

Bearded Vulture European Endangered Species Programme (EEP): Annual report 2016

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SUMMARY

2016 was the second consecutive year with a new breeding record inside the EEP: 27 fledglings. In total 35 Bearded Vulture pairs laid 59 eggs, from which 29 hatchlings and 27 surviving juveniles were produced. 17 of these were released in the 4 on-going reintroduction projects (Alps, Andalusia Grands Causses and Corsica), and 10 were added to the breeding network. Of these 27 offspring, 18 came from the specialized captive breeding centres (18 laying pairs) and 9 from Zoos (17 laying pairs).

A new founder male from Tallinn zoo successfully reproduced for the first time. Additionally, one new pair in the Green Balkans rescue centre started to reproduce with success.

Despite the high breeding success, the surplus of females inside the EEP has increased because most of the offspring included in the captive network are females due to desired genetic lineage.

Six birds have been transferred during 2016, making it possible to establish five new pairs. Furthermore, all three pairs from the Asters breeding centre had to be temporarily transferred while the centre is being completely rebuilt.

Four new zoos, Oasi di Sant' Alessio (Italy), Dvůr Králové Zoo (Czech Republic), Košice Zoo (Slovakia) and Aachener Tierpark Euregiozoo (Germany) have expressed interest to collaborate with the Bearded Vulture EEP.

Thanks to the financial support from EEP zoos, and other organizations the VCF managed to establish an effective EEP coordination which kept the specialized breeding centre Vallcalent in Catalonia open for 2016 - we thank you for your support, without this the future of the Bearded Vulture in Europe would look bleaker!

In 2013 the VCF began offering an advisory service within the EEP and since then continuous signs of improvements inside the captive breeding network have been recorded; losing only 3 birds in 2016.

For the first time an egg from the endangered Corsican population has been successfully rescued and its chick included in the EEP, with the aim to build a Corsican genetic reserve.

INTRODUCTION

The International Bearded Vulture breeding network (EEP – European Endangered Species Programme) is a VCF-coordinated network of zoos, animal parks, captive breeding centres and private collections aiming to breed this species in captivity for conservation purposes. Since 1978, a total of 488 young Bearded Vultures have been successfully bred (271 in Specialized Captive Breeding Centres and 217 in zoos/private collections), and 270 of those have been reintroduced in the wild in five from which four are still on-going projects - 210 nestlings reintroduced in the flagship Bearded Vulture reintroduction project in the Alps, 44 in the Andalusia project (Spain), 11 in Grands Causses (Corridor project, France) -which is included since 2015 in the framework of the LIFE project GypConnect-, and two in the new reinforcement project from Corsica started in 2016. The VCF's final goal is to restore the species across its former range in Europe, and establish a European Bearded Vulture meta-population, with connections between the current European autochthonous isolated populations (Pyrenees, Corsica and Crete) with the reintroduced populations, in a continuum that goes from northern Africa (Morocco) to Asia (Turkey & the Caucasus).

By the end of 2016 the EEP included 38 zoos (mainly European), 3 large (red spots) and 2 smaller (green spots) specialized captive breeding centres, and 3 private keepers, keeping a total of 164 birds.



The distribution of the captive stock over many Zoos lowers bulk risks, e.g. epidemic diseases.

BREEDING RESULTS 2016

Specialized captive breeding centres

- Richard Faust Bartgeier Zuchtzentrum Haringsee (RFZ)

The RFZ, headquarters of the EEP and with a captive stock of 31 birds, is specialized in the reproduction of founder birds. During the 2016 breeding season five pairs laid. Three of these are experienced old breeding pairs. The fourth is an adult pair which contains a male amputee. The fifth is a young pair which started to breed in 2012 but don't harmonize well. Fights continuously occurred making it necessary to separate them for one day in February in the middle of the breeding season. Nevertheless, fights continued afterwards and the pair was



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definitively separated before the start of the following breeding season. All together RFZ produced 9 eggs and from them five chicks hatched and all survived. From these five nestlings, four were released (1 in Corsica, 1 Baronnies and 2 in Andalusia).

- Centro de Cría de Guadalentín (CCG)

The CCG, with a captive stock of 23 birds, is the foundation of the Andalusia Bearded Vulture reintroduction project. Thanks to the transfer of an adult male from Vallcalent to Guadalentín in 2013, a new pair was established and increased the number of breeding pairs to seven. In two of the pairs it was necessary to remove the male; one male was removed because he started to limp and the second because the male started to be aggressive towards the female and didn't take care of the chick. From the 14 eggs laid, nine chicks hatched and all fledged. From these 9 chicks two males, descendants from a founder Pyrenean male, were included in the EEP. The other seven chicks were released in all four on-going reintroduction projects: 1 in Andalusia, 1 in Corsica, 2 in Switzerland (Alpine project), one in Baronnies (Alpine project) and 2 in Grands Causses. The last two release sites are included in the framework of the LIFE project GypConnect.



Cabús, one of the most successful breeding males in Guadalentín. Recovered in 1996 in the Andorra Pyrenees after being shot.

- Centre de Fauna Vallcalent (CFV)

The CFV was built to create a Pyrenean genetic reserve. Four of the 15 birds housed there at the moment are from the Pyrenees. One of these four Pyrenean birds is Kirma, the famous female with an injured mandible. She was recovered in 2012 with a severe diagnosis - total loss of sensitivity in her left leg, large necrosis at the distal part of the third finger on the left foot, and the horrific beak injury (see photo below). It is suspected that Kirma suffered from electrocution from a power line, which caused the injuries to the left limb. For more information about Kirma see <http://www.4vultures.org/2015/02/12/on-kirma-and-commitment-to-a-cause-how-intensive-care-and-a-lot-of-expertise-rehabilitated-a-severely-injured-bearded-vulture-back-into-breeding/> In 2015 she successfully reproduced for the first time, however during chick rearing the male would often become very nervous when the chick begged for food and Kirma was not able to feed. This was to the point that the male would start to chase Kirma out from the nest. Finally, it was decided to remove Kirma and the chick was reared successfully by the male alone.

This year the situation with the pair changed completely. Firstly, Kirma laid her single clutch a month earlier than last year, showing a good relationship with her male. The big surprise was that when the chick starts to beg for food Kirma immediately stands up and moves aside, giving the male space to feed the chick. As soon as the male is finished, she returns to the nest and continues with her task: to warm the chick. Only when she goes to feed herself does the male relieve her during this short eating period (10-20min). This behaviour is very interesting, since birds are genetically programmed to feed chicks when they hear begging. But in the case of Kirma, she has adapted to her physical

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disability! She realized she cannot prepare nor give the little pieces of meat that the chick needs for the first few weeks. French colleagues have also reported that in the Pyrenees a one-eyed breeding female also managed to breed successfully in spite of her injury. In this case the breeding effort was done mostly by the male, in particular incubation during the day and feeding the chick.

The old breeding pair from Vallcalent laid a third clutch. This is the first time on record that a Bearded Vulture female laid a second replacement clutch. All three clutches were single. The first was laid on the 27th of December, which was removed two days later because it became buried under wool. 25 days later, on the 23rd of January, she laid a second clutch. This time the egg was immediately removed and adopted by another pair. After another 35 days on the 27th of February, she laid the first egg of the third clutch. All three eggs were fertile but only the first and the last hatched. After 40 years of breeding Bearded Vultures in captivity we have never registered such an event.

In summary two females laid 4 fertile eggs, from which three nestlings hatched. The chick from Kirma was included in the captive network and the other two released in Andalusia. One of them was reared successfully by the imprinted male. The third chick was transferred to Guadalentín for its adoption.



Kirma's nest: Kirma with her partner incubated their egg (darkest) and the 2nd of the old breeding pair from Vallcalent which unfortunately aborted during the middle of the incubation period.

- Breeding center Asters (Conservatoire d'Espaces Naturels Haute Savoie)

This is a small breeding centre with a captive stock of 6 birds. In 2016 only one pair produced a double clutch. Unfortunately both eggs failed. One of them was fertile and broke under the incubating bird.

- Breeding centre in Arth-Goldau (Natur und Tier Park Goldau)

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This small breeding centre is keeping 3 pairs. One pair laid a double clutch and the other two only one egg. Only one chick hatched and was included in the captive breeding network.

- ☞ **Summary** 18 breeding pairs in the specialized captive breeding centres laid 32 eggs. 18 offspring were successfully reared: 8 males and 10 females.

Zoos, animal parks & private collections

- Zoos & animal parks

The zoos play a crucial role in the EEP and in the conservation of Bearded Vultures. Although the success rate is on average lower than in the specialized breeding centres, they still contribute substantially to the number of young birds raised annually. Furthermore, by maintaining a captive stock distributed in several separate locations, we decrease risks (for example in case of epidemic diseases). In addition, by showing this species as well as publicizing the *in-situ* conservation efforts to large audiences in several countries, they contribute significantly to raise public awareness about the species. The zoos help to build core support for vulture conservation that would otherwise be impossible to achieve.

During the 2016 breeding season six zoos produced 9 fledglings (4 males, 3 females and 2 unknown). The following zoos/recovery centres produced two fledglings: Tierpark Friedrichsfelde (Berlin), Yerevan zoo and Rescue Center Green Balkans, and the following zoos produced one: Liberec, Ostrava and Tallinn. Tallinn zoo produced a chick for the first time from a new male founder. The pair from Green Balkans also reproduced for the first time, and with good success as they produced two chicks. This was only achieved thanks to new technology applications (see chapter Outlook / News).

The pairs in Academie de Fauconnerie du Puy du Fou, Berlin (Zoo Berlin), Chomutov, Nuremberg, Riga, Schönbrunn and Torreferrussa failed to produce any young. Chomutov zoo hatched the smallest chick ever registered (87g weight) but unfortunately it died during hand-rearing. In Nuremberg, a five-day old chick was found under the nest dead without signs of injuries.

- ☞ **Summary** 14 breeding pairs in zoos laid 23 eggs. From the 23 eggs, 11 hatched and 9 offspring were successfully reared (4 males, 3 females and 2 unknown). Four of them have been released (2 in Andalusia and 2 in the Alps) and 5 kept for the EEP.

- Private collections:

Three pairs from the private collections (England, Czech Republic and Monticello, Italy) laid four eggs. Three of them aborted and one was infertile.

- ☞ **Summary** 3 breeding pairs laid 4 eggs. No offspring was produced.

In total in 2016: 35 pairs laid a total of 59 eggs, which resulted in 27 surviving juveniles. 17 of these were released, and 10 were added to the breeding network (see Table 2 in Annex I – Offspring in 2016).



Young Bearded Vultures from the EEP just after their release in the Swiss Calfeisen Valley. Currently there are approximately 200-250 Bearded Vultures in the Alps. This reintroduction project represents one of the most successful wildlife comebacks in recent history, and is based on the successful work of the EEP.

Problems within the Bearded Vulture EEP

- Hand rearing and flight shows

As mentioned in the last EEP annual reports, during recent years flight shows have become popular in several European zoos/parks. Consequently, the demand for Bearded Vultures - **an Endangered Species** - for flight shows has increased.

Correspondingly the number of new requests from institutions to participate in the conservation of the Bearded Vulture is increasing each year, showing a rise in interest in this species and for its conservation.

This high demand from new centres has made it possible to be very selective with new additions, and therefore, 90% of our EEP partners have already signed an agreement with the VCF where the destination of the birds and their descendants is settled: only for the breeding program EEP or for release, and not for other activities like flight shows.

We would like to take this opportunity to thank all our many partners who have shown their confidence and signed the agreement.

Particularly for our new collaborators we would like to restate the goals and objectives of this international captive breeding program which started 40 years ago, and was a precursor to the later established EEP.

The objectives of this programme were clearly defined from the beginning and to this day are still followed. One of these is to create a captive stock as a genetic reserve, managing genetics and demographics of the captive population. At the same time, the EEP aims to build an ex situ genetic reserve from European autochthonous population (Pyrenees and Corsica). The third objective is to

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produce chicks that can reproduce as they reach sexual maturity and that are suitable for reintroduction. The final goal is the in-situ conservation; establishing a wild population capable to survive and reproduce, independently of human involvement. In collaboration with the Vulture Conservation Foundation (VCF) the ultimate aim of the programme is to create a European meta-population of Bearded Vultures, creating gene flow between the existing isolated autochthonous populations in Europe (in the Pyrenees, Corsica, and Crete) and with populations in North Africa and in Asia.

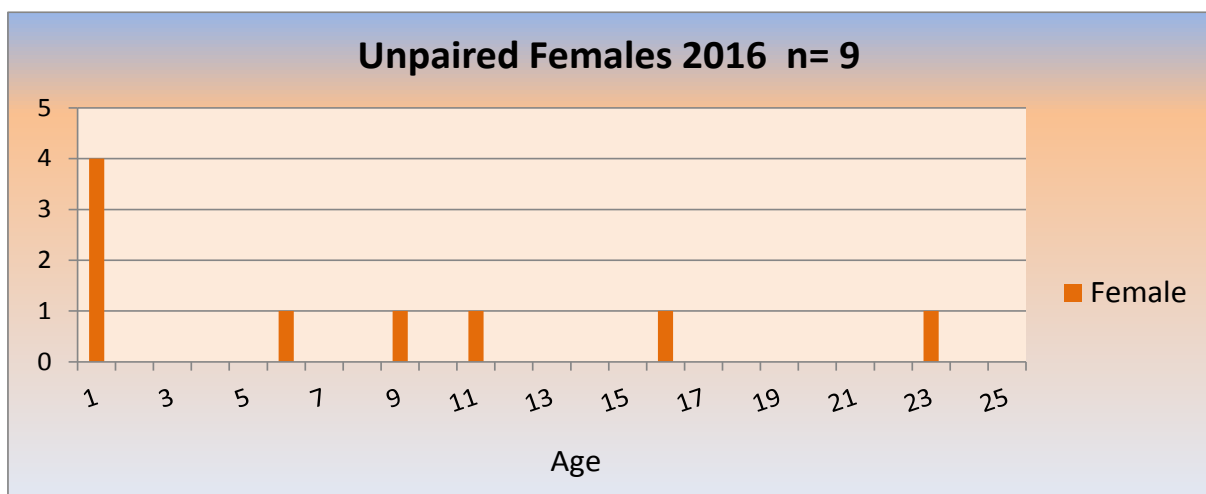
This can be only achieved if chicks are naturally reared, fomenting the development of their natural behaviour. That's why the motto of the Bearded Vulture EEP is: Quality before Quantity.



The final aim of the Bearded Vulture EEP is to produce chicks suitable for release, capable to survive in the wild without human help and able to reproduce when they arrive to their sexual maturity. Only naturally reared chicks fulfil this aim.

- Sex ratio

Irrespective of the high breeding success in 2015 where the number of lone females could be reduced significantly from 11 to five, in 2016 most of the birds kept for the EEP were females. This again increased the sex imbalance to nine females. Fortunately, more than 50% of the birds are immature which gives time to compensate this imbalance.



Transfers

During 2016 four males and two females were transferred with the aim of building 5 new pairs. On the 12th of March the juvenile male hatched at the La Garenne zoo in 2015 was transferred to the private Centro di Riproduzione e Conservazione "Monticello" to be paired with the lone female from 2010. On the 13th of April, two months after losing an old male, the old female from Wuppertal zoo was transferred to Richard Faust Centre with the aim of building a new pair. Although the last chick produced was 15 years ago, her breeding experience can be used for fostering. On the 1st of July, the lone adult male from Academie de Fauconnerie du Puy du Fou was transferred to La Garenne zoo, where the old breeding male died the breeding season before. On the same date Parc des Oiseaux received a young male from Guadalentín breeding centre to be paired with a six-year-old female. Because of the recent incredible breeding results, Amnéville zoo (which has become new EEP partner in 2015) received a young pair: a female from Guadalentín and the first hatched male from Green Balkans rescue centre.



Old female from Wuppertal arriving at Richard Faust Centre (Haringsee, Austria).

In addition, all three pairs from Asters breeding centre had to be temporarily transferred due to the centre being completely rebuilt in 2017. The two adult pairs have been transferred to Vallcalent recovery centre (Catalonia) and the younger pair to Academie de Fauconnerie du Puy du Fou (France).



The arrival to Vallcalent (Lleida, Spain) of one of the birds coming from Asters breeding centre.

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Increases:

This year was the first time a Corsican bird could be included in the EEP.

The Corsica population -one of the last island autochthonous populations- is near extinction. That is why the VCF, together with the Parc naturel régional de Corse, created a five-year emergency action plan. One of these actions is to guarantee the genetic pool in long term. This includes the recovery of clutches from the wild and the potential hatchlings to be included in the EEP. During this breeding season only 2 Corsican pairs produced a clutch from the four potential pairs. Asco territory was the only area with an accessible nest from where a single clutch could be removed, which was completed on the 26th of February. A hatchling was obtained from this egg and adopted in the breeding centre Guadalentín. The chick was successfully reared and results showed it was female.



It must be mentioned that during the 40 years of monitoring Asco territory, the pair never produced a fledgling. This female has an important value, not only being the first Corsican bird included in the EEP but also in that the genetic pool of her parents have been saved for posterity.

These actions could only be realized thanks the support of the following entities:



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Losses:

Three birds died in 2016, two females and one male. BG651 was a founder female coming from Kazakhstan and died on the 11th of June in the Academie de Fauconnerie du Puy du Fou (France). Her age was unknown but following the necropsy results –pulmonary oedema- and lacking other causes, we can suspect she was an old bird. The second female, BG728, was also a founder bird and died on the 9th of September in the Moscow zoo. Supposedly she arrived as young bird in 2005 at Nalchikskii Zoo and two years later was transferred to Moscow zoo. From the necropsy she showed an abdominal aorta and renal arteries atherosclerosis, renal dystrophy, hyperplasia of the adrenal cortex and an external hydrocephalus. Unfortunately from both females we have no descendants.

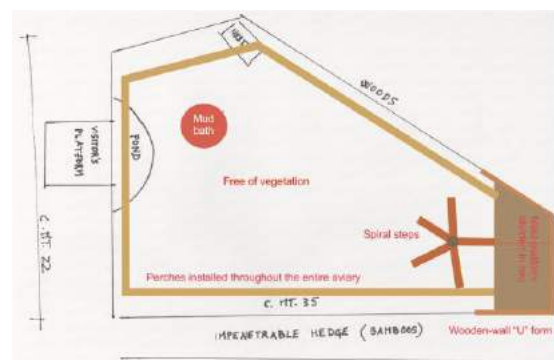
The male, BG043, was a 36-year-old descendant from the former Alpenzoo Innsbruck breeding pair. He died on the 17th of February in the Wuppertal zoo. During his life span this male produced three fledglings and all have been released into the wild.

This was the second consecutive year that losses were maintained at a minimal level and affected only old birds, giving us the possibility of increasing the captive population stock. As a reminder, the goal of the EEP is to obtain 200 birds in the captive stock which we are slowly achieving.

New partners

Every year new zoos are applying to join the Bearded Vulture EEP. In 2006 four new zoos expressed interest in collaborating and accepted the rules and goals: Oasi di Sant' Alessio (Italy), Košice Zoo (Slovakia), Dvůr Králové Zoo (Czech Republic) and Aachener Tierpark Euregiozoo (Germany).

Oasi di Sant' Alessio has signed the agreement and sent pictures of the potential aviary for housing a pair of Bearded Vultures, with a proposal to accept advice from the EEP coordinators on how to improve the aviary. The goal is to start with facility rebuilding beginning in 2017. Currently the aviary houses a human-imprinted adult Bearded Vulture, which will be included in the EEP and hopefully in the future can be used as foster bird.



Oasi di Sant' Alessio: view of the potential aviary and suggested EEP recommendations how to improve it.

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Aachener Tierpark Euregiozoo (Germany) has also sent pictures and is now waiting on a visit of the EEP Coordinator next spring, to evaluate the proposed aviary for housing Bearded Vultures in person.



Aachener Tierpark Euregiozoo: view of the potential aviary for housing Bearded Vultures.

During the winter of 2015-16, Amnéville zoo reconstructed its aviary following the exact recommendations for improvements from the EEP coordinators. This has made it possible for them to receive a pair of nestlings this spring. The birds have been introduced in the aviary using a hacking method, which has proven in other zoos to be one of the best methods for acclimatising birds in a new 'habitat'.



Amnéville zoo: Above- view of the potential aviary for housing Bearded Vultures. Below- view of the aviary after its reconstruction which has followed EEP recommendations.

Outlook / News

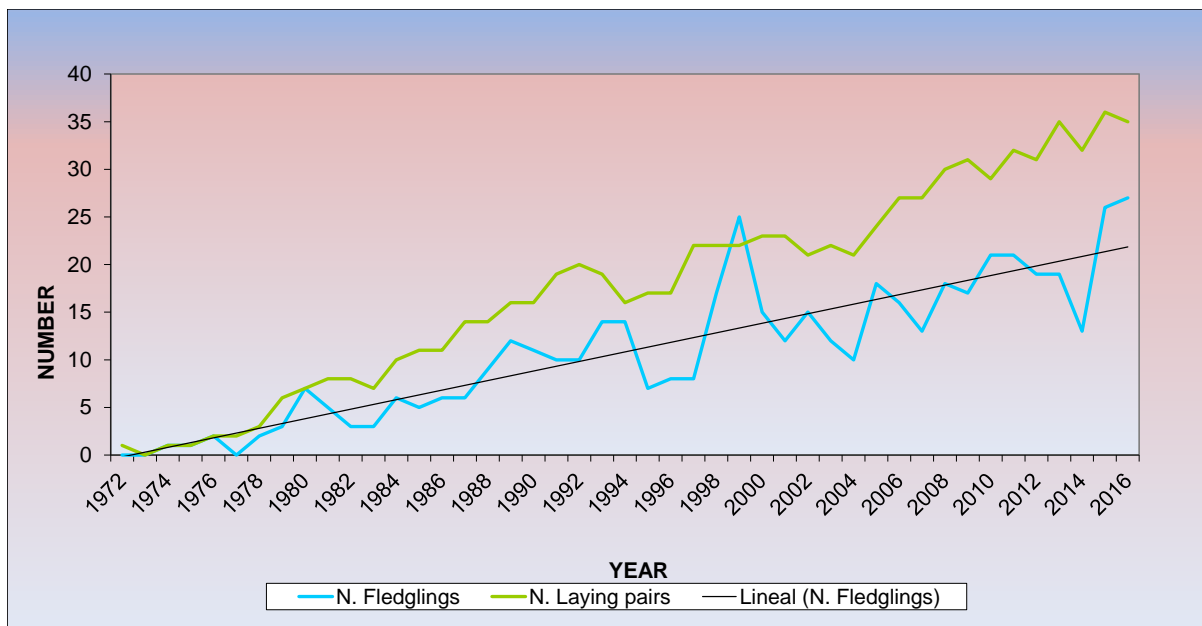
- The Bearded Vulture EEP is collaborating in four on-going reintroduction projects.

Since 1986, when the first release took place in the Alps, three additional reintroduction projects have begun using the EEP as base for their releases: Andalusia, Grands Causses and Corsica. This was possible thanks to the continuously increasing captive breeding stock and its breeding improvements, principally during the last years. This resulted in an opportunity to start a new

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reintroduction project in Grands Causses in 2012 -which is included in the framework of the LIFE Project GypConnect (LIFE14 NAT/FR/000050) since 2015- and to start a reinforcement project in Corsica in 2016.

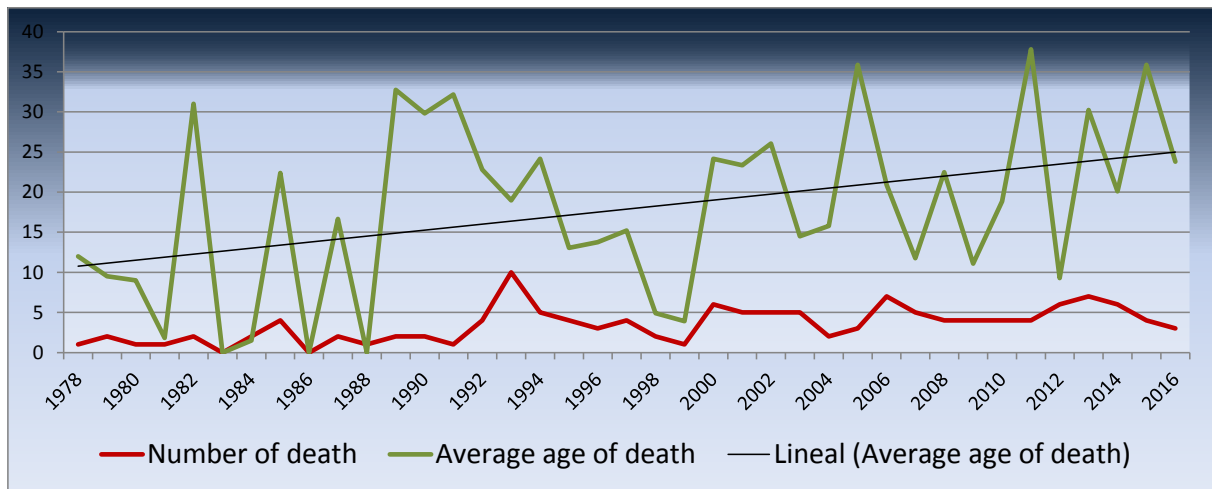
Currently the captive breeding stock is increasing yearly (on average 1-3 pairs per year), with high possibilities to raise the number of chicks produced per year. This increase is partially because old and infertile laying pairs have been substituted by new and younger reproducing pairs.



In addition, although new young pairs normally have lower breeding success during their first breeding season, now it's possible for the VCF staff to assist the partners with their birds from thousands of km away. This can be achieved thanks to the new advisory service offered by the VCF and new technologies (video-Skype, webcam, WhatsApp) so the VCF staff can directly follow the breeding evolution, advise the EEP Partners for nest controls and hand-rearing of chicks, and help take the right decision in every momentary situation. An example of this is the pair from Green Balkans, which started reproducing this year for the first time. Although both the pair and the Green Balkans staff had no experience with breeding, thanks to video-Skype they were advised directly by the VCF staff. In the nest control the first egg had to be removed due to hatching problems, and the staff were advised on how to assist the hatching process. The same occurred during the hand-rearing period. The success was apparent: both chicks hatched and were successful reared, something that rarely occurs by inexperienced birds and staff.

In regards to zoos; survival rate and average death age have increased significantly at these institutions during the last two years. Although at the beginning of the project several guidelines were drafted for helping zoos to upgrade their housing conditions and increase their survival rate, zoos didn't respond by improving their facilities.

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However, with the new VCF service zoos could be directly visited (± 20 visited zoos and 7 zoos advised remotely through pictures) and advised on how to improve their housing conditions. Additionally, two new completed and updated guidelines have been published and are available at the VCF homepage: guidelines for housing Bearded Vultures in captivity and guidelines for feeding (<http://www.4vultures.org/our-work/captive-breeding/bearded-vulture/>). All these encourage the zoos to put more effort into this species.



Thanks to the good cooperation in the Bearded Vulture EEP, the goal to re-establish an European meta-population is getting closer.

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We would like to thank our sponsors:



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ANNEX I

Table 1: BREEDING PAIRS IN 2016

AUSTRIA	PAIR	LAY DATE	HATCH DATE
Tiergarten Schönbrunn	BG 201 x BG 044002003	1 st : 25 th Dec	broken (1 st Jan)
Richard Faust Zentrum	BG 108065040 x BG 175152153	1 st : 15 th Dec 2 nd : 21 st Dec	06 th Feb 13 th Feb
	BG 017019021 x BG 070022023	1 st : 07 th Jan 2 nd : ? Jan	29 th Feb 07 nd Mar
	BG 199 x BG 107150151	1 st : 06 th Jan 2 nd : 12 th Jan	broken/fertile (22 nd Feb) disappeared
	BG 468223132 x BG 453286153	1 st : 26 th Jan 2 nd : 31 st ? Jan	disappeared (27 th Feb) disappeared (27 th Feb)
	BG 399159270 x BG 278065074	1 st : 24 th Dec	16 th Feb
	BG 681 x BG 560371103	-	<i>mating & nest building</i>
FRANCE			
Breeding Centre Asters	BG 297086104 x BG 115019021	1 st : 16 th Dec 2 nd : 21 st Dec	broken/fertile (21 st Jan) disappeared (16 th -17 th Jan)
	BG 454108175 x BG 518087054	-	<i>nest building only female</i>
A. de Fauconnerie du Puy du Fou	BG 212152153 x BG 651	1 st : 26 th Dec 2 nd : 2 nd -4 th Jan	infertile infertile
GERMANY			
Tierpark Friedrichsfelde Berlin	BG 294017070 x BG 292199107	1 st : 24 th Jan 2 nd : 30 th ? Jan	19 th ? Mar 23 rd Mar
Berlin Zoo	BG 298122118 x BG 320018272	1 st : 14 th Jan	infertile
Nuremberg Zoo	BG 018019021 x BG 336201044	1 st : 09 th Feb	04 th Apr (died 09 th Apr)
SPAIN			
Centro de Cría Guadalentín	BG 286 x BG 153	1 st : 15 th Dec 2 nd : 20 th Dec	06 th Feb 12 th Feb
	BG 313009006 x BG 330108119	1 st : 23 rd Dec 2 nd : 30 th Dec	putrefied 21 st Feb
	BG 391124041 x BG 360018272	1 st : 31 st Dec 2 nd : 07 th Jan	23 rd Feb 01 st Mar
	BG 337201044 x BG 317017070	1 st : 27 th Dec 2 nd : 02 nd Jan	17 th Feb 24 th Feb

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Centre de Fauna Vallcalent	BG 362080081 x BG 389199107	1 st : 03 rd Jan 2 nd : 09 th Jan	aborted aborted
	BG 410286153 x BG 290134135	1 st : 28 th Dec 2 nd : 04 th Jan	putrefied putrefied
	BG 124131132 x BG329043040	1 st : 08 th Jan 2 nd : 14 th Jan	30 th Jan 04 th Feb
	BG 371105178 x BG 103065040	1 st : 27 th Dec 2 nd : 23 rd Jan 3 rd : 27 th Feb	16 th Feb aborted (21 st -24 th Feb) 19 th Apr
	BG 223014010 x BG 725	1 st : 16 th Dec	08 th Feb
	BG 652 x BG 680	-	<i>mating & nest building</i>
	BG 551 x BG 588371103	-	<i>nest building</i>
Centre de Fauna Torreferrussa	BG 500 x BG 513009006	1 st : 20 th Dec 2 nd : 25 th Dec	aborted putrefied
SWITZERLAND			
Breeding Centre Goldau/Rigi	BG 174134135 x 118154155	1 st : 08 th Jan	29 th Feb
	BG 060034035 x BG 091005006	1 st : 24 th Feb	infertile
	BG 145131132 x BG 276199107	1 st : 15 th Jan	aborted
TS-REPUBLIC			
Liberec Zoo	BG 180161162 x BG 274	1 st : 10 th Dec 2 nd : 17 th Dec	aborted (just before hatching) 09 th Feb
Chomutov Zoo	BG 340018272 x BG 338134135	1 st : 11 th Jan 2 nd : 24 th Feb	06 th Mar (died 13 th Mar) Aborted
Ostrava Zoo	BG 207017070 x BG 233122118	1 st : 29 th Dec 2 nd : 05 th Jan	infertile aborted/putrefied
	BG 325017070 x BG 322152153	1 st : 15 th Jan	07 th Mar
Private Mr. Stika	BG 470159270 x BG 303009006	1 st : 20 th Jan	infertile
ESTONIA			
Tallinn Zoo	BG 431 x BG 436180274	1 st : 30 th Jan	23 rd Mar
LATVIA			
Riga Zoo	BG 327105178 x BG 381159270	1 st : 07 th ? Jan 2 nd : 14 th ? Jan	infertile? infertile?
ENGLAND			
Private Center	BG 722154155 x BG 723154155	1 st : 22 nd Mar	aborted
ITALY			
Center Monticello (M. Albertini)	BG 234086104 x BG 397201044	1 st : 07 th Jan 2 nd : ? Jan	Aborted (middle incubation) Aborted (week before hatching)

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Parco Natura Viva	BG 451108175 x BG469018272	-	<i>nest building</i>
ARMENIA			
FPWC (Yerevan zoo)	BG 828 x BG 826	1 st : 11 th -15 th Dec	03 rd Feb
		2 nd : 15 th -18 th Dec	07 th Feb
BULGARIA			
Rescue Center Green Balkans	BG 461199107 x BG 483108175	1 st : 07 th Feb	04 th Apr
		2 nd : 17 th -18 th Feb	14 th Apr

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TABLE 2. OFFSPRING IN 2016

STUDBOOK NO.	PARENTAGE	SEX	BREEDING STATION/ZOO	DESTINATION
BG 886	BG 124 x BG 329	f	Centro de cría Guadalentín	RELEASE (Corsica, Niolo Valley, FRANCE)
BG 887	BG 826 x BG 828	?	FPWC (Yerevan zoo)	BREEDING (not included in the EEP)
BG 888	BG 124 x BG 329	m	Centro de cría Guadalentín	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 889	BG 286 x BG 153	f	Centro de cría Guadalentín	BREEDING (Destination: Amnéville zoo)
BG 890	BG 108 x BG 175	m	Richard-Faust-Zentrum	RELEASE (Corsica, Niolo Valley, FRANCE)
BG 891	BG 826 x BG 828	?	FPWC (Yerevan zoo)	BREEDING (not included in the EEP)
BG 892	BG 223 x BG 725	f	Centre de Fauna Vallcalent	BREEDING (Destination: Guadalentín center)
BG 893	BG 180 x BG 274	f	Liberec zoo	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 894	BG 286 x BG 153	m	Centro de cría Guadalentín	BREEDING (Destination: Parc des Oiseaux)
BG 895	BG 108 x BG 175	m	Richard-Faust-Zentrum	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 896	BG 399 x BG 278	f	Richard-Faust-Zentrum	BREEDING (Destination: Richard-Faust-Zentrum)
BG 897	BG 337 x BG 317	f	Centro de cría Guadalentín	RELEASE (Lozère, Grands Causses, FRANCE)
BG 898	BG 371 x BG 103	f	Centre de Fauna Vallcalent	RELEASE (P.N. Castril, Andalusia, SPAIN)
BG 899	BG 313 x BG 330	m	Centro de cría Guadalentín	RELEASE (Melchsee-Frutt, SWITZERLAND)
BG 900	BG 391 x BG 360	m	Centro de cría Guadalentín	RELEASE (Melchsee-Frutt, SWITZERLAND)
BG 901	BG 337 x BG 317	f	Centro de cría Guadalentín	RELEASE (Lozère, Grands Causses, FRANCE)
BG 902	BG 017 x BG 070	m	Richard-Faust-Zentrum	RELEASE (P.N. Castril, Andalusia, SPAIN)
BG 903	BG 174 x BG 118	f	Tierpark Goldau	BREEDING (Destination: Plock zoo)
BG 904	BG391 x BG 360	f	Centro de cría Guadalentín	RELEASE (Baronnies, Léoux Valley, FRANCE)
BG 905	BG 017 x BG 070	m	Richard-Faust-Zentrum	RELEASE (Baronnies, Léoux Valley, FRANCE)
BG 906 ₁₎	BG 340 x BG 338	?	Chomutov zoo	DIED
BG 907	BG 325 x BG 322	f	Ostrava zoo	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 908	Asco Pair	f	Wild Corsica	BREEDING (Destination: Guadalentín center)
BG 909	BG 294 x BG 292	m	Tierpark Berlin	RELEASE (Untersulzbachtal, Hohe Tauern, AUSTRIA)
BG 910	BG 294 x BG 292	f	Tierpark Berlin	RELEASE (Untersulzbachtal, Hohe Tauern, AUSTRIA)
BG 911	BG 431 x BG 436	f	Tallinn zoo	BREEDING (Destination: Richard-Faust-Zentrum)
BG 912	BG 461 x BG 463	m	Rescue Center Green Balkans	BREEDING (Destination: Amnéville zoo)
BG 913 ₂₎	BG 018 x BG 336	?	Nuremberg zoo	DIED
BG 914	BG 461 x BG 463	m	Rescue Center Green Balkans	BREEDING (Destination: Plock zoo)
BG 915	BG 371 x BG 103	f	Centre de Fauna Vallcalent	RELEASE (Guadalentín, Andalusia, SPAIN)

1) died at 7 days old: very small chick (hatch weight 87g). The last three days the weight was decreasing daily.

2) died at 5 days old: was found dead under the nest.