

NEST GUARDING OF THE EGYPTIAN VULTURE (*NEOPHRON PERCNOPTERUS*) IN BULGARIA AND GREECE (2012-2015)

TECHNICAL REPORT UNDER ACTION C5

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



PREPARED BY
BSPB, HOS, WWF-GREECE, RSPB

MARCH 2016



AUTHORS:

Vladimir Dobrev¹, Elzbieta Kret², Theodora Skartsis², Victoria Saravia³, Anastasios Bounas³, Steffen Opper⁴ & Stoyan C. Nikolov¹

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

RECOMMENDED CITATION:

Dobrev, V., Kret, E., Skartsis, T., Saravia, V., Bounas, A., Opper, S. & Nikolov, S.C. 2016. Nest-guarding of the Egyptian vulture (*Neophron percnopterus*) in Bulgaria and Greece (2012-2015). Technical report under action C5 of the LIFE+ project “The Return of the Neophron” (LIFE10 NAT/BG/000152). BSPB, Sofia. 13 p.

ABOUT THE PROJECT

This fact sheet was prepared under the frames of action C5 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 MAVFA 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).

Contents

1.	Introduction	3
2.	Aim of the nest guarding in the frame of the project	3
3.	Implementation	3
3.1.	Limitations	3
3.2.	Time period	3
3.3.	Targeted nests and selection criteria	4
3.4.	Fieldwork	4
3.4.1.	Stationary observation points	4
3.4.2.	Equipment	5
3.4.3.	Nest guardians	5
3.4.4.	Nest guarding	5
3.4.5.	Protocols and data collection	6
3.5.	How to react in a case of a perceived threat	6
3.6.	Communication and cooperation with local people, target groups and authorities	7
3.6.1.	Local communities	8
3.6.2.	Tourist and extreme sport clubs	8
3.6.3.	Fishermen	8
3.6.4.	Loggers and Forestry services	8
3.6.5.	Hunters	9
3.6.6.	Village mayors and municipalities	9
3.6.7.	Police	9
3.7.	Requirements, obligations and rules for nest guardians	9
3.8.	Combining nest guarding with individual supplementary feeding	10
4.	Results: Nest guarding in Bulgaria and Greece	11
5.	Lessons learned	11
6.	Acknowledgements	12
7.	References	12
8.	Annexes	13
	Annex 1. Field protocol for nest-guarding.	13

1. INTRODUCTION

The endangered Egyptian vulture (*Neophron percnopterus*) is one of the four vulture species in Europe, and the most threatened of all with ongoing population decline in most of its range across Eurasia and Africa (Iñigo et al. 2008). The Balkan population of this globally threatened scavenger is declining more rapidly than populations in western Europe or India (Galligan et al. 2014; Velevski et al. 2015), likely due to a combination of several known threats such as poisoning, electrocution, landscape changes and direct persecution (Carrete et al. 2007; Mateo-Tomás and Olea 2010; Velevski et al. 2015). Hence, conservation management targeting these threats is urgently needed to halt the population decline (Velevski et al. 2014).

Nest guarding is a conservation technique which is used to increase the breeding success in raptor species, such as the Eastern imperial eagle (*Aquila heliaca*) (Demerdzhiev et al. 2014). In Egyptian vulture this approach seems to be an effective tool to prevent direct threats on vulture's nests such as disturbance, nest robbing and direct persecution which may affect the breeding success and cause a population decline (Zuberogoitia et al. 2014). The nest guarding could also help saving chicks fallen from the nests. This is valid especially for small and isolated populations where the survival of each individual and persistence of each nest is crucial for the survival of the population. Moreover, nest guarding may provide site-specific data on the biology and ecology of the population that can improve its conservation management.

2. AIM OF THE NEST GUARDING IN THE FRAME OF THE PROJECT

The project "The Return of the Neophron" (LIFE10 NAT/BG/000152, www.LifeNeophron.eu) aims to prevent the extinction of the Egyptian vulture in Bulgaria and Greece through a wide range of direct and indirect conservation measures and tools. The nest guarding programme implemented under the project aimed to prevent direct threats to Egyptian vulture nests such as disturbance, nest robbing and persecution, and as added value, to collect data on the biology and ecology of the species

3. IMPLEMENTATION

3.1. Limitations

This approach is cost- and labour-intensive and applicable mostly to small populations such as the Balkan population of the Egyptian vulture where only several clusters of breeding pairs are left and are exposed to many threats (Velevski et al. 2015).

3.2. Time period

Securing safe nesting sites and minimising threats during the breeding season through nest guarding may extend over the whole breeding season – from the moment the pair occupies the territory (in March) and the nest until they leave it (in September). Different options exist to optimise the nest guarding in terms of time and resources needed but still a minimum nest-guarding effort is required (see below). Hence, nest guarding can be applied with different intensity/frequency according to certain time periods crucial for the reproductive output:

- *Intensive nest guarding* – daily nest guarding during the light part of the day. For supervision of the nest during the night, MMS trail cameras could be used.
- *Regular nest guarding* – constant and regular visits of the nest several times per week (2 to 4 visits with

up to 4 hours of observations) during the whole breeding season.

- *Periodic nest guarding* – extends over some parts of the reproductive cycle of the birds when they are most threatened such as the incubation period and the fledgling period (covering again the light part of the day).

3.3. Targeted nests and selection criteria

The action was expected to save breeding attempts and possibly even the lives of some adult or juvenile birds by preventing fatal disturbance at nests or attempts of nest robbing. The selection of Egyptian vulture nests for the nest-guarding programme was based on expert's opinion following the criteria:

- *Vulnerability to disturbance* – considering the region of the country where the nest is located and location of the nest itself (we assumed that if a nest is located close to village, road, or in a hunting area it is more prone to the risk of disturbance than a nest located in a distant place without any villages, roads, or other human infrastructure around);
- *Vulnerability to nest robbing or direct persecution of vultures* – confirmed or suspected cases of nest robbing and/or shooting of adults for taxidermy purposes or poaching;
- *Productivity* – nests with 2 chicks were preferred for nest guarding than nests with a single chick;
- *Accessibility* – subject of nest guarding were mostly nests which were not in very remote areas and for which there was an accessible observation point with good visibility towards the nest.

3.4. Fieldwork

3.4.1. Stationary observation points

The observation points we used for nest-guarding had always direct visibility towards the nest, were at a distance which guarantees that the nest guardian is not disturbing the birds (Zuberogoitia et al. 2008) and in most of the cases had easy access.



3.4.2. Equipment

Nest guarding requires the usage of binoculars and telescopes, especially if the nest guard is to record different aspects of the pair's biology and ecology. Since nest guarding can cover long periods of time on a daily basis a tent, raincoat and other clothers for fieldwork are required to ensure the comfort of the nest guardian. In particular cases where the access to the nest is limited and the nest guardian is not present during the night, the installation of a MMS trail cameras could be an option to consider. This is especially valid for nests that have been robbed on previous occasions.

3.4.3. Nest guardians

People directly involved in the nest guarding programme were carefully selected based on certain requirements (see Section 3.7). Also they must have good communication skills in order to cover the requirements in the strategy for communication and cooperation with local people and authorities (see Section 3.6). Apart from observations of the nest from stationary points, nest guardians are also required to make short walks in

the territory to inspect for disturbance and other factors that can threaten the nest and the pair. Inspection walks should keep a safe distance from the nest in order to avoid disturbance. It is also advisable for nest guardians to have some type of identification while a copy of the relevant authorities permission to carry out this particular action should be provided to them. All relevant authorities have been notified in advance of the implementation of this action and list with the names of the nest-guardians have been provided to them (the authorities need to be prepared to urgently take action and help if needed; see Section 3.6.8).

In a case of bad weather conditions nest guardians can leave the observation point and the activity could be cancelled for that day.



3.4.4. Nest guarding

The nest guarding started early in the morning and ended at the end of the day. After occupying the stationary observation point the nest guardian constantly made inspections of the nest and the area around using binoculars or/and a telescope in order to look for potential disturbance such as people making loud noise close to the nest, people resting under the nesting cliff, treasure hunters, people climbing the cliff or performing any other activity that can affect the

breeding. This is especially valid for the incubation period (April – June) when most of the unsuccessful Egyptian vulture pairs fail in breeding (Liberatori & Penteriani 2001). In any case of disturbance, Conservation Officer under the project and relevant local authorities were notified, and if possible the nest guardian tried to communicate to the people causing disturbance and ask them to leave the area or stop the behaviour that's causing disturbance.



3.4.5. Protocols and data collection

All data collected by nest guardians were recorder in field protocols in order to gather all data on the disturbances, the biology and ecology of the pair, and to note everything else relevant (**Annex I**).

3.5. How to react in a case of a perceived threat

A detailed guideline for nest guardians was developed under the project with instructions to follow in the event of a threat (with action points and contacts in case of emergency). In general, if some threat appears the nest guardian should be prepared and trained to react fast following one of the following approaches:

- Non-intentional disturbance - if a threat comes from random people who are not aware of the existence of the nest, such as people who practise extreme sports and who have just come accross the breeding cliff, the nest guardian should approach them and ask them politely to leave the place, explaining to them the conservation work that is being implemented and informing them about the vulnerability of the species.
- Intentional disturbance - if a threat comes from people targeting the cliff and performing illegal activity such as treasure hunting, or people directly threatening the Egyptian vulture like poachers, or trophy hunters and nest robbers, the nest guardian should immediately contact the local police department and forestry service (or other relevant authority) and send an alert while observing from a distance, making notes and taking pictures of the people breaking the law, and if possible of their vehicle too.

Apart from the cases of disturbance of the nest or direct persecution, nest guardians are also very important when juvenile Egyptian vultures leave the nest. During the fledgling period, most of the tasks of the nest guardians were linked to intensive observation of the chicks in the nest, awaiting for their first flight which

could lead to an accident if the chick/s fledge unsuccessfully and fall from the nest under the cliff. In that case the nest guardian organized a rescue mission to recover and put the chick/s back in the nest (if it has not been injured from the fall – in this case the chick is caught and sent to Wildlife Rescue Center). The most important actions for the nest guardian in such cases are:

- Remember the place where the chick has been last observed;
- Keep the chick in sight and to supervise its condition (if it is injured or not; if adults contact/feed the chick; if there is a predator nearby, etc.);
- Call authorities or/and other people involved in the nest guarding of the nest.

If the chick is found by the nest guardian and he/she might have a chance to catch it, this should be done carefully in order to avoid injuries of the bird. Usually chicks are not difficult to catch on the ground especially when there are trees and bushes around, but this should be done fast and the head of the birds should be covered with a piece of cloth (a shirt for example) in order to decrease the level of stress. Once caught, and checked for injuries, the bird should be put in the nest again. While awaiting for help and if the bird is in the hands of the nest guardian he/she has to keep it carefully on the ground while just gently holding the chick. If a cardboard box or a pet porter are available the bird can be immediately placed inside. In these cases climbing equipment is needed to access the nest (access to the nest should be attempted only by experienced climbers). If injured, the chick should be sent to a Wildlife Rescue Center.

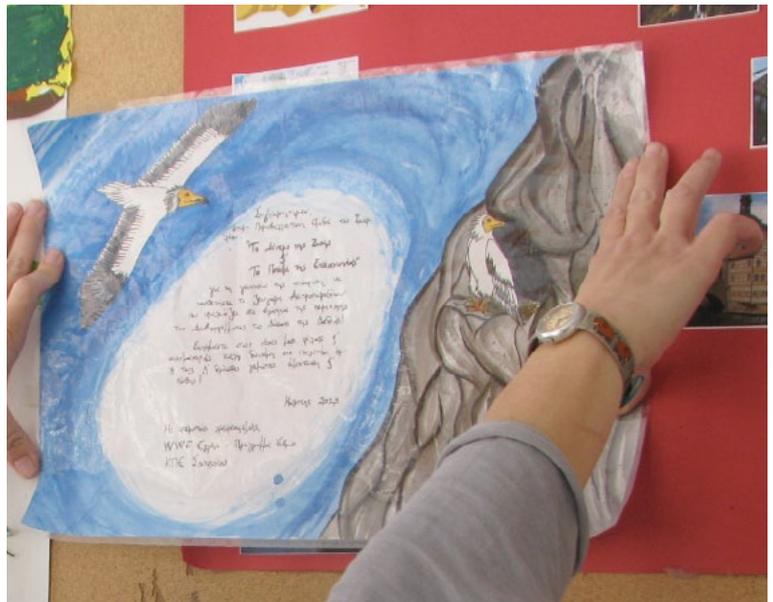
3.6. Communication and cooperation with local people, target groups and authorities

Apart from the direct conservation benefits that the nest guarding is designed for, it is also an effective tool to create a positive attitude towards the vultures in the area where this action is performed and to engage local people. The ultimate objective is to have responsible and reactive local communities (who can act in appropriate way if there is a danger to the local pair of Egyptian vulture), but also authorities (e.g. National/ Natural Parks, Forestry Services, Regional Inspectorates of the Ministry of Environment, etc.) engaged to implement the nest guarding or supervision of the nests regularly.



3.6.1. Local communities

Raising awareness amongst local communities in areas where Egyptian vulture breeds is very important for the conservation of the species. In this line, mostly meetings with local people on the field, distribution of information materials on the Egyptian vulture amongst local communities and organizing events were considered. The aim was to create a positive attitude of the local communities towards the Egyptian vulture and nature conservation. Information campaigns results in attracting local people to take part in some direct (e.g. nest guarding) or indirect (e.g. communication events) conservation actions and thus promote the conservation of the species.



3.6.2. Tourist and extreme sport clubs

Creating a list with local and regional tourist and extreme sport clubs (para- and delta-gliding, rock climbing and caving) was considered as a pilot step towards the communication and collaboration with this target group in the regions where the most vulnerable nests of the Egyptian Vulture have been identified.

For each pair of Egyptian vultures which may be disturbed by such activities, specific meetings were conducted with the relevant club for extreme sports. The representatives of the clubs at the meeting were requested not to perform their activity in the vicinities of the nests, since they may disturb the birds and even cause breeding failure. Each year before the breeding season, new meetings with those clubs were conducted if needed. When possible, agreements with these clubs could be made not only to assure the joint efforts towards the conservation of the Egyptian Vulture, but also to other more general and site specific topics such as decrease of the disturbance of other cliff nesting raptors such as the Golden Eagle, Long-legged Buzzard, Eagle Owl, Peregrine Falcon, etc. Such agreement could be made also among NGOs who join their efforts to run the guarding action under specific project and with permissions from the authorities. Following the management plans of protected areas and if measures to conserve the Egyptian vulture are added, responsible authorities are obliged to ban and control the activities practised by extreme clubs in areas sensible in terms of biodiversity.

3.6.3. Fishermen

Some nests of Egyptian vultures are situated close to rivers and fishing sites. At such sites fishermen activity (especially when they camp there for several days) may disturb the vultures and cause a breeding failure. For such nests implementation of nest guarding is an effective measure to prevent disturbance (at least during incubation).

3.6.4. Loggers and Forestry services

If logging activities are carried out near an Egyptian vulture nest, cooperation with the Forestry service is needed in order to find a solution to avoid the disturbance caused by this activity (e.g. logging outside the breeding season). It is advisable to inform Forestry services about the project activities prior to nest guarding programme.

3.6.5. Hunters

Hunters are key stakeholders in the effort to conserve the Egyptian vulture. They are often in the countryside and thus may be engaged as allies to help detect illegal activities or disturbance. Meetings with hunters were carried out in areas where hunting activity may cause disturbance to Egyptian vulture nests.



3.6.6. Village mayors and municipalities

Meetings with village mayors and mayors of municipalities were undertaken for pairs where nest guarding is foreseen, to inform them of the presence of the endangered bird in their territory and ask their permission and cooperation for the conservation of the species.

3.6.7. Police

Whenever nest guarding is carried out by field assistants (and not authorities), official letters were sent to inform local Police department on the activity that is being performed. Such communication needed especially in cases when assistance and intervention by the Police is required (disturbance of the nest, poaching, etc.).

3.7. *Requirements, obligations and rules for nest guardians*

Finding reliable people for nest guarding is always challenging but it is the key to success in this action. These people should be prepared to work on the field in remote areas, under bad weather conditions and for many hours per day. They also should have good communication skills.

A detailed Guidelines for the nest-guardians implementing the activity was developed and provided to each

nest guardian. More specifically, the *Guidelines* addressed the following issues:

- General rules;
- Main potential threats that can happen during the nest guarding;
- Instructions on how to react in a case of a threat and how to collect of evidences;
- Printed copies of field protocol (Annex I).

Before starting the implementation of nest guarding programme the following administrative steps were conducted for each nest-guardian:

- Signing a contract regulating responsibilities;
- Instruct hired people about safety at work and signing a declaration about this;
- The guidelines for implementation of the nest guarding was printed, sent and explained to each nest-guardian.

At the start of each guarding period, each nest-guardian was trained by the project Conservation Officer or other relevant specialized technical field staff (e.g. Bird Crime Officer or Regional Nest Guarding Coordinators). The local specifics of the work were explained and demonstrated in the field (incl. the nest and observation point). Nest-guardians were also instructed on how to do the monitoring of the targeted nests and fill the field protocol (Annex I).



3.8. Combining nest guarding with individual supplementary feeding



In some occasions, nest guarding can be combined with another direct conservation action - individual supplementary feeding close to the nest [link to the Report for the supplementary feeding]. Ideally in terms of cost effectiveness, the individual supplementary feeding could be implemented by the nest guardian.

4. RESULTS: NEST GUARDING IN BULGARIA AND GREECE

During the implementation of the LIFE+ project “The Return of the Neophron”, the following results in relation to nest guarding of Egyptian vultures in Bulgaria and Greece were achieved:

- In average 15 pairs (or 50% of the pairs with clutch) in Bulgaria and Greece were guarded annually between 2012 and 2015.
- The project ensured personal guard in average of 69% of the chicks since 2012.
- 7 juveniles were saved by nest guardians between 2012 and 2015, improving species productivity with 5.7%.
- 6 fatal disturbances of breeding Egyptian vultures were prevented.
- More than 30 people were involved in the nest guarding programme each year since 2012, including many volunteers from foreign countries (e.g. Lithuania, Canada, USA, Rumania, Germany, etc.).



5. LESSONS LEARNED

- Involving local people makes this action less resource consuming and thus more sustainable in long-term.
- Nest guarding during the incubation and fledgling period seems to be the most beneficial to increase the productivity of vultures and saving chicks every year, and it is a powerful raising awareness tool amongst local communities.
- Nest guarding is mostly needed in areas where nests are vulnerable to disturbance, robbing and direct persecution.

6. ACKNOWLEDGEMENTS

We would like to express our gratitude to all field assistants, local collaborators and volunteers involved in the nest guarding programme for Egyptian vultures in Bulgaria and Greece (2012-2015), in particular Georgi Georgiev, Krasimir Manev, Dimitar Nedelchev, Medzhnun Ademov, Mitko Angelov, Svetoslav Cvetanov, Rusi Atanasov, Jivko Barzov, Ivailo Ivanov, Marin Kurtev, Albena Kurteva, Kralu KraleV, Giannis Chondros, Giorgos Greousiotis, Ali Abtourachman, Theodoris Christodoulou, Konstantinos Christodoulou, Chrysoula Fotiou, Paschalis Seitanis, Katerina Demiri, Vasilis Papavasiliou, Nikos Maroukas, Giannis Serbezis, Dimitris Vavlylis, BSPB volunteers, namely Ventsislav Hristov, Plamen Marinov, Elena Avramova, Georgi Kostadinov, Zheni Kostadinova, Maria Krumova, Lidia Gorinova, Tsvetelin Shekerov, Ralitsa Ilieva, Romyana Boyanova, Georgi Georgiev, Plamen Hristozov, Natasha Pitars, Zhimantas Chekas, Denitsa Petrova, Tsvetanka Boeva, Doan Mehmedov, Zhivko Barzov, Nikolay Vekov, Dzhaner Emin, Tatyana Veleva, Flaviu Filip, Pencho Petrov, Valentin Velev, Aleksandar Stoykov, Radoslav Moldovanski, Anton Chaushev, Tsvetan Yakimov, Stela Stankulova, Yoav Chfudnov, Anton Andonov, Dimitar Aygatov, Emil Yordanov, Dimitar Nedelchev, Martin Karadzhov, Albena Kurteva, Georgi Georgiev, Kralyu KraleV, Krasimir Manev, Marin Kurtev, Medzhnun Ademov, Mitko Angelov, Svetoslav Simeonov, Nikolay Vasiliev, Zhaneta Moldovanska, EVS and Greek volunteers hosted by WWF Greece, namely Jose Rodriguez, Bony Van Puyvelde, Giacomo Biasi, Maria Pita, Malte Buhrs, Jasmin Zoll, Joanna Wawrzyczek, Javier Falquina, Pierre Briere, Sara Visquert, Zita Torok, Elena Almanza Lopez, Joanna Barreira, Anna Barbosa, Diane Oberle, Daniela Silva, Sandra Nicolas Guijosa, Sebastien Theof, Tsatsioti Katerina, Theodosakis Nikos, Apergis Kosmas, Feleki Antigoni, Matziouridis Ioannis, Paralikas Marios, ChatziGiannakis Kiriazis and Andromachi Soulopoulou. We also acknowledge the support of local authorities, such as Rusenski Lom Natural Park in Bulgaria, Rodopi Forest Service and the Management Body of the National Park Dadia-Lefkimi-Soufli Forest in Greece.

7. REFERENCES

- Carrete, M., Grande, J.M., Tella, J.L., Sánchez-Zapata, J.A., Donázar, J.A., Díaz-Delgado, R. & Romo, A. 2007. Habitat, human pressure, and social behavior: Partialling out factors affecting large-scale territory extinction in an endangered vulture. *Biological Conservation* 136: 143-154.
- Demerdzhiev, D., Stoychev, S., Dobrev, D., Spasov, S. & Terziev, N. 2014. Conservation measures undertaken to improve the population status of eastern imperial eagle (*Aquila heliaca*) in Bulgaria. *Slovak Raptor Journal* 8: 27-39.
- Galligan, T.H., Amano, T., Prakash, V.M., Kulkarni, M., Shringarphure, R., Prakash, N., Ranade, S., Green, R.E. & Cuthbert, R.J. 2014. Have population declines in Egyptian Vulture and Red-headed Vulture in India slowed since the 2006 ban on veterinary diclofenac? *Bird Conservation International* 24(3): 272-281.
- Iñigo, A., Barov, B., Orhun, C. & Gallo-Orsi, U. 2008. Action plan for the Egyptian Vulture *Neophron percnopterus* in the European Union. BirdLife International & European Commission, Brussels.
- Liberatori, F. & Penteriani, V. 2001. A long-term analysis of the declining population of the Egyptian vulture in the Italian peninsula: distribution, habitat preference, productivity and conservation implications. *Biol. Conserv.* 101, 381-389.
- Mateo-Tomás, P. & Olea, P.P., 2010. Diagnosing the causes of territory abandonment by the Endangered Egyptian vulture *Neophron percnopterus*: the importance of traditional pastoralism and regional conservation. *Oryx* 44: 424-433.
- Velevski, M., Grubac, B. & Tomovic, L. 2014. Population viability analysis of the Egyptian Vulture *Neophron percnopterus* in Macedonia and implications for its conservation. *Acta Zoologica Bulgarica* 66: 43-58.
- Velevski, M., Nikolov, S.C., Hallmann, B., Dobrev, V., Sidiropoulos, L., Saravia, V., Tsiakiris, R., Arkumarev, V.,

