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VERSITA

The long-legged buzzard (*Buteo rufinus*) in Slovakia in the past and present

Myšiak hrdzavý (*Buteo rufinus*) na Slovensku v minulosti a v súčasnosti

Štefan DANKO

Abstract: In the 19th century the long-legged buzzard bred in the Balkan Peninsula only in Greece. From the first half of the 20th century it began to expand to the north, and at the end of 2012 the northern boundary of its breeding expansion in south-eastern Europe extended to central Hungary, south-western Romania, Romanian Dobruja, the southern half of Ukraine and along the western border of Kazakhstan. In the work are 232 faunistic data on the occurrence of the species on the territory of Slovakia from the year 1870 to the end of 2012. In the period from 1911–1950 only 7 cases were found here; from the period 1951–2000 43 observations exist, and for the short period from 2001–2012 there are as many as 180, of which 98 occurred in the year 2012 alone. The text in particular evaluates the invasive occurrence of the species in 2012 in Slovakia and its neighbouring countries (Austria, Czech Republic and Poland). Given this increasing trend in the frequency of occurrence of the long-legged buzzard in Slovakia, its breeding on the territory of Slovakia in the near future can be anticipated, though by the end of 2012 this had not yet to be confirmed.

Abstrakt: Myšiak hrdzavý hniezdil v 19. storočí na Balkánskom polostrove len v Grécku. Od prvej polovice 20. storočia sa začal šíriť severným smerom a do konca roka 2012 severná hranica jeho hniezdneho rozšírenia v juhovýchodnej Európe dosiahla po stredné Maďarsko, juhozápadné Rumunsko, rumunskú Dobrudžu, južnú polovicu Ukrajiny a po západnú hranicu Kazachstanu. V práci je zhrnutých 232 faunistických údajov o výskyte druhu na území Slovenska od roku 1870 do konca roku 2012. V období rokov 1911–1950 bol tu zistený len v 7 prípadoch, z obdobia rokov 1951–2000 už existuje 43 pozorovaní a za krátke obdobie rokov 2001–2012 až 180, z čoho len v roku 2012 to bolo 98 pozorovaní. V texte je zvlášť zhodnotený invazný výskyt druhu v roku 2012 na Slovensku aj v susedných krajinách (Rakúsko, Česká republika a Poľsko). Na základe uvedeného rastúceho trendu početnosti výskytov myšiaka hrdzavého na Slovensku možno predpokladať v blízkej budúcnosti jeho hniezdenie aj na území Slovenska, do konca roka 2012 ešte nebolo potvrdené.

Key words: range change, frequency, expansion, trend, invasion.

Štefan Danko, Raptor Protection of Slovakia, Kuklovská 5, 841 04 Bratislava, Slovakia. E-mail: danko@gecom.sk.

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Introduction

The nominotypical subspecies of the long-legged buzzard is distributed in the southern Palaearctic from the Balkan Peninsula to north-western Mongolia and China. The northernmost nests are located in northern Kazakhstan, the southernmost in northern Iran (Ferguson-Lees & Christie 2001). The European population in its northern part was until the end of the 20th century divided into an eastern and a western part. By the end of the 1960s in Europe the eastern population bred in Russia from the River Don and the North Caucasus to the Ural Mts. The western part of the range was isolated from it and is located in south-eastern Europe from the European part of Turkey to islands in the Aegean Sea along mainland Greece, to the north to Bulgaria and Macedonia (Glutz et al. 1971). The breeding grounds of the eastern and western parts were joined in their southern part only through Asia Minor, while in the Balkans

it had an island-like character. In the 19th century the species bred only in southern and central Greece, in Macedonia only from the 1950s and in Bulgaria from the 1960s. Simeonov et al. (1990) assumed that it has bred in Bulgaria since 1950. In 1969 there was a common breeding ground in Macedonia (Danko & Cseresnyés 1971) and the species occurred and bred abundantly in Bulgaria in 1985 in the foothills of the Rhodope Mts. south-west of Plovdiv (Lipták in litt.). Sterbetz (1960) has already written about the expansion of the species to the north and the increasingly more frequent occurrence on the territory of Hungary. The first breeding of the long-legged buzzard isolated from its range was recorded in 1992 in Hungary (Dudás & Sándor 1993, Dudás et al. 1993). The first breeding in Romania was documented in 1996 (Schmitz 1996). Later, the breeding grounds in Europe shifted to Crete, Albania, Bosnia and Herzegovina, Romania and Ukraine (Munteanu et al. 1997). Strong growth in the number of breeding pairs (up to about 300) was recorded in Bulgaria (Mičev & Jankov 1993), and about 50 pairs were reported from Greece and Ukraine. By the end of the 20th century Grubač & Rašajski (2000) reported 14–19 breeding pairs in south-eastern Serbia, and they assumed the breeding of one pair in the northern part of the country not far from the border with Hungary, south-easterly from the town of Szeged. Mrlík & Landsfeld (2002) wrote about the expansion of the species in Central Europe by the end of the 20th century, and they believe the reason for its expansion to the north from the Balkans and the increase in the number of breeding pairs was a consequence of climatic changes associated with global warming and the expansion of cultural steppes. They considered the food factor to be less important. Fesenko & Bokotej (2002) from Ukraine reported the species breeding at the start of the 21st century from the Central Dnieper to the south-east, where it breeds over the entire Crimea and along the Black Sea coast from Moldova to Russia. Thus, the primary breeding ground of the long-legged buzzard in south-eastern Eurasia joined with the part in the Balkans through Romanian Dobruja and through Europe. At the end of 2012 Gorbaň (in litt.) reported that the breeding ground in Ukraine is also expanding to the west and extends to the Východné Karpaty Mts. Estimated numbers of breeding pairs of the species in south-eastern Europe are presented in Tab. 1.

From the most recently published data Daróczi & Zeitz (2008) discovered in Romania strong growth in the population and a shift to the north, particularly in the southern and south-eastern regions in Dobruja, where in the year 2004 they estimated 100–180 pairs and found a more frequent occurrence of the species in the western part of the country. Daróczi (in litt.) at the end of 2012 stated that the long-legged buzzard is already more abundant than the common buzzard in some parts of the northern Dobruja. It was already more abundant on this territory as early as the 1970s, but no one looked for nests here. Daróczi, Hegyeli and Nagy (in litt.) discovered the breeding of the long-legged buzzard in the western part of the country for the first time in the Arad region, near the village of Bodrogu Nou in 2008. Indications of breeding were also discovered in the Timiş re-

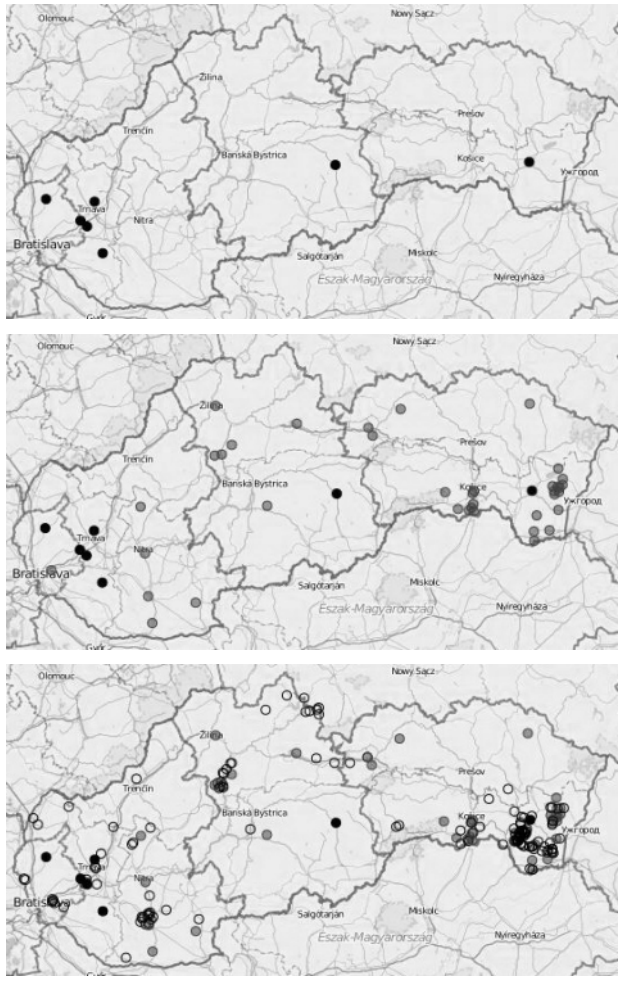


Fig. 1–3. Occurrence of *Buteo rufinus* in Slovakia from 1911–1950 (above, black circles), 1951–2000 (in the middle, grey circles) and 2001–2012 (below, white circles).
Obr. 1–3. Výskyt *Buteo rufinus* na Slovensku v rokoch 1911–1950 (hore, čierne krúžky), 1951–2000 (v strede, sivé krúžky) a 2001–2012 (dole, biele krúžky).

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gion in 2006, near the village of Cenad, and Bagyura found one breeding pair in 2011 on a high-power electricity pylon near Sannicolau Mare, where long-legged buzzards had already occurred in 2006–2008. There are at present 10–30 breeding pairs in the western part of Romania adjacent to Hungary (Daróczi in litt.).

The aim of the work is to collect all available data on the occurrence of the long-legged buzzard in Slovakia to the end of 2012 and to evaluate them in the context of species expansion recorded in south-eastern Europe.

Methods and materials

Faunistic data on the occurrence of the long-legged buzzard in Slovakia were obtained from the available literature and from original data. The web page www.birding.sk presents 70 data (from August 20, 2005 – November 30, 2012); in the database SOS/BirdLife Slovensko at aves.vtaky.sk are 26 data (from August 14, 2007 to December 2, 2012), and others were obtained directly from observers. Records which probably represent repeat observations of the same individual at one site several times in the defined time periods are considered as a single observation. An exception occurred if at a location on the given day a higher (or different) number of individuals occurred. The data are divided into the periods 1911–1950, 1951–2000 and 2001–2012. The 20th century is plotted according to the individual decades and the 21st century specifically by the individual years. In neighbouring Hungary and in the adjacent part of Romania only existing nests of the long-legged buzzard are marked on the map. The occurrence of the species is also evaluated by the individual months in the year and by the individual orographic units (Tab. 2, Fig. 15). All available data, both published and unpublished, are listed in Appendix 1.

Tab. 1. Estimated numbers of breeding pairs of the long-legged buzzard (*Buteo rufinus*) in south-eastern Europe, year – status to particular year
Tab. 1. Odhadované počty hniezdnych párov myšiaka hrdzavého (*Buteo rufinus*) v juhovýchodnej Európe, rok – stav k príslušnému roku
A – BirdLife International (2004), B – Mebs & Schmidt (2006)

	A	year/rok	B	year/rok
Greece	200–300	2000	200–300	2000
Macedonia	50–80	2000	50–80	2004
Albania	?	2000	0–10	2002
Bulgaria	250–400	2000	>800	2003
Serbia	22–28	2000	15–20	2004
Romania	65–110	2000	65–110	2002
Ukraine	50–150	2000	ca 150	2004
Hungary	2–7	2000	4–7	2002

Results

For the period 1870–2012 a total of 232 faunistic data were obtained on the territory of Slovakia. The long-legged buzzard was in the past considered to be a rare bird. The first two data on its occurrence are from the 19th century. Hutten-Klingenstein (1881) wrote that in the 1870s an individual was killed near Bošany. Greisiger (1884) found in the former Kežmarok seminary a mounted long-legged buzzard specimen which was probably killed in the area around Kežmarok. The document is not dated and the author considered it as the rarest bird in the region at that time. The numbers of observations and the number of individuals of the long-legged buzzard recorded in Slovakia in the years 1911–1950 are depicted in Fig. 1, in the years 1911–2000 in Fig. 2 and in the years 1911–2012 in Fig. 3. From the graph (Fig. 4) it follows that in the last decade of the 20th century the species occurred more often than in the preceding decades. In the 21st century 64 data were recorded in the first decade alone. The graph in Fig. 5 depicts the first 12 years of the 21st century by individual years. An increased number of observations is evident in the years 2006–2011 in

Tab. 2. Synopsis of *Buteo rufinus* observations in particular orographic units. Numbers and names of orographic units follow Kroupová (1980), see Fig. 15 also
Tab. 2. Prehľad počtu pozorovaní *Buteo rufinus* v orografických celkoch. Číslovanie a názvy orografických jednotiek sú uvedené podľa Kroupová (1980), pozri aj Obr. 15

OU no. OC č.	orographic unit orografický celok	no. počet
820	Východoslovenská rovina Lowlands	88
400	Košická kotlina Basin	41
240	Turčianska kotlina Basin	18
802	Nitrianska pahorkatina Mts	15
790	Podunajská rovina Lowlands	14
801	Trnavská pahorkatina Mts	10
770	Borská nížina Lowlands	7
630	Oravská vrchovina Basin	6
804	Hronská pahorkatina Mts	6
810	Východoslovenská pahorkatina Mts	7
252	Popradská kotlina Basin	4
050	Rožňavská kotlina Basin	4
251	Liptovská kotlina Basin	2
360	Zvolenská kotlina Basin	2
570	Podbeskydská vrchovina Mts	2
220	Žilinská kotlina Basin	1
670	Levočské vrchy Mts	1
750	Laborecká vrchovina Mts	1
780	Chvojnícka pahorkatina Mts	1
803	Žitavská pahorkatina Mts	1
030	Stolické vrchy Mts	1
∑		**232**

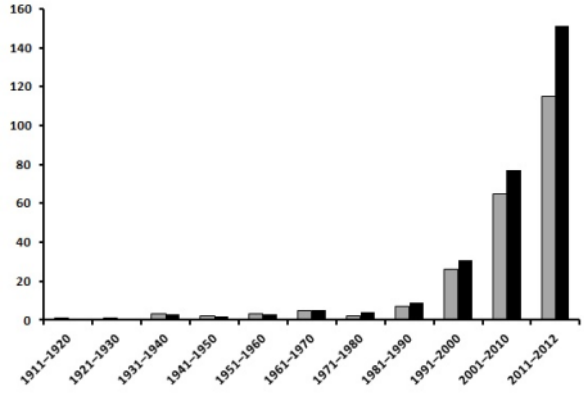


Fig. 4. Numbers of observations (grey column) and numbers of individuals (black column) of long-legged buzzards (*Buteo rufinus*) found in the 20th century and in the first decade of the 21st century by decades; data in the last column are only for the years 2011 and 2012 in Slovakia.
Obr. 4. Počty pozorovaní (sivý stĺpec) a počty jedincov (čierny stĺpec) myšiakov hrdzavých (*Buteo rufinus*) zistených v 20. storočí a v 1. desaťročí 21. storočia odstupňované po 10 rokoch, údaje v poslednom stĺpci sú len za dva roky 2011 a 2012 na Slovensku.

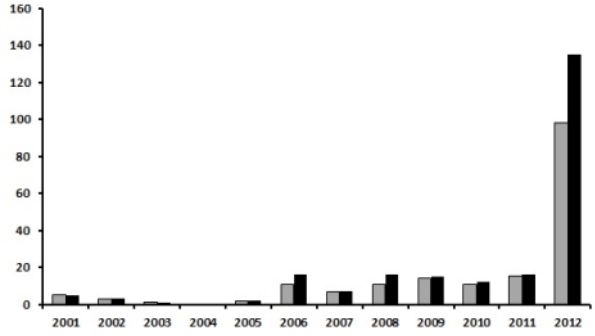


Fig. 5. Numbers of observations (grey column) and numbers of individuals (black column) of long-legged buzzards (*Buteo rufinus*) found in the years 2001–2012 in Slovakia.
Obr. 5. Počty pozorovaní (sivý stĺpec) a počty jedincov (čierny stĺpec) myšiakov hrdzavých (*Buteo rufinus*) zistených v rokoch 2001–2012 na Slovensku.

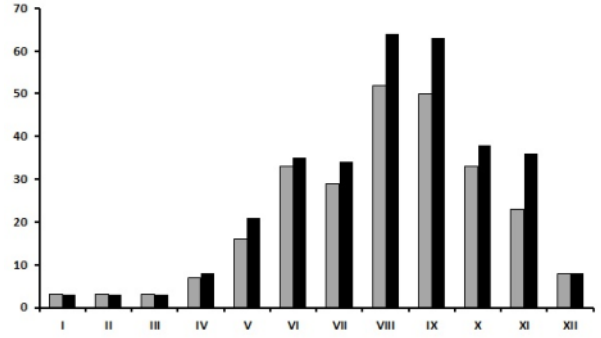


Fig. 6. Distribution of the number of observations (grey column) and the number of individuals (black column) of long-legged buzzards (*Buteo rufinus*) in the course of the year. All data from the beginning of the 20th century up through 2012 are included.
Obr. 6. Rozloženie počtov pozorovaní (sivý stĺpec) a počtov jedincov (čierny stĺpec) myšiakov hrdzavých (*Buteo rufinus*) v priebehu roka. Spracované sú všetky výskytové údaje od začiatku 20. storočia do roku 2012.

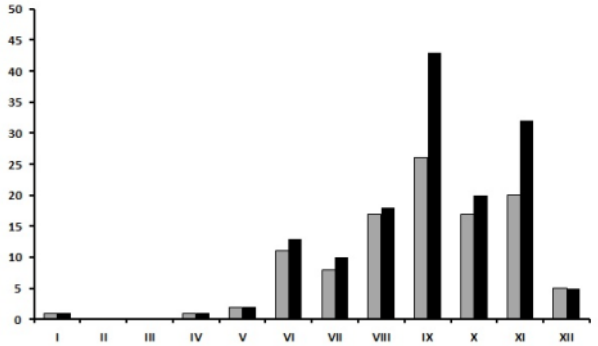


Fig. 7. Numbers of observations (grey column) and numbers of individuals (black column) of long-legged buzzards (*Buteo rufinus*) found in the individual months in Slovakia in 2012.
Obr. 7. Počty pozorovaní (sivý stĺpec) a počty jedincov (čierny stĺpec) myšiakov hrdzavých (*Buteo rufinus*) zistených v jednotlivých mesiacoch na Slovensku v roku 2012.

comparison with previous years (17 observations in 2011) and the result of the invasive occurrence – 98 data from 2012. The graph in Fig. 6 depicts the distribution of the number of observations and the number of individuals of the long-legged buzzard by individual months of the year for the entire period evaluated 1911–2012.

In the great majority of cases (81.9%) only a single individual was observed at the given time at the given site. From a total of 232 observations two individuals were spotted 31 × (13.4%), three individuals 7 × (3.0%; Fig. 14), four individuals 2 × (0.9%) (September 10, 2012 near Malý Ruskov and November 7, 2012 near Trebišov in the Východoslovenská rovina Lowlands, Hrtan in litt.), 5 individuals 1× (0.4%) (November 11, 2012 near Zemplínsky Klečenov, when in a single field there were present a total of 25 individuals of *Buteo buteo*, 11 individuals of *Aquila heliaca*, two individuals of *Haliaeetus albicilla*

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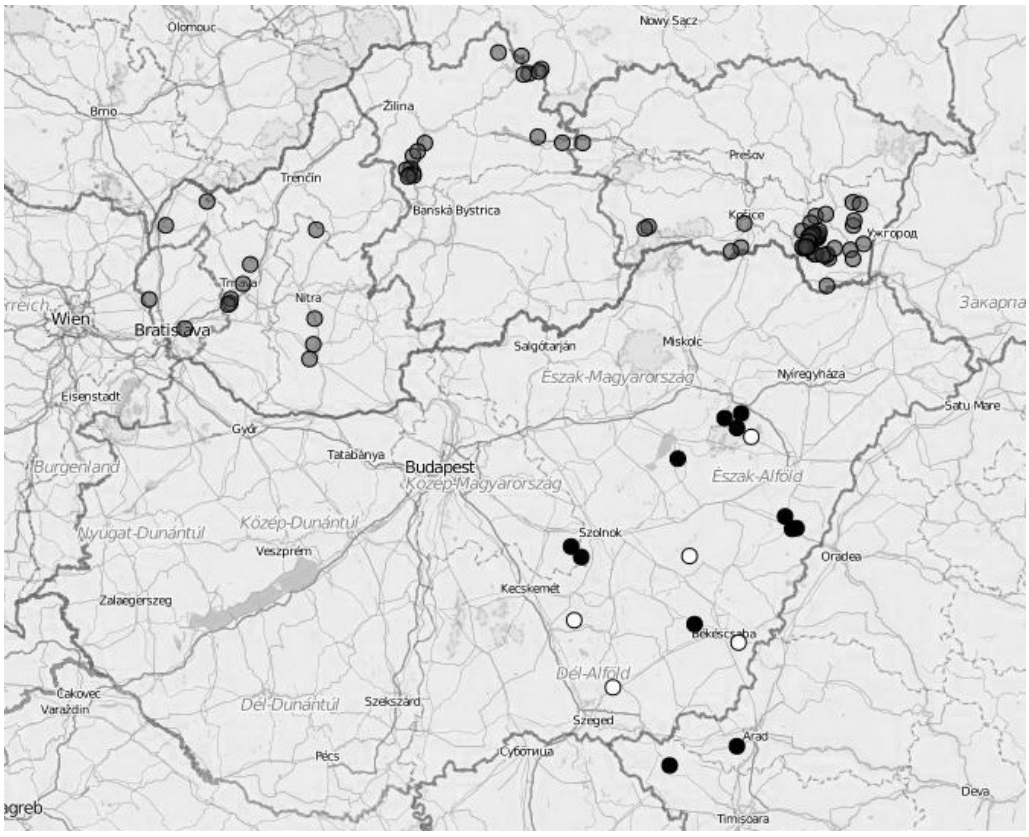


Fig. 8. Sites of occurrence of the long-legged buzzard (grey circles) in Slovakia in 2012 and breeding sites of the species in Hungary and in adjacent parts of Romania. The solid black circle – breeding sites of the long-legged buzzard (*Buteo rufinus*), white circle – breedings sites of mixed pairs of *B. rufinus* × *B. buteo*.
Obr. 8. Lokality výskytu myšiaka hrdzavého (sivé krúžky) na Slovensku v roku 2012 a hniezdne lokality druhu v Maďarsku a v priľahlej časti Rumunska. Plný čierny krúžok – hniezdne lokality myšiaka hrdzavého (*Buteo rufinus*), biely krúžok – hniezdne lokality zmiešaných párov *B. rufinus* × *B. buteo*.

and one *Falco tinnunculus*, Balla in litt.), and 6 individuals 1× (0.4%) (September 9, 2012 near Malý Ruskov, Hrtan in litt.). Both onetime observations occurred in the Východoslovenská rovina Lowlands. A higher number of individuals (4 or more) occurred only in 2012. The numbers of observations increased after 2006 and up to 2011 were on approximately the same level. In 2012 the species occurred invasively in Slovakia (Fig. 5), which is manifested also in the surrounding countries.

From the viewpoint of occurrence the species most often and most abundantly occurred in the Východoslovenská rovina Lowlands, then in basins (primarily the Košická kotlina Basin) and hills, rarely in the highlands. Regarding mountains only flew over the Levočské vrchy Mts. (800–900 m a. s. l.) in the direction of the Popradská kotlina Basin, and in the past was shot near Tisovec (ca. 450 m a. s. l.) in the Stolické vrchy Mts. Of interest is the occurrence of the long-legged buzzard, a species that lives primarily on plains of a steppe-like character, in the Oravská kotlina Basin. The first observations in this territory were recorded on October 27, 2001, by Karaska & Ridzoň (2006) in the Podbeskydská vrchovina Highlands, where it was also seen on June 5, 2012, by Hoľma (in litt.). More frequent occurrence is recorded in the Oravská kotlina Basin from July 4, 2006 (Karaska & Ridzoň 2006), to the start of December 2012 (Suchánek, aves.vtaky.sk). The highest elevation (810 m) where the species occurred on this territory is in the surroundings of the village of Suchá hora Mt. (Karaska in litt.).

A strong invasion of the species was recorded in 2012 in Slovakia, when 98 faunistic data were recorded (at this point it is necessary to recall that in fact there were more, but the occurrence of the same individual at



E. Hrtan

Fig. 9. A young individual in the first calendar year, 20 August 2012 near Trebišov.
Obr. 9. Mladý jedinec v prvom kalendárnom roku života, 20. august 2012 pri Trebišove.



E. Hrtan

Fig. 11. An individual in the second calendar year of life. Trebišov, Čapliny, 3 August 2012.
Obr. 11. Jedinec v druhom kalendárnom roku života. Trebišov, Čapliny, 3. august 2012.



E. Hrtan

Fig. 10. A young individual in the first calendar year, 25 September 2012 near Novosad.
Obr. 10. Mladý jedinec v prvom kalendárnom roku života, 25. september 2012 pri Novosade.



M. Balla

Fig. 12. An individual in the second calendar year of life. Zemplínský Klečenov, 11 November 2012.
Obr. 12. Jedinec v druhom kalendárnom roku života. Zemplínsky Klečenov, 11. november 2012.

a location over a long period of time is probably taken as a single faunistic data point with the first and last days of observation). So, for example, Suchánek and Hoľma (in litt.) observed an individual from April 13 to 22 in the Oravská kotlina Basin near the village of Suchá hora; Balla (in litt.) recorded two individuals between June 17 and 28 near Kucany on the Východoslovenská rovina Lowlands; Hrtan (in litt.) tracked an individual from August 3 to 23 near Trebišov, and another individual occurred from August 13 to October 26 near Novosad (Balla, Hrtan in litt.). Kočí and Nemček observed an individual from August 31 to September 11 near Voderady in the Trnavská pahorkatina Hills; Dobrota recorded an individual from September 5 to October 22 near Ležiachov in the Turčianska kotlina Basin (both at www.birding.sk), Suchánek (in litt.) from September 23 to November 15 in the Oravská kotlina Basin, Václav (aves.vtaky.sk) from November 24 to December 1 near

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Fig. 13. The most abundant raptor in the fields of the Východoslovenská rovina Lowlands was *Buteo buteo* (on the left), often commonly with *Buteo rufinus*. Malý Ruskov, 10 September 2012.
Obr. 13. Najpočetnejším dravcom na poliach Východoslovenskej roviny bol *Buteo buteo* (vľavo), často spoločne s *Buteo rufinus*. Malý Ruskov, 10. september 2012.



Fig. 14. Three individuals of *Buteo rufinus* 11 November 2012 in a field near Zemplínsky Klečenov.
Obr. 14. Tri jedince *Buteo rufinus* 11. novembra 2012 na poli pri Zemplínskom Klečenove.

Vysoká pri Morave in the Borská nížina Lowlands, etc. The first data point in 2012 was recorded on January 28 near Martin in the Turčianska kotlina Basin by Gruchaľák (in litt.), the last on December 19 near Branč in the Nitrianska pahorkatina Hills by Kvetko (in litt.). It can be seen in the graph in Fig. 7 that the species occurred most frequently and most abundantly in the months from August to November.

Invasive occurrences of the long-legged buzzard in 2012 were also recorded in neighbouring countries. In Austria 82 observations of the species were recorded, 64 (78%) of which come from the Pannonian region of Niederösterreich in the north-eastern part of the country (www.club300.at). There were 34 observations recorded in 2011. In Czech Republic 18 observations are reported (questionable observations are not included in the data and

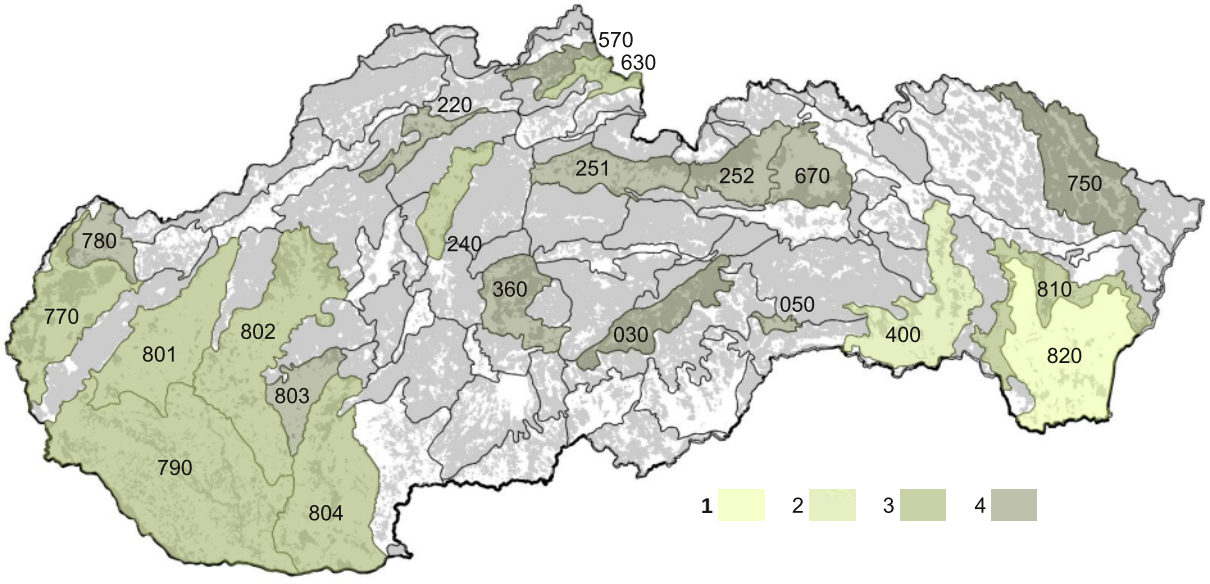


Fig. 15. Synopsis of *Buteo rufinus* occurrence in Slovakia in particular orographic units. Numbers represent identification of orographic units (see Tab. 2). 1 – >50 observations, 2 – 21–50 observations, 3 – 6–20 observations, 4 – 1–5 observations.
Obr. 15. Prehľad výskytu *Buteo rufinus* na Slovensku podľa orografických celkov. Čísla predstavujú označenie orografických jednotiek (pozri Tab. 2). 1 – >50 pozorovaní, 2 – 21–50 pozorovaní, 3 – 6–20 pozorovaní, 4 – 1–5 pozorovaní.

some observations from one site in the course of several days are excluded), only three of which were in Bohemia. The others come from Moravia, and of these, three are from the Olomouc district, two each from the Brno-venkov, Kroměříž, Opava and Vyškov districts, and one each from the Břeclav, Bruntál, Nový Jičín and Přerov districts (www.birds.cz/avif). One observation from the eastern part of the Bohemia is found on the Web page www.vcpc-so.cz. Since 1982 the most observations recorded in Czech Republic in a single year was four, in 2011 (Bělka in litt.). In Poland 39 observations from the territory of 11 provinces were reported in 2012. Most of them (59%) come from the south-eastern part of the country, most commonly from the Lubelskie (11 ×), Podkarpackie (5 ×), Świetokrzyskie (4 ×) and Malopolskie (3 ×) provinces. The highest number of observations (12) in the period 2008–2011 was recorded in 2010 (www.komisjafaunistyczna.pl).

Discussion

By the end of the 19th century climatic change was taking place over all of Europe. The warming probably caused several species of animals to begin to expand from the Balkans to the north, particularly in the second half of the 20th century. In the first stage this was, for example, the golden jackal (*Canis aureus*), which by the early 1990s again occupied territory in Hungary (Heltai et al. 2007) and occurred more frequently on the territory of Slovakia (Danko 2012). Among birds, the collared dove (*Streptopelia decaocto*) (Mošanský 1979) and the Syrian woodpecker (*Dendrocopos syriacus*) (Ferianc 1977) expanded to the north to Slovakia. In the next stage of species expansion to the north at the beginning of the 1990s, southern species of bats *Hypsugo savii* (Dobrosi 1993), whose expansion into Central Europe was assessed by Reiter et al. (2010), penetrated into Hungary, as did *Pipistrellus kuhlii* (Fehér 1995), which from at least 2006 was also multiplying in Slovakia (Danko 2007). Sachanowicz et al. (2006) wrote about expansion of the range of *P. kuhlii* in Central and Eastern Europe. Among raptors, by the start of the 1950s, the Eastern imperial eagle (*Aquila heliaca*) (Sládek 1959) had expanded into Slovakia as a breeder, and *Buteo rufinus* began to expand northward from the Balkans (Sterbetz 1960, Daróczi & Zeitz 2008). In Ukraine, in addition to expanding to the north, the species also penetrated in a westerly direction to the foothills of the Východné Karpaty Mts. and from 2011 it also occurred in western Ukraine near the city of Ľvov (Gorbaň in litt.). In 2012 there was an invasive occurrence of the species in Central Europe, primarily in Slovakia, Austria and Poland in terms of numbers, and

to a lesser extent in Moravia in the Czech Republic. It can be assumed that the birds penetrated into Slovakia and Austria from Hungary, but the occurrence in Poland points to the probability that they penetrated there from Ukraine. This is evidenced in the fact that the highest occurrence was in the Lubelskie and the Podkarpackie provinces. The more numerous occurrences of the species in the Opolskie province allow the assumption that the birds got there from Moravia. Since no method of colour marking of long-legged buzzards has thus far been used, their origin can only be assumed, and it cannot excluded that some of the birds resident in eastern Slovakia came also from Ukraine.

By observation and study of photographs, it was determined that the predominate portion of long-legged buzzards resident in eastern Slovakia were made up of young one- and two-year old individuals (Fig. 9–12). Juvenile birds probably came from Hungarian breeding sites. The longer-term residence of two-year old individuals in the territories of the Východoslovenská rovina Lowlands with the occurrence of small forests, poplar lines and diffused greenery in neighbouring fields and meadows (similar biotopes as the breeding grounds in neighbouring Hungary) allow the assumption that these birds have occupied new breeding grounds and in the coming years the species will also begin to breed in Slovakia. The year 2013 will show whether the invasion was a one-time event or if it indicates the start of a more intensive expansion of the species to the north from the original breeding grounds. For Slovakia the most significant data are those on the breeding of an isolated population of the long-legged buzzard in neighbouring Hungary. Breeding was first documented on the Hortobágy Plain in 1992, just 85 km south-west of the south-eastern border of Slovakia. Other breedings were documented in 1996 in the southern part of the Szolnok and Hajdú-Bihar counties (Sándor & Ecsedi 2004). The number of breeding pairs has slowly risen. In 2002 Bagyura & Haraszthy (2004) reported 4–7 pairs, from 2007 Bagyura et al. (2009a, 2010a, b) 6–15 breeding pairs and in 2010 for Hungary reported 9–15 breeding pairs and 2–4 mixed pairs with *Buteo buteo* (Tihanyi et al. 2012; Fig. 8). One point of interest is the data on the breeding of mixed pairs, which annually raise 1–3 young (Bagyura et al. 2009b). The production of a relatively large number of crossbreeds which practically cannot be differentiated obviously makes identification of them in the field more difficult. Hybrid females are not capable of reproduction, and only a small portion of males are (Bagyura in litt.).

In the food of a long-legged buzzard on the territory of the Hortobágy Plain Kalotás (1992) found from among 94 separate animals, 67 insects (72%), the most numerous of which (65 inds., 69.1%) were beetles (Coleoptera), while from mammals the most numerous was the European ground squirrel (*Spermophillus citellus*) with 18 individuals. He found only seven individuals from the voles (*Microtus*). Ground squirrel was seen several times in the nests of *B. rufinus* in Romanian Dobruja (Dravecký in litt.). Sterbetz (1960) observed a long-legged buzzard as it gathered grasshoppers on the ground. According to data from Balla and Hrtan (pers. comm.) during observations of long-legged buzzards in the summer of 2012 on the Východoslovenská rovina Lowlands, all individuals exclusively hunted common voles (*Microtus arvalis*) on cultivated fields (Fig. 13, 14), in which that year there was a population increase. Even this fact was one reason for the abundant occurrence of the species in eastern Slovakia. Despite the frequent occurrence of orthoptera species on mowed meadows, not even once was a long-legged buzzard observed gathering insects (see data above from Hungarian authors).

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Appendix 1

An overview of observations and the number of long-legged buzzards (*Buteo rufinus*) in Slovakia from 1870 to the end of 2012. OU – orographic unit, E – geographic longitude, N – geographic latitude, no. – number of individuals

Prehľad pozorovaní a počtu myšiakov hrdzavých (*Buteo rufinus*) na Slovensku od roku 1870 do konca roku 2012. OC – orografický celok, E – zemepisná dĺžka, N – zemepisná šírka, no. – počet jedincov

site / lokalita	OU / OC	E	N	date / dátum	no.	observer / pozorovateľ	reference / prameň
Bošany	802	18° 15´	48° 35´	1870	1		Hutten-Klingenstein 1881
Kežmarok	252	20° 25´	49° 09´	unknown	1		Greisiger 1884
Bánovce nad Ondavou	820	21° 50´	48° 41´	before 1914	1		Schenk 1918
Tisovec	030	19° 57´	48° 40´	27 Sep 1929	1		Musílek 1929
Špačince	801	17° 37´	48° 26´	25 Aug 1937	1		Kotek & Sklenář 1966
Vozokany	790	17° 42´	48° 06´	28 Nov 1937	1		Černý 1938
Voderady	801	17° 33´	48° 16´	4 Sep 1938	1		Brtek 1938
Cífer	801	17° 29´	48° 19´	26 Feb 1948	1		Matoušek 1958
Rohožník	770	17° 09´	48° 27´	31 Dec 1950	1		Ferianc 1977
Kráľovský Chlmec	820	21° 59´	48° 26´	30 Sep 1958	1		Mošanský 1960
Očová	360	19° 17´	48° 35´	30 Jan 1960	1		Sládek 1960
Svätá Mária	820	21° 50´	48° 26´	2 Aug 1960	1		Mošanský 1960
Nitra	802	18° 06´	48° 17´	Feb 1961	1		Ferianc 1977
Veľké Kapušany	820	22° 04´	48° 34´	23 Mar 1961	1		Sládek 1962
Ráztoky	251	19° 34´	49° 07´	7 May 1965	1		Ferianc 1968
Teplička nad Váhom	220	18° 47´	49° 13´	3 Jan 1966	1		Štollmann 1967
Kevice	240	18° 51´	48° 55´	25 Aug 1967	1		Svatoň 1979
Kusín	810	22° 04´	48° 50´	9 Aug 1976	2	Š. Danko & L. Bohačík	Danko 2002
Slovenské Pravno	240	18° 47´	48° 54´	2 Oct 1976	2	L. Bohačík	in litt.
Iňačovce – Senné	820	22° 02´	48° 41´	18 Aug 1981	1	Š. Danko	Danko 2002
Iňačovce – Senné	820	22° 05´	48° 42´	25-28 Aug 1982	2	Š. Danko & T. Diviš	Danko 2002
Iňačovce – Senné	820	22° 02´	48° 40´	7 Oct 1982	1	Š. Danko	Danko 2002
Iňačovce – Senné	820	22° 04´	48° 43´	22 Aug – 4 Sep 1983	1	B. Beneš & T. Diviš	Danko 2002
Bojná	802	18° 04´	48° 35´	6 May 1984	2		Ferianc & Feriancová 1984
Iňačovce – Senné	820	22° 02´	48° 40´	4 Sep – 25 Nov 1986	1	Š. Danko	Danko 2002
Iňačovce – Senné	820	22° 05´	48° 41´	18 Aug 1987	1	Š. Danko	Danko 2002
Seňa	400	21° 33´	48° 33´	1 Aug 1992	1	J. Mihók	Danko 2002
Poprad	252	20° 17´	49° 02´	4 Jul 1993	1	Š. Danko & K. Krejsa	Danko 2002
Varechovce	750	21° 48´	49° 14´	8 Jul 1993	1	B. Maderič	Danko 2002
Komárovce	400	21° 06´	48° 34´	15 Aug 1993	3	J. Mihók	Danko 2002
Gajdoš	820	22° 07´	48° 46´	23–24 Aug 1993	1	B. Beneš & T. Diviš	Danko 2002
Grajciar	400	21°16´	48° 36´	10 Aug 1994	2	J. Mihók	Danko 2002
Bunkovce	820	22° 07´	48° 43´	5-6 Sep 1994	1	B. Beneš & T. Diviš	Danko 2002
Kucany	820	21° 52´	48° 32´	10 Apr 1995	1	M. Balla	Danko 2002
Bratislava, airport	790	17° 13´	48° 11´	Apr – Aug 1995	2	J. Chavko	Danko 2002 Mrlík & Landsfeld 2002
Bratislava, airport	790	17° 13´	48° 10´	Apr – Aug 1996	1	J. Chavko	Danko 2002 Mrlík & Landsfeld 2002
Ihľany	670	20° 34´	49° 12´	4 Jul 1996	1	Š. Danko	Danko 2002
Košice	400	21° 17´	48° 39´	30 Jul 1996	1	J. Mihók	Danko 2002
Jasov	400	21° 00´	48° 24´	12 Aug 1996	1	J. Lipták	Danko 2002
Folkušová	240	18° 56´	48° 58´	11 Oct 1996	1	V. Mrlík, B. Landsfeld & P. Žák	Danko 2002 Mrlík & Landsfeld 2002
Bratislava, airport	790	17° 13´	48° 11´	Apr – Aug 1997	1	J. Chavko	Danko 2002 Mrlík & Landsfeld 2002
Grajciar	400	21°16´	48° 36´	8 Aug 1997	1	J. Mihók	Danko 2002
Keť	804	18° 36´	47° 58´	16 Sep 1997	1	F. Baláž	Danko 2002
Košice, airport	400	21° 15´	48° 40´	11-15 Sep 1998	2	S. Danko	in litt.
Čečehov – Jastrabie pri Michalovciach	820	22° 01´	48° 43´	12 Sep 1998	1	Š. Danko	Danko 2002
Strážne	820	21° 50´	48° 22´	19 May 1999	1	M. Balla	in litt.
Iňačovce – Senné	820	22° 02´	48° 41´	2-30 Jul 1999	1	Š. Danko & T. Diviš	Danko 2002
Grajciar	400	21° 16´	48° 36´	6 Jul 1999	1	J. Mihók & J. Lipták	Danko 2002
Perín	400	21° 13´	48° 34´	7 Aug 2000	1	J. Mihók	in litt.
Bočiar	400	21° 14´	48° 35´	9 Aug 2000	1	J. Mihók	in litt.
Nové Zámky	790	18° 08´	48° 01´	5 Sep 2000	1		Lengyel 2001
Maňa	803	18° 09´	48° 05´	29 Oct – 12 Nov 2000	1		Lengyel 2001

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site / lokalita	OU / OC	E	N	date / dátum	no.	observer / pozorovateľ	reference / prameň
Úpor	820	21° 41´	48° 35´	22 Mar 2001	1	Š. Danko & M. Balla	
Novosad	820	21° 44´	48° 31´	11 May 2001	1	M. Balla	in litt.
Úpor, Čongov	820	21° 40´	48° 36´	23-27 Jun 2001	1	Š. Danko & M. Balla	
Dolný Ohaj	804	18° 10´	48° 03´	21 Aug – 15 Sep 2001	1		Lengyel & Kukučka 2004
Zákamenné	570	19° 16´	49° 23´	27 Oct 2001	1		Karaska & Ridzoň 2006
Dolný Ohaj	804	18° 08´	48° 03´	11 May 2002	1		Lengyel & Kukučka 2004
Dvory nad Žitavou	790	18° 08´	48° 01´	29 Jun 2002	1		Lengyel & Kukučka 2004
Košice, airport	400	21° 15´	48° 40´	2 Oct 2002	1	S. Danko	in litt.
Košice, airport	400	21° 15´	48° 40´	2 Oct 2002	1	S. Danko	in litt.
Kokšov Bakša	400	21° 20´	48° 38´	26 Jul 2003	1	J. Lipták	in litt.
Košice, airport	400	21° 15´	48° 40´	29 Jun 2005	1	S. Danko	in litt.
Ležiachov	240	18° 52´	48° 59´	20 Aug 2005	1	M. Dobrota	in litt.
Bratislava, airport	790	17° 13´	48° 10´	9 Apr 2006	1	J. Chavko	in litt.
Poľany	820	21° 59´	48° 29´	23 Jun 2006	1	M. Balla	in litt.
Košice, airport	400	21° 15´	48° 40´	29 Jun 2006	1	S. Danko	in litt.
Suchá Hora	630	19° 47´	49° 21´	4 Jul 2006	2		Karaska & Ridzoň 2006
Nižná Rybnica	820	22° 08´	48° 46´	7 Jul 2006	1	Š. Danko	
Košice, airport	400	21° 15´	48° 40´	1-7 Aug 2006	2	M. Špirko, S. Danko	in litt.
Košice, airport	400	21° 15´	48° 40´	11-13 Aug 2006	3	S. Danko, Š. Mrásko	in litt.
Košice, airport	400	21° 15´	48° 40´	18-25 Aug 2006	2	S. Danko	in litt.
Košice, airport	400	21° 15´	48° 40´	5 Sep – 4 Oct 2006	1	S. Danko	in litt.
Žabokreky	240	18° 56´	49° 03´	14 Sep 2006	1	B. Demovič	www.birding.sk
Poprad, airport	252	20° 15´	49° 05´	15 Sep 2006	1	M. Dravecký	in. litt
Kúty	770	17° 02´	48° 42´	23 May 2007	1	J. Chavko	in litt.
Poľany	820	21° 59´	48° 29´	14 Jun 2007	1	M. Balla	in litt.
Leles	820	22° 02´	48° 29´	1 Aug – 5 Sep 2007	1	M. Balla	in litt.
Košice, airport	400	21° 15´	48° 40´	9 Aug 2007	1	S. Danko	in litt.
Hažín	810	22° 01´	48° 46´	14 Aug 2007	1	S. Pačenovský & M. Riník	aves.vtaky.sk
Košice, airport	400	21° 15´	48° 40´	21 Aug 2007	1	S. Danko	in litt.
Košice, airport	400	21° 15´	48° 40´	17 Oct 2007	1	S. Danko	in litt.
Horovce	820	21° 44´	48° 42´	8 May 2008	1	J. Lipták	in litt.
Grajciar	400	21° 16´	48° 36´	May–Jun 2008	3	J. Mihók	in litt.
Boľ	820	21° 56´	48° 29´	3 Jun 2008	1	M. Balla	in litt.
Košice, airport	400	21° 15´	48° 40´	7-9 Jun 2008	1	S. Danko	in litt.
Šaca	400	21° 09´	48° 37´	15 Jun 2008	2	J. Lipták	in litt.
Košice, airport	400	21° 15´	48° 40´	15 Jun 2008	2	S. Danko	in litt.
Albínov	820	21° 40´	48° 44´	22–23 Jun 2008	1	P. Pjenčák & Š. Danko	Danko et al. 2010
Bešeňov	802	18° 09´	48° 01´	18 Jul 2008	1	J. Lengyel	www.birding.sk
Komoča	790	18° 01´	47° 34´	24 Sep 2008	1	J. Lengyel	www.birding.sk
Studené – Tomášov	790	17° 19´	48° 08´	9 Oct 2008	2	J. Chavko	in litt.
Želiezovce	804	18° 37´	48° 03´	20 Oct 2008	1	M. Prommer	www.birding.sk
Veľký Kamenec	820	21° 49´	48° 22´	4 May 2009	1	Š. Danko & H. Castelijns	
Zemplínske Hradište	820	21° 46´	48° 35´	15 May 2009	2	M. Balla	in litt.
Košice, airport	400	21° 15´	48° 40´	22-23 May 2009	1	S. Danko & I. Szabó	in litt.
Leles	820	22° 03´	48° 28´	4 Jun 2009	1	M. Balla	in litt.
Byšta	810	21° 33´	48° 31´	14 Jun 2009	1	M. Balla	Danko et al. 2010
Zemplínske Hradište	820	21° 44´	48° 35´	14 Jun 2009	1	M. Balla	in litt.
Kecerovce	400	21° 25´	48° 49´	4 Aug 2009	1	J. Lipták	in litt.
Košice, airport	400	21° 15´	48° 40´	6 Aug 2009	1	S. Danko	in litt.
Krtovce	802	17° 59´	48° 32´	11 Aug 2009	1	B. Matejovič	in litt.
Košice, airport	400	21° 15´	48° 40´	10 Sep – 7 Oct 2009	1	S. Danko & M. Špirko	in litt.
Okoličná na Ostrove	790	17° 34´	47° 28´	13 Sep 2009	1	J. Lengyel	www.birding.sk
Majcichov – Hoste	801	17° 38´	48° 16´	20 Sep 2009	1	J. Chavko	in litt.
Trebišov, cukrovar	820	21° 44´	48° 39´	7 Oct 2009	1	E. Hrtan	in litt.
Trebišov, Paričov	820	21° 45´	48° 37´	8 Dec 2009	1	E. Hrtan	in litt.
Sliač	360	19° 08´	48° 39´	11 Apr 2010	1	S. Ondruš	www.birding.sk
Byšta	810	21° 33´	48° 32´	6 Jun 2010	1	M. Balla	Danko et al. 2010
Veľké Ripňany	802	17° 59´	48° 32´	5 Jul 2010	1	B. Matejovič	www.birding.sk
Lipová	802	18° 08´	48° 04´	12 Jul 2010	1	J. Lengyel	www.birding.sk
Zemplínske Hradište	820	21° 45´	48° 34´	23 Jul 2010	1	M. Balla	in litt.

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site / lokalita	OU / OC	E	N	date / dátum	no.	observer / pozorovateľ	reference / prameň
Trnava	801	17° 37´	48° 23´	5-29 Aug 2010	1	J. Chavko & J. Matula	www.birding.sk
Zemplínske Hradište	820	21° 45´	48° 29´	29 Aug 2010	2	M. Balla	in litt.
Košice, airport	400	21° 15´	48° 40´	17 Sep 2010	1	S. Danko	in litt.
Šurany–Bánov	802	18° 09´	48° 04´	4 Oct 2010	1	R. Kvetko & R. Václav	aves.vtaky.sk
Vysoká pri Morave	770	16° 56´	48° 14´	20 Nov 2010	1	R. Václav	aves.vtaky.sk
Grajciar	400	21° 16´	48° 36´	end Dec 2010	1	J. Mihók	in litt.
Haniska – Grajciar	400	21° 16´	48° 36´	6 Feb 2011	1	J. Mihók	www.birding.sk
Grajciar	400	21° 16´	48° 36´	Mar 2011	1	J. Mihók	in litt.
Leles, Borzva	820	22° 02´	48° 30´	7 Jun 2011	1	M. Balla	in litt.
Košice, airport	400	21° 15´	48° 40´	21 Jun 2011	1	M. Špirko	in litt.
Leles	820	22° 02´	48° 29´	22 Jun – 20 Jul 2011	1	M. Balla	in litt.
Palárikovo	790	18° 04´	48° 02´	12 Jul 2011	1	J. Lengyel	www.birding.sk
Radava	802	18° 19´	48° 06´	14 Jul 2011	2	R. Václav	aves.vtaky.sk
Hurbanovo	790	18° 11´	47° 50´	15 Jul 2011	1	P. Littera	www.birding.sk
Radava	804	18° 11´	48° 04´	28 Jul 2011	1	J. Lengyel	www.birding.sk
Vechec	810	21° 36´	48° 53´	12 Aug 2011	1	P. Pjenčák	www.birding.sk
Beša	820	21° 57´	48° 31´	30 Aug 2011	1	M. Repel & M. Harčár	aves.vtaky.sk
Šurany, Akomáň	802	18° 04´	48° 03´	10-15 Sep 2011	1	J. Lengyel & M. Balog	www.birding.sk
Košice, airport	400	21° 15´	48° 40´	11 Sep 2011	1	S. Danko	in litt.
Bašovce	801	17° 48´	48° 38´	17 Sep 2011	1	J. Kočí	www.birding.sk
Šurany, Nový Svet	802	18° 04´	48° 04´	17 Sep – 18 Oct 2011	1	J. Lengyel	www.birding.sk
Vysoká pri Morave	770	16° 56´	48° 19´	22 Oct 2011	1	R. Václav	aves.vtaky.sk
Vrakuňa	790	17° 14´	48° 09´	12 Nov 2011	1	M. Balog	www.birding.sk
Martin, Ľadoveň	240	19° 56´	49° 03´	28 Jan 2012	1	J. Gruchaľák	in litt.
Suchá Hora	630	19° 46´	49° 21´	13-22 Apr 2012	1	O. Suchánek & J. Hoľma	in litt.
Rabča	570	19° 28´	49° 28´	6 May 2012	1	J. Hoľma	in litt.
Trstená	630	19° 38´	49° 27´	8 May 2012	1	D. Karaska	in litt.
Čičarovce	820	22° 01´	48° 32´	13 Jun 2012	1	P. Chrašč	aves.vtaky.sk
Strážne	820	21° 50´	48° 22´	15 Jun 2012	1	M. Balla	in litt.
Senné	820	22° 02´	48° 39´	15 Jun 2012	1	P. Chrašč	aves.vtaky.sk
Košice, airport	400	21° 15´	48° 40´	15-16 Jun 2012	1	S. Danko	in litt.
Trebišov, Čapliny	820	21° 46´	48° 36´	16-18 Jun 2012	1	E. Hrtan	in litt.
Kucany	820	21° 50´	48° 31´	17-28 Jun 2012	2	M. Balla	in litt.
Oborín	820	21° 54´	48° 33´	24 Jun 2012	1	M. Balla	in litt.
Trebišov, Paričov	820	21° 44´	48° 37´	26 Jun 2012	2	E. Hrtan	in litt.
Suchá Hora	630	19° 46´	49° 21´	27 Jun 2012	1	D. Karaska	in litt.
Bratislava, airport	790	17° 13´	48° 10´	27 Jun 2012	1	R. Čajkovič	in litt.
Senné	820	22° 02´	48° 41´	28 Jun 2012	1	M. Balla	in litt.
Trebišov, Paričov	820	21° 44´	48° 37´	5 Jul 2012	1	E. Hrtan	in litt.
Trebišov, Čapliny	820	21° 47´	48° 36´	8 Jul 2012	1	E. Hrtan	in litt.
Častkov	780	17° 22´	48° 46´	9 Jul 2012	1	R. Cáfal	www.birding.sk
Tvrdomestice	802	18° 09´	48° 38´	20 Jul 2012	1	B. Matejovič	www.birding.sk
Trebišov, Čapliny	820	21° 47´	48° 36´	24–31 Jul 2012	3	E. Hrtan	in litt.
Kožuchov	820	21° 43´	48° 34´	27 Jul 2012	1	E. Hrtan	in litt.
Lúčky	810	22° 02´	48° 46´	28 Jul 2012	1	M. Riník	in litt.
Trebišov, Slovnaft	820	21° 43´	48° 36´	30 Jul 2012	1	E. Hrtan	in litt.
Veľké Revištia – Závadka	820	22° 05´	48° 45´	1 Aug 2012	1	P. Chrašč	aves.vtaky.sk
Trebišov, Čapliny	820	21° 46´	48° 36´	3-23 Aug 2012	1	E. Hrtan	in litt.
Perín-Chym	400	21° 13´	48° 33´	6 Aug 2012	1	M. Prommer	www.birding.sk
Trebišov	820	21° 45´	48° 36´	6 Aug 2012	1	M. Balla	in litt.
Senné	820	22° 02´	48° 41´	8 Aug 2012	1	P. Chrašč	aves.vtaky.sk
Novosad	820	21° 45´	48° 31´	13 Aug – 26 Oct2012	1	E. Hrtan & M. Balla	in litt.
Trebišov, Olšiná	820	21° 47´	48° 37´	16 Aug 2012	2	E. Hrtan	in litt.
Košice, airport	400	21° 15´	48° 40´	20-21 Aug 2012	1	S. Danko	in litt.
Leles	820	22° 02´	48° 30´	21 Aug 2012	1	M. Balla	in litt.
Veľký Čepčín	240	18° 49´	48° 53´	21 Aug 2012	1	M. Dobrota	www.birding.sk
Senné	820	22° 02´	48° 41´	22 Aug 2012	1	Ľ. Hrinko	in litt.
Perín-Chym	400	21° 09´	48° 32´	24 Aug 2012	1	M. Olekšák	www.birding.sk
Trebišov – Zemplínsky Klečenov	820	21° 42´	48° 34´	27 Aug – 5 Sep 2012	1	E. Hrtan	in litt.
Vysoká pri Morave	770	16° 57´	48° 18´	28 Aug 2012	1	V. Nemček	www.birding.sk

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site / lokalita	OU / OC	E	N	date / dátum	no.	observer / pozorovateľ	reference / prameň
Ivančiná	240	18° 48′	48° 55′	28–31 Aug 2012	1	M. Dobrota	www.birding.sk
Kucany	820	21° 51′	48° 31′	30 Aug 2012	1	M. Balla	in litt.
Voderady	801	17° 32′	48° 18′	31 Aug – 11 Sep 2012	1	J. Kočí & V. Nemček	www.birding.sk
Ležiachov	240	18° 51′	48° 59′	5 Sep – 22 Oct 2012	1	M. Dobrota	www.birding.sk
Rožňava	050	20° 32′	48° 38′	6 Sep 2012	1	Z. Bekeš	www.birding.sk
Ležiachov	240	18° 51′	48° 59′	7 and 18 Sep 2012	2	M. Dobrota	www.birding.sk
Veľké Kapušany – Veškovce	820	22° 06′	48° 34′	8 Sep 2012	1	A. Rácz	aves.vtaky.sk
Malý Ruskov	820	21° 40′	48° 38′	9 Sep 2012	6	E. Hrtan	in litt.
Zemplínsky Klečenov	820	21° 40′	48° 33′	9 Sep 2012	2	M. Balla	in litt.
Sirník	820	21° 49′	48° 31′	9 Sep 2012	1	M. Balla	in litt.
Malý Ruskov	820	21° 40′	48° 38′	10 Sep 2012	4	E. Hrtan	in litt.
Trebišov, Ondava	820	21° 52′	48° 40′	10 Sep 2012	1	E. Hrtan	in litt.
Bánov	802	18° 07′	48° 01′	10 Sep 2012	1	J. Lengyel	www.birding.sk
Malý Ruskov	820	21° 40′	48° 38′	11 Sep 2012	3	E. Hrtan	in litt.
Košice, airport	400	21° 15′	48° 40′	11 Sep 2012	2	P. Vojtánek	in litt.
Horovce	820	21° 50′	48° 42′	12 Sep 2012	1	M. Balla	in litt.
Košice, airport	400	21° 15′	48° 40′	12-29 Sep 2012	1	S. Danko & M. Špirko	in litt.
Pozdišovce	810	21° 50′	48° 43′	13 Sep 2012	3	P. Chrašč & M. Repel	aves.vtaky.sk
Bodorová	240	18° 51′	48° 54′	15-30 Sep 2012	1	M. Dobrota	www.birding.sk
Martin	240	18° 56′	49° 03′	18 Sep 2012	1	B. Demovič	www.birding.sk
Liesek	630	19° 41′	49° 22′	23 Sep – 15 Nov 2012	1	O. Suchánek	in litt.
Rožňava	050	20° 33′	48° 39′	24 Sep 2012	1	M. Olekšák	www.birding.sk
Šurany	802	18° 08′	48° 05′	24 Sep 2012	2	J. Spišák	www.birding.sk
Trebišov, Čapliny	820	21° 46′	48° 36′	26 Sep 2012	1	E. Hrtan	in litt.
Zemplínsky Branč	820	21° 42′	48° 33′	26 Sep 2012	2	M. Balla	in litt.
Vlkas	804	48° 08′	48° 17′	30 Sep 2012	1	J. Gúgh	aves.vtaky.sk
Vavrišovo	251	19° 45′	49° 05′	3 Oct 2012	1	P. Vrlík	www.birding.sk
Zemplínsky Klečenov	820	21° 41′	48° 33′	7 Oct 2012	1	M. Balla	in litt.
Trnava	801	17° 38′	48° 23′	7 Oct 2012	1	J. Chavko	in litt.
Čáry	770	17° 04′	48° 39′	8 Oct 2012	1	R. Jureček	www.birding.sk
Milhostov	820	21° 43′	48° 40′	12 Oct 2012	1	E. Hrtan	in litt.
Malý Čepčín	240	18° 50′	48° 54′	14 Oct 2012	1	M. Dobrota	www.birding.sk
Borcová	240	18° 50′	48° 56′	14 Oct 2012	1	M. Dobrota	www.birding.sk
Turčianske Teplice	240	18° 52′	48° 54′	15 Oct 2012	1	M. Dobrota	www.birding.sk
Štrba	252	20° 05′	49° 03′	15 Oct 2012	1	J. Galčík	www.birding.sk
Príbovce	240	18° 53′	49° 00′	18 Oct 2012	2	M. Dobrota	www.birding.sk
Zemplínsky Branč	820	21° 42′	48° 33′	20 Oct – 4 Nov 2012	2	M. Balla	in litt.
Rožňava	050	20° 32′	48° 38′	21 Oct 2012	1	Z. Bekeš	www.birding.sk
Zemplínsky Klečenov	820	21° 41′	48° 33′	26 Oct 2012	2	M. Balla	in litt.
Trebišov, Čerjaky	820	21° 43′	48° 35′	28 Oct 2012	1	M. Balla	in litt.
Zemplínsky Klečenov	820	21° 41′	48° 33′	2 Nov 2012	2	M. Balla	in litt.
Rožňava	050	20° 32′	48° 39′	6 Nov 2012	1	M. Olekšák	www.birding.sk
Trebišov	820	21° 42′	48° 36′	7 Nov 2012	4	E. Hrtan	in litt.
Úpor – Zemplínske Hradište	820	21° 42′	48° 35′	7 Nov 2012	2	M. Balla	in litt.
Zemplínske Hradište	820	21° 42′	48° 35′	8 Nov 2012	1	M. Balla	in litt.
Zemplínsky Klečenov	820	21° 40′	48° 33′	8 Nov 2012	1	M. Balla	in litt.
Zemplínsky Klečenov	820	21° 41′	48° 33′	9 Nov 2012	3	M. Balla	in litt.
Zemplínsky Klečenov	820	21° 41′	48° 33′	11 Nov 2012	5	M. Balla	in litt.
Zemplínsky Klečenov	820	21° 41′	48° 33′	14 Nov 2012	1	M. Balla	in litt.
Zemplínske Hradište	820	21° 43′	48° 35′	14 Nov 2012	1	M. Balla	in litt.
Malženice	801	17° 41′	48° 28′	17 Nov 2012	1	D. Rak	www.birding.sk
Borcová – Turčianske Teplice	240	18° 51′	48° 56′	18-30 Nov 2012	1	M. Dobrota	www.birding.sk
Slovenská Nová Ves	801	17° 32′	48° 17′	21 Nov 2012	1	V. Nemček	www.birding.sk
Brehov, Kamenná moľva	820	21° 51′	48° 30′	22 Nov 2012	1	M. Balla	in litt.
Vysoká pri Morave	770	16° 55′	48° 17′	24 Nov – 1 Dec 2012	1	R. Václav	aves.vtaky.sk
Bodorová	240	18° 51′	48° 54′	25 Nov 2012	1	M. Dobrota	www.birding.sk
Zemplínsky Klečenov	820	21° 41′	48° 33′	25 Nov 2012	2	M. Balla	in litt.
Zemplínsky Klečenov	820	21° 41′	48° 33′	28 Nov – 18 Dec 2012	1	M. Balla	in litt.
Liesek	630	19° 42′	49° 22′	1–2 Dec 2012	1	O. Suchánek	aves.vtaky.sk
Kožuchov	820	21° 43′	48° 34′	2 Dec 2012	1	M. Balla	in litt.
Branč	802	18° 09′	48° 12′	19 Dec 2012	1	R. Kvetko	in litt.