

**LIFE+ EGYPTIAN VULTURE NEW LIFE:
URGENT ACTIONS TO STRENGTHEN THE BALKAN
POPULATION OF THE EGYPTIAN VULTURE
AND SECURE ITS FLYWAY
LIFE16 NAT/BG/000874**

**FIRST RELEASE OF CAPTIVE-BRED EGYPTIAN
VULTURES IN BULGARIA**

TECHNICAL REPORT



CONTENTS

Preface.....	2
Summary	3
Introduction.....	4
Methodology.....	5
Chronology	5
Origin of the birds.....	5
Releasing method.....	5
Results	7
Release and post-fledging behavior	7
Migration	7
Regina.....	7
Lom.....	8
Elodie.....	9
Post-migration fate	10
Conclusive notes.....	12
References.....	13
Annexes	14

PREFACE

About the project

This report was prepared for the aim of action C3 of the project “Urgent Actions to Strengthen the Balkan Population of the Egyptian Vulture and Secure Its Flyway” (LIFE16 NAT/BG/000874), funded by the European Commission and co-funded by “A. G. Leventis” Foundation.

Organisations and institutions involved

Organisation/Institution

Bulgarian Society for the Protection of Birds (BSPB)/BirdLife Bulgaria

Directorate of Nature Park “Russenski Lom”

Prague Zoo & European Association of Zoos and Aquaria (EAZA)

Green Balkans

Management Unit of the Biosphere Reserve of Gadabeji

Sahara Conservation Fund (SCF)

Vulture Conservation Foundation (VCF)

Activities implemented

Planning, coordination and releases

Supplementary feedings and daily observations

Captive breeding, provision and transportation of the fledglings

Hack building and video surveillance installment

Field survey in Niger, preliminary report

Coordination of the work in Niger

Networking and strategic guidance on the release methods

Recommended citation

Arkumarev, V., Mourtala, S.M., Rabeil, T., Apeverga, P. Dobrev, V. & Nikolov S.C. 2018. First release of captive-bred Egyptian Vultures in Bulgaria. Technical report under action C3 the project LIFE16 NAT/BG/000874. BSPB, SCF & APLORI. Sofia. 14 p.



SUMMARY

The Balkan Egyptian Vulture population has declined with 80% over the last 30 years with a 7% annual decrease rate. Despite the implementation of various conservation measures the species' negative trend has not been reversed. Therefore, more comprehensive approach is needed to ensure the survival of the remaining Balkan population. Reinforcement of the population with releases of captive-bred Egyptian Vultures needs to be implemented simultaneously with the in-situ conservation measures. In 2016 the first releases of captive-bred Egyptian Vultures took place in Bulgaria. Three juveniles were provided by the Prague Zoo and were transported to the hacking site in Rusenski Lom Nature Park in Northern Bulgaria. Two of the vultures were brother and sister (Lom and Regina) raised by a pair with Turkish origin. The third juvenile (Elodie) was raised by a pair of French origin. The young Egyptian Vultures were kept in the hack for 16 days until they have fully developed and adapted to the place. Lom and Regina fledged on the same day when the hack was open, Elodie fledged six days later. All three vultures were fitted with satellite transmitters in order to follow their movements and migration. After the release the birds were regularly visiting the supplementary feeding station situated near the hacking site and were observed to interact with the local breeding pair. Regina started its south migration first only 6 days after the release. Lom started his migration 4 days later. Both vultures were following similar migration route crossing through the Dardanelles and migrating through Western Anatolia in Turkey. They both reached the Adrasan Peninsula and decided to cross the sea reaching Cyprus. Afterwards both Regina and Lom continued southwest and were flying over the sea alongside and not far from the coast. However, due to unknown reasons they didn't reach the coast and finally drowned into the sea. Elodie started its migration last and chose different migration route. She migrated through Greece and successfully crossed the Mediterranean Sea between Crete and Libya. She was wintering in Niger where in September 2017 was killed by local people for bush meat.

We can conclude that the released young Egyptian Vultures through the method of hacking adapted well to the local conditions and fledged at similar age as their wild conspecifics. Our observations confirmed that the availability of quality food in satisfying quantity at the feeding station is important to attract and hold the released vultures in the vicinity of the release site. Two of the released vultures started their migration following the main migration route of the Bulgarian wild population but due to unknown reasons they undertook an oversea flight through Cyprus and eventually died. Different release techniques have to be tested in future and their success to be scientifically evaluated in order to choose which method is most successful and gives the best results for reinforcement of the Egyptian Vulture population on the Balkan.

INTRODUCTION

The Egyptian Vulture (*Neophron percnopterus*, Linnaeus 1758) is a medium sized opportunistic scavenger with a broad distribution throughout the southern Palaearctic and North Africa (Botha et al. 2017). The species is listed in the IUCN Red List as Endangered because of consistent and steep declines in its populations throughout its range (Birdlife International 2008). Especially critical is the status of the population on the Balkans, where it has declined by over 80% for the last 30 years and the population currently consists of less than 70 pairs (Velevski et al. 2015). There is a wide range of threats that the Balkan population faces in its breeding grounds (Saravia et al. 2016) and along its migration flyway (Nikolov et al. 2016), the main amongst which include: non-intentional poisoning, electrocution by power lines, direct persecution (incl. for bushmeat and belief-based use in the wintering grounds), disturbance, reduced food availability and habitat change. Recent population viability analyses show that the species might get extinct from FYR of Macedonia in the next 25 years unless immediate and effective conservation actions are undertaken (Velevski et al. 2014). One of the suggested approaches by the authors to save the Balkan population is through reinforcement of the population with releases of captive-bred individuals which has to be implemented simultaneously with in-situ conservation measures. Large scale of conservation measures has been applied for the species on the Balkans but they seem not effective enough to halt the population decline. Therefore, more comprehensive approach is needed to stabilize the remaining population of the species.

Reinforcement of populations with captive-bred individuals is widely used approach in the conservation of many species. However, the practical experience with releasing captive-bred Egyptian vultures on the Balkans is lacking and the foreseen experimental introduction in Bulgaria will significantly contribute to the accumulation of more knowledge in this area. In the long-run, such actions will underline a program for active reinforcement of the wild population and securing its future in the country and the region. Different strategies for releases of captive-bred individuals have to be tested and the results scientifically evaluated. Here we present data on the first releases through hacking method of juvenile captive-bred Egyptian Vultures in Bulgaria. We studied the post-release behavior of the fledglings, their migration routes and survival.

METHODOLOGY

Chronology

Activity	Date/period
Delivery of the birds	10.08.2016
Adaptation period	10.08.2016 – 26.08.2016
Opening of the hack	26.08.2016
Start of first migration	Between 02.09.2016 and 26.09.2016

Origin of the birds

Three juvenile Egyptian Vultures were provided by the Prague Zoo within the framework of the European Endangered Species Programs (EEP) of the European Association of Zoos and Aquaria (EAZA), by courtesy of the Vulture Conservation Foundation (VCF) (Pic. 1). Two of the vultures were females – Elodie and Regina, named after their zookeepers. The third fledgling was male - Lom, named after the Nature Park where it was released. Lom and Regina are brother and sister raised in the Vienna Zoo by adult pair of Turkish origin. Regina hatched on 01/06/2016 and Lom hatched 5 days later on 06/06/2016. The third juvenile Elodie hatched on 16/06/2016 in the Paris Zoo by a pair of Pyrenean origin, but was raised by experienced pair in Prague Zoo. For summarized details on the birds see Annex I.



Picture 1. Captive-bred juvenile Egyptian vultures provided by EAZA for release in Bulgaria

Releasing method

As a first release site for captive-bred Egyptian Vultures in Bulgaria was selected Nature Park Rusenski Lom which is situated in the northern part of the country. It includes huge plateau river valley with dense shrub vegetation and high cliff complexes. This is the smallest of the remaining Egyptian Vulture breeding clusters in Bulgaria holding 1-2 breeding pairs in the last years. The number of the breeding pairs in the area has considerably dropped over the last 12 years from 9 to 1 (Kurtev et al. 2007). As it is a pilot release on the Balkans the strategy was to release the juveniles in suitable habitat, with functional feeding station in the vicinity of the hacking site, local capacity, easy access for food delivery and daily observations, presence of conspecifics breeding pairs in the area but still far enough in order to avoid potential aggressive interactions between the territorial pairs and the released birds on the feeding site.

The hacking method was selected for releasing the birds based on the guidelines provided by VCF (Velevski et al. 2016). This method has been successfully tested for releases of captive-bred Egyptian Vultures in Italy (Ceccolini & Cenerini 2005) and Israel. There was an old hack that was renovated and adapted for the needs of experiment. The hack was built in a big cliff cavity by closing the front with a wire net in order to protect the birds from predators and to prevent early fledging. A camera connected to a monitor was installed inside the hack and power supplied by solar cells. Regina, Lom and Elodie were transported to the hacking site on 10/08/2016 at age respectively 71, 66 and 54 days. They were all ringed and tagged with 45g Microwave Argos/GPS satellite transmitters which made possible to follow their movements and discover their fate after the release (Pic. 2). This method was previously applied to wild individuals and was found to very efficient for this purpose (Oppel et al. 2015). Before the release they were supplied with food (whole rats and pieces of lamb) and water on a daily basis through special pipes to avoid any contact with people (Pic. 3). The three fledglings were observed daily from a remote observation point and through the camera installed in the hack (Pic. 4). The hack was situated near a vulture feeding site. The feeding site was cleared from the shrubby vegetation and grass. A few days before the release ground team from the Directorate of the Nature Park and BSPB started providing food at the place (food that vultures were already familiar, but also new items of parts of whole bodies of domestic animals – e.g. pigs, that further on vultures can find in the wild). Two Egyptian Vulture decoys were mounted on the feeding site to attract the fledglings and show them where the safe source of food is located. One of the decoys depicted adult vulture and the other one a juvenile (Pic. 5).



Picture 2. Tagging the vultures with satellite transmitters before placing them into the hack.



Picture 3. Special tubes for remotely providing food and water for the vultures in the hack.



Picture 4. Installing video surveillance in the hack.



Picture 5. Mounting the Egyptian vulture decoys at the feeding station.

RESULTS

Release and post-fledging behavior

On 26/08/2016, after two weeks acclimatization period the hack was opened. The period overlapped with the first flights of the fledgling from the wild nest in the region. Lom (aged 82 days) left the hack first same day, shortly followed by his sister Regina (aged 87 days) (Pic. 6). During the first day both fledglings were exercising in flying and landing, investigating the close surroundings of the hack. In the evening Regina was roosting near the hacking site while Lom chose a tree to spend the night. On the second day the adults from the neighboring breeding pair appeared in the vicinity of the hack but no aggressive interaction with the fledglings were observed. Instead the released birds were following the adults and copying their flight, improving their skills. However, they were following the adults only in the vicinities of the hack and always returning back to the hacking cliff. The wild adult vultures, obviously attracted by the released juveniles and probably the decoys, landed to feed at the vulture restaurant for the first time during this breeding season (in the previous months this pair was provided with supplementary food very close to its nest as it is part of a supplementary feeding scheme; Dobrev et al. 2016). Regina and Lom visited the feeding station as well but didn't feed that day. On the next day more food was provided and dispersed over the feeding site and the two fledglings visited the feeding station again but this time they were eagerly feeding. In the following days both birds were regularly visiting the feeding site and were obviously attracted by the vulture decoys as they were exploring them and even jumping on their backs (Pic. 7). Lom demonstrated strange territorial behavior at the feeding site by chasing away the wild adult male who came to feed on the site. Some days later, on 01/09/2016, Elodie (aged 78) left the hack too. She was regularly visiting the feeding station as well.

In terms of the post-fledgling movements, Regina was not flying further than 1,2 km from the hack before starting migration. In the first days after the release Lom was exploring the area around the hacking site flying as far as 1.5 km from the hack. Before starting migration, on 31/08/2016, 04 and 05/09/2016 Lom made exploratory flights respectively at 7, 13 and 9 km from the hack. Elodie spent one month near the hack flying not further than 500 m from the release site and regularly visiting the feeding station.



Picture 6. First flight of Lom from the hacking site.



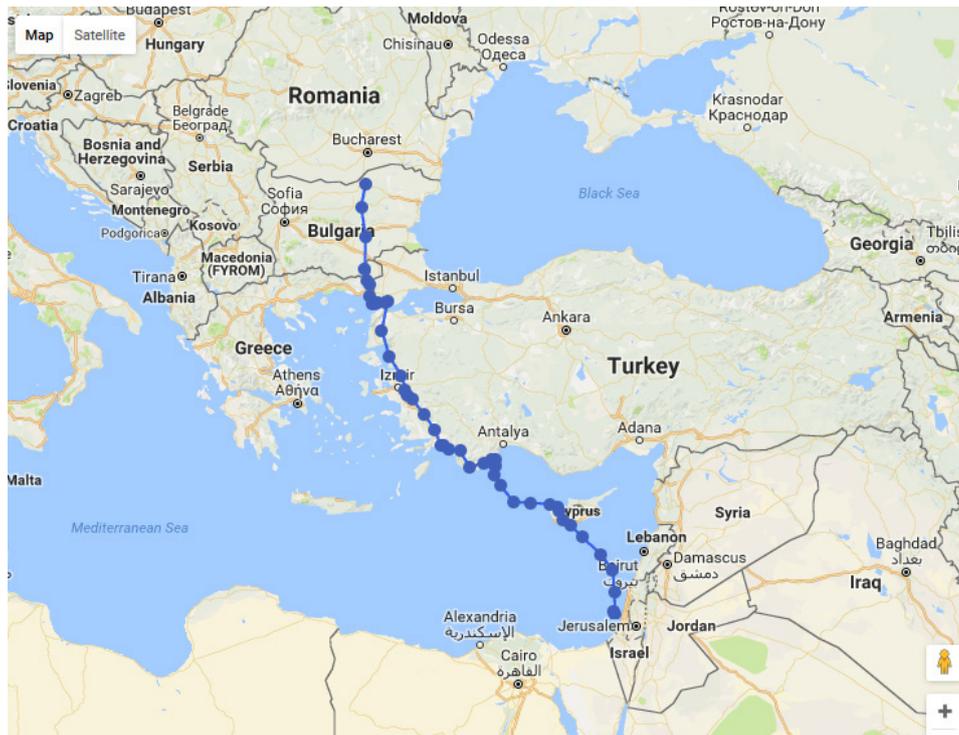
Picture 7. Lom and Regina together with the decoys at the feeding station

Migration

Regina

On 02/09/2016 Regina (aged 94 days) started its south migration just 7 days after her first flight from the hack. For only a day she flew 270 km over Eastern Balkan Mountain and Eastern Rhodopes to reach Greece and roosted north of Dardia National Park. On her way Regina passed over areas with vulture supplementary feeding stations both in Bulgaria and Greece but did not stop to feed. Two days later Regina crossed Dardanelles and continued its migration south by following the Aegean coast. On 7/09/2016 she reached the western coast of Antalya Basin near Adrasan which was a critical point in her travel. She spent the night on the Adrasan Peninsula and in the next morning Regina chose to cross the sea instead to continue along the coast. However, if she had chosen to continue along the coast she would have to fly north to get around the

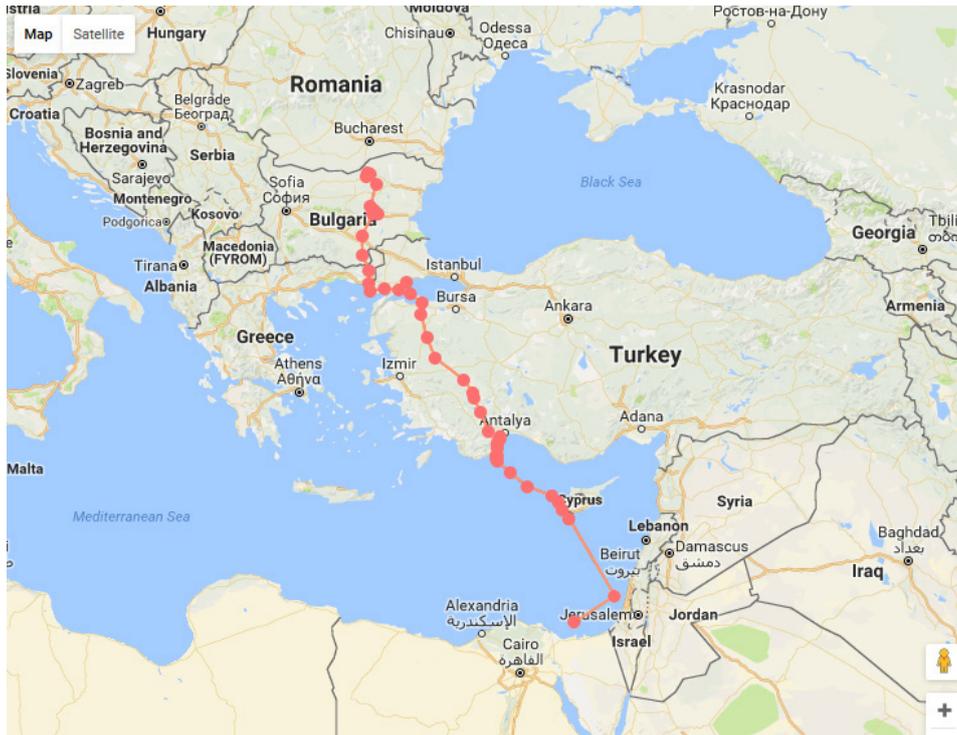
Peninsula and then continue its south migration. In that case Adrasan Peninsula served as an ecological trap for the young Egyptian vulture and she couldn't find the right route, finally choosing to fly over the sea. That day Regina flew over 270 km for 9-10 hours over the sea and finally reached the western coast of Cyprus. In the morning of 09/09/2016 she continued her migration south entering again into the sea through Akrotiri Peninsula on Cyprus at 10:00 - the distance to the nearest coast was 240 km. For 6 hours she flew over 190 km and at 16:00 some 50 km from the Lebanese coast, it seems a northeastern wind pushed her away from the coast. She continued to fly over the sea some more 130 km in southwestern direction and obviously very exhausted drowned into the sea at 20:00, just 28 km from the coast of Tel Aviv. During her, unfortunately unsuccessful, migration Regina flew over 1,500 km for 8 days, with average speed ca. 200 km per day. Over 500 km she flew over the sea, where finally died (Map 1).



Map 1. Migration map of the captive-bred Egyptian Vulture Regina.

Lom

Lom started its migration on 06/09/2016 (aged 93 days) just 11 days after his first flight from the hawk. The first day he flew 115 km before settling down to roost on a cliff in Eastern Balkan Mountain. Interestingly, Lom followed his sister Regina almost exactly in her footsteps, a few days later. Lom also passed over potential stopover sites such as the vulture supplementary feeding stations in Eastern Balkan Mountain, in Eastern Rhodopes in Bulgaria and Dadia National Park in Greece but didn't stop to feed and roost. Unlike Regina, he had crossed the Marmara Sea through the Marmara islands – and not through the Dardanelles, and migrated through Western Anatolia rather than following the coast. On 11/09/2016 he reached the mountainous area south of Antalya near the Adrasan Peninsula. Lom initially chose the right way flying north and trying to go over the peninsula following the land but then stopped for roosting. On the next morning unfortunately, he flew back south reaching the horn of the Adrasan Peninsula and facing the sea. He roosted on a cliff over the sea and in the early morning on 13/09/2016 Lom entered into the sea from the same place as Regina did earlier, reaching the western coast of Cyprus, where he spent the night. The next day he continued to fly south over the sea, almost reaching the Israeli coast (some 40 km away), but then veered southwest and continued to fly 150 km more over the sea, where in the evening drowned only 35km away from the coast of Egypt. During his, unfortunately unsuccessful, migration Lom flew over 1,800 km south for 9 days, with average speed ca. 200 km per day. Over 500 km he flew over the sea, where finally died (Map 2).



Map 2. Migration map of the captive-bred Egyptian Vulture Lom

Elodie

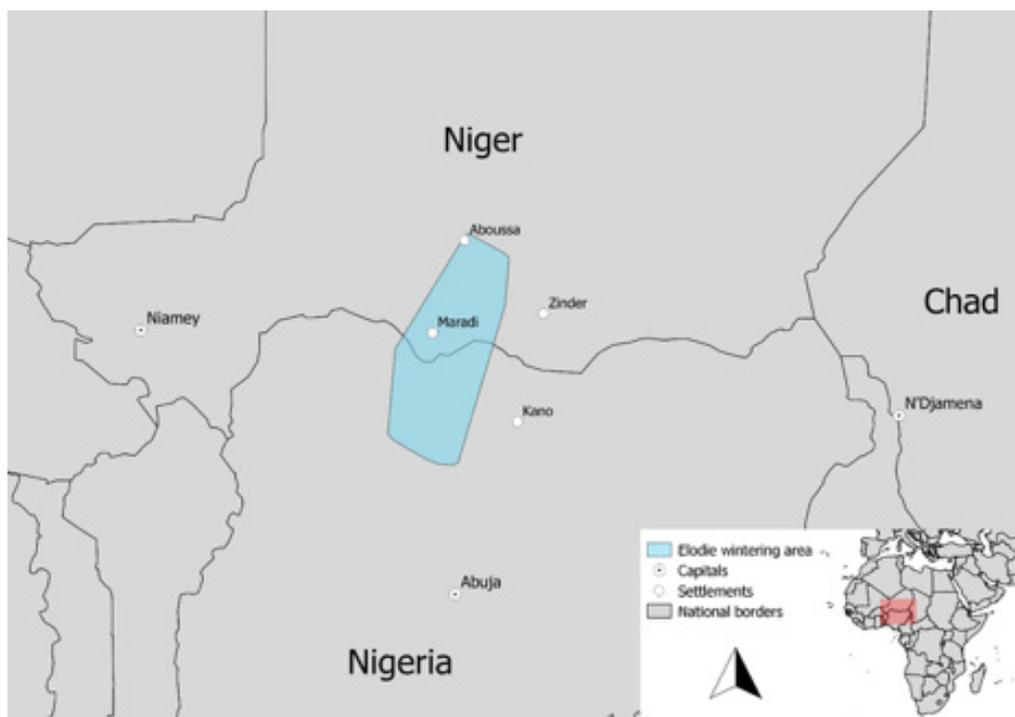
Elodie was the youngest and the last to start its south migration. On 26/09/2016 Elodie (aged 103 days) started her migration flying only 90 km southwest and roosting in the Balkan Mountains. On the next day she continued her journey southwest and reached the Aegean Sea near Komotini where she spent the night. On the next morning instead of following the seacoast to the east Elodie decided to fly over the sea reaching Athos on Chalkidiki Peninsula. On 29/09/2016 she continued flying south over the sea and the Greek islands and finally reached Peloponnese. At 08:00 in the morning of 04/10/2016 Elodie flew over the island of Kythira and it was the last land to see followed by 500 km strip of open sea. She covered that distance in only 10 hours to reach the Lybian coast at 20:00 in the evening and turning herself into only the second tagged Egyptian Vultures migrating from the Balkans which have successfully crossed the Mediterranean Sea. The young vulture continued flying southwest another 3,000 km to reach its wintering grounds in Niger on 18/10/2016. During her south migration Elodie flew over 4,400 km for 23 days, with average speed ca. 160 km per day (Map 3).



Map 3. Migration map of Elodie, who successfully crossed 500 km of open sea flying from Greece to Libya

Post-migration fate

After reaching the wintering grounds (18/10/2016) Elodie spent the next 11 months roaming over a vast area around the border between Nigeria (Kano) and Niger (Maradi) (Map 4). The bird settled mainly in the areas reach of livestock and water available (Pic. 8), roosting mainly on tress, but without evidence of significant congregations of other conspecifics.



Map 4. Elodie's wintering area in Niger and Nigeria



Picture 8. Water pool near Kano, Nigeria (left) regularly visited by Elodie in spring 2017 together with another Egyptian vulture, and the tree (right) were the bird often perched.

On 13/09/2017 Elodie stopped transmitting from a place near the village Aboussa in southern Niger. Under the guidance of SCF, a team from the Management unit of the Biosphere Reserve of Gadabedji visited the last coordinates of Elodie to make investigation of her fate. The mission began with the search for information about the village of Guidan Dan Jimo and the place from which the last signal was transmitted. The team visited the village of Aboussa, located 60 km by bird flight east of Gadabedji in the Commune of Tarka (Department of Belbedji), not far away from the village of Guidan Dan Jimo. Once at the place the ground team with the help of the village chief searched the area to find remains from the vulture or the transmitter itself. They found two local people who helped them to find the transmitter and the ring, because they were aware of the case and knew the men who killed Elodie. According to the investigation held the bird was seen for the first time on 10/09/2017 at around 14:30 UTC, in the camp, feeding on a dead cow carcass. Two to three days later, the children were worried by this strange bird and this is what prompted two men, one from the village of Aboussa and the other from Ruwan Aggouwa to kill the vulture on Thursday 14/09/2017 around 16h in the camp. Panicked after discovering the equipment of the bird, they escaped by granting part of the meat to the children of the camp (Pic. 9). The two accused men are the 60 years old Yahaya Yaro from Mayahi and the 61 years old Issa Adamou from Hawan dawaki. The local villagers stated that they have never seen Egyptian Vulture before, only the 65 years old head of the village has seen the species when he was young. During this mission, a local community awareness meeting had been organized. The purpose of this meeting was to present the images of the vultures encountered in Niger and to recall their status and their protection by the law. The involvement of Eco-guards in this mission helped for the local population's awareness about the participatory management of the natural resources (Pic. 10). Since the identity of the poachers was revealed, the village chief asked them to present themselves. They will be held accountable in accordance with the law and this will serve as a lesson to all those who will attempt to perform such acts which are in contradiction with the national and international legislation.



Picture 9. Remains from Elodie killed for bushmeat in Niger



Picture 10. Raising awareness among the local people in the village where Elodie was killed.

CONCLUSIVE NOTES

1. The three released young Egyptian Vultures through the method of hacking adapted well to the local conditions and fledged at similar age as their wild conspecifics.
2. The fledglings were regularly visiting the feeding station and utilizing the provided food. The presence of vulture decoys might have played important role in attracting the fledglings to the feeding station and showing where the safe food is. The availability of quality food in satisfying quantity at the feeding station is important to attract and hold the released vultures in the vicinity of the release site.
3. No aggressive interactions were observed between the local breeding pair and the released birds, instead they were following the adult birds and copying their flight movements and behavior. The presence of conspecifics in the area of release might play an important role in the adaptation of the release birds as the social learning play an important role in the Egyptian Vulture's ecology. However, the release site was 4 km away from the wild pair's nest at the edge of their territory. More studies and field observations are needed to better understand this behavior and the possible interaction between the wild territorial birds and the released vultures.
4. Regina and Lom started their migration earlier than the birds from the wild population. The wild fledglings and adults on the Balkans start their migration mainly during the second – third week of September. The absence of more experienced Egyptian Vultures to follow during this early migration period might explain the wrong migration route chosen by Regina and Lom and their consequent death. However, both vultures followed almost exactly the same route and other factors might be underlying for the observed behavior. More in depth studies are needed on this matter. Different release techniques have to be tested in future and their success to be additionally evaluated.
5. The very long distances travelled by the three vultures over the sea and the successful crossing of Elodia of 500 km of open sea shows that the released birds were in good body condition during the migration. However other factors such as wind speed and direction have significant impact on the successful sea crossing. Regina and Lom were flying alongside and close to the land but didn't reach it. The reasons for this unusual behavior remain unknown.
6. So far, there is evidence for Egyptian Vulture for the Balkans shot for believed based use in Africa (Kret et al. 2017), but this is the first evidenced case of tagged individual shot for bush meat. Raising awareness on the Egyptian Vulture's status and importance is needed among the local communities in the wintering grounds. Poaching is one of the most important threats for the species in the wintering grounds and especially in Niger as proven by the Elodie's case.

REFERENCES

- Botha, A. J., Andevski, J., Bowden, C. G. R., Gudka, M., Safford, R. J., Tavares, J. and Williams, N. P. 2017. Multi-species Action Plan to Conserve African-Eurasian Vultures. CMS Raptors MOU Technical Publication No. 5. CMS Technical Series No. xx. Coordinating Unit of the CMS Raptors MOU, Abu Dhabi, United Arab Emirates.
- Ceccolini, G. & Cenerini, A. 2005. Techniques of release for Egyptian vultures in Italy. In: Bearded Vulture Annual Report . F.C.B.V., 121-124 2005.
- Dobrev, V., Kret, E., Skartsi, T., Saravia, V., Bounas, A., Opiel, S. & Nikolov, S.C. 2016. Individual supplementary feeding of the Egyptian vulture (*Neophron percnopterus*) in Bulgaria and Greece (2012-2015). Technical report under action C4 of the LIFE+ project "The Return of the Neophron" (LIFE10 NAT/BG/000152). BSPB, Sofia. 12p
- Kurtev, M., Angelov, I. & Yankov, P. 2008. Action plan for the Egyptian Vulture in Bulgaria. BSPB, Sofia. (In Bulgarian)
- Nikolov, S. C., Barov, B., Bowden, C. & Williams, N. P. (Eds.) 2016. Flyway Action Plan for the Conservation of the Balkan and Central Asian Populations of the Egyptian Vulture *Neophron percnopterus* (EVFAP). BSPB Conservation Series No. 32, Sofia, CMS Raptors MoU Technical Publication No. 4, Abu Dhabi. 124 p.
- Opiel, S., Dobrev, V., Arkumarev, V., Saravia, V., Bounas, A., Kret, E., Veleviski, M., Stoychev, S. & Nikolov, S.C. 2015. High juvenile mortality during migration in a declining population of a long-distance migratory raptor. *Ibis*, 157(3): 545-557.
- Saravia, V., Kret, E., Dobrev, V. & Nikolov S. C. 2016. Assessment of mortality causes for the Egyptian Vulture (*Neophron percnopterus*) in Bulgaria and Greece (1997-2015). Fact sheet under action A1 of the LIFE+ project "The Return of the Neophron" (LIFE10 NAT/BG/000152). HOS, Athens. 9 p.
- Veleviski, M., Grubač, B. & Tomovic, L. 2014. Population Viability Analyses of the Egyptian Vulture *Neophron percnopterus* in Macedonia and Implications for Its Conservation. *Acta Zoologica Bulgarica*, 66(1): 43-58.
- Veleviski, M., Nikolov, S. C., Hallmann, B., Dobrev, V., Sidiropoulos, L., Saravia, V., Tsiakiris, R., Arkumarev, V., Galanaki, A., Kominos, T., Stara, K., Kret, E., Grubač, B., Lisičanec, E., Kastritis, T., Vavylis, D., Topi, M., Hoxha, B. & Opiel, S. 2015. Population decline and range contraction of the Egyptian Vulture *Neophron percnopterus* on the Balkan Peninsula *Bird Conservation International*, 25(4): 440-450.
- Veleviski, M., Tavares, J., Zink, R., Hatzofe, O. & Frey, H. 2016. Suggested protocol for the experimental release of captive-bred Egyptian Vultures in Italy and Balkan Peninsula. VCF Technical Note.

ANNEXES

Annex I. Overview per individuals

	Lom	Regina	Elodie
Parameters			
General characteristics:			
Sex	Male	Female	Female
Origin	Turkish	Turkish	Pyrenean
Hatching date	06.06.2016	01.06.2016	16.06.2016
First flight (age)	26.08.2016 (82 days)	26.08.2016 (87 days)	01.09.2016 (78 days)
Migration:			
Start (age)	06.09.2016 (93 days)	02.09.2016 (94 days)	26.09.2016 (103 days)
Average speed	200 km/day	200 km/day	160 km/day
Total distance covered (duration)	1,800 km (9 days)	1,500 km (8 days)	4,400 km (23 days)
Distance flown over the sea	500 km	500 km	500 km
Mortality:			
Date / period	13.09.2016 (migration)	09.09.2016 (migration)	13.09.2017 (wintering)
Cause	Drowning into the sea	Drowning into the sea	Shot (for bush meat)
Location	Mediterranean Sea (35 km from the coast of Egypt)	Mediterranean Sea (28 km from the coast of Tel Aviv)	South Niger (near the village Aboussa)