

Threats and Mitigation – focus on poisoning

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An overview of the work against wildlife poisoning in Greece. A never-ending battle

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The Balkan Egyptian Vulture (EV) population has been suffering a long-term decrease during the past decades. The illegal use of poison baits has been identified as the single most important cause of mortality for the species in the region and particularly in Greece, where only 4-5 breeding pairs survived in 2022. Although the practice has been banned since 1993, it is still deeply rooted in the rural communities mainly due to high levels of sufferance, lack of awareness and lack of law enforcement. Greece still holds important populations of large and medium predators (bear, wolves, jackals, foxes) which allegedly cause losses in livestock and game, as well as damages to crops and other activities, e.g. beekeeping. Although wildlife-human conflict is usually the main driver behind the use of poison baits, human-human conflict – disputes for land use, problems between working dogs, etc. – has been identified in Greece as being at least as common a driver as the former.

Due to the problem's strong socioeconomic dimensions, putting an end to this illegal practice requires a variety of actions working at multiple levels and targeting different groups of stakeholders. During the last ten years, in the framework of two LIFE projects for the EV (LIFE10NAT/BG/000152 & LIFE16NAT/BG/000874), two conservation NGOs – Hellenic Ornithological Society and WWF Greece - have been focusing their efforts on addressing wildlife poisoning in the country's few regions where the species is still present (Epirus, Thessaly and Thrace). These two organizations have implemented a combination of approaches throughout the years, ranging from more traditional and much needed policy actions, capacity building among law enforcement authorities and increase of public awareness, to more innovative activities such as working directly with stakeholders and testing alternative methods against predator attacks. Two detection dog units to investigate poison incidents were created for the first time in Greece in 2014 by these two NGOs and since then they have investigated 113 cases, detecting 246 poison baits and 220 poisoned animals, thus not only saving the lives of EVs and other scavengers, but also providing the much-needed data to better assess and expose the problem. In 2018 the combined work and pressure of several conservation organizations, joining their forces in a Task Force against wildlife poisoning, led to the endorsement of the first Ministerial Decision on wildlife poisoning, just recently updated and upgraded into a Joint Ministerial Decision. Based on the data gathered by this Task Force, the project was able to create an online DB and map for poisoning events in the Balkans. Specific training seminars have been carried out among law enforcement authorities to increase the capacity of the field agents and wardens that manage and investigate poisoning events. A change in mentality of stakeholders involved in wildlife poisoning is key for success, and thus much effort has been focused on

building trust and awareness amongst local communities. To achieve this, three regional networks of stakeholders against wildlife poison were created directly engaging more than 200 members belonging to different land user groups (stockbreeders, hunters, farmers) and local authorities. Network members receive services -e.g. veterinary attention- and equipment –e.g. electric fences, first aid kits for poisoned working dogs- that helps them reduce wildlife conflict due to livestock or crop losses, and through the contact with the project’s staff increase their knowledge and tolerance towards wildlife. In addition, to reduce the number of livestock losses due to predator attacks, the pilot testing of three different methods against predators was carried out in 95 farms: (i) over a 5-year period over 125 livestock guarding dog (LGD) puppies of local races of sheepdogs (i.e. Greek Shepherd and Epirus Molossus), perfectly adapted to the Greek countryside conditions, were donated among stockbreeders suffering wolf and bear attacks; (ii) an improved version of the fladry fencing for wolves -not used by Greek stockbreeders until now-, was developed and distributed among 21 livestock breeders, with particular focus on transhumant stockbreeders; and (iii) Foxlights, also a visual repellent against predators never used before in Greece, were distributed to 39 farms. Achieving a change of mentality in local communities can be accelerated by targeting also young ages, therefore an environmental education programme including an educational kit and other educational materials, school visits, children’s activities and events was designed and implemented reaching over 6,220 children and teenagers.

Despite all the work carried out, Greek biodiversity continues to fall victim of the illegal use of poison baits, highlighting the need to continue the anti-poisoning efforts. On a brighter side, no EV has been recorded poisoned since 2015 in the regions where these actions are being implemented, while the last years have seen an increase in the commitment and degree of concern shown by Greek relevant authorities with regard to this environmental crime.

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Causes of death or injury in EV in Greece since 2000

Poisoned or suspected poisoned	59%
Natural causes	23%
Unknown	12%
Electrocuted	3%
Lead poisoning	3%

➤ Illegal use of poison baits is the main cause of mortality among Egyptian vultures - and other vulture species- in Greece

Knowledge

Prosecution ↔ **Prevention & deterrence**

➤ Multi-level approach is necessary - Essential to work at all levels to address this deeply rooted practice

➤ Combination of long-term ongoing actions brings hope!

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Poisoning of free-range dogs - one of the biggest threats to Egyptian Vultures?

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Egyptian Vultures (EV) have always done extremely well in Oman and Sokotra island (Yemen), which are countries, that due to cultural traditions, are lacking viable populations of free-range dogs. On the contrary the populations in most other countries within the range have declined substantially. It is widely accepted that at present the main cause of the decline is poisoning, but for most countries, it is impossible to even make a rough guess what percentage of the mortality is caused by what subtype of poisoning. Poisoning of free-range dogs is illegal, but it has been undertaken for many decades with varying sometimes large-scale intensity in almost all of the countries within the species range. The proliferation of rabies is often the precursor for implementing it and rubbish dumps are possibly among the main target areas during such campaigns, and even more, they are frequently the places where the poisoned dogs are being openly disposed of. Massive mortality of EVs in such instances has been recorded only once and in Northern Macedonia in the 1990s when 60-70 individuals were poisoned. Big congregations of EVs on rubbish dumps exist in a number of countries, but further identification of new such sites, investigation of the possible threats and monitoring are almost invariably lacking. Since poisoning at rubbish dumps might be a big sink for the population, there is a need for a specially devoted internationally coordinated effort to address it.



Photo: Torsten Prohl

Peer-reviewed research derived from the abstract:

Angelov, I. (2023) An understudied cause of Egyptian Vulture (*Neophron percnopterus*) population decline: a perspective. *Acta Zoologica Bulgarica*, Suppl. 17, in press.

Using tracked vultures as a management tool - rapid response to poisoning events and other benefits.

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The CMS Vulture MsAP recommends the establishment of tracking samples to study the movement biology of African-Eurasian as one of its recommended research actions. Since its adoption in 2017, various studies focused on this activity have been launched in east and southern Africa and several others are still in process. Most of these studies will use the data collected to determine the movements of vultures related to foraging, breeding and migration. We will however look at how the data collected from the transmitters fitted to vultures in Africa can be used to support a range of management actions, most notably the rapid response to wildlife poisoning incidents, but also other management actions that can be supported by the tracking of these birds.

Current situation and future plans

- At least 3 other, similar systems active/under development in Africa
- Integration of all early warning systems into a single, functional system across S & E Africa
- RTD at the PAOC – November 2022
- Tracked birds can be indicators wherever they travel
- Ground-truthing, effective feedback-loop and network essential
- Target – deployed min 200 tracked birds by the end of 2023
- Possible expansion into other known gap areas
- Continue to improve and refine the system
- Quantify impact over time
- Manage awareness

Detection dogs against wildlife poisoning in the Balkans

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Detection dogs are used in a number of fields, including police investigation, rescue of people, hunting, wildlife conservation and lately in the diagnosis of some forms of cancer and other diseases such as covid-19. Detection dogs have proven to be an effective tool in wildlife crime investigation, increasing efficiency and saving human time and energy invested. In some Mediterranean countries, such as Spain, Portugal and Italy, specially trained dogs have been used for the fight and control of poison baits. Poison baits are considered to be the leading cause of non-natural mortality for many threatened scavenger species in the Balkans. Their illegal use is a widespread practice in the countryside, constituting the main threat for the Egyptian vulture (EV) (*Neophron percnopterus*), but also for the other vultures. Poisoned EVs recorded in Greece between 2012 and 2015 and in Bulgaria in 2020 were six and two respectively. In order to tackle this practice, a total of nine anti-poison dog units were created in Greece (eight) and Bulgaria (one) during the period 2014-2021. The training of handlers and dogs was carried out by professional dog trainers from Spain, Hungary and Greece. Since 2014 until September 2022 the units patrolled the countryside in areas important for and regularly used by threatened birds of prey. A total of 1,300 patrols were conducted, covering 3,420 kilometers and detecting 550 dead animals identified as poisoned, where approximately 56% were domestic animals and ca 44% wildlife. The most common species detected was the dog (shepherd or hunting) with a total number of 245 dead individuals, followed by foxes with 59 individuals. We registered 31 poisoned vultures: one EV, 12 Cinereous and 18 Griffon vultures. A total of 676 poison baits were discovered, varying from pieces of meat with poison, pieces of fat containing a paraffin capsule with cyanide to a whole animal carcass laced with poison. Toxicological analyses were carried out in almost 70% of all incidents, finding that cyanide and a few pesticides – most of which are illegal or internationally banned such as Endosulfan, Carbofuran, Methomyl or Phorate were the most common substances used to set poison baits. The majority of the incidents happened in spring and summer months. The main suspected reasons of poison bait use were: large predator extermination, fox control, disputes among land users and retaliation acts. In 50% of the cases, a complaint forms were filled in, but none of them managed to reach the courtroom. An active network of stakeholders consisting of all relevant authorities (forestry services, municipalities, rural vets, game guard bodies) and land users (livestock breeders, hunters, farmers etc.) significantly contributed to poison incident detection, as they informed the anti-poison dog units about incidents around their sites. Poison incident detection also improved in the past years thanks to GPS transmitters mounted on vultures and large eagles, thus increasing the efficiency of the units and helping to reduce the potential range/impact of the poison incidents. The operation of the anti-poison dog units provided the chance to better assess and expose the extent of the problem. Prompt removal of poison baits and animals from the countryside is the most direct and effective way to reduce the risk of wildlife poisoning. The illegal use of poison baits is not a wildlife conservation issue exclusively, but has serious

effects on man and his economic activities also, as a large majority of the victims found poisoned were livestock guarding dogs and hunting dogs. Following the success of the dog units as an innovative and preventive tool against poisoning, several more units were created or are under creation by the relevant authorities both in Greece and Bulgaria in 2022. However, it must not be forgotten that dog units are just a tool that facilitates the work that should be done by law enforcement bodies and cannot be seen as the ultimate solution for the problem.


Detection dogs against wildlife poisoning in the Balkans


2014-2022

- 1300 Patrols
- 3420 Kilometers
- 436 Poison incidents
- 550 Poisoned animals
- 676 Poison baits

- ✓ Innovative and preventive action by removing from the countryside poison baits and animals
- ✓ Highlight the illegal use of poison baits
- ✓ Prevention of other poisoning



Complaint



BUT

Cases in the court: 0!!

Dog units are just a tool that facilitates the work!

Need for sufficient involvement of governmental relevant authorities and proper incident investigation → final aim: take the culprit to court!

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Wildlife poisoning in the Balkan Peninsula - challenges and solutions proposed by the BalkanDetox LIFE project

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Avian scavengers in general are a group of species which suffers the most from illegal wildlife poisoning. Between 2000 and 2020 a total of 465 vultures perished in the Balkan Peninsula, including 47 Egyptian Vultures, 17 Cinereous Vultures and one Bearded Vulture. The Griffon Vulture population inhabiting this region suffered the worst from the illegal practice of wildlife poisoning. These vultures appear as casualties in every fifth poisoning event in the Balkans, and a total of 400 individuals perished within 233 separate poisoning or presumable poisoning incidents. Common Buzzard and Red Fox closely follow, with 392 individuals within 190 separate incidents and 389 individuals within 141 separate incidents respectively.

From the analysed data we can conclude that an average of 23 vultures are poisoned annually on the Balkan peninsula. If we take into account that approximately only 20 % of poisoning incidents are ever discovered and documented, we can estimate that about 115 vultures are potentially being poisoned annually throughout the Balkans. Such losses exact a heavy toll on the vulture populations in the region. Therefore, it is evident that wildlife poisoning continues to be the single most important threat to vultures in the Balkan Peninsula and current limiting factor for their recovery. This factor has to be taken into account when planning any conservation initiatives regarding vultures, especially re-stocking and reintroduction initiatives.

Although the motives behind most of these incidents remain undiscovered, the majority of better documented and investigated poisoning events indicate that the main driver of poison use in the region are conflicts with mammalian predators (mainly wolves, foxes, jackals, but also bears, martins) and the damages they cause to livestock practices, agricultural production and to game animals in hunting areas.

The most used substances for wildlife poisoning in the Balkan Peninsula by far are pesticides from the group of Carbamates, especially Carbofuran, which was detected in almost every second poisoning event (46%) for which forensic toxicological analysis was conducted. This banned pesticide was mostly used for poison baits preparation in Serbia, Croatia, followed by Greece and Bulgaria.

The main problems and difficulties in the struggle to reduce scope, frequency of occurrence and subsequently number casualties which this illegal practice causes in the Balkan Peninsula can mainly be attributed to low awareness, insufficient engagement of the relevant governmental authorities, unclear legislation and responsibilities and jurisdictions, and lack of resources and capacities when it comes to dealing with poisoning incidents on several levels: detection (surveying for poison baits or dead animals), sampling, conduction of forensic necropsies and toxicological analysis, and finally judiciary process and legal proceedings of poisoning incidents.

The BalkanDetox LIFE (BDL) project targets to raise the operational capacities of relevant governmental authorities for combating wildlife poisoning by providing specialized training for law enforcement agents, veterinarians and toxicologists. BDL aimed at providing basic operational tools based on best practice models from Spain, such as Standard Operational Protocols for investigation,

conducting forensic necropsies and toxicological analysis on wild animals. The BDL project is committed to securing long-term engagement of the relevant national authorities from the Balkan countries by establishing national anti-poisoning working groups and developing national strategical frameworks. Thus, they will ensure that struggle to prevent wildlife poisoning carries on long after the project ends.

PROJECT OBJECTIVES

- Build Capacities**
Secure real and continued engagement of the relevant national governmental authorities in the region against illegal wildlife poisoning by increasing their capacity and formalizing national anti-poisoning working groups in each project country to improve the management of poisoning incidents and achieve significant mortality reduction of species affected.
- Enhance Collaborations**
Increase cooperation between governmental institutions and relevant stakeholders through joint engagement within National Anti-Poisoning Working Groups and enhance regional cooperation and information exchange by establishing regional networks of enforcement agents, wildlife forensic pathologists, toxicologists, lawyers and public prosecutors.
- Raise Awareness**
Bridge knowledge gaps relating to the use of illegal poison baits and its adverse impacts on wildlife to the key target audience, labelling the practice as a socially unacceptable behaviour in the general public's eyes. The project will also inform several poison-bait users in the region about preventive measures as an alternative to poison use.
- Reduce poisoning incidents**
Decrease the number of wildlife poisoning incidents by 20% at the end of the project as a product of raising awareness among the general public about the illegal use of poison in the environment and the danger it represents to human health and wildlife, as well as enforce legal consequences of this action in each target country.
