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

Annual Report for (poisonous) **2017**

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“Bright Future for the Black Vulture in Bulgaria” LIFE14 NAT/BG/649
Report on Action D2 – “Monitoring the impact on indicator species”

BRIGHT FUTURE FOR THE BLACK VULTURE

Vultures back to LIFE

LIFE14NT/BG/649

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Резюме

Това е отчетът за осмата година от началото на реинтродукцията на белоглавия лешояд (*Gyps fulvus*) в Кресненския пролом, която беше започната в началото на 2010 и се изпълнява от Фонд за дивата флора и фауна. Той е част от отчета по Дейност Д2 на Проект „Нов живот за лешоядите" LIFE14NAT/BG/649.

През 2017 г. броят на зимуващите белоглави лешояди през зимния сезон 2016-2017 беше рекордно висок – над 50 птици, достигащи на моменти над 60. Около 10 двойки проявяваха брачно поведение и минимум 4 снесоха яйца до средата на месец март 2017, когато настъпи най-голямото документирано отравяне на белоглави лешояди на Балканския полуостров. От 12 март 2017 до началото на април същата година, бяха намерени труповете на 18 белоглави лешояди, а липсващите и косвено установени жертви са общо над 30 индивида. Бяха установени няколко „огнища" на тровене с цел избиване на вълци, край селата Стара Кресна, Крупник и Церово, но лешоядите са били изтровени, най-вероятно на едно и също място до село Церово на минимум три последователни етапа. Докато в първите два района са били използвани малки примамки (парчета месо) и затова са били отровени предимно вълци, лисици и кучета, в района на Церово примамката е била цял труп на крава, обилно наръсена с отрова и останала действаща на терена в продължение на повече от две седмици. Въпреки широкото медийно отразяване и масова обществена реакция срещу това посегателство срещу природата, следствените действия на правоохранителните органи не доведоха до резултат.

Този инцидент беляза 2017 години като катастрофална за колонията на белоглавия лешояд в Кресненския пролом, където загинаха и птици от други колонии, които зимуваха тук – няколко птици от Врачански Балкан, включително първото въобще маркирано малко излетяло от гнездо в района, една птица от Източни Родопи и по няколко от Македония и Сърбия. За щастие, добре прецезираните и основани на все по-добро познаване на вида управленски подходи приложени от ФДФФ и сродни организиации, дадоха резултат и колонията беше съхранена. Останалите живи 5-8 птици, които са носители на социалната памет на колонията от Кресненския пролом бяха консолидирани в ново ядро, чрез незабавно освобождаване на още 6 белоглави лешояди и с продължаване на подхранването към края на 2017 местната група

наброява между 15 и 35 инидивда. За контрол и превенция на отравянията беше въведено масово използване на прецизни и интензивно събиращи и предаващи информация сателитни предаватели.

Други важни моменти от процеса на реинтродукция на белоглавия лешояд в Кресненския пролом за 2017 са както следва:

1.) Беше доказан и трайно установен обмена на птици между колонията на вида в Демир Капия – Македония и Кресненския пролом – вече приемани части от една обща суб-популация;

2.) Благодарение на поставените предаватели беше открита нова, неизвестна досега колония на вида Македония - Чатино.

3.) За поредна година бяха регистрирани голям брой непуснати в рамките на проекта белоглави лешояди - „гости", посетили Кресненския пролом за определено време през годината – над 100 индивида. Така заедно с пуснатите в рамките на проекта, общият брой белоглави лешояди регистрирани през 2017 година в Кресненския пролом надхвърля 130 индивида;

4.) За пета поредна година бяха наблюдавани черен лешояд (*Aegypius monachus*) и египетски лешояд (*Neophron percnopterus*) в Кресненския пролом.

За поредна година бяха наблюдавани маркирани белоглави лешояди от Израел, Гърция, Сърбия, Хърватска и от други части на България (вкл. Източни Родопи и Врачански Балкан).

На свой ред индивиди пуснати и/или маркирани в Кресненския пролом бяха наблюдавани в Сърбия, Израел, Турция, Италия, Гърция, Македония, както и в други части на България (Врачански Балкан, Сините камъни, Котел и Източни Родопи).

През тази година за първи път беше установена птица, която естествено (на собствен ход и своя воля) е пристигнала от Испания и беше наблюдавана на площадката за подхранване в Кресненския пролом.

И тази година, макар в намален състав заради отравянето през март, белоглави лешояди бяха наблюдавани през най-горещите месеци от годината във високите части на Рила, Пирин и Осогово.

През 2017 в Кресненския пролом бяха уловени и маркирани с предаватели 5 диви белоглави лешояди, чието проследяване ни разкри голяма част от районите на обитание на

вида на Балканите – в Сърбия, Гърция, Македония и България. Включително една от тези птици загина от токов удар в Турция, показвайки част от заплахите за мигриращите птици. Друга птица, маркирана с предавател по проекта, излюпена в колонията на вида край Месолонги (ЮЗ Гърция), направи обиколна миграция заобикаляйки СИ части на Средиземно море и през Северна Гърция и Босфора достигна до Саудитска Арабия и границата с Йемен.

Продължават дейностите по подхранване на лешоядите (над 54 тона харна в 190 подхранвания, средно 15.5 (от 8 до 23) подхранвания месечно, както и дейности по предотвратяване на конфликта между животновъди и хищници и дейности за увеличаване на дивеча и екстензивното животновъдство.

Природозащитните дейности на ФДФФ в района продължават в рамките на проект „Нов живот за лешоядите" LIFE14 NAT/BG/649, под ръководството на Зелени Балкани – Стара Загора, финансиран от финансовия инструмент LIFE на ЕС, в партньорството на Фондацията за опазване на лешоядите (VCF), Евронатур (EuroNatur) и правителството на Екстремадура (Goberno de Extremadura) и съ-финансиран от френските зоопаркове Bioparc de Doue (Биопарк де Доуе) и Зоопарк Sainte Croix и ирландския тръст „The Nelson Settlement" от Дъблин. За съжаление, въпреки че основната цел на Проекта е възстановяването на черния лешояд, този вид няма да бъде освобождаван в Кресненския пролом в близките години (както беше първоначално предвидено), поради опасността от отравяне.

Abstract

This is the eighth year of the Griffon Vulture *Gyps fulvus* reintroduction into the Kresna Gorge, which was begun at the beginning of 2010 and is run by the Fund for the Wild Flora and Fauna (FWFF). It is part of the report of Action D.2 of the project "Vultures Back to LIFE" LIFE14NAT/BG/649.

In 2017, the number of wintering Griffon Vultures during the winter season 2016-2017 was a record high - over 50 birds with some moments of reaching over 60. About 10 pairs were expressing breeding behaviour and at least 4 laid eggs until mid-March 2017, when the largest documented poisoning event of Griffon Vultures in the Balkan Peninsula has happened. From 12 March 2017 to early April of that year, the bodies of 18 Griffon Vultures were found, and the missing and indirectly identified victims were more than 30 individuals. Several cases of poison baits application to kill wolves were registered near the villages of Stara Kresna, Krupnik and Tserovo, but all the vultures were poisoned, probably in the same place near the village of Tserovo in at least three consecutive stages. While small baits were used in the first two regions and affected mostly wolves, foxes, and dogs, in the area of Tserovo the poison was set in a corpse of a dead cow that remained as active bait on the ground for more than two weeks. Despite the wide media coverage and mass public response to this encroachment on nature, law enforcement investigations did not result.

This incident marked 2017 year as a catastrophe for the colony of the Griffon Vulture in the Kresna Gorge, where birds from other colonies were killed too - several birds from Vrachanski Balkan, including the first marked chick from a nest in the region, a bird from the Eastern Rhodopes and several from Macedonia and Serbia. Fortunately, well-thought out and based on high standards for management and an increasing knowledge on the species applied by FWFF and related organizations resulted in colony reconsolidation and sustaining. The remaining 5-8 birds, bearing the social memory of the colony of the Kresna Gorge, were consolidated into a new core by immediately releasing six more Griffon Vultures and by continuing feeding. At the end of 2017, the local group ranged between 15 and 35 years. For the control and prevention of poisoning a massive use of precise and intensive collecting and transmitting satellite transmitters was introduced.

Other important moments from the reintroduction process of the Griffon Vulture in the Kresna Gorge for 2017 are as follows:

1.) The bird exchange between the colony of the species in Demir Kapia - Macedonia and the Kresna Gorge has been proven and permanently established - already the two sites are considered as parts of a common sub-population;

2.) Thanks to the set transmitters, a new colony of the Griffon Vulture was discovered in FYR Macedonia – in the area of Chatino – 20 km southwest of the well known colony in Demir Kapia.

3.) Over 100 Griffon Vultures not-released within the project – so called "guests" have visited the Kresna Gorge for a certain time of the year. Thus, together with the ones released in the project, the total number of Griffon Vultures registered in 2017 in the Kresna Gorge exceeds 130 individuals;

4.) For the fifth consecutive year, a black vulture (*Aegypius monachus*) and an Egyptian vulture (*Neophron percnopterus*) were observed in the Kresna gorge.

In 2017, marked Griffon Vultures from Israel, Greece, Serbia, Croatia and from other parts of Bulgaria (including Eastern Rhodopes and Vratsa Balkan) were again observed in Kresna Gorge.

Individuals released or captured and marked in the Kresna Gorge were observed in Serbia, Israel, Turkey, Italy, Greece, Macedonia, as well as in other parts of Bulgaria (Vrachanski Balkan, Sinite kamani, Kotel and Eastern Rhodopes).

This year, for the first time, a bird was recorded to naturally (on its own initiative and will) arrived from Spain and was observed at the feeding site in the Kresna Gorge.

This year, although in reduced number due to the poisoning in March, Griffon Vultures were observed during the hottest months of the year in the high parts of Rila, Pirin and Osogovo.

In 2017, in the Kresna Gorge, 5 wild Griffon vultures were captured and marked with transmitters, the tracking of which revealed to us a large part of the areas of the species home-range on the Balkans - in Serbia, Greece, Macedonia and Bulgaria. One of these birds died of an electric powerline in Turkey, showing some of the threats to migratory birds. Another bird, tagged with a project transmitter hatched in the colony near Mesolongi (SW Greece), made a loop migration bypassing the north-eastern part of the Mediterranean Sea and through northern Greece and the Bosphorus reached Saudi Arabia and the border with Yemen.

Vulture feeding site maintenance continued in 2017 with over 54 tons of carcasses in 190 feeding events, an average of 15.5 (8 to 23) per month. Other activities to prevent conflict between livestock breeders and predators, and activities to increase wildlife and extensive livestock breeding continued.

The FWFFs nature conservation activities in the area continued under the "Bright future for the Black Vulture" - LIFE14 NAT/BG/649 project, under the leadership of Green Balkans - Stara Zagora, funded by the EU LIFE Financial Instrument, in the cooperation with Vulture Conservation Foundation, EuroNatur and Goberno de Extremadura, and co-funded by the French zoos - Bioparc de Doue and Sainte Croix Zoo and the Irish Trust "The Nelson Settlement" from Dublin.
Unfortunately, although the main objective of the Project is the recovery of the Black Vulture, this species will not be released in the Kresna Gorge in the coming years (as originally foreseen) due to the danger of poisoning.

Key words: Eurasian Black Vulture, *Aegypius monachus*, Egyptian Vulture *Neophron percnopterus,* poison, Pirin National Park, Rila National Park

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Transfers

In 2017, in total 28 Griffon Vultures – five captive bred (two from Paris Zoo and three from Barcelona Zoo) and 23 rehabilitated - 3 from Spain and 20 from France (Hegalaldia) were transferred to the acclimatization aviary in Kresna Gorge. Two of these, but also one imported in 2014 were transferred for captive breeding in Sofia Zoo (two non-releasable ones) and one was transferred for release in Vrachanski Balkan.

Releases

In 2017, six Griffon Vultures were released in Kresna Gorge. Three of them were captive bred – two in Barcelona Zoo, Spain (Pirineo – B70 and Barca - B71), one in Paris Zoo, France (Paris – P), while three others were rehabilitated birds – two from Spain (K9U and K2M) and one from France (HZ).

The Griffon Vulture F88-56 was recaptured in March 2017 and after successful treatment of poisoning it was released again in June 2017.

All they adapted well and were permanently present at the feeding site in Kresna Gorge until the end of the year.

Table 1. Released Griffon Vultures and their observations in 2017 in Kresna Gorge

N	ID of the bird\ month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	B70							x	x	x	x	x	x
2	B71					x	x	x	x	x	x	x	x
3	P					x	x	x	x	x	x	x	x
4	F88-56	x	x	recap	x	x	x	x	x	x	x	x	x
5	K9U					x	x	x	x	x	x	x	x
6	K2M						x	x	x	x	x	x	x
7	HZ												x

**recap - means the bird was recaptured*

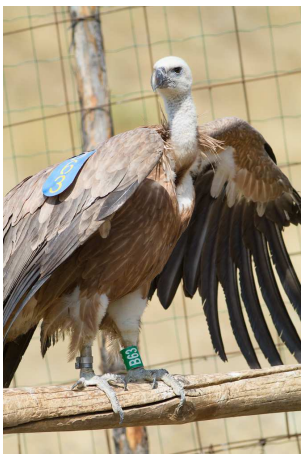
Monitoring

Methods

The vultures were frequently (every 2 to 4 days) observed by binoculars and spotting scopes at the feeding site and the known roosting sites.

In 2017 we continued to use blue wing-tags with orange (enlightened to "gold") inscription with three and two vertically set symbols of a digit and a letter and vice versa (common letters for the Cyrillic and Latin alphabets) as follows: B69, 1H, 2H, C1, HZ and the like.

Figures 1, 2, 3 and 4. The marking scheme for Griffon Vultures released in Kresna Gorge in the period 2013-2017.




In 2017 we fitted GPS/GSM transmitters to three more released within the project and another five wild captured Griffon Vultures mainly as a reaction to the poisoning incident in March 2017. The action is considered more as a tool to avoid poisoning of large groups of birds and finding the poison baits and perpetrators, then just establishing the home-range, that is why very frequent data logging was elaborated (such as taking GPS fixes every 5 to 10 minutes and logging the data every 1 to 4 hours). For the purpose of PR we use the term "poison spy agents" for the birds equipped with transmitters.

We continue to use local people and tourists' reports about observations of vultures to keep track on vultures' whereabouts in the area. In 2017, the initiated a year earlier Facebook request for people who visit the mountains to report their sightings and pictures of the vultures, was again in use.

This year we continued to use a camera trap to the feeding site and counted and recognized the present individual Griffon Vultures. We succeeded to take pictures of vultures that we were unable to recognize from a distance, as well as to take pictures of other animals using the feeding site.

Digiscoping and determination of different individuals

We continued to use digiscoping and took pictures of all observed birds with 400 mm Canon lenses and Canon 7D camera in RAW format. After that digitally enlarged on a PC screen and improved through *Adobe PhotoShop* we found the number of the photographed birds either pictured from a hide or in flight or anywhere.

We continued using the sophisticated "***visual marking***" method (Stoynov & Peshev 2014). We made several thousand photographs of Griffon Vultures, but also of Black Vultures, Egyptian Vultures, Eagles and others mostly in flight with the goal to determine the different individuals. After removing the inappropriate pictures, remained more than 5000, which were catalogued with *Adobe LightRoom*.

Marking of wild vultures

To establish the origin of wild Griffon Vultures present in Kresna Gorge as well as to follow with which age groups the released Project birds are dispersing we capture and mark the birds on passage through a hole in the aviary's roof mesh in a manner described by (Iezekiel, Woodly & Hatzofe 2003). Blue wing-tags and green rings were used, as well as GPS/GPRS tags, when available.

Results

In early 2017 the number of Griffon Vultures in Kresna Gorge was a record high – up to 60 individuals. Many wild ones ("guests") joined the colony for the winter and the cold and snowy weather let to large livestock losses and thus plenty of food not only at the feeding site (up to 10 tons in February 2017), but also around the villages in the region. Record number of birds expressing breeding behaviour was established of some 10 pairs in two distinct colonies. The In March 2017 a large poisoning incident appeared in the area (see chapter "Mortalities" bellow, for details) and in two weeks 18 Griffon Vultures were found dead and about 30 are considered to have become victims. This directly ruined the colony and even the non-breeding nucleus of Griffon Vultures in the area was nearly destroyed. The two known pairs incubating eggs lost their partners and soon after the breeding season for them was compromised. Thus in April 2017 about 5-8 birds from the colony and non-breeding birds from the nucleus in Kresna Gorge remained alive and some of the guests dispersed. To consolidate the nucleus again, we shortly released first 3 and later another 3 Griffon Vultures equipped with GPS/GPRS transmitters. In the same time the migration of the species started and the flow of birds on passage increased the number of the birds in the area to 14-20. Also some missing for some time birds arrived back (e.g. the very first chick fledged in Kresna Gorge in 2016 - B74-XX) and it seems that the colony/nucleus was re-established. In the next months the visits of birds from Demir Kapia colony in FYR Macedonia (FYROM) to Kresna Gorge and vice versa was very intensive, as our partners of Nature Conservation Association "Aquila" (NCA Aquila) intensified the provision of food for the vultures at the feeding site Vitachevo. The idea was to attract as mush as possible birds from Kresna Gorge and to keep them away from the poison in the area.

The frequent communication and the usage of the two feeding sites – Vitachevo in FYR Macedonia and Kresna Gorge in Bulgaria, was proved also by the GPS/GPRS transmitters. Some birds were moving between the two sites on a daily basis. Obviously breeding birds in Demir Kapia were coming to take food at the feeding site in Kresna Gorge. Also with the help of non-breeding wild Griffons captured and tagged with GPS/GPRS in Kresna Gorge was discovered a small new colony in FYR Macedonia in the area of Chatino south from the Vitachevo feeding site. This new colony of 2-3 pairs

was confirmed by Emanuel Lisichanets from NCA Aquila, who at the time reported about 10 pairs at Demir Kapia. So, in total 12-13 pairs bred in FYROM in 2017. We can't confirm that some pairs or partners from pairs were lost during the poisoning incident in Kresna Gorge, but it is likely.

Despite the great loss from the poisoning incident – the biggest recorded in Balkans, the Griffon Vulture nucleus in Kresna Gorge was saved and it was successfully re-established. Many factors were important:

a.) the presence of survivals that kept alive the social memory for the colony and connections with other sites;
b.) the presence of floaters from migrating source populations like Uvats in Serbia and Eastern Rhodopes in Bulgaria;
c.) the presence of active colonies in FYR Macedonia (Demir Kapia and Chatino) at about 90-100 km from Kresna Gorge;

but some more factors (listed bellow) were crucial and available in Kresna Gorge and made difference from the extinction due to poisoning in 2012 and its inability of re-establishment of the similar Nestos Gorge Griffon Vulture colony in Greece. The last also had the above mentioned three factors in-kind, but the important missing ones are as follows:

d.) Concentration spot – the feeding site and the aviary with Griffon Vultures kept in captivity close to suitable roosting sites;
e.) Release of some more birds in the very first moment to fill up and consolidate the local nucleus;
f.) Trans-border cooperation of dedicated teams and coordinated feeding sites maintenance;

So, despite the poisoning and the nearly complete destruction of the colony, the registered presence of minimum 22 exogenous marked and minimum of 72 unmarked individuals (guests) for some time in different periods of the year resembles the result from 2016. Thus, in total, minimum 130 different Griffon Vultures have again been observed in Kresna Gorge in 2017 including released within the project, but also migrating, vagrant, wintering or summering birds form other parts of the Balkan Peninsula and on naturally arrived from Iberian Peninsula.

Marked birds from Israel, Greece, Serbia, Croatia and other parts of Bulgaria have been observed.

First time ever, a Griffon Vulture originating from Spain and arrived on its own was observed at the feeding site in Kresna Gorge on 29.09.2017. The bird 8A6 has been rehabilitated in Burgos, Spain as juvenile in 2007 and 10 years later appeared in Kresna Gorge. Some more news about this bird's journey and fate through Europe are about to be published from our colleagues.

Birds released in Kresna Gorge were observed in Serbia, Greece and FYR of Macedonia as well as other parts of Bulgaria (Vrachanski Balkan, Sinite Kamani, Central Balkan, Kotel, and Eastern Rhodopes). This year too, the Griffon Vultures spent the hottest summer months in Pirin National Park and sometimes in Rila National Park. However, a competition of the mentioned high-mountains was discovered and well documented. A summering group of Griffon Vultures from Mariovo and Demir Kapia regions in FYR Macedonia was once again observed in Kaymakchalan – a high mountain (>2,500m) with large treeless zone, full of free-ranging livestock. Congregations of summering Griffon Vultures in this area was reported previously, and now it was well documented by GPS/GPRS tracked birds and visits of Pantelis Konstantinou and Hristo Peshev (see pictures attached).

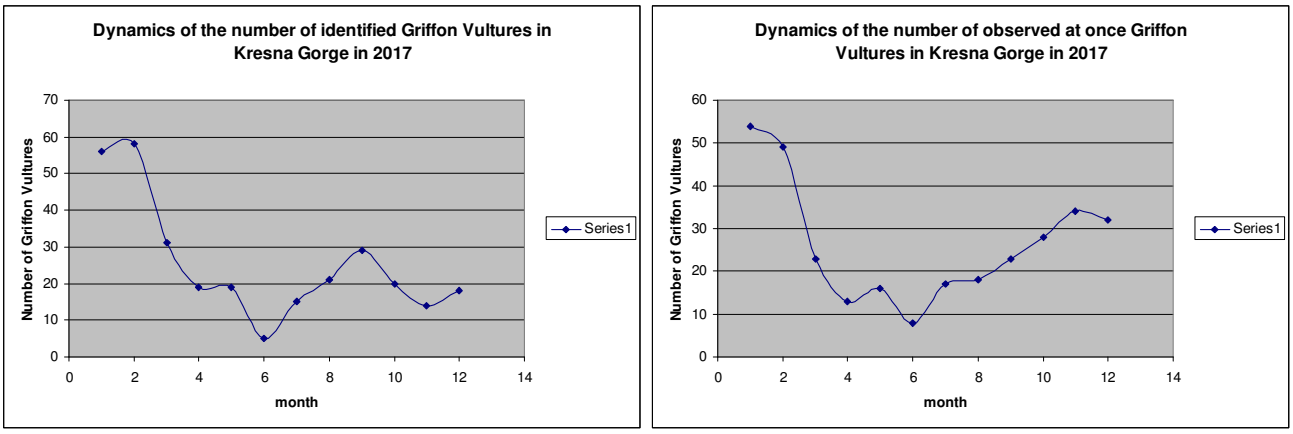
In 2017, for very first time, summering in the Central Greek Mountains of GPS/GPRS tracked Griffon Vultures, captured and marked in Kresna Gorge, was recorded. Also a tracked bird (OX) released in Kresna Gorge after summering on Kaymakachala and Mariovo area on FYR Macedonia – Greek border moved for wintering in Akarnanika – Baumistos Mts in Southwestern Greece, which appears to be a good place for wintering of the species in the recent years. Unfortunately, some cases of poisoning were reported from the area (Rigas Tsiakiris – in litt.).

***Table 2**. Numbers of Griffon Vultures, Egyptian and Black Vultures observed in Kresna Gorge in 2017 by months.*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Number Identified Griffon Vultures	56	58	31*	19	19	5	15	21	29	20	14	18
Number of Griffon Vultures observed at once (max.) at the feeding or roosting site	54	49	23*	13	16	8	17	18	25	28	34	32
Number of Egyptian Vultures					1	1		1				
Number of Eurasian Black Vultures		1										

* poisoning incident happened around 12 March 2017, but the bulk of the Griffon Vultures from Kresna Gorge visited the poisoned bait in groups in some days period and gradually got killed.

***Figure 5**. Seasonal dynamics in numbers of Griffon Vultures in Kresna Gorge in 2017 (a. identified birds within the month and b. observed birds at once within the month).*



Mortalities and misfortunes

Poisoning of about 30 Griffon Vultures in Kresna Gorge – March 2017.

On 12.03.2017 FWFF team received a signal for a Griffon Vulture found in Tisata Reserve by rangers of Pirin National Park. We went on site and discovered that this was the birds with wing-tag 56, which was in a bad condition. The vet of Kresna applied atropine, although poisoning was not yet considered likely to be the reason in the case. The bird was with full crop, but was not vomiting, unless stressed by our presence and manipulation. X-ray excluded any other traumas or shooting. The most of the birds in the colony were observed at the roosting sites and a lot of food was available at the feeding site.


The next day 13.03.2017 a dead vulture was reported not far from the place the first one was found the previous day. This time police, environmental inspectors and veterinary services were alarmed and they came on site.


The mayor of the near-by village reported a dead dog and a wolf and fox in the vicinity of the village and we visited these sites to check. The victims were far away from each other and were not eaten by birds. No bait was discovered so far. Still most of the birds – 23 were observed at the roosting sites and at the feeding site. Plenty of food was available at the feeding site. We moved three captive bred birds in the acclimatization aviary as to serve as attractants to the wild and let them keep at the feeding site.

We searched the area of Stara Kresna, Krupnik, where another wolf was reported poisoned. The number of the birds in the roosting sites and the feeding site was 32-33.

17.03.2017 a sick raven was observed around the feeding site. The searching of the bait continued and all the stakeholders and local counterparts were alarmed to provide information for dead animals or baits.

20.03.2017 – three more Griffon Vultures were reported dead not far from the places where the previous were found.

22 and 24.03.2017 the searching of large areas for the bait continues. Ravens found dead at the feeding site.

25.03.2017 the Griffon Vulture C was found dead under the pylons between Rakitna and Mechkul, where the birds sometimes roost. A second poisoned wolf reported in the mountain above Krupnik. Vultures are no longer seen in the Gorge, except the two incubating females.

27.03.2017 in the late afternoon the Griffon Vulture K was found dead in the bottom of the Gorge near to road.

28.03.2018 an attempt was made to feed the female B61 in the nest as her chick has just hatched. During the visit of the cliff two more dead vultures found 01 and 90.

30 and 31 march 2017 two days in which the BSPB's Poison Dog Unit was working on the ground. Nothing was found.

02.04.2017 a signal for a remains from a dead cow and vulture corpses arrived through Forestry Service and the Environment Inspectorate Blagoevgrad. This is it – this was the place where the entire colony was poisoned. Three dry corpses of Griffon Vultures were found around a dry corpse of a large cow. All this is at 20 km north from the place where the first two batches of dead vultures were found.

On 04.04.2017 in a precise visit of all roosting sites 6 more vultures and later on e 3 more were found. 18 dead corpses found in total, but about 30 birds missing

05.04.2017 as finally the poison bait was found and it was clear it was no longer active a rescue mission for the chick and the egg from the two nests was organised. We knew the females are safe now and they could leave the nests. The chick of B61 was missing; the egg of Griffon #5 was collected and transferred to the Wildlife Centre of Green Balkans in Stara Zagora.

All confirmed dead vultures in the poisoning incident in Kresna Gorge – March 2017.

01	
9	
12	F64
45	F62
90	
A	B00
C	B19
	F87
	F89
K	
K3X	K3X
K6F	K6F
K44	K44
K47	K47
M	B17
P	B35
X	M60
	B2C

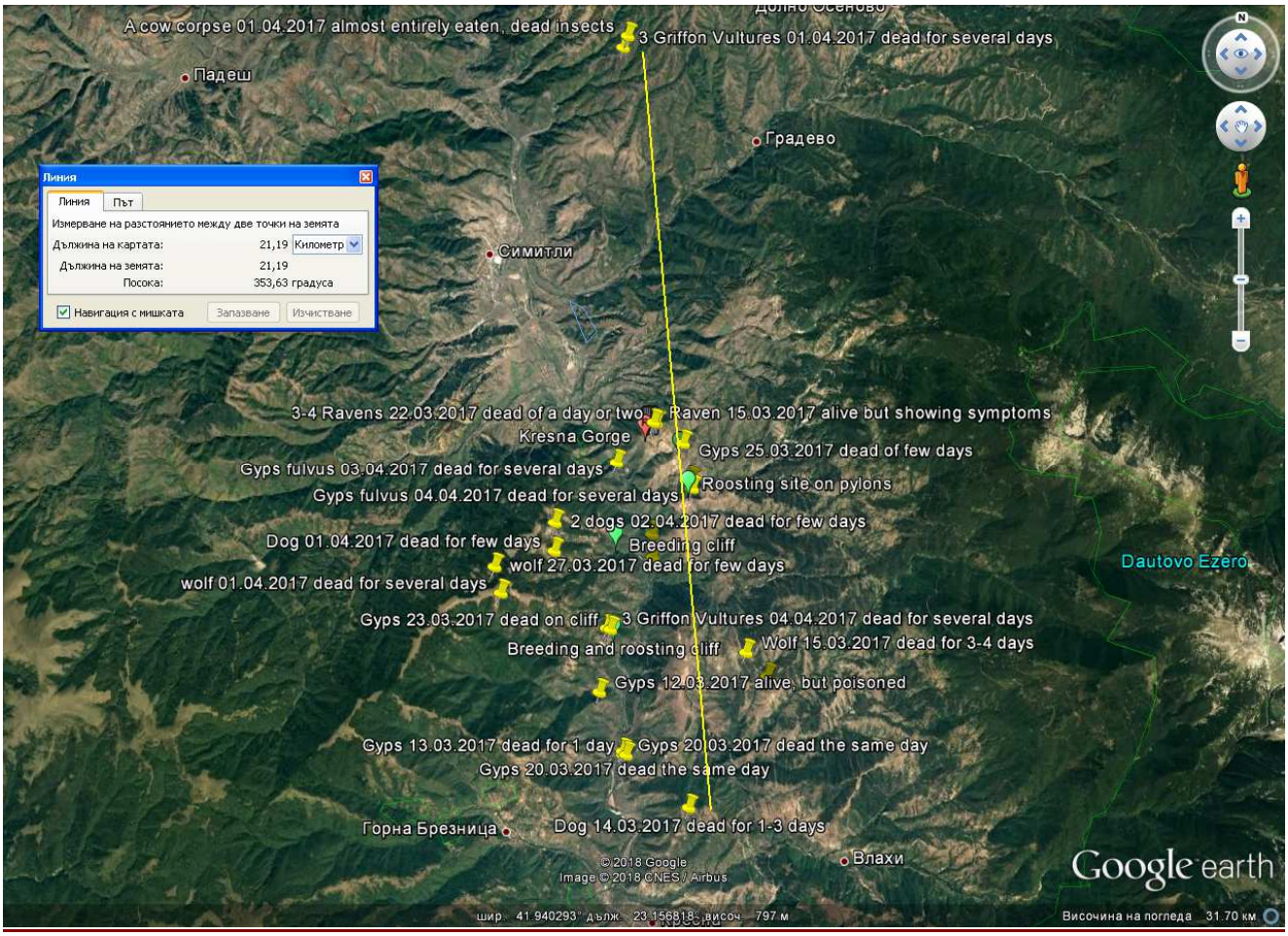


***Figure 6**. Poisoned animals and Griffon Vultures found in Kresna Gorge in the case of March 2017.*

Electrocution of the Griffon Vulture C1 in Turkey.

The Griffon Vulture – Wild C1 was captured in Kresna Gorge in October 2017 as a juvenile from the year on passage. It was marked with a ring (BC1), wing-tag C1 and a transmitter. After the release it moved to Eastern Rhodopes and after some days of bad weather and feeding in Dadia, it moved as to continue its migration towards Asia Minor and further. However it had a bad luck as to parch on a unsafe electric pylon in the southern part of the European part of Turkey. Hristo Peshev checked the place with coordinates (N40.649193, E27.021947) and has found the bird dead under an electric pole in a thick pine forest patch near the village of Yeniköy - 4 km from the shore of the Sea of Marmara. The Vulture was already quite decomposed, but it was obvious that it was killed by an electric shock – burnt and laying under an unsafe 20 kV pylon.

***Figure 7**. The area, the pylon and the Griffon Vulture C1 electrocuted in Turkey, December 2017.*

Dispersals and movements

Figure 8. The movements of 14 tracked with GPS/GPRS Griffon Vultures in 2017, revealed the main vultures sites in Balkans.

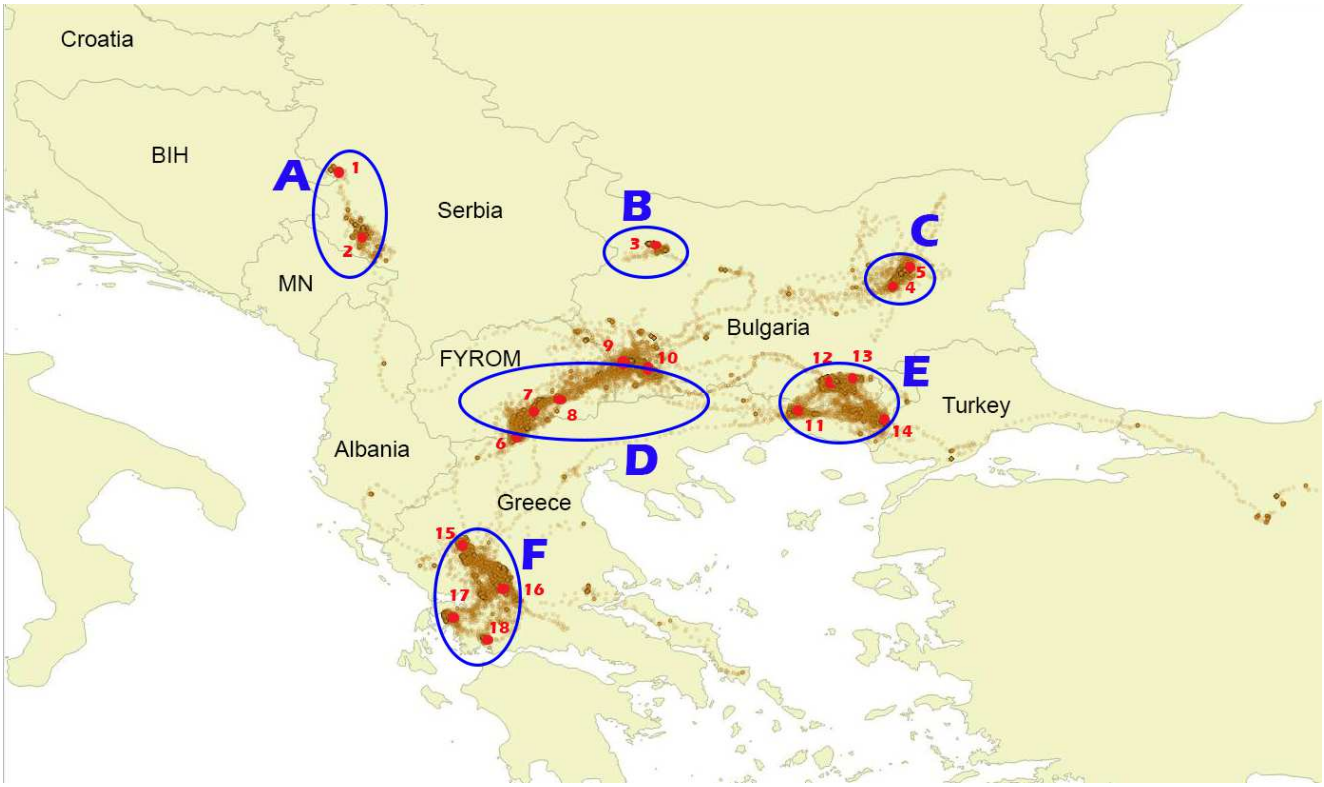


Figure 9. General vulture areas in Balkans: A. Western Serbia; B. Vrachanski Balkan; C. Eastern Balkan; D. FYROM & SW Bulgaria; E. Eastern Rhodopes; F. SW Greece;

Particular Vulture areas in Balkans:

A1 – Treshnitsa Gorge in Serbia;

A2 – Uvats Gorge (includes also Mileshevka Gorge and Radoyna Gorge) in Serbia;

B3- Vrachanski Balkan in Bulgaria;

C4 – Sinite Kamani in Bulgaria;

C5 – Kotel Mountain in Bulgaria;

D6 – Kaymakchalan in Greece and Mariovo in FYROM;

D7 – Vitachevo feeding site and Chatino colony in FYROM;

D8 – Demir Kapia in FYROM;

D9 – Kresna Gorge in Bulgaria;

D10 – Pirin National Park in Bulgaria;

E11 – Kompsatos Gorge in Greece;

E12 – Studen Kladenets in Bulgaria;

E13 – Madjarovo in Bulgaria;

E14 – Dadia in Greece;

F15 – Tzumerka in Greece;

F16 – Central Greek Mountains in Greece;

F17 – Akarnanika and Boumistos Mts in Greece;

F18 – Kleisura & Messolonghi in Greece;

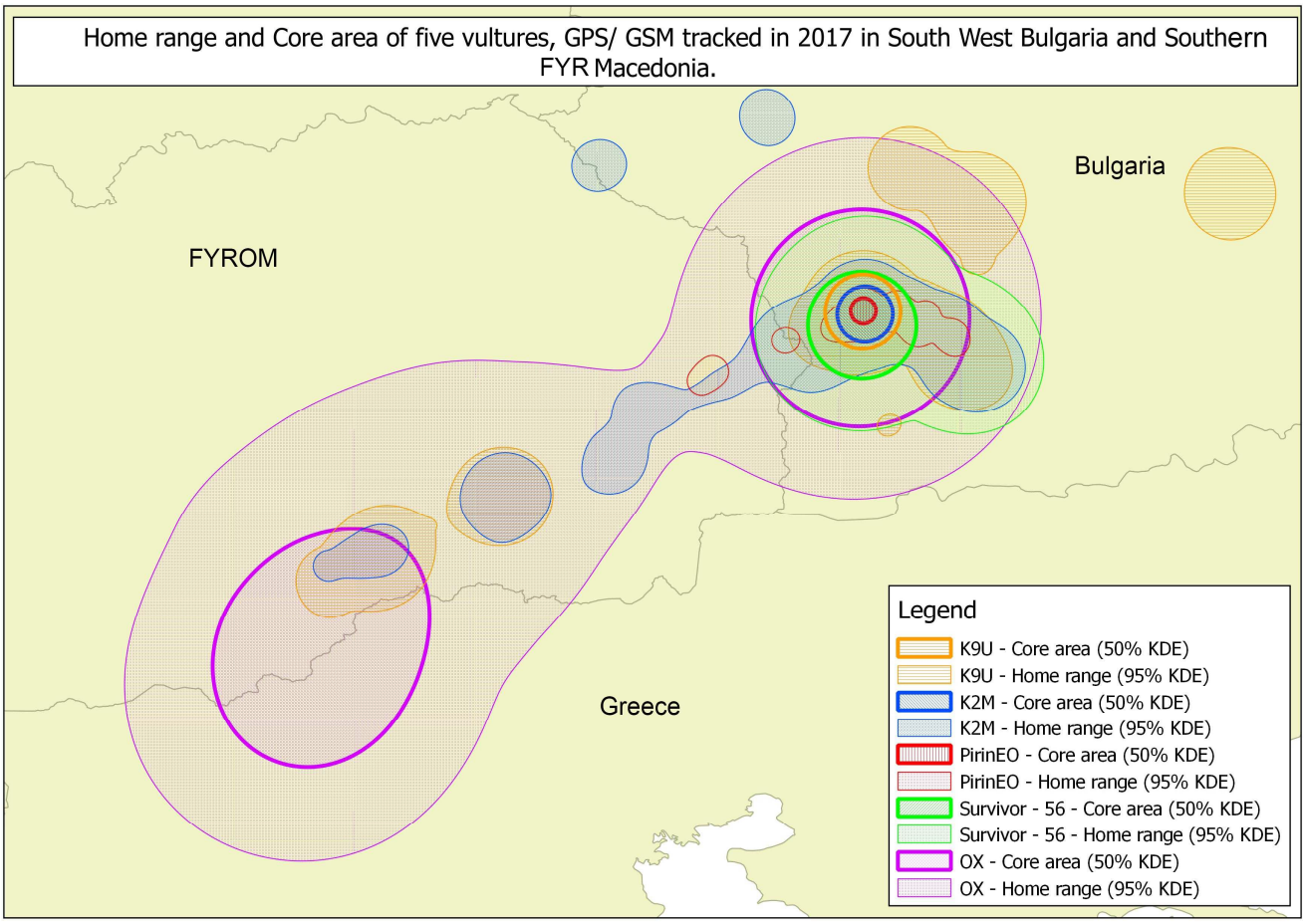


Figure 10. *Home range of Griffon Vultures in SW Bulgaria and FYR Macedonia.*

Whereabouts of some of the marked birds

B41-H was released in Kresna Gorge 22 October 2011 and moved away from the area shortly after the release, reaching Dadia in Greece. In 2016 it was frequently observed in Eastern Rhodopes (BSPB-Volen Arkumarev), where it most probably breeds. In 2017 was reported from Eastren Rhodopes and Kotel Mountain and again Eastern Rhodopes.

F88-56 - Hard released 15.04.2015 and permanently present in Kresna Gorge. On 18.07.2016 it was observed in Eastern Rhodopes (BSPB- Volen Arkumarev). In autumn 2016 it is again permanently

observed in Kresna Gorge. This is the only bird that was poisoned, but survived after threatement in March 2017. It was released again in May 2017 equipped with GPS/GPRS transmitter and soon after made a visit to Eastern Rhodopes for some days and returned to Kresna Gorge again. Short visits to FYROM were also several times recorded.

F82-78 - Soft released 19.08.2015 and permanently present in Kresna Gorge. On 27.07.2016 and 16.09.2016 it was observed in Eastern Rhodopes (BSPB- Volen Arkumarev). In autumn 2016 it is again permanently observed in Kresna Gorge. Probably was in Eastern Rhodopes and arrived back to Kresna Gorge on April 2018 and thus avoided the poisoning in March.

In 2017, although to lesser extend (because of the decreased local nucleus' number due to poisoning in March) compared to previous year, the group of Griffon Vultures from Kresna Gorge was again reported from and photographed in Pirin National Park. The birds are moving there in the hot summer days of June to September to drink water and to benefit from carcasses of grazing on the alpine pastures livestock. Roosting sites in the mountain were reported in the area of "Orlite", but also from Spano Pole. Some reports and data from transmitters showed some summer visits also to Rila National Park and Rila Monastery Nature Park. Some birds for some time of the year joined the summering group of birds from FYROM in the area of Kaymakchalan on the Greek/FYROM border.

The Griffon Vulture OX from Kresna Gorge spends the summer in the Voras mountain over vast pastures under the Kaimakchalan peak. We studied many of the points visited by the bird in the last month and we headed for the mountain to learn more about the vultures in the area. In the winter the place is used for skiing and there is an asphalt road. From the road we began to observe rocks that we knew were used by the vultures. The two days we were there, we were impressed by the large number of birds of prey – buzzards and kestrels were flying everywhere. As we watched a honey buzzard passing over us, six vultures appeared from the clouds. Happy of this, we reach the ski center, which is empty at this time of year. We spoke with the local shepherds; unfortunately, it's hard to understand each other, because they are all Albanians. The only thing we figured out was, that they have seen vultures after we show them pictures of the birds. One of the questions we sought for an answer, how big are the herds taken this summer to the mountain, we counted thousands of cows, a few hundred horses and sheep. The largest group of vultures we saw on the first day was fourteen, one of which was the female "5" from the colony in the Kresna gorge. Near

the road, one of the GPS points that we checked, we found remains of a dead calf, from which the vultures had eaten the previous day. Unfortunately, the proximity to the road had not allowed them to eat it altogether, unlike all other remains, which we found the next day of which only bones and skin remained. The next day, we focused on looking for vulture-visited dots, we found numerous remains, mostly from calves. We were constantly following vulture "OX" location, and we observed it eat with a group of ravens.

On 11.08.2016 Hristio Peshev visited Kaymakchalan. Some of the pictures are here:

Figures 11, 12, 13 and 14. *The Griffon Vultures and preferred habitat at Kaymakchalan, Greece in 2017.*

Breeding

After the first successful reproduction of two pairs in Kresna Gorge in 2016, the 2017 was unsuccessful due to the poisoning incident in March 2017, where all breeding pairs were poisoned or destroyed. In January-March ten pairs were formed and experienced breeding displays, nest building and occupation. Three or four eggs were laid, but only two pairs were directly observed to incubate. An egg was laid from the pair B35-P x B61 on 05.02.2017 and hatched on 04.04.2017, but died soon

after, because the male B35- P was poisoned in March and the female B61 remained alone and was unable to provide food to the chick. Rescue mission for the egg/chick was not attempted earlier, because we did not know whether the poison bait is still active in the area and we decided to let the female stay with attached to the nest as long as possible and to avoid finding and feeding on the poison. As the poison bait was discovered and destroyed on 02.04.2017, a rescue mission was organized on 05.04.2017, but it was too late, the chick was missing and the female B61 left the nest.

From about 16 known breeding birds, only 3 survived the poisoning – B95-5; B61 and O.

Attracted exogenous birds

From the 96 recognised exogenous birds that visited Kresna Gorge in 2017, seventeen were marked and their origin established. Eight Griffon Vultures ringed in Serbia, one in Spain, two in Israel, one in Greece, four released and two wild-caught marked from the re-introduction project sites in Balkan Mountain in Bulgaria were observed in Kresna Gorge in 2017. Two were wild juveniles from Eastern Rhodopes and Vrachanski Balkan. Details follow here:

Attracted in Kresna Gorge exogenous marked Griffon Vultures in 2017.

wingtag	ring	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
K5U	K5U	x	x	x									
B75										x	x	x	x
K9C	K9C				x	x							
X		x	x	x					x	x			
X5		x	x										
16	S27	x	x	x									
3A	B3A	x	x	x									
28				x									
	B2C	x	x	x									
B67					x	x							
K6F	K6F	x	x	x									
K3X	K3X	x	x	x									
29				x									
24	S48									x			
39												x	x
6H7													x
41	S65									x	x	x	x
P	S72										x		
	4F8							x					
	8A6									x			

S27 - 16 – a Griffon Vulture ringed as juvenile in the nest on 06.06.2014 in Uvats colony in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge permanently from 05.06.2015 to the end of December 2016 – it was permanently present in the area for year and a half now. Probably poisoned in Kresna Gorge in March 2017, but not confirmed.

S48 - 24 – a Griffon Vulture ringed as juvenile in the nest (2015) in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge from 04.11.2016 to 12.11.2016. Present in 07.09.2017 at the feeding site in Kresna Gorge, later moved to Akarnanika Mts in Greece for wintering (data from Kostas Bestas).

S?? - 28 – a Griffon Vulture ringed as juvenile in the nest (2015) in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge on 19.04.2016, and also 26.09.2016 and 27.09.2016; On 30.03.2017 observed in Kresna Gorge coming from Eastern Rhodopes, where seen by Volen Arkumarev – BSPB few days ago;

S42 - 29 – a Griffon Vulture ringed as juvenile in the nest (2015) in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge from 04.11.2016 to 12.11.2016.

S?? - 39 – a Griffon Vulture ringed as juvenile in the nest (2015) in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge from 04.11.2016 to 12.11.2016. Observed again in Kresna Gorge throughout November and December 2017.

S65 - 41 – a Griffon Vulture ringed as juvenile in the nest (2015) in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge from 04.11.2016 to 12.11.2016. Observed again in Kresna Gorge on 07.09.2017.

S72 – P – a Griffon Vulture ringed as juvenile in the nest (2015) in Serbia (Sasha Marinkovich pers. comm.) was present at the feeding site in Kresna Gorge from 04.11.2016 to 12.11.2016. Observed again in Kresna Gorge in October 2017.

K3X – an immature Griffon Vulture released in the frame of LIFE08 NAT/BG/278 at Vrachanski Balkan Nature Park (Western Balkan Mts., Bulgaria) on 23.03.2014, was present at the feeding site in Kresna Gorge from 19.04.2015 and since then it is permanently present at the feeding and roosting site in area (last recorded late December 2016). Poisoned in Kresna Gorge in March 2017.

K5U – an immature Griffon Vulture released in March 2015 in the frame of LIFE08 NAT/BG/278 at Vrachanski Balkan Nature Park (Western Balkan Mts., Bulgaria) was present at the feeding site in Kresna Gorge on 01.10.2015 and since then it is permanently present at the feeding and roosting site in area (last recorded late December 2016). Poisoned in Kresna Gorge in March 2017.

K6F – an immature Griffon Vulture released in the frame of LIFE08 NAT/BG/278 at Vrachanski Balkan Nature Park (Western Balkan Mts., Bulgaria) was present at the feeding site in Kresna Gorge from 16.09.2015 and since then it is permanently present at the feeding and roosting site in area (last recorded late December 2016). Poisoned in Kresna Gorge in March 2017.

K9C – an immature Griffon Vulture released in 2015 in the frame of LIFE08 NAT/BG/278 from Central Balkan National Park, Bulgaria was present in Kresna Gorge on 02.04.2016. Present at the feeding site in Kresna Gorge in April and May 2017, later recaptured in Hungary (data by Elena Kmetova-Biro/Green Balkans).

B3A–B3A - a Griffon Vulture ringed as a juvenile in the nest (2016) in the Bulgarian part of Eastern Rhodopes, marked by BSPB in the area of Madjarovo (BSPB – Volen Arkumarev and Stoycho Stoychev pers. comm.) was present at the feeding site in Kresna Gorge from 04.11.2016 and is still in the area until the end of the year (wintering). Probably poisoned in Kresna Gorge in March 2017, but not confirmed.

B67–B67 - a wild, native to Balkans, Griffon Vulture ringed when was caught in the aviary in Kotlenska Planina, Bulgaria in May 2015 (Lachezar Bonchev/FWFF, Ivelin Ivanov/Green Balkans pers. comm.) was present at the feeding site in Kresna Gorge on 08.05.2016; On 29.05.2017 observed in Kresna Gorge;

B75-B75 - a wild, native to Balkans, Griffon Vulture ringed when was caught in the aviary in Central Balkan, Bulgaria autumn 2016 (Ivelin Ivanov/Green Balkans pers. comm.) was present at the feeding site in Kresna Gorge throughout September, October, November and December 2017.

B2C – a juvenile Griffon Vulture fledged in 2016 from Vrachanski Balkan (the only marked naturally fledged chick from the area) arrived at the feeding site in Kresna Gorge on 04.11.2016 and was present until the end of the year (wintering). Poisoned in Kresna Gorge in March 2017.

4E3 -N - a Griffon Vulture ringed in Israel (as wintering or on passage bird - Ohad Hatzofe, pers. comm.) was present at the feeding site in Kresna Gorge on 13.05.2017.

4E8 - a Griffon Vulture ringed in Israel (as wintering or on passage bird - Ohad Hatzofe, pers. comm.) was present at the feeding site in Kresna Gorge on 05.07.2017.

8A6 - a Griffon Vulture fledged in the region of Burgos, Spain, rehabilitated and marked in the same region in 2007 and released there the same autumn (data by Alvaro Camina, pers. comm.) was present at the feeding site in Kresna Gorge on 29.09.2017. The very first, ever, sighting of a Griffon Vulture from Spain arrived on its own and registered in Bulgaria.

Griffon Vultures wild-caught and marked on passage in Kresna Gorge and their whereabouts

Attracted by the feeding site and the conspecifics into the aviary some wild Griffon Vultures that pass through during migration or spent some time in Kresna Gorge are entering the acclimatization aviary on their own. We use this opportunity to mark them and to try to establish their origin, or to learn more about their whereabouts. Since 2012 we marked 8 Griffon Vultures with wing-tags of which two were fitted also with GPS/GSM transmitters. Details for recoveries follow here:

X (left wing) – aged using moulting pattern as bird born in 2013 was caught, marked and released on 10.01.2014. It was present in Kresna Gorge until the spring of 2015, when left the area, but has returned again in October 2015 and is frequently present until the end of the year 2016. At the beginning we thought that this bird was among the poisoned ones, but in June 2017 we received information that it is alive and safe in, most probably, its native colony in Uvats, Serbia. Two more reports and photographs were received about it later in the year from the same area in Serbia. The bird was observed in Kresna Gorge once again on 01.09.2017 and later again was reported from Serbia.

B94- 4 - aged using moulting pattern as bird born in 2013 was caught, marked and released on 28.05.2014. First time observed after the release on 16.06.2014- Vrachanski Balkan (George Stoyanov- pers. comm.); 09.06.2015 – Studen kladenets (Marin Kurtev – pers.comm.); 08.07.2015 – Kotel (Lachezar Bonchev - FWFF); July 2015- Vrachanski Balkan (George Stoyanov- pers. comm.); 01.10.2015 in Kresna Gorge; 14.05.2016 – Eastern Rhodopes (BSPB – Volen Arkumarev); 18.09.2016- Vrachanski Balkan (George Stoyanov); 03.04.2017- Demir Kapia, FYROM; 21 and 26.10.2017 – Potochnitsa Feeding site, Eastern Rhodopes (BSPB – Volen Arkumarev); 25.12.2017 – feeding site and acclimatization cage visit in Gamla reserve, Israel (Itay Levitas and Ohad Hatzofe);

B95- 5 - aged using moulting pattern as bird born in 2012 was caught, marked and released on 28.05.2014. On 01.06.2014 was observed at Demir Kapiya, FYROM (Metodiya Velevski- pers. comm.) together with other birds from Kresna Gorge, but which later returned; On 26.07.2014 returned to Kresna Gorge and was present all the time until 25.06.2015 –when was again observed at Demir Kapiya, FYROM (Bobi Delov- pers. comm.); 26.06.2015- Vitachevo Feeding site, FYROM (Emanuel Lisichanets- pers. comm.); in the early July 2015 returned to Kresna Gorge and is still present, while trying to breed with the male B17-M in the season 2016; In 2017 laid egg in Kresna Gorge, but the male B17-M got poisoned in the poisoning incident in March 2017. B95-5 continued to incubate the egg alone until 5 May 2017, when the egg was taken for artificial incubation in the "Wildlife Rehabilitation and Breeding Centre" of Green Balkans in Stara Zagora. Since then the bird is frequently moving from Kresna Gorge to FYROM (Demir Kapiya, Vitachevo, Kaymakchalan) and back.

B2A - aged using moulting pattern as bird born in 2014 was caught, marked and released on 22.07.2015. It was equipped with GPS/GSM transmitter. Less than a week after the release it moved

to Eastern Rhodope. It is still there, while frequently moves from the Greek part of the mountain to the Bulgarian part along Arda River valley and back. In August 2016, the transmitter stopped working, while the bird was still in Eastern Rhodopes; 17.03.2017- observed in Eastern Rhodopes- Studen kladenets by Volen Arkumarev from BSPB;

X5 - aged using molting pattern as bird born in 2013 was caught, marked and released on 26.10.2015. This bird was photographed in FYR Macedonia and Greece (Kaymakchalan) in 2016, but also was frequently present in Kresna Gorge. Probably poisoned in March 2017 in Kresna Gorge, but not confirmed.

B69 – Balkan - Wild, native to Balkans, captured in Kresna Gorge in July 2017 and hard released on 03.08.2017. It was equipped with GPS/GPRS transmitter. The bird stayed in the area of Kresna Gorge until 06.09.2017, when moved to Uvats area in Serbia, and remained there for the winter. It is most likely that bird is native to Uvats.

1H – Wild, captured in July 2017, marked, equipped with GPS/GPRS transmitter and released. Moved to FYROM, where a new colony of the species was shown by this bird. Later moved to Central Greek Mountains, wheres spent most of the summer. In outumnn moved to Kresna Gorge for short visit and then moved to Eastren Rhodopes, where it is overwintering the 2017-2018.

2H – Wild, captured in July 2017, marked, equipped with GPS/GPRS transmitter and released. Moved to FYROM, where a new colony of the species was shown by this bird. Later moved to Central Greek Mountains, wheres spent most of the summer. In outumnn moved to Kresna Gorge for short visit and then moved to Eastren Rhodopes, where it is overwintering the 2017-2018.

B73 – Wild, captured in July 2017, marked and released. No data for the bird afterwards.

C1 – Wild, was captured in Kresna Gorge in October 2017 as a juvenile from the year on passage. It was marked with a ring (BC1), wing-tag C1 and a GPS/GPRS transmitter. After the release it moved to Eastern Rhodopes and after some days of bad weather and feeding in Dadia, it moved as to continue its migration towards Asia Minor and further. It died in Turkey (see chapter Mortalities).

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 Egyptian Vulture *Neophron percnopterus* and Eurasian Black Vulture *Aegypius monachus*.

Eurasian Black Vulture *Aegypius monachus*

An immature Eurasian Black Vulture (Fig. 15) was observed and photographed in flight with a large group of Griffon Vultures on 15.02.2017 in Kresna Gorge.

Figure 15. *An immature Eurasian Black Vulture in Kresna Gorge in February 2017.*

Egyptian Vulture *Neophron percnopterus*

An adult Egyptian Vulture was observed on 5 may 2017 in Kresna Gorge. Once again the species was spotted in June 2017, and a picture from camera trap at the feeding site of an immature bird was taken on 6 August 2017.

Figure 16. *An immature Egyptian Vulture at the feeding site in Kresna Gorge in 06.08.2017.*

Urgent Conservation actions

As such actions we recognize those providing an immediate effect and are not necessarily sustainable, but increasing the extinction time of a threatened species. Such actions may be implemented for endangered species to support them increase at least to a better conservation status or until any sustainable and long-term measures produce results. We recognize these to be feeding of vultures, to minimize dispersal and avoid poisoning. Nest guarding to ensure safe reproduction, brood management and captive birds release to increase recruitment, insulation of dangerous power-lines etc.

Feeding

In 2017 we continued to organize feeding of vultures at minimum 3 to 4 times per week (and every time upon availability of carcasses – sometimes up to 7 days a week). More than 54 tons of carcasses were deposed in 190 events at the feeding site in 2017. When larger animal corpse was available during the summer months, meat was preserved in a freezer and disposed in smaller quantities more frequently. In addition to the vultures' feeding Programme of FWFF in Kresna Gorge, food was provided to Viatchevo vulture feeding site in FYR Macedonia, by the Nature Conservation Association "Aquila". Food was provided there at least once a week which turned to intensification of occasional foraging movements of small groups of vultures between the two feeding sites. In the table bellow could be seen the frequency and amounts of food deposited to the feeding site near the village of Rakitna in Kresna Gorge. Also the numbers of the vultures present in the area.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	total
Feeding events	16	21	23	20	19	8	14	15	12	15	11	16	**190**
Amount of food in kg	7550	10710	7180	5210	3275	2160	2380	3910	2615	3000	2130	4300	**54420**
Vultures present	56	58	31	19	19	5	15	21	29	20	14	18	-

Table 3. *Number of feedings and amount of food provided by FWFF in Kresna Gorge in 2017.*

Insulation of dangerous power-lines

This year following the two electrocution cases in 2016, another seven 20 kV power-line poles were equipped with perch discouragers as an urgent measure to avoid future electrocutions. These were the closest to one of the roosting sites (a 400 kV pylon) and a small water pond that attracts the vultures and let them perch to near-by 20 kV pylons.

Long-term Conservation Actions

As such actions we recognize those that not necessarily provide an immediate effect, but are sustainable and change the habitat and the local people attitude to better for the target species. Such actions rarely are regarded to a certain endangered species, which could be stated as *flagship species*, but more for its habitats and entire ecosystem.

Restoration of food source for vultures

The action for reintroduction of the Fallow deer in the area continues.

In 2017 four offspring were produced from three Fallow Deer hinds in the fenced sanctuary of FWFF. With two mature males transferred to Kotel and two more to Forestry University Game Station near Berkovitsa, the number of the Fallow Deer flock in the FWFF's Sanctuary in Kresna Gorge is now 15 (6 stags, 4 yearling males, 4 hinds and three offspring). Release is progress, as the mature stags are now going outside the fence on their own and get in when fed.

FWFF continues to keep a herd of Rhodope Short Horn Cattle in Kresna Gorge. The herd is doing well and increasing. More and more farmers are now interested to start to raise this breed, while it proven very adaptable and good for the area (forage use and predators protection).

Against poison activities

The compensation programme and the public awareness activities are continuing in their full spectrum. It seems, however, that the feeding site operation in an area with permanent wolf presence is the most effective anti-poison tool. Maintaining permanent feeding sites for vultures in regions of sympatric presence with wolf is an irreplaceable conservation tool.

The existence of an aviary with Griffon Vultures inside, placed just at the feeding site increases the attraction of wild and free-ranging reintroduced vultures and this is a way of keeping them away of occasionally present and potentially dangerous (poisoned) food.

Despite the Anti-poison Dog Units might are good tool to check certain area for poison baits and/or dead animals, there is need of some preliminary information for the general location of the poisoning event. This preliminary information could be received from local people's or tourists' reports, but the best option would be to keep certain number of "poison spy agents" among the vultures in the local community – such equipped with last generation GPS/GPRS transmitters. The transmitters should be checked from a person from the local conservation entity in the internet platform minimum once a day in periods with lower vultures' activity (e.g. winter or prolonged periods of poor weather). While in case of periods with high vultures' activity, in good sunny or clear windy days, there should be checks of minimum twice a day. In situations with received some information or signs of poisoning, the transmitters should be set up to provide data up to every 10 minutes and the internet platform with the data form the transmitters should be observed permanently. This option should be used to establish a potential poisoning even and to send a field team (ideally an Anti-poison Dog unit) to check and eventually destroy the bait and provide first aid to poisoned animals/birds.

Overview

In 2017 we faced a great disaster with the poisoning of the colony in Kresna Gorge. We have the following lessons learnt:

- We should never keep the acclimatization aviary free of Griffon Vultures, as they attract the entire colony at the safe place to feed.
- We should never remove a carcass to which the vultures fed to replace it with new one in cases we would like to attract the birds to feed on the feeding site. They preffer to feed on a carcass they already fed on it earlier.
- We should always keep about 10% of the birds in the colony tracked with GPS/GPRS transmitters as to know where they go to feed and to react urgently if a poisoning is suspected.
- Poison Dog Unit is useful, but comes and might be effective once a GPS tracking systems is put in place.
- The Social memory is very important to be preserved. In case of decomposition of a colony the Social memory should be kept alive by forcing group bond and consolidation by intensive

feeding site maintenance and release of birds to attract and fill up the minimal nucleus of 8-12 Griffon Vultures.

Kresna Gorge colony was re-established and the Social memory saved. The colony now is integrated to Demir Kapia colony and two form a common Griffon Vulture population of FYROM and SW Bulgaria.

The releases of immature Griffon Vultures should continue with at least 10 birds per year until natural colony is established and begin to produce by ten juveniles per year.

Because of the poisoning, the release of the Black Vultures in this part of the Balkan Peninsual will be postponed.

As much as possible 20 kV power-line pylons should be safeguarded for birds in Kresna Gorge.

The actions for establishment of wild population of Fallow deer and establishment of extensive raised sheep and cattle herds should continue.

Feeding sites in the high mountain areas of Rila and Pirin National Parks should be established, as these areas are obviously preferred by the vultures in summer, and lesser risk of poisoning or electrocution exists there.

The poisoning is still hard to control along Struma Valley and this will obviously always be the case until people and predators share the same habitat. Thus feeding of vultures on traditional feeding sites still is a must, while any measures for minimizing the poison baits use are underway as permanent and long-term measures.

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