

The distribution and utilization of the Black Grouse (*Lyrurus tetrix*) in the Carpathian Basin from the 19th century to the present

Attila BENDE^{1*}, István FEKETE² & László BOZÓ³

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Abstract The Black Grouse (*Lyrurus tetrix*) has been a sporadic species in the Carpathian Basin throughout the ages. Because of its rarity, it was not hunted in the same tradition as other grouse species in the region. Despite this, small numbers were shot year after year, its meat was eaten and its tail feathers were a valuable hunting trophy. In the present study, we collected the information available in the literature on the former distribution, hunting and trade of this species in the Carpathian Basin. According to national hunting statistics from the turn of the 19th and 20th centuries, the largest populations were found in the mountainous areas of the present-day Slovakia and Transylvania (Romania). Between 1884 and 1909, three counties accounted for 56.2% of the total number of hunting bags: Liptó (21.7%), Szepes (18.5%), Gömör–Kishont (16.0%). Bags having a minimum 10 kills each were recorded in 18 counties, of which the counties of Árva (6.1%), Máramaros (5.4%) and Sáros (5.4%) accounted for the highest numbers. More modest Black Grouse bags were reported in the Eastern Carpathians (Romania), where, in addition to Máramaros (5.4%), the counties of Csík (3.0%), Udvarhely (1.2%) and Brassó (1.0%) are worth mentioning. For the areas neighbouring these counties, only sporadic data are available. The most stable populations may have been in Máramaros, but here, as in Transylvania in general, a slightly decreasing trend was observed. It also occurred sporadically in western Hungary, and a small population may have survived in northern Hungary until the 1920s. Today, only the strongest populations of this species remain, and the peripheral populations have been disappeared over time due to habitat conversion as a result of increasingly intensive forestry.

Keywords: population decline, habitat degradation, hunting, deforestation

Összefoglalás A nyírfajd (*Lyrurus tetrix*) a Kárpát-medencében minden korban kisszámú, szórványos elterjedésű fajnak számított. Ritkasága miatt a vadászatának sem alakult ki olyan hagyománya, mint a Kárpát-medence más fajdféléi esetében. Ennek ellenére kis számban évről évre terítékre került, húsát fogyasztották, faroktollai pedig értékes vadásztrófeának számítottak. Jelen tanulmányban a faj egykori Kárpát-medencén belüli elterjedéséről, vadászatáról és kereskedelméről gyűjtöttük össze a szakirodalomban elérhető információkat. A 19–20. század fordulójáról ismert országos terítékstatisztikák adatai alapján Felvidék (Szlovákia) és Erdély (Románia) hegyvidéki területein éltek a legnagyobb állományai. Az 1884 és 1909 közötti években az összes teríték 56,2%-át három megye adta: Liptó (21,7%), Szepes (18,5%), Gömör–Kishont (16,0%). Legalább 10 példányt elérő elejtést 18 vármegyében rögzítettek, amiből Árva (6,1%), Máramaros (5,4%) és Sáros (5,4%) vármegye képviselt kimagasló értéket. Szerényebb nyírfajdterítékekről írtak a Keleti-Kárpátokon (Románia), ahol Máramaros (5,4%) mellett Csík (3,0%), Udvarhely (1,2%), Brassó (1,0%) vármegyékét érdemes megemlíteni. Ezen vármegyék szomszédságában található területekről csupán szórvány adatokkal rendelkezünk. A legstabilabb állományok Máramarosban élhettek, de itt is enyhén csökkenő tendencia volt érvényes, ahogy Erdélyben általában. Szórványosan Nyugat-Magyarországon is előfordult, az 1920-as évekig pedig Észak-Magyarországon is fennmaradhatott egy kisebb állománya. Napjainkban csak az egykor legerősebb állományai maradtak fenn, a perempopulációk idővel felmorsolódtak. Eltűnésének oka az élőhelyek átalakulása az egyre intenzívebbé váló erdőgazdálkodás miatt.

Kulcsszavak: állománycsökkenés, élőhelyek degradációja, vadászat, erdők kivágása

¹ University of Sopron, Faculty of Forestry, Institute of Wildlife Management and Wildlife Biology, 9400 Sopron, Bajcsy-Zsilinszky út 4., Hungary

² Amity Institute of Psychology & Allied Sciences, Amity University Kolkata, Kolkata, India Major Arterial Road, Action Area II, Rajarhat, New Town, Kolkata, West Bengal 700156, India

³ Eötvös Loránd University, Department of Systematic Zoology and Ecology, 1117 Budapest, Pázmány Péter sétány 1/C Hungary

* corresponding author, e-mail: bende.attila@uni-sopron.hu

Introduction

The Black Grouse (*Lyrurus tetrix*) nests from Great Britain through Siberia to Manchuria (de Juana *et al.* 2021). Its European distribution is concentrated in Scandinavia and Russia, but significant populations also exist in the central Alps (Zbinden *et al.* 2020). It nests mainly in forests with a moist and cool climate, from lowland areas to high mountains. Its population declined and in many areas of Europe, including the Carpathians, the Balkans, the peripheral Alps and many countries in central and western Europe, it was even completely extinct (Bergmann & Klaus 1994, Zbinden *et al.* 2020). The decline is due to habitat conversion and the increasing presence of winter sports in higher regions (Patthey *et al.* 2008, Zbinden *et al.* 2020).

It was already a rare species in the Carpathian Basin in the 19th century (Chernel 1899), and since the 1920s, no authentic data are known from the territory of present-day Hungary (Hadarics & Zalai 2008, Szép *et al.* 2021). As a result, it did not have a hunting tradition like that of the Hazel Grouse (*Tetrastes bonasia*) or the Western Capercaillie (*Tetrao urogallus*), but it was hunted and was one of the “main game” species (Anonim 1910, Földvály 1924). However, the history of its hunting utilization and its appearance in the Carpathian Basin has not been summarised until now. In the present study, we would like to fill this gap by reviewing the literature.

Material and Methods

In addition to the Hungarian hunting and ornithological literature, we used studies published in other periodicals and monographs to evaluate the former distribution of the Black Grouse in the Carpathian Basin (Podhradszky 1882, Anonim 1893, 1906, 1910, Szönyey 1888, Csátó 1894a, b, 1896, 1897a, b, Höhnig 1895, Czynk 1896, 1897, Illés 1895, Chernel 1899, 1903, 1907, 1917, Diezel 1899, Cseney Vuchetich 1900, PocsKay 1906, Bársony 1910, Schenk 1916, 1920, 1929, Földvály 1924, Böhm 1927, Szlávik 1929, Nagy 1934, 1936, Vertse 1938, Mauks 1942a, b, Roth 1942, Szederjei 1942, Sőregi 1958, Csaba 1963, 1967, Sterbetz 1988, Béres & Gavril 2000, Gavril & Béres 2000, Faragó 2000, Haraszthy 2013, 2015, Gyurácz & Kóta 2020). These data, which in many cases have not yet been processed, have been supplemented with the data of the bagging statistics from 1879 to 1913, initiated by Albert Bedő and published by Faragó (2009).

First, the hunting methods, hunting seasons and shooting fees of the species are presented. This is followed by information on the legal and illegal trade of the species. First, we



Figure 1. The location of the former counties of Hungary. The red line indicates the current border of Hungary

1. ábra Magyarország egykori vármegyéinek elhelyezkedése. A piros vonal Magyarország jelenlegi határait jelzi

converted contemporary shooting fees, market prices and taxes to today's values in HUF based on the values given on the website of www.artortenet.hu. After that, we converted these values into EUR according to the HUF/EUR exchange rate on 1 January 2025 (1 EUR $\approx$ 400 HUF), and we reported the converted values here. The distribution of the species is broken down by county and by smaller regions (typically former economic units comprising a few settlements) (Figure 1). The spatial and temporal pattern of the hunting bags is presented as an average of the 25 years of aggregated county bagging data from 1884 to 1909, using a frequency (chromatic) scale. The maps were produced using the geographic information software ArcGIS 10.3. In order to assess the population changes in some of the larger geographical areas of the Carpathian Basin, which are crucial for the occurrence of the Black Grouse, we selected those counties where we have at least five years of bagging data and where bags contained five specimens from at least two consecutive years. We also examined the regional variation of the populations at a finer spatial scale, for which we had a total of 107 annual bagging data. These data for smaller farm units were grouped by county for analysis due to the small sample size. After the bagging data, we summarise the occurrence and distribution data within the Carpathian Basin by major regions, and finally, we summarise the literature on repopulation attempts.

Results

Rutting and hunting of the Black Grouse

The Black Grouse was typically hunted during its spring rutting, which started at the end of March after the harsh winter colds and lasted until the end of May or the first half of June (Duba 1886, Diezel 1899, Cseney Vuchetich 1900, Donászy 1907, Gyulai 1908, Kerpely 1918, Szlávik 1929). Cocks started rutting as early as during the evening retreat, but they were particularly active at dawn (Cseney Vuchetich 1900, Szlávik 1929). Where there were large enough flocks, these traditional rutting sites held up to 20–30 cocks. However, this is unlikely to have occurred in the Carpathian Basin (Gyulai 1908). Permanent rutting sites were found in forest clearings, forest meadows, clear-cuts (Höhnig 1895, Szlávik 1929), in the high mountains in patches cleared of snow or in difficult-to-access marshy places (Kerpely 1918). They were about 0.5–0.7 hectares in size (Chernel 1903).

One of the most popular hunting methods was stalking at the rutting sites (Chernel 1903), by making a hut from pine branches a few weeks before the breeding season, digging a hole, or just hiding in the bushes to wait for the cocks to come in (Donászy 1907, Bársony 1910, Böhm 1927, Szederjei 1942). Hunting was most effective at dawn and especially during the early evenings (Illés 1895). To do this, birds were lured into shooting distance by calling (Höhnig 1895, Chernel 1903, Donászy 1907). This hunting method required extreme patience and silence (Illés 1895). In northern Europe, where there were denser flocks, decoy birds were also used (Donászy 1907, Szlávik 1929).

In addition to stalking, other hunting methods were also used, as spring and autumn bird scouting was also practised (Podhradszky 1882, Duba 1886, Illés 1895, Diezel & Mika 1899). Scouting may have been more common in areas where the species was rarer, such as at the Great Hungarian Plain (Sterbetz 1888). It was also hunted during drives (Cseney Vuchetich 1900, Chernel 1903, Donászy 1907), but also by looping, netting and the use of various types of cover baskets (Donászy 1907). Live-caught grouse were in demand in Hungary (Pocskay 1906) and may have served as a basis for the attempts to introduce them into Hungary in the 19th century.

Hunting was first regulated in Act VI of 1872 (§ 10). At that time, the hunting season for cocks ran from 1 June to 1 March, while the killing of hens was prohibited at all times. Grouse could no longer be hunted in the autumn-winter scouting season. In 1923, the hunting season for cocks was from 1 April to 31 May. In 1933, cocks remained huntable, but no season was set for them (Nagy 1933). From 1935, it was again included in the list of species that can be hunted just as in the previous season (Nagy 1935, Zambó 1936, Nikolits 1940), but in 1941 it was again subject to a year-round ban (Nikolits 1942). The decree of 1950 (16 074/1950. (VI. 27.) FM) on the hunting season and the ban period brought a definitive change in the issue of hunting the Black Grouse in Hungary. According to this law, a general hunting ban was also in force for Black Grouse (§ 3 (1)).

The Black Grouse cock was hunted not only for its tasty meat, but especially for its trophy (Szlávik 1929). The value of the species is well reflected in the shooting prices. At the beginning of the 1800s, the price for shooting a single Black Grouse was 2.1 Euro, in 1893

in Gömör–Kishont County 13.6 Euro, in 1904 in Liptó County 126.8 Euro, in 1907 in Szepes County 365.9 Euro, while in the same county in 1918 101.4 Euro. In Hungary, the price of shooting a Black Grouse was 0.14 Euro in 1923, but this was significantly influenced by the post-war economic recession.

Trade and poaching

Only a few people had access to its meat, but those who did could prepare it according to numerous recipes (Anonim 1884, Czifray 1888, Chernel 1903). The first records of Black Grouse trade date from the second half of the 1500s. At that time, three Black Grouse were sold for 17 denariuses in the vicinity of Kassa. A century later, in 1610 in Szepes County, the price was 10 denariuses, and in 1612 in Rozsnyó 12 denariuses per individual. As an indication of the value of the meat, the price of 10.5 kg of beef was 4 denariuses. In 1708, in Zemplén County, the price was 24 denarius (a turkey was worth 60 denarius). In 1883, in Vienna, it was at present value 25.1 Euro, and in 1887, in Budapest, 12.9 Euro. In 1891 and 1899 it was at present value 13.4 Euro, on 14 March 1897 13.6 Euro, on 24 March 9.5 Euro, on 27 March 8.8 Euro, on 30 March 8.1 Euro and on 6 April 6.8 Euro per individual. The purchase price is also known from 1888 and 1889, when the price paid in Budapest was at present value 40 Euro per pair. In 1903, a taxidermist in the same city paid at present value 26.8 Euro for a specimen.

The development of taxes is also an interesting source of information on the trade of Black Grouse. In Budapest, the consumption tax was 3.4 Euro in 1882, 1887, 1890 and 1898, 2 Euro in 1934 and 1938, and 0.6 Euro in 1943. In Vienna, the tax was 7.6 Euro per individual in 1884 and 6.7 Euro in 1892 (Bende & Bozó 2025).

There is only one report of official measures taken in the field of illegal trade. On 19 February 1886, six cocks were seized by the authorities in the shop of a Budapest game dealer (Anonim 1886).

In connection with poaching, it should be mentioned that netting was already a prohibited hunting method in the 19th century, but was still practised in mountainous areas. Cocks and hens also got into the poachers' loops, which further reduced the population, which was already in serious decline.

Black Grouse bags

According to the national bag statistics from the turn of the 19th and 20th centuries, it was always a rare species in the Carpathian Basin, but in the mountainous areas of the present-day Slovakia and Transylvania (Romania), bag records from the end of the 19th century were known year after year. Based on the national bags between 1884 and 1909 ($n=2723$), the hunting bag data was recorded in 37 out of 63 counties. Three counties accounted for 56.2% of the total number of Black Grouse hunted between 1884 and 1909: Liptó (21.7%), Szepes (18.5%), Gömör–Kishont (16.0%). The total national bags in these three counties exceeded 400 specimens in 25 years. Bags of 10 or more specimens were recorded in 18 counties, of which the most significant were the counties of Árva (6.1%), Máramaros (5.4%)

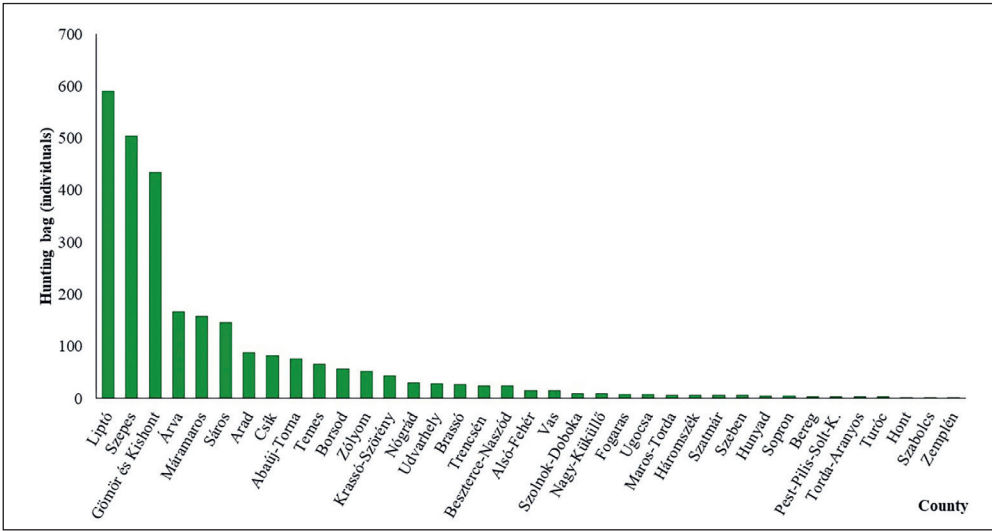


Figure 2. Total bagging data of the Black Grouse in the Carpathian Basin by county between 1884 and 1909

2. ábra A nyírfajd vármegyei terítékadatai a Kárpát-medence területén 1884 és 1909 között

and Sáros (5.4%). While the counties of Arad (3.2%) and Temes (2.4%) have bagging data of the species, these records, which are very high sample sizes in a single year (1892, 1894 and 1909), must be treated with caution, as they are not confirmed by other ornithological records of the species (Figure 2).

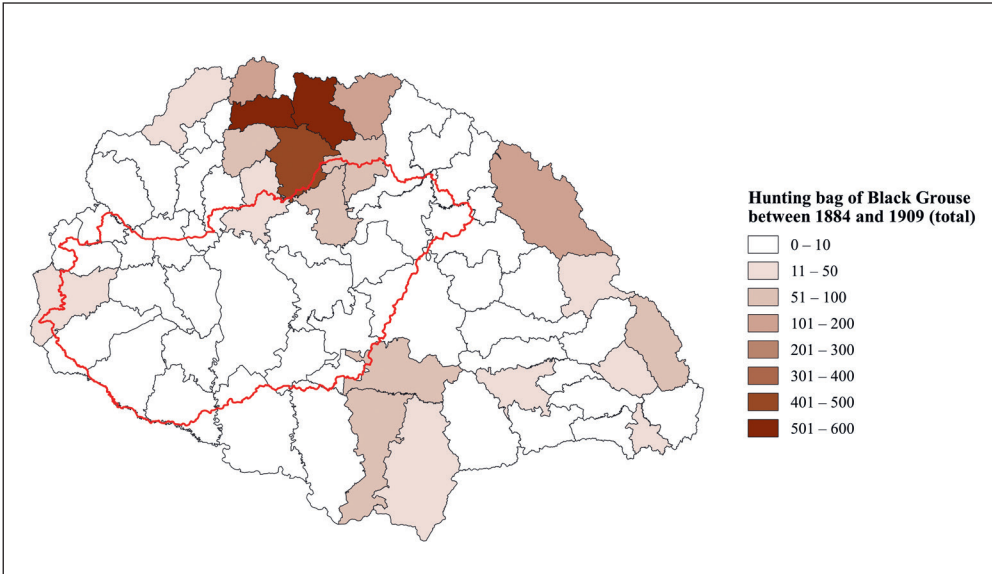


Figure 3 Distribution of Black Grouse bagging records by county in the Carpathian Basin between 1884 and 1909

3. ábra A nyírfajd vármegyei terítékadatai a Kárpát-medence területén 1884 és 1909 között

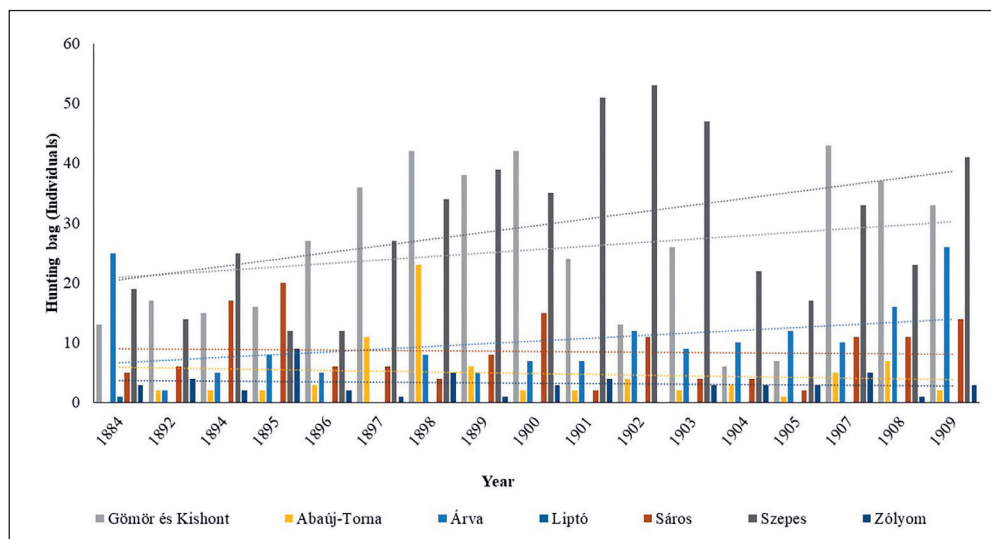


Figure 4. Trends in the bagging data of Black Grouse in the Northern Carpathians, in counties with bags having more than five specimens in at least two years between 1884 and 1909

4. ábra A nyírfajd terítékadatainak trendje az Északi-Kárpátok azon vármegyéiben, ahol 1884 és 1909 között legalább két évben öt madarat lőttek

Based on the spatial pattern resulting from the 25 years of summarised national bagging data, small to large breeding populations of Black Grouse were present in three major regions of the Carpathians (Figure 3). Of these regions, the Northern and Eastern Carpathians (Romania and Slovakia) were prominent.

Looking at hunting bags in the Northern Carpathians (Slovakia), the most prominent areas were in Liptó, Szepes, Árva and Gömör–Kishont counties. The surrounding counties are less important than these, but bagging data with low sample sizes published from year to year suggests the presence of a permanent population.

In the Northern Carpathians, the population of the species in the period 1884–1909, although not significant in size, shows a stagnant (Abaúj–Torna and Zólyom Counties) or slightly increasing (Árva, Gömör–Kishont, Liptó, Szepes Counties) trend in the size of these island-like populations (Figure 4).

More modest Black Grouse bags were recorded in the Eastern Carpathians (Romania), where, besides Máramaros (5.4%), Csík (3.0%), Udvarhely (1.2%) and Brassó (1.0%) counties are worth mentioning. For the areas adjacent to these counties (e.g. Alsó-Fehér, Beszterce–Naszód, Krassó–Szörény), only sporadic data are available. For Vas and Sopron counties in Western Hungary (0.8%), which are connected to the Alps, there are sporadic bagging data. In relation to the Transylvanian and other scattered bagging data, it is worth noting that the species' populations started to decline earliest probably in these areas.

The most stable populations were found in Máramaros County based on the bags, but here too, as in Transylvania in general, the trend was slightly declining (Figure 5). It is worth noting that, in the light of the hunting bag data of Transylvania (Farágó 2009), the data on the 19th century Transylvanian occurrences questioned by Csátó (1894a, b) may also be correct.

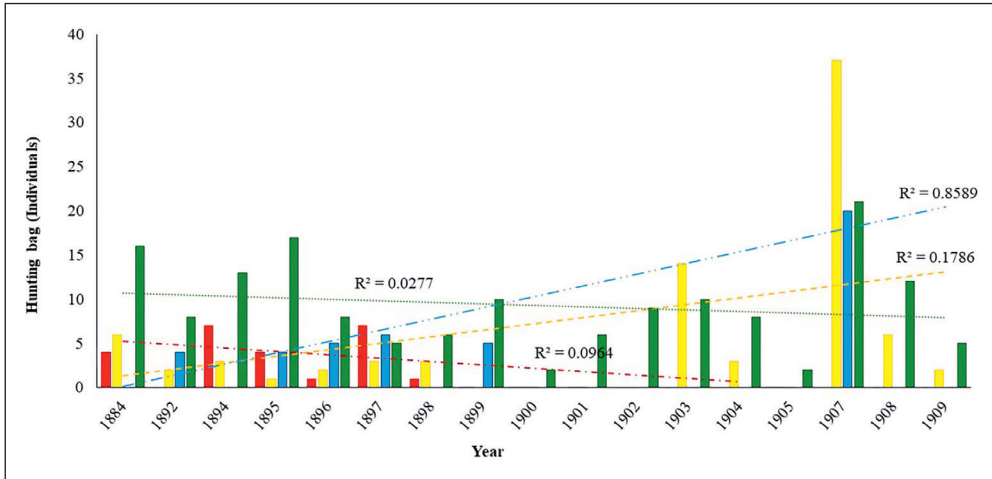


Figure 5. Trends in the bagging data in Transylvania, in counties with bags having more than five specimens in at least two years between 1884 and 1909 (red: Beszterce–Naszód, yellow: Csík, blue: Krassó–Szörény, green: Máramaros)

5. ábra A nyírfajd terítékadatainak trendje Erdély azon vármegyéiben, ahol 1884 és 1909 között legalább két évben öt madarat lőttek (piros: Beszterce–Naszód, sárga: Csík, kék: Krassó–Szörény, zöld: Máramaros)

For smaller spatial data, most of the data came from the counties of Gömör–Kishont and Szepes. This was followed by the counties for which at least five data were available, and the average size of the bags for the county was determined on the basis of these data. The bag size was 4 specimens per year in Gömör–Kishont, 5.2 in Szepes and 5.5 in Bereg Counties.

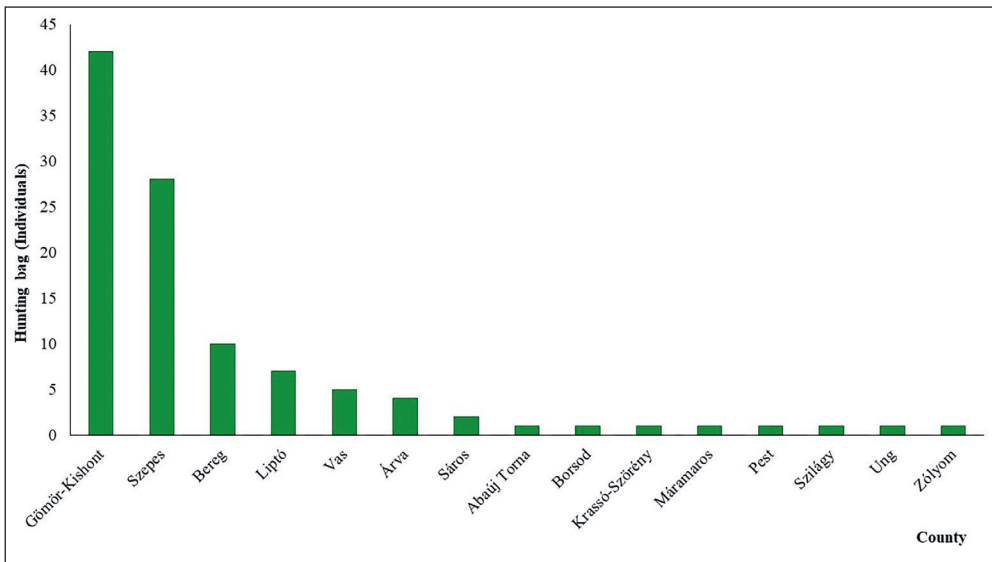


Figure 6. Number of annual regional Black Grouse bagging data by county

6. ábra A regionális éves nyírfajd terítékadatok száma vármegyéenként

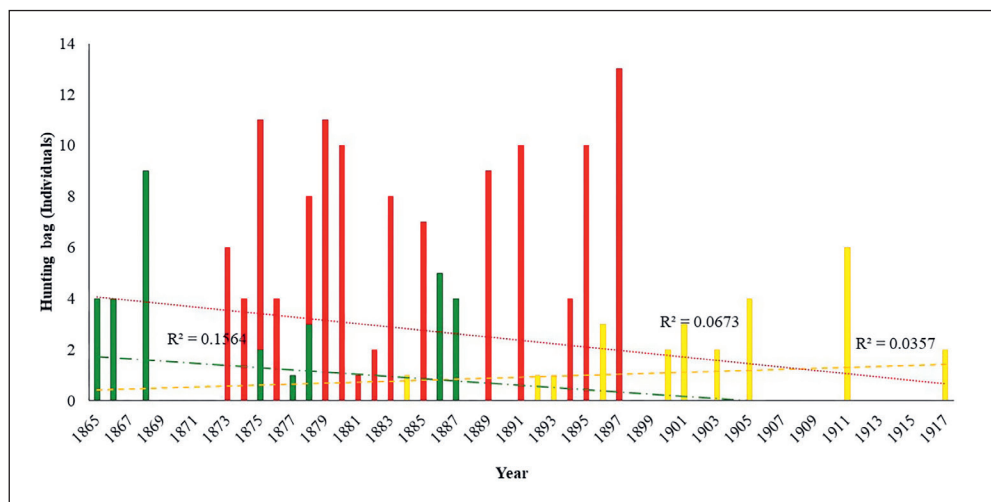


Figure 7. Bagging data for three different small-scale regions between 1865 and 1917 (yellow: Polonka, red: Grénicz and Teplicz, green: Munkács)

7. ábra A nyírfajd terítékadatai 1865 és 1917 között három kisebb földrajzi régióból (sárga: Polonka, piros: Grénicz és Teplicz, zöld: Munkács)

Since we no longer had any bagging data in Southern Transylvania from this period, the role of the counties in the present-day Slovakia is outstanding, which is in line with the trends in the national data (Figure 6).

We know literature data on Black Grouse bags from three small-scale regions for which annual bagging data were available for at least ten different years between 1865 and 1917 (Figure 7). The bag size showed an increasing trend in Polonka (Slovakia) ($n=19$), a decreasing trend in Grénicz and Teplicz (Slovakia) ($n=18$) and in Munkács (Ukraine) ($n=16$).

The last known occurrences of Black Grouse in the Carpathian Basin

Territory of present-day Slovakia

According to Mauks (1942), in the late 1700s and early 1800s, Black Grouse was a rare species in the High Tatras. In the 1870s, considerable inter-annual fluctuations were reported, but in Gömör–Kishont County, around Rozsnyó, on the southern slopes of the Ore Mountains, it was seen in large numbers every year. During a hunt with British pointers 12 specimens were killed. In 1883, one egg from Nagyrőce, then two from the same place on 20 May 1895, six from Vizesrét in June 1896, and six from Vichodna on 26 May 1902 were added to the collection of the Natural History Museum (Haraszthy 2015). Duba (1886) reports a serious decline in the population. According to Földvály (1924), the species used to be more common in Gömör–Kishont County than in the 1920s. He did not describe the cause of the disappearance, but from his description, it seems likely that the habitats were completely transformed, with a significant increase in disturbance.

According to Nagy (1926a), in the mid-1920s the species still occurred in the northwestern parts, in Árva, Liptó, Zólyom, Szepes, Turóc, Trencsén, Abaúj–Torna, Sáros and Gömör–Kishont counties.

Transylvania (Romania)

In the 1800s, several observations of the Black Grouse were reported from Fogaras in the Bráza and Páring Mountains, from the Borszék region in the Gyergyó hills, from the mountains northeast of Szászrégen, and from the Retyezát (Csató 1894a, b). As no clear evidence was available from these observations, these data were not accepted by Csató (1894a, b) and later by Czynk (1896). Then, in the last days of April 1894, Dr. Sándor Filep shot a cock at Mogyorós hills in Gyergyóbélbor, which he presented to Kálmán Csató in May (Csató 1894a). On April 1 1895, Árpád Balkay bagged two cocks also at Bélbor. Czynk (1896) also saw hens in Gyergyó in the same year. On 21 May 1896, a cock was shot in Gyergyóditró, which led Kálmán Csató to investigate the local population more thoroughly (Csató 1896). Dénes Imre, who shot the latter cock, informed him that the Black Grouse occurred in the Bélbor area in Csík County. These data led to the conclusion that the earlier reports from Szászrégen could also be authentic, as these mountain ranges are connected with the Northeastern Carpathians, where the species was occurring. In addition, the species was also found in Gyergyó. According to Dénes Imre, a total of seven specimens were killed between 1885 and 1896, and 4–10 cocks rutting were seen. At that time, he estimated the population here at 50–60 individuals. The species was rare in the area around Nagyenyed (Fehér County) in the 1800s, but used to occur in the Kalotaszeg snowy areas. It was also found in Radna (Máramaros County) (Schenk 1920). Balkay (1926) wrote, based on family recollections from the 1870s and 1880s, that the species was rare but occurred in various parts of Transylvania. Maderspach (1926, 1932), referring to Adam Buda and other hunters and observers, mentions that the species was present in the Retyezát and the Páring Mountains in the 1870s and even in the early 1900s. According to his own observations, it was no longer found in these areas in the 1920s. According to Gyulai (1908), the population decline was partly due to the disappearance of habitats and their conversion, and partly to hunting. Nagy (1926b, c) explained the absence of the species in the Southern Carpathians by the lack of suitable habitats, where, according to him, it was never thought to be common. Gyulai (1908) considered it to be extremely rare in Transylvania already at the beginning of the 20th century. Czynk (1897), based on his own observations, considered it impossible that it could have occurred in the Fogaras Mountains in the late 1800s. In the Hargita Mountains, a confirmed record of its occurrence in the Úz Valley and Lucs is known from the first half of the 20th century, but since then no grouse have been observed in these areas (Györgyvicze 1987). Szakall (1944), publishing his observations on rutting, is one of the last to mention the decline of Black Grouse in this area. It occurred in Máramaros and Radna from the 1950s until the 1990s (Gavril & Béres 2000), and is still the only occurrence in Transylvania (www.rombird.ro).

Observations from the current territory of Hungary

In 1836, a cock was shot in Nemescsó (West Hungary) and in 1858 in Kőszeg (West Hungary) as well (Gyurácz & Kóta 2020). In April 1906, it was found in two places in Vas County, in Pinkafő and Borostyánkő (Chernel 1907, Csaba 1963). One of the specimens was in the collection of the museum in Szombathely (Csaba 1963). In May 1912, three Black Grouse were observed in Léka (Schenk 1917). A cock was also bagged in the same area on 12 May 1909 (Csaba 1967). Schenk (1917, 1929) mentions the Bükk Hills, Heves, Pest (Gödöllő), Sopron, Vas, Győr, Nógrád, Abaúj and Zemplén counties as the places for the most frequent occurrences. In the Putnok, Sajóvelezd and Bánhorváti areas (Borsod–Abaúj–Zemplén County), a significant rutting was recorded in April 1900, and three cocks were hunted in ten days. In this area, the Black Grouse occurred until the 1920s (Haraszthy 2013). The last record was from 1924 (Földvály 1924). Saád (1966) reported that the last sighting in the Bükk Hills was from 1917, but in the mid-1960s, an individual was observed on a February day near Jávorkút (this observation is not confirmed by the Hungarian Rarities Committee).

Lowland observation data

According to Faragó (2000), in the first half of the 19th century, the Black Grouse was still nesting regularly in the birch forests of the Nyírség. By the 1860s, however, their numbers had declined, with the last individuals being seen in the 1880s and 1890s. In the mid-1920s, Jenő Nagy, after learning of a former occurrence of the Black Grouse in Nyírség, made an appeal to hunters in the area. As a result, 17 hunters provided him with data which proved that the Black Grouse was still living in Nyírség and the Ung–Szatmár Plain in the mid-1800s. It had been found in the forests between Nyírbátor, Vállaj, Fény and Nyírbéltek until about the 1870s, and in the forests of Tornyospálca until the 1880–90s. In the Ung–Szatmár Plain, west of the Szernye Marsh and north of the city of Beregszász, it was still breeding in thousands until 1887. Then, in the winter of 1887/88, they suddenly disappeared or declined sharply in numbers (Nagy 1934). Their last isolated populations may have been in the Szernye Marsh (Nagy 1934, 1936, Sterbetz 1988). The last record from Nyírség dates from 1878, but this could not be confirmed by Nagy (1934, 1936). A specimen shot and taxidermied in 1872 in the vicinity of Mándok (Szabolcs–Szatmár–Bereg County) existed until the First World War (Anonim 1932). Balkay (1926) agreed with both Jenő Nagy and Viktor Maderspach that the species could occur in Nyírség. He added that the former occurrence of the Black Grouse in the Bodroghöz was also probable (Balkay 1926). Nagy (1926c), reacting to these articles, strongly confirmed that he had no data either from the Ecsedi Marsh or from the Bodroghöz. Later, Vertse (1938) recalls several articles giving historical occurrence data of the species from the area. According to Vertse (1938), it occurred in the forests of Szentmárton, Mándok, Nyírbátor, Csomaköz, Csonkapap, Harangláb and Barabás in the early 19th century. Vertse (1938) also mentions its occurrence in Nyírség. In the 1870s, Black Grouse was seen and killed in the Peres Forest of Szürte village in Ung County. Also, from this period, there is known data from Gút (lowland area of Bereg County) (Anonim 1927).

Re-colonisation attempts

Already at the end of the 19th century, colonisation attempts began in several parts of the country. Between 1883 and 1888, birds were released into the forests of Nyírbakta, but their fate remained unknown (Sterbetz 1988). Breeding birds were also sought there later (Balogh 1906). In March 1889, ten hens and five cocks were released into the hunting grounds at Gödöllő. The first cocks were shot in 1893, the fate of the others is unknown (Kallina 1893). Kallina (1893) also mentions a colonisation attempt at Vértes Hills. In December 1894, Black Grouse was introduced into the Bakony Hills, but this attempt also failed (Esterházy 1894).

An attempt to introduce it within the present borders of Hungary was made in 1927 in Sopron, again without success. In the 1950s, the question of artificial breeding and rearing was raised as a new alternative (Bajza 1952). In 1977, an attempt was made to introduce it in Lábod, but this initiative was also unsuccessful. In the 2000s, the Nyírerdő Zrt. launched an artificial breeding programme for Black Grouse with the aim of attempting to reintroduce the species in case of success. Work was carried out at two sites in Gút and in the Haláp and Hajdúhadház Forestry Areas (Anonim 2008). The programme was unsuccessful after 2010 (Haraszthy 2013).

The conclusion of the repopulation attempts was that they could not have been successful, as the species' extinction in Hungary was not caused by overexploitation, but by habitat loss and conversion (Sterbetz 1988).

Conclusion

Based on the data we collected, the Black Grouse was never a frequent breeder in the Carpathian Basin, and habitat conversion processes in the 19th century further reduced this small population. Its exact range is not fully known due to uncertainties in the data, but it certainly had significant populations in several parts of the Carpathians. Declines were similar in other countries of Western and Central Europe and were due to the same causes (deforestation, draining of marshes and abandonment of grazing in high mountain regions). It is mainly the peripheral populations that disappeared, while the central populations are stable in most regions of Europe (Zbinden *et al.* 2020), as confirmed by the fact that in the Carpathian Basin, the species is nowadays only found in areas where it used to have central breeding populations. Annual bagging data suggest that hunting and associated trade did not have a significant impact on the population. Bende and Bozó (2025) obtained the same result for the Hazel Grouse, adding that poaching and illegal trade may have already caused local disappearances. To ensure the long-term survival of the species, forestry practices need to be changed and as much extensively managed forest area as possible maintained.

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