ASSESSMENT OF MORTALITY CAUSES FOR THE EGYPTIAN VULTURE (*NEOPHRON PERCNOPTERUS*) IN BULGARIA AND GREECE (1997-2015)

FACT SHEET UNDER ACTION A1

LIFE+ PROJECT "THE RETURN OF THE NEOPHRON" LIFE10 NAT/BG/000152

PREPARED BY
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AUTHORS:

Victoria Saravia[1], Elzbieta Kret[2], Vladimir Dobrev[3] & Stoyan C. Nikolov[3]

1. *Hellenic Ornithological Society,BirdLife Greece, Themistokleous 80, GR-10681 Athens, Greece*
2. *WWF Greece, 21 Lambessi, Gr 117 43 Athens, Greece*
3. *Bulgarian Society for Protection of Birds / BirdLife Bulgaria, Yavorov complex, bl. 71, vh. 4, PO box 50, 1111 Sofia, Bulgaria*

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ABOUT THE PROJECT

This fact sheet was prepared under the framework of the LIFE+ project "The Return of the Neophron" (LIFE10 NAT/BG/000152, www.LifeNeophron.eu) funded by the European Union and co-funded by the "A. G. Leventis Foundation" and the MAVA Fondation pour la Nature, and implemented by the Bulgarian Society for the Protection of Birds (BirdLife Bulgaria), the Hellenic Ornithological Society (BirdLife Greece), the World Wide Fund for Nature – WWF Greece and the Royal Society for the Protection of Birds (BirdLife UK).

BACKGROUND

"The Return of the Neophron" LIFE+ project (www.LifeNeophron.eu) started in late 2011 and was aiming to prevent the extinction of the globally threatened Egyptian vulture (*Neophron percnopterus*) in the Balkans. The project is mostly operating in 27 NATURA 2000 sites in Bulgaria (12 Special Protection Areas, SPA) and Greece (15 SPA).

AIM AND METHODOLOGY

This study aimed to assess the mortality causes for the Balkan population of Egyptian vulture (all ages) in the breeding grounds (in Bulgaria and Greece). Analysis was based on all available (and reliable) data collected in non-systematic way in the period 1997 - 2015. [NB: for mortality reasons of juveniles during migration see Oppel et al. (2015) Ibis, 157(3): 545-557]

RESULTS

Since 1997, a total of 73 dead Egyptian Vultures have been recorded, out of which in 61 cases the reason of death has been confirmed or the source considered reliable. Human-induced reasons of death were more frequent (57%) than natural reasons (18%) (Fig. 1). The most frequent human-induced reason of death was poisoning (86%) followed by direct persecution (8%) and electrocution (6%), while the most frequent natural causes of death were predation (36%) and bad health condition and (27%) (Fig. 1).

Recent situation (2012-2015) shows again higher frequency of human-induced mortality (39%) compared to natural causes (29%) (Fig. 2). However, the ratio of natural mortality causes seems to be relatively higher than in the past period (since 1997), probably because of more intensive nest monitoring allowing for the detection of dead juveniles in the nest. There was no difference in the results of detailed analysis compared to the past period: the most frequent human-induced reason of death was again poisoning (82%) followed by direct persecution and electrocution (9% each), while the most frequent natural causes of death were predation and bad health condition (25% each) (Fig. 2).

Since 1997, most of the individuals found dead were adults (61%), followed by mortality in the nest (hatchlings and fledglings, in total of 19%) and juveniles (15%) (Fig. 3). Mortality in adults and immature Egyptian vultures was mostly due to human-induced causes (85% of cases), while mortality in hatchlings, fledglings and juveniles was due to natural causes (52%) and only in rare occasions to human induced causes (5%) (Fig. 4 Tab. 1). Similar ratio is observed also in the mortality cases during the last few years (2012-2015) (Fig. 5).

Overall analysis (1997 – 2015) by country (Bulgaria vs Greece) indicates similar rates of mortality causes (mainly poisoning, with 15 dead individuals in each country), although there seems to be more evidence of direct persecution in Bulgaria (Fig. 6) with three known cases, whereas there are none in Greece. Analysis of data from recent time (2012 – 2015) shows a larger amount of poisoning cases in Greece (seven in Greece but only two in Bulgaria, but more cases of direct persecution and electrocution in Bulgaria (two in Bulgaria, none in Greece) (Fig. 7).

FIGURES AND TABLES

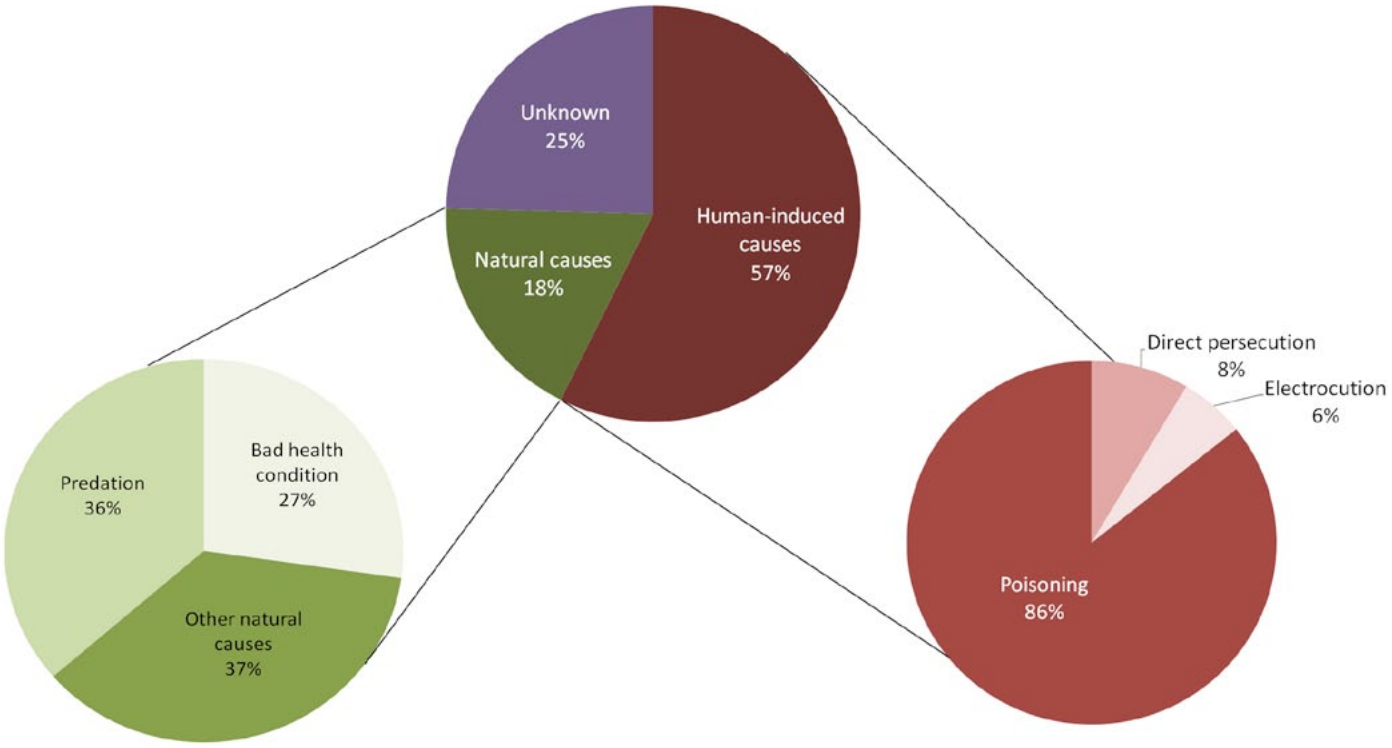

Figure 1. Analysis of the causes of Egyptian Vulture mortality (N = 61) in Bulgaria and Greece (1997 – 2015) (central pie chart), and detailed breakdown of each type of cause for the same period (natural causes in left pie chart & human induced-causes in right pie chart).

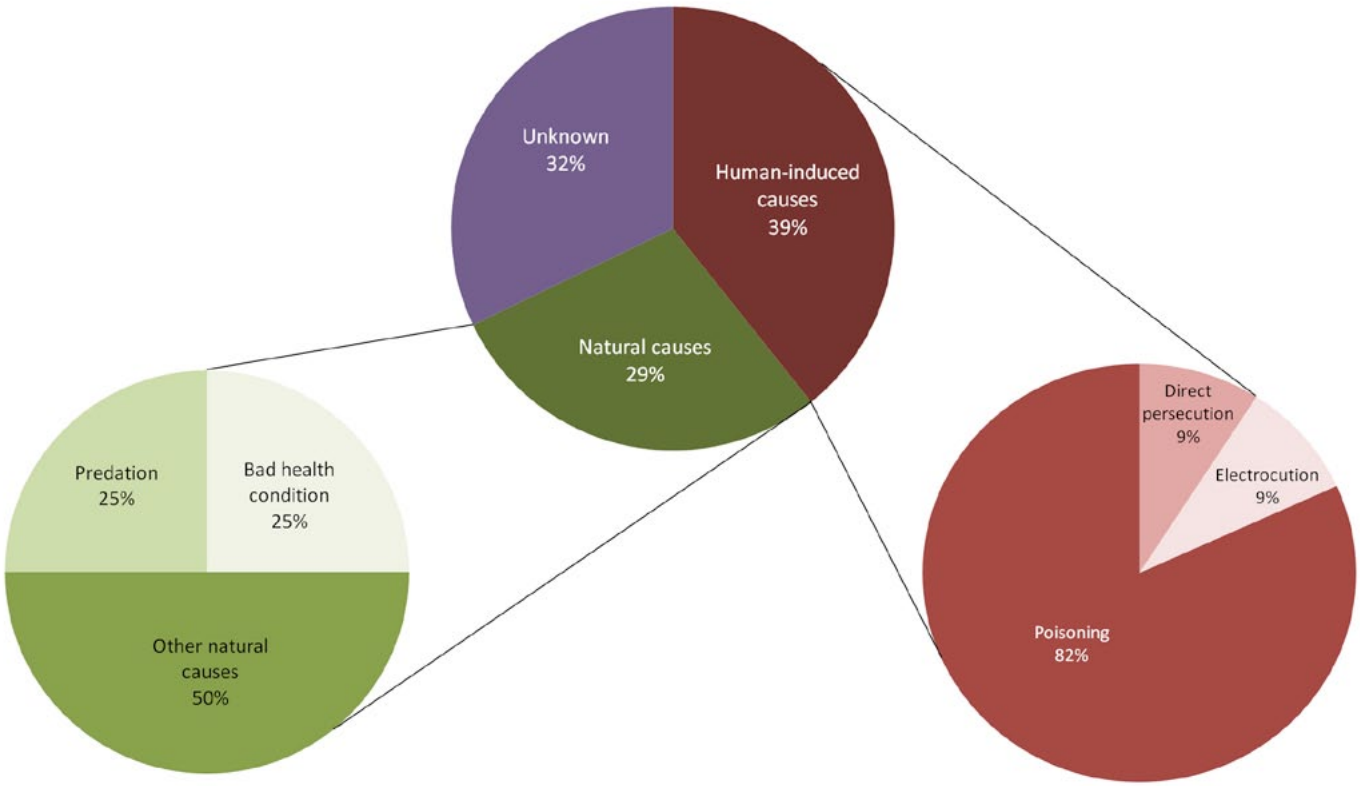

Figure 2. Analysis of the causes of Egyptian Vulture mortality (N = 28) in Bulgaria and Greece in recent time (2012 – 2015) and detailed breakdown of each type of cause for the same period (natural causes in left pie chart & human induced-causes in right pie chart).

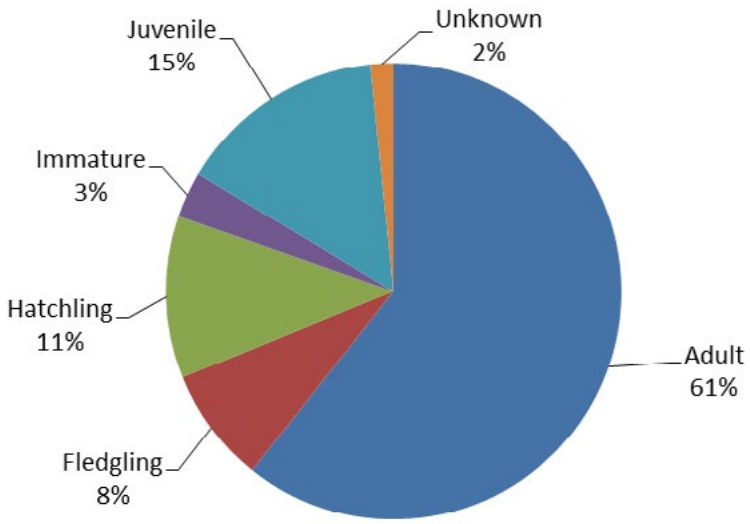

Figure 3. Egyptian Vulture mortality by age class (N = 61) in Bulgaria and Greece (1997 – 2015).

Table 1. Mortality cases of Egyptian Vultures by age class in Bulgaria and Greece (1997-2015).

Age	Reason of death		Number of individuals found dead
	General	Detailed	
Hatchling	Natural	Other natural causes	1
		Predation	2
	Unknown	Unknown	4
Fledgling	Natural	Other natural causes	3
		Predation	2
Juvenile	Human-induced	Poisoning	1
	Natural	Bad health condition	3
	Unkown	Unknown	5
Immature	Human-induced	Electrocution	1
	Unknown	Unknown	1
Adult	Human-induced	Direct persecution	3
		Electrocution	1
		Poisoning	28
	Unknown	Unknown	5
Unknown	Human-induced	Poisoning	1

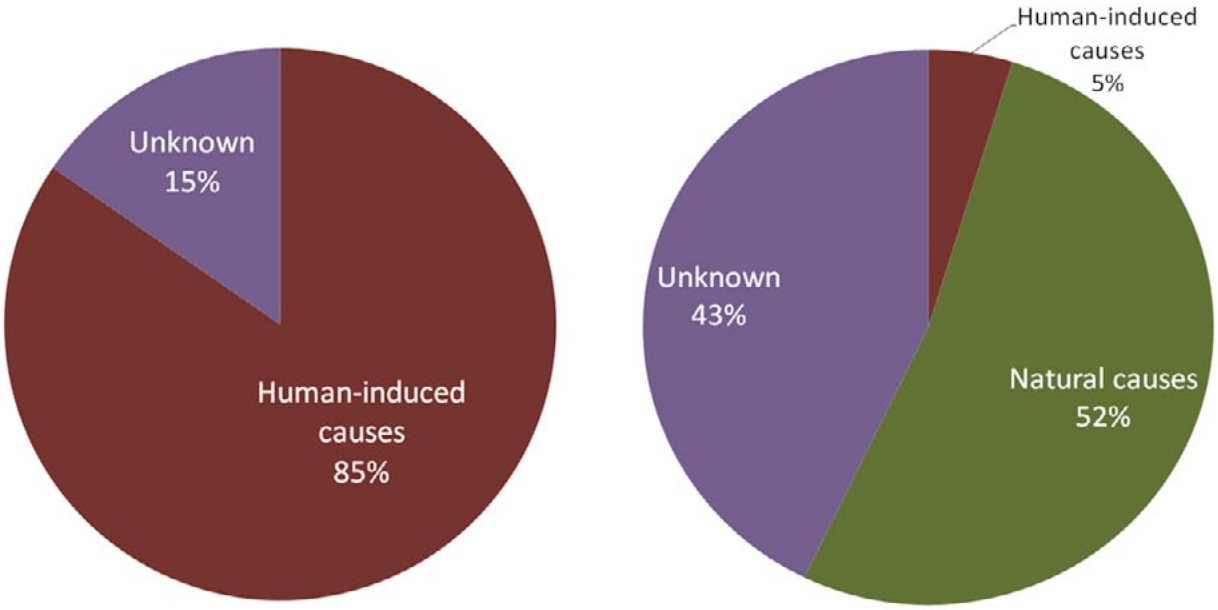

Figure 4. *Left:* Mortality causes of adults and immatures (N = 21) in Bulgaria and Greece (1997 – 2015). *Right:* Mortality causes of hatchlings, fledglings and juveniles (N = 39) in Bulgaria and Greece (1997 – 2015).

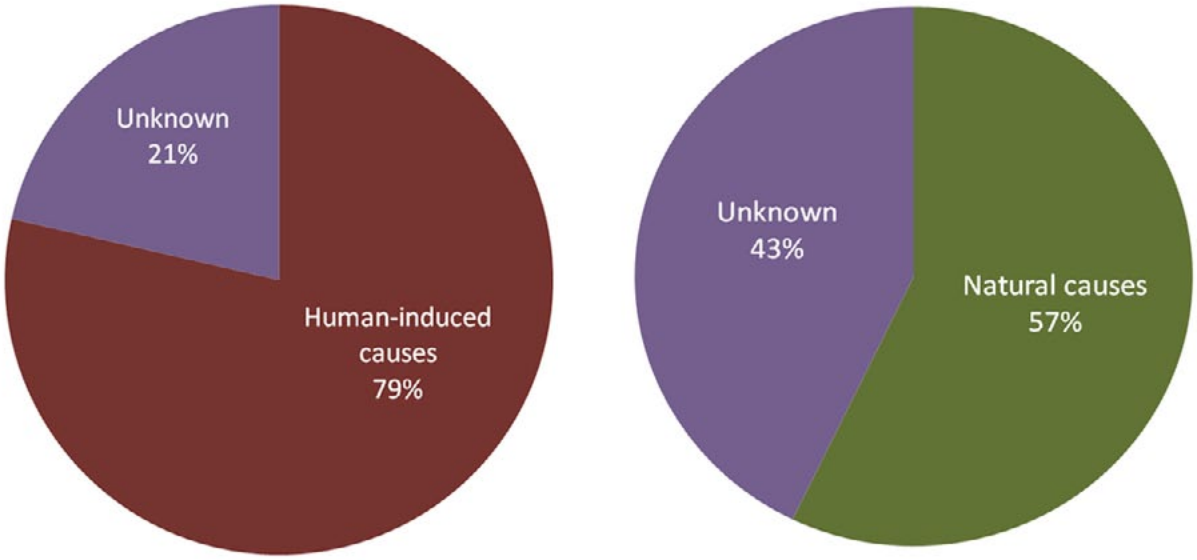

Figure 5. *Left:* Mortality causes of adults and immatures (N = 14) in Bulgaria and Greece (2012 – 2015). *Right:* Mortality causes of hatchlings, fledglings and juveniles (N = 14) in Bulgaria and Greece (2012 – 2015).

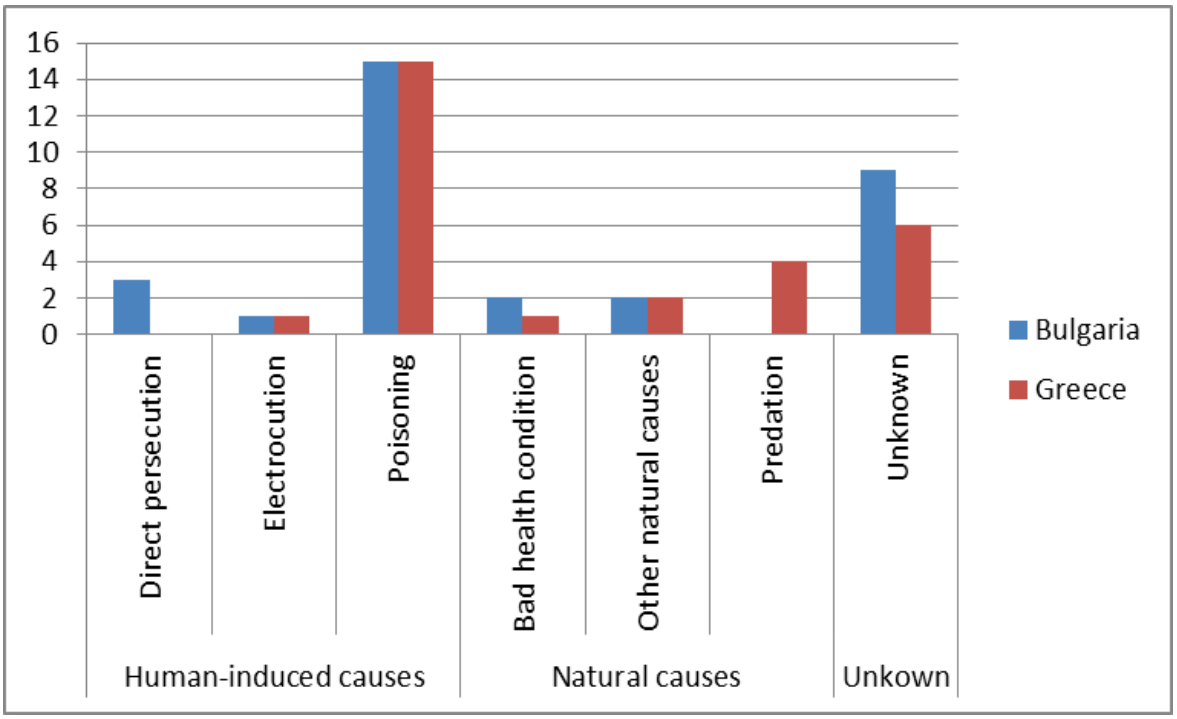

Figure 6. Causes of Egyptian Vulture mortality (N = 61) by country - Bulgaria and Greece (1997 – 2015). Vertical axis indicates the number of dead individuals found.

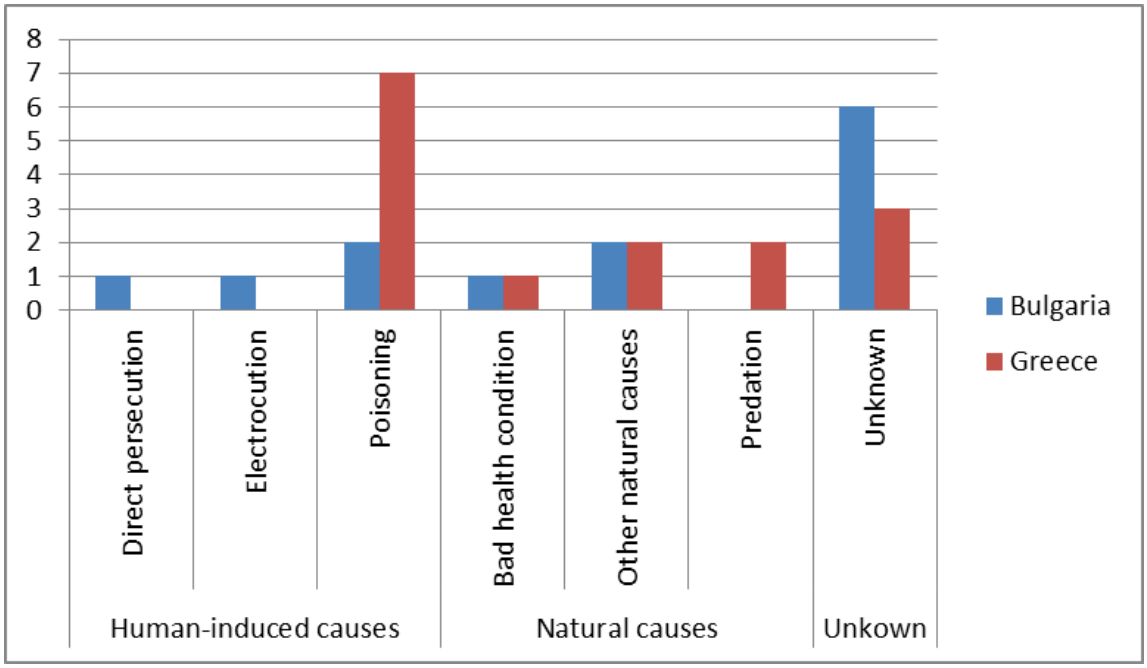

Figure 7. Causes of Egyptian Vulture mortality (N = 28) by country - Bulgaria and Greece, in recent time (2012 – 2015). Vertical axis indicates the number of dead individuals found.
(NB: Two of the individuals reported under the "Poisoning" category in Greece were treated in wildlife rescue centres where they finally recoved. Nevertheless, they have been included in the analysis in order to better reflect the impact of this threat on the species).