LIFE09 NAT/SK/000396
Conservation of *Aquila pomarina* in Slovakia

Assessment of conservation status of *Aquila pomarina* in eight Special Protection Areas in Slovakia

Background document for Management Plans

Summary

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List of Contents

List of Abbreviations

BP	Breeding Pair
BT	Breeding Territory
MoA	Ministry of Agriculture and Rural Development
LSE	Lesser Spotted Eagle
MoE	Ministry of the Environment
RDP	Rural Development Plan for the Slovak Republic
SNC	State Nature Conservancy of the Slovak Republic
SPA	Special Protection Area

Introduction

Special Protection Areas are part of the European network of protected areas known as Natura 2000. Its aim is to maintain or improve the favorable conservation status of habitats and species of European importance. Special Protection Areas are designated to protect the habitats of migratory bird species, especially their breeding, wintering and resting places along their migration routes and habitats of birds of European importance in order to ensure the survival and reproduction of the species.

The Nature and Landscape Conservation Act No. 543/2002 Coll., as amended, provides that management plans shall be prepared in order to ensure long-term continuous conservation of the special protection areas. Content of management plans is established by the Decree of the Ministry of Environment of the Slovak Republic no. 24/2003 Coll., Implementing the Act. 543/2002 Coll. on nature and landscape protection, as amended.

Assessment of the conservation status of bird species targeted by conservation represents the foundation for designing an appropriate management for the special protection areas. This document summarises information on the conservation status of the Lesser Spotted Eagle in eight Special Protection Areas, namely in the Horna Orava SPA, The Tatry Mountains SPA, the Nizke Tatry Mountains SPA, the Slovensky kras Karst SPA, the Volovské vrchy Mountains SPA, the Slanske vrchy Mountains SPA, the Vihorlatske vrchy Mountains and Laborecká vrchovina Upland SPA and gives en example of detailed assessment of the conservation status of Lesser Spotzted Eagle in Laborecká vrchovina Upland.

Assessment of conservation status was performed following the methodology for assessing conservation status of birds and habitats published in Polák, P., Saxa, A (eds.). 2005: Priaznivý stav biotopov a druhov europskeho vyznamu (Favorable Conservation Status of Habitats and Species of the European importance). The book was published by the State Nature Conservancy as technical guidelines for developing management plans for protected areas.

The original methodology dealt with criteria and indicators for assessing the species conservation status at the national level. For the purpose of the present document, some criteria and indicators were adapted to the level of the special protection area. For each SPA individual values of the indicator "population size" has been established in consideration of the size of population as listed in the National List of Proposed SPAs, approved by the Slovak Government Resolution no. 636/2003 on 9.7.2003. Size of population then has been considered as favorable.

Present document was developed within a framework of the Project LIFE09NAT/SK/000396 “Conservation of the Lesser Spotted Eagle in Slovakia”. Project was implemented by the Raptor Protection of Slovakia and energy companies Východoslovenská energetika Holding, a.s., Stredoslovenská energetika, a.s. a Stredoslovenská energetika – Distribúcia, a.s. Project was co-finaced by LIFE, the European Union´s financial instrument for the environment and the Ministry for the Environment of the Slovak Republic.

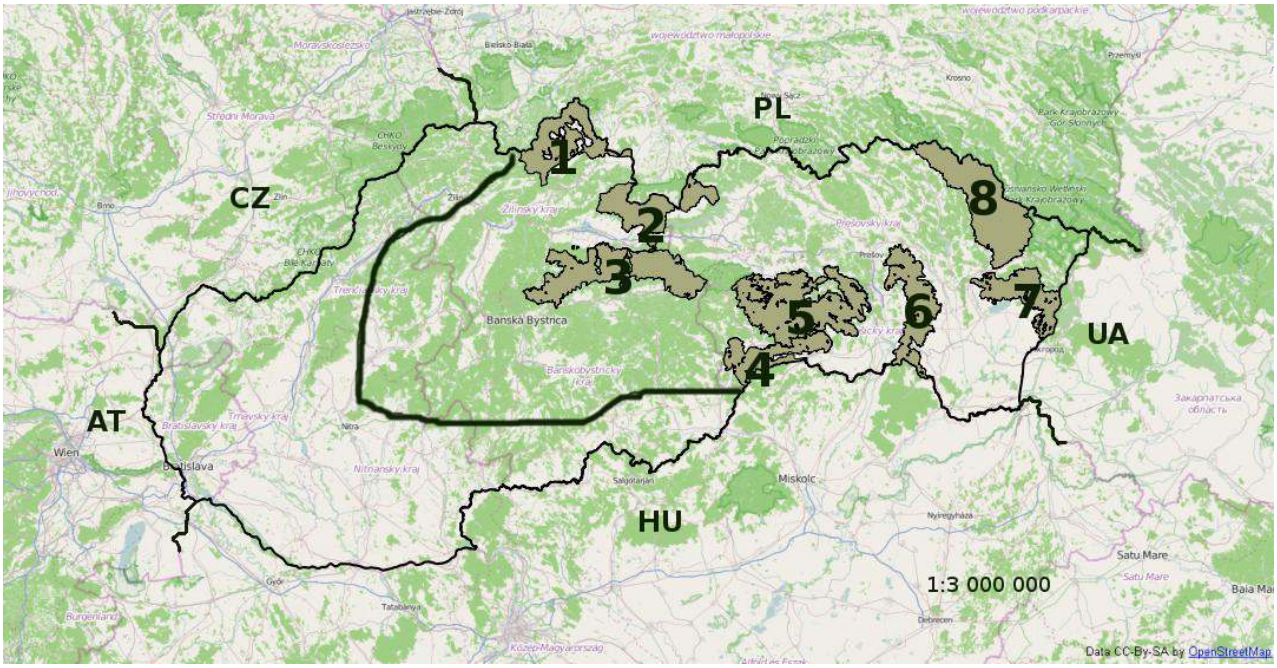
Summary of Assessments of Conservation Status of the Lesser Spotted Eagle in Eight SPAs in Slovakia

The Lesser Spotted Eagle is a migratory species. In Europe, which is home to more than 95% of the breeding population (16 400 – 22 100 pairs, BirdLife International, 2015), these eagles are found from as far south as the Balkan peninsula and Turkey right up to the Baltic Sea in the north. The western limit of their occurrence runs from north-eastern Germany through Poland, Slovakia, Hungary, Croatia and Greece. The eastern boundary of this area reaches from the western part of Russia to the area between the Black and Caspian seas. These eagles spend the winter for the most part in eastern and south-eastern Africa.

Slovakia is one of the countries in Europe, which are significant breeding places for the Lesser Spotted Eagles. The breeding population is concentrated in central and eastern Slovakia and nowadays amounts to 600 – 800 breeding pairs (Dravecky *at al*, 2015). In the period 2000 – 2013, though, the breeding population has shown a declining trend, and numbers have dropped by as much as 23%. The Lessee Spotted Eagle inhabits diverse habitats in elevations from 100 to 900 m a.s.l.

In Slovakia, 12 Special Protection Areas (SPAs) were designated for the protection of the Lesser Spotted Eagles. These SPAs provides a formal protection for 217 breeding pairs which represent 31 % of the national population.

In the period 2011-2014, within a framework of the Project LIFE09NAT/SK/000396 Conservation of *Aquila pomarina* in Slovakia, monitoring of 187 breeding territories was performed in 8 SPAs: Horná Orava, Tatry, Nizke Tatry, Slovensky kras, Volovské vrchy, Slanske vrchy, Vihorlatské vrchy and Laborecká vrchovina. In 170 breeding territories (90,9 %) presence of breeding pair was confirmed, as a minimum in one breeding season.



Map showing a breeding range of the Lesser Spotted Eagle in Slovakia and location of the SPAs forming the LIFE09NAT/SK/000396 Project Area: 1. Horna Orava SPA, 2. Tatry SPA, 3. Nizke Tatry SPA, 4. Slovenský kras SPA, 5. Volovské vrchy SPA, 6. Slanske vrchy SPA, 7. Vihorlatské vrchy SPA , 8. CHVÚ Laborecká vrchovina.

Detailed monitoring data allowed making an assessment of the conservation status of the Lesser Spotted Eagle in individual SPAs. Assessment was performed following the methodology for assessing conservation status of birds and habitats published in Polák, P., Saxa, A (eds.). 2005: Priaznivý stav biotopov a druhov europskeho vyznamu (Favorable Conservation Status of Habitats and Species of the European importance).

The book was published by the State Nature Conservancy as technical guidelines for developing management plans for protected areas.

Assessment was based on evaluation of the population status, status of habitats and direct or indirect threats.

For each SPA individual values of the indicator "population size" has been established in consideration of the assessed size of population at the time of compilation of the National List of Proposed SPAs, approved by the Slovak Government Resolution no. 636/2003 on 9.7.2003. Size of population then has been considered as favorable.

By comparing actual population parameters in individual SPAs with population status from the National SPA List, population trend was determined. Individual Assessments were consulted with the State Nature Conservancy.

Assessment of the conservation status of the Lesser Spotted eagle in individual SPAs was complemented with designing management measures tailor made to the individual SPAs constituting project area and proposed monitoring scheme. Management recommendations for individual SPAs were made on the basis of *Aquila pomarina* Management Guidelines developed within a framework of the project.

Overall assessment of the conservation status has been expressed in one of the three categories

- Favorable Conservation Status – good (100 – 78% from total possible points)
- Favorable Consrevation Status – average (77-55% from total possible points)
- Unfavorable Conservation Status (54-33% from total possible points)

Horná Orava Special Protection Area

The Horná Orava (Upper Orava) SPA was established by Regulation of the MfE SR no. 173/2005, effective as of 1 May 2005. It is located in the north-western part of Slovakia in the Oravské Beskydy, Kysucká vrchovina Uplands, Podbeskydská brázda Gap, Oravská Magura, Podbeskydská vrchovina Uplands and the Oravská kotlina Basin orographic zones. This SPA has an area of 58 735 hectares comprising parts of the districts of Dolný Kubín, Námestovo and Tvrdošín.

The hilly landscape of this SPA inhabited by the lesser spotted eagle consists of a mosaic of woods, meadows and pastures, and a small extent of fields and marshes at elevations above sea level ranging from 600 to 900 metres.

The nesting population has suffered very serious decline in recent years, down by as much as 40% from the original number of 60 pairs. The nesting population of the lesser spotted eagle is currently estimated at 31 - 41 pairs. The nesting habitats are mainly spruce forests, but exceptionally include also marshy spruce/pine woods.

In Horna Orava SPA, the Lesser Spotted Eagle has unfavourable conservation status. Overall evaluation was 47 points that represents 50, 50%.

The Tatry Mountains Special Protection Area

The Tatry Mountains SPA was established by Regulation of the MfE SR no. 4/2011, effective as of 15 January 2011. It is located in the northern part of central Slovakia in the Western Tatras, High Tatras, Belianske Tatras orographic zones, and partially extending into the Liptov Basin and the eastern part of the Podtatranská brázda Gap. This SPA has an area of 54 611 hectares comprising parts of the districts of Liptovský Mikuláš, Poprad and Tvrdošín.

The Tatry SPA consists of high mountain relief with great vertical complexity. The lesser spotted eagle inhabits only the marginal parts of this area, mainly the southern foothills at elevations between 700 – 1100 metres above sea level, bordering on the open spaces of the Liptov Basin, which the eagles use as their hunting grounds. These eagles avoid the other parts of the SPA rising above 1100 metres.

The nesting population has suffered very serious decline in the recent past, down by as much as 35% from the original number of 17 pairs. The nesting population of the lesser spotted eagle is currently estimated at 8

– 13 pairs. The nesting biotopes are mainly spruce forests making up not only the forested areas of the lower slopes, but also patches of woodland growing on the farmland below, particularly the permanent grasslands which have become overgrown and now have the character of woods. The nesting by lesser spotted eagles in the Tatry SPA is concentrated in the marginal parts close to agriculturally-used land and grassland areas.

In Tatry Mountains SPA, the Lesser Spotted Eagle has unfavourable conservation status. Overall evaluation was 53 points that represents 53, 50%.

The Nízke Tatry Mountains Special Protection Area

The Nízke Tatry (Low Tatras) Mountains SPA was established by Regulation of the MfE SR no. 189/2010, effective as of 15 May 2010. It is located in central Slovakia in the Ďumbierske Tatry, Kráľovohoľské Tatry and Starohorské vrchy Hills orographic zones, partially in the Kozie chrbty range, and only marginally in the Horehronské Podolie (Upper Hron Valley) and Slovenský raj (Slovak Paradise) areas. This SPA has an area of 98 169 hectares comprising parts of the districts of Banská Bystrica, Brezno, Liptovský Mikuláš, Poprad and Ružomberok.

The Nízke Tatry SPA consists of a switchback range of fell-like mountains with predominantly coniferous forests on the north-facing slopes and more mixed woodland on the south-facing slopes. The lesser spotted eagle inhabits only the marginal northern parts of this area at elevations between 700 – 1200 metres above sea level, bordering on the open spaces of the Liptov and Poprad Basins, which the eagles use as their hunting grounds. These eagles avoid the other parts of the SPA rising above 1300 metres.

The nesting population has suffered very serious decline in recent years, down by 53% from the original number of 15 pairs. The nesting population of the lesser spotted eagle is currently estimated to number 7 pairs. Several pairs have disappeared completely, and a trend has developed of gradual movement of the remaining pairs to the most marginal parts of the mountain range, or even to the neighbouring lowlands outside the SPA itself. The nesting habitats are spruce forests. The nesting of lesser spotted eagles in the Nízke Tatry SPA is concentrated in the marginal northern parts close to agriculturally-used land and grassland areas.

In Nizke Tatry Mountains, the Lesser Spotted Eagle has unfavourable conservation status. Overall evaluation was 39 points that represents 38 %.

The Slovensky kras Karst Special Protection Area

The Slovenský kras (Slovakian Karst) SPA was established by Regulation of the MfE SR no. 192/2010, effective as of 15 May 2010. The area extends into the following orographic zones: Slovenský kras, Košická kotlina Basin, Volovske vrchy Hills and Revúcka vrchovina Uplands. This SPA has an area of 43 860 hectares comprising parts of the districts of Roznava and Kosice-Environs.

In this area the lesser spotted eagle inhabits a karst landscape at elevations above sea level ranging from 220 to 850 metres consisting of plateaux separated by valleys and canyons. The complex, varied relief is complemented in the valleys with fields, meadows and pastures, marshland, fishponds and streams, and with orchards and vineyards on the hillsides.

The nesting population of the lesser spotted eagle is estimated at 10 – 12 pairs. The typical nesting biotope consists of hornbeam and oak woods, beech and mixed beech/hornbeam woodland, then rocky communities of maple, ash, and Scots and black pine.

In Slovensky kras Karst SPA, the Lesser Spotted Eagle has average favourable conservation status. Overall evaluation was 67 points that represents 70%.

The Volovské vrchy Mountains Special Protection Area

The Volovské vrchy Hills SPA was established by Regulation of the MfE SR no. 196/2010, effective as of 15 May 2010. It is located in the central part of eastern Slovakia, directly adjacent to the Slovenský kras SPA and extending into the Volovské vrchy and Čierna hora orographic zones. This SPA has an area of 121 421

hectares comprising parts of the districts of Rožňava, Košice-Environs, Spišská Nová Ves, Gelnica and Prešov.

The lesser spotted eagle inhabits predominantly the margins of the area, bordering the open spaces of the Hornád Basin to the north and the Košice Basin to the south-east, at elevations above sea level ranging from 230 to 900 metres. The eagle avoids the central parts of the SPA rising above 1000 metres. There is a very low density population in the Hnilec Valley in the central part of the area (one or two pairs) due to insufficient extent of suitable hunting grounds.

The nesting population of the lesser spotted eagle is currently estimated at 12 – 15 pairs, distributed among the foothills bordering the southern, south-eastern and eastern parts of the SPA. The nesting population has suffered a clearly declining trend over the last 20 years, dropping by as much as 50% from the original size of the nesting population of around 26 pairs. The eagles have disappeared mainly from the northern part of the area due to fragmentation of forest growth in the nesting grounds caused by intensive logging especially of spruce forest, but also due to inter-species competition with the golden eagle. The nesting biotopes consist mainly of coniferous woodland, more spruce forest in the west and fir forest in the central part, mixed forest with beech and oak together with Scots pine, hornbeam and alder in the southern part, and deciduous woodland with beech in the east of the area, together making up around 70% of the SPA area.

In Volovske vrchy Mountains SPA, the Lesser Spotted Eagle has unfavourable conservation status. Overall evaluation was 50 points that represents 52%.

The Slanské vrchy Mountains Special Protection Area

The Slanské vrchy Hills SPA was established by Regulation of the MfE SR no. 193/2010, effective as of 15 May 2010. It is located in eastern Slovakia in the Slanské vrchy orographic zone. This SPA has an area of 60 247 hectares comprising parts of the districts of Košice-Environs, Prešov, Trebišov and Vranov nad Topľou.

The hills in this area are of volcanic origin and are inhabited by the lesser spotted eagle at elevations from 230 to 900 metres above sea level. The extensive forests covering the hills are complemented on the lower slopes with agricultural land, i.e. ploughed fields, meadows and pastures. Mountain-type meadows are present to a small extent in the area.

The nesting population of the lesser spotted eagle is estimated at 32 – 38 pairs. The nesting biotopes consist mainly of beech forests, but also mixed oak and beech woodland with oak stands. Nesting by lesser spotted eagles in the Slanské vrchy Hills SPA is concentrated in the marginal parts of the range in the vicinity of agriculturally used lands (arable land and grasslands).

In Slanské vrchy Mountains SPA, the Lesser Spotted Eagle has average favourable conservation status. Overall evaluation was 53 points that represents 55%.

The Vihorlatské vrchy Mountains Special Protection Area

The Vihorlatské vrchy Hills SPA was established by Regulation of the MfE SR no. 195/2010, effective as of 15 May 2010. It is located in eastern Slovakia mostly in the Vihorlatské vrchy orographic zone, and partially extending into the Beskydské predhorie Foothills to the north and into the Východoslovensa pahorkatina (East Slovakian Uplands) to the south. This SPA has an area of 48 286 hectares comprising parts of the districts of Humenné, Michalovce, Snina and Sobrance. The Vihorlatské vrchy Hills are of volcanic origin.

The aera is inhabited by the lesser spotted eagle at elevation from 120 to 900 metres above sea level. The extensive forests covering the hills give way on the lower slopes to agricultural land, i.e. ploughed fields, meadows and pastures. Mountain-type meadows are present to a small extent in the area.

The nesting population has suffered very serious decline in recent years, down by as much as 47% from the original number of 17 pairs. The nesting population of the lesser spotted eagle is estimated at 7 – 11 pairs. The nesting biotopes consist mainly of beech forests, but also mixed oak and beech woodland with oak stands. Nesting by lesser spotted eagles in the Vihorlatské vrchy Hills SPA is concentrated in the marginal parts of the mountain range in the vicinity of agriculturally used lands (arable land and grasslands).

In Vihorlatske vrchy Mountains, the Lesser Spotted Eagle has unfavourable conservation status. Overall evaluation was 49 points that represents 51%.

The Laborecká vrchovina Upland Special ProtectionArea

The Special Protection Area (SPA) of the Laborecká vrchovina Uplands was established by Regulation of the Ministry for Environment of the Slovak Republic (MfE SR) no. 438/2009, effective as of 1 November 2009. It is located in the north-eastern part of Slovakia, mostly within the Laborecká vrchovina orographic zone, with a small part extending to the south-west into the Ondavská vrchovina Uplands orographic zone. This SPA has an area of 102 814 hectares comprising parts of the districts of Svidník, Stropkov, Medzilaborce, Humenné and Snina.

The hilly landscape of this SPA inhabited by the lesser spotted eagle consists of a mosaic of woods, meadows, pastures, fields and marshes and stream system made up of the Svidničanka, Ladomírka, Chotčianka, Oľka, Výrava, Udava, Cirocha and Laborec streams, at elevations above sea level ranging from 200 to 700 metres.

The nesting population of the lesser spotted eagle is estimated at 46 – 50 pairs, which is characterized by a combined (regular to clustered) distribution. The typical nesting biotope consists of beech and mixed beech/hornbeam woodland.

In Laborecka vrchovina Upland SPA, the Lesser Spotted Eagle has average favourable conservation status. Overall evaluation was 72 points that represents 77%.

Defining the Conservation Status of the Lesser Spotted Eagle in Laborecka vrchovina Upland Special Protection Area

The Laborecká vrchovina Upland Special Protection Area (SPA) is located in the north-eastern part of Slovakia, mostly in the Laborecká vrchovina Upland orographic unit, with only a small portion on south-west extending into the Ondavská vrchovina Upland orographic unit. The SPA covers an area of 102,814 ha and spreads over the Svidník, Stropkov, Medzilaborce, Humenné and Snina districts.

1. Basic species characteristics

Species distribution in the Laborecká vrchovina Upland SPA:
In the Laborecká vrchovina Upland SPA the lesser spotted eagle inhabits a hilly mosaic landscape formed by forests, meadows, pastures, fields, wetlands and the branched network of the Svidničanka, Ladomírka, Chotčianka, Oľka, Laborec, Výrava, Udava and Cirocha watercourses at an altitude from 200 to 700 m. The abundance of the lesser spotted eagle breeding population is estimated at 46-50 pairs. The population is regularly distributed over the SPA.
The lesser spotted eagle is a migratory species; pairs fly into breeding grounds in the SPA predominately during the first ten days of April and leave for their wintering grounds in central and southern Africa mainly in the second half of September.

Species Habitats:

Breeding habitats
The breeding habitats are beech and mixed beech forests. An important prerequisite for breeding is the presence of old forests (more then 80 years old) with a suitable vertical structure, enabling the formation of deep crowns and natural woody elements which provide the eagles with favourable opportunities for building nests or offers nests built by other species (e.g. *Buteo buteo, Pernis apivorus, Milvus milvus, Accipiter gentilis)*. Older trees, so-called "reserve trees" which are left on a felling surface after extraction, have great importance in forests during renewal of the forest growth. When newly established young growth in the surroundings grows to the height of the "reserve trees" left behind, these later provide eagles with other opportunities for building a nest. Nests are placed on different trees, such as beech, oak, cherry, birch, pine, larch, spruce and fir. In mixed beech forests, nests are placed preferentially on coniferous trees. During renewal of forests in which the LSE breeds, the shelterwood logging (its large-area or small-area form) is in particular applied, and it has a very negative impact on the status of the breeding habitat at present. In a much smaller extent, the selective logging is applied (e.g. in the northern part of the SPA).
Feeding habitat
The feeding habitat is formed primarily of permanent grasslands (PG), i.e. meadows, pastures and unmanaged grasslands, (representing 84.10% of the SPA farmlands) and of plots of arable land (making up 15, 82 %of the SPA farmlands). Non-forest woody vegetation (e.g. solitary trees, trees belts and bushes, which eagles prefer to use for tracking prey or for places of rest, have great importance in the feeding habitats.
The management of agricultural land in the feeding habitats of the eagles has a semi-intensive to intensive character and is focusing on the raising of beef cattle (breeding without the market production of milk predominates) and sheep. Existing management has a positive impact on the survival of prey and its availability for the lesser spotted eagle. Pastures are thus grazed by the mentioned types of livestock, and meadows and plots with multi-year fodder are managed by mowing for the purpose of producing coarse fodder (i.e. hay) and for the purpose of production of green feed for direct feeding of animals and the production of silage for winter. Permanent grasslands are occasionally also mulched, which increases the availability of prey for eagles but has an unfavourable impact on the quality of grasslands. Plots of arable land with cereals (e.g. barley, wheat, triticale, rye) are used by eagles as hunting grounds during the entire breeding season. Areas of arable land with maize used for the production of silage for livestock are attractive for eagles only after harvesting and ploughing, similarly as with plots with energy crops (sunflower and rapeseed) due to the very thick vegetation that these crops create, making prey inaccessible to the eagles but also causing possible injury to eagles during hunting after the harvest due to the high stubble fields left

behind. In the feeding territories, 22 kV electrical lines with dangerous pylons are found. As much as 85% of their total length in the SPA has already been equipped with consol barriers.

Existing and potential threats:

a) Degradation and loss of breeding habitats

- forest legislation does not sufficiently consider the requirements of nature conservation and biodiversity, including the ecological claims of the lesser spotted eagle (the application of inappropriate management methods with forest management in the SPA)

b) Degradation and loss of feeding habitats

- cutting of non-forest woody vegetation for the purpose of producing woodchips
- large-area cultivation of unsuitable agricultural crops predominately for energy purposes
- burning of mowed biomass after mowing of meadows and burning of stubble fields after harvest of agricultural crops
- taking of agricultural land for construction of solar (photovoltaic) power plants and other infrastructure
- abandoning of agricultural land
- transformation of permanent grass covers into other types of land

c) Disturbances at breeding locations

- forest management activities preformed during the breeding season (performing of intentional – i.e. tending and renewal, exceptional and random extractions; concentrating, transporting, storing and exporting of wood; processing of wood – preparation of fuel wood, wood chipping; access of forest mechanisms, machines and equipment, including teams of horses; construction, reconstruction, maintenance and use of forest roads and sloping tracks; trimming and reforestation work, construction and maintenance of fencing; performing of forest technological improvements; excavations, construction and earthworks of other character)
- use of hunting rights during the breeding season (individual and common hunts, construction and maintenance of hunting facilities and their use, riding of motor vehicles into forests)

d) Immediate mortality

- deaths and injuries on untreated sections of 22 kV power lines
- shooting of young birds in the nest and adult individuals
- application of chemical preparations from the "List of prohibited preparations for Special Protection Areas" (source: http://nrl.uvm.sk/)
- unprofessional application of chemical preparations for protection of crops from the "List of permitted preparations for protection of plants" (source: http://www.uksup.sk/index.php?n=14)

e) General threats

- absence of a Programme of Care of the Laborecká vrchovina Upland SPA
- absence of a Programme of Care of the lesser spotted eagle

2. Defining of status:

Assessment criteria		FAVOURABLE STATUS		UNFAVOURABLE STATUS
		A good	**B average**	**C unfavourable**
Population	1.1. Population size	More than 45 breeding pairs	35-45 breeding pairs	Fewer than 35 breeding pairs
	1.2. Population trend	Population growing by more than 20% over a 5-year period	Population is stable or oscillates ± 20% over a 5-year period	Population declining by more than 20% over a 5-year period
	1.3. Area trend	Species inhabits 75-100% of suitable habitats in the SPA for a period of 5 years	Species inhabits 50-75% of suitable habitats in the SPA for a period of 5 years	Species inhabits less than 50% of suitable habitats in the SPA for a period of 5 years
	1.4. Inter-species interaction	Density of *Aquila chrysaetos* in the SPA is less than 0.4 pairs/100 km^2	Density of *Aquila chrysaetos* in the SPA is 0.4-0.6 pairs/100 km^2	Density of *Aquila chrysaetos* in the SPA is more than 0.6 pairs/100 km^2
	1.5. Productivity of population	Average breeding success for a 5-year period is greater than 0.8 juv/breeding pair/year	Average breeding success for a 5-year period is 0.6- 0.8 juv/breeding pair/year	Average breeding success for a 5-year period is smaller than 0.6 juv/breeding pair/year
	1.6. Integrity of breeding and feeding habitat	Feeding territory of pairs is located in the SPA in more than 90% of breeding population	Feeding territory of pairs is located in the SPA in 80-90% of breeding population	Feeding territory of pairs is located in the SPA in less than 80% of breeding population
Habitat	2.1. Breeding habitat	Share of forests undisturbed by clear-cutting for over 80 years is after extractions more than 70% of FSF acreage in the SPA	Share of forests undisturbed by clear-cutting for over 80 years is after extractions 40-70% of FSF acreage in the SPA	Share of forests undisturbed by clear-cutting for over 80 years is after extractions less than 40% of FSF acreage in the SPA
	2.2. Feeding habitat	Share of suitable area (permanent grass cover, water-logged areas, grassy arable land, arable land with several years fodder) and non-forest woody vegetation is more than 70% the area of the ASF in the SPA	Share of suitable area (permanent grass cover, water-logged areas, grassy arable land, arable land with several years fodder) and non-forest woody vegetation is 40-70% the area of the ASF in the SPA	Share of suitable area (permanent grass cover, water-logged areas, grassy arable land, arable land with several years fodder) and non-forest woody vegetation is less than 40% the area of the ASF in the SPA
	2.3. Habitats important during migration	Share of suitable areas (permanent grass cover, water-logged areas, grassy arable land, arable land with several years fodder) and non-forest woody vegetation is more than 70% the area of the ASF in the SPA	Share of suitable areas (permanent grass cover, water-logged areas, grassy arable land, arable land with several years fodder) and non-forest woody vegetation is 40-70% the area of the ASF in the SPA	Share of suitable areas (permanent grass cover, water-logged areas, grassy arable land, arable land with several years fodder) and non-forest woody vegetation is less than 40% the area of the ASF in the SPA
Threat	3.1. Degree of indirect threat to species population	For a period of 5 years in a circle with a radius of at least 300 m from the nest tree no disruption by forest management activities and/or hunting rights occurred during the breeding season. The share of the breeding population secured by established protection zones around nests is more than 80%.	For a period of 5 years in a circle with a radius of at least 300 m from the nest tree no disruption by forest management activities and/or hunting rights occurred during the breeding season. The share of the breeding population secured by established protection zones around nests is 50-80%.	For a period of 5 years in a circle with a radius of at least 300 m from the nest tree no disruption by forest management activities and/or hunting rights occurred during the breeding season. The share of the breeding population secured by established protection zones around nests is less than 80%.

	3.2. Degree of direct threat to species population	For a period of 5 years no death occurred due to illegal (e.g. shooting and poisoning) and/or other activities. And/or in the feeding territories no death to mammals in consequence of inappropriate use of chemical preparations for the protection of crops. And/or the construction of electricity mains are treated with protective and guarding elements on lines in 70-100% of the area of the SPA.	For a period of 5 years death occasionally occurred due to illegal (e.g. shooting and poisoning) and/or other activities. And/or in the feeding territories death occasionally occurred to mammals in consequence of inappropriate use of chemical preparations for the protection of crops. And/or the construction of electricity mains are treated with protective and guarding elements on lines in 40-70% of the area of the SPA.	For a period of 5 years death regularly occurred due to illegal (e.g. shooting and poisoning) and/or other activities. And/or in the feeding territories death regularly occurred to mammals in consequence of inappropriate use of chemical preparations for the protection of crops. And/or the construction of electricity mains are treated with protective and guarding elements on lines in less than 40% of the area of the SPA.
	3.3. Degree of threat to breeding habitat	For a period of 5 years the share of forests over 80 years undisturbed by extraction remained unchanged or increased by less than 10% of their area.	For a period of 5 years the share of forests over 80 years undisturbed by extraction increased by 10-20% of their area.	For a period of 5 years the share of forests over 80 years undisturbed by extraction increased by more than 20% of their area.
	3.4. Degree of threat to feeding and migration habitat	For a period of 5 years no reduction in the area of permanently grassy surfaces (meadows, pastures), waterlogged area, grassy arable land, arable land with several years fodder was recorded in the SPA. The share of arable land with unsuitable cultures (e.g. maize, sunflowers, rapeseed) is less than 10% of the total area of arable land in the SPA.	For a period of 5 years on less than 5% of the area of PPF a lowering of permanently grassy surfaces (meadows, pastures) and/or waterlogged area and/or grassy arable land and/or arable land with several years fodder was recorded in the SPA. And/or share of arable land with unsuitable cultures (e.g. maize, sunflowers, rapeseed) is 10-20% of the total area of arable land in the SPA.	For a period of 5 years on more than 5% of the area of PPF a lowering of permanently grassy surfaces (meadows, pastures) and/or waterlogged area and/or grassy arable land and/or arable land with several years fodder was recorded in the SPA. And/or share of arable land with unsuitable cultures (e.g. maize, sunflowers, rapeseed) is more than 20% of the total area of arable land in the SPA.

Assessment of status:

Criteria		Status	Parameter weight	Possible number of points	Achieved number of points
Population	1.1. Population size	**3**	3	9	**9**
	1.2. Population trend	**2**	3	9	**6**
	1.3. Area trend	**3**	1	3	**3**
	1.4. Interspecies interaction	**3**	1	3	**3**
	1.5. Productivity of population	**2**	3	9	**6**
	1.6. Integrity of breeding and feeding habitat	**3**	2	6	**6**
Habitats	2.1. Breeding habitat	**1**	3	9	**3**
	2.2. Feeding habitat	**3**	3	9	**9**
	2.3. Migration habitat	**3**	1	3	**3**
Threats	3.1. Indirect threat to species population	**2**	3	9	**6**
	3.2. Direct threat to species population	**3**	3	9	**9**
	3.3. Threat to breeding habitat	**1**	3	9	**3**
	3.4. Threat to feeding and migration habitat	**3**	2	6	**6**
Total number of points:				**93**	**72**
Achieved value (%)				**77**	

Overall assessment (percentage share of achieved value from the possible whole):

A	B	C
100–78%	77–55%	54–33%
	77%	

The achieved value of 72 points (77%) shows an **average favourable status** of the population of the lesser spotted eagle in the Laborecká vrchovina Upland SPA.
The population criteria after assessment show good and average values. It is necessary to emphasize, however, that the system of establishing protection zones around the nests of lesser spotted eagle pairs, which has been taking place in the Laborecká vrchovina Upland SPA for 19 years now, also contributed significantly to the relatively satisfactory values for population criteria herein presented.
Similarly, the status of feeding habitat criteria show good values, which it is necessary to sustain in the subsequent period, as development of activities for the support of extensive raising of sheep and cattle, correctly managing cutting meadows and to complete the treating of 22 kV power line pylons in the entire SPA is associated with it. Among the various threats to feeding and migration habitats it is especially necessary to focus great attention on limiting the cultivation of energy crops, the taking of agricultural land for solar power plants, but mainly on the cutting on non-forest trees and bushes for the purpose of producing woodchips, which in recent years has taken on an unacceptable dimension!
Despite the achieved overall value of **average favourable status** for the lesser spotted eagle population it is necessary to note that the unfavourable status of the breeding habitat of the lesser spotted eagle caused by intensive and unsuitable forest management activities is very alarming. If such a trend continues in the coming years we can expect that the present status of the lesser spotted eagle to shift toward an **unfavourable status**. It is essential to bear in mind the fact that the lesser spotted eagle population, as a peak predator and long-living animal, reacts to negative changes taking place in its environment with a certain time delay lasting even several years; therefore, excessive intensive forest management in the present, including the application of unsuitable management methods, is a warning signal for a population which it is necessary to start responsibly resolving right now.

3. Management measures needed for preserving the favourable status of the species:

Management measures in the breeding habitat

- to ensure a differentiated approach in management of forests as follows:
  a) in protected forests and specially designated forests in the Laborecká vrchovina Upland SPA to respect the ecological claims of the lesser spotted eagle in the case of any forest management activities
  b) in managed forests located in the Laborecká vrchovina Upland SPA to ensure with the renewal of forests application of the selection and purposeful management systems and to give preference to natural renewal of vegetation with the aim of strengthening and preserving the ecological stability of the forests in the breeding habitats of the lesser spotted eagle (renewal of natural forest composition, improving of horizontal and vertical structure of vegetation, more suitable formation of forest edges); to exclude application of the clear-cutting management method and to lower the existing area with application of the shelterwood management method to an area of a maximum of 20% of the area of the SPA
  c) to re-evaluate the currently existing network of forest roads from the viewpoint of the real needs of forest management and their impact on the fragmentation and ecological stability of breeding habitats and to ensure removal of "excess forest roads", which enable disruption of the state of the breeding habitat (legal and illegal extraction, hunting, poaching, increased visitorship, etc.)
- to ensure application of the system of establishing protection zones in the areas around all active nests (nests which were occupied by eagles at least once in a period of five years) of individual pairs of the lesser spotted eagle with the following conditions:
  a) the protection zone is set in a circle of (radius) at least 300 m from a nest tree
  b) removal or causing damage to a nest tree is forbidden
  c) the performing of any forest management activities is prohibited during the reproductive period, i.e. from March 16 to August 31 of the calendar year
  d) outside the reproductive period, i.e. from September 1 to March 15 of the calendar year:
     - in the interior part of the protection zone in a circle (radius) of minimally 100 m from the nest tree to not interfere in the vegetation and soil cover
     - in the exterior part of the protection zone in a circle (radius) of minimally from 100 m to 300 m around the nest tree, or over the entire area of a so-defined protection zone, to apply with forest management exclusively the selection management system (with its *tree form* to carry out cutting of individually selected trees, and with its *group form* to carry out group or group-selection cutting with the area of renewal cutting of max. up to 0.2 ha) or the purposeful management method (with its *tree form* to carry out purposeful tree-cutting of trees, and with its *group form* to carry out purposeful group cutting of trees with an area of renewal cutting of a max. up to 0.2 ha).
- to ensure incorporation of the presented system of protection zones into forest conservation programs (FCP)
- with the purpose of strengthening and preserving the ecological stability of forests to ensure provision of agricultural consulting by a forest park subjects in matters involving them in measures of "Forest-environmental and climate services and forest conservation " and "Payments relating to the Natura 2000 systems" in the scope of the Rural Development Programme of the Slovak Republic for 2014-2020 for the purpose of obtaining compensation payments for limitation of management due to application of the principle of permanently sustainable development and conservation of nature and ensuring incorporation of these environmental measures into the Slovak RDP always for the new programme period
- to propagate and promote a FSC (Forest Stewardship Council) certificate for the purpose of environmentally suitable and permanently sustainable management of forests (source: http://www.fscslovakia.sk/)
- to ensure removal of hunting equipment (especially high stands) in the interior of protection zones and to guide construction of new hunting facilities so that they are situated outside of protection zones

Management measures in feeding habitats

- with the aim of conserving PGC acreage (meadows and pasturage) to prevent their ploughing under and transformation into another type of land

- to ensure suitable management of PGC with regular mowing of meadows and removal of biomass, extensive pasturing of sheep and beef cattle, in justifiable cases also mulching and with the creation of PGC to use locally suitable species of grasses
- to exclude application of industrial fertilizers and pesticides on PGC surfaces
- to lower the share of unsuitable agricultural cultivation for energy purposes (sunflower, rapeseed) in favour of agriculture which is in line with the ecological claims of the lesser spotted eagle (e.g. perennial fodders: clover, alfalfa, closer-grass blends) and at the same time support the raising of sheep and beef cattle
- with application of pesticides on arable land to ensure a professional qualified oversight and to use only chemical preparations which are not on the list of banned preparations for protection of special protection areas (source: http://nrl.uvm.sk/)
- analyse in 5 –years intervals samples of feathers of the lesser spotted eglase for pesticide residua, in case suspecious sterile eggs or dead individuals are found, analysis should be perfommed immediatey
- to not plough under a portion of stubblefield areas (min. 30%) after cereal harvest and to leave them until September – October of the calendar year, to remove straw from these areas, in case of increased growing of these areas with vegetation it is possible to perform mulching
- to not reduce the amount of non-forest woody vegetation (e.g. for reason of cutting them for woodchips) and to ensure their appropriate maintenance; with the planting of non-forest woody vegetation to use original species of trees
- to prevent the taking of agricultural land for construction of solar power plants and other infrastructure and to direct their construction away from agricultural land (e.g. an unused surface within built-up areas of agricultural enterprises)
- to prevent the abandoning of agricultural land
- with the aim of strengthening and conserving the ecological stability of feeding habitats on agricultural areas to ensure the provision of agricultural consulting by agricultural subjects in matters and involving them in the individual sub-measures of the "Agricultural-environmental-climate measure" and "Ecological agriculture" measures within the Rural Development Program of the Slovak Republic 2014-2020 for the purpose of obtaining compensation payments for the limiting of farming due to application of the principle of permanently sustainable development and nature conservation and to ensure the involvement of environmental measures to the Slovak RDP always for the new programme period
- on all agricultural lands to carry out processes which minimize the negative impact on the lesser spotted eagle population; with mulching, mowing of grasses and the harvest of agricultural crops to always proceed in the direction from the centre to the edge or from one side of the land to the other, to use with mowing and harvesting warning equipment
- inspection of compliance with Statutory Management Requirements (SMR) and standards of Good Agricultural and Environmental Conditions (GAEC) in the scope of application of Cross compliance (CC) by agricultural subjects
- to ensure elimination of risk of injury and death on constructions of power lines by gradual treatment with preventive and guarding elements on cables

General management measures

- to work up and subsequently apply in practice a Programme of Care for the SPA and to ensure its regular updating after a period of 10 years
- to work up and subsequently apply in practice a Programme of Care for the lesser spotted eagle and to ensure its regular updating after a period of 10 years
- to ensure regular monitoring in the meaning of part no. 4 of this document
- to ensure continuous promotion of species conservation and awareness of the professional (foresters, farmers, hunters) and the lay public
- to ensure elimination of risks of illegal shooting in cooperation with the relevant institutions (Slovak Police, Municipal Offices, Slovak Environmental Inspection (SIŽP), members of Guardians of Nature)
- to ensure enforcement rights in cases of bird criminality

4. Monitoring

Monitoring of the population:
A basis prerequisite of applying the above-mentioned management measures, as well as the overall defining of the favourable status of the lesser spotted eagle in the Laborecká vrchovina Upland SPA is the current knowledge of the state of abundance, density and trend of development of the breeding population. Therefore, it is necessary each year to monitor the breeding population with the aim of obtaining data on the following parameters:

- presence of individual pairs at breeding sites
- number of successful breeding pairs
- number of unsuccessful breeding pairs
- number of non-breeding pairs
- number of young in a nest
- number of fledged young
- determining of overall productivity of the breeding population
- determining the reasons for unsuccessful breeding
- determining the integrity of the breeding and feeding habitat

Method of monitoring the population:
Monitoring the lesser spotted eagle breeding population in the Laborecká vrchovina Upland SPA can be done during the entire breeding period (April – August) and we can divide it into several stages:

a) Spring behaviour – locating the breeding ground (April 10 – April 30)
method: registration of the territorial behaviour of lesser spotted eagles is performed from observation points situated in suitable breeding and feeding habitats in areas of the species occurrence.

b) Incubation period (May 1 – June 10)
method: control of occupancy of known nests from previous years in the breeding territory of individual pairs of eagles or location of breeding territories of new pairs on the basis of flight of the male with prey (carrying food to the sitting female) into the breeding forest.

c) Period of care for young (June 11 – August 10)
method: if it was not possible to find and localize the occupied nest of a new pairs in the previous period, it is necessary to do so in this period on the basis of the flying of birds into the breeding forest with prey.

d) Period of fledging of young from the nests– check of breeding success (August 11 – September 30)
method: control of the breeding success is performed visually with binoculars from the ground and the presence of young in the nest is determined shortly before if flies from the nest or after it flies out, when it remains in the nearby vicinity – in this case it is possible to confirm its presence also on the basis of carrying food by the parents to the fledged young in the breeding forest both in and outside the nest. In addition, it is possible to determine a successful breeding by comparing the fledged young with the parents on the hunting grounds.

e) Monitoring in areas with irregular occurrence (May 1 – July 31)
method: in areas of the SPA with irregular breeding or with irregular occurrence in the breeding period it is necessary to record each occurrence of lesser spotted eagles. Outside the mentioned time period it is possible to assume that observed individuals are only flying through the territory. To evaluate all observations at the end of the season.

f) Monitoring in feeding habitats (May 1 – July 31)
method: registration of lesser spotted eagles from observation points situated in appropriate feeding habitats in the SPA. In a circle up to 5 km from the assumed or potential nest it is recommended to check meadows, pastures, wetlands, surfaces of multi-year fodders and grasses on arable land but also surfaces with other agricultural crops (mainly cereals). During the course of agricultural work in particular, such as the mowing of meadows, fodder and cereal harvest, individuals even from several nearby pairs can gather on the mentioned surfaces. Subsequently, on the basis of the flying of individuals with prey into the breeding forest it is possible to find and locate the nest of new pairs of eagles.

Method of monitoring the integrity of the population's breeding and feeding habitat:
An important parameter for defining the favourable status of the lesser spotted eagle population is monitoring and analysis of the integrity of the breeding and feeding habitats, primarily for those pairs of lesser spotted eagles whose home ranges are situated on the edges of the boundary of the Laborecká

vrchovina Upland SPA. A basic principle of monitoring this parameter is to obtain knowledge about the home ranges of pairs breeding in the SPA but using feeding habitats also outside the boundaries of the SPA and subsequently to propose and apply (if necessary) relevant management measures which enable the conservation of these feeding habitats in a favourable state. Because the possibilities of ensuring the protection of feeding habitats within and outside an SPA are different in legislation, monitoring and evaluating this parameter is very important also in relation to possible modifications of the SPA boundaries in the future.

method: from observation points with a good view of the boundary area of the Laborecká vrchovina Upland SPA direct control of the home range is done during the breeding season and the behaviour is monitored of individuals of those pairs of lesser spotted eagles whose nests are located within 3 km of the actual border of the SPA. On the basis of behaviour of individuals (the flying of eagles to areas outside the SPA) identification of individual pairs of eagles whose feeding habitats extend to areas outside the SPA is performed and at the same time the extent of its overrun is measured.

Basic documentation consists in the website of the State Nature Conservancy of the Slovak Republic (http://www.sopsr.sk/natura/index1.php?p=4&lang=sk&sec=1), the soil maps at http://www.podnemapy.sk/default.aspx and Google Earth.

Monitoring of habitats:

A significant component of the overall defining of favourable status of the lesser spotted eagle in the Laborecká vrchovina Upland SPA is monitoring and analysis of breeding and feeding habitats, which enable us to obtain data for the purpose of assessing the quality of the home range of the individual pairs of eagles.

a) Monitoring the status of breeding habitats

method: a direct physical check is made of the status of the breeding habitats in a circle of at least 300 m from the nest continuously during the entire calendar year with the aim of preventing their possible damage or destruction by excessive forest management activities. A further check is made of the presence of hunting facilities in the vicinity of the nest of individual pairs of eagles, a check on the observance of the season and method of hunting by the hunting organizations for the purpose of their regulation in relation to any possible negative impact of hunting rights on the course of breeding of individual pairs of eagles.

In the case of established protection zones around nests, it is necessary to check compliance with the conditions of protection of the nest locations in connection to the time and territorial limitation of forest management activities, including application in advance of the determined management method, and according to Programmes of Care of Forests, to know the status and degree of completion of the forests in which nests are situated and which are located in a protection zone of the individual nests.

Basic documentation are forest maps, forest GIS http://lvu.nlcsk.org/lgis/, hunting GIS http://lvu.nlcsk.org/polovgis/ps_f_udaje/polorg.aspx, and Google Earth.

b) Monitoring the status of feeding and migration habitats

method: a check of the status of the feeding habitats is made continuously during the entire calendar year, primarily in connection to implementation of environmentally inappropriate methods of managing agricultural land (e.g. an unsuitably selected structure of crops on arable land in crop planning, the use of prohibited chemicals for treating plants or incorrect application of permitted chemicals – rodenticides – for liquidation of small ground rodents), the growing on meadows and pasture by airborne woody plants, significant soil erosion on pastures due to the high concentration of livestock on one surface, the burning of stubblefields on arable land and the mowing of biomass on meadows, the occupying of croplands (especially with the construction of solar power plants), the cutting of non-forest trees, the ploughing under of PGV, drainage of water meadows, etc.

For the purpose of checking for pestices residua in tissues of the eagles, feather from adult indivivuduals is collected during monitoinrg, alwyas for the epriod of five subsequent breeding seasons. This is particularly important for breeding pairs having feeding territories on arable land.

All the stated activities have a significant impact on the density and abundance of selected key prey species.

Likewise, a check on observing the statutory management requirements (SMR) and standards of good agricultural and environmental conditions (GAEC) is made in the scope of applying Cross Compliance (CC) by agricultural subjects.

For the purpose of determining current status, monitoring of the pylons of 22 kV power lines and identification of problematic sections.
Basic documentation are soil maps http://www.podnemapy.sk/default.aspx, cadastral maps, design documentation and Google Earth. In e

Threats:
For the purpose of setting the degree of threat we evaluate changes found during the monitoring of the population and habitat monitoring.
It is necessary to consult identified threats with conceremed stakeholders and cooperate with them in removal these threats. Improtant stakeholders may include, but are not limited to :

- District Offices, Environmental Departments
- District Offices, Land and Forests Departments
- Municipal Offices (in whose competence is resolving issues of non-forest woody vegetation)
- Forestry management enterprises
- Agricultural enterprises
- Hunting associations
- Východoslovenská energetika, a.s., Košice
- Slovak Environmental Inspection
- Slovak Police Force
- State Veterinary and Food Administration of the Slovak Republic
- Central inspection and testing institute for agriculture
- Agricultural Paying Agency

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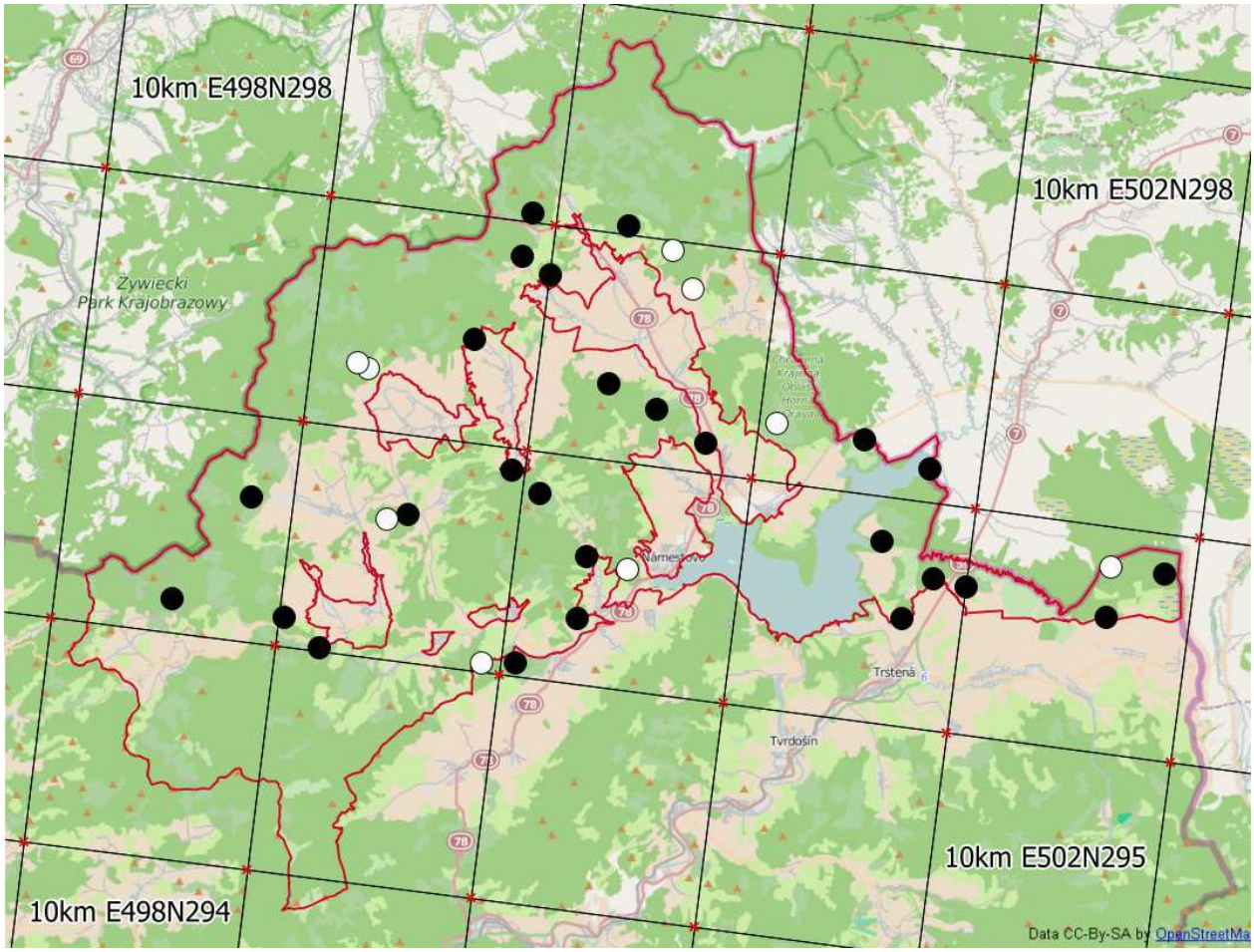
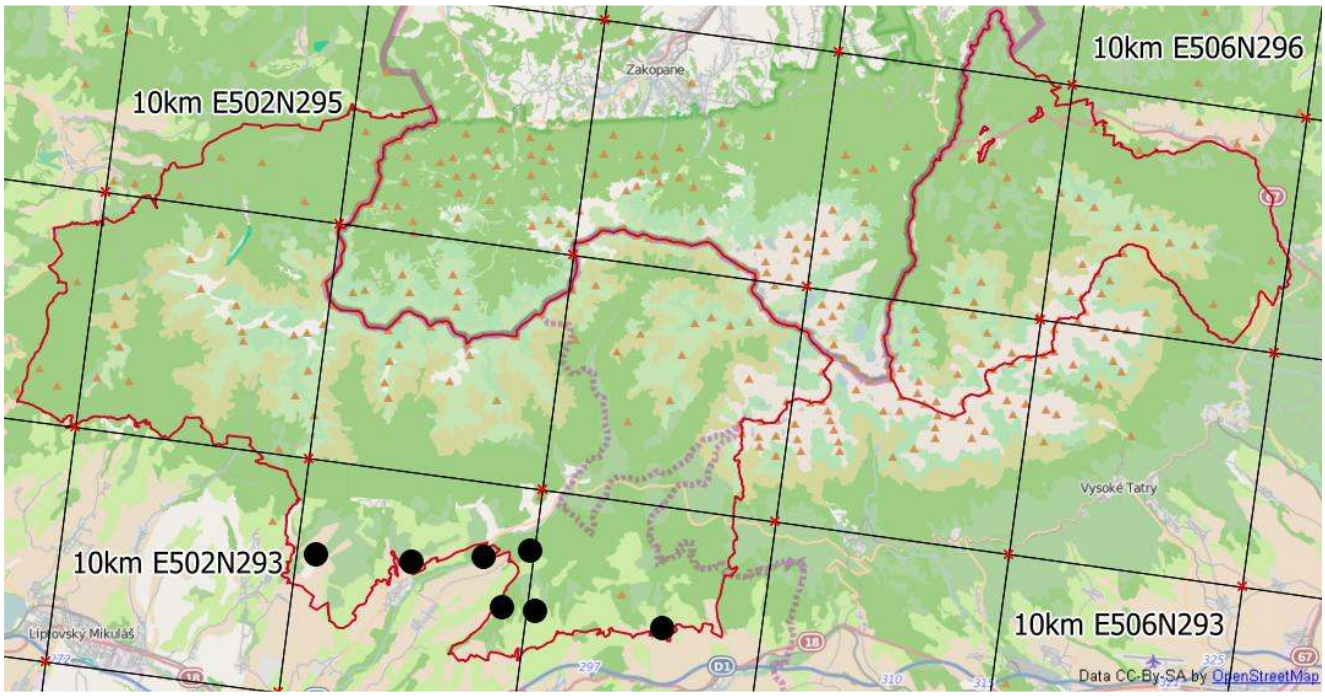
Annex 1: Maps showing distribution of breeding pairs of *Aquila pomarina* in the Horna Orava SPA, The Tatry Mountains SPA, the Nizke Tatry Mountains SPA, the Slovensky kras Karst SPA, the Volovské vrchy Mountains SPA, the Slanske vrchy Mountains SPA, the Vihorlatske vrchy Mountains and Laborecká vrchovina Upland SPA

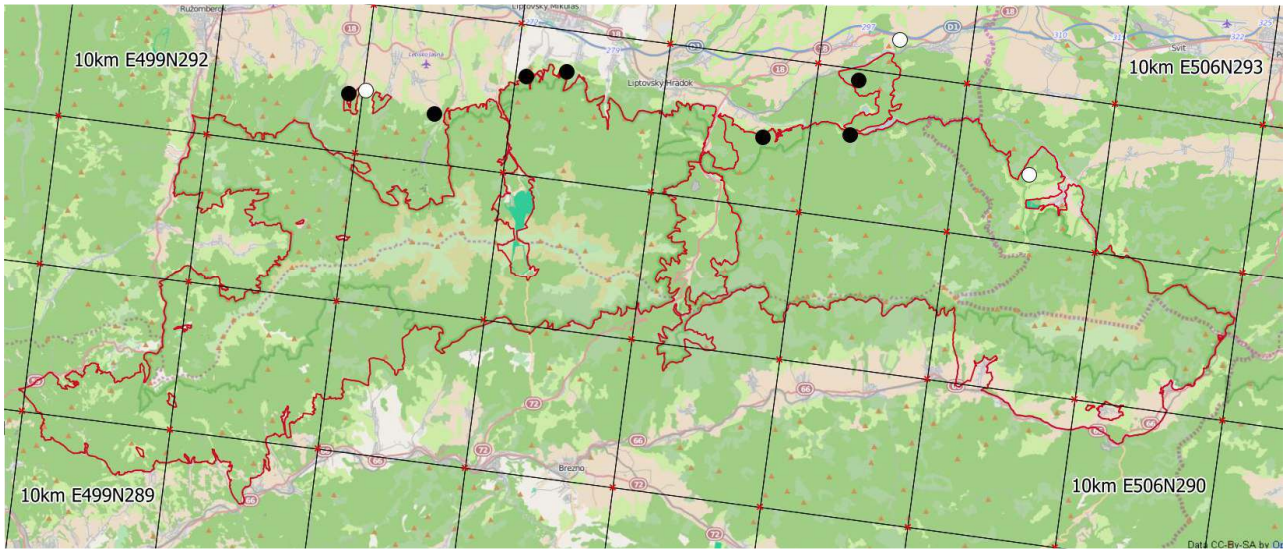
1. Map showing distribution of breeding pairs of *Aquila pomarina* in the Horná Orava SPA - SKCHVU008



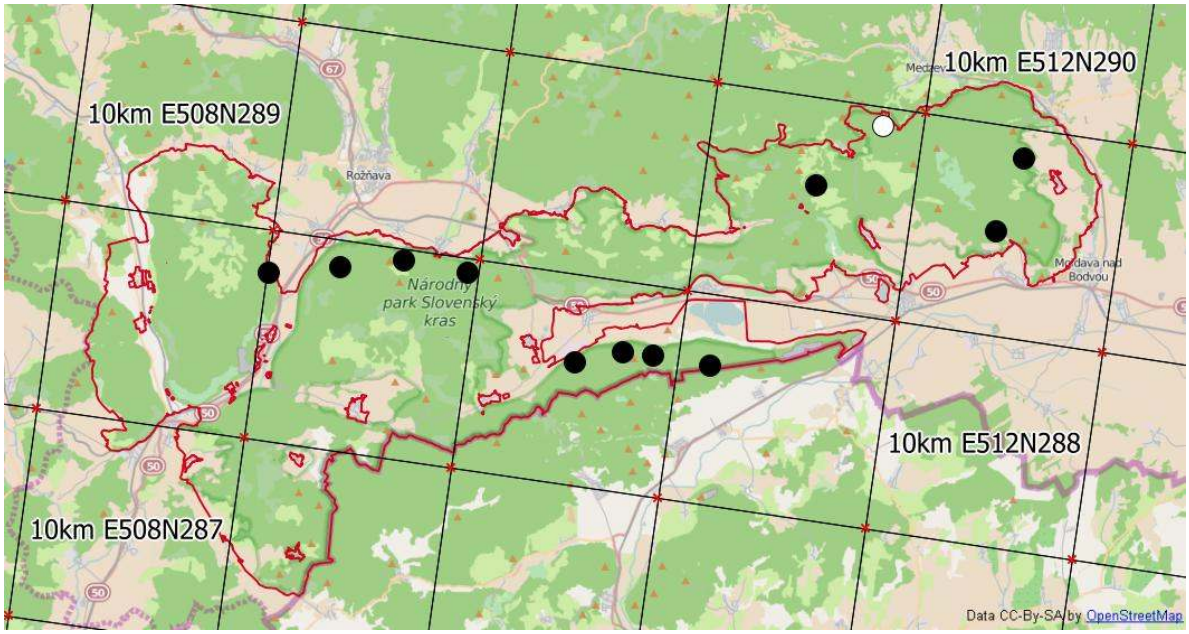
2. Map showing distribution of breeding pairs of *Aquila pomarina* in the Tatry Mountains SPA – SKCHVU030



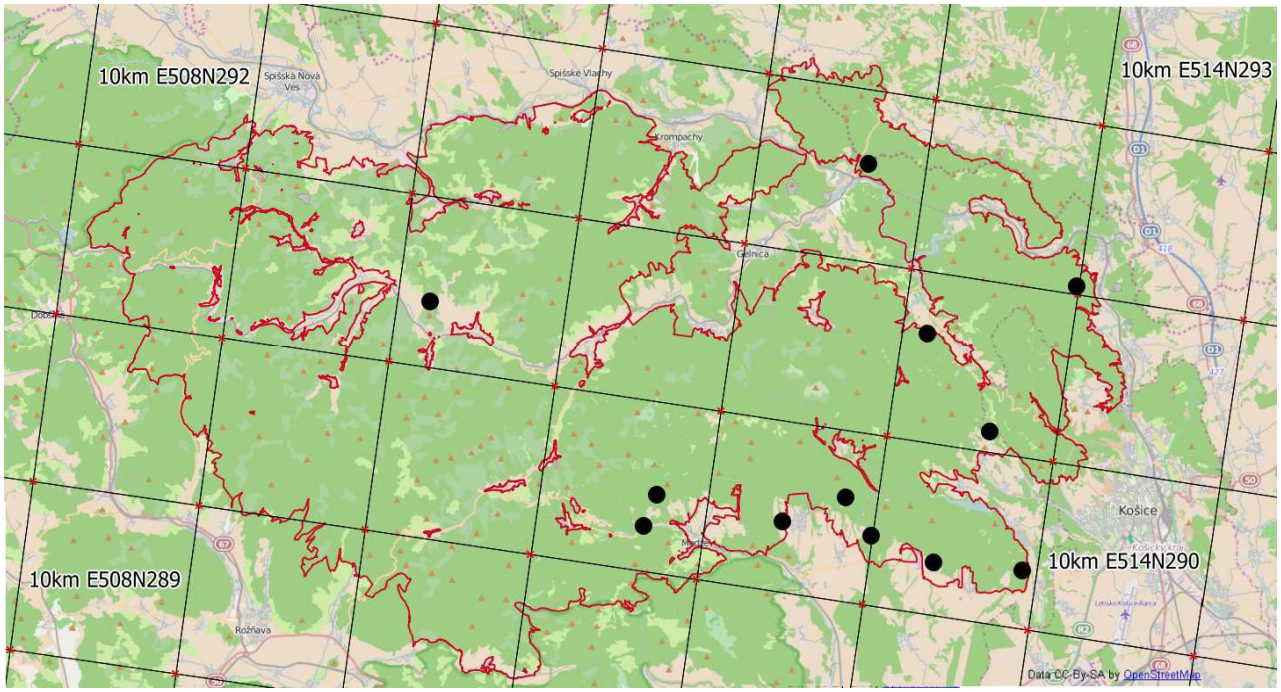
3. Map showing distribution of breeding pairs of *Aquila pomarina* in the Nízke Tatry Mountains SPA – SKCHVU018



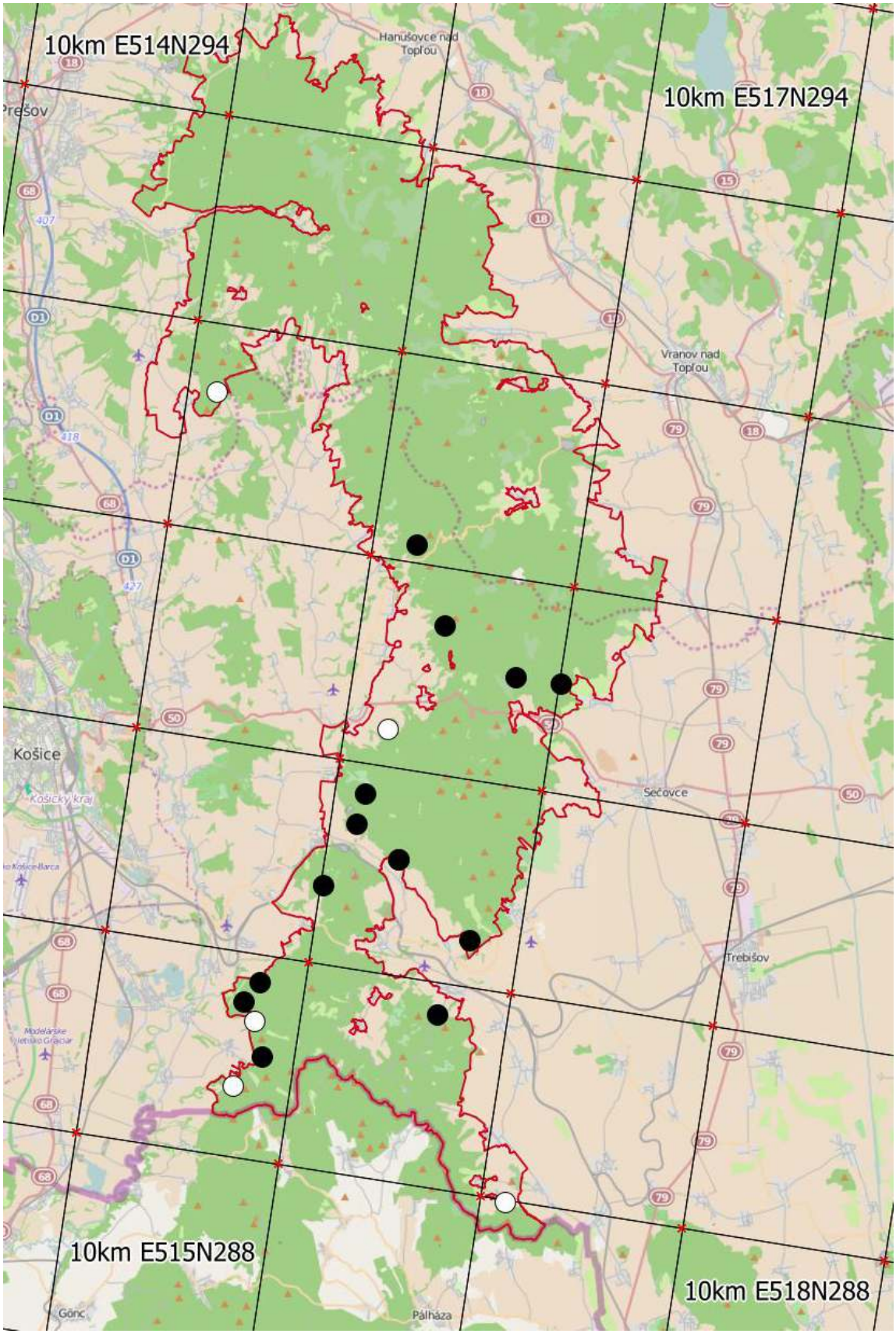
4. Map showing distribution of breeding pairs of *Aquila pomarina* in the Slovenský kras Karst SPA – SKCHVU027



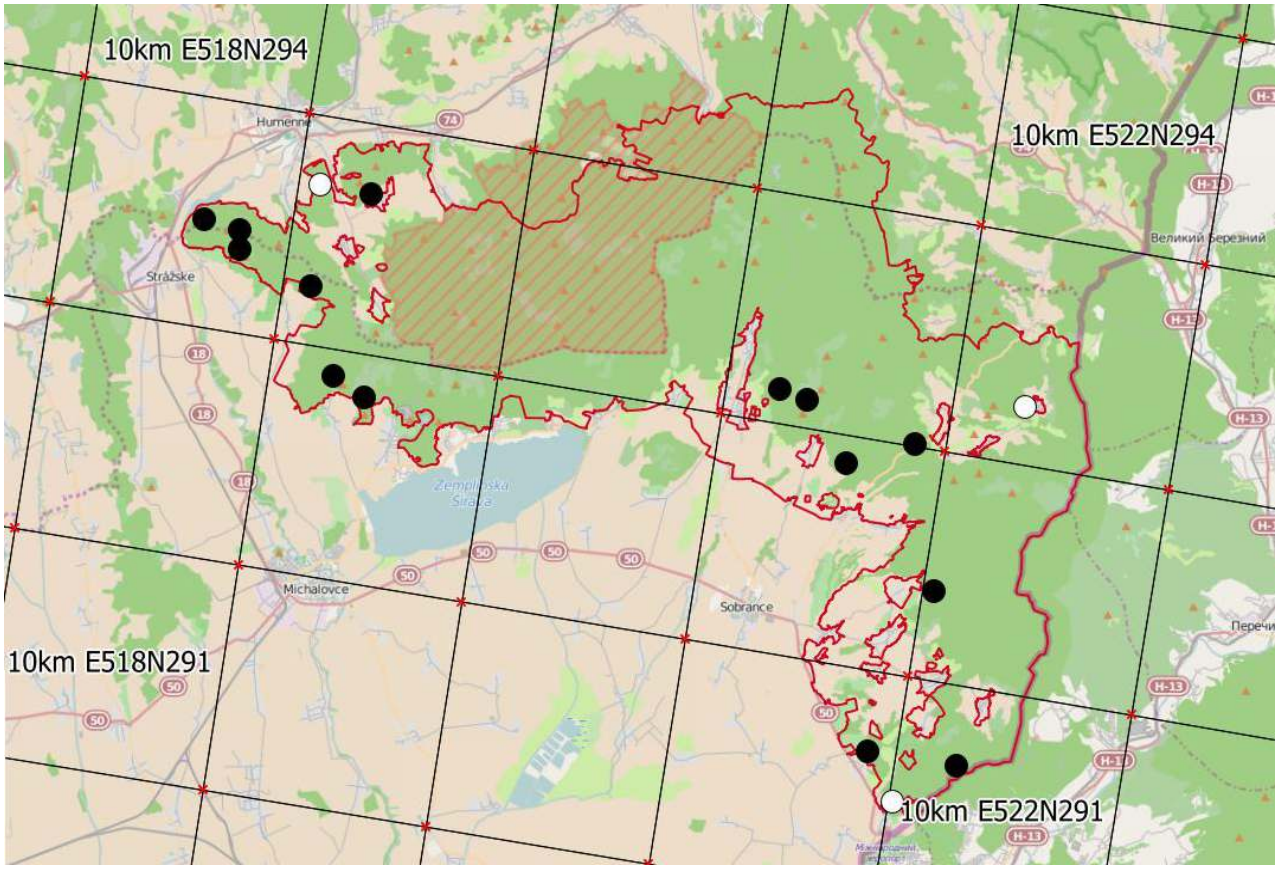
5. Map showing distribution of breeding pairs of *Aquila pomarina* in the Volovské vrchy Mountains SPA – SKCHVU036



6. Map showing distribution of breeding pairs of *Aquila pomarina* in the Slanské vrchy Mountains SPA – SKCHVU025



7. Map showing distribution of breeding pairs of *Aquila pomarina* in the Vihorlatské vrchy Mountains SPA – SKCHVU035



8. Map showing distribution of breeding pairs of *Aquila pomarina* in the Laborecká vrchovina Mountains SPA – SKCHVU011