информирање на Економскиот совет да се дополни со оперативни заклучоци и повторно да се разгледа на последната седница на Економскиот совет од ноември.
11. Се задолжува Бирото за развој на образованието да ја предвиди можноста најдобрите наставници да бидат ментори на нововработените наставници и да добијат соодветен надоместок за истото.
12. Се задолжуваат Спиро Ристовски, министер за образование и наука, Елизабета Тодоровска, државен секретар во Министерството за образование и наука, Весна Хорватовиќ, директор на Бирото за развој на образование, Мери Атанасовски, Азир Алиу и Виктор Новаковски, советници на



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претседателот на Владата, да остварат работна посета во Финска со цел разгледување на можноста за приближување на финскиот образовен модел и за истото да ја известат Владата во рок од три месеци.



13. Се задолжува Министерството за образование и наука на последната седница од ноември на Економскиот совет да достави информација за прогрес за извршени надзори во училиштата за примена на дидактички упатства за подготовка и задавање на домашни задачи на учениците со оперативни заклучоци и Акционен план.

14. Се укажува на ЈУ Национален парк Галичица до крајот на јануари 2014 година да подготви и достави на седница на Влада измени на планот за управување за периодот 2011-2020 година во насока на овозможување на изградба на скијачкиот центар, изградба на новопроектираниот патен правец АЗ Охрид-Св.Наум, градба во опфатот на туристичко развојната зона КО Љубаништа, општина Охрид, градба на туристичко развојната зона Стење, КО Стење и градба на туристичко развојната зона Отешево, КО Отешево.

15. Се укажува на Агенцијата за просторно планирање во рок од седум дена до ЈУ Национален парк Галичица да достави плански опфат за туристичко развојната зона КО Љубаништа.

16. Се укажува на АД МЕПСО во рок од седум дена до ЈУ Национален парк Галичица да достави плански опфат за скијачкиот центар во Националниот парк Галичица.

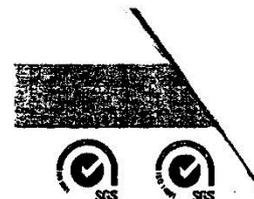
17. Се укажува на ЈП за државни патишта во рок од седум дена до ЈУ Национален парк Галичица да достави плански опфат за новопроектираниот патен правец АЗ Охрид-Св.Наум.

18. Се задолжува Абдилаким Адеми, министер за животна средина и просторно планирање да ја разгледа можноста за измени на Законот за води во делот изградба на објекти во крајбрежен појас и за истото да ја известат Владата на првата редовна седница за да заземе став.

19. Се задолжува Министерството за транспорт и врски на секои две недели да известува за прогресот на информацијата за степенот на изработка на планска документација за туристичко рекреативни зони во Република Македонија.



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20. Се задолжуваат министрите без ресор задолжени за привлекување на странски инвестиции и Агенцијата за странски инвестиции и промоција на извозот на Република Македонија да стапат во контакт со потенцијалните инвеститори заинтересирани за отварање на депонија за опасен отпад и пречистителна станица.

21. Се задолжува Министерството за животна средина и просторно планирање да продолжи со реализација на активностите предвидени во Акциониот план за издавање на интегрирана еколошка дозвола.

22. Се задолжува Министерството за образование и наука детално да ги разгледа предлозите и размислувањата од страна на деканите и директорите на средните и основните училишта во врска со подобрувањето и рефомирањето на наставниот процес, како и критериумите за избор на студенти на Педагошкиот факултет, истите да ги предвиди во измените и дополнувањата на законската регулатива и да ја извести Владата на втората редовна седница.”



ДОСТАВЕНО И ДО:

- Министерство за образование и наука
- Агенција за странски инвестиции и промоција на извозот на Република Македонија
- Државен просветен инспекторат
- Државен испитен центар
- Биро за развој на образованието
- Спиро Ристовски, министер за образование и наука
- Елизабета Тодороска, државен секретар во Министерството за образование и наука
- Весна Хорватовиќ, директор на Бирото за развој на образование
- Мери Атанасовски, Азир Алиу и Виктор Новаковски, советници на претседателот на Владата
- ЈУ Национален парк Галичица
- АД Мепсо
- ЈП Државни патништа
- Абдилајим Адеми, министер за животна средина и просторно планирање
- Министерство за транспорт и врски
- Неџдет Мустафа, Хади Незир и Бил Паллески, министри без ресор задолжени за привлекување на странски инвестиции
- Министерството за животна средина и просторно планирање

Подготвил: Симона Крунговска *С. Крунговска*
Контролирал: Љубица Р. Димовска *Л. Димовска*
Одобрил: Митра Спасовска *М. Спасовска*



Annex 2 Government directive on Amendment to MP: Extract from the draft Minutes – 152nd session of the Government of the Republic of Macedonia, held on 03.09.13



Република Македонија
Влада на Република Македонија

10.09.2013
03 395/2

ДО КАНЦЕЛАРИЈА НА ПРЕТСЕДАТЕЛ НА ВЛАДАТА
СКОПЈЕ



Бр. 41-17/152
Скопје, 3.09.2013 год.

Влада на Република
Македонија
Генерален секретаријат
на Владата на
Република Македонија

ИЗВАДОК

од Нацрт - записникот од Сто педесет и втората седница на
Владата на Република Македонија,
одржана на 3.09.2013 година

Бул. Илинден бр. 2
1000 Скопје,
Република Македонија
Тел. (02) 3118 - 022

„ТОЧКА : 76 Прашања и предлози

По повод одржаната седница на Економскиот совет на Владата и усвоените заклучоци од оваа седница, Владата заклучи:

1. Се задолжува Министерството за образование и наука да одржи работна средба со министрите без ресор и Агенцијата за странски инвестиции и промоција на извозот на Република Македонија, за подготовка на оперативни заклучоци во однос на Информацијата со предлог мерки и активности, со цел поврзувањето на потребите на странските директни инвеститори со понудата на вештини на домашниот пазар на труд со Акционен план и истите да ги достави на втората наредна седница на Влада.
2. Се задолжува Агенцијата за странски инвестиции и промоција на извозот на Република Македонија да ги извести промоторите во однос на можноста за воведување на специјализирани образовни модули и профили за потребите на потенцијалните странски од страна на Министерството за образование и наука, Агенцијата за вработување и факултетите, со цел истата да биде составен дел од нивните промотивни активности.
3. Се задолжува Министерството за образование и наука во септември 2014 година да отпочне постапка за набавка на таблети со тастатура со утврдена динамика: најпрво се заменуваат компјутерските системи во средните училишта, потоа од 6-9 одделение и 1-5 одделение во основните училишта.
4. Се задолжува Министерството за образование и наука да отпочне постапка за набавка на дигитални содржини кои досега не се опфатени, со утврдена динамика: средни училишта, 6-9 одделение и 1-5 одделение во основните училишта.



Annex 3 MoEPP interpretation of legal provisions under Law on Nature Protection (Art.99) covering starting procedure for amending NPG MP



29/11/2013

Gmail - NP Galicica-Clen 99



Oliver Avramoski <oliver.avramoski@gmail.com>

NP Galicica-Clen 99

2 messages

Билјана Spiroska <bspiroska@hotmail.com> Thu, Sep 5, 2013 at 10:54 AM
To: "oliver.avramoski@gmail.com" <oliver.avramoski@gmail.com>, "can192@hotmail.com" <can192@hotmail.com>, "marjan.muzoski@gmail.com" <marjan.muzoski@gmail.com>, "ognen@galicica.org.mk" <ognen@galicica.org.mk>, "zoranv.ohrid@yahoo.com" <zoranv.ohrid@yahoo.com>

Почитувани,

Во прилог е образложението од страна на МЖСПП, во врска со измена на член 99 од Законот за заштита на природата. Ова образложение треба како информација да излезе од Министерството за економија .

Поздрав,

Во врска со промена на член 99 и

----- Forwarded message -----

From: Jadranka Ivanova <jadrankaivanova@hotmail.com>
Date: Wed, Sep 4, 2013 at 11:11 AM
Subject: FW: NP Galicica
To: "bspiroska@gmail.com" <bspiroska@gmail.com>

Jadranka Ivanova
Head of EU Department
Ministry of Environment and Physical Planning
Republic of Macedonia
Tel. mob: + 389 (0) 75 250 234
e-mail: j.ivanova@moepp.gov.mk
alternative email: jadrankaivanova@hotmail.com
web: www.moepp.gov.mk

 Образложение за Galicica_DodavamenodoME_HD.doc
32K

Oliver Avramoski <oliver.avramoski@gmail.com> Thu, Sep 5, 2013 at 11:01 AM
To: Andon Bojadzi <andon.bojadzi@gmail.com>

[Quoted text hidden]

Д-р Oliver Avramoski
Раководител на Сектор за заштита на природата
Јавна установа Национален парк Галичица
Галичица 66, Охрид 6000

<https://mail.google.com/mail/?ui=2&ik=ce8d8be3&ik=pt&ik=zoranv.ohrid@yahoo.com&ik=truel&search=query&ik=140cd46846278>

1/2



ОБРАЗЛОЖЕНИЕ

Во врска со заклучокот на Владата на Република Македонија од 148 седница одржана на 30.07.2013 година со кој е задолжено Министерството за економија во соработка со Министерството за животна средина и просторно планирање во рок од 30 дена до Владата на Република Македонија да достави Предлог – закон за изменување и дополнување на Законот за заштита на природата (во делот на членот 99 со што ќе се овозможи градба во границите на Националниот парк Галичица) следи следното образложение:

Во членот 99 од Законот за заштита на природата ("Сл.весник на РМ" бр. 67/04, 14/06, 84/07, 35/10, 47/11, 148/11, 59/12 и 13/13) се посочува дека плановите за управување со заштитените подрачја се донесуваат за период од десет години, а најдоцна во рок од две години од денот на прогласувањето на заштитено подрачје. Воедно, во ставот 2 од истиот член е наведена обврската за субјектите се задолжени да управуваат со заштитените подрачја, да вршат оцена на резултатите постигнати со примената на планот за управување по истекот на петтата година од неговото спроведување. Има право да изврши ревизија на Планот за управување со заштитеното подрачје. Дополнително, со ставот 3 субјектот кој управува е должен да отпочне изготвување на нови планови за управување со заштитените подрачја, најдоцна една година пред истекот на рокот за кој е донесен планот.

Во овој член не се уредува прашањето на промена на Планот за управување со заштитеното подрачје. Воедно Законот за заштита на природата не го уредува ова прашање освен во делот дека промената на планот мора да се врши на ист начин како и што е донесен планот. Согласно ова, субјектот кој управува со заштитеното подрачје има право да го промени планот пред истекот на рокот на важење на истиот согласно потребите на самиот субјект или поради други развојни планови и стратегии.

Оттука би сакале да напоменеме дека нема потреба да се изготвува Предлог - закон за изменување и дополнување на Законот за заштита на природата во врска со членот 99 бидејќи истиот се однесува на важноста на плановите за управување со сите заштитените подрачја во Република Македонија.



Во насока на дефинирање на идните активности околу изградба и спроведување на инфраструктурни проект/и во Националниот парк Галичица потребно е да се спроведат следните активности:

- да се дефинираат опфатот на проектот/тите со картографски прилог на карта со размер 1 : 25 000 и координати на опфатот во државен координатен систем,
- да се побара мислење од Јавната установа Национален парк Галичица, Охрид како надлежен субјект за управување со паркот во однос на опфатот на проектот/тите, со цел да се утврди дали истите ја опфаќаат зоната на активно управување или зоната на строга заштита,
- Јавната установа НП Галичица да отпочне со активности за презонирање односно промена на Планот за управување, во колку опфатот на проектот ја тангира зоната на активно управување или евентуално зоната на строга заштита,
- да се почитува урбанистичко планската документација (да се изготви ваква документација во колку не постои за предметната локација на опфатот на проектот)
- Согласно Законот за животната средина да се спроведе Стратешка оцена на влијанието врз животната средина (SEA) на урбанистичко планската документација
- Извештајот од стратешката оцена на влијанието врз животната средина ќе служи како основа за изработка на Студијата за валоризација која треба да ја подготви Националниот парк заради промена на планот.



Annex 4 Management Board of NPG decision to launch procedure for amendments to MP



РЕПУБЛИКА МАКЕДОНИЈА
ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК
ГАЛИЧИЦА

БР. 02-522/3
02.09.2013 ГОД
О Х Р И Д

Врз основа на член 10 од Статутот на Јавната установа Национален парк Галичица Охрид и член 52 од Правилникот за работа на Управниот одбор на Јавната установа Национален парк Галичица Охрид, Управниот одбор на Јавната установа Национален парк Галичица Охрид, како и задолжението од Владата на Република Македонија, точка 35 од Сто и четириесет и втората седница на Владата на Република Македонија одржана на 24.06.2013, Управниот одбор на Јавната установа Национален парк Галичица на својата петнаесетта седница, одржана на 02.09.2013 година, ја донесе следнава

ОДЛУКА

Член 1

Да се пристапи кон постапка за измени на Планот за управување со Национален парк Галичица за периодот 2011-2020 година во насока да се овозможи градба во опфатите за туристичко развојна зона Стење, КО Стење и туристичко развојна зона Отешево, КО Отешево, Општина Ресен.

Член 2

Доколку пред отпочнување на постапката за измени на Планот за управување со Национален парк Галичица за периодот 2011-2020, од страна на Владата на Република Македонија се добијат дополнителни задолженија – заклучоци за измени во насока на овозможување на изградба на скијачки центар во Национален парк Галичица, или изградба на новопроектираниот патен правец А3 Охрид-Свети Наум или градба во опфатот на туристичко развојната зона Љубаништа, КО Љубаништа, Општина Охрид, истите да бидат вклучени во постапката за измени на Планот за управување со Национален парк Галичица за периодот 2011-2020.

Член 3

Се задолжува Јавната установа Национален парк Галичица Охрид веднаш да го извести Министерството за финансии во врска со можните финансиски импликации по Буџетот на Република Македонија кои произлегуваат од спроведувањето на оваа одлука, а во врска со Финансискиот и проектниот договор меѓу KfW, FrankfurtamMain, Владата на Република Македонија, претставувана од Министерството за Финансии и Јавната установа Национален парк Галичица, Програма „Прекуграничен биосферен резерват Преспа“, Поддршка за Национален парк „Галичица“.

Член 4

Оваа одлука стапува на сила на денот на донесувањето

Охрид, 02.09.2013

Управен одбор на ЈУ Национален парк Галичица

Охрид

Претседател

Оливер Достиноски



GALIČICA NATIONAL PARK

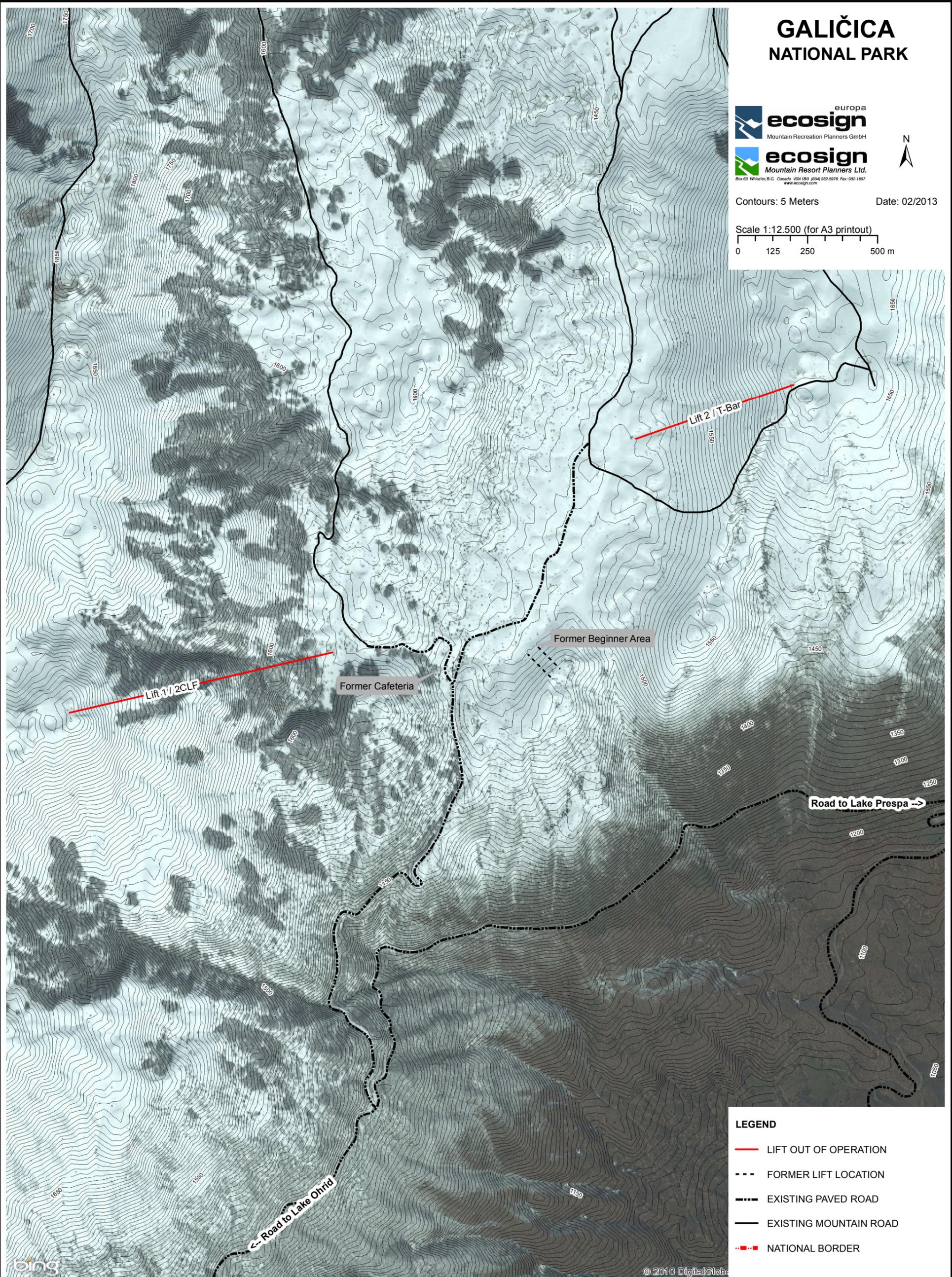


Contours: 5 Meters

Date: 02/2013

Scale 1:12.500 (for A3 printout)

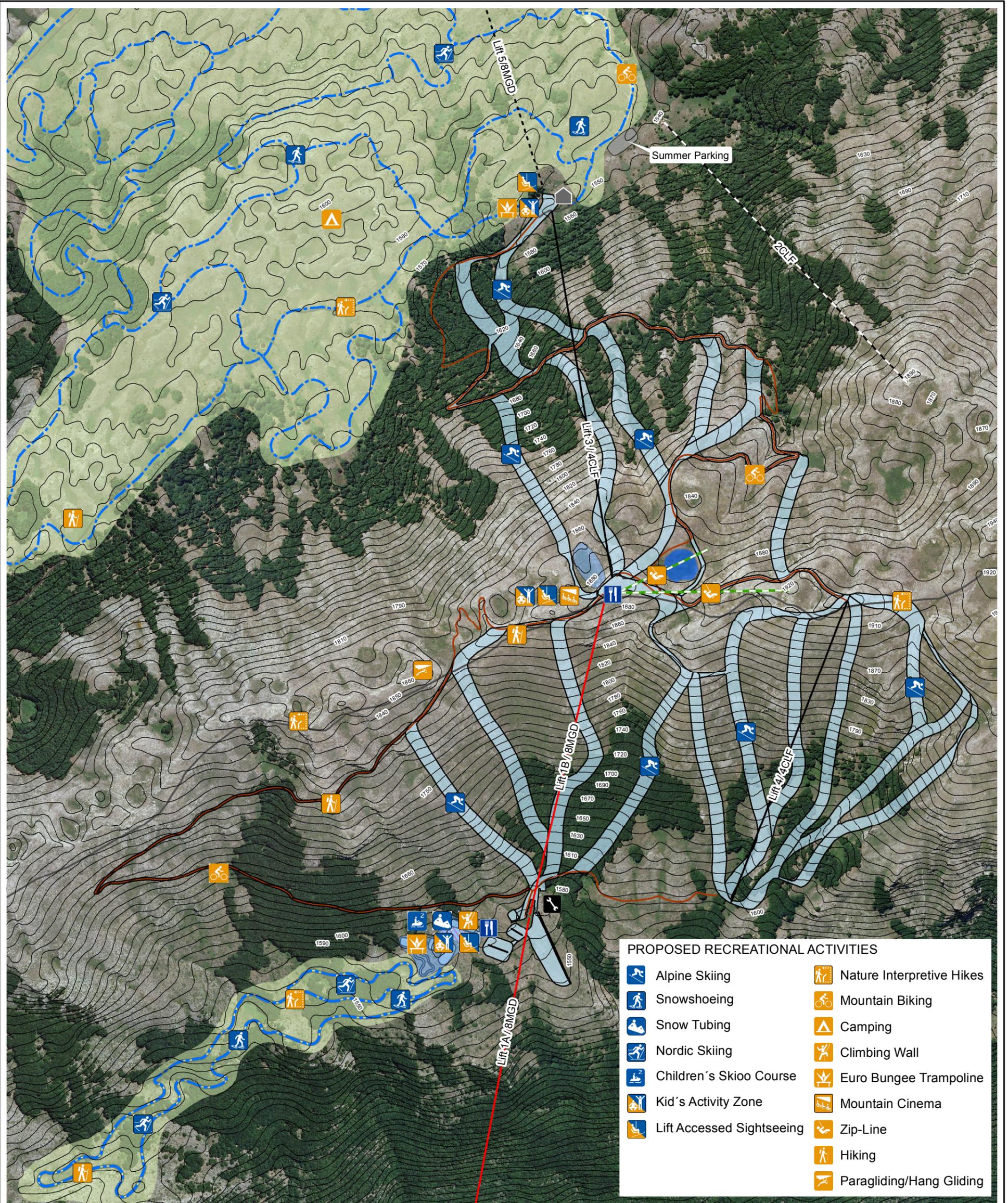
0 125 250 500 m



bing

© 2010 DigitalGlobe

Figure II.8
EXISTING MOUNTAIN FACILITIES PLAN



GALIČICA NATIONAL PARK



Date: 02/2014

Contours: 10 meters

Scale 1:10.000 (for A3 printout)



LEGEND

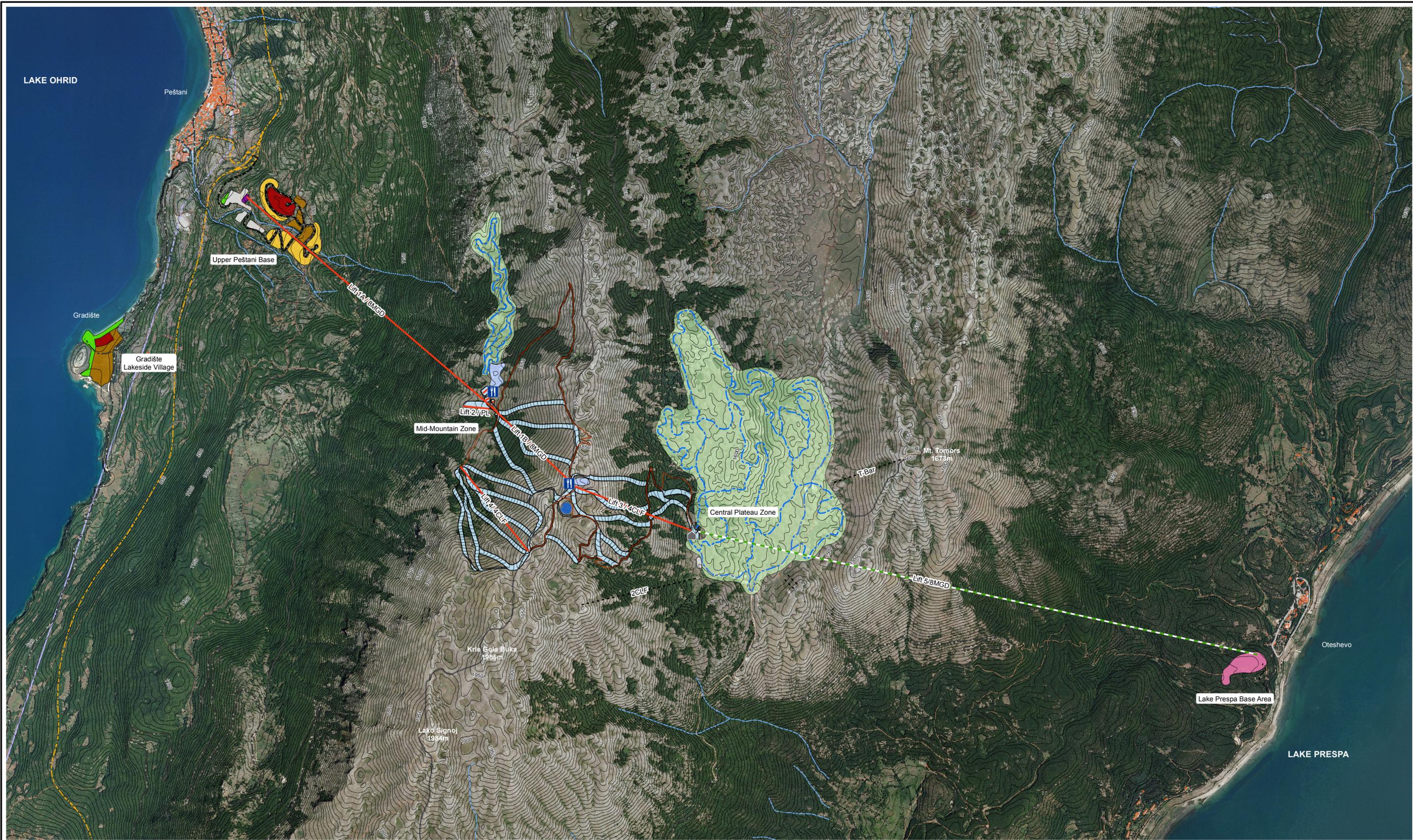
- WINTER OPERATION ONLY
- YEAR-ROUND OPERATION
- EXISTING LIFT OUT OF OPERATION
- PROPOSED CONSTRUCTION ROAD
- EXISTING PATH
- SNOWSHOE/NORDIC TRAIL
- ZIP-LINE
- PROPOSED PISTE
- SNOWMAKING POND
- KIOSK/RESTAURANT

europa
ecosign
Mountain Recreation Planners GmbH

ecosign
Mountain Resort Planners Ltd.
Box 03 Whistler, B.C. Canada V0N 1B0 (604) 932-0976 Fax: 604-932-1097
www.ecosign.com email: info@ecosign.com

Figure VII.4

GALIČICA SKI CENTER SUMMER AND WINTER RECREATION PLAN



GALIČICA NATIONAL PARK

LEGEND

- | | | | | | | | | | | | |
|-----|---------------|-----|------------------------------|-----|-----------------------|-----------------------|------------------|------------|--------------------------------|------------------------|-----------------|
| --- | EXISTING ROAD | --- | EXISTING LIFT OUT OF SERVICE | --- | PROPOSED ACCESS ROAD | LAND USE DESIGNATIONS | ■ | APARTMENTS | ■ | NORDIC & SNOWSHOE ZONE | |
| --- | EXISTING PATH | --- | PROPOSED LIFT | --- | FUTURE HIGHWAY | ■ | HOTEL/VILLAGE | ■ | PUBLIC GREEN SPACE/PICNIC AREA | ■ | PROPOSED PISTE |
| --- | POWER LINE | --- | OTESHEVO CONNECTOR | --- | SNOWSHOE/NORDIC TRAIL | ■ | PARKING | ■ | SNOW PLAY/SLIDING AREA | ■ | SNOWMAKING POND |
| --- | BUILDING | --- | PROPOSED CONSTRUCTION ROAD | --- | SINGLE-FAMILY UNITS | ■ | SERVICE BUILDING | ■ | KIOSK/RESTAURANT | | |
| --- | CREEK | | | | | | | | | | |

Date: 03/2014
 Contours: 10 meters
 Scale 1:20,000 (for A2 printout)
 0 250 500 1,000 m



Figure VII.1
GALIČICA SKI CENTER - MASTER PLAN OVERVIEW

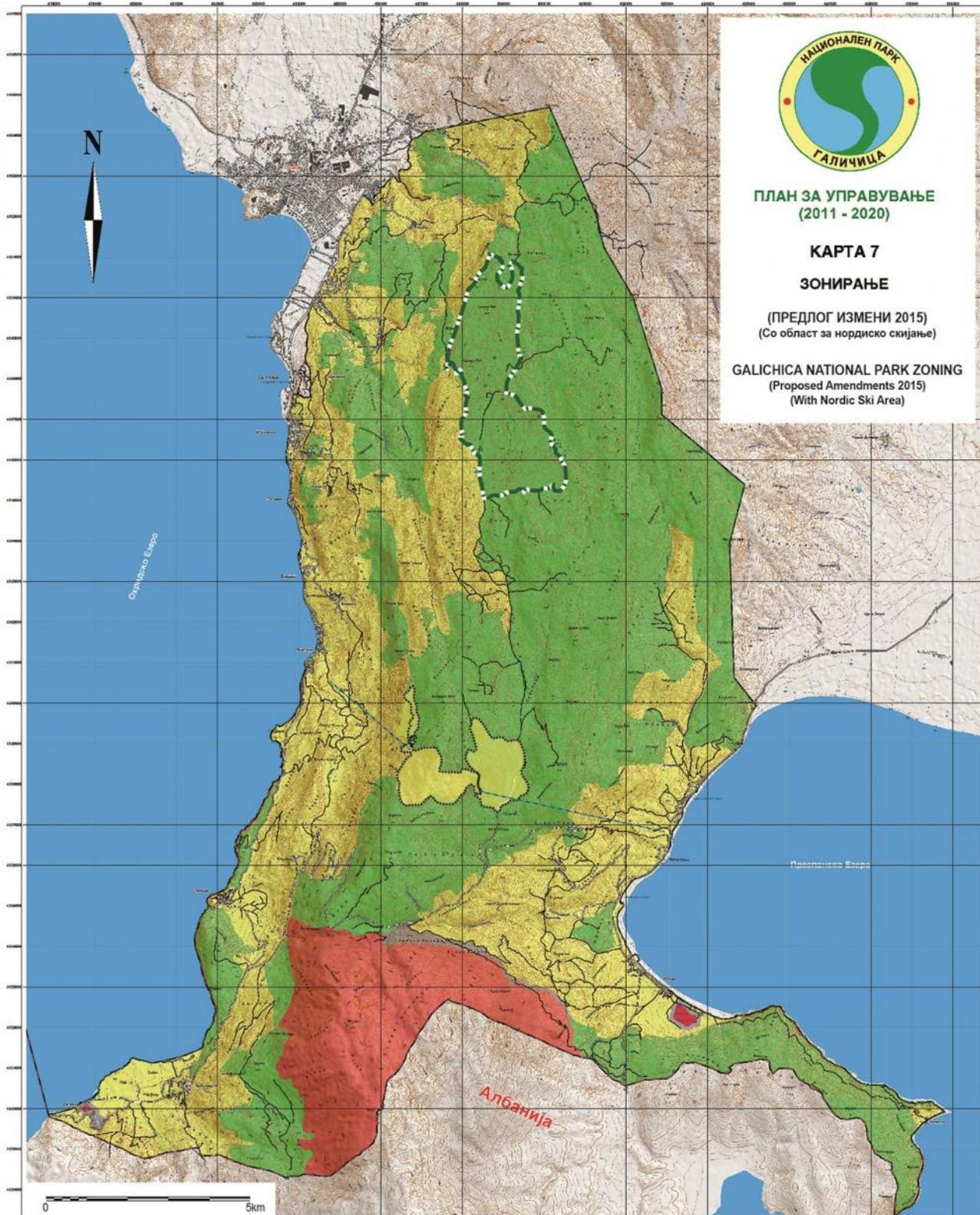


ПЛАН ЗА УПРАВУВАЊЕ
(2011 - 2020)

КАРТА 7
ЗОНИРАЊЕ

(ПРЕДЛОГ ИЗМЕНИ 2015)
(Со област за нордско скијање)

GALICHICA NATIONAL PARK ZONING
(Proposed Amendments 2015)
(With Nordic Ski Area)



ZONIRANJE_NPG_predlog_izmeni_o by Zoniranje_2013

Buffer zone

Zone of Active Management

Zone of Sustainable Use

Zone of Strict Protection

Area re-zoned from ZSU to ZAM

Galichica Ski Centre Components

State border

Boundary of Galichica National Park Галичица

Existing watercourses

Occasional watercourses

Water Sources

Asphalt road

Unpaved road

Pedestrian path

Springs

Зона за строга заштита (делови Стара Галичица, Клифови на Охридско Езеро, Клифови на Преспанско Езеро и Остров Голем Град)

Зона за строга заштита - дел Стењско Блато

Зона за строга заштита - дел Извориште Св. Наум

Граница на Национален парк Галичица

Постојани водотечи

Повремени водотечи

Локви

асфалтен пат

земјен пат

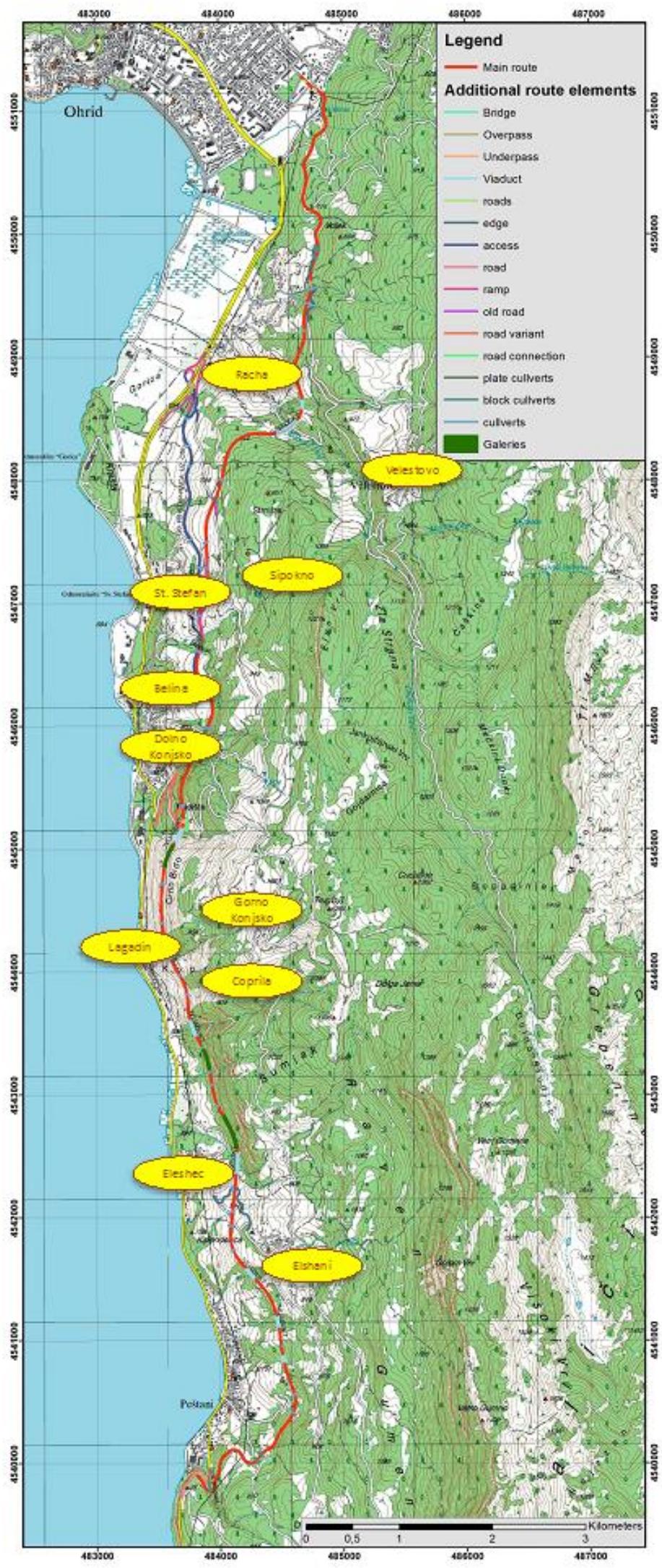
пешачка патека

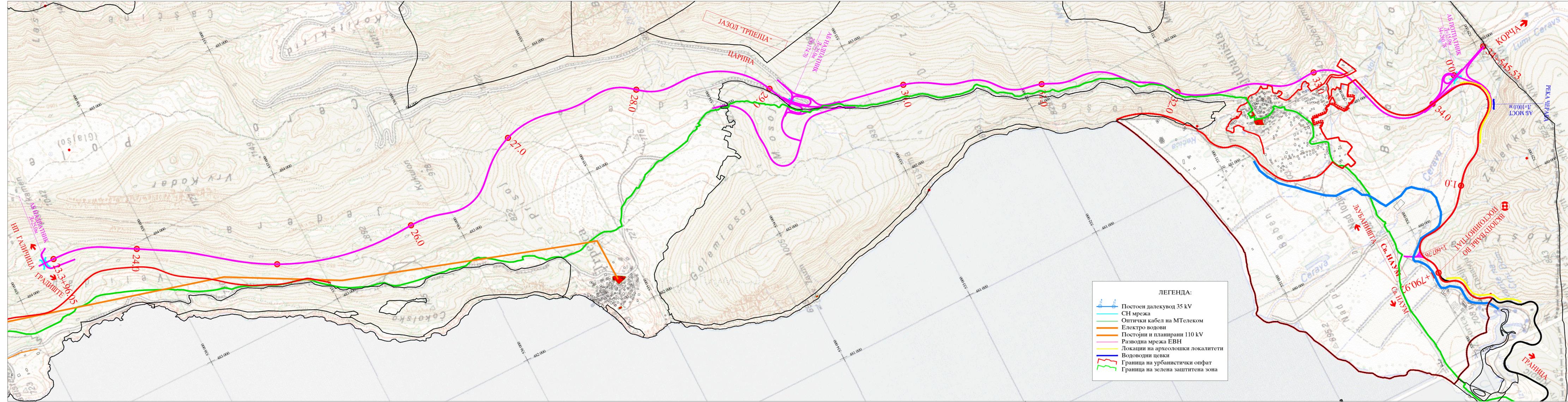
Извори

Државна граница

Иработил: БИОЕКО, Скопје, врз основа на податоците од Карта 7 од Планот за управување со Национален Парк Галичица (2010-2020) (декември 2013 година)

Еквидистанца во Р. Македонија = 10м
Еквидистанца во Р. Албанија = 20м





НАЗИВ НА ПРОЕКТ:
 PROJECT TITLE: **ЕКСПРЕСЕН ПАТЕН ПРАВЕЦ А-3**
КОСЕЛ - ОХРИД - ГР. АЛБАНИЈА
 Делница - Пештани - Св. Наум
 EXPRESS ROAD A-3
 KOSEL - OHRID - BORDER ALBANIA
 Section: Pestani- Sv.Naum

ИНВЕСТИТОР:
 CLIENT: **ЈАВНО ПРЕТПРИЈАТИЕ ЗА ДРЖАВНИ ПАТИШТА**
PUBLIC ENTERPRISE FOR STATE ROADS

ПРЕГЛЕДНА КАРТА **OVERVIEW MAP**
M 1:10000 **M = 1:10000**
 Дел 1: Пештани - Љубаништа (Гр. Албанија)
 од км. 23+396.05 - 34+545.53
 Дел 2: Љубаништа - Св. Наум
 од км 0+000.00 - 1+790.92
 Part 1: Pestani - Ljubanista (Border Albania)
 from km. 23+396.05 - 34.545.53
 Part 2 : Ljubanista - Sv.Naum
 from 0+000.00 - 1+790.92

ИЗВРШИТЕЛ:
 CONTRACTOR: **ЧАКАР & ПАРТНЕРС**
 РЕВИДЕНТ:
 REVISER: Градежен факултет - Скопје

ВОДИТЕЛ НА ПРОЕКТОТ:
 PROJECT MANAGER: Лазо Чакаровски
 ДИПЛОМАТИНГ
 А.2. ОДГОВОРЕН ПРОЕКТАНТ
 LEADING DESIGNER: Христина Чакаровска
 ДИПЛОМАТИНГ

СОРАБОТНИЦИ:
 CO-AUTHORS: Бошко Цилаков, дипл.град.инж. Панче Грков, дипл.град.инж.
 Владимир Апостолов, дипл.град.инж.

ВИД НА ПРОЕКТ:
 TYPE OF DESIGN: **ИДЕЕН ПРОЕКТ**
PRELIMINARY DESIGN
 СОДРЖИНА:
 TITLE: **ПРЕГЛЕДНА КАРТА**
OVERVIEW MAP

ТЕХН.БРОЈ:
 TECHN. NO: 107/2013
 ДАТУМ:
 DATE: 04/2013
 РАЗМЕР:
 SCALE: 1:10 000
 ФАЗА:
 PHASE: **Г**
 ВИД НА ДОКУМЕНТ:
 DOC TYPE: D W G 0 1
 РЕВИЗИЈА:
 REVISION: 0 1
 БРОЈ НА ЦРТЕЖ:
 DRAWING No: / 0 1

Annex 11 – NPG AMP SEA

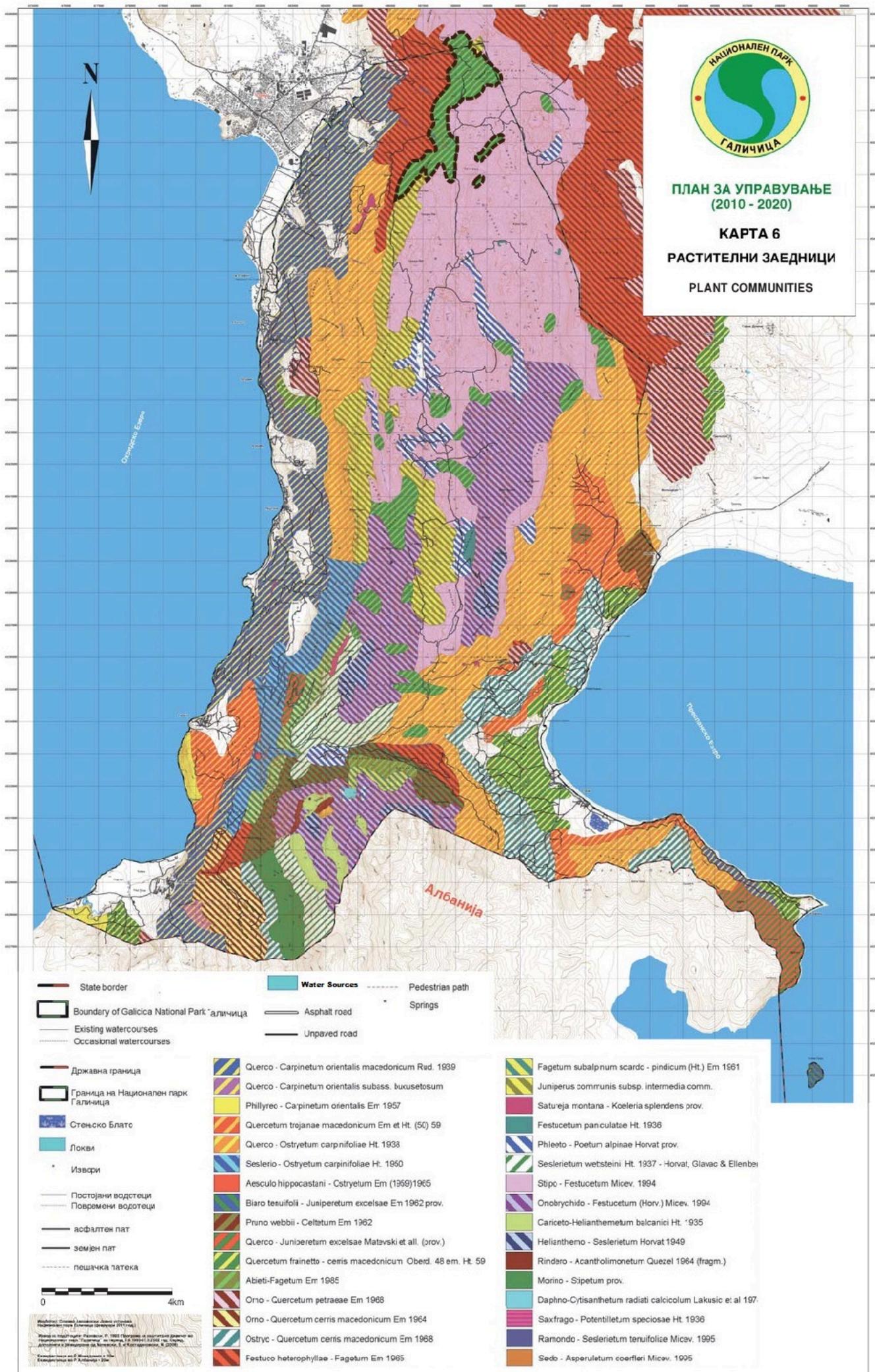
Table showing Technical data of the sections Ohrid – Peshtani and Peshtani – border with the Republic of Albania (Part 1 and Part 2), as well as parts of the Express Road A3 Kosel – Ohrid – border with the Republic of Albania.

Elements	Junction Ohrid - Peshtani	Junction Peshtani – border with the Republic of Albania	
		Part 1: Peshtani - Ljubanishta	Part 2: Ljubanishta – Sveti Naum
Horizontal elements of the track			
Minimal radius of the curves	250	250	140(95)
Minimal transit	80(6)	80(6)	40
Minimal length of the direction between the curves that are in opposite directions	156.53	156.53	-
Minimal length of the direction of the curves in the same direction	257.70	386	-
Levelling solution			
Minimal longitudinal incline	0.3%	0.6%	1%
Maximal longitudinal incline	3.5%	6.0%	6.3%
Incline of the crossing ramps	1 %	1%	0.55%
Minimal radius of convex rounding off	4000	5000	-
Minimal radius of concave rounding off	3000	4000	5000
Elements of the transversal profile			
Traffic lanes (<i>m</i>)	2X3.50 = 7.00	2X3.50 = 7.00	2 x 3.50 = 7.00
Side lanes (<i>m</i>)	2x0.20=0.40	2x0.20=0.40	2 x 0.30 = 0.60
Shoulder lanes (<i>m</i>)	2 x 2.00 = 0.40	2 x 2.00 = 4.00	-
Total width of the roadway (<i>m</i>)	11.40	11.40	7.60
Third lane for heavy goods (<i>m</i>)	-	3.25 + 0.3 = 3.55	3.25 + 0.3 = 3.55
Lane for joining and leaving near the nodes (<i>m</i>)	3.25	3.25	-
Curbs (<i>m</i>)	2 x 1.50 = 3.00	2 x 1.50 = 3.00	2 x 1.00 = 2.00
Pre-cast concrete half-battered kerb and berm (<i>m</i>)	0.75 + 1 = 1.75	0.75 + 1.00 = 1.75	0.75 + 1.00 = 1.75
Maximal transversal incline in the horizontal turns	7%	7%	7%
Transversal incline in a straight line	2.5 %	2.5 %	2.5 %



ПЛАН ЗА УПРАВУВАЊЕ
(2010 - 2020)

КАРТА 6
РАСТИТЕЛНИ ЗАЕДНИЦИ
PLANT COMMUNITIES



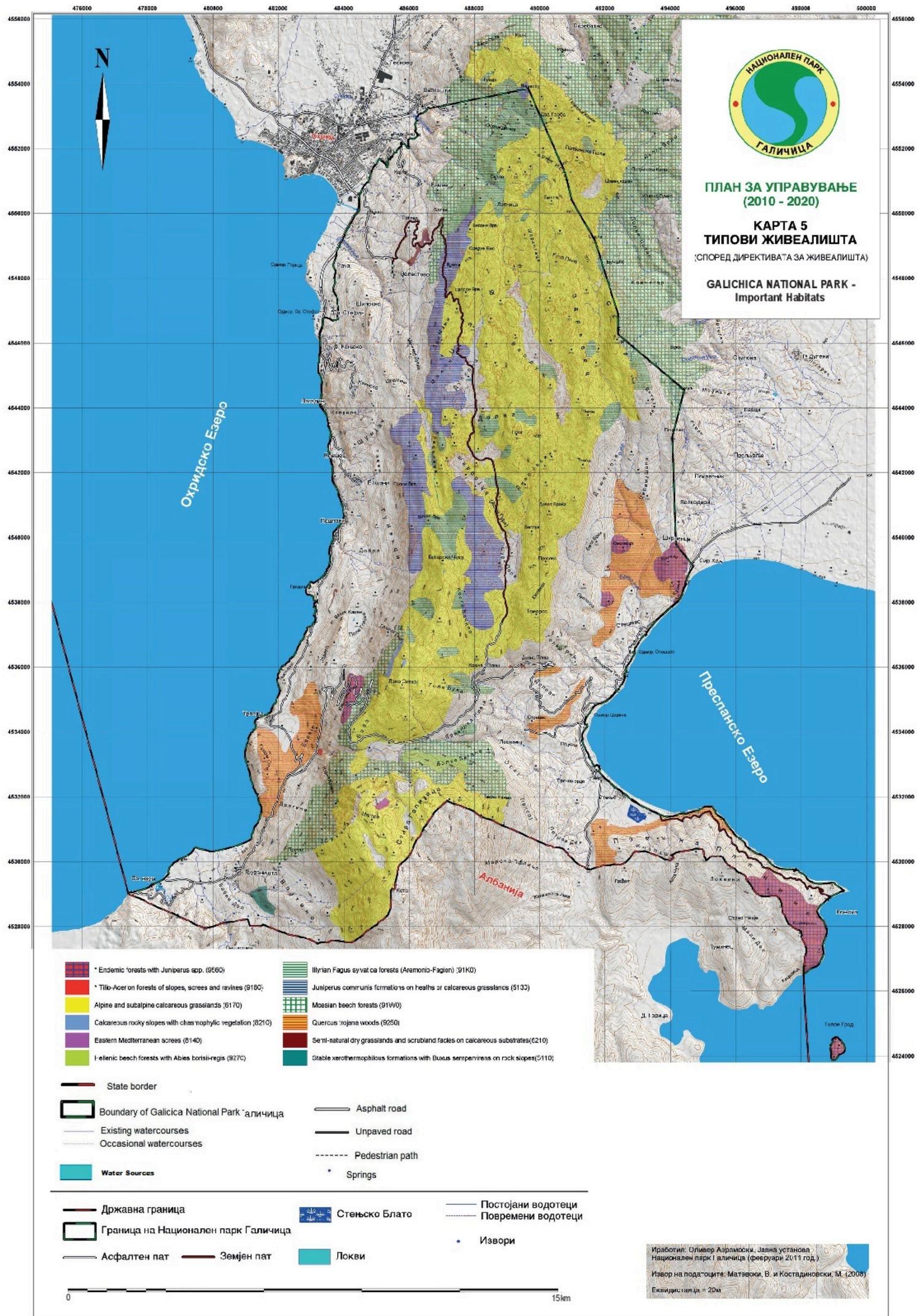
- State border
- Boundary of Galichica National Park Галичица
- Existing watercourses
- Occasional watercourses
- Water Sources
- Asphalt road
- Unpaved road
- Pedestrian path
- Springs

- Државна граница
- Граница на Национален парк Галичица
- Стенско Блато
- Локви
- Извори
- Постојани водотеци
- Повремени водотеци
- асфалтен пат
- земјен пат
- пешачка патека

- Qlerco - Carpinetum orientalis macedonicum Red. 1939
- Qlerco - Carpinetum orientalis subsp. buxetosum
- Phillyreo - Carpinetum orientalis Em 1957
- Quercetum trojanae macedonicum Em et Ht. (50) 59
- Qlerco - Ostryetum carpinifoliae Ht. 1933
- Seslerio - Ostryetum carpinifoliae Ht. 1950
- Aesculo hippocastani - Cstryetum Em (1959)1965
- Biaro tesuifoli - Juniperetum excelsae Em 1962 prov.
- Pruno webbii - Celtetum Em 1962
- Qlerco - Juniperetum excelsae Matvski et all. (prov)
- Quercetum frainetto - ceris macedonicum Oberd. 48 em. Ht. 59
- Abieti-Fagetum Em 1985
- Orno - Quercetum petraeae Em 1968
- Orno - Quercetum ceris macedonicum Em 1964
- Ostryc - Quercetum ceris macedonicum Em 1968
- Festuco heterophyllae - Fagetum Em 1965

- Fagetum subalpnum scardic - pindicum (Ht.) Em 1661
- Juniperus communis subsp. intermedia comm.
- Satuleja montana - Koeleria splendens prov.
- Festucetum paniculatae Ht. 1936
- Phlesto - Poetum alpinae Horvat prov.
- Seslerietum wetsteini Ht. 1937 - Horvat, Glavac & Ellenber
- Stipo - Festucetum Micev. 1994
- Onobrychido - Festucetum (Horv.) Micev. 1994
- Cariceto-Helianthemetum balcanici Ht. 1935
- Helianthem - Seslerietum Horvat 1949
- Rindsro - Acantholimometum Quezel 1964 (fragm.)
- Morino - Sijpetum prov.
- Daphno-Cytisanthetum radiati calcicolum Lakusic et al 197.
- Saxfrago - Potentilletum speciosae Ht. 1936
- Ramondo - Seslerietum tenuifoliae Micev. 1995
- Sedo - Asperuletum coarctati Micev. 1925

Масштаб: 1:50,000
Издание: 2010
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Проверил: Д-р М. Митревски
Галичица, 2010



**ПЛАН ЗА УПРАВУВАЊЕ
(2010 - 2020)**

**КАРТА 5
ТИПОВИ ЖИВЕАЛИШТА**
(ПОРЕД ДИРЕКТИВАТА ЗА ЖИВЕАЛИШТА)

**ГАЛИЧИЦА NATIONAL PARK -
Important Habitats**

- * Endemic forests with *Juniperus* spp. (9560)
- * Tilio-Acer on forests of slopes, screes and ravines (9180)
- Alpine and subalpine calcareous grasslands (6170)
- Calcareous rocky slopes with chasmatophytic vegetation (8210)
- Eastern Mediterranean screes (8140)
- I-ellenic beech forests with *Abies borisii-regis* (9270)
- Illyrian *Fagus sylvatica* forests (Arenonio-Fagion) (91K0)
- Juniperus communities on heaths or calcareous grasslands (5133)
- Moesian beech forests (91W0)
- Quercus trojana woods (9250)
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (6210)
- Stable xerothermophilous formations with *Buxus sempervirens* on rock slopes (5110)

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- Државна граница
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- Асфалтен пат
- Земјен пат
- Локви
- Стенско Блато
- Постојани водотеци
- Повремени водотеци
- Извори

Иработил: Оливер Азрјамоски, Јавна установа
Национален парк Галичица (февруари 2011 год.)
Извор на податоците: Матевски, В. и Костадиновски, М. (2008)
Еквидистанца = 20m





Annex 14 Plant Species

SPECIES	LE	SE	ICUN	BC	HD	LNP	CITES	CORINE	LC	Rare-MK	IPA
1. <i>Acantholimon androsaceum</i>										1-2	
2. <i>Alkanna noneiformis</i>						PS					A(iii)
3. <i>Alyssum galicicae</i>											
4. <i>Alyssum strybrnyi</i>											
5. <i>Anchusa barrelieri</i> subsp. <i>serpentinicola</i>											
6. <i>Arabis bryoides</i>										1-10	
7. <i>Asperula doerfleri</i>										1-10	



8. <i>Asphodeline taurica</i>										1-2	
9. <i>Asplenium fissum</i>										1-10	
10. <i>Astragalus baldaccii</i>						PS		AL			A (iv)
11. <i>Astragalus mayeri</i>		x							x		
12. <i>Centaurea tomorosii</i>	x					SPS			x		
13. <i>Convovulvus elegantissimum</i>										1-5	
14. <i>Crocus cvijici</i>		x				SPS		MK	x		
15. <i>Cynoglottis barrelieri</i> ssp. <i>serpenticola</i>											A (iv)
16. <i>Cytisus procumbens</i>										1	



17. <i>Edraianthus horvatii</i>	x					PS			x		
18. <i>Erodium guicciardii</i>						PS					A (iv)
19. <i>Festuca galicicae</i>	x					PS			x		
20. <i>Fritillaria gussichiae</i>						PS					A(iv)
21. <i>Fritillaria ionica</i> var. <i>orchidana</i>									x		
22. <i>Genista januensis</i> var. <i>macedonica</i>									x		
23. <i>Genista radiata</i>										1-2	
24. <i>Helichrysum zivojini</i>	x					SPS			x		
25. <i>Hyssopus officinalis</i> ssp. <i>pilifer</i>										1-5	



26. <i>Laserpitium orchidarium</i>	x							PS		x		
27. <i>Morina persica</i>											1-10	
28. <i>Nepeta ernesti-mayeri</i>	x							SPS		x		
29. <i>Oxytropis purpurea</i>								PS				A (iv)
30. <i>Potentilla speciosa</i>											1-5	
31. <i>Prunus prostrata</i>											1	
32. <i>Sempervivum galicum</i>	x						x			x		
33. <i>Sideritis raeseri</i>							x		AL			A (iv)
34. <i>Viola eximia</i>							x					A (iv)



LE	Local endemite (NPG/Galichica – Suva Gora)
SE	Subendemite
IUCN	European Red List of Threatened Species (Bilz, M., Kell, S. P., Maxted, N. and Lansdown, R.V. 2011. European Red List of Vascular Plants. Luxembourg: Publications Office of the European Union)
BC	Bern Convention
HD	Habitats Directive
LNP	Law on Nature Protection, in accordance with the Lists of strictly protected wild species and protected wild species (“Official Gazette of Republic of Macedonia” no. 139 from 07. 10. 2011); SPS – Strictly protected species, PS – Protected species
CITES	CITES Convention
CORINE	CORINE project of the European Commission
LC	locus classicus
Rare-MK	Small number of habitats in Macedonia (the numbers show the total number of localities in Macedonia where the species has been registered)
IPA	Important Plant Areas



Annex 15 Invertebrate Species

SPECIES	HD	BERN	IUCN (G)	EU Red List	CORINE	ENDEM	Rare-MK	LNP	Other
1. Helix secerenda	-	-	-	-	-	-	Balkan	?	-
2. Zadariian orhidense	-	-	-	-	-	BAL	-	-	-
3. Xysticus macedonicus	-	-	-	-	-	BAL	-	-	-
4. *Rosalia alpina	II/IV	II	VU (A1c)	-	+			-	Flagship
5. Lucanus cervus	II	III	-	-	-	-	-	-	Fla
6. Saga Pedo	IV	II	VU (B1+2bd, ver. 2.3)	-	+	-	-	PS	Flagship
7. Parnassius Apollo	IV	II	VU (A1cde, ver. 2.3)	NT (A2c)	+	-	+	PSP	-
8. Parnassius Mnemosyne	IV	II	LR/NI (ver. 2.3)	-	+	-	+	PSP	-
9. Zerynthia polyxena	IV	-	-	-	+	-	+	-	-
10. Lycaena dispar	II/IV	II	LR/NT (ver. 2.3)	-	+	-	+	PSP	-
11. Polyommatus eroides	II/IV	-	-	-	-	-	-	-	-
12. Maculinea arion	IV	II	LR/NT (ver. 2.3)	-	+	-	+	PSP	-

HD Habitats Directive (European Council Directive on the conservation of natural habitats and of wild fauna and flora, 92/43/EEC); annexes II and IV

BERN Bern Convention, annexes II and III;

IUCN (G) According to the data from IUCN (IUCN Red List of Threatened Species. Version 2010.4.). The data was retrieved on 02 December 2010 from www.iucnredlist.org. **Explanation of the categories of species endangerment:** EN –Endangered species; VU –Vulnerable; NT – Near Threatened; LC – Least Concern; LR/NT – Least Concern/Near Threatened – (category included in version 2.3)); DD – Data Deficient; the combination of numbers and letters given in brackets after category of concernment (e.g. VU (A1cde, ver. 2.3)) denotes the criteria (and their version) according to which it has been determined



- EU Red List The data on the Coleoptera order are taken from Nieto, A. and Alexander, K.N.A. 2010. *European Red List of Saproxyllic Beetles*. Luxembourg: Publications Office of the European Union; the data on the Odonata order are taken from V.J. Kalkman, J.-P. Boudot, R. Bernard, K.-J. Conze, G. De Knijf, E. Dyatlova, S. Ferreira, M. Jović, J. Ott, E. Riservato and G. Sahlen. 2010. *European Red List of Dragonflies*. Luxembourg: Publications Office of the European Union; on the order Lepidoptera they have been taken from Van Swaay, C., Cuttelod, A., Collins, S., Maes, D., Lypez Munguira, M., Šašić, M., Settele, J., Verovnik, R., Verstrael, T., Warren, M., Wiemers, M. and Wynhof, I. 2010. *European Red List of Butterflies*. Luxembourg: Publications Office of the European Union. **Explanation of the categories of species endangerment:** : EN –Endangered; VU –Vulnerable; NT –Near Threatened; LC – Least Concern; the combination of numbers and letters given in brackets after category of concernment (e.g.. VU (A1cde)) denotes the criteria according to which it has been determined
- CORINE Pursuant to the database of CORINE biotopes (version 2000) <http://www.eea.europa.eu/data-and-maps/data/corine-biotopes>; data retrieved on 22 December 2010
- ENDEM Species with limited distribution: NPG – limited to the area of National Park Galichica; NPG (sub-end) – limited to the area of National Park Galichica and its immediate surroundings; NPG/NPP – found only in the areas of National Park Galichica and National Park Pelister; S-W MAK – southwest Macedonian; sub-MAC-sub-Macedonian; W-BAL – west Balkan; S-Bal – south Balkan; S-E-BAL – southeast Balkan; sub-BAL- sub-Balkan; BAL – Balkan.
- LNP Law on Nature Protection, in accordance with the Lists of strictly protected wild species and protected wild species (“Official Gazette of Republic of Macedonia” no. 139 from 07. 10. 2011); SPS – Strictly protected species, PS – Protected species
- Flagship Remarkable and attractive species, often aesthetically attractive, recognizable even for individuals which are not experts (Flagship Species).



Annex 16 Amphibians and Reptiles

No.	Species	HD	BERN	CITES	IUCN (G)	EU (Red List)	LNP	CORINE	ENDEM
CLASS AMPHIBIA (AMPHIBIAS)									
1	<i>Pseudepidalea viridis</i> (Green Toad)	IV	II	-	LC (D)	LC	PS	+	-
2	<i>Rana dalmatina</i> (Agile Frog)	IV	II	-	LC(D)	LC	PS	+	-
CLASS REPTILIA (REPTILES)									
3	<i>Testudo hermanni boettgeri</i> (Eastern Hermann's tortoise)	II/IV	II	II	NT(D) ⁴	NT ⁴	PS	+	Balkan
4	<i>Ablepharus kitaibelii</i> , (European copper skink)	IV	II	-	LC(S)	LC	PS	+	Balkan
5	<i>Lacerta viridis</i> (European Green Lizard)	IV	II	-	LC(D)	LC	PS	+	-
6	<i>Podarcis muralis</i> (Common wall lizard)	IV	II	-	LC(S)	LC	PS	+	-
7	<i>Podarcis erhadii</i> (Erhard's wall lizard)	IV	II	-	LC (S)	LC	PS	-	Balkan
8	<i>Hierophis gemonensis</i> (Balkan whip snake)	IV	II	-	LC(S)	LC	PS	-	Balkan
9	<i>Zamenis longissimus</i> (Aesculapian snake)	IV	II	-	LC(U)	LC	PS	+	Balkan
10	<i>Elaphe quatuorlineata</i> (Four-lined Rat snake)	II	II	-	NT(D)	LC	PS	+	-
11	<i>Coronella austriaca</i> (Smooth snake)	IV	II	-	-	LC	PS	+	-
12	<i>Vipera ammodytes</i> (horned viper)	IV	II	-	LC(D)	LC	PS	+	-

HD Habitats Directive, annexes II and IV

BERN Bern Convention, annexes II and III;

IUCN (G) According to the data from IUCN (IUCN Red List of Threatened Species. Version 2010.4.). The data was retrieved on 02 December 2010 from www.iucnredlist.org. **Explanation of the categories of species endangerment:** EN –Endangered species; VU – Vulnerable; NT – Near Threatened; LC – Least Concern;

EU Red List According to Temple, H.J. and Terry, A. (Compilers). 2007. *The Status and Distribution of European Mammals*. Luxembourg: Office for Official Publications of the European Communities. **Explanation of the categories of species endangerment:** : EN – Endangered; VU –Vulnerable; NT –Near Threatened; LC – Least Concern; NA – Not Assessed

CORINE Pursuant to the database of CORINE biotopes (version 2000) <http://www.eea.europa.eu/data-and-maps/data/corine-biotopes>; data retrieved on 22 December 2010



LNP Law on Nature Protection, in accordance with the Lists of strictly protected wild species and protected wild species (“Official Gazette of Republic of Macedonia” no. 139 from 07. 10. 2011); SPV – Strictly protected species, PV – Protected species



Annex 17 Bird Species

No.	Species	BERN	BD	CITES	CMS	LNP	LH	IUCN(G)	SPEC	CORINE
1.	<i>Alectoris graeca</i> (Rock partridge)	III	II/1	-	-	PS	TP	LC	SPEC 2	-
2	<i>Perdix perdix</i> (Grey partridge)	III	II/1, III/1	-	-	PS	TP	LC	SPEC 3	-
3	<i>Coturnix coturnix</i> (Common quail)	III	II/2	-	II	PS	TP	LC	SPEC 3	-
4	<i>Ciconia nigra</i> (Black stork)	II	I	II	II	SPS	PPG	LC	SPEC 2	+
5	<i>Circaetus gallicus</i> (Short-toed snake eagle)	II	I	II	II	SPS	PPG	LC	SPEC 3	+
6	<i>Circus pygargus</i> (Montag's harrier)	II	I	II	II	SPS	PPG	LC	Non-SPEC ^E	+
7	<i>Accipiter brevipes</i> (Levant sparrowhawk)	II	I	II	II	SPS	PPG	LC	SPEC 2	+
8	<i>Accipiter nisus</i> (Eurasian sparrowhawk)	II	-	II	II	SPS	PPG	LC	Non-SPEC	-
9	<i>Buteo buteo</i> (Common buzzard)	II	-	II	II	SPS	PPG	LC	Non-SPEC	-
10	<i>Falco tinnunculus</i> (Common kestrel)	II	-	II	II	SPS	PPG	LC	SPEC 3	-
11	<i>Falco vespertinus</i> (Red-footed falcon)	II	I	II	II	-	PPG	NT	SPEC 3	-
12	<i>Falco peregrinus</i> (Peregrine falcon)	II	I	I	II	SPS	PPG	LC	Non-SPEC	+
13	<i>Scolopax rusticola</i> (Eurasian woodcock)	III	II/1, III/2	-	II	PS	TP	LC	SPEC 3	-
14	<i>Columba polumbus</i> (Common wood pigeon)	-	II/1, III/1	-	-	PS	TP	LC	Non-SPEC ^E	-
15	<i>Streptopelia turtur</i> (Turtle dove)	III	II/2	-	II	PS	TP	LC	SPEC 3	-
16	<i>Cuculus canorus</i> (Common cuckoo)	III	-	-	-	-	-	LC	Non-SPEC	-
17	<i>Otus scops</i> (European scops owl)	II	-	II	-	SPS	PPG	LC	SPEC 2	-
18	<i>Athene noctua</i> (Little owl)	II	-	II	-	SPS	PPG	LC	SPEC 3	-
19	<i>Asio otus</i> (Long-eared owl)	II	-	II	-	SPS	PPG	LC	Non-SPEC	-
20	<i>Caprimulgus europaeus</i> (Nightjar)	II	I	-	-	-	-	LC	SPEC 2	+
21	<i>Upupa epops</i> (Hoopoe)	II	-	-	-	-	-	LC	SPEC 3	-
22	<i>Dendrocopos minor</i> (Lesser spotted woodpecker)	II	-	-	-	-	-	LC	Non-SPEC	-
23	<i>Dendrocopos medius</i> (Middle spotted woodpecker)	II	I	-	-	-	-	LC	Non-SPEC ^E	+
24	<i>Dendrocopos leucotos</i> (White-backed woodpecker)	II	I	-	-	-	-	LC	Non-SPEC	+
25	<i>Dendrocopos major</i> (Great spotted woodpecker)	II	-	-	-	-	-	LC	Non-SPEC	-
26	<i>Dendrocopos syriacus</i> (Syrian woodpecker)	II	I	-	-	-	-	LC	Non-SPEC ^E	+
27	<i>Dryocopus martius</i> (Black woodpecker)	II	I	-	-	-	-	LC	Non-SPEC	+



28	<i>Picus viridis</i> (European green woodpecker)	II	-	-	-	-	-	LC	SPEC 2	-
29	<i>Lanius collurio</i> (Red-backed shrike)	II	I	-	-	-	-	LC	SPEC 3	+
30	<i>Oriolus oriolus</i> (Eurasian golden oriole)	II	-	-	-	SPS	PPG	LC	Non-SPEC	-
31	<i>Garrulus glandarius</i> (Eurasian jay)	-	II/2	-	-	SPS	PPG	LC	Non-SPEC	-
32	<i>Parus major</i> (Great tit)	II	-	-	-	-	-	LC	Non-SPEC	-
33	<i>Parus palustris</i> (Marsh tit)	II	-	-	-	-	-	LC	SPEC 3	-
34	<i>Parus lugubris</i> (Sombre tit)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
35	<i>Parus caeruleus</i> (Eurasian blue tit)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
36	<i>Galerida cristata</i> (Crested lark)	III	-	-	-	-	-	LC	SPEC 3	-
37	<i>Lullula arborea</i> (Woodlark)	III	I	-	-	-	-	LC	SPEC 2	+
38	<i>Alauda arvensis</i> (Eurasian skylark)	III	II/2	-	-	-	-	LC	SPEC 3	-
39	<i>Eremophila alpestris</i> (Horned lark)	II	-	-	-	-	-	LC	Non-SPEC	-
40	<i>Aegithalos caudatus</i> (Long-tailed tit)	III	-	-	-	-	-	LC	Non-SPEC	-
41	<i>Hippolais pallida</i> (Eastern olivaceous warbler)	II	-	-	II	-	-	LC	SPEC 3	-
42	<i>Phylloscopus trochilus</i> (Willow warbler)	II	-	-	II	-	-	LC	Non-SPEC	-
43	<i>Phylloscopus collybita</i> (Common chiffchaff)	II	-	-	II	-	-	LC	Non-SPEC	-
44	<i>Phylloscopus orientalis</i> (Eastern Bonelli's warbler)	-	-	-	II	-	-	-	SPEC 2	-
45	<i>Phylloscopus sibilatrix</i> (Wood warbler)	II	-	-	II	-	-	LC	SPEC 2	-
46	<i>Sylvia atricapilla</i> (Eurasian blackcap)	II	-	-	II	-	-	LC	Non-SPEC ^E	-
47	<i>Sylvia borin</i> (Garden warbler)	II	-	-	II	-	-	LC	Non-SPEC ^E	-
48	<i>Sylvia curruco</i> (Lesser whitethroat)	II	-	-	II	-	-	LC	Non-SPEC	-
49	<i>Sylvia cantillans</i> (Subalpine warbler)	II	-	-	II	-	-	LC	Non-SPEC ^E	-
50	<i>Troglodytes troglodytes</i> (Eurasian wren)	II	-	-	-	-	-	LC	Non-SPEC	-
51	<i>Sitta europaea</i> (Eurasian nuthatch)	II	-	-	-	-	-	LC	Non-SPEC	-
52	<i>Certhia brachydactyla</i> (Short-toed treecreeper)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
53	<i>Turdus merula</i> (Common blackbird)	III	-	-	II	-	-	LC	Non-SPEC ^E	-
54	<i>Turdus philomelos</i> (Song thrush)	III	-	-	-	-	-	LC	Non-SPEC ^E	-
55	<i>Turdus viscivorus</i> (Mistle thrush)	III	-	-	-	-	-	LC	Non-SPEC ^E	-
56	<i>Erithacus rubecula</i> (Robin)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
57	<i>Luscinia megarhynchos</i> (Common nightingale)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
58	<i>Phoenicurus phoenicurus</i> (Common redstart)	II	-	-	-	-	-	LC	SPEC 2	-
59	<i>Saxicola rubetra</i> (Whinchat)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
60	<i>Oenanthe oenanthe</i> (Northern wheatear)	II	-	-	-	-	-	LC	SPEC 3	-



61	<i>Monticola saxatilis</i> (Common rock thrush)	II	-	-	-	-	-	LC	SPEC 3	-
62	<i>Muscicapa striata</i> (Spotted flycatcher)	II	-	-	II	-	-	LC	SPEC 3	-
63	<i>Ficedula albicollis</i> (Collared flycatcher)	II	I	-	II	-	-	LC	Non-SPEC ^E	+
64	<i>Prunella modularis</i> (Dunnock)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
65	<i>Anthus campestris</i> (Sawny pipit)	II	I	-	-	-	-	LC	SPEC 3	+
66	<i>Anthus trivialis</i> (Tree pipit)	II	-	-	-	-	-	LC	Non-SPEC	-
67	<i>Anthus spinoletta</i> (Water pipit)	II	-	-	-	-	-	LC	Non-SPEC	-
68	<i>Fringilla coelebs</i> (Common chaffinch)	III	-	-	-	-	-	LC	Non-SPEC ^E	-
69	<i>Serinus serinus</i> (European serin)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
70	<i>Carduelis chloris</i> (European greenfinch)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
71	<i>Carduelis carduelis</i> (European goldfinch)	II	-	-	-	-	-	LC	Non-SPEC	-
72	<i>Carduelis cannabina</i> (Common linnet)	II	-	-	-	-	-	LC	SPEC 2	-
73	<i>Pyrrhula pyrrhula</i> (Eurasian bullfinch)	III	-	-	-	-	-	LC	Non-SPEC	-
74	<i>Miliaria calandra</i> (Corn bunting)	III	-	-	-	-	-	LC	SPEC 2	-
75	<i>Emberiza citrinella</i> (Yellowhammer)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
76	<i>Emberiza cirius</i> (Cirl bunting)	II	-	-	-	-	-	LC	Non-SPEC ^E	-
77	<i>Emberiza cia</i> (Rock bunting)	II	-	-	-	-	-	LC	SPEC 3	-
78	<i>Emberiza hortulana</i> (Ortolan bunting)	III	I	-	-	-	-	LC	SPEC 2	+

BD Bird Directive, annexes I, II/1, II/2, III/1, III/2;

BERN Bern Convention, annexes II and III ;

CMS Bonn Convention, annexes I and II;

CITES Washington Convention, annexes I and II;

IUCN (G) According to the data from IUCN (IUCN Red List of Threatened Species. Version 2010.4.). The data was retrieved on 22 December 2010 from www.iucnredlist.org. **Explanation of the categories of species endangerment:** EN –Endangered species; VU – Vulnerable; NT – Near Threatened; LC – Least Concern;

CORINE Pursuant to the database of CORINE biotopes (version 2000) <http://www.eea.europa.eu/data-and-maps/data/corine-biotopes>; data retrieved on 22 December 2010



SPEC	Species of European Conservation Concern according to BirdLife International (2004). <i>Birds in Europe: population estimates, trends and conservation status</i> . Cambridge, UK: BirdLife International; Explanation of the SPEC Categories: SPEC 1 – species of global conservation concern, i.e., classified as globally threatened, directly concerned or for which there are insufficient data (Data Deficient); SPEC 2 - Species with an unfavourable European conservation status; Non-SPEC ^E – found in Europe and have a favourable conservation status; Non-SPEC – not found in Europe and have a favourable status of conservation; W (wintering) signifies that the category refers to the wintering population;
LNP	Law on Nature Protection, in accordance with the Lists of strictly protected wild species and protected wild species (“Official Gazette of Republic of Macedonia” no. 139 from 07. 10. 2011); SPV – Strictly protected species, PV – Protected species
LH	Law on hunting (“Official Gazette of RM” no. 26/09), PPG – protected game with permanent prohibition for hunting (Article 13); TP = protected game with a permanent closed hunting season or a temporary protection (pursuant to article 11).



Annex 18 Mammal Species

Taxonomic Group/Species*		HD	BERN	CMS	CITES	IUCN (G)	EU Red List	CORINE	Endem	LNP	LH
1.	<i>Erinaceus roumanicus</i> (Northern white-breasted hedgehog)	-	-	-	-	LC	LC	-	-	-	-
2.	<i>Crocidura suaveolens</i> (Lesser white-toothed shrew)	-	III	-	-	LC	LC	-	-	-	-
3.	<i>Sorex minutus</i> (Eurasian pygmy shrew)	-	III	-	-	LC	LC	-	-	-	-
4.	<i>Plecotus auritus</i> (Brown long-eared bat)	IV	II	II	-	LC	LC	+	-	-	-
5.	<i>Eptesicus serotinus</i> (Serotine bat)	IV	II	II	-	LC	LC	+	-	-	-
6.	<i>Nyctalus leisleri</i> (Lesser noctule)	IV	II	II	-	LC	LC	+	-	-	-
7.	<i>Myotis mystacinus</i> (Whiskered bat)	IV	II	II	-	LC	LC	+	-	-	-
8.	* <i>Canis lupus</i> (Grey wolf)	II/IV	II	-	II	LC	LC	+	-	-	NP
9.	<i>Vulpes Vulpes</i> (Red fox)	-	-	-	-	LC	LC	-	-	-	NP
10.	<i>Felis Silvestris</i> (Wildcat)	IV	II	-	II	LC	LC	+	-	SPS	PPS
11.	<i>Lynx lynx balcanicus</i> (Balkan lynx)	II/IV	III	-	II	LC	LC	+	Balkan	SPS	PPS
12.	<i>Martes foina</i> (Beech marten)	-	III	-	-	LC	LC	-	-	-	NP
13.	<i>Mustela nivalis</i> (Least weasel)	-	III	-	-	LC	LC	-	-	-	NP
14.	<i>Meles meles</i> (European badger)	-	III	-	-	LC	LC	-	-	PS	NP
15.	* <i>Ursus arctos</i> (Brown bear)	II/IV	II	-	II	LC	LC	+	-	SPS	PPS
16.	<i>Sus scrofa</i> (Wild boar)	-	-	-	-	LC	LC	-	-	-	TP
17.	<i>Capreolus capreolus</i> (Roe deer)	-	III	-	-	LC	LC	-	-	-	TP
18.	<i>Sciurus vulgaris</i> (Red squirrel)	-	III	-	-	LC	LC	-	-	-	PPS
19.	<i>Microtus felteni</i> (Felten's vole)	-	-	-	-	DD	LC	-	Balkan	PS	-
20.	<i>Apodemus flavicollis</i> (Yellow-necked mouse)	-	-	-	-	LC	LC	-	-	-	-
21.	<i>Glis glis</i> (Edible dormouse)	-	III	-	-	LC	LC	-	-	-	PPS
22.	<i>Muscardinus avellanarius</i> (Hazel dormouse)	IV	III	-	-	LC	LC	-	-	-	-

HD Habitats Directive, annexes II, and IV;
 BERN Bern Convention, annexes II and III ;
 CMS Bonn Convention, annexes I and II;



CITES	Washington Convention, annexes I and II;
IUCN (G)	According to the data from IUCN (IUCN Red List of Threatened Species. Version 2010.4.). The data was retrieved on 22 December 2010 from www.iucnredlist.org . Explanation of the categories of species endangerment: EN –Endangered species; VU – Vulnerable; NT – Near Threatened; LC – Least Concern;
EU Red List	According to Temple, H.J. and Terry, A. (Compilers). 2007. <i>The Status and Distribution of European Mammals</i> . Luxembourg: Office for Official Publications of the European Communities. Explanation of the categories of species endangerment: : EN –Endangered; VU –Vulnerable; NT –Near Threatened; LC – Least Concern; NA – Not Assessed
CORINE	Pursuant to the database of CORINE biotopes (version 2000) http://www.eea.europa.eu/data-and-maps/data/corine-biotopes ; data retrieved on 22 December 2010
LNP	Law on Nature Protection, in accordance with the Lists of strictly protected wild species and protected wild species (“Official Gazette of Republic of Macedonia” no. 139 from 07. 10. 2011); SPV – Strictly protected species, PV – Protected species
LH	Law on hunting (“Official Gazette of RM” no. 26/09), PPG – protected game with permanent prohibition for hunting (Article 13); NP = protected game with a permanent closed hunting season or a temporary protection (pursuant to article 11), PG = not protected game (pursuant to Paragraph 3, Article 9).

УЧЕСНИЦИ ВО ЈАВНАТА РАСПРАВА ПО ИЗВЕШТАЈОТ ЗА СТРАТЕГИСКА ОЦЕНА ЗА ВЛИЈАНИЕТО НА ЖИВОТНАТА СРЕДИНА ПО ПРЕДЛОГ
ИЗМЕНЕТЕ НА ПЛАНОТ ЗА УПРАВУВАЊЕ СО НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА (2011-2020)

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(22.01.2015)

ЗАПИСНИК

Од Јавната расправа по Нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 година, одржана на ден 22.01.2015 година, со почеток во 13,00 часот, во просториите на управната зграда на ЈУ национален парк Галичица Охрид.

На ден ден 22.01.2015 година, во просториите на управната зграда на Јавната установа Национален парк Галичица Охрид (ЈУНПГ) на ул. Велестовски Пат бб, со почеток во 13,00 часот, се одржа јавна расправа по Нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 година.

Јавната расправа ја организира Јавната установа Национален парк Галичица Охрид (ЈУНПГ).

Од МЖСПП на јавната расправа не присуствуваше никој.

Од ЈУНПГ на расправата учествуваа:

Зоран Вељановски, директор;

д-р Оливер Аврамоски, раководител, Сектор за заштита на природата;

Андон Бојаци, Стручен соработник, Сектор за заштита на природата;

Од стручниот тим на БИОЕКО, Скопје, кој ги изготви Нацрт измените на Планот за управување, беа присутни:

Д-р Светозар Петковски;

Проф. д-р Александар Трендафилов.

Од стручниот тим на Градежен институт "Македонија", Скопје, кој ги изготви Нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 година измените на Планот за управување, беа присутни:

Д-р Борка Ковачевиќ

Мартина Блинкова

Владимир Костовски

Весна Милошеска, и

Габриела Дуданова-Лазаровска

Од KFW банката беа присутни:

Наташа Радовановиќ, и

Роберт Шаламанов

Од Министерството за животна средина на Република Албанија 4 (четворица) претставници.

Виола Салиаго
Силвамина Алшабани
Реди Бадуки
Орнела Шоши

На расправата беа присутни и следните претставници на заинтересирани и засегнати страни и општата јавност:

Митко Темелковски, Центар за управување со кризи, Охрид;

Сашо Матлиоски, Дирекција за заштита и спасување на РМ;
Сашо Сотироски; Водовод Охрид, Јавно меѓуопштинско претпријатије „Проаква“;
Николоски Вангел, с.Љубаништа
Булоски Серафин, с.Љубништа,
Весна Илиевска Утевска “Еко Свест”
Александра Бујароска – Фронт 21/42 Скопје
Александар Мицески, Охрид
Даниела Јовановска – МЕД
Иванов Ѓорѓе – МЕД
Трајче Талевски-ЈНУ Хидробиолошки завод Охрид
Борис Стојаноски, Еколошко друштво „Грашница“, Охрид;
Јасминка Т. Момироска, Локална самоуправа Охрид;
Иванов Ѓорѓе, МЕД Скопје,
Јоже Јованоски, ЈП за државни патишта
Тасески Јордан, ЈП за државни патишта
Љупчо Сотироски, ЈП за државни патишта
Дејан Пановски, МЖСПП БС-Охрид
Антонио Арсов, АД ЕЛЕМ Скопје
Горан Ковачевиќ, АД ЕЛЕМ Скопје
Енис Хилми, ДООЕЛ Галерија
Илина Арсова, МЗ Лагадин,
Мила Никулоска, МЗ Лагадин
Билјана Милошеска, ЕБРД

Листата на присутни на јавната расправа е дадена во прилог на записникот.

Јавната расправа се одвиваше по следниот:

Дневен ред

- Отворање и вовед
- Презентација на нацрт измените на Планот за управување
- Дискусија

Отворање и вовед

Јавната расправа ја отвори Д-р Оливер Аврамоски, раководител на Секторот за заштита на природата при ЈУНП Галичица Охрид, кој им посака добредојде на присутните и им се заблагодари за учеството на денешната јавна расправа. Тој укажа дека сите имаат можност по писмен пат да се произнесат по Нацрт Извештајот до 31.01.2015 година а и денес можете да ги поставите Вашите прашања, забелешки и препораки.

Во изработката на Нацрт Извештајот беа консултирани и вклучени и стручните лица при ЈУНПГ, особено преку доставување на потребните информации.

Денес, истакна тој, се одржува јавна расправа, и ја покани д-р Борка Ковачевиќ да го презентира Нацрт Извештајот за Стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 година.

Презентација

Д-р Борка Ковачевиќ како претставник на стручниот тим на Градежен институт “Македонија”, Скопје, кој го изготви Нацрт Извештајот за Стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 година, најнапред ги поздрави учесниците и им се заблагодари за нивното присуство.

Д-р Борка Ковачевиќ најнапред се осврна на основите врз кој се заснова овој извештај. Таа истакна дека Извештајот се изработува врз основа на претходно донесена Одлука за спроведување на стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 година а донесена во согласност со член 65 од Законот за животна средина.

Измените на ПУ се спроведуваат на барање на Владата на Република Македонија а во насока овозможување на неколку на следните развојни проекти:

- Изградба на Туристичко развојна зона “Отешево”, КО Отешево, Општина Ресен,
- Изградба на Туристичко развојна зона “Стење”, КО Стење, Општина Ресен
- Изградба на Туристичко развојна зона “Љубаништа”, КО Љубаништа, Општина Охрид,
- Изградба на ски центар во Национален парк Галичица,
- Изградба на Експресен пат А3 Косел-Охрид-граница со Република Албанија,

а главна цел е да се извршат промени на зонирањето на националниот парк за да се овозможи реализација на развојните проекти планирани од Владата на РМ и се

предлага конверзија од Зона од активно управување во Зона на одржливо користење на околу 395 ха.

При изработката на измените, покрај промена во зоните предложени се и некои ограничувања како и мерки и активности со кои негативното влијание ќе се намали колку што е можно повеќе.

Главна цел во управувањето со паркот е заштитата на природата,биолошката и пределската разновидност и природното наследство. Поради тоа сите развојни активности во НПГ треба да бидат подредени на оваа цел.

СОВЖС дава соодветни мерки и препораки за развој на регионот со максимален напор за намалување и целосно избегнување на негативните влијанија, развој на алтернативни и варијантни решенија, со можност за избор на најадекватно решение, во согласност со важечките стандарди и прописи и позитивна законска регулатива.

По дел од Нацрт СОВЖС свое излагање имаа Мартина Блинкова и Владимир Костовски претставници од ГИМ.

По презентацијата на претставниците од ГИМ, Оливер Аврамоски ги информира присутните дека денес тука се присутни и изработувачите на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2010-2020 годин, Д-р Светозар Петковски и Проф.Д-р Александар Трендафилов

Дискусиите ќе се обидам да ги преведувам на англиски јазик заради присуството на претставниците од Р.Албанија изнесе Д-р Оливер Аврамоски.

Дискусија

Д-р Светозар Петковски – претставник на Биоeko Скопје.

И покрај исцрпното излагање на претставниците на ГИМ сакам пред присутните да дадам свое образложение за биолошката разновидност на планината Галичица и што всушност претставува НПГ. Кога станува збор за планината Галичица таа е со најголем број ендемични, рељефни видови и др. во РМ. Преку НПГ тоа богатство почна да се промовира не само во национални рамки туку и на меѓународно ниво.

При прогласување на НПГ сите природни живеалишта биле дегадирани од неправилното користење.

Кога се развиваше ЕМЕРАЛД мрежата на подрачја, НПГ го доби местото на заштитено подрачје број еден. Од сите заштитени подрачја во Македонија, НПГ е единствено заштитено подрачје кое работи според европски рамки.

Од сите заштитени подрачја во РМ НПГ единствено разви програма за долгорочен мониторинг. Одделението за заштита на природа активно учествуваше во тоа. По завршувањето на Проектот НПГ и понатаму редовно спроведува мониторинг.

При изработка на планските документи се внимавало таму каде што има најмалку негативно влијание на биолошката разновидност вклучително и на живеалиштата таму да се реализираат проектите.

Со исклучок на ТРЗ Љубаништа каде околу 2 ха се од заштитниот појас на зоната за строга заштита исто така и ТРЗ Стење кај Стенско блато, другите сите се поставени каде што има најмало негативно влијание врз флората и фауната во НПГ, што не значи дека ЈУНПГ се согласува со ваквите решенија.

Трајче Талевски-ЈНУ Хидробиолошки завод Охрид (приватно)

Ми се поставува прашањето на ваква убавина да се гради пат околу 30 км и ширина од 14 метри и плус заштитниот појас за развој на туризмот а во Зли Дол алпинистите не смеат да градат патека заради непречено движење на животинскиот свет се прашувам што ќе предизвика овој пат. Кога се правеше патот до Метропол за да не го поремети движењето на водата на Билјанини Извори се одеше внимателно чекор по чекор. Тука се и изворите во Св.Наум каде може да се нанесе непредвидлива штета. Исто така може да се наруши и дотокот на вода од Преспанското Езеро. Расцепување на ваква пејсажна убавина со изградба на пат мислам дека е избрзано и непромислено.

Борка Ковачевиќ- ГИМ –Морам да напоменам дека денешниот Извештај не е поединечно за секој проект да ги дискутираме проектите затоа што некој се на развојно ниво идеен проект и сл. овде зборуваме за генерални влијанија на измените на ПУ. За секој проект ќе биде посебно изработен извештај за СОВЖС.

Александра Бујароска – Фронт 21/42 Скопје

Искрено првпат да видам СОВЖС која реално го детектира негативното влијание врз природата на паркот кое ќе настане со измените на ПУ. Во четири сегменти на Извештајот изработувачот на СОВЖС дал негативна оценка. Се прашувам каков е резултатот на СОВЖС врз ПУ. Ако јас го разбираам, Вашата негативна оценка треба да ја земе предвид ЈУНП Галичица Охрид и МЖСПП и да не ги спроведе измените. Во врска со ски-центарот се прашувам каде ќе најдат снег. Исто така не е спомнат Законот за заштита на природата каде што не е возможно промена на зони од повисоко на пониско туку обратно што повисока заштита на природата.

Одлична е стратешката оценка, ваквата СОВЖС треба да стави крај на овие проекти.

Борка Ковачевиќ- ГИМ- И се заблагодари на Александра за оценката дека извештајот е квалитетен. Имаме добар тим, огромна поддршка од ЈУНП Галичица Охрид и изработувачот на ПУ, доколку не беше така немаше да имаме ваков извештај.

Ние не даваме мислење дека некој проект е добар или лош. Ние даваме осврт на влијанието на измените на ПУ но потребно е да се гледа и развојот на социоекономските интереси, туризмот, миграцијата, невработеноста и слично. Ова треба да се свати како насока за развој на регионот така и го сработивме во Извештајот но во рамките на одржлив развој. Ние не го третираме овде секој проект посебно.

Останува на МЖСПП Вашите мислења и забелешки можат да бидат земени во предвид и при изработка на поединечните проекти а за развој на регионот.

Илина Арсова - МЗ Лагадин . Живеам во Лагадин во една природна форма се скијаме, одиме пеш до Магаро, не ја повредуваме природата. Што се однесува до ски центарот , местото каде што е предвиден да се гради ,снегот не се задржува таму, мислам дека тоа е залудна инвестиција. Да ги следиме новите трендови во светот, рурален туризам, еден ефтин начин на скијање, да ја понудиме нашата автеничност.

Борка Ковачевиќ- ГИМ –Вашите коментари ќе ги предложиме на инвеститорите да ги имаат предвид.

Роберт Шаламанов-претставник на KFW банката-Извештајот е со одличен квалитет се до еден момент и ме интересира како дојдовте до тоа да предвидите активности за неутрализација на негативните ефекти. Низ целиот извештај преовладува негативното влијание на проектите. Особено, не беше истакнато влијанието врз Аполоновата пеперутка која е до истребување. НПГ ги губи вредностите за национален парк како и пошироко Охридскиот регион за заштитено подрачје.

Трето Националниот парк Галичица со изградбата на овие проекти ги губи вредностите за кој е прогласен и оценка, Вие оценувате давате препораки со извештајот, значи ова е оценка.

Борка Ковачевиќ – ГИМ - Одговори на забелешките на Роберт Шаламанов дека ова не е оцена на влијание, ова е со поинаков концепт, ова е оценка на измените на ПУ а не на поединечни проекти. Според законска процедура мислење даваат надлежните органи и институции. Нема заклучок и препорака, ова е предлог кој ќе ги земе во предвид Вашите мислења и коментари, предлози и забелешки. Подоцна може да дадете забелешки и на поединечните проекти и СОВЖС на истите.

Роберт Шаламанов-претставник на KFW банката- Одговори дека штетата е веќе направена откако ќе се извршат измените на ПУ, презонирање, ќе се гради и покрај тие објекти и туристичка населба.

Виола Салиаго- Министерството за животна средина на Република Албанија – Се претстави дека доаѓа од Одделението за води од Министерството за животна средина од Р.Албанија. Има забелешки дека воопшто не го добиле документот и не можат да дадат мислење. Ако го добијат документот ќе достават мислење до 20 Февруари. Ја чуди што нема претставници од МЖСПП на Република Македонија и се интересираше во која фаза е документот.

Оливер Аврамоски - ЈУНП Галичица Охрид-Одговори на забелешките и прашањата на претходниот дискутант. По наши сознанија документот од контакт со МЖСПП писмо е доставено до Вас но заедно со дописот немало ЦД и затоа не сте во можност да се произнесете. Процедурата што ја барате за дополнителни денови до 20 Февруари за произнесување потребно е двете министерства да се договорат а во однос на прашањето до која фаза е проектот, Оливер ја изложи целата постапка и истакна дека по измените на ПУ документот се праќа на согласност во МЖСПП.

Наташа Радовановиќ - претставник на KFW банката- Во Студијата се спомнува можен ризик од губење на статусот на национален парк и второ можен ризик од губење на статусот на Светско природно и културно наследство на Охридскиот регион. Сакам да прашам кој ќе ја сноси одговорноста за овие работи.

Д-р Светозар Петковски – претставник на Биеко Скопје-даде објаснување во однос на претходните дискусии, тој истакна: Ние многу сакаме да манипулираме со Европската легислатива. Приоритетите во Европската унија се различни од нашите. Треба да имаме на ум дека заштитените подрачја во Република Македонија се заштитени со национална легислатива и не може никој да ги укине освен тој што ги прогласил за заштитени.

Даниела Јовановска – МЕД- Да се надоврзам само во однос на легислативата, генерално мое мислење е дека проекти од ваков тип не се соодветни за територија на заштитено подрачје од втора категорија и уште помалку промена на зоните од повисока кон пониска категорија на заштита. Во предлог измените несомнено се посочуваат негативните ефекти. Прашање до Вас, спомнавте дека негативните влијанија ќе бидат оценети за секој проект посебно. Сега сме во фаза на Предлог измени на ПУ, дали МЖСПП ќе каже да на измените.

Борка Ковачевиќ- Всушност колку што разбрав Даниела смета дека ова треба да биде завршен процес па после да излезат проектите. Мислам дека ова е заклучок а не прашање. Да тоа е така се согласувам по законската регулатива.

Иванов Ѓорѓе – МЕД – Ќе дадам свој коментар на статусот Биосверен резерват што го дава УНЕСКО и кој може да ни го одземе исто така и за тоа мора некој да сноси одговорност. Ова не е прашање туку констатција исто така и со прогласувањето за заштитено подрачје со националното законодавство може да се даде или одземе. Целиот биосверен резерват е дел од еден европски венец, мислам како што ние се лутиме за пастрмката на Албанија така ќе ни се лутат нас и соседите кои ги опфаќа биосверниот резерват. За патиштата кои се планирани со проектот, сите сме биле во медитеранските земји и таму инфраструктурата е сведена на минимум заради зачувување на природните пејсажи и автентичноста а кај нас обратно сметаме дека туризмот ќе се развие повеќе а ние сме далеку од нив по однос на туризам за да се споредиме. Документот кој што денес се презентира требаше да биде уште поригорозен во однос на изнесените негативни влијанија врз природата на паркот. Изведувачот треба да ги земе предвид нашите забелешки и препораки. Во однос на ски центарот каде што се планира да се гради, тој простор претставува коридор за движење на дивите животни. Дел од конекцијата ќе се затвори. Исто така вознемирувањето на животните кои се територијални претставува голем негативен фактор нивното вознемирување, поготово на балканскиот рис, на тој простор затоа што ски центарот зазема голема територија. Треба да се изврши мониторирање на тој предел дали има присуство на Балкански рис и ако нема зошто нема.

Александар Мицески-физичко лице, Охрид – Во документот во детали се опишани негативните влијанија од измените на ПУ но и социо-економските интереси, па јас прашувам кои се тие социо-економските причини, ќе има ли работни места на краток период, ме интересира дали е извршена процена која е користа а која е штетата од овие проекти. Мислам дека има низа мерки да се преземат а да не биде засегнат Националниот парк Галичица. Би сакал во тој правец да ми одговорите.

Борка Ковачевиќ- ГИМ - Во овој документ не се направени такви проценки или мерења во смисол на тоа колку вработувања и слично. За секој од овие пет проекти понатаму ќе ја развива документацијата за можен број на вработувања и слично. Во оваа фаза на постапката не е можно да се направат такви проценки. Ова е еден општ документ.

Наташа Радвановиќ - претставник на KFW банката- Констатира дека до 31.01.2015 година треба да се достават писмени мислења, забелешки, предлози и сл. И што понатаму, кој ќе биде процедурата.

Оливер Аврамоски - ЈУНПГ - Одговори на ова прашање кој истакна дека после завршувањето на јавната расправа ќе се изготви записник и по забелешките од денешната расправа и по Вашите писмени мислења доколку доставите должни сме да Ви одговориме за сите предлози, мислења и слично, дали се прифатени, дали не се

прифатени, дали се вградени во документот или зошто не се. На Вашите мислења ќе Ви одговори ЈУНПГ Охрид, заедно со тимот од ГИМ и тимот од Биеоко.

Откако ќе се внесат во документот истиот се испраќа на согласност во МЖСПП и тие во рок од два месеци треба до нас да достават мислење и доколку нивното мислење е позитивно документот Измени на ПУ го донесува Управниот одбор на ЈУНП Галичица Охрид.

Борка Ковачевиќ- ГИМ - Им се обрати на присутните дека ни е потребно Вашето мислење за да го подобриме документот.

Наташа Радовановиќ - претставник на KFW банката- Ние сакаме да помине расправата а потоа ќе доставиме мислење.

Борис Стојаноски, Еколошко друштво „Грашница“, Охрид-Ме радува храброста на дискусантите, добивме поддршка од сите страни. Јас сум вклучен и запознат со оваа работа сум присуствувал на состаноци од Биосверен резерват. Прашање до претставниците од Р.Албанија, дали ќе се зложат да ги стопираат овие проекти затоа што ќе предизвикаат негативно влијание врз природата и на нивна страна како соседи.

Силвамина Алсхабани – Р.Албанија- Ние сме погранично подрачје и секако дека ќе има влијание но не можам да се произнесам. Откако ќе го добиеме документот ќе доставиме писмено мислење подетално.

Весна Илиевска Утевска - “Еко Свест”- Прочита одредби од IUCN – примарната цел на националниот парк е да се зачува природата. Треба да се процени преку целта, дали дејствијата што се преземаат влијаат на примарната цел за која е прогласено подрачјето. Во ваква ситуација имаме избор или проекти или национален парк. Имплементацијата за овие проекти е крај за националниот парк Галичица.

Во врска со ставовите на ЕБОРД, која ќе ја финасира изградбата на патиштата со цел економски раст и развој, се поставува прашањето дали економскиот раст и развој е категорија што би се употребила за национален парк, да но за раст и развој но не за национален парк.

Д-р Светозар Петковски – претставник на Биеоко Скопје-Истакна дека е потребно да расчистиме во врска со IUCN, многу погрешно се толкуваат. Кога се правеше ЗПП имаше и Ваши претставници. Примарна цел е заштита на природата а втора цел е развој на масовен туризам. Зошто имаме зонирање. Кога ќе се прави новиот закон ќе реагираме.

Александра Бујароска – Фронт 21/42 Скопје- Според сите законски одредби проектите не треба да се спроведат. Ако се земе СОВЖС никаде не пишува масовен туризам.

Трајче Талевски-ЈНУ Хидробиолошки завод Охрид – Сакам да поставам едно прашање до Д-р Свето и Проф. Трендафилов. Дали презонирањето е направено во служба на овој проект за изградба на пат и другите проекти односно дали симнувањето на категоријата од повисоко кон пониско е во служба на овие проекти.

Оливер Аврамоски – ЈУНП Галичица Охрид – Даде одговор на претходниот дискусант. ЈУНП Галичица Охрид имаше задолжение од Владата на РМ да изготвиме измени на ПУ за да се овозможи изградба на проектите што ги предложи Владата на РМ и согласно закон се изработи и овој документ. Немавме алтернатива.

Иванов Ѓорѓе – МЕД – Национален парк се прогласува за заштита на природата на долгорочен план и внатре се дозволени само рекреативни и едукативни активности. Масовен туризам во Европските држави во националните паркови се избегнува, така треба и во НПГ, масовниот туризам да се избегнува а да се развива руралниот туризам. Ако зборуваме за одржлив развој, масовниот туризам не може да биде одржлив. Во националните паркови во Македонија се предвидува масовен туризам и има тенденција изградба на ски центри на секоја планина или во радиус од 30 км. неколку ски центри со пропратни објекти. Во законот не е предвидено масовен или рурален туризам, но ако не се држиме до Европските стандарди за заштита кој ќе дојде како турист. Дали ќе очекуваме да дојдат странски туристи коа ќе прочитаат по сите весници дека кај нас масовно се уништува природата. Ова беше само моја констатација истакна дискусантот.

Д-р Светозар Петковски – претставник на Биеко Скопје-Многу ми се допадна дискусијата на младиот дискусант и зачувајтеја кога ќе го менуваме Законот за заштита на природата според кој критериуми ќе ги дефинираме заштитените подрачја.

Не давајте паушални изјави за масовен туризам, секој ќе ви рече, каков туризам се Плитвички Езера, Постојна Јама, Триглав и други еве барем овие што ги знаеме.
Забелешка: Записникот е извадок од аудио записот и ги дава сублимирано исказите на говорниците.

Република Македонија
Министерство за животна средина
и просторно планирање

ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА

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6000 Охрид
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Предмет: Мислење по Извештај за стратегиска оцена на
животната средина

Врска: ваш бр.03-723/5 од 11.11.2014; наш бр.15-11304/1 од 11.11.2014

Почитувани,

Во врска со Вашето барање на мислење, ваш бр. 03-723/5 од 11.11.2014 година, по доставениот Извештај за стратегиска оцена на животната средина Предлог изменина план за управување со Национален парк Галичица - Општина Охрид, а врз основа на спроведена постапка за стратегиска оцена на животната средина, Министерството за животна средина и просторно планирање дава **позитивно мислење** и ви ги доставува следните забелешки кои треба да ги имате во предвид при јавната расправа и подготовката на финалниот извештај.

Во прилог на наведеното, Министерството за животна средина и просторно планирање посочува дека предметниот Извештај за стратегиска оцена на животната средина ги содржи аспектите за заштита на животната средина, како и економските и социјалните прашања во фазите на планирање и имплементирање на планот, како и преглед на регулаторната рамка и процедури кои ќе служат како основа за проценки на влијанијата врз животната средина за сите идни подпроекти кои би се реализирале во рамки на планот.

Согласно наведеното, Министерството смета дека е постигната општата цел на Извештај за стратегиска оцена на животната средина, односно дека е направена целосна анализа на потенцијални влијанија од донесувањето и имплементацијата на Урбанистичкиот план кој е предмет на стратегиска оцена, а воедно се утврдени и

мерки за заштита, намалување и неутрализација на негативните влијанија и план за мониторинг на животната средина.

Воедно Ве информираме дека процесот на спроведување на стратегиска оценка на животната средина треба да продолжи со следниве чекори:

1. Пред започнувањето на постапката за усвојување/донесување на планскиот документ, субјектот заедно со нацртот на планскиот документ и извештајот за стратегиската оценка на животната средина во рок од пет работни дена објавува информации за местото каде може да се разгледа нацрт / предлог плански документ и извештајот, односно спроведува постапка за учество на јавноста.
2. Како можни начини за вклучување на јавноста, правни, физички лица, како и други засегнати страни се објавување на истите на веб страната на субјектот, или преку организирање на јавна расправа, трибини, емитување на телевизиски емисии и слично.
3. Министерството, јавноста и други правни и физички лица го доставуваат своето мислење до субјектот во рок од 30 дена од денот на објавување на нацрт / предлог плански документ и извештајот за стратегиска оценка.
4. Откако ќе се систематизираат мислењата, наодите и мислењата од засегнатите страни, субјектот е должен да ги интегрира во извештајот за стратегиската оценка на животната средина и да го достави до надлежното Министерство.
5. Министерството е должно во рок од 60 дена од денот на достасување на документацијата да ја оцени соодветноста односно исправноста на планскиот документ и извештајот.
6. Потоа субјектот треба да ја објави одлуката за усвојување на планскиот документ.
7. Органот е должен да ги следи ефектите врз животната средина и врз здравјето на луѓето од спроведувањето на планскиот документ, со цел во раната фаза да се согледаат евентуалните негативни ефекти, како и санирање на истите доколку се појават.

Со почит,

Министер,
Nurhan Izairi

Изработил: Милева Тагасовска
Проверил: Сашо Апостолов

Одобрил: Неби Реџепа



КОМЕНТАР

на Нацрт-Извештај за СЕА за Предлог измени на План за управување со Национален парк Галичица за период 2011-2020 година

ОСНОВНИ КОМЕНТАРИ

Посебно треба да се обрати внимание дека со измените на Планот за управување со НП Галичица, природната зона на паркот (зоната на строга заштита и зоната за активно управување) ќе се намали за 1,4% во однос на постојното зонирање.

Посебно е значајно што НП Галичица се наоѓа во граници на светско природно и културно наследство на Охридскиот регион и овој простор подлежи под меѓународна заштита, согласно Конвенција за заштита на светското културно и природно наследство-УНЕСКО.

НП Галичица е вклучена во Националната Емералд мрежа на Подрачја од посебен интерес за зачувување (ASCI), назначени со цел зачувување на мрежата на природни станишта и се развива на територијата на земјите членки на Бернска конвенција (Конвенција за зачувување на дивиот свет и природните живеалишта во Европа).

Воедно НП Галичица е идентификуван како значајно еколошко подрачје за растенија и пеперутки.

СПЕЦИФИЧНИ КОМЕНТАРИ

Во Нацрт-Извештајот за СЕА на План за управување со НП Галичица, во поглаве 2.3 - Врска со други плански документ, излистани се одделни документи, кои не се релевантни во однос на заштита на природата:

- **Стратегија на биолошката разновидност со акционен план** (не е во важност од 2008 година). Изработена е нацрт-верзија на нова Стратегија за биолошка разновидност со Акционен План, а таков податок во Нацрт-Извештајот за СЕА не е наведен
- **Национална стратегија за развој на туризмот 2009-2013** (не го третира прашањето на зонирање на НП Галичица, ниту заштита на дивите видови и природни живеалишта)
- **Стратегија за регионален развој на Република Македонија 2009-2019** (не го третира прашањето на зонирање на НП Галичица, ниту заштита на дивите видови и природни живеалишта)
- **Стратегија за одржлив локален економски развој на Општина Охрид** (не го обработува прашањето на зонирање на НП Галичица, ниту заштита на дивите видови и природни живеалишта)
- **Стратегија за развој на општина Ресен** (не го обработува прашањето на зонирање на НП Галичица, ниту заштита на дивите видови и природни живеалишта)

На страна 43 од Нацрт-Извештајот за СЕА е наведено дека: *"Целите на стратегиската оцена се содржат во: Законот за управување со*

светско природно и културно наследство на Охридскиот регион (Службен весник на РМ број 75/10) и Национална стратегија за развој на туризмот 2009 – 2013, Влада на РМ.

Целта на стратегиска оцена е пропишано согласно Законот за животната средина, а истата е поврзана и со Законот за заштита на природата".

Во најголем дел податоците во поглавјето 5.4 - Еколошки и биолошки карактеристики, Екосистеми, живеалишта и вегетација засегнати од плански опфат се преземени од документот-Предлог измени на План за управување со Национален парк Галичица за период 2011-2020 година. Препорачуваме да се проанализираат и други стручни и научни трудови за Еколошки и биолошки карактеристики

Во поглавје 8 - Анализа на алтернативи на страна 177 и 178: "За предметните измени на ПУ на НП Галичица, не се приложени алтернативи во однос на планираните проекти за кои се иницира промената на зоните во паркот, во смисла на капацитет и местоположба, како ни алтернативи поврзани со предложените промени во зонирањето. Разгледувањето на различни алтернативи за предложениот плански документ е обигаторно согласно Уредбата за Нацрт Извештај за стратегиска оцена на животна средина"

Недостатокот на разгледувани алтернативи го оневозможува изготвувачот на Нацрт извештајот за СОЖС да ги анализира позитивните и негативните страни на можните алтернативни решенија, односно го оневозможува изготвувачот да го оправда изборот на најдоброто решение".

Мислиме дека изготвувачот треба да даде алтернативни решенија, во колку се спроведуваат проектите за ски-центарот, експерсниот пат и туристичко развојните зони Лубаништа, Стење и Отешево. Тогаш која е целта на Нацрт-Извештајот за СЕА.

На страна 190 е наведено дека: "Врз основа на анализата и дискусијата може да се заклучи дека согласно законските обврски и постојните податоци за влијанието на предложените проекти следните три видови се издвојуваат како најзначајни: цвиикева качунка (*Crocus cvijicii*), живоинов смил (*Helichrysum zivojinii*) и аполонова пеперутка (*Parnassius apollo*).

Ако како најзначајни на подрачјето на НП Галичица се издвојуваат горенаведените видови, треба да се наведе како би можеле да бидат загрозувани од предвидените инфраструктурни проекти, тогаш потребно е да се предвидат и мерки за нивна заштита и зачувување.

На страна 202 е наведено дека: "Поради непостоење на детални податоци поврзани со живеалишта и видови значајни за заштитата, **не може да се оцени вистинското влијание на измените на Планот за управување и измените на зоните на заштита заради реализирање на предвидените проекти. Промената на зоните и реализацијата на**

проектите пред да се извршат овие истражувања, може да доведе до деградација на живеалиштата и популациите на видовите уште пред тие да бидат соодветно истражени. Поради тоа, главна мерка за заштита на биодиверзитетот во НП Галичица е спроведување на дополнителни истражувања на живеалиштата и видовите пред да се направат било какви промени на зоните и спроведување на планираните проекти".

Мисламе дека не може главна мерка за заштита на биодиверзитетот во НП Галичица да биде спроведување на дополнителни истражувања на живеалиштата и видовите.

Предлог измени на План за управување со Национален парк Галичица за период 2011-2020 година вклучува детална анализа на природните живеалишта, флората и фауната во опфатот на инфраструктурните проекти. Тоа е наведено во овој извештај за СЕА во поглавје 9.8 - Влијание врз флора и фауна и живеалишта, односно е преземено од Предлог измените на Планот за управување со Национален парк Галичица за период 2011-2020 година.

Предлагаме да се направат истражувања и на бројноста и густината на популациите на дивите видови и за тековната состојбата со природни живеалишта, кои се во опфатот на инфраструктурните проекти.

На страна 206 од Извештајот за СЕА Поглавјето 11 - План за мониторинг врз животната средина, истиот треба да се доработи во смисла на утврдување на динамика за мониторинг на биодиверзитетот пред започнување на инфраструктурните проекти, за време на нивно реализирање и миниуми 3 години по нивното завршување.

На страна 207 во Табела 35 - План за мониторинг на животната средина, делот за биолошка разновидност е даден доста општо. Треба да се наведат клучните видови дива флора, фунги и фауна и природни живеалишта кои ќе се монитираат.



Република Македонија
Министерство за финансии

УСТАНОВА НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА
ОХРИД

Примен: 13.01.2015

С. ЕДН.	БРОЈ	ПРИЛОГ	ВРЕДНОСТ
03	28		

ОМВ БР. [Handwritten]

ДО: ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА

Бр. 07-45510/2
Скопје, 31. 12. 2014 година
Република Македонија
Министерство за финансии
Даме Груев 12,
1000 Скопје,
Република Македонија
Тел.: ++ 389 3255 529
Е-пошта:
martin.noveski@finance.gov.mk
Веб страна: www.finance.gov.mk

Предмет: Мислење

Врска: Ваш допис бр. 03-723/8 од 25.12.2014 година

Почитувани,

Во врска со вашата Покана за доставување на мислења, предлози и препораки по нацрт Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2011 - 2020 година, Министерството за финансии од аспект на своите надлежности го дава следново мислење:

Изработката на извештајот произлегува од законската обврска на изработувачот на планскиот документ да спроведе постапка за стратегиска оценка на влијанието врз животната средина и здравјето на луѓето, согласно Законот за животна средина.

Имајќи го предвид горенаведеното, Министерството за финансии нема забелешки по однос на предметниот документ.

Со почит,

Изработил: Мартин Новески
Проверил: Тоше Пановски
Аница Ивановска-Стрезовска

Елена Трпковска
Државен советник



[Handwritten signature]

Документ бр. 23-01-2015



Република Македонија
Министерство за образование и наука

ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА
ОХРИД

Примено: 23.01.2015			
Ср. бр.:	Бр.:	Пр. бр.:	Вредност:
03	59		Министерство за образование и наука

До:
Јавна установа Национален парк Галичица
Велестовски пат бб, 6000 Охрид
Република Македонија

Бр. 15-20700/2-14
21-01-2015 год

Предмет: Доставување мислење

ул. Св. Кирил и Методиј бр. 54
1000 Скопје
Република Македонија

Врска: Ваш бр. 03-723/8 од 25.12.2014 год.

Тел. (02) 3117 896
Факс: (02) 3118 414

Веб страна: www.mon.gov.mk



Почитувани,

Министерството за образование и наука го разгледа вашето барање за мислење на доставениот нацрт „Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за периодот 2011-2020 година, и го доставува следното мислење:

Според превземените активности наведени во горенаведениот извештај Министерството за образование и наука во целост ги подржува активностите и нема забелешки во однос на текстот на извештајот.

Со почит:

Министер,
Abdillim Xhefiri

Изработил: Костадин Марков
Контролирал: Живко Колчакоски
Одобрил: М-р Светлана Пинева

Доцна
амбасер

23.01.2015

Ј.П. "МАКЕДОНИЈАПАТ" - Скопје



Македонијат

ул. "Даме Груев" 14, Скопје

Поштенски фах 529

Жиро сметка: 200000002559725

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ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА - ОХРИД
www.makedonijapat.com.mk

тел. дир 02/ 3138-724

3138-746

факс: 3138-736

3239-452

Наш број: 13-9/2
Ваш број:

Примен: 23.01.2015			
С. број	С. број	П. број	ВРЕДНОСТ
03	58		Скопје, 21.01.2015 год.

ДО

**ЈАВНА УСТАНОВА НАЦИОНАЛЕН
ПАРК ГАЛИЧИЦА - ОХРИД**

**ПРЕДМЕТ: Мислење по нацрт Извештајот
За стратегиска оценка за влијание
на животната средина на Предлог
измените за Планот за управување
со Национален парк Галичица за
период 2011-2020 година**

Почитувани,

Во врска со Вашата покана за земање учество во јавната расправа за нашите забелешки, мислења и предлози по нацрт Извештај за стратегиска оценка („нацрт СОВЖС“), Ве информираме дека нацрт извештајот за стратегиска оценка за влијание на животната средина за Планскиот документ немаме забелешки и предлози, бидејќи Нацрт - Извештајот за стратегиска оценка од ГИМ е стручно, професионално направен.

Со почит,



**Раководител на одделение
за јавни набавки**

Маријана Георгиевска

КО:

- Архива
- Сектор 13/МГ



ЈАВНО ПРЕТПРИЈАТИЕ ЗА УПРАВУВАЊЕ И
ЗАШТИТА НА ПОВЕКЕНАМЕНСКОТО ПОДРАЧЈЕ

ЈАСЕН

Јавно претпријатие за управување
на повеќенаменското подрачје "ЈАСЕН"

Бр. 03-73/1
30.01. 2015 год.

До СКОПЈЕ

Јавна Установа Национален Парк Галичица
Велестовски пат бб, Охрид 6000
Република Македонија

Предмет: Мислења, предлози и препораки по Нацрт измените на Извештајот за стратегиска оценка за влијание на животната средина на Предлог измените за управување со Национален Парк Галичица за период 2011-2020 година.

Почитувани,

Врз основа на Вашето барање бр. 03-723/8 од 25.12.2014 год. Ве известуваме дека откако го разгледавме Нацрт Извештајот за стратегиска оценка изготвен од страна на Градежниот Институт Македонија, нашиот стручен колегиум одлучи дека во целост ги исполнувате условите предвидени со Законот за животна средина и дека има развојна компонента за предвидените проекти:

- Туристичко развојна зона „Отешево“, КО Отешево, општина Ресен;
- Туристичко развојна зона „Стење“, КО Стење, општина Ресен;
- Туристичко развојна зона „Љубаништа“, КО Љубаништа, општина Охрид;
- Развој и изградба на ски центар во Национален парк Галичица

ЈПУЗПП "Јасен"-Скопје во целост ги подржуваат ваквите проекти кои го промовираат туризмот во Македонија. Нашите предлози и препораки се да се сочува површината под шума, да се зголеми нивната вредност и да се обезбеди најголем прираст според природните услови на месторастење, да се обезбеди одржливо управување, планирање, стопанисување со шумите, чување на шумите и шумското земјиште на начин и во обем со кој трајно се одржува и унапредува нивната производна способност, биолошка разновидност, способност за обнова и виталност во интерес на сегашниот и идниот развој на економските, еколошките и социјалните функции на шумата, а притоа да не се наруши екосистемот.



Влада на Република
Македонија

Бр. _____
Скопје,

ЈПУЗПП ЈАСЕН
11 Октомври 23 а
1000 Скопје
Тел. (02)3115-016
(02)3239019
info@jasen.com.mk
www.jasen.com.mk





ЈАВНО ПРЕТПРИЈАТИЕ ЗА УПРАВУВАЊЕ И
ЗАШТИТА НА ПОВЕЌЕНАМЕНСКОТО ПОДРАЧЈЕ

ЈАСЕН



Шумите без оглед на сопственоста и намената, имаат заштитни и општокорисни функции. Заштитните функции на шумите се остваруваат особено преку, заштита на земјиштето, правилна изградба на сообраќајниците и други објекти за заштита од ерозија, поројни надоаѓања и поплави, влијание на водниот режим и режимот на ерозивните наноси, заштита на електроенергетските, хидромелиоративните, водоснабдителните системи и објекти, заштита на населби и објекти од јавен и локален интерес во државна и приватна сопственост и проширување и облагородување на урбаните зони. Општокорисните функции на шумите се во насока на одржлив развој и унапредување на животната средина и се остваруваат особено преку: подобрување на плодноста и заштита од загадување на земјиштето, намалување и запирање на ерозивните процеси, создавање на кислород и прочистување на атмосферата, зачувување на природните вредности и биолошката разновидност, создавање поволни услови за одмор, спорт и рекреација, развој на туризмот и ловството.

Скопје, 30.01.2015 год.

Со Почит,

Референт за искористување:
Дипл.инж. Гоце Ставревски

ЈПЗП ЈАСЕН
Директор
дипл. инж. Михаил Малахов





ВЛАДА НА РЕПУБЛИКА МАКЕДОНИЈА
Агенција за промоција и поддршка на туризмот на РМ

Агенција за промоција и поддршка
на туризмот на Република Македонија

Бр. 03-68/2
28.01 2015 год
СКОПЈЕ

ОМБЕР 29.01.2015
ДОЧУХ

Број: 001
Дата: _____ 2015 година

ДО: Јавна установа национален парк Галичица
Велестовски пат бб, 6000 Охрид

Предмет: Доставување на мислење

Почитувани,

Согласно вашата покана за "доставување на мислења, предлози и препораки по нацрт Извештајот за стратедиска оценка за влијание на животната средина на Предлог измените на Планот за управување со Национален парк Галичица за период 2011-2020 година", а согласно и основната дејност и надлежност, како и програмата на Агенцијата за промоција и поддршка на туризмот на РМ, предвиден е проект за развој на туризмот во РМ од сегментот „Активности во природа“, проект "Летање во природа".

Агенцијата доставува предлог за реализација на проектот "Летање во природа", во кој НП Галичица ќе разгледа можности за негова реализација. Ве известуваме дека од страна на агенцијата ќе биде изготвен основен проект одкога ќе биде конкретизирана локацијата од ваша страна и вметнато во годишната програма на општината.

Проектот "Летање во природа" подразбира поставување на систем за летање поврзан со дрвени платформи како и придружни објекти за опрема. Овој проектот се реализира во природна средина за кој не се предвидуваат никакви негативни влијанија за животната средина. Затоа ве молиме да го земете во предвид во извештајот за стратедиска оценка за влијание на животната средина.

За сите понатамошни информации ќе останеме во контакт. Се надеваме на успешна соработка.

Со почит,
ДИРЕКТОР,

Кристијан Цамбазовски



Изработил: Огнен Темелковски
Контролирал: Зоран Николовски

Влада на Република
Македонија

АППТРМ

Ул. Дебарца бр.2
1000 Скопје,
Република Македонија
Тел. (02) 3223 146
(02) 3223 101

Факс:
Е-пошта:
info@tourismmacedonia.gov.mk





ОМБЕР
29.01.2015

До Јавна установа Национален парк Галичица

Предмет: Мислење и препораки

По однос на вашата покана бр. 03-723/8 од 25.12.2014 год. за доставување на мислења, предлози и препораки по нацрт Извештајот за стратегиска оценка за влијание на животната средина на предлог измените на Планот за управување со Национален парк Галичица, Советот на ЈНУ Хидробиолошки завод – Охрид, на седницата одржана на 27.01.2015 год. го усвои следното мислење и препораки:

Извештајот претставува комплексна и детална студија која ги содржи сите аспекти на заштита на животната средина.

Врз основа на расположивите податоци направена е анализа на еколошките и биолошките карактеристики на НП Галичица, одредени се значајните типови на живеалишта, нивната биолошка разновидност и вредност на самото живеалиште согласно Директивата за живеалишта и нивната врска со системот за класификација на живеалишта според EUNIS. Воедно, даден е и детален опис на засегнатите живеалишта опфатени со проектите, вклучително и видовите кои типично се среќаваат во нив.

Изработена е целосна анализа на потенцијалните влијанија од донесувањето и спроведувањето на Планот кој е предмет на стратегиската оценка, нагласувајќи дека најголем дел од влијанијата врз животната средина се со поголем обем и неповолни, што е логично доколку во предвид се земе големината на предметниот опфат и предвидените содржини.

Изготвувачот на Извештајот предвидува план за мониторинг врз животната средина, како и соодветни мерки на заштита, намалување, неутрализирање или целосно избегнување на негативното влијание врз природното и културното наследство во регионот.

Како што нагласува и самиот изготвувач, сите развојни активности и проекти кои се преземаат во националниот парк треба да бидат во насока на заштита на природата, биолошката и пределската разновидност и природното наследство.

Со оглед на фактот дека предметната локација се наоѓа во опфат на просторот заштитен како светско природно и културно наследство, наша препорака е при преземање на активности од било каков обем, во целост да се почитува законската регулатива на Р. Македонија и со особено внимание да бидат земени во предвид сите елементи содржани во Извештајот, а се со цел да се избегнат негативните влијанија врз статусот „национален парк“, и на неговото меѓународно значење како дел од Емералд мрежата од Македонија, Биосферен резерват Охрид - Преспа и Светското природно и културно наследство на охридскиот регион.

ЈНУ Хидробиолошки завод – Охрид

Д-р Сузана Патчева



Oliver Avramoski <oliver.avramoski@gmail.com>

(no subject)

Andreas.Weitzel@kfw.de <Andreas.Weitzel@kfw.de>

Fri, Jan 30, 2015 at 3:14 PM

To: oliver.avramoski@gmail.com

Cc: zoranv.ohrid@yahoo.com, andon.bojadzi@gmail.com, natascha.radovanovic@kfw.de,
Robert.Sarلمانov@kfw.de

Dear Mr. Avramoski,

please find attached our comments to the report.

Mit freundlichen Grüßen,

Andreas Weitzel

Von: Oliver Avramoski [<mailto:oliver.avramoski@gmail.com>]

Gesendet: Donnerstag, 25. Dezember 2014 15:32

An: Weitzel, Andreas; Radovanovic, Natascha (Büro Skopje)

Cc: Zoran Veljanovski; Andon Bojadzi

Betreff: Re:

[Quoted text hidden]



Galichica SEA Report - Questions_update.docx

17K

Galichica SEA Report

Questions for the Public debate

Technical issues:

- Terminology in the English version
- Unclear statements using e.g. "Draft report". It is very difficult to know to which report the authors are referring to.
- Also usage of imprecise formulation, including etc, some., others must be avoided to avoid unclear statements
- Not all abbreviations are listed (PD, PLB, MEPSO). Some abbreviations in the report are coming from Macedonian terminology (in particular the one for the zones)
- There's a mistake with regards to the percentage of the Zone for sustainable usage on p. 16
- Some statements in the report are not clear if they are referring to the actual MP or to the draft amendments to the MP (e.g. Table 1. Third row, third paragraph on Spatial Plan).
- Table 1 has no reference in the report. That is the case for many tables in the report.

Questions

1. During the reading of the report we got an impression that sustainable development concept () is not being fully and integrally considered. E.g. in the Principle of Sustainable development environment at the beginning of the report, Environment is not even mentioned, whereas "economic social and technical activities" prevail. What is the reason for this?
2. Preservation has been named in the same Principle. Do you think by changing the zones, biodiversity will be preserved?
3. The report states reduction of Zone of active management is only 1.4%. Do you think the impact on the biodiversity and eco-systems can be measured in %?
4. The report is practicing most often "will" instead of "would", "should". Why is this case?
5. Sometimes the impression is that EIA and SEA procedures and directives are being mistaken (Table 3)
6. What is a directed sustainable development (Chapter 4.1, bullet 5)
7. On p.42 you are mentioning what the goals of the strategic assessment entail. Can you describe the meaning of this part? Under this same title, Public participation and implementation of projects are being mentioned. Why Projects?
8. On p. 67 it is written: By analyzing the spatial data of the proposed project scopes and the habitats within the Park 4 types of endangered habitats have been identified in accordance with the Habitat Directive of the European Union that will be included in the execution of the projects. Is it certain those Projects will be executed? If yes, why preparing this report?

Questions to be posed during the public debate

9. You have mentioned under Chapter 7 the main goals of the Management Plan are to “provide stability of environmental processes and the biologic and area diversity, protection of natural habitats, conservation; “Do you think, the Draft amendments and the changes of the zones will affect negatively these goals?
10. There is very clear statement in the Report (Chapter 7 related to the Goals of Nature and Environment) which states: “The implementation of the foreseen projects because of which are made the amendments to the zones in the NP Galichica, as well as the change of the zoning were not harmonized with the implementation of these goals for protection of the nature and the environment in the national park.” After such a statement including statements on cumulative effects and once you have developed the Table on Impact on p.160 one would expect, you recommend not having the draft amendments to the MP. On contrary the report includes a “Netralization and a Monitoring Plan”? Can you explain, why you have decided to include those despite having many clear statements and conclusion which are clearly showing the draft amendments will no doubt harm the environmental balance?
11. Having in mind the risks as described in the SEA report, such as loosing of the status of National Park or even losing the Ohrid region World Heritage protected status under UNESCO are pointed in the report, we would like to ask what is the strategy if these risks do materialize?



European Bank
for Reconstruction and Development

ЈАВНА УСТАНОВА НАЦИОНАЛНИО ПАРК ГАЛИЧИЦА
ОПШТИНА ОХРИД

Примено	02.02.2015	ДНОСТ
орг. е/		
03	83	

Mr. Oliver Avramoski
Head of the Department for National Conservation
Public Institution National Park - Galichica
Velestovski Pat
6000 Ohrid
Macedonia

30th January 2015

Dear Mr Avramoski,

RE: EBRD Comments on 'Draft Report for Strategic Environmental Assessment for: Draft Amendments to the Management Plan for National Park Galichica for the Period 2011-2020: Technical Report: 0903-1127/3 (November 2014)

The European Bank for Reconstruction and Development (EBRD) would like to thank the representatives of the Public Institution National Park Galichica for the opportunity to provide comments on its *Draft Strategic Environmental Assessment (SEA)* concerning the proposed amendments to the Management Plan for the National Park Galichica (NPG). It is our understanding that these amendments are in relation to changes requested by the Government of Macedonia to enable the construction of a number of proposed development projects, including three tourist development zones, a ski-centre in the NPG and the A3 expressway from Kosel-Ohrid to the border with the Republic of Albania. These amendments will involve changes to the existing management zones of the NP Galichica.

EBRD is currently considering extending financing to the Public Enterprise for State Roads (PESR) for the construction of four road projects in Macedonia. One project under consideration by EBRD is the Ohrid to Peshtani section of the A3 Expressway project.

Like other International Finance Institutions (IFIs), EBRD have specific environmental and social requirements which includes the need to establish a strategic basis for our investments that are in line with the Bank's Environmental and Social Policy, Performance Requirements, national legislation and

relevant EU Directives, regardless of a project's jurisdiction, including the EU SEA Directive (2001/42/EC). As such, we consider the Draft SEA for the proposed amendments to the NPG, as an essential element of the environmental assessment process for these future development projects, including the A3 expressway.

EBRD has reviewed the Draft SEA and provided comments below, which we would respectfully encourage the Public Institution National Park Galichica (PINPG) to take into consideration in the preparation of the next version and/or finalisation of the SEA:

ENVIRONMENTAL BASELINE:

Annex 1 of the EU SEA Directive requires SEA reports to present: *(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme; (c) the environmental characteristics of areas likely to be significantly affected.*

Based on the discussions with the Macedonian NGO Bioeco, we are of an understanding that there is extensive biodiversity baseline data that has been collected over the past several years, which has enabled NPG to (i) identify EU Habitats Directive (92/43/EEC) listed species and (ii) develop detailed habitat maps (http://galicica.org.mk/home_page.html), some of which have been included in the SEA. The draft SEA however states, in a number of places, that there is insufficient baseline data to determine the negative and positive effects of the development projects, which is required in order to support the re-zoning. This disconnect, potentially exposes NPG to external criticism from civil society organisations. Accordingly, we would suggest that these sections of the draft SEA be revisited to confirm whether there is truly an absence of data or whether this was simply an oversight in the drafting of the SEA.

CONSIDERATION OF ALTERNATIVES:

The EU SEA Directive requires an assessment of 'reasonable alternatives' (Art. 5(1)) Annex 1 of the EU SEA Directive also requires SEA reports to present: *(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information*

- According to the draft SEA, the assessment only considers the 'Null Alternative' of the development projects not proceeding and no other alternatives have been considered. The lack of consideration of reasonable alternatives appears to be outlined in the last paragraph in Section 8, which states *'no alternatives have been given when it comes to planned projects for which is initiated the change of the park zones'*. Again, EBRD is of the understanding that at least 3 road alignments of the A3 expressway were considered by PESR, as were alternative sites for the proposed ski-hill. To demonstrate compliance with the EU SEA Directive and the Macedonian Regulation (No. 153/07), EBRD recommends that any alternatives considered to these developments, even at this early stage, be included in the SEA in order to demonstrate that the mitigation hierarchy has been/will be followed, to ensure that biodiversity and ecosystem functions are not degraded and/or lost from the landscape (e.g. use of tunnels through certain sections of the A3 expressway etc.)

IMPACT ASSESSMENT:

Annex 1 of the EU SEA Directive requires SEA reports to present: *'the likely significant effects (1) on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;'*

- The NP Galichica is an important environmental resource and parts affected by the proposed re-zoning fall under a number of national, European (e.g. Emerald Site) and International Designations (UNESCO World Heritage Site/OUV). It is therefore essential that the SEA considers the impacts sufficiently, especially given the natural value and protection afforded to the National Park under these designations. Specifically, we would recommend that the impact assessment section of the SEA be revised to establish a robust strategic basis to support the re-zoning of the park. Key areas include:
 - Impacts on flora and fauna, and related priority biodiversity features to ensure No Net Loss of biodiversity, protected habitats (e.g. Active Management Zones) and the ecological functions that they support;
 - Impacts on cultural and historical heritage;
 - Impact on landscape;
 - Cross-border/Trans-boundary impact – *the outcomes of trans-boundary consultations on the re-zoning needs to be robustly reported in the SEA to meet the provisions within the EU SEA Directive.*

Also at present, EBRD does not consider the current level of assessment of potential cumulative effects associated with the development projects to be sufficient. The cumulative impact assessment will need to consider the changes and impacts that may result because of the combined proposed developments, with a particular reference to the landscape sensitivity, cultural heritage and biodiversity. This would need to include consideration of induced impacts as a result of the increased access from the proposed project developments.

ASSESSMENT UNDER THE HABITATS DIRECTIVE:

The NP Galichica is an Emerald Site and also contains important habitats and species which are covered by the Habitats Directive and Birds Directive. We welcome that the draft SEA report does identify the existence of significant habitat types within the Park (Section 5.4). Within the draft SEA we would request clarity on how the SEA meets the provisions of the Habitats Directive (specifically those under Art.6(3)) and that it references other future assessments that are to be prepared and/or are required to meet the Habitats Directive due to the potential re-zoning. This should also clarify details of assessments that may need to be carried out at an individual development project level.

MITIGATION, MONITORING AND OFFSETTING REQUIREMENTS FOR DEVELOPMENT PROJECTS:

Annex 1 of the EU SEA Directive requires the SEA report to present: *(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;*

- Whilst we recognise and support the need for individual development projects to undertake detailed studies to assess project specific environmental and social impacts; the SEA should make an overarching commitment to offset the planned conversion of the nearly 400 hectares

of Active Management Zone (AMZ) to Sustainable Use Zones (SUZ). This commitment to future offsets could include the identification of areas within the park where current protection status could be enhanced/augmented, or even the possibility of expanding the current park boundaries to ensure that any rezoning of NPG will result in a No Net Loss of biodiversity.

Upon reviewing the Bank's recommendations to *Draft Report for Strategic Environmental Assessment for: Draft Amendments to the Management Plan for National Park Galichica for the Period 2011-2020: Technical Report: 0903-1127/3*, we would welcome the opportunity to meet to discuss the points raised herein at your earliest convenience.

Yours sincerely,



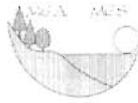
Anca Ioana Ionescu
Head of EBRD Skopje Resident Office

ОМВГР

ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА
ОБРИД

Примено:	02.02.2015		
орг.е.	К	П	ОДНОСТ
03	86		

FR NT₂₁₄₂



30.01.2015 година, Скопје

До:

Национален Парк Маврово 

Копија до:

Одделение за стратешка оценка на влијанието врз животната средина

Сектор за просторно планирање

Министерство за животна средина и просторно планирање

КОМЕНТАРИ КОН НАЦРТ ИЗВЕШТАЈОТ ЗА СТРАТЕГИСКА ОЦЕНА НА ЖИВОТНАТА СРЕДИНА ЗА: ПРЕДЛОГ ИЗМЕНИ НА ПЛАН ЗА УПРАВУВАЊЕ СО НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА ЗА ПЕРИОД 2011-2020 ГОДИНА

Предлог измените се донесни врз основа на податоците со кои веќе располага Јавната Установа Национален парк Галичица и во процесот на изработка на измените не се спроведени дополнителни истражувања или студии. Во Планот е истакнато дека изградбата на само еден од проектите (ски центарот) ќе афектира значаен дел од пошироките живеалишта на конзервациски значајните видови и тоа *Crocus cvicii*, *Helichrisum zivoinii* и особено значаен дел од живеалиштето на *Parnassius Apollo*. Во живеалиштата кои се предмет на анализа при разгледување на развојните проекти можат да се сретнат поголем број на животински и растителни видови кои имаат статус на строго заштитени видови согласно национални и меѓународни легислативи (директиви, конвенции и сл.) меѓу кои и: *Lycaena dispar*, *Maculinea arion*, *Accipiter brevipes*, *Buteo buteo*, *Falco tinnunculus*, *Athene noctua*, *Ursus arctos*, *Lynx lynx balcanicus* и др. Како што е посочено во Планот за погоре наведените видови ЈУНПГ не располага со просторни податоци кои ги дефинираат: траекториите на движење, места за гнездење, размножување и хибернација. Оттука пред дефинирање и заклучување на промените во однос на зонирањето во НП Галичица неопходни се дополнителни истражувања кои ќе придонесат кон исклучување на секакво можно негативно влијание врз заштените видови.

Според конечната верзија на физибилити студијата и мастер планот за ски центар во НП Галичица доставена на 09.06.2014 год. **значително се зголемува планскиот опфат и додадени се нови содржини.** Иако како што е наведено **новододадените содржини** влегуваат во зоната за одржливо користење сепак **треба да бидат земени предвид при дискутирање и определување на кумулативното влијание кое значителното проширување на опфатот во дополнување на предвидените измени и пренамена на површини под активно управување во зона за одржливо искористување ќе ги имаат врз биолошката разновидност.**

Дополнувањето ќе овозможи да се добие целосна и реална слика за влијанието кое изградбата на ски центарот ќе го има врз животната средина во дополнување на веќе посоченото негативно влијание по однос на 2 од 4-те афектирани станишта вклучени во Анекс I од Директивата за станишта и тоа:

- 1) 6170: Алпски и субалпски калциколни тревници вклучувајќи ги:
 - Планинските затворени калциколни пасишта со власеника врз кои изградбата на ски центарот ќе се одрази негативно или како што е истакнато „состојбата на зачуваност на состоината од ова живеалиште опфатена со проектот ќе биде значително влошена поради силната фрагментација“.
 - Елино-балканските оголени пасишта каде имајќи предвид дека изградбата на ски центарот ќе афектира дури 8% од површината под оваа заедница во Паркот „се очекува негативно влијание врз неговата состојба на зачуваност“.
- 2) 91K0: Илирски шуми од *Fagus sylvatica*: изградбата на ски центарот ќе афектира „3,93% од вкупната површина под ова станиште во Паркот со што состојбата на зачуваност на состоината од ова живеалиште ќе биде сериозно влошена поради силната фрагментација која ќе се изврши со просеките“.

Дополнително како што е нагласено ски центарот вклучува и изградба на капацитети за вештачки снег без притоа да биде доставен детален концепт за потребите и спецификацијата на системот за правење на вештачки снег. Имајќи ги предвид геолошките карактеристики на планината, Галичица сиромашна со површински и истечни води со што се наметнува потребата во предлог измените на Планот за управување со Национален парк Галичица **да биде дискутиран начинот на кој изградбата на капацитетите за вештачки снег ќе се одрази врз постојаните извори и привремените извори на Галичица како и врз хидролошката состојба на Охридското/Преспанското Езеро** кои како што е посочено во Извештајот за стратегиска оцена за измена на Планот „иако не се во границите на Паркот имаат силно влијание во развојот и поддржувањето на значајната биолошка разновидност присутна во границите на Паркот“.

Изградбата на Експресниот пат АЗ, Косел-Охрид-граница со Република Албанија ќе доведе до значителна фрагментација па оттука и намалување на функционалноста како коридор на стаништето-Шуми со *Quercus trojana*, вклучено во Анекс I во Директивата за станишта и единствена функционално и структурно „здрава“ состоина под станиште од ваков тип на западната страна на Галичица.

Во Планот и Извештајот за стратегиска оцена за измена на Планот не се дадени детални податоци за карактерот на градежните зафати и детали за планираните објекти во ТРЗ „Отешево“, Љубаништа 1,2 и 3 и дополнително нагласено е дека воопшто нема детали за планирани или можни објекти и човекови активности во ТРЗ „Стење“. Следствено на тоа во моментот не може да се определи степенот на негативно влијание и начинот на кој промената на зонирањето на површините предвидени за изградба на овие проекти би можело да се одрази по однос на природните вредности на Паркот. При тоа, имајќи предвид дека ТРЗ Љубаништа 3, како и ТРЗ Стење се проектирани во рамки на заштитниот појас на строго заштитените зони: Извориштето на Св. Наум и Стењското Блато во Планот треба да вклучи и измени во прилог на обезбедување на потребниот заштитен појас. Во спротивно, во текот на градежната и оперативната фаза, притоа имајќи го предвид карактерот на предвидените проекти не би можело да се осигури зачувување на вредностите поради кои локалитетите првично се имаат стекнато со статус „строго заштитени зони“.

Дополнително, плановите за туристичките зони и пат навлегуваат во дел од зоните на заштита на паркот каде ваков тип на активности се забранети. Деградирањето на зоните од повисока во пониска согласно Законот за природа е недозволиво. Имено управувањето со зоните во националниот парк треба да доведе до унапредување на животната средина и подобрување на зоните (од зона за одржливо користење во зона за активно управување и строга заштита како што налагаат член 104,105 и 106).

Според погоре посоченото Предлог Планот би требало повторно да се обработи со цел да се анализираат сите можни алтернативи на предложените проекти, онака како што налага Законот за животна средина, со цел максимално да се избегнат можните негативни влијанија. Само на овој начин може да се осигура долгорочно зачувување на Националниот парк Галичица.

Имено, извештајот за Стратегиска оцена за измена на Планот за Управување со Национален парк Галичица за Период 2011-2020 потенцира дека предлог измените можат да доведат до губење на еколошкиот интегритет на екосистемско ниво и карактеристиките на пределот, кои се едни од најзначајните намени на подрачја заштитени во категоријата „НАЦИОНАЛЕН ПАРК“. Според извештајот гледајќи долгорочно, овие промени можат да доведат до влијание на статусот на „национален парк“, и влијание на неговото меѓународно значење како дел од Емералд мрежата од Македонија, Биосферен резерват Охрид-Преспа и Светското природно и културно наследство на охридскиот регион (УНЕСКО) како што и е посочено во официјалниот извештај на УНЕСКО од 38 конференција одржана во Катар во 2014 година.

Согласно член 73 од Законот за животна средина органот кој го подготвува планскиот документ или промената на планскиот документ (во овој случај Националниот парк Галичица), е должен да ги земе предвид наодите од извештајот. Имајќи предвид дека извештајот јасно потенцира дека ефектите од кумулативните промени кои би можеле да настанат со реализација на предложените проекти би можеле да доведат до губење на статусот Национален парк, очекуваме и го охрабруваме Националниот парк Галичица да не пристапи кон измена на планот со цел зачувување на екосистемот во целост.

Согласно Архуската конвенција и Законот за животна средина бараме да ни доставите посмени одговори/мислења на сите коментари и прашања, вклучувајќи и одговор кои ќе бидат земени предвид, кои не и зошто.

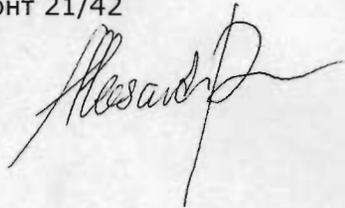
Ве молиме Вашиот одговор да ни го доставите на следниве адреси:

Фронт 21/42
Бул. Јане Сандански бр. 25/2/9, 1000 Скопје

Еко-свест
Бул. 11 Октомври 125/12, 1000 Скопје, Македонија

или по електронски пат на следниве адреси:
aleksandra.bujaroska@front.org.mk, contact@front.org.mk или info@ekosvest.com.mk

Со почит,
Координатор на работната група
Александра Бујароска
Фронт 21/42



Претседател
Фронт 21/42



** Работната група за учество на јавноста е формирана во рамки на проектот „Активизам на дело“ кој се спроведува со финансиска помош на Европската Унија. Во работната група учествуваат: „Фронт 21/42“, Македонски Зелен Центар, Еко-Свест, Македонско еколошко друштво [REDACTED] п. Ставовите и мислењата изразени во овој документ се исклучиво на работната група за учество на јавноста и во ни една смисла не ги одразуваат ставовите и мислењата на Европската Унија.*

Оператор на електропреносниот систем на Македонија
Акционерско друштво за пренос на електрична енергија
и управување со електроенергетскиот систем,
во државна сопственост, Скопје

ОМБСР
05-02-2015

МЕПСО
- МАКЕДОНСКИ ЕЛЕКТРОПРЕНОСЕН СИСТЕМ ОПЕРАТОР

Бр. 10-544
03.02.2015 год.
СКОПЈЕ

Максим Горки бр.4, 1000 Скопје

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www.mepso.com.mk

До
Јавна установа Национален парк Галичица
Велестовски пат бб, 6000 Охрид

Ваш дел.бр. - 03-723/8 од 25.12.2014 год.
Наш дел.бр. - 02-7671 од 29.12.2014 год.

Предмет: Достава на мислење

Почитувани,

Во врска со вашата покана за земање на учество во Јавната презентација и расправа во врска со усвојување на Планот за управување со Национален парк Галичица за период од 2011-2020 год, Ве информираме дека во опфатот од НП Галичица кој е представен во Извештајот за стратедиска оценка изработен од Градежен институт „МАКЕДОНИЈА“ АД МЕПСО нема постоечка и планирана инфраструктура.

Со почит,

Изработил: Јане Герасимоски

Контролирал: Христо Аиновски

Одобрил: Робе Робески



Директор на Подружница ОПМ
Ацо Ристески, дипл.ел.инж

Ко:
- Оддел ДВ
- Подружница ОПМ
- Архива

ОМВСР 11.02.2015

Република Македонија
Јавно претпријатие за државни патишта



ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК „ГАЛИЧИЦА“
ОХРИД

ПРЕМШИ:	11.02.2015	
03	122	Република Македонија Јавно претпријатие за државни патишта

ДО
ЈУ Национален Парк „Галичица“
Велестовски пат
6000 Охрид

Предмет: Достава на податоци за експресен пат АЗ, делница Охрид - Пештани по однос на Нацрт извештај за СОЖС за Предлог измени на План за управување со НП Галичица за период 2011-2020 година

ЕМБС: 6839673
ул.Даме Груев бр.14
1000 Скопје,
Република Македонија

Тел. (02) 3-228-454
(02) 3-118-044
Факс: (02) 3-220-535

Бр. 08-419/2
Дата: 09.02.2015 год.
Скопје

Почитувани,

Во врска со одржаната јавна расправа по однос на Нацрт извештај за Стратегиска оцена на влијание врз животната средина за Предлог измени на План за управување со НП Галичица за период 2011-2020 година, како и по преглед на истиот, Јавното претпријатие за државни патишта Ви ја испраќа последната усвоена траса на предметната делница, изградба на експресен пат АЗ, делница Охрид – Пештани, со соодветни технички карактеристики кои се дефинирани со Основниот проект, во електронска верзија (ЦД).

Ве молиме, оваа усвоена траса да ја имате предвид при промената на Планот за управување со НП Галичица за период 2011-2020 година и истата да биде соодветно приложена во изменетиот План.

Се извинуваме заради доставувањето на усвоената траса неколку дена по рокот за доставување на забелешки (31.01.2015 година), што се совпадна со периодот на избор на нов В.Д. Директор во ЈП за државни патишта. Се надеваме дека оваа забелешка ќе ја имате предвид при инкорпорирањето на усвоената траса за делницата Охрид-Пештани.

Ви благодарам за соработката и останувам,

Со почит,

В. Д. ДИРЕКТОР,
Владо Мисајловски

Прилог: ЦД (траса на АЗ, делница Охрид – Пештани)

Изготвил: Сашка Богданова Ајцева

Контролирале: Јоже Јовановски
Злате Манев

Одобрил: Александар Стојанов

септември 11.02.2015

WWW.UZKN.GOV.MK



Република Македонија

МИНИСТЕРСТВО ЗА КУЛТУРА

Управа за заштита на културното наследство

Бр. 17-19/2

30.01.2015 год.

Скопје

Примено:		11.02.2015	
орг.еди.		БРОЈ	ВРЕДНОСТ
03	121		

ДО

ЈАВНА УСТАНОВА НАЦИОНАЛЕН ПАРК
ГАЛИЧИЦА

Велестовски пат 66

6000 ОХРИД

ПРЕДМЕТ: Мислење по Извештајот за стратегиска оценка за влијание на животната средина за Предлог измените на Планот за управување со Националниот парк Галичица за периодот 2011-2020 година
ВРСКА: Ваше писмо бр. 03-723/8 од 25.12.2014 год.

Во врска со вашето писмо под горниот број за добивање забелешки и мислење по Извештајот за стратегиска оценка за влијание на животната средина за Предлог измените на Планот за управување со Националниот парк Галичица за периодот 2011-2020 година (тех.бр.0903-1127/3 изготвен од Градежен институт „Македонија“ А.Д. Скопје), Управата за заштита на културното наследство го разгледа Извештајот и ги има следните забелешки:

1. Во Извештајот за стратегиска оценка за влијание на животната средина во деловите каде што се обработува културното наследство се употребува терминологија која не е дефинирана во Законот за заштита на културното наследство („Службен весник на Република Македонија“ бр.20/04, бр.115/07, бр.18/11, бр.148/11, бр.23/13, бр.137/13, 164/13, 38/14, 44/14 и 199/14). На пример: во табелата 3. Цели на СОВЖС се зборува за *културни споменици и регистрирани археолошки локалитети*, во насловот 5.6 се зборува за *културно и археолошко наследство* без да се води сметка дека *и регистрирани археолошки локалитети* како и *археолошко наследство* претставуваат составен дел на културното наследство. Во документот исто така не се води сметка за разликата помеѓу *регистрацијата* и *евиденцијата* на културното наследство. Затоа молиме во документот исклучиво да се употребува терминологијата пропишана во Законот за заштита на културното наследство.

2. Во границите на Националниот парк Галичица постојат повеќе поединечно заштитени добра кои претставуваат културно наследство, запишани во Националниот регистар на културното наследство, но и добра за кои основано се претпоставува дека претставуваат културно наследство, запишани во заштитните евиденции. Имајќи ја предвид ваквата состојба, во предложениот документ треба да се прави разлика меѓу заштитените добра кои претставуваат културно наследство и добрата за кои основано се претпоставува дека претставуваат културно наследство (евидентирани добра).

3. Во насловот 5.6 *Културно и археолошко наследство*, каде што се претставува културното наследство, податоците се земени од Просторниот план за Охридско-Преспанскиот регион, односно од заштитно-конзерваторските основи изготвени за овој план. Во овој елаборат покрај заштитените добра се наведени и добра кои се

предлагаат за заштита со предложена категорија, што треба да се потврди со актот за прогласување. Бидејќи за голем број на добра сеуште не е извршена ревалоризација, ниту пак е извршена валоризација за предложените добра, податоците наведени во Извештајот не кореспондираат со званичните податоци од Националниот регистар на културното наследство, односно не се точни, особено оние податоци кои се однесуваат на статусот на објектите и наведената категорија. Затоа податоците за културното наследство **не треба** да се превземаат **посредно од други документи**, туку **непосредно од званичните документи** кои ги поседува Управата за заштита на културното наследство. Некористењето на званична документација довело на повеќе места да се наведат погрешни податоци (на пр. во табелата 49. *Моментална состојба на живојната средина* се наведува постоење на евидентирани и меѓународно заштитени локалитети што не е точно, и.т.н.).

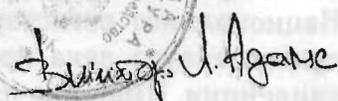
5. Во Извештајот се дадени податоци за културното наследство кои се однесуваат за населени места кои се надвор од границите на Националниот парк Галичица и тоа селективно, само за сакралната архитектура и археолошките локалитети. Ако податоците се наведуваат за поширок регион истите треба да ги третираат сите видови на културно наследство, но бидејќи се работи за територија во строго одредени граници, пожелно би било наведените податоци да се однесуваат само за објектите во назначените граници.

6. Во насловот 9.9 *Влијание врз културното и историското наследство* се наведуваат обврските на Управата за заштита на културното наследство пропишани во чл.31 од Законот за управување со светското природно и културно наследство во Охридскиот регион, меѓутоа е пропуштено да се наведе дека Извештајот за состојбата на светското природно и културно наследство во Охридскиот регион го изготвуваат Управата за животна средина и Управата за заштита на културното наследство еднаш на секои шест години. Во овој дел нејасно е според кое мислење ќе се дефинира учеството на НУ Завод за заштита на културното наследство и Музеј-Охрид во реализацијата на експресниот пат и развојните зони.

7. Во насловот 10. *Мерки и препораки за заштита, намалување и неутрализирање на негативните влијанија*, кога станува збор за културното наследство треба да се наведат мерките кои се однесуваат на заштитата на културното наследство кое се наоѓа во границите на Националниот парк Галичица и зоните на кои ќе се реализираат предвидените проекти. Наведениот режим на заштита во најголем дел се однесува на старото градско јадро на Охрид, а не на културното наследство во границите на Националниот парк Галичица.

Со почит,

ДИРЕКТОР,
г-р Виктор Л. Агамс



Изработил: м-р С.Герасимова-Матеска



**УЧЕСНИЦИ ВО ЈАВНАТА РАСПРАВА ПО ИЗВЕШТАЈОТ ЗА СТРАТЕГИСКА ОЦЕНА ЗА ВЛИЈАНИЕТО НА ЖИВОТНАТА СРЕДИНА ПО ПРЕДЛОГ
ИЗМЕНИТЕ НА ПЛАНОТ ЗА УПРАВУВАЊЕ СО НАЦИОНАЛЕН ПАРК ГАЛИЧИЦА (2011-2020)**

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Република Македонија
МИНИСТЕРСТВО ЗА КУЛТУРА
Управа за заштита на културното наследство

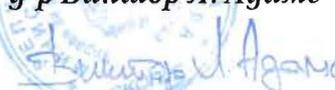
Бр. 17-19/5
09.06. 2015 год.
Скопје

До
Јавна установа
Национален парк Галичица
Ул. Галичица бб
6000 Охрид

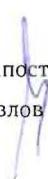
Предмет: Доставување податоци

Во врска со вашето барање за доставување на податоци за културно наследство во границите на националниот парк Галичица, а со цел усвојување на Предлог измените на Планот за управување со националниот парк Галичица за периодот 2011-2020 година во прилог ви доставуваме список со податоци.

Со почит,

ДИРЕКТОР,
г-р Виктор Л. Агамс



Прилог :Список

Изработил: В.Апостолова 
Одобрил: З. Павлов 

ОХРИДСКИ РЕГИОН

ЦРКВИ И МАНАСТИРИ

Ред. бр.	Назив	Место	Број на решение	КП
1.	УСПЕНИЕ НА СВ. БОГОРОДИЦА	с. Велестово	07-604/1 од 29.05.1998	1971
2.	СВ. СТЕФАН-ПАНЦИР	Долно Коњско	07-598/1 од 29.05.1998	869
3.	МАНАСТИР СВ. НАУМ	с. Љубаништа	07-20/1 од 12.03.1968	859
4.	ПЕШТЕРНА ЦРКВА СВ. БОГОРОДИЦА ПЕШТАНСКА	с. Пештани	07-28/1 од 13.03.1968	1077
5.	СВ. БОГОРОДИЦА ЗАХУМСКА	с. Трпејца	07-27/1 од 13.03.1968	975

АРХЕОЛОШКИ ЛОКАЛИТЕТИ (РЕГИСТРИРАНИ СО РЕШЕНИЕ)

Ред. бр.	Назив	Место	Број на решение	КП
1.	НАКОЛНА НАСЕЛБА "ЗАЛИВ НА КОСКИТЕ"/ПЛОЧА МИЌОВ ГРАД	с. Пештани	07-350/1 од 08.04.1998	Охридско Езеро и 1097, 1107 и 1108

Инвентар на незаштитени недвижни добра ЦРКВИ И МАНАСТИРИ

Ред. бр.	Назив	Место	Број на решение	КП
1.	СВ. ИЛИЈА	с. Елшани	/	/
2.	СВ. ВРАЧИ	с. Пештани	/	/

АРХЕОЛОШКИ ЛОКАЛИТЕТИ

Ред.бр.	Назив	Место	Датација	Вид
1.	АРХ. ЛОК. "БОГОРОДИЦА ПРЕЧИСТА"	с. Велестово	Среден век (15 век)	Еднокорабна црква и некропола
2.	АРХ. ЛОК. "БУЧИЛА"	с. Љубаништа	Неолот, римски и среден век	Населба и некропола
3.	АРХ. ЛОК. "ЦРКВИШТЕ"	с. Пештани	Среден век (14 век)	Црква
4.	АРХ. ЛОК. "ЦРНА ПЕШТЕРА"(КРСТОН ЗАБ)	с. Трпејца	неолит	Пештера (засолниште)
5.	АРХ. ЛОК. "ЕЛШАНИ"	с. Елшани	Доцна антика	Некропола
6.	АРХ. ЛОК. "ГЛАЈШО-СЕЛИШТЕ"	с. Трпејца	Среден век (развиен)	Населба
7.	АРХ. ЛОК. "ГРАДИШТЕ-ОСОЈ"	с. Трпејца-рид Осој	Ран среден век	Тврдина
8.	АРХ. ЛОК. "ГРАДИШТЕ-ВИЛИЦИТЕ"	с. Љубаништа-планина Галичица	Хеленистички период	Утврдена населба
9.	АРХ. ЛОК. "ГРАДИШТЕ"	с. Коњско	Хеленистички период	Населба (тврдина -
10.	АРХ. ЛОК. "ГРАДИШТЕ"	с. Пештани (автокамп Градиште)	Римски период	Утврден логор (каструм)
11.	АРХ. ЛОК. "КАЛЕ"	с. Трпејца	Доцна антика	населба
12.	АРХ. ЛОК. "КРОМИДИШТА"	Нас. Рача	Среден век	Остатоци од мала црква и некропола
13.	АРХ. ЛОК. "КРОМИДИШТА"	с. Велестово	Среден век	Еднокорабна црква и некропола
14.	АРХ. ЛОК. "КУМБАРЕВЦИ"	с. Рамне	Среден век	Црква и некропола
15.	АРХ. ЛОК. "КУПЕЈНИЦА"	с. Елшани	Доцна антика	Населба
16.	АРХ. ЛОК. "МАКЛА"	с. Рамне	Среден век	Некропола
17.	АРХ. ЛОК. "МАЛО КОЊСКО"	с. Коњско	Среден век развиен	Словенска населба
18.	АРХ. ЛОК. "МАНАСТИРИ"	с. Рамне	Ран среден век, среден век	Ранохристијанска базилика
19.	АРХ. ЛОК. "СВ. НИКОЛА-СЕЛСКИ ГРОБИШТА	с. Љубаништа	Среден век	Црква и некропола
20.	АРХ. ЛОК. "НИВАТА ОД ВАСИЛ БУЧКОСКИ"	нас. Шипокно	Римски период	Некропола
21.	АРХ. ЛОК. "РАЧА"	Нас. Рача	Римски период, среден век	Некропола
22.	АРХ. ЛОК. "РАЧА"	с. Велестово	Доцна антика и среден век	Населба, некропола
23.	АРХ. ЛОК. "РАИЦА-МАНАСТИРИШТЕ"	с. Љубаништа	Ранохристијански период	Сакрален објект
24.	АРХ. ЛОК. "РАМНИНСКИ ЛОЗЈА"	с. Рамне	Римски период	Населба и некропола

25.	АРХ. ЛОК."СЕЛИШТЕ"	с. Велестово	Среден век	Црква и некропола
26.	АРХ. ЛОК."СТАРА КОЛИБА-КОШОТ"	с. Љубаништа	Римски период	Населба
27.	АРХ. ЛОК."СТАРА РАЧА"	с. Велестово	Среден век развиен	Црква
28.	АРХ. ЛОК."СТАРО СЕЛО"	с. Пештани	Среден век развиен	Населба
29.	АРХ. ЛОК."СВ. АТАНАСИЕ"	с. Љубаништа	Римски период	Некропола
30.	АРХ. ЛОК."СВ. АТАНАСИЕ"	с. Рамне	Среден век	Црква
31.	АРХ. ЛОК."СВ. БОГОРОДИЦА"	с. Љубаништа	Среден век	Црква
32.	АРХ. ЛОК."СВ. ИЛИЈА"	с. Љубаништа	Среден век	Црква и некропола
33.	АРХ. ЛОК."СВ. ИЛИЈА"	с. Рамне	Среден век развиен	Црква
34.	АРХ. ЛОК."СВ. МАРТИНИЈА"	с. Коњско	Среден век развиен	Остатоци од црква
35.	АРХ. ЛОК."СВ. ПЕТКА"	с. Љубаништа	Среден век	Некропола
36.	АРХ. ЛОК."СВ. ПЕТКА"	с. Коњско	Среден век развиен	Сакрален објект
37.	АРХ. ЛОК."СВ. ВАРВАРА"	с. Рамне	Среден век	Црква и некропола
38.	АРХ. ЛОК."СВ. ВРАЧИ"	с. Рамне	Среден век	Црква и некропола
39.	АРХ. ЛОК."ТУШЕ ВАРНИЦА"	с. Рамне	Среден век развиен	Објекти
40.	АРХ. ЛОК."ТУРСКИ ГРОБИШТА"	с. Љубаништа	Доцна антика	Некропола
41.	АРХ. ЛОК."ЏАМИШТЕ"	с. Пештани	Среден век	Црква
42.	АРХ. ЛОК."ЗАУМ"	с. Трпејца	Доцна антика, ранохристијански период	Населба

ПРЕСПАНСКИ РЕГИОН

УРБАНИСТИЧКА ЦЕЛИНА

	Назив	Место	Реш. Бр.
1.	Урбанистичка целина с. Коњско	С. Коњско	08-751 од 21.03.1979

РУРАЛНИ СПОМЕНИЧКИ ЦЕЛИНИ

	Назив	Место	
1.	Црквата 2 плевни и остатоците од еден објект	Стење	Добра под привремена заштита за кој основано се претпоставува дека претставуваат културно наследство
2.	Варниците на плажата, арх. локалитет и црквата	-//-	

ЦРКВИ И МАНАСТИРИ

	Назив	Место	К. П	
1.	Св. Никола 1874 г.	с. Лесковец	286	Добра под привремена заштита за кој основано се претпоставува дека претставуваат културно наследство
2.	Св. Атанасие	с. Отешево		
3.	Св. Атанасие 17 век	с. Стење	1187	
4.	Св. Никола	с. Шурленци	233	

АРХЕОЛОГИЈА

	Назив	Место	
1.	Арх. лок Дабје	с. Лескоец	Добра под привремена заштита за кој основано се претпоставува дека претставуваат културно наследство
2.	Арх. лок. Калачлос	с. Лескоец	
3.	Арх. лок Бљудо среден век - црква	с. Коњско	
4.	Арх. лок. Старо село среден век - црква	с. Коњско	
5.	Арх. лок. Остров Голем град Македонско хеленистичко, римско време средновековен период населба	с.Коњско	
6.	Арх.лок.Камара доцна антика – вила рустика	с. Отешево	Добра под привремена заштита за кој основано се претпоставува дека претставуваат културно наследство
7.	Арх.лок.Пирк мак.хел.период населба	с. Отешево	
8.	Арх.лок.Св.Атанас среден век- црква	с. Отешево	
9.	Арх.лок. Сирхан-Тунелот римско време надгробна стела	с. Отешево	
10	Арх.лок Кула среден век- тврдина	с.Стење	Добра под привремена заштита за кој основано се претпоставува дека претставуваат културно наследство
11.	Арх.лок.Лозјата неолитско време населба	с.Стење	
12	Арх.лок Певчиња (Градиште-Варници) римско време населба и некропола	с.Стење	
13	Арх.лок Градиште римско време- објект	с.Стење	
14	Арх.лок.Св.Атанас ранохр.период и среден век базилика и некропола	с.Стење	
15	Арх.лок.Св.Никола доцна антика -објект	с.Стење	
16	Арх.лок.Четкарица доцна антика - населба	с.Стење	
17.	Арх.лок.Трафостаница среден век- некропола	с.Стење/Царина	
18	Арх.лок.Четкарица доцна антика - населба	с.Стење	
19	Арх.лок.Кале среден век - тврдина	с.Шурленци	