

Unusual cases of nesting by the Imperial Eagle (*Aquila heliaca*) in Eastern Slovakia

Nezvyklé prípady hniezdenia orla kráľovského (*Aquila heliaca*) na východnom Slovensku

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Abstract: Long-term monitoring of the Imperial Eagle in Eastern Slovakia has revealed that some pairs living permanently in an active agricultural environment (agrocœnosis) prove capable of adapting even to extreme conditions. In three cases eagles built their nests near railway lines (59, 22 and 15 m from the tracks), and in one case almost directly above a frequently-used road at a height of 21m.

Abstrakt: Počas dlhoročného monitoringu orlov kráľovských na východnom Slovensku sa zistilo, že niektoré páry trvalo žijúce v kultúrnej poľnohospodárskej krajine (agrocenózy) sa dokážu prispôbiť aj extrémnym podmienkam. V troch prípadoch si orly postavili hniezda pri železničnej trati (59, 22 a 15 m od koľajníc) a v jednom prípade tesne nad frekventovanou cestou vo výške 21 m.

Key words: Imperial Eagle, *Aquila heliaca*, nesting by railway lines and above a frequently-used road, Eastern Slovakia

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Imperial Eagles have been nesting in Slovakia at least since the 1940's. They originally chose older woodland for their nesting sites in various upland areas of Western and Eastern Slovakia. In the east this was mainly the Slanské Hills, the eastern part of the Volovské Hills and the Slovakian Karst, and later in the Zemplínske and Vihorlatské Hills (Danko & Chavko 1996). In 1986 for the first time one pair of Imperial Eagles nested in the active agricultural environment (agrocœnosis) of the Košice Basin, building their nest in a poplar windbreak in the middle of a field. The following year they built a new nest, but they were probably frightened away from this location by a pair of saker falcons, and returned to the Slanské Hills. In 1988 after a two-year interval some Imperial Eagles nested for the

first time in the agrocœnosis of the East Slovakian Uplands, the East Slovakian Plain in 1992 and again in the Košice Basin in 1993. Since that period the progressive settlement of new nesting sites in various places in these areas has proceeded to such an extent that at present (in 2004) the majority of the East Slovakian population (62.5%) nests in the active agricultural environment. This used to involve mainly new, young pairs, but then older pairs also started nesting in their own hunting grounds, occasionally exchanging their hillside nesting site for one on agricultural land. At the end of 2004 six of the ten pairs originally nesting in the hills persistently use stable nests in woodland complexes, and four of these occasionally nest in the lowlands as well. 13 pairs are using stable nests in the agrocœnoses.

We have been carefully monitoring the settlement of this new type of nesting biotope by Imperial Eagles from the outset. Since we did not know how the eagles would react to various types of disturbance in the open countryside, in 1991 we started organizing four-month stints of guarding with volunteer assistance. Large nests in windbreaks or in solitary trees were very noticeable, especially during the first nesting phase before the trees developed leaf-cover. The nest-guards made detailed notes of every possible kind of disturbance affecting the eagles (e.g. agricultural work, occasional passers-by, hunters), especially during incubation, and the eagles' reactions to them. At the same time we pointed out the existence of the nests to the relevant workers on the local collective farms (in particular their agricultural planners) and hunting associations (the gamekeepers), and asked them to refrain during the periods of incubation and raising young up to two weeks of age from carrying out any kind of activity in the vicinity of the nests which might disturb the eagles during their nesting. Urgent farming work was supposed to be carried out carefully under the supervision of the nest-guards.

Up to and including the year 1997 we guarded 16 nests, during which time we found that the eagles gradually became accustomed to the new type of nesting environment and capable of identifying very well which disturbances were dangerous for them and which were uninteresting. Farm work did not disturb them at all, even when tractors for example were operated directly below the nesting trees; nor were they disturbed by crop-spraying aeroplanes flying nearby. For this reason we ceased guarding them from 1998 onwards. We mean to demonstrate the eagles' gradual adaptation to the active agricultural countryside by presenting the following findings from the East Slovakian Plain.

Nesting of eagles alongside railway lines

In 2001 an older pair of eagles built a new nest in an oak tree at a height of about 17 metres, located only 15 m away from the railway tracks (see Fig. 1). For unknown reasons no clutch of eggs was ultimately laid in this nest, but the pair built another nest in the crown of a Scots pine cca. 750 m from the same tracks at the edge of a nearby field copse, which they nested in during 1995.



Fig. 1. Nest of an older pair of Imperial Eagles near the railway line in 2001. Photo: M. Balla

Obr. 1. Hniezdo staršieho páru orlov kráľovských blízko železnižnej trate v roku 2001. Foto: M. Balla

In 2002 one young pair built the first nest of their lives in an acacia tree near the same railway line at a straight-line distance of 5.5 km from the first pair. Although they abandoned this nest, they built another one 1 km further on, again near the railway line just 59 m from the tracks in a slim acacia at a height of approx. 11 m (see Fig. 2). A clutch was laid in this nest, but at the end of April it was probably destroyed by pine-martens, and the nesting ended unsuccessfully.

In 2004 the same pair chose to return to their 2002 nesting-place, located at a height of only 9 m, and at a distance of 22 m from the railway tracks (see Fig. 3). The sitting bird was not disturbed by passing trains (this was also noticed by the train-drivers themselves), nor did approaching trains even cause the male to fly from his perch in a tree directly overhanging the tracks. Ten chicks hatched out of this clutch, but at the beginning of June we found them dead in the nest for some unclear reason.

Whatever the cause, though, it was not due to the proximity of the railway line.



▲ **Fig. 2.** Nest of a young pair of Imperial Eagles near the railway line just 59 m from the tracks in 2002. Photo: M. Balla

Obr. 2. Hniezdo mladého páru orlov kráľovských blízko železničnej trate len 59 m od vedenia, v roku 2002. Foto: M. Balla



▲ **Fig. 3.** Nest of a young pair of Imperial Eagles near the railway line in 2002 and 2004. Photo: M. Balla

Obr. 3. Hniezdo mladého páru orla kráľovského blízko železničnej trate v rokoch 2002 a 2004. Foto: M. Balla

Nesting of eagles above a frequently-used road

In 2000 one older pair of eagles built a new nest in an ash-tree standing extremely close by a very frequently-used road, so close in fact that the nest was almost directly overhanging the road at a height of 21 m (see Fig. 4). Through repeated observation we found that the eagles became completely accustomed to the traffic on the road below, and there

were almost no circumstances which would cause the birds to fly from the tree.

Our experience up until that time had led us to consider the Imperial Eagle as a timid bird with a great escaping distance (several hundred metres), but in this case for example the tops of large trucks passed just 16 metres below the nest, and as long as people walking or cycling past the tree, i.e. 19 m below the nest, did not stare straight into the eyes of the bird standing or sitting there, then it never flew from the nest. The pair nested in this noisy place for four years in succession, each time successfully producing offspring, three times two chicks and once just one, but all finally flying from the nest.

To summarize these observations it can be concluded that permanent living in an active agricultural environment can lead to pairs of Imperial Eagles successfully adapting even to extreme conditions, which is a previously unknown experience for us as far as this kind of raptor is concerned throughout the whole area of its occurrence.

Súhrn

Prvé hniezdenie orlov kráľovských v otvorenej poľnohospodárskej krajine na Slovensku sa zistilo v r. 1986 v Košickej kotline, potom nasledovali prvé zahniezdenia vo Východoslovenskej pahorkatine v roku 1988 a na Východoslovenskej rovine v r. 1992. Od roku 1993 hniezdia už stabilne najmä na Vsl. rovine a v Košickej kotline, do roku 2004 vrátane hniezdilo v agrocénózach už 62,5 % východoslovenských párov. Vznik tejto nížinnej populácie sme pozorne sledovali a od r. 1991 sme organizovali aj fyzické stráženie ich hniezd, aby sme zistili reakcie orlov na rušivé vplyvy počas hniezdenia. Po viacročných skúsenostiach sme v r. 1998 od stráženia upustili, pretože sme zistili, že sa orly dokázali veľmi dobre adaptovať svojmu životnému prostrediu. Vedeli veľmi dobre analyzovať, ktoré vyrušenie je pre nich nebezpečné, resp. nezaujímavé.

K extrémnym prípadom adaptácie v prostredí kultúrnej krajiny došlo v štyroch prípadoch na Východoslovenskej rovine.

V troch prípadoch si postavili orly svoje hniezda pri železničnej trati. Jeden mladý pár mal dve hniezda vo vzdialenosti 59 a 22 m od koľajníc na agátoch vo výške cca 11 a 9 m, kde v prvom prípade v roku 2002 zničila znášku asi kuna a v druhom prípade v roku 2004 sme našli v hniezde začiatkom júna dve z neznámych príčin uhynuté mláďatá. Orol sediaci

na znáške v tesnej blízkosti železničnej trate nikdy neodletel, keď prechádzal po nej vlak.

V treťom prípade v r. 2001 u iného starého páru sa nachádzalo hniezdo len 15 m od koľajníc, ale orly v ňom nakoniec nezahniedzili. Znášku zniesli do iného hniezda mimo trate vo vzdialenosti 750 m.

Posledný prípad totálnej adaptácie na kultúrnu krajinu sme zaznamenali v rokoch 2000-2003, kedy jeden starý pár orlov hniezdil v hniezde postavenom na strome tesne vedľa veľmi frekventovanej cesty len vo výške 21 m nad ňou. Z dovtedajších poznatkov sme orla kráľovského poznali ako plachého vtáka s veľkou únikovou vzdialenosťou (niekoľko 100 m), v tomto prípade napr. vrch veľkého nákladného auta prechádzal len 18 pod hniezdom a pokiaľ človek prechádzajúci 21 m pod hniezdom na bicykli i pešo nepozoroval priamo očami na hniezde sediaceho alebo stojaceho vtáka, tak z hniezda nikdy nevyletel. Pár hniezdil na tomto rušnom mieste 4 roky za sebou vždy úspešne, z hniezda vyleteli 3x2 a raz jedno mláďa.

Zhrnutím týchto poznatkov sa dá usúdiť, že trvalým životom v kultúrnej poľnohospodárskej krajine sa niektoré páry orlov kráľovských dokážu prispôbiť aj extrémnym podmienkam, ktoré sme u tohto druhu dravca doteraz nepoznali v celom areáli jeho rozšírenia.

References

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Fig. 4. Nest of an older pair of Imperial Eagles above the road in 2000 – 2003. The pair nested in this noisy place for four years in succession, each time successfully producing offspring, three times two chicks and once just one
Photo: Š. Danko

Obr. 4. Hniezdo staršieho páru orla kráľovského nad cestou v rokoch 2000 - 2003. Pár hniezdil na tomto rušnom mieste 4 roky za sebou vždy úspešne, z hniezda vyleteli 3x2 a raz jedno mláďa. Foto: Š. Danko