Re-introduction of Griffon Vulture (*Gyps fulvus*) in Kresna Gorge of Struma River, Bulgaria

Annual Report 2012

Emilian Stoynov & Hristo Peshev
Fund for Wild Flora and Fauna- www.fwff.org

"Conservation of Birds of Prey in Kresna Gorge, Bulgaria" LIFE11 NAT/BG/363

Recommended citation

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.*

Summary

After the disappointing outcome from late 2011 the Griffon Vulture re-introduction project in Kresna Gorge continued with release of birds in 2012. The Griffon Vulture M60-X released in October 2011 and later observed suffering starvation near the Kerkini Lake in Greece was fed on place and successfully recovered. In May 2011 it returned on its own to the release and feeding site in Kresna Gorge and became the founder of a new nucleus of released and exogenous Griffon Vultures in the area. With new releases and attraction of exogenous birds the group of Griffon Vultures in Kresna Gorge is now consisted of 11 permanently present individuals. They are all young to breed in 2013, but the good point is that they seem very much attached to the area. This year we have a record of 16 Griffon Vultures seen together at the feeding site and 31 different individuals present for sometime throughout the year. Also the presence of the Griffon Vultures and the feeding site attracted rare species like the Egyptian Vulture (*Neophron percnopterus*) and the Red Kite (*Milvus milvus*).
In 2012 FWFF has started a new 5 years project called "Conservation of birds of prey in Kresna Gorge, Bulgaria" supported by LIFE+ financial instrument of EC and co-funded by private donors as Friends of Vienna Zoo, Austria and Zoo de Doue, France.

Transfers

On 06.08.2012 twelve Griffon Vultures were received from Green Balkans originating from Spain and France. Eight of these are releasable birds and four are handicapped non-releasable ones.

Releases

In 2012 in total 12 Griffon Vultures were released in Kresna Gorge- all of them transferred to the cage in 2011. Two of these were second time released after its first release in 2011 and re-entering the cage on its own. They adapted well and joined the returnee M60-X in the area. G48-C was released on 15.04.2012 and made company to M60-X until June 2012 when was found electrocuted. B31-U, B17-M, G48-E, B29-A were released on 24.06.2012. B19-C was released on 29.06.2012. B37-K, B35-P, B34-O were released on 25.07.2012. B25-E, B39-H, B36-I were released on 02.08.2012.
The presence of 31 different individuals Griffon Vultures at the feeding site throughout the year was recorded in 2012.

Figure 1.Releases and observations of the released Griffon Vultures in Kresna Gorge in 2011.

N	ID of the bird\ month	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	G48-C imm., (re-released)	x	x	†						
2	B31 – U imm., (re-released)			x	x	x	x	x	x	x
3	B17– M imm.			x	x	x	x	x	x	x
4	B19 – C imm.			x	x	x	x	x	x	x
5	B25 – E imm.					x	x	x	recap	
6	B29 – A imm.			x	x	BG	BG	BG	BG	BG
7	B34– O imm.				x	x	x	x	x	x
8	B35– P imm.				x	x	x	x	x	x
9	B36– T imm.					x	x	x	†	
10	B37– K imm.				x	x	x	x	x	x
11	B39– H imm.					x	x	x	x	x
12	G48- E imm.			x						
Total number		**1**	**1**	**6**	**7**	**10**	**10**	**10**	**10**	**8**

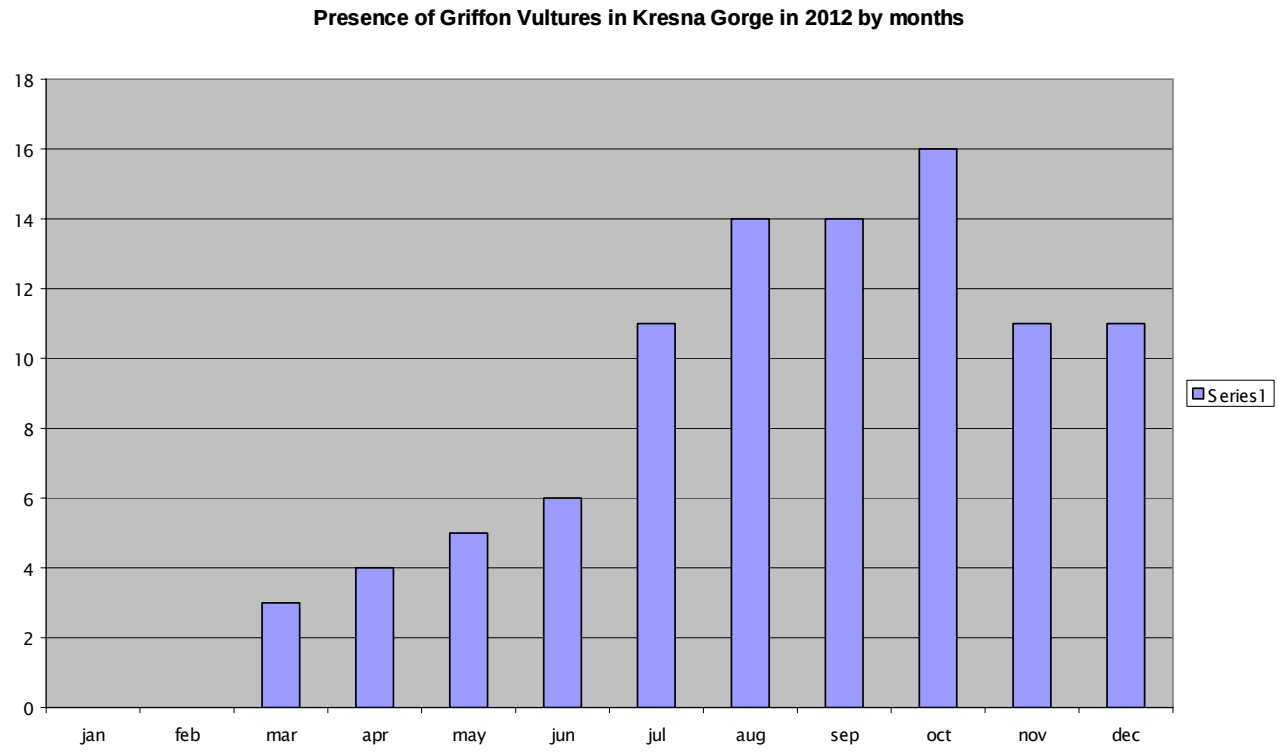
Figure 2. Previously released and exogenous Griffon Vultures observed in Kresna Gorge in 2011.

N	ID of the bird\ month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	M60 -X imm	Kerkini	Kerkini	BG	BG	x	x	x	x	x	x	x	x
2	Exogenous Serbian S046 - 12			x									
3	Exogenous Croatian CMZ					x							
4	Exogenous non marked 1			x		x							
5	G92 Exogenous Greek						x	x	x	x	x	x	x
6	Exogenous non marked 2				x	x							
7	Exogenous non marked 3				x								
9	G38 (released 2010)								IT	IT			
10	G46 (released 2010)					IT	IT						
11	G47 (released 2010)							SRB					
12	G10 (released 2010)						BG	BG					
13	Exogenous adult with metal ring								x				
14	**K56** Exogenous from Sinite Kamani NP, Bulgaria									x			
15	Exogenous Croatian CPS									x			
16	Exogenous Croatian CNV										x		
17	Exogenous non marked 4										x		
18	Exogenous non marked 5										x		
19	Exogenous non marked 6										x		
20	Exogenous non marked 7										x		
21	Exogenous non marked 8										x		
22	Exogenous non marked 9										x	x	x
23	Exogenous non										x	x	x

marked 10												
Number of identified birds (Table 1 and 2)	1	1	3	4	5	8	9	13	13	19	12	11
Highest number of birds observed at once at the feeding site	0	0	1	3	4	8	8	13	13	16	11	11
Total number of recorded birds	**1**	**1**	**3**	**4**	**6**	**8**	**10**	**15**	**14**	**20**	**14**	**12**

x – means observed in Kresna Gorge during the month.
Recap. – means recaptured in the cage, through the hole in the mesh.
BG- means observed in other place in Bulgaria.
Kerkini – Means observed in Kerkini National Park in Greece.
SRB- Means observed in Uvats Gorge in Serbia
IT- Means observed in NE Italy

Figure 3. Seasonal dynamic in number of Griffon Vultures in Kresna Gorge in 2011.



Monitoring techniques

The vultures were frequently observed at the feeding site and the known roosting sites.

In 2012 we continued to use blue wing tags with orange (enlightened to "gold") inscription of single letter (common letters for the Cyrillic and Latin alphabets) for the released birds. Concerning the rings we used the original rings (red with white codes) with which the birds were imported from Spain.

In case some of the birds in the cage lost its original ring, the EGVWG green rings with white letters were used.

Figure 4 and 5. The marking scheme for Griffon Vultures released in Kresna Gorge.

The wing tags and the rings were set to create a unique combination – e.g. ring on left leg, wing tag on left wing, and opposite and/or crossed. We put two wing tags to one of the birds. Thus even if it is impossible to see the codes, one could recognize the bird only by the situation of the rings and wing tags. The records of the observed birds are made as the number of the ring is followed by the letter of the wing tag (M60-X or B31-U).

In 2012 we succeed to introduce GPS-GSM tracking of some of the released vultures. Four birds were equipped with GPS-GSM transmitters, produced by Bulgarian company. The Griffon Vulture G48-C was the first to show us the foraging area and roosting sites as well as the reason of its death.
The other three just showed the extension of the foraging area and some occasional longer distance movements to Greece, FYROM and Serbia.

The definition of the area of presence and the foraging area helps us to address conservation measures such as the compensation of depredated livestock to avoid poison baits use, public awareness raising and insulation of the dangerous powerlines.

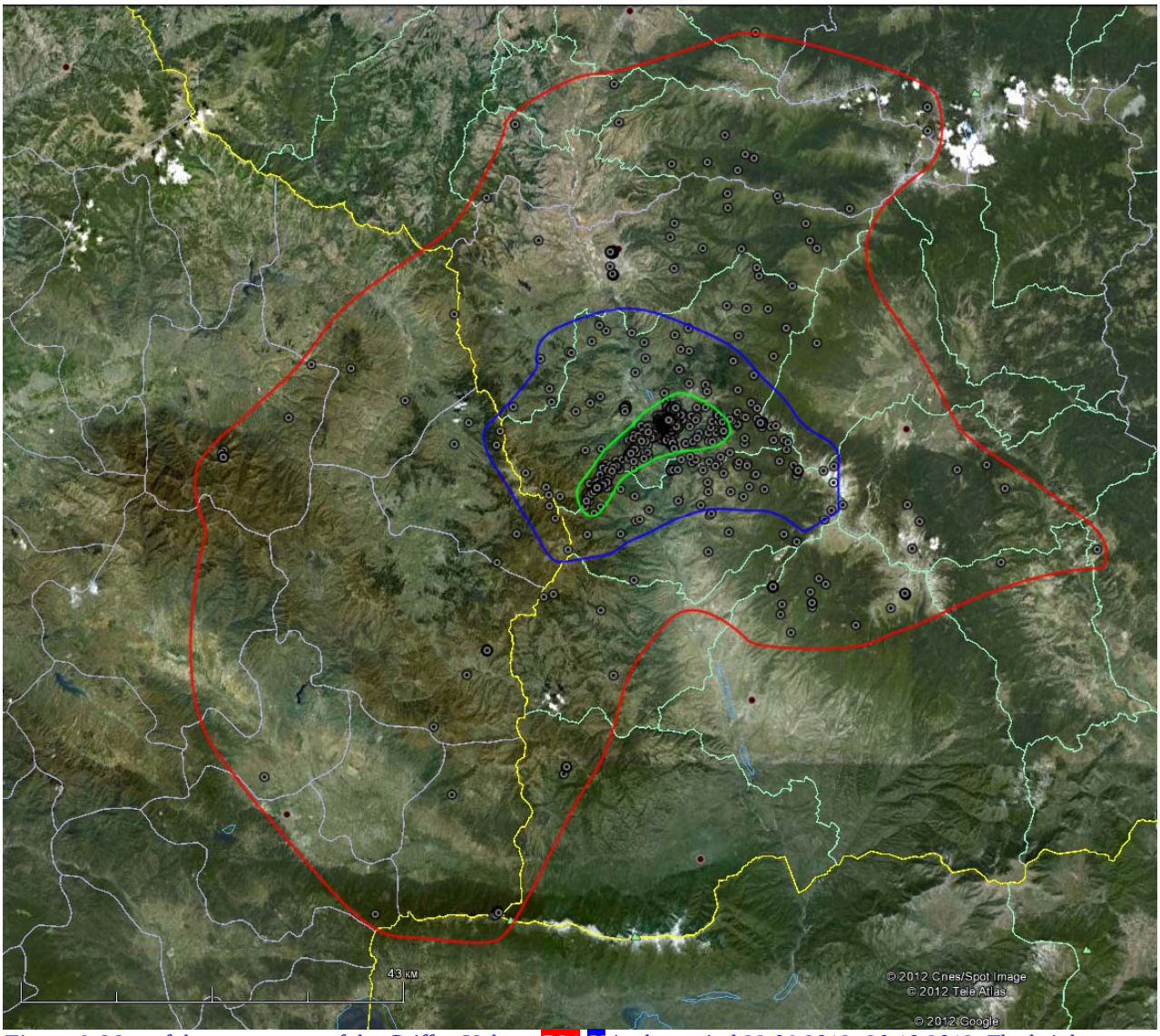


Figure 6. Map of the movements of the Griffon Vulture B31-U in the period 22.06.2012- 30.10.2012. The bright green polygon shows 80% of the presence, the blue polygon shows 98% of the presence and the red one shows 100% of the presence. The yellow lines are the borders of Bulgaria with Greece to the south and Bulgaria-FYROM to the west.

However the use of these particular transmitters seems not reliable enough, because we were loosing the data any time the tracked vulture was leaving the territory of Bulgaria and the net coverage of the Bulgarian GSM operator. This happened with or without switched “roaming”. The other problem was the self partial release of the transmitter. In two of the cases the transmitter went partly unattached and endangered the birds until its complete detachment.

Figure 7. Picture of the Griffon Vulture B31-U in flight. Note the partly untied GPS-GSM transmitter on its chest.

We continued to use digiscoping and took pictures of all observed birds with 300, 450 and 600 mm lenses in RAW format. After that digitally enlarged on the screen and improved through Adobe PhotoShop we found the number of the photographed birds either pictured from a hide or in flight or anywhere. Taking pictures from a hide on the feeding site allowed us to read even standard ornithological rings.

This year we used a camera trap to the feeding site and counted and recognized the present individual Griffon Vultures. With the help of the camera trap we noticed that the Griffon Vultures fed and drunk water during the night at about 3.00 o'clock during the hottest days of August, when the temperature of the air was about 42°C.
Thanks to the camera trap we also detected the presence of European Hedgehog (*Erinaceus concolor*) and the Red Fox (*Vulpes vulpes*) at the feeding site during the night. Unfortunately the camera trap we used frequently got out of order and seems not reliable equipment for long-term monitoring.

Figure 8 and 9. Griffon Vultures pictured at the feeding site in Kresna Gorge with camera trap during the day and night.

Mortalities and injuries

In 2012 two cases of dead Griffon Vultures were recorded. The reasons for the death of both of them was electrocution on 20 kV powerlines. On 26.06.2012 G48-C was found dead under a pylon of 20 kV powerline with an obvious signs of burning on its leg. On 06.10.2012 an exogenous juvenile Griffon Vulture was found dead under a pylon of a 20 kV powerline on 200 meters from the previous one. A communication with the powerline owning company was started and it is expected perch discouragers to be attached soon.

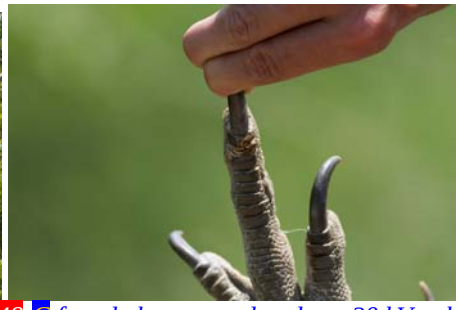




Figure 10, 11 and 12. Griffon Vulture G48-C found electrocuted under a 20 kV pylon in Kresna Gorge.

B36 – T that was released in Kresna Gorge on 02.08.2012 was observed to perch on a roof of a house on 05.10.2012 in the village of Krupnik close to the Gorge. Despite our attempts to capture it and/or to let it fly away and return to the Gorge the bird always perched on the next roof of the houses in the village. Few days later the bird disappeared and we have no information about it onwards. We suspect a Golden Eagle attack over that bird, which lead it to land in the village. For few days at that time the group of the vultures were severely attacked and mobbed by a new formed pair of Golden Eagles in the northern part of the Gorge, where the most used roosting site for the Griffons was.
The case was used for increasing the local public awareness on the project and vulture conservation and many newspapers and TV channels presented the exotic situation.


Figure 13 and 14. The Griffon Vulture B36 – T perching on a roof of a house in the village of Krupnik close to Kresna Gorge.

G92 a Griffon Vulture from Nestos Gorge in Greece (see chapter "*Attracted Exogenous birds*" bellow) became a common visitor to the feeding site in Kresna Gorge. On 15.12.2012 while feeding at the feeding site this bird flew away with a hanging leg that seemed broken.

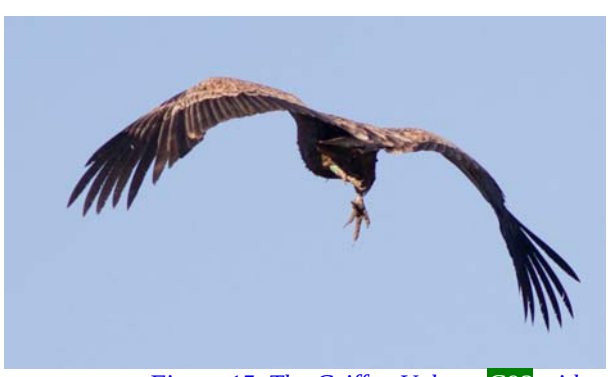



Figure 15. The Griffon Vulture G92 with a hanging leg – probably broken.

Dispersals

M60 – X was nearly exhausted three weeks after the release (22 October 2011) in Kresna Gorge when it was found in Kerkini National Park in Greece and fed up for few weeks by the Park authority. It was in the area from 18.11.2011 to mid December 2011 when was fully recovered and was flying better and better – Reported by Theodoros Naziridis – Kerkini National Park Authority, Greece. Later the bird was seen in the area of Prmahonas on the Bulgarian-Greek border where it seems it was feeding on road kills. Food was twice provided by our team. In late February it moved back to Bulgaria and stayed for three weeks near Rupite, where it was fed by our team and local enthusiasts four times. In early May 2012 the bird finally returned to the feeding and release site in Kresna Gorge and settled there.

G10 that was released on 21.09.2010 in Kresna Gorge was observed on 07.06.2012 at the feeding site of Sinite Kamani NP, near Sliven (400 km from the release site) – Reported by Green Balkans – Vultures Return in Bulgaria project. The same bird was later observed in Eastern Rhodopes (120 km South from Sliven and 280 km east from Kresna Gorge) at a feeding site on 31.07.2012 – reported by Hristo Hristov.

G38 that was released on 21.09.2010 in Kresna Gorge was observed in NE Italy at feeding site on 19.08.2012 (stayed there for two months) – Reported by Fulvio Genero.

G46 that was released on 20.02.2010 in Kresna Gorge was observed in NE Italy at feeding site on 05.05.2012 (stayed there for two months) – Reported by Fulvio Genero.

G47 that was released on 20.02.2010 in Kresna Gorge was observed in Uvats Gorge, Serbia at the feeding site on 06.07.2012 – Reported by Irena Hribsek and Sasha Marinkovich.

B29-A that was released on 23.06.2012 in Kresna Gorge was observed on 21.08.2012 at the feeding site of Sinite Kamani NP, near Sliven (400 km from the release site)- Reported by Elena Kmetova - Green Balkans – Vultures Return in Bulgaria Project. Later the bird was several times observed to Sinite Kamani and Kotel – Reported by Lachezar Bonchev – FWFF - Vultures Return in Bulgaria Project LIFE 08 NAT /BG/ 278.

Figure 16. B29-A photographed at the feeding site in Sinite Kamani Nature Park by camera trap set up by Green Balkans within the Vultures Return in Bulgaria Project.

Breeding

No breeding attempts of Griffon Vultures have been recorded in Kresna Gorge in 2012. Breeding displays of newly formed pair of subadult birds were observed in December 2012.

Attracted exogenous birds

Three Griffon Vultures ringed in Croatia, one ringed in Serbia, one in Greece and one in Sinite Kamani Nature Park in Eastern Bulgaria were observed in Kresna Gorge in 2012. One adult Griffon Vulture with metal ring on its left leg was also present at the feeding site for two times, but its origin is uncertain. More than 15 different non marked young (juveniles and immature) Griffon Vultures were present in the Gorge for some time throughout the year. Two of the last (juveniles) remained in the area for the winter period 2012-2013.

On 15-th of March 2012 a Griffon Vulture ringed in Uvats Gorge in Serbia (Sasha Marinkovich, Irena Hrisbek pers. comm.) was observed above the town of Kresna – it wore a yellow wing-tag with green inscription 12. The observation was reported by Ivaylo Dimtchev, Desislava Stefanova, Boyko Neov and Zlatin Marinov.

CMZ – a Griffon Vulture ringed as a juvenile in the nest (2011) on Plavnik Island in Croatia (Goran Susic pers. comm.) was present at the feeding site in Kresna Gorge on 4-th of May 2012. This bird was observed to overwinter in Israel by Ohad Hatzofe.

G92 – a Griffon Vulture captured as juvenile near Nestos Gorge in Greece in 2010 rehabilitated in the Helenic WildlIfe Hosptial and released back on the same place in 2011 was present frequently at the feeding site in Kresna Gorge since 14-th of June 2012.

K56 – a Griffon Vulture released in Sinite Kamani Nature Park in Eastern Balkan in Bulgaria was present at the feeding site in Kresna Gorge on 12-th of September 2012.

CPS – a Griffon Vulture ringed as a juvenile in the nest (2012) on Cres Island in Croatia (Goran Susic pers. comm.) was present at the feeding site in Kresna Gorge on 20-th of September 2012.

CNV – a Griffon Vulture ringed as a juvenile in the nest (2012) on Krk Island in Croatia (Goran Susic pers. comm.) was present at the feeding site in Kresna Gorge on 11-th of October 2012.

Other species

The Griffon Vultures presence and the feeding site became a reason for attraction and observations of other rare and threatened species in the area like the Lanner and Eleonora's Falcons, Black Kite, Red Kite and Egyptian Vulture.

A subadult Egyptian Vulture was first observed on 28-th of April 2012 and since then it was frequently present at the feeding site in Kresna Gorge until 23-th of July 2012.

Figure 17and 18. The Egyptian Vulture that was present at the feeding site in Kresna Gorge for nearly three months in the summer of the year 2012 was frequently seen to mob after Common Buzzards, Ravens and Griffon Vultures.

A Red Kite (*Milvus milvus*) was observed at the feeding site in Kresna Gorge on 20-th of November 2012. This is the first known record of the species in the area.

Interspecific competition

In October 2012 nearly 200 ravens gathered at the feeding site in Kresna Gorge. They frequently chase the Griffon Vultures, but they have found their way to visit the feeding site and to feed. Just more food should have been deposed as the ravens extract large quantities of meat from the feeding site every day. About 10 Common Buzzards on their turn were chasing the ravens and were trying and frequently succeeded to still the food they brink (*cleptoparasitism*).

The Egyptian Vulture was frequently attacking the Griffon Vultures near the feeding site.

In 2012 a new pair of Golden Eagles established its territory in the northern part of Kresna Gorge. The eagles' attacks over the vultures increased in late September with the drop of the temperatures. The decrease of temperatures minimized the possibility to vultures to soar, while in the same time increased the demand for alternative food sources for the eagles. Thus they frequently visited the feeding site and chase the vultures away from it as well as from thir close-up roosting sites. When the Golden Eagles visit the feeding site in the evening the Griffon Vultures take off in panic and fall in lower altitudes (because there is unfavorable conditions for soaring at that time) and perch on electric pylons or close to villages. In November the group of 11 Griffon Vultures moved their roosting site at a 400 kV pylons, out of the Gorge (1.8 km from the feeding site), where they were no longer mobbed by Golden Eagles and/or Ravens.

Feeding

In 2012 we succeed to organize feeding of vultures 2 to 3 times a week. This has proven to be the most important factor for attachment of the new formed group in the area. Corpses of dead animals collected in the villages around the Gorge are used to feed the vultures, but also slaughter offal from slaughterhouses of the towns of Blagoevgrad and Razlog. When larger animal corpse is available during the summer months, meat was preserved in a freezer and disposed in smaller quantities more frequently. About 15 tons of carcasses and slaughter offal were deposed at the feeding site in 2012.
Establishment of two more feeding sites along Kresna Gorge is planned for 2013.

Along with direct vulture re-introduction actions we are working on re-introduction of the Fallow Deer (*Dama dama*) as a natural food source for wolves and vultures. Having this species back into the nature of Kresna Gorge it is believed the depredation over livestock and the consequent man/predators conflict will be minimized. Thus food for vultures will be available and no poison baits used. Also a sheep and goats and a cattle herds have been established and the livestock is grazed close to the Gorge to maintain the habitat for tortoises, hares, and finally for vultures.

Overview

With the release of well attached to the area immature Griffon Vultures in 2012 and the attraction of more and more exogenous birds the Kresna Gorge is now a host of 10 to 30 Griffon Vultures throughout the year.
About ten 20 kV electric pylons should be equipped with perch discouragers in 2013 and next group of 8 to 10 birds to be released in spring.
The permanent feeding two to three times a week seems very important to fix the birds in the area and it should continue until stable colony of about 10 pairs is established.
The spontaneous return of the Egyptian Vulture should be boosted with release of birds bred in captivity.
The actions for establishment of wild population of Fallow Deer and establishment of extensive raised sheep and cattle herds should continue.
Establishment of two more feeding sites along the Kresna Gorge is necessary to disperse the ravens and golden eagles and to give chance the vultures to feed at any season.

Acknowledgements

Since June 2012 the action is supported by the LIFE+ financial instrument of EU within the project “Conservation of Birds of Prey in Kresna Gorge” LIFE11 NAT /BG/363, and is co-financed by Friends of Vienna Zoo, Austria and Bioparc Zoo de Doue, France.
At different stages the project was financially supported by:
Deutche Bundesstiftung Umwelt (DBU), Frankfurt Zoological Society (FZS), Foundation Ensemble, Rufford Small Grants (RSG), Whitley Fund for Nature (WFN), Vulture Conservation Foundation (VCF), Zoo Sainte de la Croix, and others.
We are grateful to GREFA (Ernesto Xsusto and Manuel Crespo) and Spanish Government for the Griffon Vultures provided for release.
We are also grateful to all colleagues and nature lovers that provided information for observed Griffon Vultures: Theodora Skartsi – WWF Greece, Dadia Project; Marin Kurtev – BSPB; Ivailo Dimchev – BSPB; Atanas Grozdanov- Sofia University; Rosen Aleksov – RIEW Blagoevgrad; Theodoros Naziridis – Kerkini National Park, Greece; Goran Susic – Caput Insulae, Beli, Croatia; Sasha Marinkovic and Irena Hrisbek – Birds of Prey Protection Fund, Serbia, Ohad Hatzofe – NPA, Israel and others.