

Conservation of *Aquila pomarina* in Slovakia

LIFE09 NAT/SK/000396



Lesser Spotted Eagle Habitats Management Guidelines Summary



Compiled by:

Alexander KURTHY, Boris MADERIČ, Zuzana GUZIOVÁ

Contributors: Miroslav DRAVECKÝ, Štefan DANKO, Ivana FABIANOVÁ, Tomáš FLAJS, Ján HOLMA, Ervín HRTAN, Dušan KARASKA, Ján KICKO, Miroslav MADERA, Jozef MIHÓK and Oldřich SUCHÁNEK.



List of Content

List of Content	3
Introduction.....	4
Methodology	5
General Recommendations for Lesser Spotted Eagle Habitats Management.....	5
Protective zones in breeding habitats.....	6
Eagle-friendly management of the Lesser Spotted Eagle breeding habitats.....	7
Eagle-friendly management of the Lesser Spotted Eagle of the breeding habitats	8
Annex 1 Home ranges in Horna Orava SPA: Rabča „Kýčera“ and Zákamenné „Strakov vrch.....	10
Annex 2 Home ranges in Slovensky kras SPA: Jovice and Jablonov nad Turnou	20
Annex 3 Home ranges in Laborecká vrchovina SPA: Rokytovce „Maľcovo“ and Zubné “Dúbrava”	31
References:.....	41

Introduction

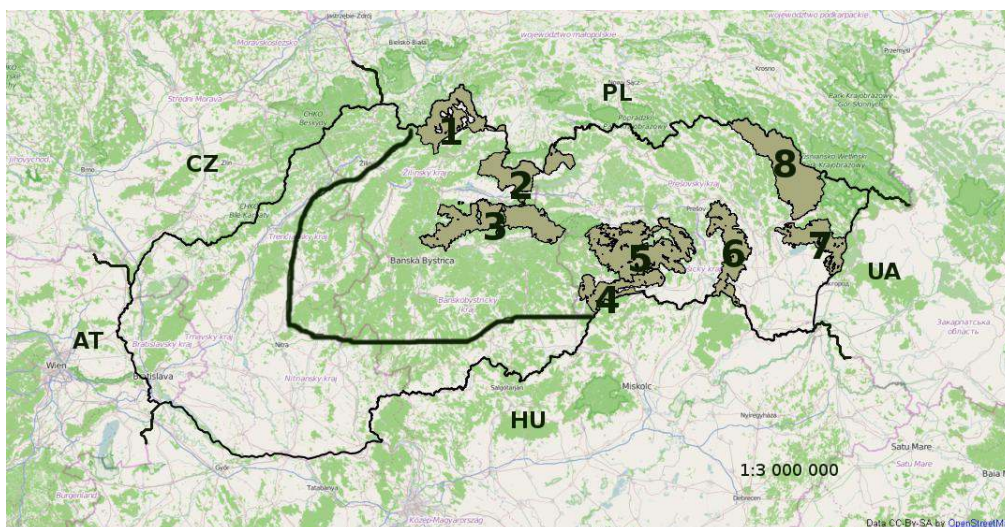
Slovakia is one of the countries in Europe, which hosts significant breeding population of the Lesser Spotted Eagle. The breeding population is concentrated in central and eastern Slovakia and nowadays amounts to 600 – 800 breeding pairs (Dravecky *at al*, 2015). The Lesser Spotted Eagle inhabits diverse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

Also other human activities such as excessive usage of artificial fertilizers and chemical preparations, construction on agricultural land, growing energy crops like oil-seed rape, maize or sunflowers over very extensive areas, are all further threats to the breeding population of the lesser-spotted eagle because they lead to the impairment or loss of feeding habitats. The eagles' feeding territories are also criss-crossed with power lines. The pylons of the 22 kilovolt lines are frequently causing injury or death to birds, including raptors, as a result of electrocution.

Aforementioned factors threaten survival, reproduction, and ultimately have negative impact on the abundance, density and trend of the Lesser Spotted Eagle population.

In this situation, habitats management guidelines were urgently needed so that to serve as management framework to those stakeholders that have activities in breeding and feeding habitats of the Lesser Spotted Eagle.

Habitats Management Guidelines were developed within a framework of the Project LIFE09NAT/SK/000396 "Conservation of the Lesser Spotted Eagle in Slovakia". Project was implemented in Special Protection Areas by the Raptor Protection of Slovakia and power utility companies Východoslovenská energetika Holding, a.s., Stredoslovenská energetika, a.s. a Stredoslovenská energetika – Distribúcia, a.s. Project was co-financed by LIFE, the European Union's financial instrument for the environment and the Ministry for the Environment of the Slovak Republic. The Present document is Summary of Habitats Management Guidelines.



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.

Methodology

Formulation of the general Habitats Management Guidelines was preceded with detailed analysis of the six home ranges of the Lesser Spotted Eagle in the three Special protection Areas, namely Horná Orava SPA, Slovensky kras SPA and Laborecka vrchovina SPA, In each SPA two home ranges were selected for analysis and they are listed below:

- Rabča - Kýčera and Zákamenné - Strakov vrch in Horná Orava SPA,
- Jovice and Jablonov n./Turňou - Čerpačka plynu in Slovensky kras SPA,
- Rokytovce - Maľcovo / Zubné - Dúbrava in Laborecka vrchovina SPA

Home ranges reference names are based on local geographic names.

Selection of home ranges was made in consideration of the representativeness of the home ranges, when applying the following criteria:

- Representativeness of site conditions within the SPAs designated for the protection of the Lesser Spotted Eagle in Slovakia
- Representativeness of site conditions within individual SPA
- Representativeness of forest types
- Sufficient monitoring history of the breeding pair

Delineation of the home ranges was made on the basis of the knowledge from long term monitoring of home ranges in the past.

Analysis of home ranges was made the basis of satellite Google Earth maps. For each home range, habitats structure and land use was determined. This was complemented with information of the breeding pair status from monitoring under Action E1. Consultations were made with farmers to complete information on actually utilized agricultural subsidies.

The six home ranges in question serve as models for home range management situations. Results of analysis are presented for individual home ranges in Annexes 1-3.

On the basis general Habitats Management Recommendations for the Lesser Spotted Eagle were formulated that are presented in the following chapter.

General Recommendations for Lesser Spotted Eagle Habitats Management

In order to provide a management framework aimed at favorable conservation status of the Lesser Spotted Eagle, General Habitats Management Recommendations were formulated on the basis of detailed analysis of the six home ranges of the Lesser Spotted Eagle in three SPAs in Slovakia.

Protective zones in breeding habitats

Areal and time restrictions of activities that might have negative impact on animals, plants and habitats of conservation importance is frequently used in conservation practice. This approach can be used in preventing disturbance of the Lesser Spotted Eagle during the breeding season and for protection of its breeding habitats. By applying area and time restrictions of activities, a kind of protective zone is established.

In Slovakia, Nature and Landscape Conservation Act No. 543/2002 Z. z. as amended give a legal framework for implementation of the protective zone concept. In its § 4, it provides that *„if a human activityleads to threatening of existence of plants and animals or their degradation, to disturbing propagation capacity or to extinction, competent authority may restrict or prohibit such activity, subject to prior notice..”*

Competent authority may establish the protective zone at its own discretion or on the basis of proposal from legal or physical person.

Protective zone can be established in the formal procedure by the two different instruments: by notice or by the decision of the competent authority. Restrictions are specified in more detail in decision.

Protective zone should be established for a period of minimum 5 years around all active nests, i.e. nests of those breeding pairs that bred at least once in the last 5 years. Zone shall extend to minimum of 300 m from the nests and shall be divided into inner and outer part.

Recommended parameters for the Protective zone for the Lesser Spotted Eagle are given in the below table.

Species	Time restriction	Size of the protective zone (min distance of outer border from the nest/protective zone area)	Size of the inner zone where long term restrictions apply (min distance of the border from the nest/area)	Size of the outer zone (distance between inner and outer zone borders/ area)
Lesser Spotted Eagle	15. marec - 31. august	300 - 400 m (28,26 - 50,24 ha)	100 - 200 m (3,14 - 12,56 ha)	100 - 300 m (25,12 ha) 200 - 300 m (15,70 ha) 100 - 400 m (47,10 ha) 200 - 400 m (37,68 ha)

Zone shall not necessarily be a circle; it shall have different design depending on the site conditions. Where necessary, it shall be marked by clear marks distinct from other standard field marks.

Borders of the protective zone shall follow formal divisions of forest stands.

No management regime shall apply to inner protective zone, while in outer zone soft forest management methods may be applied, such as selective cutting. In case of windstorms of similar disasters, special management methods shall be agreed between competent authority and forest owners/managers.

Areal and time restriction of activities on forest land shall be applied also to game management, tourism or other activities that may have negative impact on the Lesser Spotted Eagle, as appropriate.

Eagle-friendly management of the Lesser Spotted Eagle breeding habitats

The Lesser Spotted Eagle breeds in forests. Most of these forests are managed for timber and intensive logging disturbs habitats and eagle during the breeding. Lesser Spotted Eagle prefers mature forests, above 80 years old, with suitable vertical structure. 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.

Older trees, so-called “seed trees” which are left after logging, have great importance in forests during renewal of the forest stands. While newly established young growth in the surroundings grows to the height of the “seed trees”, these later provide eagles with other opportunities for building a nest.

Following principles shall be observed in managing forest habitats:

- ensure differentiated approach in management of forests
- forests shall be renewed through small scale shelter wood or selective cutting and promote natural regeneration to the broadest possible extent, clear cutting shall be excluded
- re-asses 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”
- to ensure application of the system of protective zones 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:
 - the protection zone is set in a distance of at least 300 m from a nest tree
 - removal of or causing damage to a nest tree is forbidden
 - the performing of any forest management activities is prohibited during the breeding period, i.e. from March 16 to August 31 of the calendar year
 - outside the breeding period, i.e. from September 1 to March 15 of the calendar year :
 - in the inner part of the protective zone, which shall extend to a distance of minimum 100 m from the nest tree to not interfere in the vegetation and soil cover
 - in the outer part of the protective zone extending to a minimum of 300 m from the nest, only selective (group or individual) cutting shall be applied, maximum area of cut area shall be up to 0.2 ha
 - to ensure incorporation of the presented system of protective zones into the forest management plan
- with the purpose of strengthening and preserving the ecological stability of forests to participate 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 in management due to conservation restrictions

- promote application of a FSC ([Forest Stewardship Council](http://www.fscslovakia.sk/)) certificate for the purpose of environmentally suitable and permanently sustainable management of forests (source: <http://www.fscslovakia.sk/>)
- to ensure removal of hunting infrastructure in the protective zone and to regulate location of new hunting facilities outside of protective zones

Eagle-friendly management of the Lesser Spotted Eagle of the breeding habitats

The feeding habitat is formed primarily of permanent grasslands i.e. meadows, pastures and unmanaged grasslands, and but also of arable land. 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.

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.

The following management recommendations shall ensure favourable status of breeding habitats:

- prevent plowing of grasslands or their transformation into another type of land with the aim of maintaining sufficient area of grasslands for eagles
- ensure suitable management of grasslands by regular mowing of meadows and removal of biomass, extensive grazing of sheep and beef cattle, promote grassland restoration with site specific species of grasses
- exclude application of industrial fertilizers and pesticides on grasslands
- lower the share of unsuitable agricultural cultivation for energy purposes (sunflower, rapeseed), promote crops that is suitable for the Lesser Spotted Eagle (e.g. perennial fodders: clover, alfalfa, clover-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 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 eagle for pesticide residues, in case suspicious sterile eggs or dead individuals are found, analysis should be performed immediately
- 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
- do not remove 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
- 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)
- prevent the abandoning of agricultural land
- with the aim of strengthening and conserving the ecological stability of feeding habitats on agricultural areas participate at implementing 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 nature protection
- in managing agricultural land, employ methods 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, use warning equipment with mowing and harvesting
- ensure 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
- green power lines crossing feeding habitats
- restore wetlands within agricultural land to diverse prey sources for the Lesser Spotted Eagle

Annex 1 Home ranges in Horna Orava SPA: Rabča „Kýčera“ and Zákamenné „Strakov vrch

Tab. 1. Size and structure of the home ranges in the Horná Orava SPA

Location	Total Area (ha)	Agriculture land (ha)	Forest Land (ha)	wetlands (ha)	gardens (ha)	built area (ha)
Rabča "Kýčera"	1098,45	508,91	478,31	11,50	0,00	99,73
Zákamenné "Strakov vrch"	1304,64	609,66	594,67	14,58	0,00	85,73

Tab. 2. Percentage of the size and structure of the home ranges in the Horná Orava SPA

Location	Total Area (%)	Agriculture land (%)	Forest Land (%a)	Wetlands (%a)	Gardens (%)	Built area (%)
Rabča "Kýčera"	100	46,33	43,54	1,05	0,00	9,08
Zákamenné "Strakov vrch"	100	46,73	45,58	1,12	0,00	6,57

Tab. 3. Structure of the home ranges in the Horná Orava SPA with detailed classification of agricultural land

Location	Total Area (ha)	Arable land (ha)	Grasslands (ha)	Forest Land (ha)	Wetlands (ha)	Gardens (ha)	Built area (ha)
Rabča "Kýčera"	1098,45	154,20	354,71	478,31	11,50	0,00	99,73
Zákamenné "Strakov vrch"	1304,64	67,08	542,58	594,67	14,58	0,00	85,73

Tab. 4. Percentage structure of the home ranges in the Horná Orava SPA with detailed classification of agricultural land

Location	Total Area (%)	Arable Land (%)	Grasslands (%)	Forest Land (%a)	Wetlands (%a)	Gardens (%)	Built area (%)
Rabča "Kýčera"	100	14,04	32,29	43,54	1,05	0,00	9,08
Zákamenné "Strakov vrch"	100	5,14	41,59	45,58	1,12	0,00	6,57

Tab. 5. Breeding success and number of young of the Lesser Spotted Eagle on the site Rabča "Kýčera" in different years

	2011	2012	2013	2014
Breeding success	-			

Fledglings	1			
------------	---	--	--	--

Tab. 6. Breeding success and number of young of the Lesser Spotted Eagle on the site „Strakov vrch“ in different years

hniezdny parameter/rok	2011	2012	2013	2014
Breeding success	+	-	+	+
Fledglings	1	0	1	1

Fig. 1. Size of the home ranges of the Lesser Spotted Eagle in the Horná Orava SPA

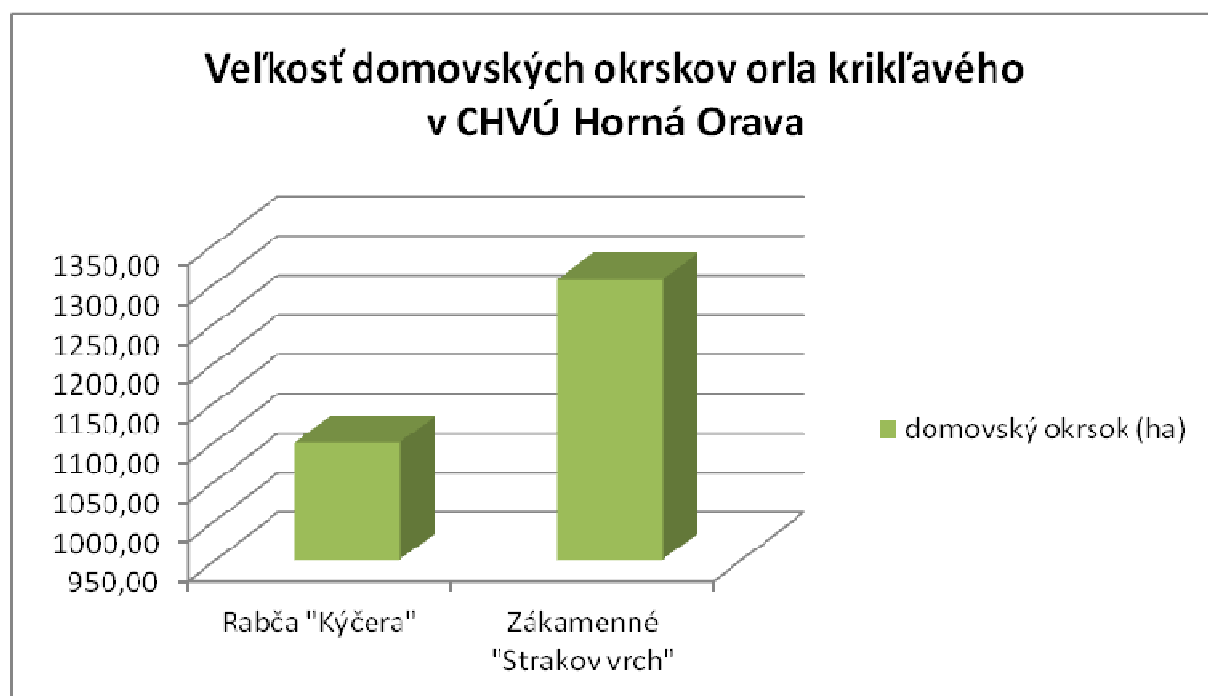


Fig. 2. Structure of the home ranges of the Lesser Spotted Eagle in the Horná Orava SPA

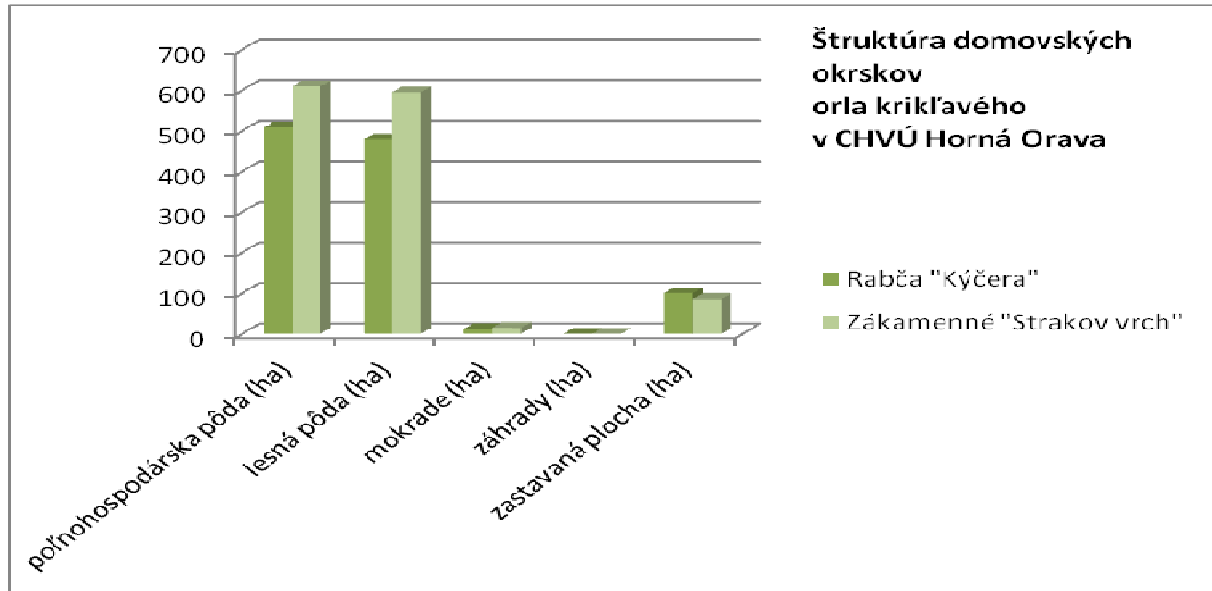


Fig. 3. Structure of the home ranges of the Lesser Spotted Eagle in the Horná Orava SPA with detailed classification of agricultural land

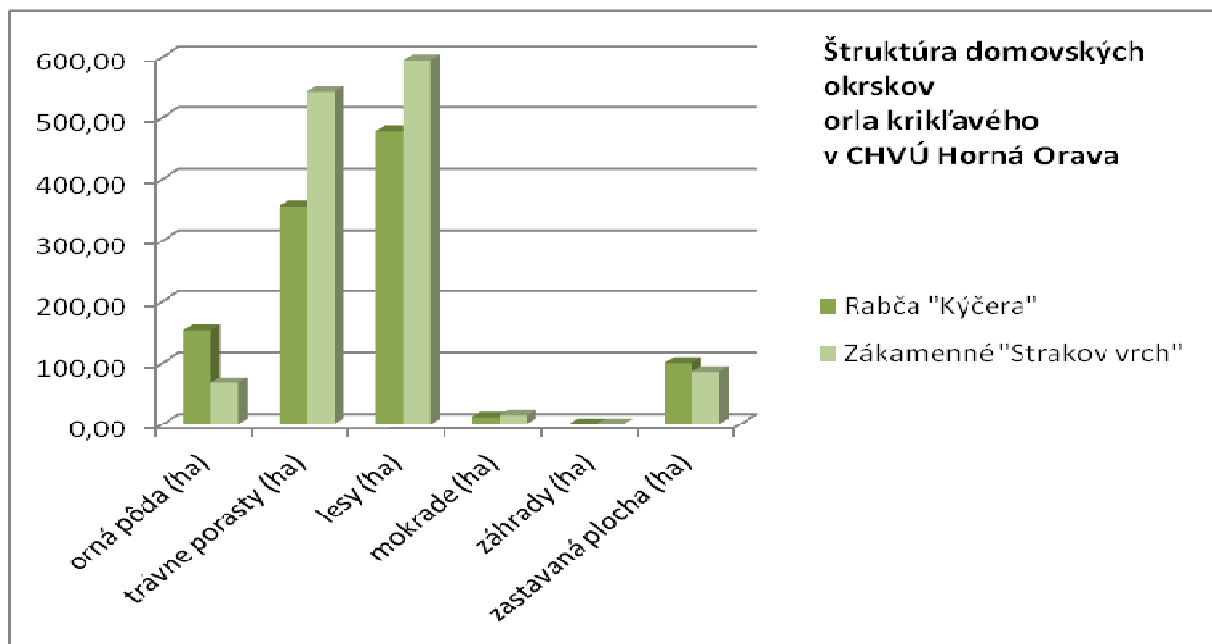


Fig. 4. Home range of the Lesser Spotted Eagle pair on the site Rabča „Kýčera“ showing its breeding territory

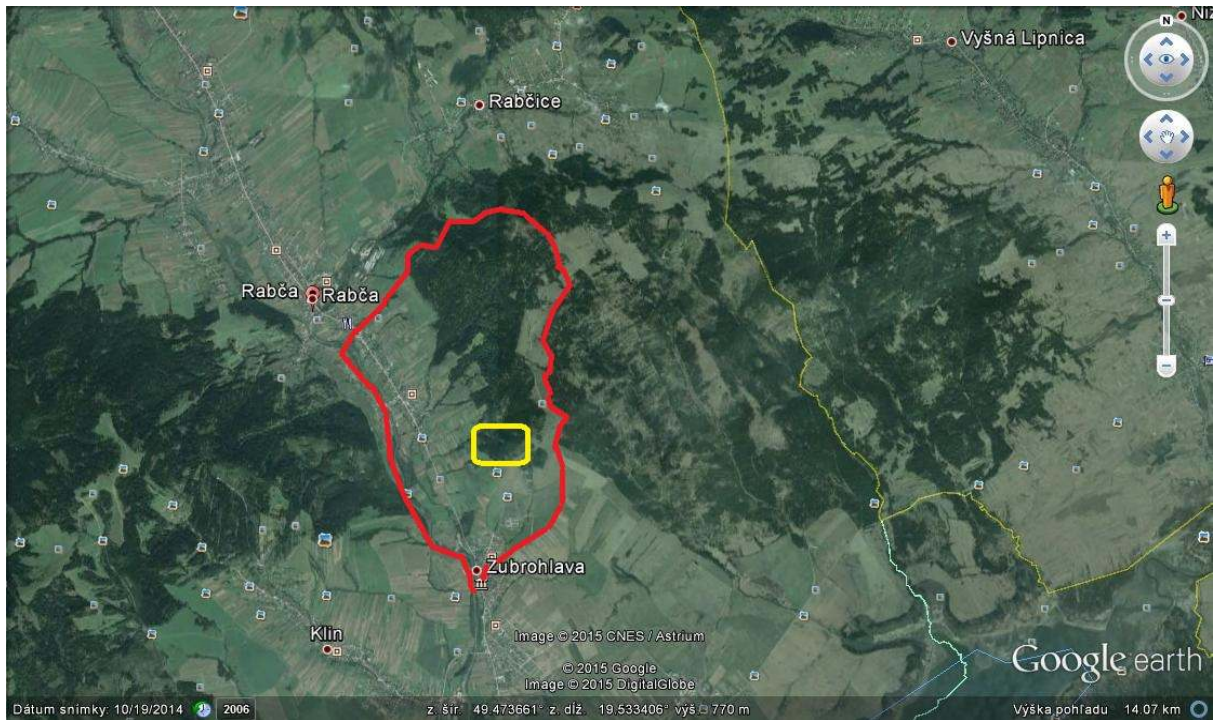


Fig. 5. Graphical analysis of the home range of the Lesser Spotted Eagle pair on the site Rabča "Kýčera" according to the accompanying legend, showing the nest occupied in 2011

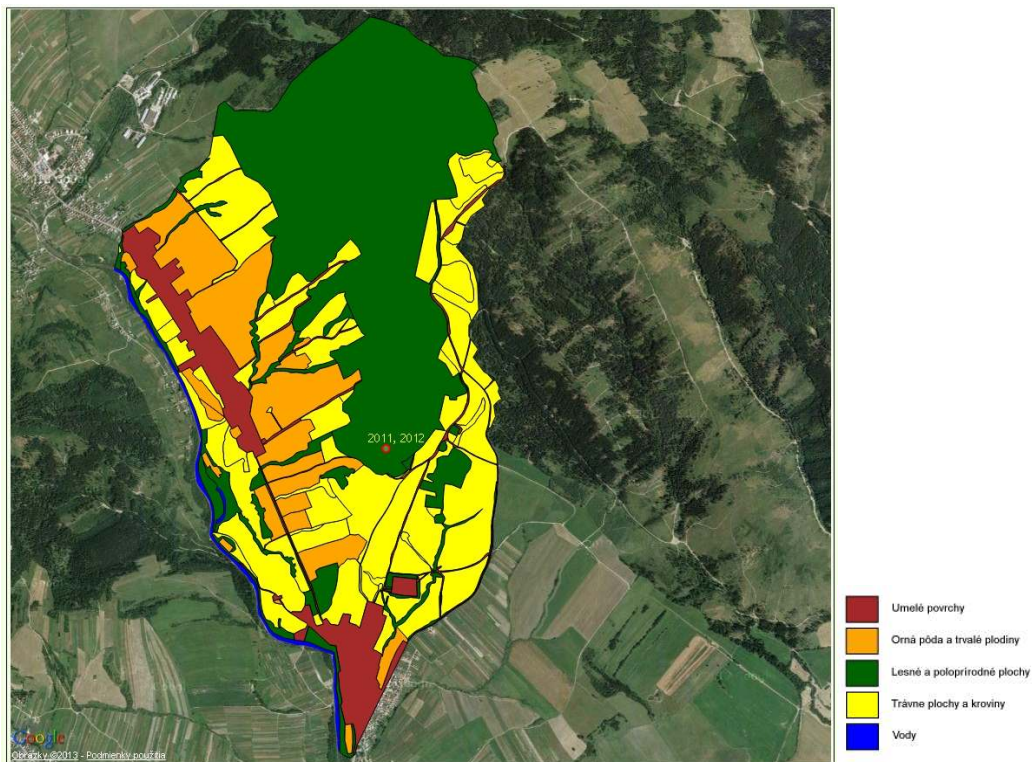


Fig. 6. Home range of the Lesser Spotted Eagle pair on the site Zákamenné „Strakov vrch“ showing its breeding territory

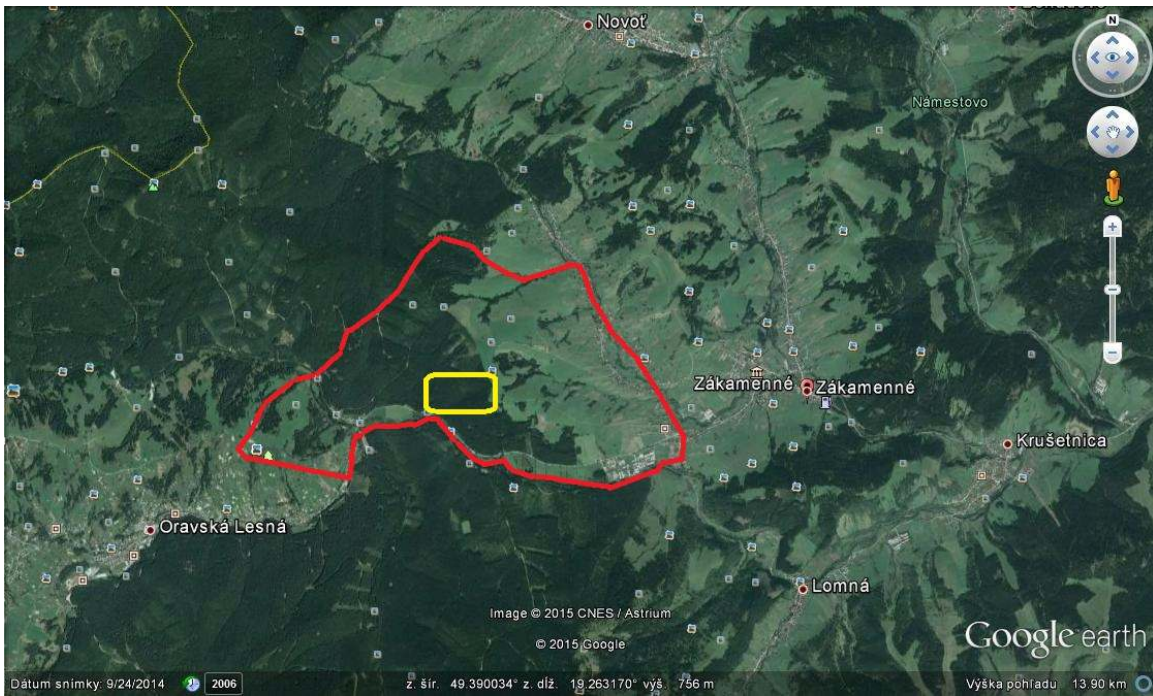


Fig. 7. Graphical analysis of the home range of the Lesser Spotted Eagle pair on the site Zákamenné „Strakov vrch“ according to the accompanying legend, showing the nests occupied in different years

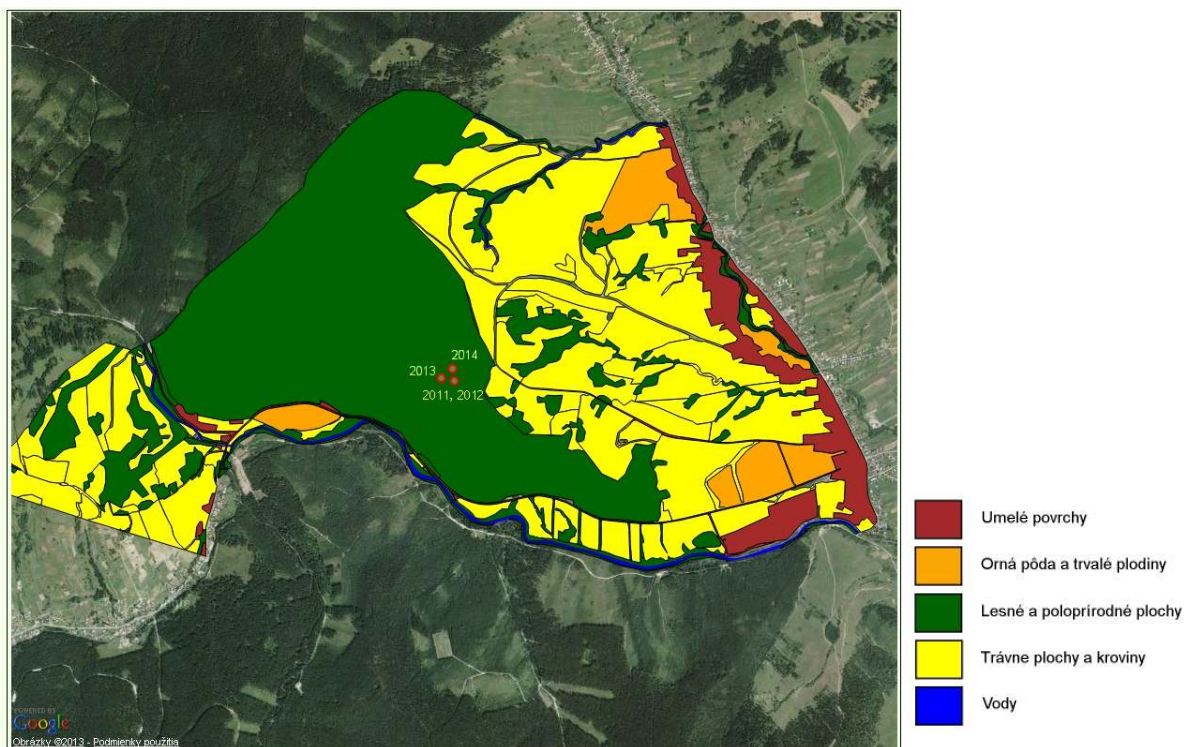


Fig. 8. Part of the home range of the Lesser Spotted Eagle pair with breeding and feeding habitat on the site Rabča "Kýčera"



Fig. 9. Spruce forest stands in the breeding habitat of the Lesser Spotted Eagle pair on the site Rabča "Kýčera"



Fig. 10. Nest tree of the Lesser Spotted Eagle pair on the site Rabča "Kýčera"



Fig. 11. Nest, in which the Lesser Spotted Eagle pair bred unsuccessfully on the site Rabča "Kýčera" in 2011



Fig. 12. Forest management activities related to the elimination of the consequences of the dissipated windstorm in the immediate vicinity of the nest and laying the fire were the likely cause of an unsuccessful breeding of the Lesser Spotted Eagle on the site Rabča "Kýčera" in 2011



Fig. 13. Nest tree of the Lesser Spotted Eagle on the site Zákamenné „Strakov vrch“



Fig. 14. Forest interior in breeding environment of the Lesser Spotted Eagle on the site Zákamenné „Strakov vrch“



Fig. 15. Spruce monocultures in breeding environment of the Lesser Spotted Eagle on the site Zákamenné „Strakov vrch“



Fig. 16 Nest of the Lesser Spotted Eagle after a failed breeding with feather remains of the young on the site Zákamenné „Strakov vrch“



Fig. 17. The Lesser Spotted Eagle young on nest during the inspection on the site Zákamenné "Strakov vrch" in July 2013



Annex 2 Home ranges in Slovensky kras SPA: Jovice and Jablonov nad Turnou

Tab. 7. Size and structure of the home ranges in the Slovenský kras SPA

Location	Total Area (ha)	Agriculture land (ha)	Forest Land (ha)	wetlands (ha)	gardens (ha)	built area (ha)
Jovice	1848,14	1147,82	487,66	30,45	50,88	131,33
Jablonov n./Turňou	1406,14	638,08	590,51	34,54	9,50	133,51

Tab. 8. Percentage of the size and structure of the home ranges in the Slovenský kras SPA

Location	Total Area (%)	Agriculture land (%)	Forest Land (%a)	Wetlands (%a)	Gardens (%)	Built area (%)
Jovice	100	62,11	26,39	1,65	2,75	7,11
Jablonov n./Turňou	100	45,38	42,00	2,46	0,68	9,49

Tab. 9. Structure of the home ranges in the Slovenský kras SPA with detailed classification of agricultural land

Location	Total Area (ha)	Arable land (ha)	Grasslands (ha)	Forest Land (ha)	Wetlands (ha)	Gardens (ha)	Location
Jovice	1848,14	1025,32	122,50	487,66	30,45	50,88	131,33
Jablonov n./Turňou	1406,14	475,64	162,44	590,51	34,54	9,50	133,51

Tab. 10. Percentage structure of the home ranges in the Slovenský kras SPA with detailed classification of agricultural land

Location	Total Area (%)	Arable Land (%)	Grasslands (%)	Forest Land (%a)	Wetlands (%a)	Gardens (%)	Built area (%)
Jovice	100	55,48	6,63	26,39	1,65	2,75	7,11
Jablonov n./Turňou	100	33,83	11,55	42,00	2,46	0,68	9,49

Tab. 11. Breeding success and number of young of the Lesser Spotted Eagle on the site Jovice in different years

	2011	2012	2013	2014
Breeding success	+	+	-	+
Fledglings	1	1	0	1

Tab. 12. Breeding success and number of young of the Lesser Spotted Eagle on the site Jablonov n./Turňou in different years

	2011	2012	2013	2014
Breeding success	-	-	-	-
Fledglings	0	0	0	0

Fig. 18. Size of the home ranges of the Lesser Spotted Eagle in the Slovenský kras SPA

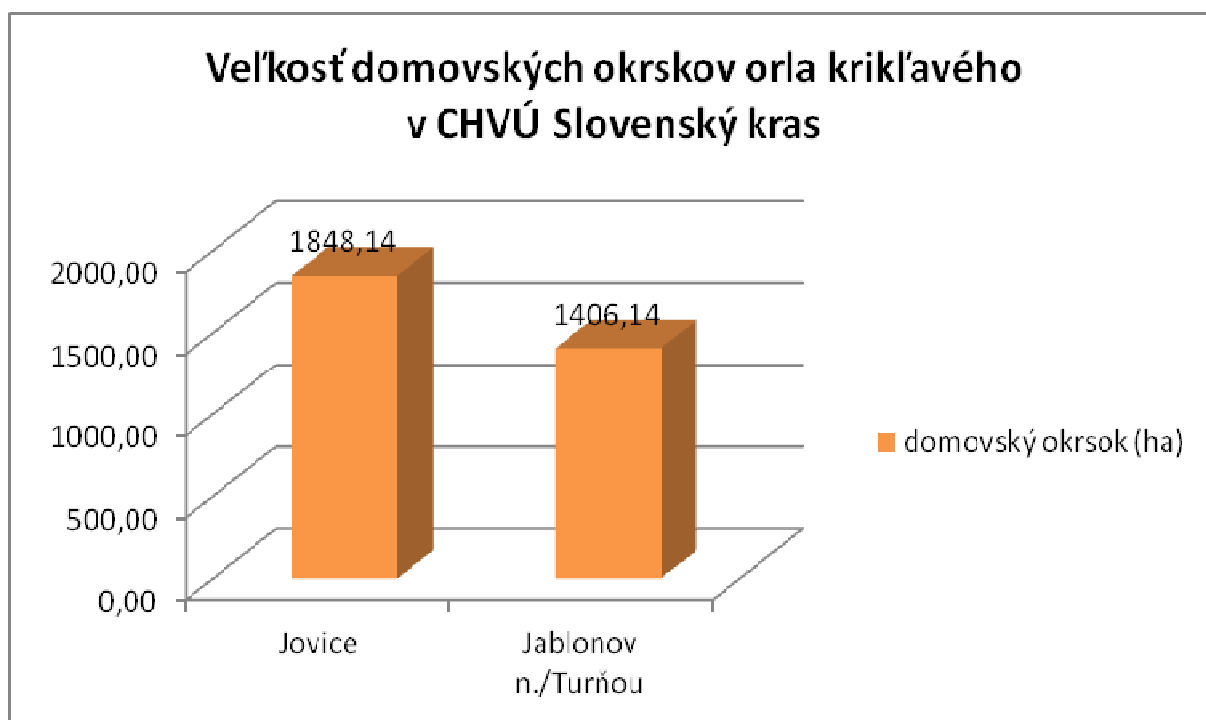


Fig. 19. Structure of the home ranges of the Lesser Spotted Eagle in the Slovenský kras SPA

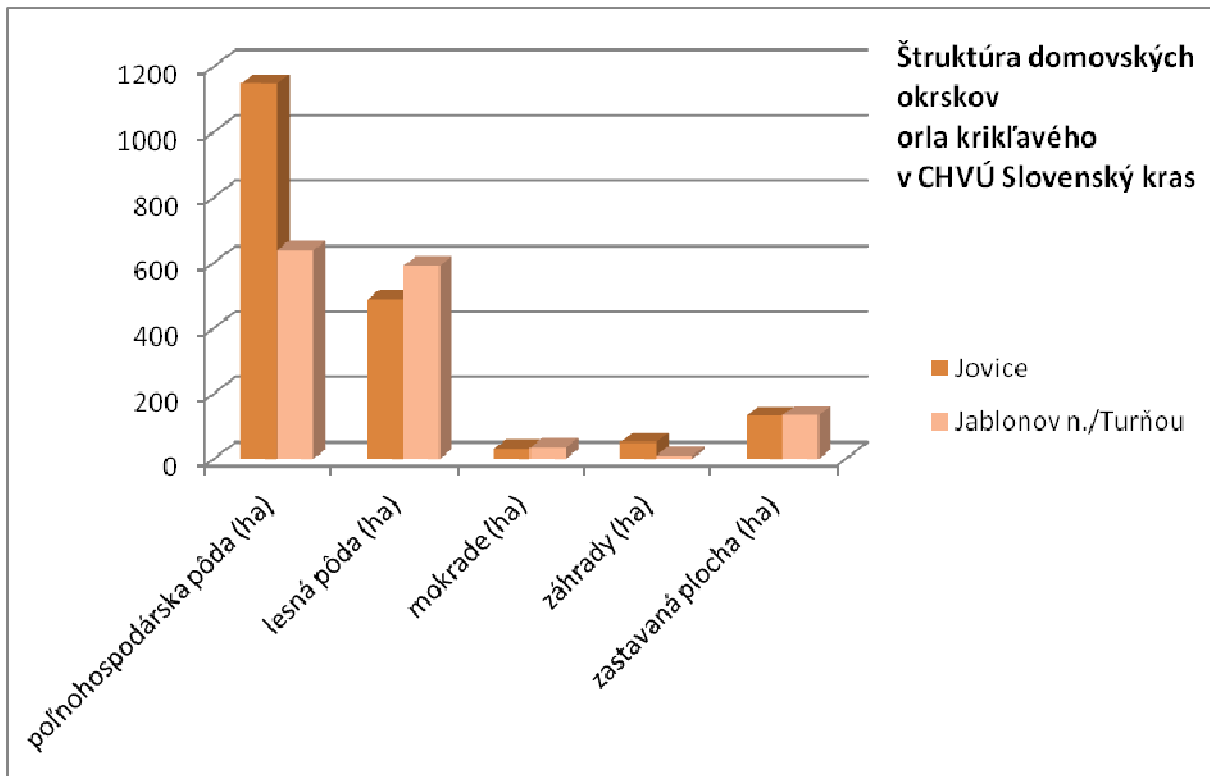


Fig. 20. Structure of the home ranges of the Lesser Spotted Eagle in the Slovenský kras SPA with detailed classification of agricultural land

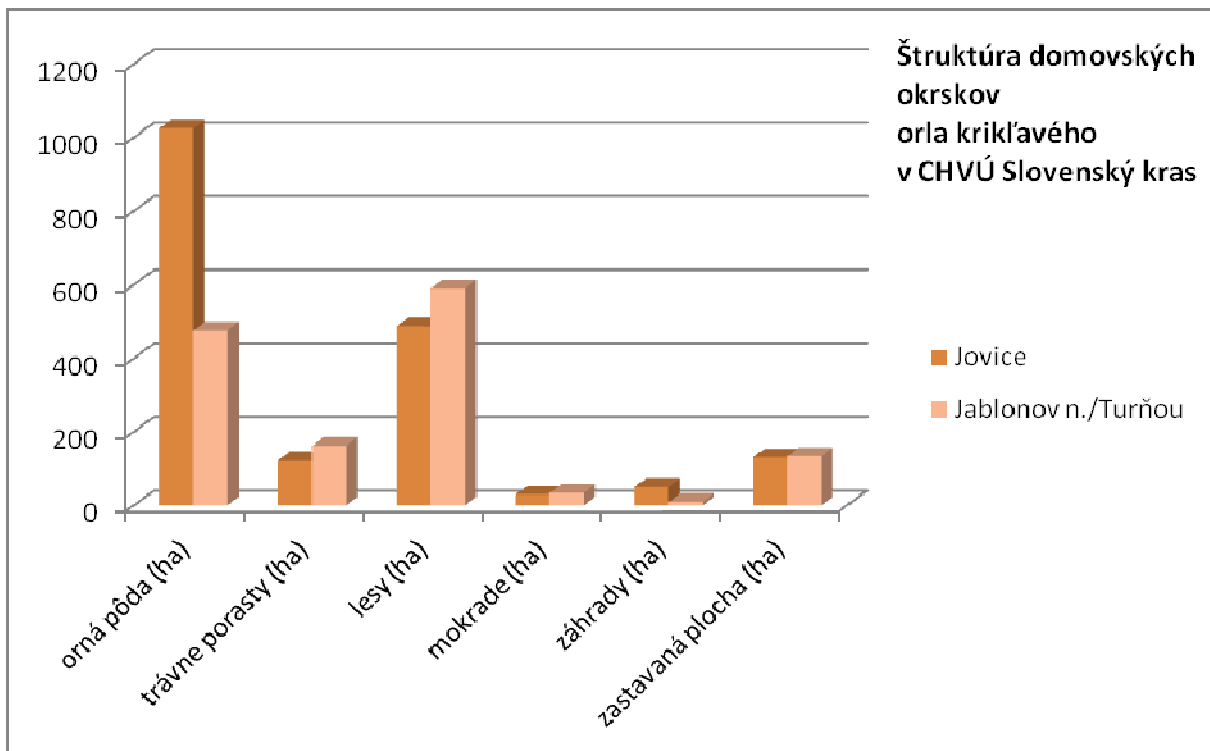


Fig. 21. Home range of the Lesser Spotted Eagle pair on the site Jovice showing its breeding territory



Fig. 22. Graphical analysis of the home range of the Lesser Spotted Eagle pair on the site Jovice according to the accompanying legend, showing the nests occupied in different years

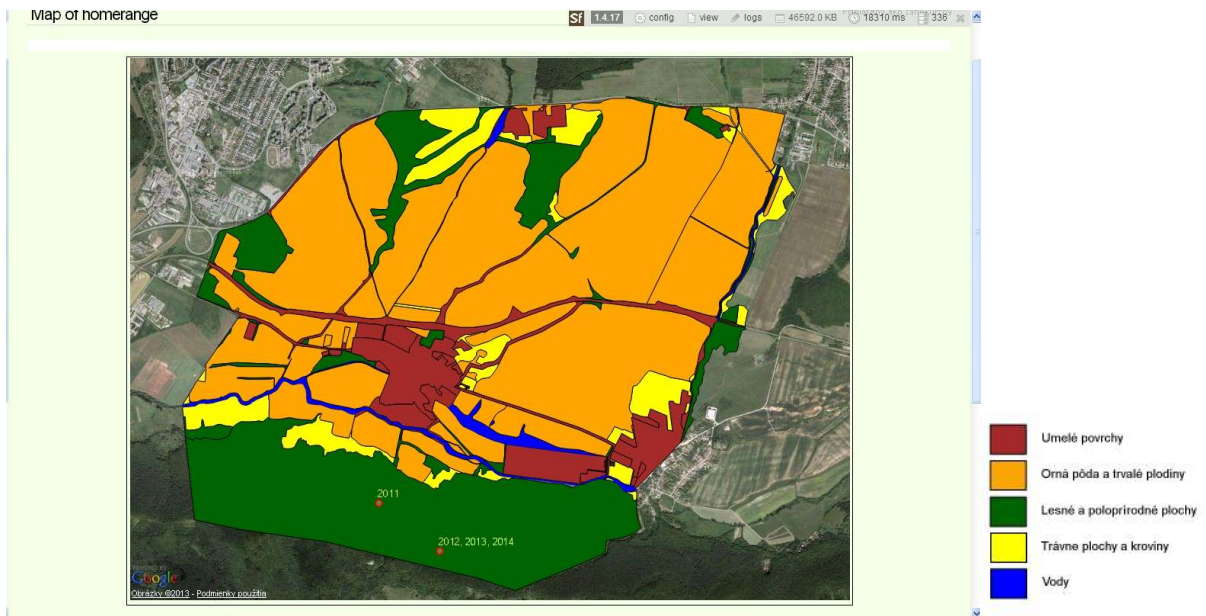


Fig. 23. Home range of the Lesser Spotted Eagle pair on the site Jablonov nad Turňou showing its breeding territory



Fig. 24. Graphical analysis of the home range of the Lesser Spotted Eagle pair on the site Jablonov nad Turňou according to the accompanying legend, showing the nests occupied in different years

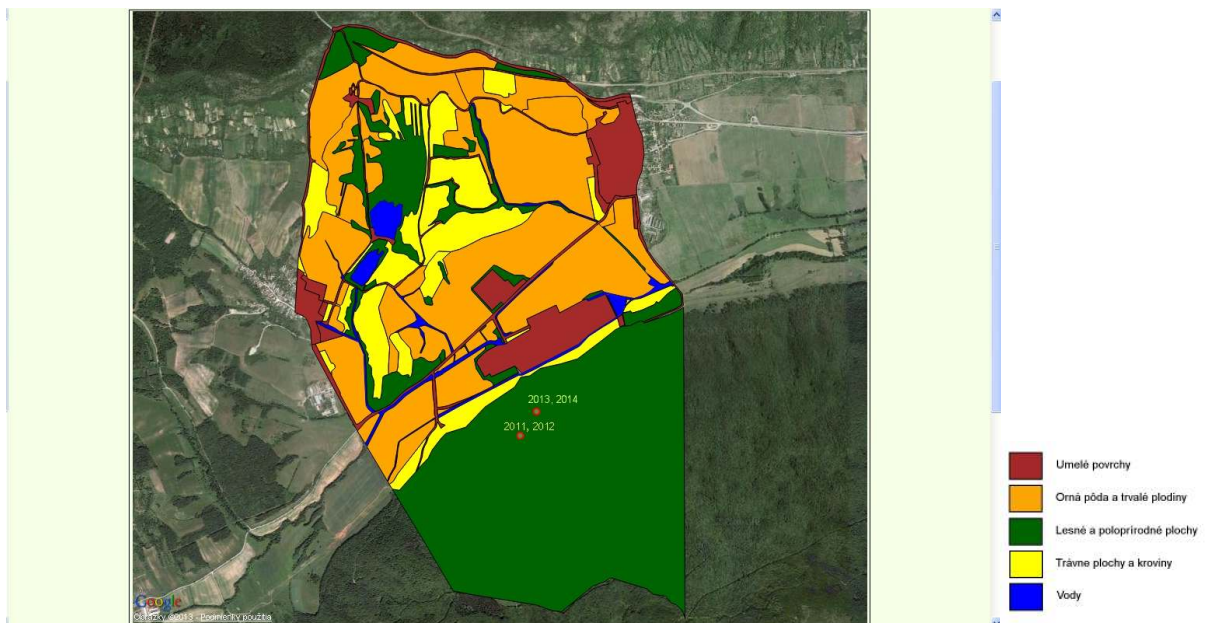


Fig. 25. Part of the home range of the Lesser Spotted Eagle pair with breeding and feeding habitat on the site Jovice



Fig. 26. Nest on beech, in which eagles bred on the site Jovice in 2012



Fig. 27. Disproved one of the nest trees (beech) in breeding territory of the eagles due to windstorm on the site Jovice in January 2013



Fig. 28. Young Lesser Spotted Eagle on the nest on the site Jovice



Fig. 29. Adult Lesser Spotted Eagle during the feeding of its young on the site Jovice



Fig. 30. Part of the home range of the Lesser Spotted Eagle pair with breeding and feeding habitat on the site Jablonov nad Turňou



Fig. 31. Part of the home range of the Lesser Spotted Eagle pair with breeding and feeding habitat on the site Jablonov nad Turňou. Grassland after cutting and processing of cut and dried biomass with technology in packaging of round hay bales



Fig. 32. Nest of the Lesser Spotted Eagle on oak on the site Jablonov nad Turňou



Fig. 33. Young Lesser Spotted Eagle on the nest on the site Jablonov nad Turňou (8.7.2011)



Fig. 34. The same nest as on Fig. 33, but with no young. Breeding of the eagle pair was unsuccessful on the site Jablonov nad Turňou (2.8.2011)



Fig. 35. Nest of the Lesser Spotted Eagle on the site Jablonov nad Turňou, in which pair bred unsuccessfully (2013)



F

g. 36. Eggshell remains found on the ground under the nest on the site Jablonov nad Turňou, in which the Lesser Spotted Eagle bred unsuccessfully (2013)



Annex 3 Home ranges in Laborecká vrchovina SPA: Rokytovce „Maľcovo“ and Zubné “Dúbrava”

Tab. 13. Size and structure of the home ranges in the Laborecká vrchovina Upland SPA

Location	Total Area (ha)	Agriculture land (ha)	Forest Land (ha)	wetlands (ha)	gardens (ha)	built area (ha)
Rokytovce "Maľcovo"	444,65	212,71	220,98	4,55	0	6,41
Zubné "Dúbrava"	1256,53	423,88	778,63	9,2	7,38	37,44

Tab. 14. Percentage of the size and structure of the home ranges in the Laborecká vrchovina Upland SPA

Location	Total Area (%)	Agriculture land (%)	Forest Land (%)	Wetlands (%)	Gardens (%)	Built area (%)
Rokytovce "Maľcovo"	100	47,84	49,70	1,02	0,00	1,44
Zubné "Dúbrava"	100	33,73	61,97	0,73	0,59	2,98

Tab. 15. Structure of the home ranges in the Laborecká vrchovina Upland SPA with detailed classification of agricultural land

Location	Total Area (ha)	Arable land (ha)	Grasslands (ha)	Forest Land (ha)	Wetlands (ha)	Gardens (ha)	Location
Rokytovce "Maľcovo"	444,65	0,77	211,94	220,98	4,55	0	6,41
Zubné "Dúbrava"	1256,53	327,58	96,3	778,63	9,2	7,38	37,44

Tab. 16. Percentage structure of the home ranges in the Laborecká vrchovina Upland SPA with detailed classification of agricultural land

Location	Total Area (%)	Arable Land (%)	Grasslands (%)	Forest Land (%)	Wetlands (%)	Gardens (%)	Built area (%)
Rokytovce "Maľcovo"	100	0,17	47,66	49,70	1,02	0,00	1,44
Zubné "Dúbrava"	100	26,07	7,66	61,97	0,73	0,59	2,98

Tab. 17. Breeding success and number of young of the Lesser Spotted Eagle on the site Rokytovce „Maľcovo“ in different years

	2011	2012	2013	2014
Breeding success	+	+		+
Fledglings	1	1		1

Tab. 18. Breeding success and number of young of the Lesser Spotted Eagle on the site Zubné „Dúbrava“ in different years

	2011	2012	2013	2014
Breeding success	+	+		+
Fledglings	1	1		1

Fig. 37. Size of the home ranges of the Lesser Spotted Eagle in the Laborecká vrchovina Upland SPA

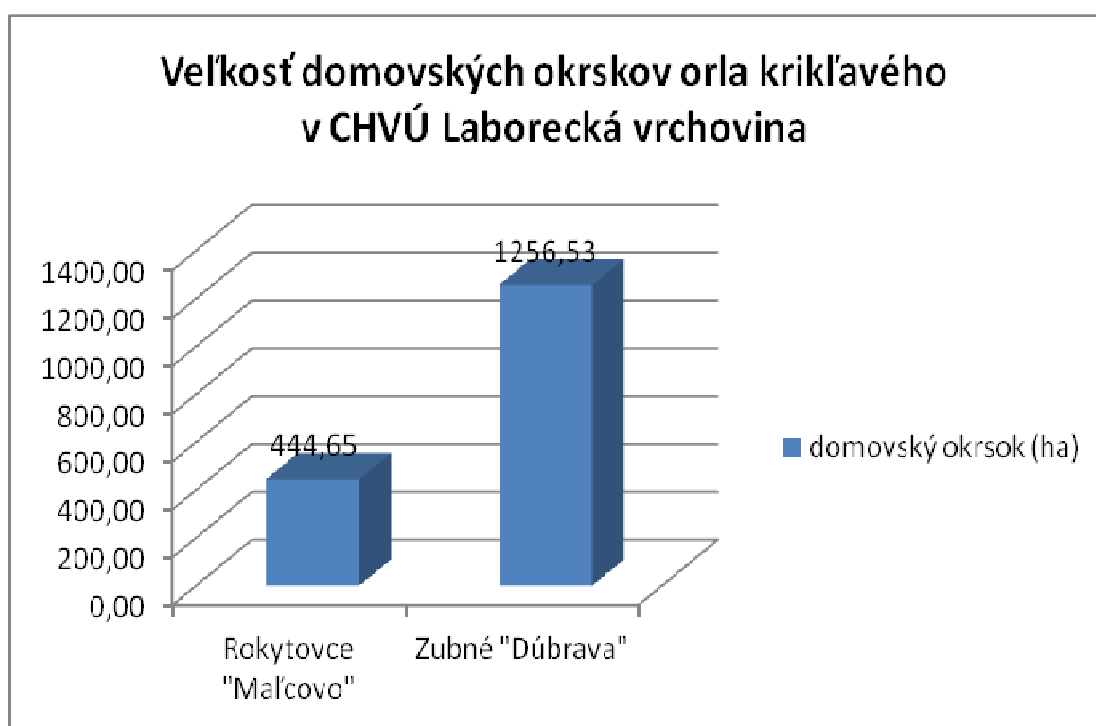


Fig. 38. Structure of the home ranges of the Lesser Spotted Eagle in the Laborecká vrchovina Upland SPA

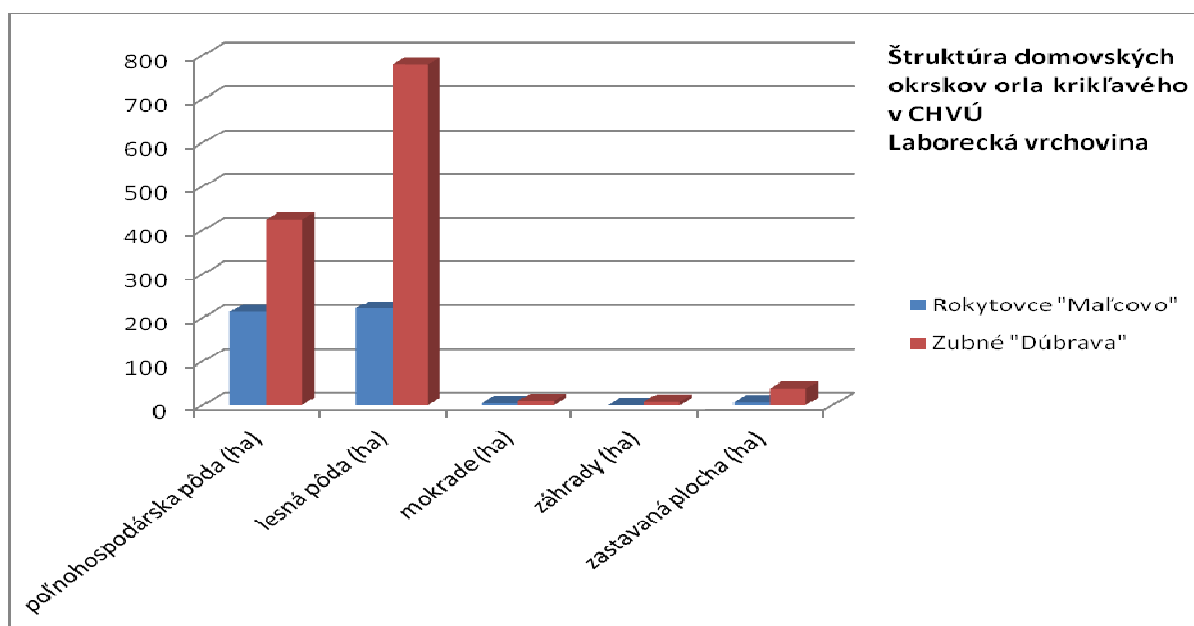


Fig. 39. Structure of the home ranges of the Lesser Spotted Eagle in the Laborecká vrchovina Upland SPA with detailed classification of agricultural land

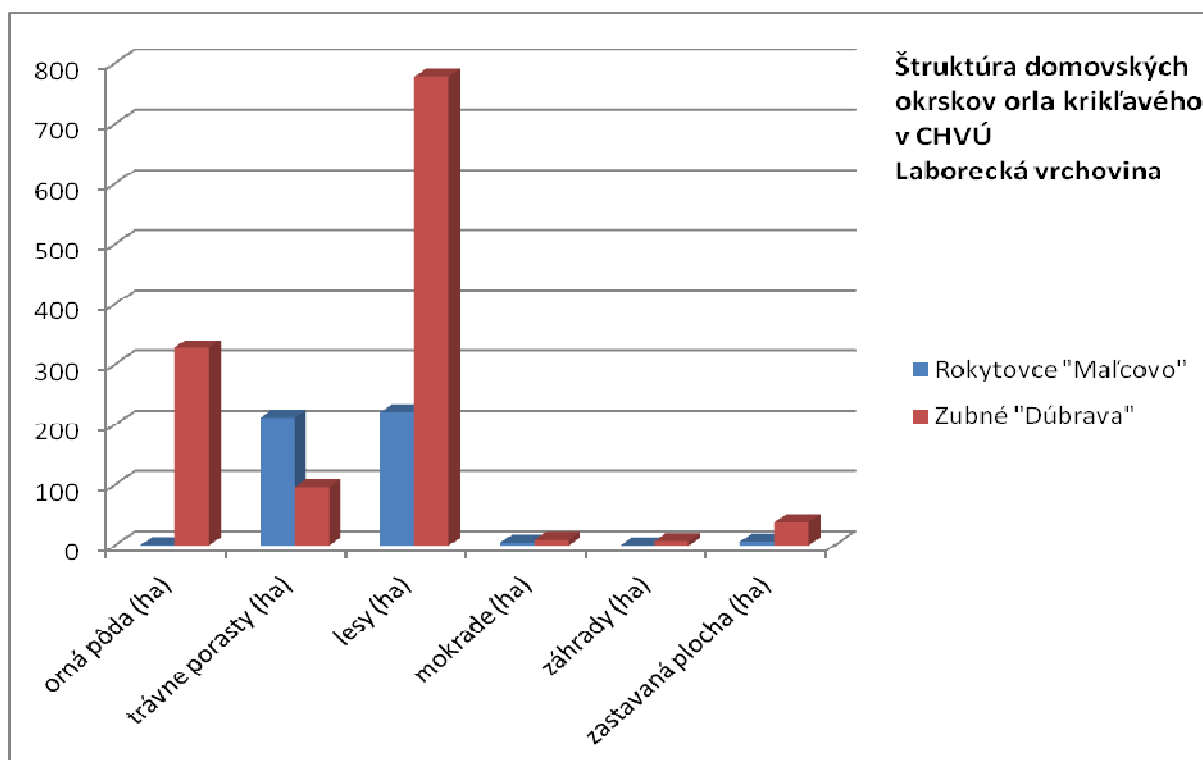


Fig. 40. Home range of the Lesser Spotted Eagle pair on the site Rokytovec „Maľcovo“ showing its breeding territory

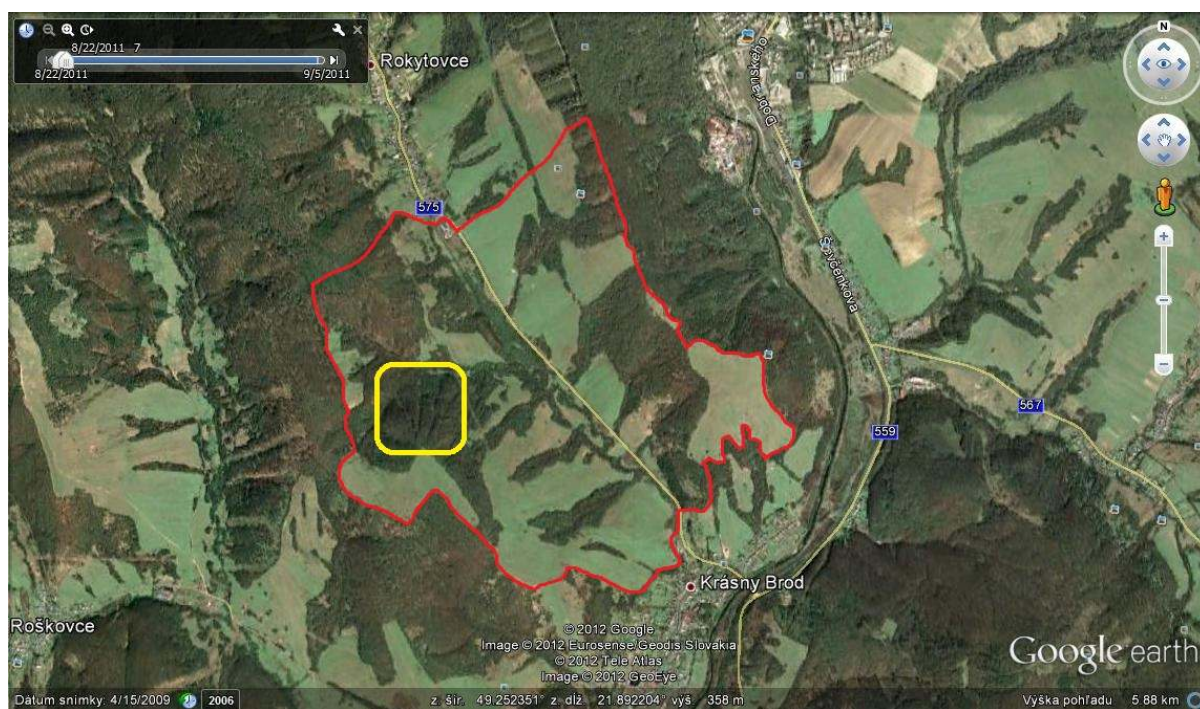


Fig. 41. Graphical analysis of the home range of the Lesser Spotted Eagle pair on the site Rokytovec „Maľcovo“ according to the accompanying legend, showing the nests occupied in different years

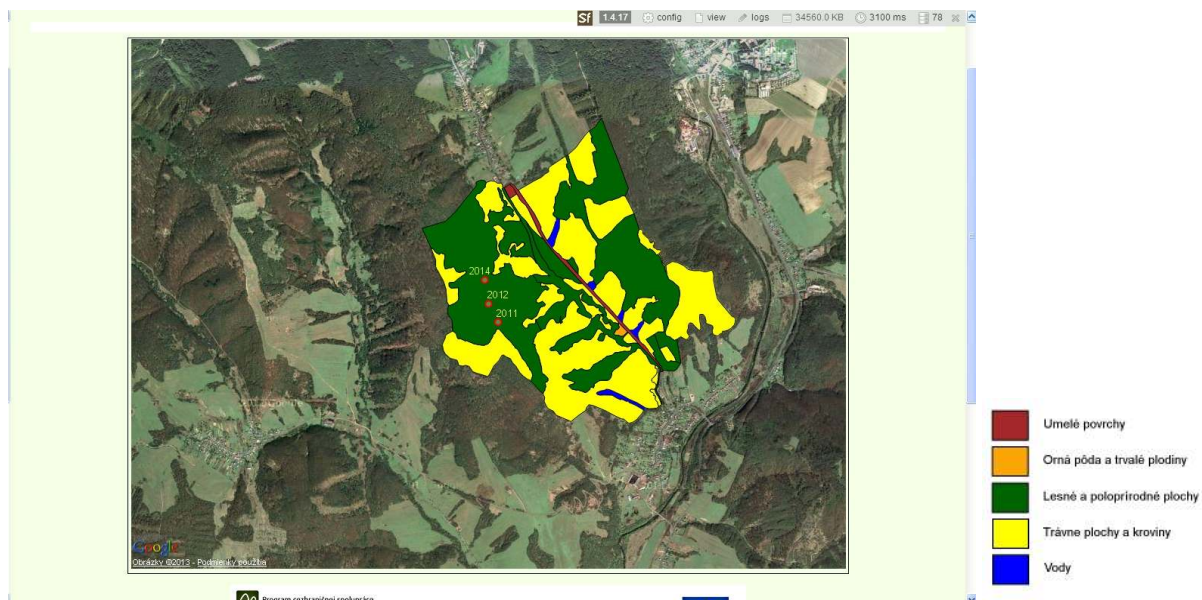


Fig. 42. Home range of the Lesser Spotted Eagle pair on the site Zubné „Dúbrava“ showing its breeding territory

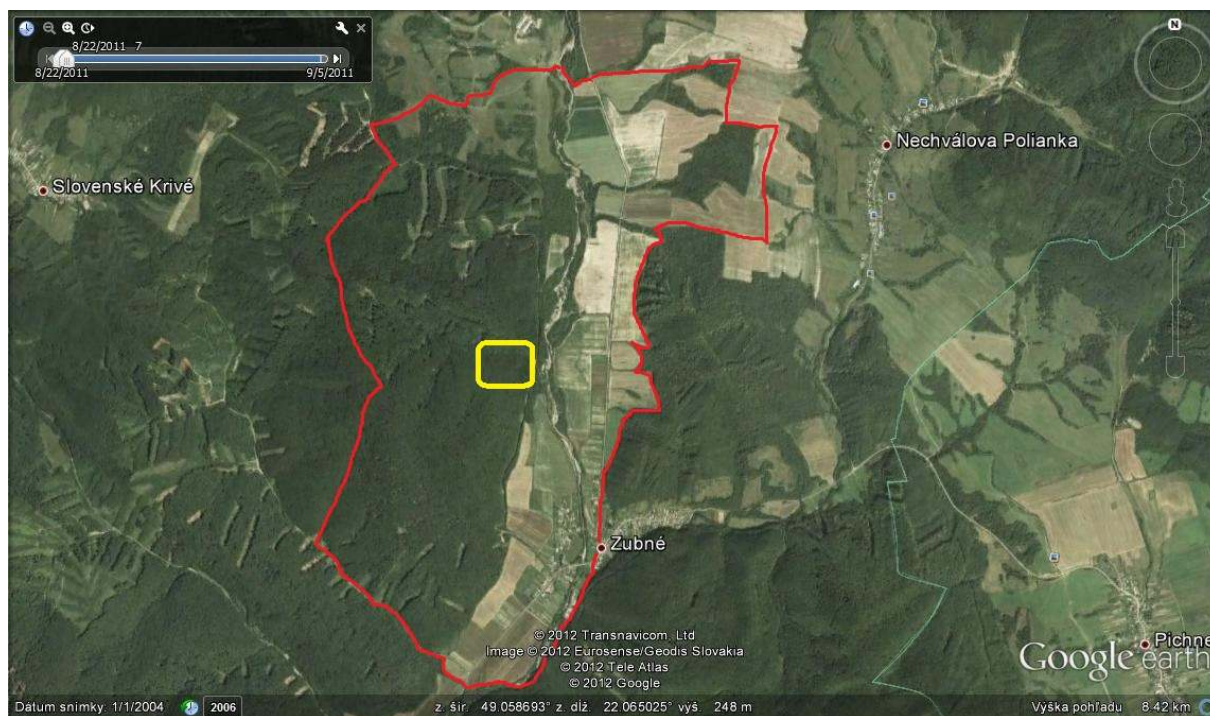
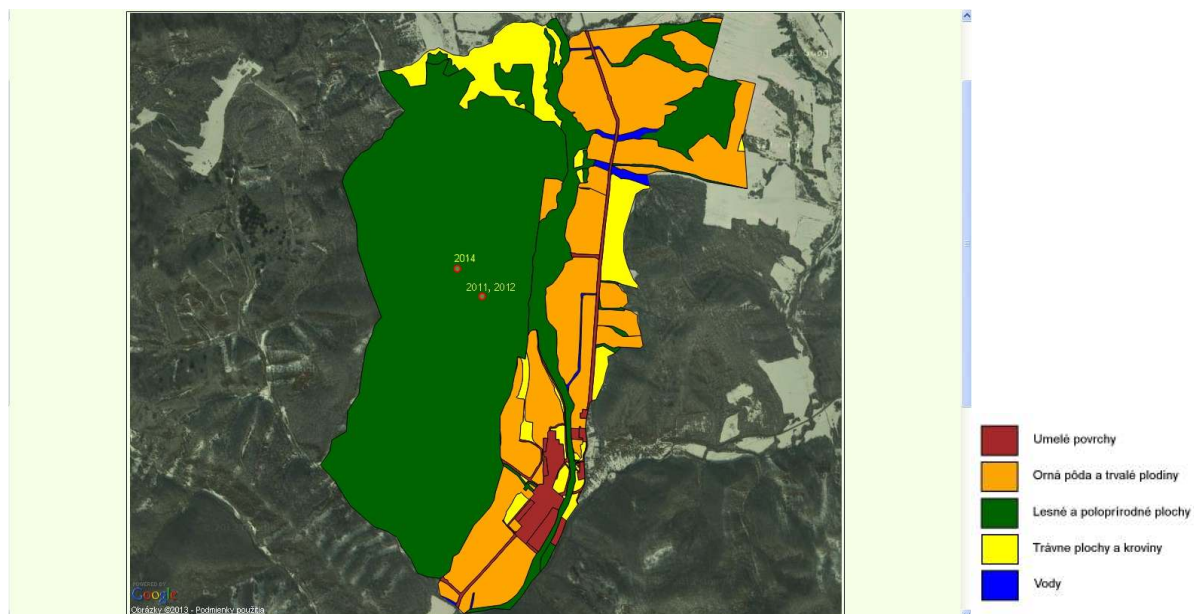


Fig. 43. Graphical analysis of the home range of the Lesser Spotted Eagle pair on the site Zubné „Dúbrava“ according to the accompanying legend, showing the nests occupied in different years



F

ig. 44. Part of the home range of the Lesser Spotted Eagle pair with breeding and feeding habitat on the site Rokytoyce „Maľcovo“



Fig. 45. Disproved one of nest trees (larch) in breeding territory of eagles pair on the site Rokytoyce „Maľcovo“ due to the May windstorm in 2014"



Fig. 46. Nest on the beech, in which eagles successfully bred on the site Rokytovcе „Maľcovo“ in 2012



Fig. 47. Young Lesser Spotted Eagle on the nest during the inspection on the site Rokytovcе „Maľcovo“ in July 2014



Fig. 48. Part of the home range of the Lesser Spotted Eagle pair with breeding and feeding habitat on the site Zubné „Dúbrava“



Fig. 49. Forest road in the breeding territory of the Lesser Spotted Eagle pair on the site Zubné „Dúbrava“



Fig. 50. The Lesser Spotted Eagle's nest, in which the pair successfully bred on the site Zubné „Dúbrava“ in 2014



Fig. 51. Young Lesser Spotted Eagle in nest, during the inspection on the site Zubné „Dúbrava“ in July 2012



References:

Klute D. 2008: Recommended buffer zones and seasonal restrictions for Colorado raptors. Colorado Division of Wildlife, Denver.

González L.M., Arroyo B.E., Margalida A. Sánchez R. & Oria J., 2006: Effect of human activities on the behaviour and breeding Spanish imperial eagles (*Aquila adalberti*): management implications for the conservation of a threatened species. *Animal Conservation* 9 (2006) 85-93. The Zoological Society of London.

Pongrácz A. & Horváth M., 2010: Suggested methodology for temporal and long-term spatial restrictions of human activities and around the nests of strictly protected raptors, owls and black storks. *Heliaca* 2010, 104-107.

Richardson C.T. & Miller C.K, 1997: Recommendations for protecting raptors from human disturbance: a review. *Wildlife Society Bulletin* 1997, 25 (3): 634-638.

Ruddock M. & Whitfield D.P., 2007: A review of disturbance distances in selected bird species. A report from Natural Research (projects) Ltd to Scottish Natural Heritage.

Sellis U., 2009: Arrangement of Spotted Eagles and Black Stork conservation in Estonia. Layman report. LIFE04NAT/EE/000072 (EAGLELIFE). Eesti Ornitoloogiaühing, 2009.

Schäffer N. & Gallo-Orsi U. (eds.), 2001: European Union action plans for eight priority bird species – Lesser Spotted Eagle. Luxembourg: Office for Official Publications of the European Communities, 2001.

Whitfield D.P., Ruddock M. & Bullman R., 2008: Expert opinion as a tool for quantifying bird tolerance to human disturbance. *Biological Conservation* 141 (2008), 2708-2717.

Zákon NR SR č. 543/2002 Z. z. o ochrane prírody a krajiny v znení neskorších predpisov

Zákon NR SR č. 326/2005 Z. z. o lesoch v znení neskorších predpisov

Zákon NZ ČSSR č. 71/1967 Zb. o správnom konaní v znení neskorších predpisov

<http://www.koo.org.pl/ochrona-strefowa-gniazd>