

## **Eco Karst ACTION PLAN**

### **- Notranjska Regional Park (NRP)**

#### **1. INTRODUCTION**

##### **1.1. Purpose of the action plan**

The Danube region is home to a rich natural heritage with increased biodiversity, largely due to its variety of landscapes and special conditions in the karst area. Diversity can also be observed in the countries in this area, some of which can be considered among the most developed in the world, while others are in the process of rapid development. Thus, conflicts between local populations and nature conservation objectives often occur, especially in protected natural areas. The perception that nature conservation prevents progress and local development is still present in many protected areas. It is, therefore, essential to develop ways in which these conflicts can be avoided and to encourage the development of fruitful collaboration between people responsible for nature conservation and the local population for the mutual benefit of people and biodiversity.

This Action Plan is the direct result of the activities undertaken within the ECO KARST project, based on a structured and participatory approach, aimed to assist both the Bükk Natural Park Directorate (as a nature conservation administration) in managing the natural capital and the ecosystem services and also the local communities developing pro-biodiversity business. The present Action Plan is a non-binding, guiding document, that will steer the management decisions within the park in the short to mid-term future, alongside or integrated into the existing management structures.

Main purpose of this action plan is to wrap up short to mid-term goals and concrete activities to reach these goals defined together with local stakeholders during the three stakeholder workshops.

It is through these common activities we want to step on the path of sustainable planning, development and use of resources in the NRP protected area and build a lasting partnership with local community as well.

##### **1.2. Scope of the action plan**

Action plan developed in the scope of Eco Karst project will serve as a guideline to sustainable use of ecosystem services. It will be used by stakeholders that will agree on following it.

These stakeholders are Notranjska Regional Park management team, locals, and organizations with businesses using the ecosystem services in the NRP area or depending on them (farmers, foresters, tourist guides etc.).

Goals and concrete activities to reach them defined in this action plan are going to be integrated in the NRP Management plan that will be done in the future (expected in 1 to 3 years).

##### **1.3. Creation and ownership of the plan**

This action plan was created in the scope of Eco Karst project concentrating on sustainable use of ecosystem services and 'nature-friendly' development of karstic protected areas by joint efforts of NRP Eco Karst team and local stakeholders.

#### 1.4. General characteristics of the pilot area

Notranjska Regional Park is an extensive area of regionally characteristic ecosystems and unspoiled nature as well as areas of natural values intertwined with areas where human influence is greater but balanced with nature.

Extensive wetlands of Intermittent lake *Cerkniško jezero* together with picturesque karst valley *Rakov Škocjan* and spectacular water cave *Križna jama* (one of four richest caves in the world regarding troglobiontic fauna) comprise the heart of the NRP area and were designated a Ramsar site *Cerkniško jezero and its environs* in 2004.

Limestone *Javorniki* mountain ridge with highest peaks reaching over 1200 m above sea level and its fir and beech forests continuing unbroken deep to the south of Balkans comprise park's southern border.

Northern part of the NRP area is dominated by a hilly landscape over 600 m high, where mixed forests are intertwined with extensively managed species-rich dry grasslands. Highest peak of this area – mount *Slivnica* is breaking 1000 m mark. This area is comprised of three plateaus (*Menišija, Vidovska, Otavska planota*), part of them being composed of limestone and part of dolomite.

Northeastern part of the NRP area is characterized by two gorges made by alpine-like creeks *Iška* and *Zala*.

*Cerkniščica* the longest creek in the park with beautiful fens and wet meadows along its meanders runs from parks' eastern border all the way to the *Cerkniško polje*.

NRP is one of Slovenia's biodiversity hot-spots as it covers only about 1 % of Slovenia's surface while roughly 3/4 of all bird, 3/4 of amphibian, 2/3 of butterfly, 1/2 of mammal species, and almost 1/3 of all vascular plant species found in Slovenia were observed in the NRP area.

## 2. SITUATION ANALYSIS OF THE SITE

In the scope of the Eco Karst project habitat types or ecosystem types map were produced for the whole area of Notranjska Regional Park. Maps were made basing on field work of foresters (SFS data) and of NRP staff (NRP data) that were collected before the actual start of the project.

The ecosystem condition map, ecosystem services maps, and ecosystem services assessment were made following customized methods provided by project partner MTA ÖK in Guidance Packages 1 - 5.

Maps were produced in ArcGIS by MTA ÖK and NRP (*non-forest habitats /ecosystems condition, hay / animal fodder, water quality and touristic attractiveness of nature*) and SFS (*forest, hunting, carbon sequestration and bee-products related maps*).

### 2.1 BIODIVERSITY CHARACTERIZING FEATURES

#### 2.1.1 ECOSYSTEM / HABITAT TYPES MAPS

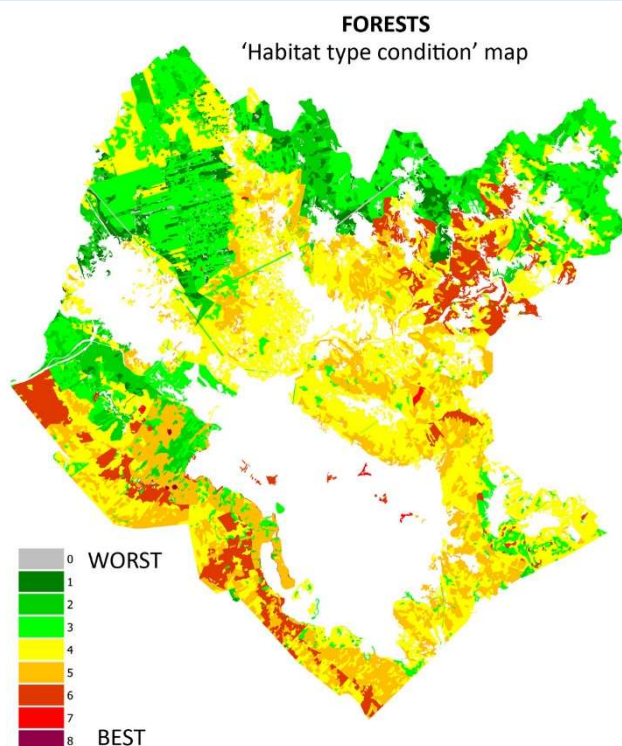
##### 2.1.1.1 FORESTS

Forest habitat types (HT) map is based on forest compartments data acquired through Slovene Forest Service (SFS) field work and projected to forest stands.

By adding score to areas of: *eco-cells, areas with larger % of dead wood and specific stand developmental stage* we created 'forest ecosystem condition' map where habitats in best condition have higher score and vice versa.

In general, forest management practices in Slovenia are extensive and mimic natural processes. This is the reason why forests in NRP area are mostly in 'acceptable' and good condition.

However, forests condition map should be updated as soon as new SFS data is gathered, as changes in habitat condition are expected because of heavy ice-storm in 2014 that was followed by bark-beetle outbreaks and heavy foresters activity in affected forests.



### 2.1.1.2 GRASSLANDS

Non-forest habitats (grasslands) map is based on NRP team field-work done before the Eco Karst project and projected to map of active farmland (available from Ministry of Agriculture, Forestry and Food).

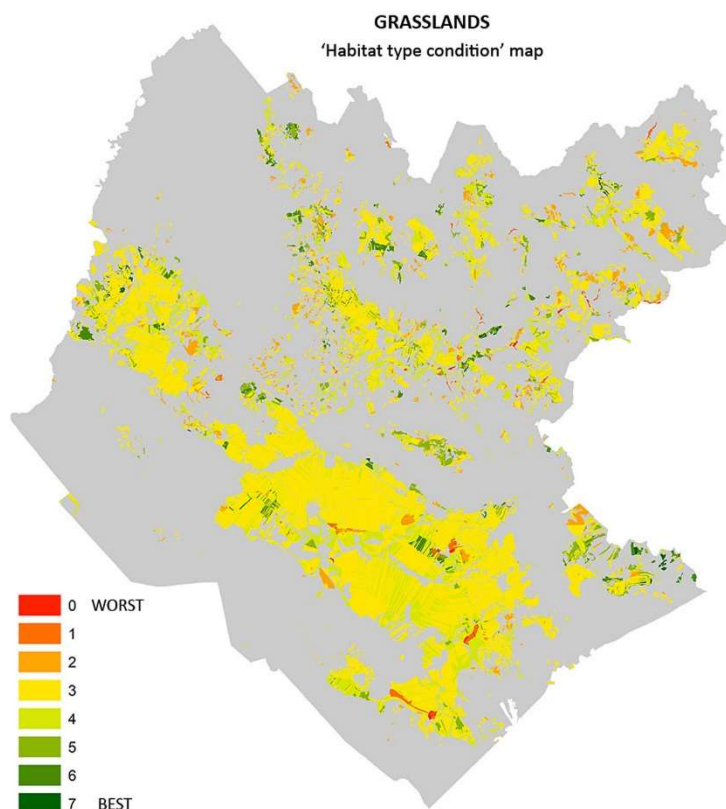
Non-forest condition map was created by adding scores based on NRP field-work and areal photos of the area in different years (documenting succession). Additional score is given to areas of: *indicator species (grassland orchids) diversity, land management and level of succession.*

Habitats in best condition have higher score and vice versa. In contrary to forests, the grasslands' condition tends to deteriorate rapidly when left unmanaged.

Extensive management is crucial for keeping grasslands in good condition (e.g. organic fertilization if any, late mowing, alternating mowing of a land-plot, minimal animal stocking density ...).

Most of grasslands in NRP area are in 'acceptable' or good condition. As a rule, grasslands in unfavourable conditions are located in less accessible areas as in most cases the unfavourable condition of grasslands in NRP area is a result of management abandonment.

We have to stress out that substantial grassland area has already been lost to scrub and forest through succession since the end of World War 2 with this trend being at its peak in the last 30 years. Some of NRP's grasslands are in favourable or exceptional condition though. These grasslands are cradles of biodiversity and thus priceless from nature conservation point of view.



## 2.1.2 SPECIES OF SPECIAL ATTENTION

Some organisms are important as indicators of 'healthy' ecosystem and good management practices.

These indicator species should be included in monitorings as changes in their population trends could serve as alarm of inappropriate management and should be addressed accordingly and promptly.

### 2.1.2.1 'FOREST' SPECIES

#### Beech Long-horn Beetle (*Morimus funereus*)

This IUCN red list (V) wingless beetle species is an old-growth mixed (Beech and Fir) forests resident.

#### Ural Owl (*Strix uralensis*)

Our second largest Owl resides in old-growth deciduous (Beech) and mixed forests (Beech and Fir) with fair amount of standing dead trees.

#### Black Stork (*Ciconia nigra*)

This shy bird nests in a canopy of a large tree in hard-to-reach parts of deciduous and mixed forests and is feeding on Cerknjško polje plain and in hidden river valleys (Iška & Zala).

#### Long-fingered Bat (*Myotis capaccinii*)

This IUCN red list (V) species needs underground caves to overwinter and breed, old-growth forests with large trees to roost and unpolluted water bodies to feed.

#### Woodpeckers (*Dendrocopos*, *Picus* and *Dryocopos* species)

Woodpeckers excavate nests in tree trunks and are important 'carpenters' as different bird and wildlife species use their nests as 'homes'.

### 2.1.2.2 'DRY GRASLANDS' SPECIES

#### Marsh Fritillary (*Euphydryas aurinia*)

This butterfly species inhabits species rich dry (and wet) extensively managed meadows that are priceless for producing the highest quality hay / fodder resulting in highest quality dairy and meat.

#### Pasqueflower species (*Pulsatilla* spp.)

Two species of this genus thrive in NRP's mineral-poor dry karst meadows of utmost nature conservation importance and areas for producing small quantities but healthy livestock fodder.

#### Grassland Orchid species (*Orchis* spp., *Ophrys* spp., *Traunsteinera globosa*, *Spiranthes spiralis*)

Grassland orchids are known to thrive in healthy environment and are excellent indicators of extensive / 'nature-friendly' management practices crucial for producing high quality meat and dairy products.

#### Eurasian Skylark (*Alauda arvensis*)

This ground nesting bird is severely threatened by agricultural intensification (mineral fertilization) that diminishes species diversity and thus Skylark's food source and makes grass too tall and thick to nest.

### 2.1.2.3 'WET GRASLANDS' SPECIES

#### Alcon Blue (*Phengaris alcon*)

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These highly specialized butterflies thrive in mineral-poor fens where one and only larval host plant (LHP) – Marsh Gentian (*Gentiana pneumonanthe*) as well as red ants – caterpillars' 'foster parents' live.

#### Scarce Large Blue (*Phengaris teleius*)

Another specialist that lays eggs on Great Burnet (*Sanguisorba officinalis*) flower buds only and overwinters in red ants' anthills inhabits productive but extensively managed grasslands on deep soils.

#### Corncrake (*Crex crex*)

This elusive bird is a true symbol of wet meadows managed in a very 'nature-friendly' way.

#### Common Quail (*Coturnix coturnix*)

Small bird of extensively managed meadows on deeper / wetter soil is threatened by agricultural intensification (mineral fertilization) and use of poisons (biocides) that diminish species diversity and lower quality of final 'grassland products' such as dairy and meat.

#### Eurasian Curlew (*Numenius arquata*)

One of the largest and most imperiled meadow birds in Slovenia lives in a mosaic of extensively managed grasslands, fens and swampy areas where parents can still find enough cover and food to rear their young.

#### Grassland Orchid species (*Orchis palustris*, *Dactylorhiza* spp., *Epipactis palustris*)

Typical for non-fertilized wet-meadows and fens these orchids are great indicators of healthy environment and extensive / 'nature-friendly' management practices.

### 2.1.2.4 'WATER' SPECIES

#### European Otter (*Lutra lutra*)

Fish-eating Otter needs naturally meandering streams and abundance of prey in order to survive and reproduce and is a sign of unspoiled natural world.

#### Stone Crayfish (*Austropotamobius torrentium*)

This crayfish species inhabits clean, oxygen rich headwater streams in the shelter of riparian vegetation and is prone to stream canalization and all types of pollution (household, industrial and agricultural).

#### Brown Trout (*Salmo trutta fario*) – 'Danube type'

This non-migrating cold oxygenated water loving fish is endangered by stream water canalization and all kinds of pollution as well as introduction of 'Atlantic type' Brown Trout that has been farmed and introduced in most of Slovenia's streams for many years.



### 2.1.3. ECOSYSTEM / HABITAT TYPES CONDITION ASSESSMENT

Please refer to descriptions of habitat types condition maps under chapter 2.1.1 (ECOSYSTEM / HABITAT TYPES MAPS).

## 2.2 ECOSYSTEM SERVICES DESCRIPTION

### 2.2.1 CARBON SEQUESTRATION AND STORAGE

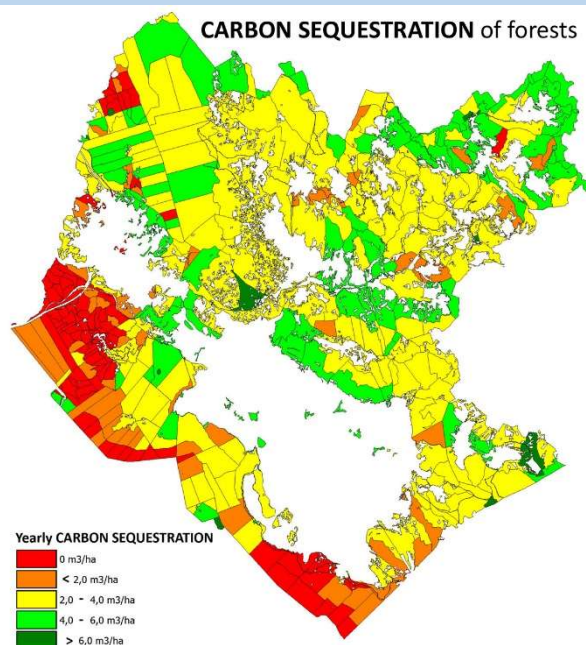
C-sequestration and storage is an important ES as carbon in the CO<sub>2</sub> form tends to add to global warming.

The C-sequestration was defined as the difference between yearly growth and allowable cut per forest sections.

In this project we focused on ecosystem service (ES) *Carbon sequestration of forests* but as all perennial plants act as a carbon sink / storage not only forests but permanent grasslands are important in reducing the greenhouse effect too!

One of Workshop 3 participants' initiatives was creation of forest reserves on state owned land. Realization of this activity would add substantially to long term C storage and other ES (clean water, erosion mitigation, water retention and droughts mitigation, recreation ...) as well.

*This ES was mapped as it adds to PBBs focusing on tourism a lot and fosters biodiversity as well.*

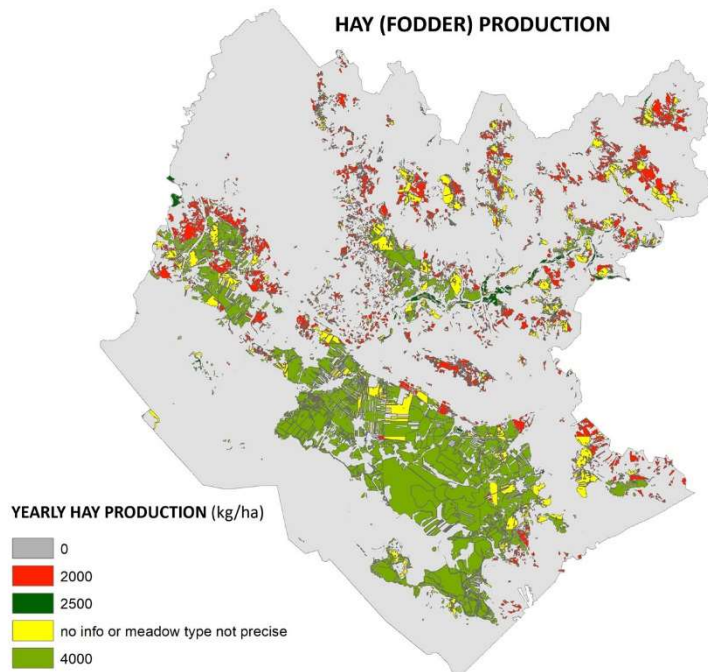


### 2.2.2 HAY PRODUCTION

ES *hay production* was defined as amount of hay produced per hectare per year (kg/ha). We formed four 'yield categories' based on yield estimates of different grassland types in this way:

Modifying rules were incorporated in the final evaluation of different grassland type hay yield as they cover geographically (elevation, inclination, orientation, water & nutrients availability) heterogeneous parts of pilot area.

**Wet grasslands of intermittent lake Cerknjško jezero** area include productive meadows on wet soil, large sedge communities, reed stands, and stands of reed canary grass.



With yearly hay yield estimated at 4000 kg/ha this is very productive area regardless of droughts. However, vast majority of hay from this area is not used as fodder but as livestock litter as it is mowed very late in the season (August 1<sup>st</sup> at earliest) to conserve nesting meadow birds such as Corncrake, Eurasian Curlew and other wildlife of this exceptional area.

**Wet grasslands of other parts of NRP** are represented by the same HTs as in Cerknjško jezero area, but are less productive due to lesser water and nutrients availability. Estimated yearly yield: 2500 kg/ha.

These grasslands are also mowed late in the season (e.g. at the end of July) and are exceptional in nature conservation point of view as many of endangered wetlands wildlife thrive here.

**Mesophilous grasslands** on Cerknjško polje outside regular floods and other more or less flat parts of the pilot area.

Yearly hay yield of 4000 kg/ha makes these extensively managed grasslands on deeper soil very important source of high quality cattle fodder and at the biodiversity cradles at the same time.

**Dry grasslands** are developed on steeper terrain, often facing south. Yearly hay yield of 2000 kg/ha makes these types of grasslands least productive but as extensive use is the only management option here they are the most diverse of all non-forest managed habitats.

*This ES was mapped as it is the base of agriculture and to PBBs focusing on tourism while it fosters biodiversity as well.*



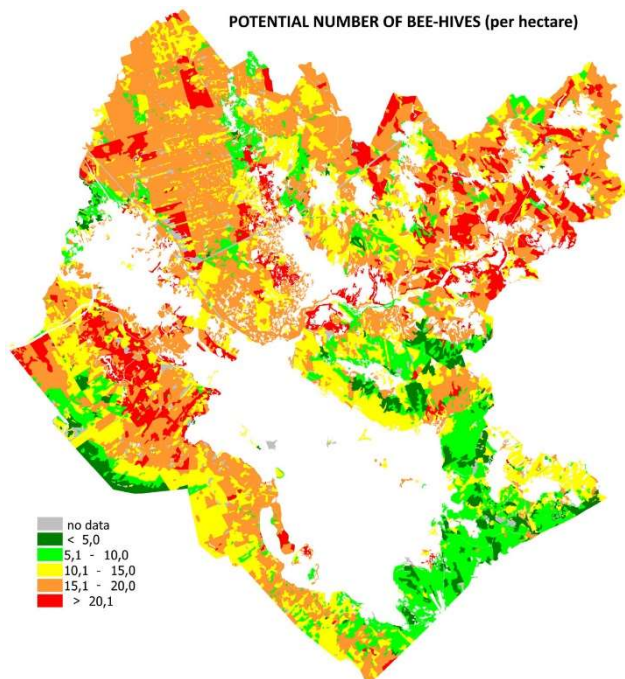
### 2.2.3 HONEY& OTHER BEE PRODUCTS

We chose to show the forests' potential for ES *honey production & other bee products* as a number of bee-hives that 1 hectare of forest can support because other bee products (queens, pollen, wax ...) are important as well.

As forests have the greatest potential for honey production (fir & 'forest' honey) in the area we made the map for woodland areas.

Though forest honey accounts for at least 2/3 of total yearlyhoney yield while grasslands honey accounts for maximum of 1/3, grasslands honey is very important as it is mostly consumed by bee families themselves enabling them to grow big and healthy.

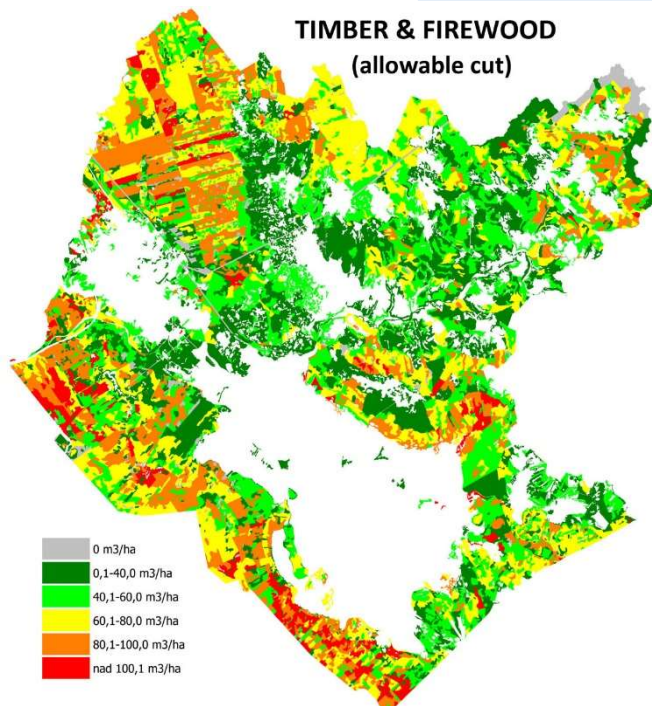
*This ES was mapped as it adds to agriculture and PBBs focusing ontourism while fostering biodiversity as well.*



### 2.2.4 TIMBER & FIREWOOD

ES *timber & firewood* was defined as allowable cut. This is amount of timber allowed to cut in a period of 10 years in a single forest stand considering stand's wood stock and its production. Calculation of allowable cut is based on field measurements of timber yield in forest stands by SFS employees at permanent sample points (areas).

As forestry plans in Slovenia are made for periods of 10 years we stumbled upon a problem in forests that were damaged during heavy ice storm in 2014 followed by bark beetle infestation of non-native Spruce (*Picea abies*) in following years. These areas were cleared by removing fallen and dead trees leaving certain areas bare and without potential to cut. We adjusted this in the maps to show realistic situation as there is no or very little allowable cut in this areas.

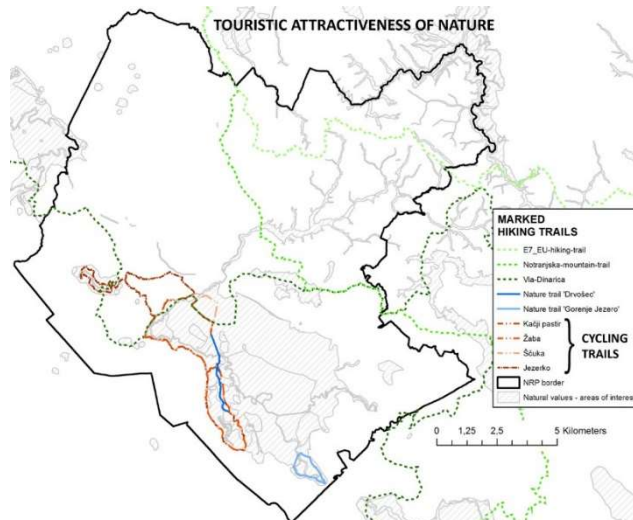


### 2.2.5 TOURISTIC ATTRACTIVENESS OF NATURE

ES *touristic attractiveness of nature* was defined as an *area* attractive for visitors in terms of great views or other outstanding natural features (geology, biodiversity).

We added marked hiking / cycling trails and tourist farms, accommodation and inns locations as well to get better perspective of opportunities and area's potential to develop.

*This ES was mapped as it is the base for tourism oriented PBBs.*



### 2.2.6 WATER QUALITY

ES *water quality* was defined as an area where water is detained, self-purified, or gathered for drinking.

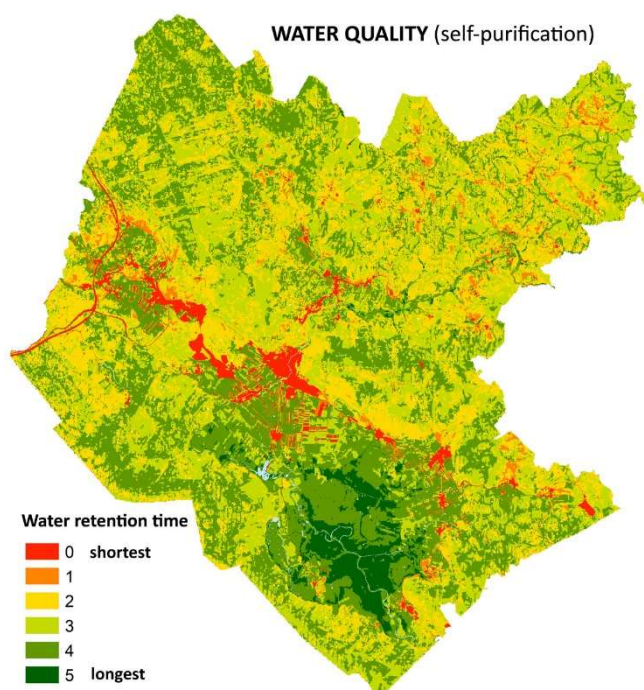
Habitat types were linked to water retention times as longer retention times mean more effective natural water purification process. More points were assigned to HT with longer retention time and vice versa.

Areas without water purification potential (score 0) are built-up areas, towns, roads, and similar.

Areas with low water retention times (score 1 - 2) are steep terrains covered in sparse vegetation of dry meadows or small patches of termophilous woodland.

Areas with medium water retention times (score 3) are mostly meadows on gentle slopes but on deeper soil, pine and similar sparsely vegetated forests and scrubland.

Areas with the best water retention and purification potential are wetlands, forests and grasslands in flat areas and old growth forests with large amounts of dead wood (score 4 - 5).



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*This ES was mapped as it adds to agriculture and PBBs focusing on tourism while fostering biodiversity as well.*

### 2.3. PRO-BIODIVERSITY BUSINESSES (PBBs)

In the three stakeholder workshops held in the scope of Eco Karst project 4 PBBs were identified as having the most potential for success.

#### These PBBs are:

1) Experience Notranjska Regional Park: visitors get to experience the outstanding natural features and diverse wildlife, as well as rich history and cultural heritage of the area.


2) Wood processing industry and craft: extensive forests provided material, food, and energy for first Stone Age settlers and all that followed and are the source of increasing quality of life for local inhabitants up to this day.

3) Local food & products dealer / store: possibly all farms in the area are extensive and many certified organic meaning the quality of fresh produce and processed products is really high and in ever higher demand as well.

4) Nature-friendly tourist farm: being a food producer and accommodation provider at the same time has great potential as visitors get to experience the way of living, learn to understand nature's cycles, and how to farm sustainably, and enjoy active holidays with healthy food.


#### The chosen PBBs represent 3 most important sectors in the area:

- **Forestry**: traditionally, this is the most important economic sector. Abundance of forests (and food in form of fish and other wildlife) attracted humans to this area since the Stone Age. Timber helped locals to earn some extra money and was once it was the driving force behind area's economic development.

 <b>Challenges and opportunities in the wood sector</b>	
<b>Challenges for biodiversity conservation</b> <ul style="list-style-type: none"> <li>○ High biological diversity is not the focus of forest management.</li> <li>○ Excessive forest exploitation.</li> <li>○ Forest wildlife disturbance.</li> </ul>	<b>Challenges for economic development</b> <ul style="list-style-type: none"> <li>○ Small patches of forest make economic use difficult.</li> <li>○ The value of local wood is not fully utilized. High quality products from local wood are not produced or not successfully marketed.</li> <li>○ Processing facilities in risk of becoming obsolete.</li> </ul>
<b>Opportunities for biodiversity conservation</b>	<b>Opportunities for economic development</b>


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<ul style="list-style-type: none"> <li>○ Increase the share of FSC certified wood for processing.</li> <li>○ Keep long tradition and knowledge alive.</li> </ul>	<ul style="list-style-type: none"> <li>○ Additional jobs.</li> <li>○ Higher product prices due to the quality of wood from local environment, protected area status, nature-friendly management practices.</li> <li>○ Conservation of HT and wood biomass.</li> <li>○ Obtain a FSC certificate to access new markets</li> </ul>
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 <b>Challenges and opportunities in the <i>beekeeping</i> Sector</b>	
Challenges for biodiversity conservation	Challenges for economic development
<ul style="list-style-type: none"> <li>○ Decreasing bee-keepers and bee-hive numbers.</li> <li>○ Bear presence sometimes hinders beekeeping (bear-proof hives traditionally exist in the area – hives built higher above ground to prevent bears from reaching them).</li> </ul>	<ul style="list-style-type: none"> <li>○ Exploitation for construction works (week-end houses) inside protected area.</li> <li>○ Need of licenses.</li> <li>○ Insufficient knowledge of species biology (bees, plants) and honey production.</li> <li>○ Unorganized sales.</li> </ul>
Opportunities for biodiversity conservation	Opportunities for economic development
<ul style="list-style-type: none"> <li>○ Very low use of pesticides.</li> <li>○ Beekeeping enables pollination which enhance biodiversity in the protected area.</li> </ul>	<ul style="list-style-type: none"> <li>○ Link to existing 'Bee-keepers educational trail' atlake Cerknjsko jezero(selling bee products).</li> <li>○ There are EU subsidies.</li> <li>○ Bee keeping as a side job.</li> </ul>




- **Farming:** livestock husbandry and tall-trunk orchards with small scale crop-rotating agriculture are traditional ways of producing food. Majority of farming practices are extensive and support biodiversity while the final products are potentially very high quality.

 <b>Challenges and opportunities in the livestock production, processing and marketing and the landscape maintenance sector</b>	
Challenges for biodiversity conservation	Challenges for economic development
<ul style="list-style-type: none"> <li>○ Keep management practices extensive / nature-friendly.</li> <li>○ Increase of certified organic farms.</li> </ul>	<ul style="list-style-type: none"> <li>○ Legislation makes selling products (farm to restaurants / accommodation facilities) difficult.</li> <li>○ Nature-friendly farming activities are dependent on subsidies.</li> </ul>
Opportunities for biodiversity conservation	Opportunities for economic development
<ul style="list-style-type: none"> <li>○ Quality of hay.</li> <li>○ Meadows for tourist activities (traditional mowing practices / education / recreation).</li> <li>○ Best practice example / environmental education demonstrating the high biodiversity value of extensive grassland management.</li> </ul>	<ul style="list-style-type: none"> <li>○ Farmer associations.</li> <li>○ Cooperation with processors, restaurants, hotels etc. to increase produce &amp; products value and to reach tourists.</li> <li>○ Label / TM creation.</li> <li>○ Hay from species rich meadows as food / litter for pets (rodents).</li> </ul>

 <b>Challenges and opportunities for the development of PBBs in the agricultural sector</b>	
Challenges for biodiversity conservation	Challenges for economic development
<ul style="list-style-type: none"> <li>○ Loss of traditional crop varieties.</li> <li>○ Traditional nature friendly farming is not promoted and farmers do not benefit from it.</li> </ul>	<ul style="list-style-type: none"> <li>○ Farmers don't sell to local restaurants as these buy the cheapest food coming from outside the park area.</li> <li>○ There is production of non-certified organic food but due to high administrative efforts and costs many farmers do not get the certificate.</li> </ul>
Opportunities for biodiversity conservation	Opportunities for economic development

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<ul style="list-style-type: none"> <li>○ More organic production and certification. Growing demand for organic food in Ljubljana and EU cities.</li> <li>○ Farmers produce in a sustainable way without use of artificial fertilizers, but lack the organic certificates because certification price.</li> </ul>	<ul style="list-style-type: none"> <li>○ Producers – restaurants / accommodation providers network to increase the produce / product value.</li> </ul>
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 <p><b>Challenges and opportunities in the Orchard and fruit processing sector</b></p>	
<p>Challenges for biodiversity conservation</p>	<p>Challenges for economic development</p>
<ul style="list-style-type: none"> <li>○ Introduction of non native crops and intensive orchards.</li> </ul>	<ul style="list-style-type: none"> <li>○ Cheaper products from large scale / intensive production.</li> </ul>
<p>Opportunities for biodiversity conservation</p>	<p>Opportunities for economic development</p>
<ul style="list-style-type: none"> <li>○ Use meadow orchards to raise awareness about biodiversity conservation importance with tourists, locals, schoolchildren.</li> <li>○ Organic production could decrease the biodiversity impact and can have a positive influence on price setting.</li> </ul>	<ul style="list-style-type: none"> <li>○ Higher value of organic jam.</li> <li>○ Cooperation with other producers to market biodiversity friendly products.</li> <li>○ Selling to restaurants, hotels, markets, shops.</li> <li>○ Maintaining meadow orchards is important to ensure the maintenance of cultural landscape, which is valuable for tourism.</li> </ul>



- **Tourism:** with area being inhabited since the Stone Age, first written evidence of intermittent lake Cerknjško jezero from times of Roman Empire, famous lake is pictured on every single important map from medieval times onwards, area's rich history and cultural heritage as well as the unspoilt nature in the heart of Europe in present times Notranjska Regional Park is a magnet for peace-seeking-tourist.

Challenges and opportunities in the <i>touristic accommodation, restauration sector</i>	
Challenges for biodiversity conservation	Challenges for economic development
	<ul style="list-style-type: none"> <li>○ Administrative effort is quite high and hinders people to develop as tourist farms.</li> <li>○ Administrative effort is quite high and hinders people to start a restaurant.</li> <li>○ Advertisement is only done via mouth to mouth.</li> </ul>
Opportunities for biodiversity conservation	Opportunities for economic development
<ul style="list-style-type: none"> <li>○ Buying food from traditional farmers in the region reduces the impact on biodiversity and supports the added value.</li> </ul>	<ul style="list-style-type: none"> <li>○ Eco Camping combines active nature protection with improved management and competitive advantages.</li> </ul>

 Challenges and opportunities in the <i>touristic and cultural sector</i>	
Challenges for biodiversity conservation	Challenges for economic development
<ul style="list-style-type: none"> <li>○ Tour operators do not work according to high naturalistic standard.</li> <li>○ Visibility of natural values - too low</li> <li>○ Great pressure on natural areas</li> </ul>	<ul style="list-style-type: none"> <li>○ Local tour offers are not advertised jointly.</li> <li>○ The divided offer is negative because it affects the price</li> <li>○ There is no long-term development strategy.</li> </ul>
Opportunities for biodiversity conservation	Opportunities for economic development

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<ul style="list-style-type: none"> <li>○ No special offer for environmental education.</li> </ul>	<ul style="list-style-type: none"> <li>○ Inadequate infrastructure management - thematic routes.</li> <li>○ Visibility of domestic food too low</li> <li>○ Bird watching tours are only offered by some guides and the park administration and could be further developed.</li> <li>○ Interest of the people to discover the nature of the natural park.</li> </ul>
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## 2.4. STAKEHOLDER ANALYSIS & PARTICIPATION

### 2.4.1 LIST OF STAKEHOLDERS CONSULTED

Altogether there were 46 participants at the three stakeholder workshops organized.

#### ECONOMY SECTOR

9 of those 46 represented the economy sector.

#### FARMING / AGRICULTURE SECTOR

6 of the participants represented the agricultural sector.

#### FORESTRY SECTOR

5 of the participants represented the forestry sector.

#### NATURE CONSERVATION / RESEARCH

10 of the participants represented the nature-conservation / research sector.

#### OTHER

6 participants represented different sectors (honey producers, anglers, hunters, cavers) hard to put in to sector categories mentioned here were joined under *Other*.

#### TOURISM

10 of the participants represented the tourism sector. These people were also present at the most workshops.

Stakeholders from tourism sector represented the most consistent and the largest group of our workshops' participants. That is also the reason that we adapted Training D (Green Entrepreneurs Training) for tourist workers as an award for their active involvement.

### 2.4.2 PARTICIPATION OF STAKEHOLDERS IN THE ACTION PLAN

During all three workshops stakeholders' ideas, comments, and recommendations were gathered and then 'filtered' (by voting and by our experience in park's management).

In this way the problems and most popular ideas to make things better were identified and activities needed to reach the goals set were given place in the action plan. This action plan focuses on addressing issues in the near future (maximum a couple of years).

## Danube Transnational Programme

### ECO KARST

List of organizations that took part at workshop 3 where goals and activities to reach them were commented and added.

STAKEHOLDER WORKSHOP 3 - PARTICIPANTS (28.3.2019)
<b>TOURISM</b>
Organic ranch Marof
TKD Sovica (association)
Tourist agency TUR Servis
accommodation providers
TIC Cerknica
<b>FARMING/AGRICULTURE</b>
AVS Dolenja vas (agrarian community)
AVS Dolenje Jezero (agrarian community)
farm
<b>FORESTRY</b>
SFS
SFS
<b>NATURE-CONSERVATION/RESEARCH</b>
NRP
NRP
NRP
NRP
NRP
<b>ECONOMY</b>
Komunala Cerknica
<b>OTHER</b>
RD Cerknica (anglers association)
bee-keepers Association (Cerknica)
bee-keepers Association (Rakek)

### 3. GOALS, OBJECTIVES & IMPLEMENTATION 3.1 GOALS, OBJECTIVES & IMPLEMENTATION

Based on the workshops participants inputs and park's management goals we compiled the table of goals and activities as well as steps to reach the set goals. The most relevant sectors in the park's area are included in the action plan. These are forestry, farming/agriculture and tourism.

We are presenting goals, objectives & implementation for each of the chosen sectors in tables below.

#### 3.1.1 FORESTRY

S U S T A I N A B L E F O R E S T R Y							
GOAL	ACTIVITY	STEPS	ACTIVITY LEADER & PARTNERS	TIME FRAME	COSTS & FUNDS	INDICATORS	PRIORITY
SUSTAINABLE FOREST MANAGEMENT	A) ADJUSTMENT OF THE FOREST MANAGEMENT PLAN FOR THE PROTECTED AREA - 1 vote	1) REDUCTION OF MAXIMUM ALLOWABLE CUT (proposal of NRP to SFS) 2A) LEAVE A HIGHER % OF STANDING DEAD TREES IN THE FOREST (5%) 2B) LEAVE A HIGHER % OF FALLEN DEAD TREES IN THE FOREST (3%) 3) ADJUSTMENT OF ALLOWABLE CUT FOR EACH SPECIES (e.g. removal of non-native species and spruce (here exceptions - pils)) 4) PROPOSAL TO BAN AFFORESTATION WITH NON-NATIVE SPECIES 5) INITIATIVE TO STOP FINANCING THE AFFORESTATION WITH SPRUCE ( <i>Picea abies</i> ) 6) INITIATIVE FOR FINANCING AFFORESTATION WITH HONEY PRODUCING TREE SPECIES OF SLOVENIAN ORIGIN (e.g. Linden ( <i>Tilia</i> spp.), Cherry ( <i>Prunus avium</i> ), Whitebeam ( <i>Sorbus aria</i> ), Rowan ( <i>Sorbus aucuparia</i> ), Sycamore ( <i>Acer pseudoplatanus</i> ))	SFS, SIDG, NRP & forest owners	2030 (new management plans)	SFS	A) Forest management plans adapted.	medium
	B) FOREST RESERVES DESIGNATION (on state owned land-plots) - 3 votes	1) FOREST RESERVE DESIGNATION INCENTIVE (state owned land plots in Rakov Škočjan and Menišija plateau areas) 2) EDUCATION / EXPERIENCE HIKING TRAILS (state or NRP managed)	SFS, SIDG, NRP & forest owners	2030 (new management plans)	own funds, EU projects (Interreg)	A) 2 forest 'sanctuaries' established. B) 1 forest education trail established in one of the 'sanctuaries'.	very high
WOOD PROCESSING	C) SUSTAINABLE FORESTRY CERTIFICATES (FSC/REDD+) - 1 vote	1) CREATION OF FOREST LAND-PLOTS OWNERS COOPERATIVE (one certificate for all members)	forest owners, NRP	2025	own funds	A) Forest owners network / cooperation established. B) 1 certificate acquired.	medium
	D) HIGH-END DESIGN / VERNACULAR WOODEN PRODUCTS	1) STAKEHOLDER NETWORKING (woodland owners - foresters - designers - craftsmen) 2) TRADEMARK 'NRP' ('NRP certificate) (internet sale, story about the making of the product - booklet, TM name / certificate rules)	NRP, local craftsmen, industry	2030	own funds	A) Business plan written.	low
	E) UNIQUE WOODEN FURNITURE	1) FURNITURE MADE OF SELECTED TREES UPON REQUEST	Tila, forest owners	2025	own funds	A) Business plan written.	low
	F) FUNCTIONAL HANDICRAFTS (fusion of tradition and innovation - e.g. dormouse trap ( <i>škrin'ca</i> ), pike lures) - 1 vote	1) DESIGN & PRODUCTION 2) LINK TO TOURIST OFFER (catering service - wooden silverware; pike angling)	local craftsmen & designers, NRP, high schools, young heritage keepers	2030	own funds	A) Business plan written.	medium
	G) SPECIAL WOODEN PRODUCTS (e.g. <i>drevak</i> boat, cider barrels)	1) LINK TO LOCAL TOURIST OFFER / LOCAL FOOD PRODUCTS 2) COOPERATION WITH POSTOJNA HIGH SCHOOL FOR FORESTRY & TIMBER (Srednja gozdarska in lesarska šola)	local craftsmen & designers, NRP, high schools, young heritage keepers	2030	own funds	A) Business plan written.	low
SUSTAINABLE USE OF NON-WOOD FOREST PRODUCTS	H) PRICELIST OF BEEKEEPERS' SOCIETIES SERVICES CREATION	1) SERVICE AND PRODUCTS PRICELIST (npr. storitev organizacije pašnega reda med in ostali izdelki) 2) 'PRODUCED IN NRP' CERTIFICATE 3) INITIATIVE TO CANCEL PAYMENTS FOR 'MOBILE BEE-HIVES' ON STATE OWNED LAND	local bee-keepers societies, NRP	2025	own funds	A) Pricelist written.	low
	I) UNIFIED 'BEE HEALTH CARE' SYSTEM IN THE NRP AREA - 1 vote	1) WORKSHOP - PROPOSAL OF MOST EFFICIENT MEDICINE (yearly event: veterinarians - beekeepers societies from NRP area)	local bee-keepers societies, Slovenia's bee-keepers NRP	2025	own funds	A) Unified bee-health system (adapted each year).	medium
	J) MUSHROOM PICKING	1) RESEARCH OF ACTIVITY'S SCOPE 2) EDUCATION & AWARENESS RAISING ABOUT RULES AND LAWS (workshops with Mycological society of Notranjska; photo catalog of protected fungi species (NRP)) 3) ESTABLISHED CONTROL 4) LINK TO LOCAL TOURIST OFFER	NRP, local mycological society	2025	own funds, EU projects	A) Awareness raising workshop organized. B) Mushroom picking activity research carried out.	low
	K) MEDICINAL HERB PICKING	1) RESEARCH OF ACTIVITY'S SCOPE 2) EDUCATION & AWARENESS RAISING ABOUT RULES AND LAWS (photo catalog of protected plant species (NRP)) 3) ESTABLISHED CONTROL 4) LINK TO LOCAL TOURIST OFFER	NRP, local societies	2025	own funds, EU projects	A) Awareness raising workshop organized. B) Medicinal herb picking activity research carried out.	low
	L) MEDICINAL HERB CULTIVATION (to minimize impact on natural populations and maximize yield)	1) WORKSHOP (species determination, cultivation techniques, HACCP)	NRP, local societies	2025	own funds, EU projects	A) Medicinal herb cultivation workshop carried out.	low

### 3.1.2 FARMING & AGRICULTURE

S U S T A I N A B L E F A R M I N G							
GOAL	ACTIVITY	STEPS	ACTIVITY LEADER & PARTNERS	TIME FRAME	COSTS & FUNDS	INDICATORS	PRIORITY
PRODUCTION OF HIGHEST QUALITY FOOD (organic or 'nature-friendly' extensive production: dairy, meat, fruit and vegetables and food products)	A) NETWORK OF LOCAL PRODUCERS OF SEASONAL LOCALLY PRODUCED FOOD AND PRODUCTS (connecting farmers - tourism sector and restaurants / delis in NRP and Slovenia)	1) SUPPLY CHAIN (producer - provider) 2) NETWORKING, COOPERATION (farms - local tourism providers e.g. accommodation providers, tourist guides, tourist farms, inns) 3) PROMOTION OF 'NATURE-FRIENDLY' (EXTENSIVE) FARMING (workshops / counselling) 4) SUPERIOR PRODUCT QUALITY (workshops, trainings on farming practices and food processing) 5) CULTURAL HERITAGE RENOVATION (e.g. fruit drying kilns, mills)	NRP & TIC, Farmers union (KZ), farmers communities (VAS) and individual farmers	2025	own funds, EU projects	A) stakeholders' network established B) number of nature-friendly farms increased by 15% C) producers - tourist services providers connections increased by 30%	very high
	C) LOCAL FOOD & PRODUCTS STORE	1) SUPPLY CHAIN (producers - store) 2) STORE OPEN	Farmers union (KZ), farmers communities (VAS) and individual farmers, merchants, craftsmen, TIC	2025	own funds, Municipality of Cerknica	A) store selling local seasonal produce & local products opened	low
	D) MEADOW ORCHARDS REVIVAL	1) EDUCATION & AWARENESS RAISING (workshops on pruning, crop processing, HACCP standards, importance for nature, KOPOP payments...) 2) HIGHEST-QUALITY PRODUCTS (e.g. fruit juice, cider, spirits, dried fruit ('škundre')) 3) MEADOW ORCHARDS RESTORATION / REJUVENATION 4) MEADOW ORCHARDS EXPANSION	NRP & Farmers union (KZ), farmers communities (VAS) and individual farmers, local associations (Društvo biodinamikov Notranjska etc.)	2025	own funds, projects	A) business plan putting meadow orchards 'in use' written B) workshops on pruning trees carried out C) meadow orchards map of the NRP area made D) meadow orchards surface increased by 20 %	medium
	E) EXTENSIVE MEADOWS & PASTURES RESTORATION	1) RESTORATION OF GRASSLANDS IN SUCCESSION (help in the process - mulching, coppice removal - NRP) 2) ESTABLISHMENT OF EXTENSIVE MANAGEMENT PRACTICES (connecting active farmers and owners of agricultural land-plots in succession - possibility of renting the land) 3) KNOWLEDGE / EXPERIENCE EXCHANGE (workshops / meetings of land-plot owners, retired farmers, agricultural counselors, NRP)	NRP & Farmers union (KZ), farmers communities (VAS) and individual farmers	2030	projects (kohezija), own funds	A) area of meadows (mowing) & pastures (grazing) enlarged to 150 ha	high

### 3.1.3 TOURISM

N A T U R E - F R I E N D L Y T O U R I S M							
GOAL	ACTIVITY	STEPS	ACTIVITY LEADER & PARTNERS	TIME FRAME	COSTS & FUNDS	INDICATORS	PRIORITY
VISITORS' REDIRECTION from the most vulnerable areas (infrastructure)	A) EDUCATIONAL TRAILS (2)	1) TRAIL SETUP (restoration & signposts) 2) WATCHTOWERS / HIDES (4) 3) 26 INFO POINTS (15 Dvošec, 11 Gorenje jezera) 4) MAINTENANCE	NRP & external assistance (public tender)	2022	EU projects (LIFE, kohezija)	A) 2 new education trails. B) Number of visitors outside marked trails reduced by 20 %.	very high
	B) PONTONES (3)	1) PONTONE SETUP 2) RULES & INFO 3) MAINTENANCE	NRP & external assistance (public tender)	2022	EU projects (LIFE, kohezija)	A) 3 pontones built and in use. B) Number of vessels (canoes, SUP boards etc.) in the central part of intermittent lake Cerkniško jezero reduced by 20 %.	low
BETTER VISITORS' EXPERIENCE	C) NEW CIRCULAR CYCLING ROUTES (5)	1) SIGNPOSTS 2) MAP 3) SMARTPHONE APP	NRP	2022	own funds	A) Cycling route established - signposts in place. B) Users feedback.	medium
	D) CONNECTING ROUTES (natural and cultural heritage and tourist offer linked)	1) SIGNPOSTS 2) MAP 3) SMARTPHONE APP	NRP	2025	own funds	A) Number of producer-provider network members' visits increased by 20 %.	medium
EDUCATION of local tourist workers	E) WORKSHOPS, TRAININGS, LECTURES (5)	1) BOOKLET ABOUT NRP (cultural & natural heritage) 2) WORKSHOPS (education: in theory & practice) 3) CONNECTING tourist offer / providers 4) NETWORKING	NRP, TIC	2022	EU projects (LIFE, Interreg)	A) 5 stakeholder workshops carried out. B) Number of nature-friendly guided tourist tours increased by 30 %.	low
HIGH-END ACCOMMODATION	F) NATURE-FRIENDLY GLAMPING	1) TRAINING FOR LOCAL STAKEHOLDERS (best practice example presentation) 2) GLAMPING OPEN	Investor, Municipality of Cerknica, NRP	2030	own funds, EU projects (Interreg)	A) Training carried out. B) Glamping built and functioning.	low
ENFORCEMENT of nature conservation act	G) RANGERS' WORK	1) EDUCATION AND EXAMS 2) RANGERS' JOB	NRP	2022	EU projects (LIFE), Municipality	A) Active ranger. B) Illegal parking reduced by 50 %.	low
	H) LIMITING TRAFFIC in nature	1) 'MOTOR-VEHICLE FREE ZONE' (Cerkniško jezero, Rakov Škocjan) 2) ENCOURAGING USE OF ELECTRIC BICYCLES	NRP Tourist associations / guides, bike rental business	2025 2025	own funds own funds, projects	A) 1 additional 'motor-vehicle free zone' established B) E-bike rental point established.	low
CONNECTING tourist service providers and other local stakeholders	I) TOURISM WORKERS NETWORK	1) COMMUNICATION / NETWORKING 2) SIGNPOSTS	TIC	2022	own funds, EU projects (LIFE)	A) Networking workshop carried out. B) Stakeholders network established.	very high
	J) SUPPLY CHAINS (farmers - tourist service providers / stores)	1) COMMUNICATION / NETWORKING 2) SIGNPOSTS	TIC	2022	own funds, EU projects (LIFE)	A) Networking workshop carried out. B) Stakeholders network established.	medium
'LEAVE ONLY FOOT-PRINTS' tourism	K) AWARENESS RAISING, NETWORKING	1) COMMUNICATION (e.g. local schools, societies/associations) 2) VOLUNTEER ACTIONS 3) COOPERATION WITH TOURIST SERVICES PROVIDERS	NRP & elementary schools, NGOs, associations, TIC	2025	own funds, EU projects (LIFE)	A) 2 cleaning actions carried out. B) 4 workshops with schools (teachers, schoolchildren) organized. C) 1 workshop with tourist workers carried out.	low
EXPERIENCE UNSPOILED NATURE	L) 'BEAR-FRIENDLY' WASTE COLLECTION	1) 'BEAR-SAFE' TRASH BINS	NRP & SFS	2020	EU projects (LIFE DnaAlpbear)	A) 3 'bear-safe' waste bins installed.	low
	M) BEAR WATCHING	1) SPECIALIZED HIDES	Hunters fraternities, TIC, NRP	2025	own funds	A) Number of bear-watching trips increased by 30 %.	low
	N) BIRD WATCHING	1) HIDES / WATCHTOWERS 2) NO WATERFOWL HUNT (Cerkniško jezero) 3) HUNT LIMITATION incorporated in 'hunting management plan' LUO 2021-2030 4) TRAININGS, WORKSHOPS	NRP & DOPPS, locals	2022	EU projects (LIFE, kohezija)	A) 4 hides / watchtowers built. B) Hunting of waterfowl in the intermittent lake Cerkniško jezero area reduced by 100 %.	medium
	O) WILDLIFE / NATURE WATCHING	1) MOBILE HIDE	NRP & hunters fraternities	2022	EU projects (kohezija)	A) 1 mobile hide built and operating.	low
	P) ANGLING	1) 'FISH-FRIENDLY' RULES (e.g. catch&release zones, single barbless hooks only, daily number of 'guest anglers' limit, lower daily quota of red list species, yearly quota for Pike (Esox lucius) and Tench (Tinca tinca), increased minimal length of red list species) 2) NO-FISHING ZONE (part of Stržen at Cerkniško jezero) 3) GUIDED ANGLING (option: angling from drevak boat)	Angling society Cerknica, National Fisheries Institute, NRP	2022	EU projects (LIFE), own funds	A) No-fishing zone at Cerkniško jezero lake established. B) Guided fishing tours.	low



### 3.2 BIODIVERSITY INVESTMENT OPPORTUNITY MAPS (BIO maps)

We included three BIO maps in the action plan: *Experience nature* map, *Nature-friendly tourist farm* map, and *Sustainable forestry / forest biodiversity conservation*, as these three fields have the largest potential to develop and can and should be sustainable.

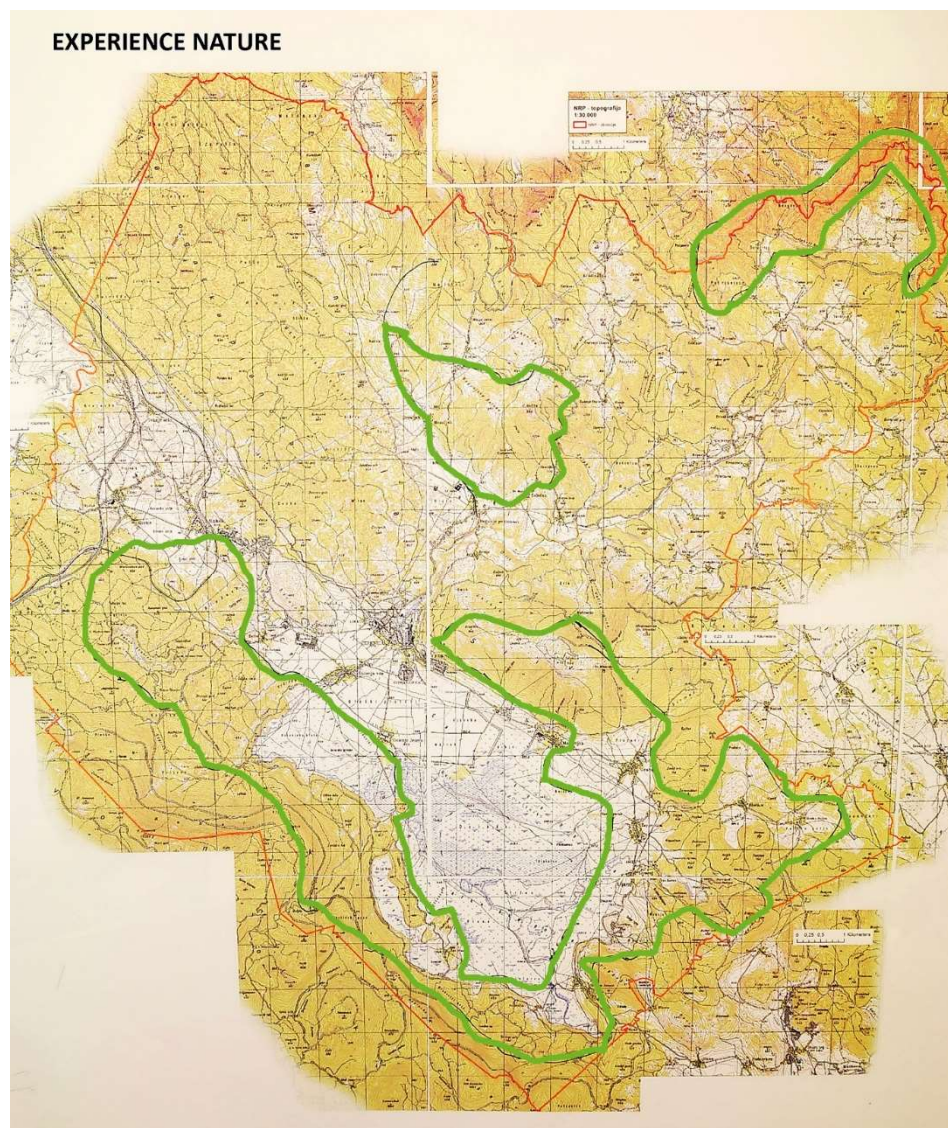
Nature is the largest asset of Notranjska Regional Park and conservation through thoughtfully planned management and local stakeholders involvement should be our top priority in order to conserve nature and wildlife for generations to come.

#### 3.2.1 EXPERIENCE NATURE

Experience nature BIO map is showing most beautiful areas of Notranjska Regional Park in terms of natural and cultural landscape that are also more or less easily accessible to anyone. These areas offer visitors genuine experience of nature and cultural landscape where man lives in harmony with nature.

Experience nature BIO map was made with inputs of local tourist guides and our knowledge of NRP's natural world as well as proximity of accommodation providers (tourist farms, apartments ...).

It is going to be used with Touristic attractiveness of nature ES map for future planning of marked trails, cycling routes, education trails etc. to connect beautiful scenery and points of interest with local tourist services providers.





### 3.2.2 NATURE-FRIENDLY TOURIST FARM

Nature-friendly tourist farm BIO map was made with inputs of local stakeholders. It is showing settlements with operating farms that could be 'transformed' into tourist farms as well as settlements where tourist farms are already offering visitors accommodation and the experience of being a farmer and his connection to the land – caring for land and animals and providing food for himself and others.

This map goes hand in hand with Experience nature BIO map as tourist farms (and other



accommodations) in NRP area are a great starting point for exploring the beautiful scenery, enjoying fresh air, smells and colors of nature as well as encounters with diverse wildlife in unspoilt nature.

This map will also be of help when working with local stakeholders with the goal of connecting them and their offer in order to assure better experience for the nature loving visitors and when planning new round hiking trails and cycling routes.



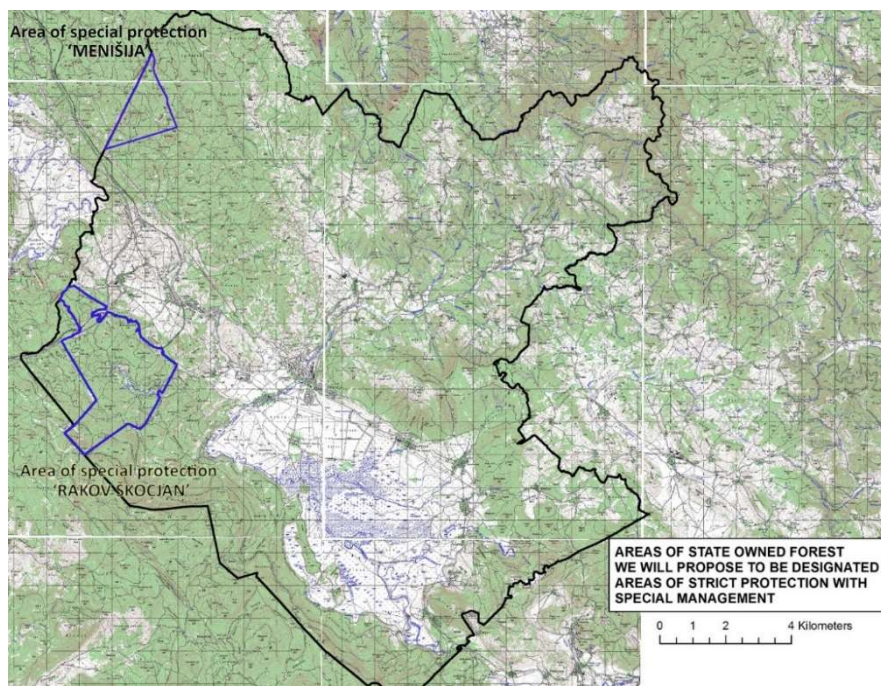
### 3.2.3 SUSTAINABLE FORESTRY / FOREST BIODIVERSITY CONSERVATION

Sustainable forestry / biodiversity conservation BIO map was made based on NRP staff research and inputs of stakeholders.

This map focuses on conservation of forest ecosystems and their biodiversity focusing on mixed beech (*Fagus sylvatica*) and fir (*Abies alba*) forest typical for Notranjska regional Park area. NRP will propose responsible institutions to set two areas on state owned land aside for nature conservation and education purposes.

We would like these forest areas to be areas of special protection and strict management rules and most importantly free of economic exploitation -making them sanctuaries for forest wildlife of the NRP area in this way.

We also see those sanctuaries as areas suitable for research and educative purposes as well. However, visitors' access should be limited to educative trails planned in a way that will allow visitors in the future to experience the natural forest and to learn about its benefits while keeping distractions of wildlife to a minimum.



We found two areas to be especially suitable for such conservation action. Proposed '*Menišija sanctuary*' lying in NW part of NRP would cover 258 ha and '*Rakov Škocjan sanctuary*' in W part of NRP that would cover 937 ha. Both 'sanctuary' areas together would represent over 5 % of NRP area and would be of huge asset in conserving forest biodiversity of the area.

## 4. MONITORING & COMMUNICATION

NRP is responsible for implementation of most of this action plan's activities and concrete steps needed to achieve the set goals and these activities will be included in NRP's workplan. In this way and with help of this action plan's tables monitoring of implementation should be easier.

Big step towards regular communication with local stakeholders was made during Eco Karst project. And as NRP is active on the social media, like Facebook and Instagram, communicating the implementation of action plan through these media should more effective too.

As some of the activities need more in-depth communication and involvement we plan to take initiative in organizing meetings with these actions proposers in the future as well.