



Enviroment and Climate  
Regional Accession Network

ECRAN

# **TAIEX-ECRAN Sub-Regional Workshop on Appropriate Assessment of the Kavadarci – Tikvesh Reserve Pilot Site (Natura 2000)**

**Workshop II: Main Assessment**

**Topic: Tikvesh area findings and AA results**

**Skopje, the former Yugoslav Republic of Macedonia. 13 – 14 October 2015**



**This Project is funded by the European Union**



**A project implemented by Human Dynamics Consortium**

## 2. Field survey

- **Why it is necessary to carry out the field survey:**
  - Data concerning assessed project location must be recent
  - Data concerning affected target features must relate to the project location, not only to SPA/SCI
  - Field survey helps to understand ecological relations within the project location, interactions with other projects, landuse and any other factors of possible cumulative effects

## 2. Field survey

- **Who should carry out the field survey:**
  - Ornithologist if assessed project applies to a SPA
  - Botanist if target features of a SCI are plant species or habitats
  - Zoologist with corresponding specialization depending on target animal species within the SCI
- **Appropriate assessment field survey is frequently a team work of various specialists**
- **Appropriate assessment should be guaranteed by one responsible expert experienced in biology as well as in relevant legislation**

## 2. Field survey

- **What is not necessary to carry out during the field survey:**
  - Influences on non-target features within SPA/SCI (it is a subject of other type of assessments – biological assessment, EIA...)
  - General environmental impacts (it is subject of EIA.)
  - Influences on landscape scenery

## 2. Field survey

- **What is not necessary to carry out during the field survey:**
  - Influences of landuse outside location of target features (if this is not in conflict with target features \*<sup>1</sup>)
  - Architectural design of the project (if this is not in conflict with target features \*<sup>2</sup>)

*\*<sup>1</sup>) possible changes of landuse influencing habitats for target features*

*\*<sup>2</sup>) possible risk of glass walls for birds, changes in bat refuges on buildings, design of potential migration corridors and other possible influences of architectonical arrangements on animals*

## 2. Field survey

- Possible location of target features of SCI within the assessed sites
- For the purpose of the pilot project 9 animal target species were listed :

English name	Scientific name
Leopard Snake	<i>Zamenis situla</i>
Mediterranean Horseshoe Bat	<i>Rhinolophus euryale</i>
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>
Blasius' Horseshoe Bat	<i>Rhinolophus blasii</i>
Schreiber's Bat	<i>Miniopterus schreibersii</i>
Geoffrey's Bat	<i>Myotis emarginatus</i>
Greater Mouse-eared Bat	<i>Myotis myotis</i>
Wolf	<i>Canis lupus</i>
Marbled Polecat	<i>Vormela peregusna</i>

*None from these target species were ascertained as directly affected by the assessed project*

## 2. Field survey

- Possible location of target features of SPA within the assessed sites
- For the purpose of the pilot project 11 bird species were listed :

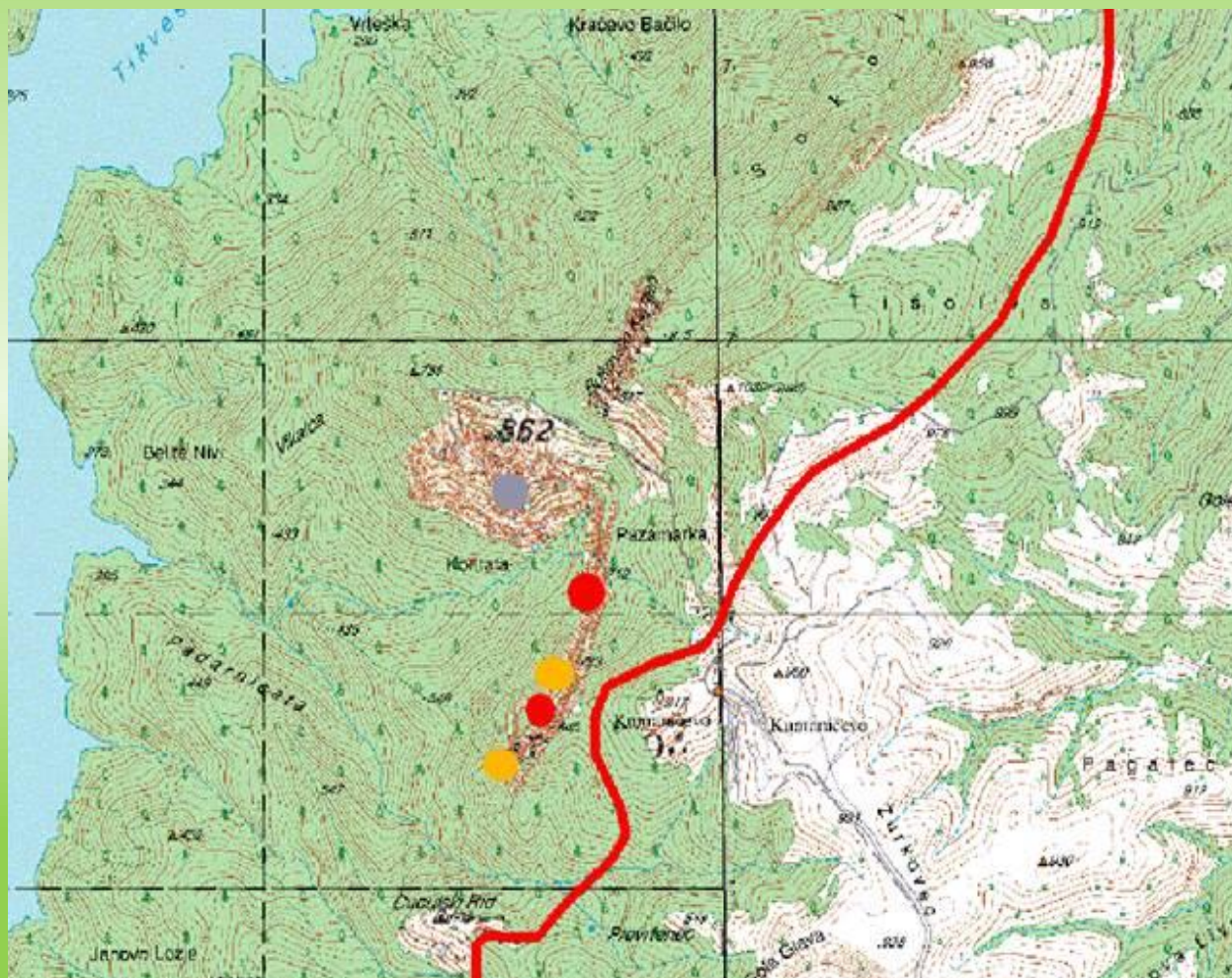
English name	Scientific name
Lammergeier	<i>Gypaetus barbatus</i>
Egyptian Vulture	<i>Neophron percnopterus</i>
Griffon Vulture	<i>Gyps fulvus</i>
Black Vulture	<i>Aegypius monachus</i>
Levant Sparrowhawk	<i>Accipiter brevipes</i>
Imperial Eagle	<i>Aquila heliaca</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Booted Eagle	<i>Hieraaetus pennatus</i>
Bonelli's Eagle	<i>Hieraaetus fasciatus</i>
Peregrine Falcon	<i>Falco peregrinus</i>
European Roller	<i>Coracias garrulus</i>

*Species highlighted by yellow color were ascertained as possibly affected*



## 2. Field survey

- Possible location of bird target features within the assessed site (Kumanichevo cliffs)



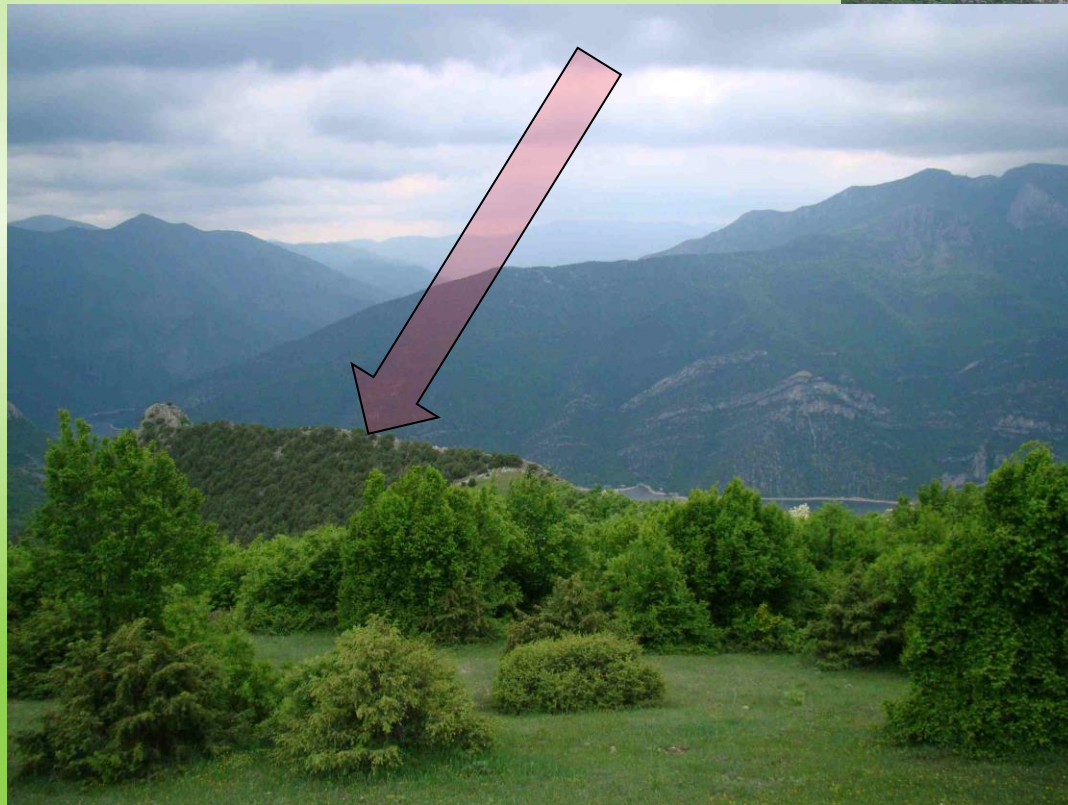
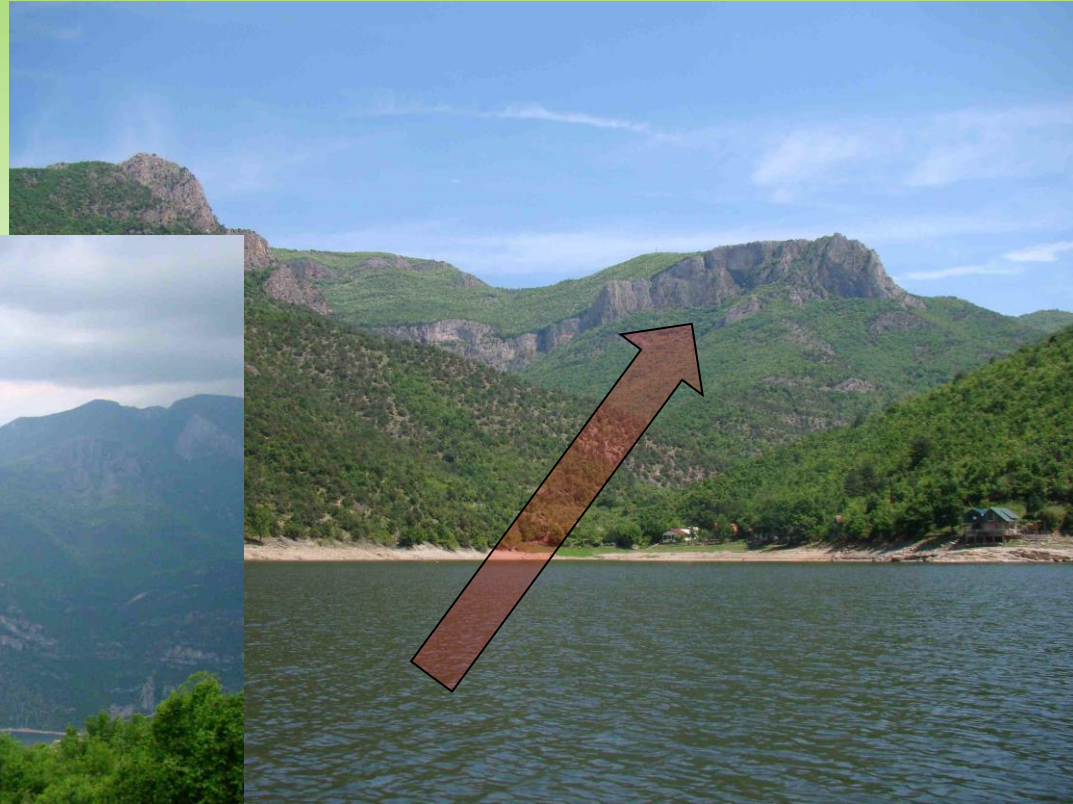
Nesting sites of:

- Kestrel
- Griffon Vulture
- Peregrine Falcon



## 2. Field survey

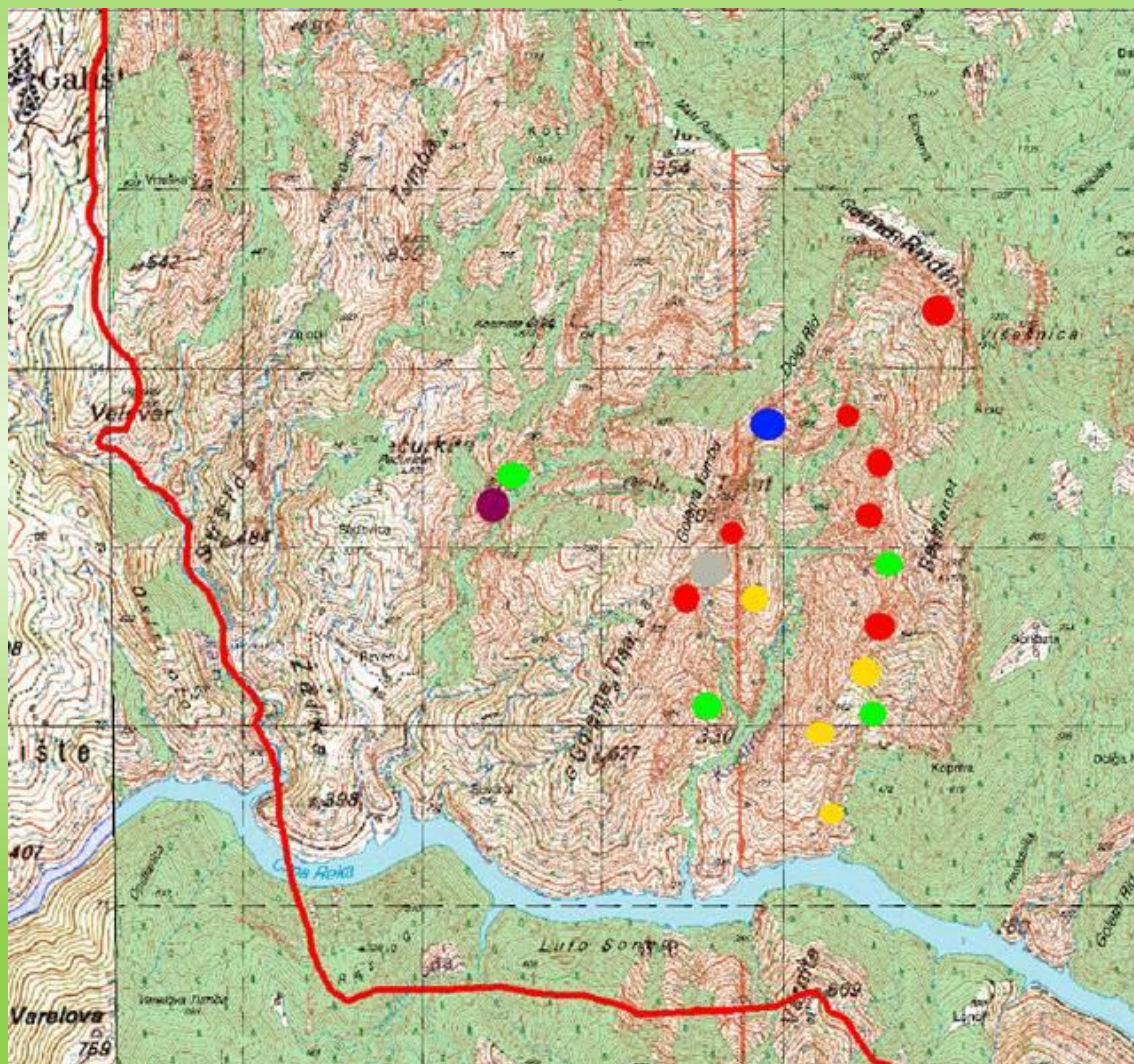
- Possible location of bird target features within the assessed site (Kumanichevo cliffs)





## 2. Field survey

- Possible location of target features within the assessed site (Koturski dol)



### Nesting sites of:

- Kestrel
- Griffon Vulture
- Golden Eagle
- Egyptian Vulture
- Peregrine Falcon
- Short-toed Snake-eagle



## 2. Field survey

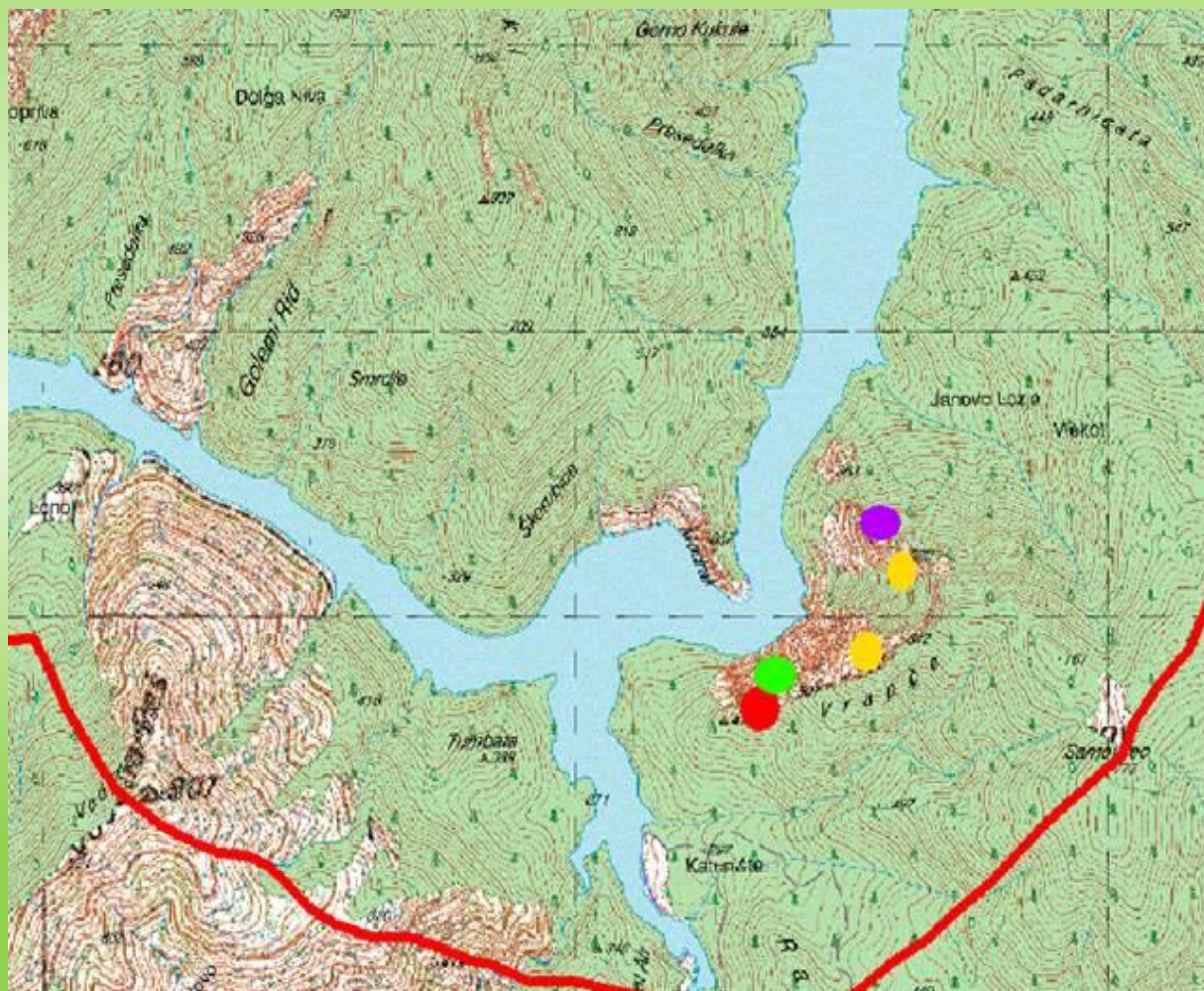
- Possible location of target features within the assessed site (Koturski dol)





## 2. Field survey

- Possible location of target features within the assessed site (Vrapce cliffs)



Nesting sites of:

- Kestrel
- Griffon Vulture
- Golden Eagle
- Egyptian Vulture



## 2. Field survey

- Possible location of target features within the assessed site (Vrapce cliffs)





## **2. Field survey**

- Quantification of affected target features within the whole SPA/SCI where these data are not available
  - In case of real AA, field survey focused on gathering of quantitative data should be carried out for a long time
  - Tikvesh area is really large and inaccessible and real assessment would take a lot of time for field survey

## 2. Field survey

- Quantification of affected target features within the whole SPA/SCI where these data are not available
  - In case of the real AA, field survey should include:
    - *Current quantification of nesting birds of prey on all recognized nesting sites (about 30 man-days in field) – it would be necessary to verify numbers of nesting birds on each site as well as number of birds using the area during migration and wintering*

## 2. Field survey

- Quantification of affected target features within the whole SPA/SCI where these data are not available
  - In case of the real AA, field survey should include:
    - *Quantification of scavengers using the area affected by the hotel and especially quad-bike trails year-round time (about 30 man-days in field)*
    - *Herpetological and mammalogical survey evaluating influences of the project on target species (about 20 man-days in field)*
    - *If the target plant species and target habitats would be defined, too, there would be necessary to assess the effects of the project on them as well (about 20 man-days in field).*

## 2. Field survey

- Assessment of possible cumulative effects of the assessed project with other projects and trends within the SPA/SCI
- Tikvesh area represents one of least disturbed and sparsely inhabited areas within Balkan
- Habitats, species and bird species inhabiting the area have good prospects for sustainable conservation status in future





## 2. Field survey

- Assessment of possible cumulative effects of the assessed project with other projects and trends within SPA/SCI
- Big birds of prey, vultures and Lammergeiers depend on food sources from extensive neighbouring areas
- In ancient times, key food sources of scavengers were remnants of large herbivores killed by other predators or dying due to other reasons
- Since antiquity these food sources have been substituted by dead stock
- Recent fast decrease in numbers of stock reduces the food sources of carrion eaters



## 2. Field survey

- Assessment of possible cumulative effects of the assessed project with other projects and trends within SPA/SCI
- Food sources of carrion eaters are further limited by veterinary legislation which avoids leaving dead cattle carcasses in the open air
- These trends should be taken into account in the assessment of the project which causes reduction of feeding areas of carrion eaters, as a cumulative effect.

## 2. Field survey

- Assessment of possible cumulative effects of the assessed project with other projects and trends within SPA/SCI
- Implementation of the hotel facility and its infrastructure will reduce present area of pasture land on the plateau near Tikvesh reserve
- Quad bike movement and noise will fragment pasture areas and reduce area of grazing land
- Quad bike movement and noise will disturb birds searching for food

### 3. AA findings and results

- Affected target features within the assessed areas
- Quantification of affected target features
- Assessment of affected target features in relation to paragraph 3 of Article 6 of Habitats Directive <sup>\*1</sup>

<sup>\*1</sup> ***Any plan or project not directly connected with or necessary to the management of the site but **likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.*****

### **3. AA findings and results**

- Likely affected target features within the assessed site
- **Lammergeier** (*Gypaetus barbatus*)
- **Egyptian Vulture** (*Neophron percnopterus*):
- **Griffon Vulture** (*Gyps fulvus*)
- **Imperial Eagle** (*Aquila heliaca*)
- **Golden Eagle** (*Aquila chrysaetos*)
- **Peregrine Falcon** (*Falco peregrinus*)

### **3. AA findings and results**

- Qualification and quantification of the effects on particular target features

#### **Lammergeier (*Gypaetus barbatus*)**

- Limitation of the feeding area during project operation by hotel facility and quad – bike trails
- *Lammergeier represents one of the most sensitive scavengers among birds. This species specializes on bones of large herbivores. The Lammergeier can swallow whole or bite through brittle bones up to the size of a lamb's femur and its powerful digestive system quickly dissolves even large pieces of bones*



### **3. AA findings and results**

- Quantification of the effects on particular target features

#### **Egyptian Vulture (*Neophron percnopterus*)**

- Limitation of the feeding area during project operation by hotel facility and quad – bike trails
- Disturbance of about 20% of nesting pairs on the Vrapce cliff by cableway construction and operation
- Risk of collision for birds flying near Vrapce cliffs with the cables of cableway
- Disturbance of about half of the nesting population by visitors during project operation

### **3. AA findings and results**

- Quantification of the effects on particular target features

#### **Griffon Vulture (*Gyps fulvus*)**

- Limitation of the feeding area during project operation by hotel facility and quad – bike trails
- Disturbance of about 20% of nesting pairs on the Vrapce cliff by cableway construction and operation
- Risk of collision for birds flying near Vrapce cliffs with the cables of cableway
- Disturbance of about half of the nesting population by visitors during project operation in nesting areas on Kumanichevo cliffs, Koturski Dol and Vrapce cliffs

### **3. AA findings and results**

- Quantification of the effects on particular target features

#### **Golden Eagle (*Aquila chrysaetos*)**

- Disturbance of about 50% of nesting pairs on the Vrapce cliff by cableway construction and operation.
- Risk of collision for birds flying near Vrapce cliffs with cables of cableway
- Disturbance of about 100% of the nesting population by visitors during project operation on nesting area Koturski Dol and Vrapce cliffs as the only nesting area within the Tikvesh reserve

### **3. AA findings and results**

- Quantification of the effects on particular target features

#### **Peregrine Falcon (*Falco peregrinus*)**

- Disturbance of about 20% of the nesting population by visitors during project operation on nesting sites Koturski Dol and Kumanichevo cliffs

### 3. AA findings and results

- Quantification of the effects on particular target features in relation to paragraph 3 of Article 6 of the Habitats Directive and clear decision if the identified effects could have significant impact

Five target species are significantly adversely affected by the assessed project:

- Lammergeier (*Gypaetus barbatus*)
- Egyptian Vulture (*Neophron percnopterus*)
- Griffon Vulture (*Gyps fulvus*)
- Golden Eagle (*Aquila chrysaetos*)
- Peregrine Falcon (*Falco peregrinus*)

**The impacted population ranges from 20 % to 100 % of particular species, i.e., there is no doubt that such an impact is *more than significant*.**



### **3. AA findings and results**

- If any target feature is likely to be significantly affected, the site integrity will be adversely affected, too

#### **Conclusions on the impact on site integrity**

Construction and especially operation of the project of Eco-resort Kavadarci would significantly adversely impact birds of prey and scavengers – target species of proposed SPA Tikvesh.

Birds of prey and scavengers play a crucial role in maintaining ecological balance of large undisturbed areas like Tikvesh reserve and must not be either disturbed or deteriorated.

Due to the significant adverse impact on 5 site target features, there is an adverse impact on the integrity of this site.

**Therefore, the project must not be authorized.**

### 3. AA findings and results

- Clear decision if the identified impacts would be possible to mitigate
- Mitigation measures proposed where appropriate
- Clear decision if the identified impacts should have significant effect on target features

### 3. AA findings and results

- Clear decision if the assessed impacts would be possible to mitigate

The results of the appropriate assessment **proved significant negative effects** of the construction and operation of the Eco-resort Kavadarci project on target features of the site.

The project was proposed in one alternative only, there is **no opportunity to propose mitigation measures (=impacts of this project cannot be mitigated)**.

### **3. AA findings and results**

- Mitigation measures where appropriate

**No mitigation measures possible.**

## 4. Lack of data necessary for AA Macedonian pilot project

- No available data on the abundance of target populations within assessed SPA/SCI as well as within the whole country
- No available data concerning the area of target habitats within assessed SCI as well as within the all country.
- No available reference lists of bird species (Annex I of Bird Directive), habitats (Annex I of Habitats Directive) and non-bird species (Annex II of Habitats Directive) for the former Yugoslavian Republic of Macedonia at time of project elaboration <sup>\*1</sup>

*<sup>\*1</sup> for this pilot project there were mostly used data published within some previous projects, especially during Emerald project preparation*



## 4. Lack of data necessary for AA Macedonian pilot project

- For the real assessment of this project it would be necessary to invest at least about 30 expert man-days of field work for ornitological survey
- If there would be target habitats listed within Tikvesh area, too, field survey would require further days for field work to assess all impacts in detail (quad bikes and hiking trails, road pavement, cableway stations)



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