

REINTRODUCTION OF THE GRIFFON VULTURE
(*GYPS FULVUS*) IN KRESNA GORGE, SOUTH-WEST BULGARIA
IN THE PERIOD 2010-2015

EMILIAN STOYNOV^{1,2*}, HRISTO PESHEV²,
ATANAS GROZDANOV¹, NADYA VANGELOVA²

1 – Department of Zoology and anthropology, Faculty of Biology, Sofia University "St. Kliment Ohridski", Sofia, Bulgaria

2 – Fund for Wild Flora and Fauna, 2700 Blagoevgrad, P.O. Box 78, 49 Ivan Michaylov Str, room 327, Bulgaria

*Corresponding author: pirin@fwff.org

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Abstract: The following research presents the activities and results of the reintroduction of Griffon Vulture (*Gyps fulvus*) in Kresna gorge, Southwest Bulgaria. The preparations for this conservation initiative started in 2000, after the foundation of the non-government organization Fund for wild flora and fauna, dedicated to conservation of wildlife, nature habitats and sustainable land management. The first 26 Griffon Vultures for Kresna gorge were provided by GREFA foundation, Spain and arrived in the area on 18.02.2010. The main idea of the following activities was the re-establishment of a Griffon Vulture colony in Southwestern Bulgaria, to play the role of a „connecting bridge“ between the species populations in the Eastern Rhodopes and Macedonia. As a part of the process, a feeding site for vultures was established in the area. Both the future new colony and the feeding site were planned to play an important role of safe ground for the vultures, migrating from the Central and Western Balkans (Croatia, Serbia and Macedonia) to the Rhodopi Mountains, Middle East, Africa and back. The reintroduction of Griffon Vultures was expected to support in natural way the return of Egyptian vultures (*Neophron percnopterus*), extinct from the area in the last decade, but also to provide basis for future reintroductions of Egyptian, Black and Bearded Vulture.

For the acclimatization of birds, an adaptation aviary was build in the vicinity of Rakitna village, municipality of Simitli. After some technical and methodological problems in the beginning, the following years showed success of the activities and the number of observed birds in the area progressively increased: 16 ind. observed at once in 2012, 28 in 2014 and 47 in 2015. In 2014 the presence of over 100 different birds was proven in the area, with the assistance of original method of photographic identification of the individuals.

During the 5 year period we observed marked individuals from Israel, Greece, Serbia, Croatia and birds from other reintroduction sites in Bulgaria. On the other hand, vultures released in Kresna gorge were identified in Serbia, Italy, Macedonia, Hungary and some parts of Bulgaria (Western and Eastern Balkan Mountains, Eastern Rhodopes).

In 2012 the reintroduction activities were reinforced through the “Life for Kresna gorge” project, supported by the LIFE financial instrument of EC and co-funded by private donors, such as Friends of Vienna Zoo, Austria and Zoo de Doue, France. During the research period the vulture feeding site also attracted many other rare raptor species: Black vulture (*Aegipius monachus*), Golden Eagle (*Aquila chrysaetos*), Imperial Eagle (*Aquila heliaca*), Steppe Eagle (*Aquila nipalensis*), White-tailed Eagle (*Haliaeetus albicilla*), Greater Spotted Eagle (*Aquila clanga*), Red Kite (*Milvus milvus*) etc.

INTRODUCTION

The Kresna Gorge of Struma River is found in Southwestern Bulgaria, between Pirin Mountains to the East and Maleshevska Mountain to the West (UTM, FM73). It comprises rough terrain of silicate rocky habitats and degraded deciduous forests with Mediterranean climate influence. It is in close proximity to the Bulgarian border with Greece and FYR of Macedonia, where suitable vulture habitats and small populations are still present.

Griffon Vulture used to breed in the area until the end of 1950s, when it was extirpated by massive, long-lasting and well organized state campaign for the use of poisonous baits for eradication of terrestrial predators – mainly Wolf (*Canis lupus*).

On 18.02.2010 following several years of preparation, the first group of 26 Griffon Vultures arrived to Kresna Gorge with the support of the Spanish GREFA. This marked the start of the main activities of the species reintroduction in the area.

The current study presents the main results from the reintroduction activities carried out between 2010 - 2015 and includes a list of publications, issued during the period, where additional detailed information can be found.

Results and discussion

Two days after the arrival of the first group of vultures, a strong wind partly opened the cage and 15 birds escaped. Intensive food provision let about 10 of the birds remain close to the release site. Three days later the first exogenous immature Griffon Vulture was recorded, which was later followed by permanent visits from migrating, wintering, vagrant and summering individuals native to the Balkans.

In June 2010 there was a poisoning accident, related to the use of a poisoned wild boar as food for the vultures at the feeding site, which killed two birds and one was observed to be sick, but later managed to recover. The other birds also fed there, but with no damage.

Until the end of the year we observed 8 Griffon Vultures which overwintered and 2-3 pairs formed. The nest of one pair was documented, where an egg was laid on 17.02.2011 and a chick hatched in mid-April 2011. The chick was observed in the nest until mid-June 2011, when it disappeared. The reason remained unknown.

In 2012 the project almost started from the beginning, as the first group of

birds dispersed and a second one was prepared for release. The same year the LIFE for Kresna Gorge project started and additional funding was provided for the reintroduction activities. The next release of 12 immature birds took place in July-August 2012 and they managed to form a stable nucleus. In the same year we observed the first Egyptian Vultures in the area. Probably the release of Griffon Vulture in combination with the maintenance of the feeding site are a good tool for attracting roaming Egyptian Vultures, which was also confirmed in Kotel Mountain, Bulgaria (Stoynov & Grozdanov 2010).

In 2013 a total of 15 birds were released (escaped) from the aviary in a storm accident. These Griffon Vultures had no problems, since they had already spent several months there for acclimatization. Thus the local group in Kresna Gorge reached more than 20 birds. Two Black Vultures, three Egyptian Vultures and more than 70 different Griffon Vultures were attracted in the area and identified and monitored thanks to newly developed visual marking method (Hristov & Stoynov 2002, Stoynov & Peshev 2014, Stoynov et.al. 2015). The method includes constant photographing of the vultures in flight and individual identification, based on individual plumage characteristics (scratches, missing feathers etc.). This visual practice seems to be a very important tool for small populations of vultures, where all individuals could be photographed and visually marked. This way maximum numbers, dynamics and individual presence could be monitored.

In 2012 and 2013 four vultures got electrocuted on 20 kV power lines, two of which close to the release site in Kresna gorge. We immediately initiated mounting of perch discouragers to eight most important pylons and the problem was solved.

In 2014 the Griffon Vulture presence in the area continued to increase with record numbers of simultaneously present individuals at the roosting site - 28 on 02 October 2014 and more than 70 exogenous individuals present for some time in different time of the year. Thus in total nearly 100 different Griffon Vultures were observed in Kresna Gorge in 2014 comprising birds released within the project, but also migrating, summering, wintering and vagrant vultures from other parts of the Balkan Peninsula. Marked birds from Israel, Greece, Serbia, Croatia and other parts of Bulgaria were observed again. Birds released in Kresna Gorge were observed in Serbia, Italy, Greece, and FYR of Macedonia, as well as other parts of Bulgaria (Vrachanski Balkan, Sinite Kamani, Central Balkan, Kotel, and Eastern Rodopi). This year the Griffon Vultures spent even more time in the National Parks of Rila and Pirin (at altitude above 2500 m) during the hot summer months, where they were recorded by the transmitters they carried, but also they were directly observed and photographed by tourists and park staff in the area of Vihren and Todorka peaks, Koncheto, Orlite and Spano Pole in Pirin National Park.

This year for second year in a row, Black Vultures (*Aegypius monachus*) were observed in the area of Kresna Gorge. Two different birds were photographed and their presence was well documented.

For the first time an Imperial Eagle (*Aquila heliaca*) was documented for more than 15 days at the feeding site in Kresna Gorge and the adjacent area.

No mortality cases of vultures were recorded in 2014 in Kresna Gorge, nor for birds released within the project.

Conservation measures for improving the habitat for vultures in Kresna Gorge are still underway – providing food for the vultures, anti-poison activities, compensation for farmers and prevention program against livestock depredation, eco-tourism promotion, insulation of dangerous power-lines, introduction of rare breeds of cattle, Fallow deer etc.

In 2015 the colony reached 22-25 birds including wintering Griffon Vultures from Serbia and Croatia and at the start of the breeding season a total of six pairs were formed, four of which built nests and two laid eggs. One of the pairs failed in incubation just ten days after the laying, while the other left the non-hatched egg 72 days after laying. An unsuccessful attempt again, but we hope that this is due to the fact that most of the birds in the pairs are still young – 4-5 years old.

CONCLUSION

For the period 2010-2015 the area of Kresna Gorge turned to be one of the most significant places for vultures in Bulgaria. It is now an important stepping stone for the migrating, wintering, summering and vagrant Griffon Vultures on the Balkans, as well as a safe refuge for non breeding Egyptian and Black Vultures. Such stepping stones are extremely important on the Balkans now, because of the recovery of Wolf population and the increasing conflict with the farmers which rises the threat of use of poisonous baits.

FWFF continues to work in the frame of the “Conservation of birds of prey in Kresna Gorge, Bulgaria” project supported by the LIFE financial instrument of EC and co-funded by private donors as Friends of Vienna Zoo, Austria and Bioparc Zoo de Doue, France.

List of the released publications for the Griffon Vulture reintroduction and the related results in Kresna gorge (2010 - 2015)

1. **Stoynov E., Peshev H.** 2011. Re-introduction of Griffon Vulture (*Gyps fulvus*) in Kresna Gorge of Struma River, Bulgaria, Annual Report 2010, *Fund for Wild Flora and Fauna, Blagoevgrad*. <http://fwff.org/griffon-vulture-reintroduction-in-kresna-gorge/>.
2. **Stoynov E., Peshev H.** 2012. Re-introduction of Griffon Vulture (*Gyps fulvus*) in Kresna Gorge of Struma River, Bulgaria, Annual Report 2011, *Fund for Wild Flora and Fauna, Blagoevgrad*. <http://fwff.org/griffon-vulture-reintroduction-in-kresna-gorge/>.

3. **Stoynov E., Peshev H.** 2013. Re-introduction of Griffon Vulture (*Gyps fulvus*) in Kresna Gorge of Struma River, Bulgaria, Annual Report 2012, *Fund for Wild Flora and Fauna, Blagoevgrad*. <http://fwff.org/griffon-vulture-reintroduction-in-kresna-gorge/>.
4. **Stoynov E., Peshev H.** 2014. Re-introduction of Griffon Vulture (*Gyps fulvus*) in Kresna Gorge of Struma River, Bulgaria, Annual Report 2013, *Fund for Wild Flora and Fauna, Blagoevgrad*. <http://fwff.org/griffon-vulture-reintroduction-in-kresna-gorge/>.
5. **Peshev H., Stoynov E.** 2015. Re-introduction of Griffon Vulture (*Gyps fulvus*) in Kresna Gorge of Struma River, Bulgaria, Annual Report 2014, *Fund for Wild Flora and Fauna, Blagoevgrad*. <http://fwff.org/griffon-vulture-reintroduction-in-kresna-gorge/>.
6. **Stoynov E., Grozdanov A., Peshev D.** 2011 First breeding of Griffon Vulture (*Gyps fulvus*) during the reintroduction activities in Kresna gorge. Youth scientific conference “Kliment’s Days”, November 2011, Conference proceedings book 2: 104-106.
7. **Stoynov E., Peshev H., Grozdanov A., Delov V., Vangelova N., Peshev D.** 2015. New data for the presence and numbers of some conservation dependent birds in Kresna Gorge with proposal of original method for individual identification of vultures. *Annuaire de l’Université de Sofia “St. Kliment Ohridski” Faculte De Biologie 2015*, volume, livre 4, pp. First National Conference of Biotechnology, Sofia 2014
8. **Stoynov E., Grozdanov A., Peshev H., Peshev D.** 2013. Present distribution and conservation specifics of the Egyptian vulture (*Neophron percnopterus* Linnaeus, 1758) in Southwest Bulgaria. *Bulg. J. Agric. Sci., Supplement 2*, 19: 259-261.
9. **Stoynov E., Peshev H., Grozdanov A.** 2014. Rare birds of prey observations in Kresna Gorge in Bulgaria. *Vulture news*, 66: 56 - 59.
10. **Stoynov E., Grozdanov A., Stanchev S., Peshev H., Vangelova N., Peshev D.** 2014. How to avoid depredation on livestock by wolf - theories and tests. *Bulg. J. Agric. Sci., Supplement 1*, 20: 129-134.
11. **Stoynov E., Peshev H., Grozdanov A., Vangelova N.** 2015. Five years overview of the reintroduction of Griffon Vulture *Gyps fulvus* in Kresna gorge, Bulgaria. *Vulture News*, 69: 33-39.

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8. Stoyanov, E., Peshev, H., Grozdanov, A., Delov, V., Vangelova, N., Peshev, D. 2015. New data for the presence and numbers of some conservation dependent birds in Kresna Gorge with proposal of original method for individual identification of vultures. *Annuaire de l'Université de Sofia "St. Kliment Ohridski" Faculte De Biologie 2015*, volume, livre 4, pp. First National Conference of Biotechnology, Sofia 2014.