

## Short communication

# Population expansion of the Hoopoe *Upupa epops* in Silesia, SW Poland

Grzegorz Kopij

**Abstract** - A total of 258 breeding pairs of the Hoopoe were recorded in Silesia (c. 42,000 km<sup>2</sup>), SW Poland, during the years 2004-2008. This is almost twice more than during the years 1978-1987 (136 pairs). This increase was rather unexpected. After a transformation in the agriculture, which took place in Poland in the 1990's, large areas of meadows and pastures, which constitute main foraging grounds of the Hoopoe, have been abandoned and cattle farming has been greatly reduced. However, climate changes (warming effect), which were recorded in this region in meantime, could have been in other way conducive for this species.

**Key words:** *Upupa epops*, population trends, census, climate change.

**Riassunto** - Espansione della popolazione di *Upupa* in Slesia, Polonia SO.

Fra il 2004 e il 2008, un totale di 258 coppie nidificanti del *Upupa* sono state accertate in Slesia (c. 42.000 km<sup>2</sup>). Questo valore è quasi più del doppio rispetto al periodo 1978-1987 (136 coppie) e l'aumento è inatteso. Infatti, con le trasformazioni del settore agricolo che hanno avuto luogo in Polonia nell'ultimo decennio del XX Secolo, ampie superfici di prati e pascoli, che costituiscono i principali ambienti di foraggiamento del *Upupa*, sono state abbandonate e l'allevamento del bestiame è stato notevolmente ridotto. Tuttavia, i cambiamenti climatici (riscaldamento), che sono stati registrati in questa regione nel frattempo, sembrano aver prodotto condizioni favorevoli per questa specie.

**Parole chiave:** *Upupa*, aumento della popolazione nidificante, cambiamenti climatici.

The Hoopoe is a strictly protected species in Poland (Act 2014/1348 issued by the Minister of Environment from 6<sup>th</sup> October 2014). It is included in the Annex I of the Bird Directive, therefore it is also protected all over the European Union. For long time, it has been regarded

in Poland as a rare species (Tomiałojc & Stawarczyk, 2003; Sikora *et al.*, 2007). During the years 1978-1987, the Hoopoe, and several other uncommon bird species associated with farmlands and forests, were counted over the whole Silesia province, SW Poland. The census was conducted through direct field explorations by a number of amateur ornithologists associated in the Silesian Bird Club. Although, the census results for most of those bird species were greatly underestimated, the respective data for the Hoopoe were more reliable. In total, 136 breeding pairs of the Hoopoe were recorded in Silesia in that period. Its numbers were regarded as declining compared with the previous years (Dyrzcz *et al.*, 1991). The most probable reason for this decline was agriculture intensification.

During the years 2004-2008, the Silesia's Hoopoe population was studied again. The study was conducted by means of a questionnaire directed to particular forest districts (N=871) through respective forest inspectorates in Silesia (c. 42000 km<sup>2</sup>). In Silesia, dozen or so forest districts fall under one forest inspectorate, and dozen or so forest inspectorates fall under Regional Directorate of State Forests (Fig. 1). The Silesian boundaries are like those adopted by Dyrzcz *et al.* (1991).

Respondents were requested whether the Hoopoe occurs currently in the particular forest district, and if so how many breeding pairs are there. Information was obtained from 730 (83.8%) forest districts [57 (89.1%) forest inspectorates]. No information was obtained only from the following forest inspectorates: Kup, Milicz, Wołów, Wałbrzych, Raszów, Wymiarki and Lubsko. However, in Milicz forest inspectorate data were obtained through direct field observations.

In total, 258 breeding pairs of the Hoopoe were recorded in Silesia during the years 2004-2008 (Fig. 2, Tab. 1). It occurred in c. 220 out of 730 (30%) forest districts. Three areas of the population concentration were identified: Barycz Valley/Bartsch Niederung (known already for Pax, 1925), Bory Dolnośląskie/Niederschlesien Heide and Lasy Lublinieckie/Lublinietz Heide. In the southern part of Silesia, dominated by farmlands, with only small fragments of forests, the Hoopoe is still uncommon. Most of Silesia comprises a lowland. In the Sudety Mts., the only mountains in this province, only 10 breeding pairs were recorded.

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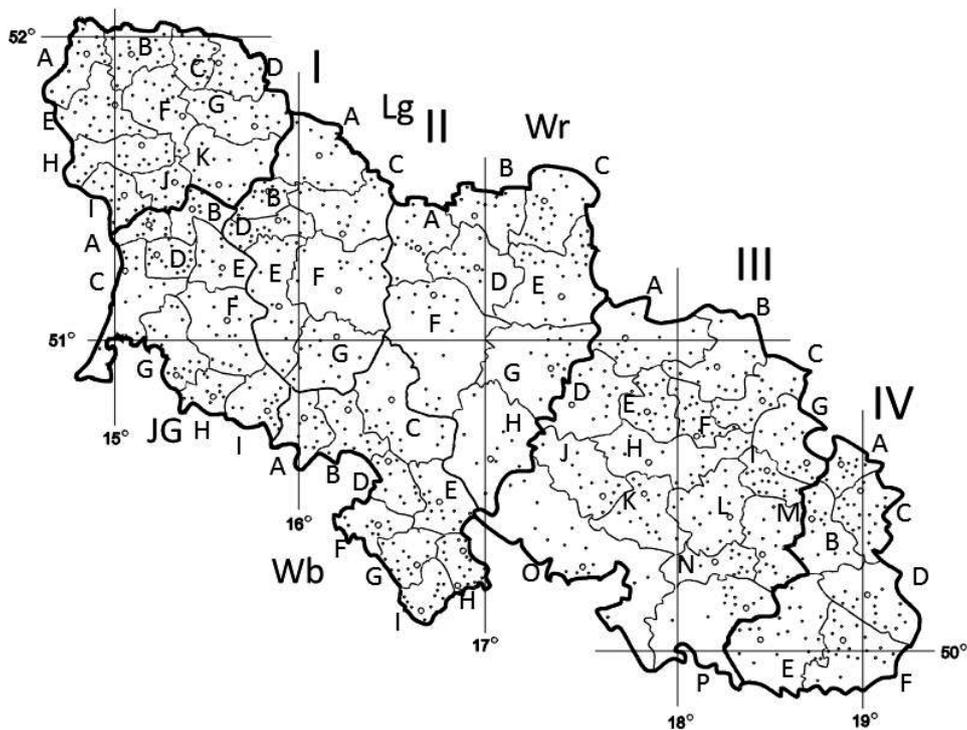


Fig. 1 - A map of the study area. Small dots: seat of forest district, small open circle: seat of forest district inspectorate, thick lines: province boundaries (I, II, III, IV), medium lines: region boundaries within Lower Silesia province (Wr, Wb, Lg, ZG), thin lines: boundaries of forest district inspectorates (A, B, C...). **I: Southern part of Lubuskie province:** A: Gubin, B: Brzózka, C: Zielona Góra, D: Przytok, E: Lubsko, F: Krzyszkowice, G: Nowa Sól, H: Lipinki, I: Wymiarki, J: Żagań, K: Szprotawa; **II: Lower Silesia:** **Wr – Wrocław region:** A: Wołów, B: Żmigród, C: Milicz, D: Oborniki, E: Oleśnica, F: Miękinia, G: Oława, H: Henryków; **Wb – Wałbrzych region:** A: Kamienna Góra, B: Wałbrzych, C: Świdnica, D: Jugów, E: Bardo, F: Zdroje, G: Bystrzyca Kłodzka, H: Lądek Zdrój, I: Międzylesie; **Lg – Legnica region:** A: Głogów, B: Przemków, C: Lubin, D: Chocianów, E: Złotoryja, F: Legnica, G: Jawor; **JG – Jelenia Góra region:** A: Ruszów, B: Świętoszów, C: Pieńsk, D: Węgliniec, E: Bolesławiec, F: Lwówek, G: Świeradów; H: Szklarska Poręba, I: Śnieżka; **III: Opole Silesia:** A: Namysłów, B: Kluczbork, C: Olesno, D: Brzeg, E: Kup, F: Turawa, G: Lubliniec, H: Opole, I: Zawadzkie, J: Tułowice, K: Prószków, L: Strzelce Opolskie, M: Rudzieniec, N: Kędzierzyn, O: Prudnik, P: Rudy; **IV: Upper Silesia:** A: Koszęcin, B: Brynek, C: Świerklaniec, D: Katowice, E: Rybnik, F: Kobiór.

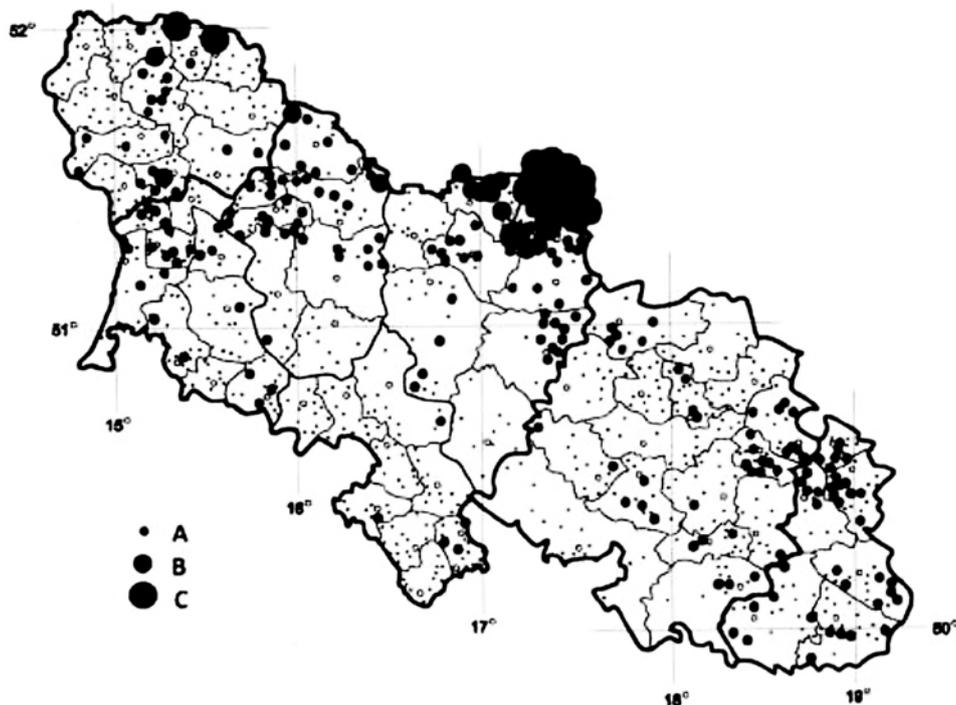


Fig. 2 - Distribution of Hoopoe breeding pairs in Silesia during the years 2004-2008. A: 1 pair, B: 2 pairs, C: 3 pairs.

Tab. 1 - Numbers of Hoopoe breeding pairs in regions of Silesia during the years 1978-1987 (after Dyrzcz *et al.*, 1991) and 2004-2008 (this study).

Region/subregion/areas	1978-1987	2004-2008
<i>Upper Silesia / Oberschlesien</i>	12	37
Lasy Lublinieckie / Lublinietz Forests	10	20
<i>Opole Silesia / Opper Schlesien</i>	33	40
<i>Lower Silesia / Niederschlesien</i>	44	153
Wrocław / Breslau		85
Barycz Valley / Bartsch Niederung	10	50
Legnica / Legnitz		41
Wałbrzych / Walbrunn	1	5
Jelenia Góra / Hirschberg	2	22
Sudety Mts. / Sudeten	3	10
<i>Lubuskie / Lubusk Region</i>	35	28
<b>Total</b>	<b>124</b>	<b>258</b>

The Silesian population of the Hoopoe, therefore, almost doubled in numbers in the last 20 or so years. This increase was rather unexpected. After a transformation in the agriculture in whole Poland, including Silesia, in the 1990's, large areas of meadows and pastures, which comprise the main foraging grounds of the Hoopoe (Glutz von Blotzheim, 1980), have been abandoned and cattle farming has been substantially reduced. However, climate changes (warming effect), which were recorded in this region during the years 1978-2008, could have been in other way conducive for this species. It is well-documented that the Hoopoe occurs in much higher densities in southern (warmer) than in northern Europe (Glutz von Blotzheim, 1980). Similar trends were recorded for a few other farmland species in Silesia, such as the Common Quail *Coturnix coturnix*, Stonechat *Saxicola torquata*, and Corn Bunting *Miliaria calandra* (Kopij, 1999, 2008, 2011, 2012). Their population densities also appear to increase with the increase of the mean annual temperature in Europe (Bird-Life International, 2004).

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