

Bearded Vulture European Endangered Species Programme (EEP): Annual report 2014

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SUMMARY

In 2014 37 bearded vulture pairs in the EEP laid a total of 56 eggs, which resulted in 13 surviving juveniles. 9 of these were released in the 3 on-going reintroduction projects (Alps, Grands Causses & Andalucia), and 4 were added to the breeding network. Of the 13 offspring, 7 came from the specialized captive breeding centers, and 6 from Zoos.

Unfortunately one Partner (a private collection) had to be excluded because was not following the guidelines and recommendations of the EEP. During the last two years its 4 hatchlings have been hand-reared for flight shows, and one release site each year had to be cancelled because of lack of chicks.

There is currently a surplus of 11 females in the breeding network, so it will be necessary in the short term to keep males back for breeding.

Initially five new pairs were established in 2014 through transfers within the Zoos and centers. Unluckily the female of one of these new pairs died during pair bonding (it was killed by its male). During the year the EEP lost in total 6 birds (died). Two new zoos also expressed interest to collaborate with the Bearded vulture EEP.

Thanks to the financial support from EEP zoos and other organizations, the VCF managed to secure an effective EEP coordination and keep the specialized breeding center Vallcalent in Catalonia open at least for 2014 - we thank you for your support, without this the future of the bearded vulture in Europe would look bleaker!

Furthermore a new advisory service to the EEP could be developed and implemented during 2014 – customised and targeted visit to zoos to improve husbandry conditions. Eleven zoos have been visited by Alex Llopis without any extra charge. All zoos which have been visited before the new breeding season 2014/15 have realized all the suggested ameliorations for improving the housing conditions of their captive birds. The goal of these visits is to increase the average death age at the zoos (now is 16.2 years old to 27.1 years in the specialized breeding centers), and to maximize breeding and productivity, as well as animal welfare.

INTRODUCTION

The international Bearded Vulture breeding network (EEP – European Endangered Species Programme) is a VCF-coordinated network of zoos, animal parks, captive breeding centers and private collections aiming to breed this species in captivity for conservation purposes. Since 1978, a total of 435 young Bearded Vultures have been successfully bred, and 235 of those have been reintroduced in the wild, in three projects - the flagship Bearded Vulture reintroduction project in the Alps, the project in Andalusia (Spain) and also the one on the Grands Causses (France). The VCF's final goal is to restore the species across its former range in Europe, and establish an 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 2014 the EEP included 38 (mainly European) zoos, 3 large (red spots) and 2 smaller (green spots) specialized captive breeding centers, and 2 private keepers, keeping a total of 152 birds.



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

BREEDING RESULTS 2014

Specialized captive breeding centers

- Richard Faust Bartgeier Zuchtzentrum Haringsee (RFZ)

The RFZ, headquarters of the EEP and with a captive stock of 25 birds, is specialized in the reproduction of founder birds. During the breeding season 2014 seven pairs laid eggs. Three of these are old and experienced breeding pairs, one a young pair that produced an egg for the third time, one pair laid for the second time and two new pairs (newly bonded) laid for the first time (one of them a founder female). From the 11 laid eggs two chicks hatched. Unfortunately one of these died with an age of 12 days – only remains of the chick could be found outside of the nest.

- Centro de Cría de Guadalentín (CCG)

The CCG, with a captive stock of 19 birds, is the basis of the Andalusia Bearded Vulture reintroduction project. There are five breeding pairs. In one of them the female showed aggressions

Bearded vulture EEP: results for 2014

against the male during the mating period, being necessary to add two crows for re-directing the aggressive behaviour against the corvids. As soon as the female laid its first egg one of the crows was removed. Two chicks hatched from 9 laid eggs. Unfortunately one of them, with an age of 17 days, was predated by a stone marten (*Martes foina*) from under the chest of its mother.



BG 792 17 days old was predated by a stone marten (*Martes foina*) from under the chest of its mother.

- Centre de Fauna Vallcalent (CFV)

The CFV was built to create a Pyrenean genetic reserve. Four from the 11 birds housed there are from the Pyrenees. During 2014 two pairs laid five eggs from which 3 chicks hatched from only one pair. All three chicks had hatching problems and without human help they would have died during hatching. The two imprinted males, stimulated by their human carer, helped to incubate and both could rear successfully the chicks. Additionally, mating attempts could be observed in further three pairs (two young and the third composed by old birds).



BG 793, one of the three chicks with hatching problems, with its foster male Gualay (one of the two human imprinted birds). Thanks to human help the chick could be saved and reared successful by the foster male.

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

This is a small breeding center with a captive stock of 7 birds. In 2014 only one pair produced one egg, from which a chick was reared successfully. Additionally a new young pair could be observed mating for the first time.

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

This small breeding center is keeping 3 pairs. Each female laid one egg, from which two chicks hatched. Unfortunately one of them was killed by its mother a few hours after hatching.

- ☞ **Summary** 18 breeding pairs in the specialized captive breeding centers laid 29 eggs. 7 offspring were successfully reared, 4 males and 3 females, while 3 hatchlings died.



Breeding center Asters.

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 centers, they still contribute substantially to the number of young birds raised annually. Especially this year, with the bad breeding success at the specialized breeding centers, the zoos gave a significant contribution to the overall results, without which the 2014 releases couldn't be done. Furthermore, by maintaining a captive stock distributed in several separate locations, we decrease the 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 breeding season 2013 only 4 zoos (Chomutov, La Garenne, Liberec and Ostrava zoos) could successfully raise 6 males. The pairs in Academie de Fauconnerie du Puy du Fou, Almaty, Berlin

Bearded vulture EEP: results for 2014

(Zoo Berlin), Berlin (Tierpark), Helsinki, Monticello, Riga, Schönbrunn, Tallinn, and Yerevan zoos failed to produce young.

The Nuremberg pair and the very old pairs in Prague and Wuppertal didn't lay eggs.

☞ **Summary** 19 breeding pairs in the zoos laid 24 eggs. 6 offspring were successfully reared, 6 males.

- Private keepers:

From the England private collection breeding pair three eggs could be obtained. Unfortunately all of them aborted.

So in total, in 2014 38 pairs laid a total of 56 eggs, which resulted in 13 surviving juveniles. 9 of these were released, and 4 were added to the breeding network (see Table 2 in Annex I – Offspring in 2014).



Young Bearded Vultures from the EEP just after their release in the Swiss Calfeisen Valley. Currently there are approximately 200 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

During the last 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. Almost 20 Bearded vultures have been lost to the EEP due to flight shows, either directly (used for flight shows) or indirectly (breeding pairs producing descendants for these purposes). And all these descendants are human-imprinted and no more able to reproduce or use for releases.

Bearded vulture EEP: results for 2014

Furthermore, the Bearded Vulture EEP network is composed by different institutions: private and municipal Zoos, private collections, NGO's institutions and Governmental recovery centres, and several of them are not EAZA members. Additionally our Spanish partners (Governments of Catalonia and Andalusia) have severe regulations about the use of autochthonous endangered species, including a prohibition to maintain such a species in captivity without a special authorization from the Government. This authorization is only given for conservation programs and not for other activities like flight shows.

For these institutions it was very important that the management of the EEP be done by an international foundation (VCF), which assumes the responsibility to enforce the guidelines of the EEP, since EAZA has no power over those institutions which are not EAZA members. It is this international coordination structure (by the VCF) that secured that not releasable birds from the European autochthonous population (Pyrenean, Crete and Greece mainland) could be included in the EEP network, and contribute their genetic pool.

Under this context, and to secure the development of the captive breeding program and guarantee the continuity of the reintroduction projects, the EEP coordinator and co-coordinator asked the VCF (as owner of almost all EEP captive stock) to be proactive in this issue.

That's why the VCF suggested signing an agreement with all our partners, about the destination of the birds and their descendants – only for the breeding program EEP or for release, and not for other activities like flight shows. Additionally, to improve the effectiveness of the management, it was proposed in the agreement that the property of the descendants should be transferred to the VCF before they are transferred to a third institution. This gives the VCF the possibility to sign the same agreement with the third institution. The aim of the VCF is for all our Partners to sign this agreement until the end of 2015.

We would like to take this opportunity to thank all our many partners who have shown their confidence and signed the agreement during 2014.

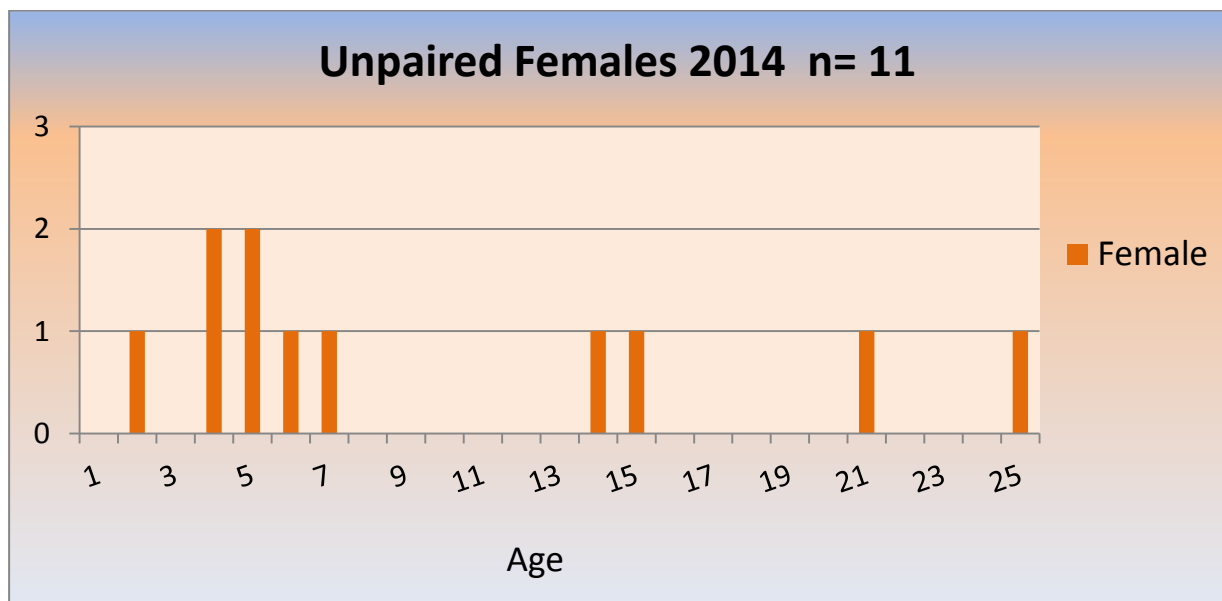
Using birds from the Bearded Vulture EEP for flight presentations means these birds are lost for the EEP breeding network. The Bearded Vulture EEP is one of the best managed, and a real showcase of how zoos are contributing to real conservation of an endangered species. We should strive to correct these bad practices – birds from an EEP should not be hand reared and/or involved in flight shows.



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 natural reared chicks fulfil this aim.

- Sex ratio

There is still a surplus of 11 females in the breeding network, with a severe lack of adult males. Even females which reproduced in the past cannot be paired at the moment due to the lack of males. Therefore it will be necessary to keep males back for breeding.



Transfers, additions, new partners, deaths

During 2014 8 birds were transferred (5 males and 3 females) with the objective to build 5 new pairs. Beauval zoo and Guadalentín received a male. Prague and Alpenzoo Innsbruck received a new pair. And the female from Plock zoo and the male from Hannover zoo were transferred to RFZ for pair bonding. Furthermore 4 birds (3 males and 1 female) are in the process to be transferred in the beginning 2015 to different zoos: Moscow, Novosibirsk, Jerez and Helsinki. This will help to establish 4 new pairs.

From the 13 available chicks, 4 were added into in the EEP network: 3 males and one female. The female was kept in the captive network to build a pair and replace the loss of the old breeding pair from Alpenzoo Innsbruck. This female is a descendent from a rare founder line (Crete and Greece mainland). Thanks to the incorporation of Yerevan zoo in the EEP network three new adult birds (2 males and 1 female) could be included in the captive stock.

Bearded vulture EEP: results for 2014



One of the breeding birds from the new EEP-Partner Yerevan zoo.

During 2014 two new zoos expressed interest to collaborate with the Bearded vulture EEP: The Yerevan Zoological Garden (Armenia, Director Mr Ruben Khachatryan), and the Parc des Oiseaux (France, Director Mr Emmanuel Visentin). The Yerevan zoo is specialized in South-Caucasian wildlife species and is managed by the Foundation for the Preservation of Wildlife and Cultural Assets (FPWC). With the entry of this zoo in the EEP network, three new founders (1 breeding pair and 1 male) could be included in the captive breeding stock. Parc des Oiseaux has one of the biggest bird collections in Europe, situated in Villars les Dombes, near Lyon. The Parc has been previously visited by VCF staff after their request, also to discuss where and how to build the new aviary. Beginning winter 2014, the Parc started with the building of a new aviary respecting completely the guidelines for housing Bearded Vultures in captivity and following the suggested modifications.



Plans from the new Alpine Aviaries, from our new EEP-Partner Parc des Oiseaux.

During 2014 we lost 6 birds (4 males and 2 females).

One approximately 38 year's old male in the RFZ, Austria, BG 156, died on the 30th of July because of senile decay and secondary aspergillosis. The real age of this male is unknown, but five years before the first signs of cataracts appeared. Since today we could only observe cataracts on very old birds. A 33 years old male, BG 179 from Helsinki zoo, Finland, died on the 5th of March because a peritoneal infection as consequence of a stomach perforation produced by a broken big bone. **Please avoid feeding Bearded Vultures with large (beef size) sharp bones. A similar incident happened several years ago in another zoo.** A 23 years old male, BG 148 from Stuttgart zoo, Germany, died on the 13th of May because of aspergillosis. A 11 years old male, BG 41 in RFZ, was euthanized on the first of May because of a fibroid tumour in both legs. A 11 years old female, BG 412 in centre de Fauna Vallcalent, Spain, died on the 24th of August, killed by its male during pair bonding. And one 3 years old female, BG 677 from Stuttgart zoo, died on the 23rd of November because of aspergillosis.

Outlook / News

- Aspergillosis continues being one of the main causes of death by Bearded Vultures in captivity.

It's well known that the pathogenicity of aspergillus spores decrease with altitude (over 900masl they lose completely their pathogenicity). That's why the Bearded Vulture, as a mountain species, has not developed an immune resistance against this kind of infection. And it is not surprising that Alpenzoo Innsbruck -the highest zoo in Europa 750masl-, nor Guadalentín Breeding centre -located in the middle of the Sierras de Cazorla (1300masl)-, have ever registered a bird with this kind of illness.

Contrary, as almost all zoos/centres are located in lower altitudes, aspergillosis infection is one of the biggest problems with this species. This can only be counteracted offering the birds the best housing conditions and food quality to improve their general fitness. Being conscious about this situation, the Vulture Conservation Foundation is offering a new advisory service for the Bearded Vulture captive breeding network, to help ameliorate the housing conditions of this species.

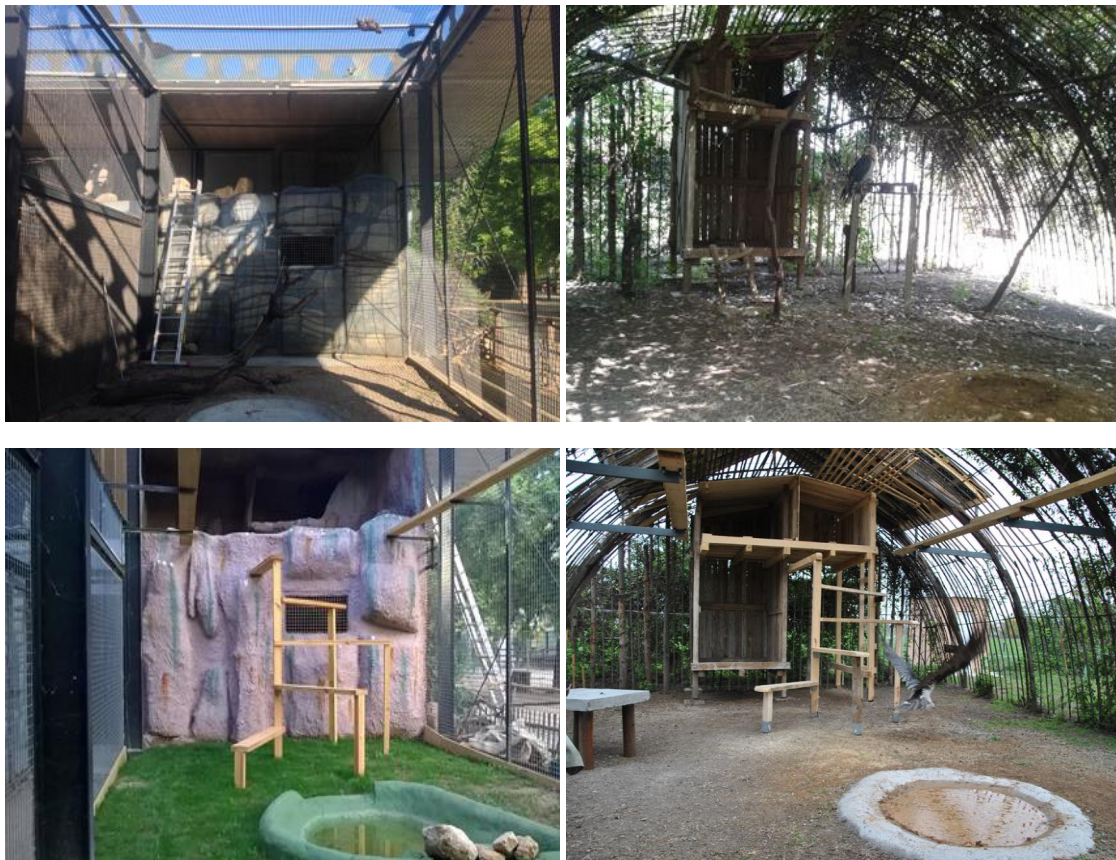
- New advisory service offered by the VCF-EEP coordination

Thanks to the financial support of our sponsors, the VCF could employ Alex Llopis full time to enhance and improve the management of the EEP network. All our EEP partners can ask for help and support from Alex Llopis regarding any question related to keeping and taking care of the bearded vultures. Additionally to this, Alex Llopis is available to visit your Zoo without any extra charge, and work with your bird curators on any aspect of bearded vulture husbandry. The VCF is only asking for the travel costs to be covered by the hosting zoo. 11 zoos/parcs/private keepers have already used this new advisory service offered by the VCF.

Bearded vulture EEP: results for 2014



Parco Natura Viva, Italy. Above several detailed pictures before the improvements have been done (below) after VCF staff visit. A new nest-site has been built, the vegetation as well a huge drinking bowl has been removed, protection of the old nest from neighbours interference and installation of perches throughout the aviary are the relevant modifications.



On the left Cordoba zoo, Spain: above before and below after rebuilding.

On the right Green Balkans rescue Center, Bulgaria: above before and below after rebuilding.

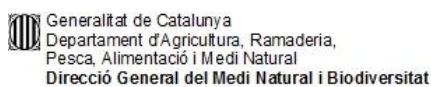
Bearded vulture EEP: results for 2014

Almost all visited zoos received a full Advisory Service Report where all suggested improvements to ameliorate the housing conditions of the birds are described and justified. These Reports can be downloaded in our website <http://www.4vultures.org/our-work/captive-breeding/bearded-vulture/>. Additionally all zoos which have been visited by Alex Llopis before the new breeding season started have realized the suggested ameliorations.



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

We would like to thank our sponsors:



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ANNEX I

Table 1: BREEDING PAIRS IN 2014

AUSTRIA	PAIR	LAY DATE	HATCH DATE
Tiergarten Schönbrunn	BG 201 x BG 044002003	1 st : 30 th Dec 2 nd : 7 th Jan	disappeared (13 th Feb) disappeared (13 th Feb)
Richard Faust Zentrum	BG 108065040 x BG 175152153	1 st : 15 th Dec 2 nd : ? Dec	disappeared 13 th Feb (25 th Feb nest empty)
	BG 017019021 x BG 070022023	1 st : 27 th Dec 2 nd : ? Jan	19 th Feb aborted
	BG 199 x BG 107150151	1 st : 26 th Dec 2 nd : 02 st Jan	putrefied/aborted Aborted
	BG 468223132 x BG 453286153	1 st : 10 th Feb	aborted
	BG 399159270 x BG 278065074	1 st : 4 th Jan	broken/disappeared
	BG 087014010 x BG 482	1 st : 18 th Jan	broken/putrefied
	BG 156154155 x BG 006019020	1 st : 27-28 th Jan 2 nd : ? Feb	aborted aborted
FRANCE			
Breeding Centre Asters	BG 297086104 x BG 115019021	1 st : 1 st -2 nd Dec	25-26 th Jan
	BG 454108175 x BG 518087054	-	<i>mating & nest building</i>
A. de Fauconnerie du Puy du Fou	BG 212152153 x BG 651	1 st : ? 2 nd : ? 3 rd : 10 th Feb 4 th : 17 th Feb	infertile infertile infertile infertile
GERMANY			
Tierpark Friedrichsfelde Berlin	BG 294017070 x BG 292199107	1 st : 17 th Jan 2 nd : ? Jan	infertile aborted
Berlin Zoo	BG 298122118 x BG 320018272	1 st : 21 th Jan	broken/infertile
Nuremberg Zoo	BG 018019021 x BG 336201044	-	<i>mating & nest building</i>
Wuppertal Zoo	BG 043019021 x BG 040034035	-	<i>mating & nest building</i>
KAZAKHSTAN			
Almaty Zoo	BG 159 x BG 270	1 st : 28 th Jan	infertile
SPAIN			
Centro de Cría Guadalentín	BG 286 x BG 153	1 st : 16 th Dec 2 nd : 22 st Dec	putrefied 13 th Feb (2 nd Mar killed by stone marten)

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	BG 313009006 x BG 330108119	1 st : 7 th Jan 2 nd : ? Jan	28 th Feb infertile
	BG 391124041 x BG 360018272	1 st : 6 th Feb 2 nd : 11 th Feb	infertile /putrefied infertile
	BG 337201044 x BG 317017070	1 st : 31 th Jan 2 nd : 6 th Feb	infertile /putrefied infertile /putrefied
	BG 362080081 x BG 389199107	1 st : 21 th Dec	aborted
	BG 410286153 x BG 290134135	-	<i>nest building</i>
Centre de Fauna Vallcalent	BG 124131132 x BG 142009041	1 st : 1 st Jan 2 nd : 11 th Jan	broken putrefied
	BG 371105178 x BG 103065040	1 st : 23 th Dec 2 nd : 09 st Jan 3 rd : 17 st Jan	16 th Feb 2 nd Mar 9 th Mar
	BG 652 x BG 680	-	<i>mating & nest building</i>
	BG 551 x BG 588371103	-	<i>mating & nest building</i>
	BG 223014010 x BG 725		<i>mating attempts</i>
Centre de Fauna Torreferrussa	BG 500 x BG 513009006	-	<i>mating & nest building</i>
SWITZERLAND			
Breeding Centre Goldau/Rigi	BG 174134135 x 118154155	1 st : 02 nd Jan	23 th Feb
	BG 060034035 x BG 091005006	1 st : 30 th Jan	infertile
	BG 145131132 x BG 276199107	1 st : 16 th Jan	11 th Mar (killed by its mother)
La Garenne Zoo	BG 034 x BG 130150151	1 st : 1 st Jan	23 th Feb
TS-REPUBLIC			
Prague Zoo	BG134 x BG 135	-	<i>mating & nest building</i>
Liberec Zoo	BG 180161162 x BG 274	1 st : 11 th Dec 2 nd : 21 th Dec	4 th Feb 11 th Feb
Chomutov Zoo	BG 340018272 x BG 338134135	1 st : 16 th Jan 2 nd : 28 th Jan	16 th Mar infertile
Ostrava Zoo	BG 207017070 x BG 233122118	1 st : 27 th Dec 2 nd : 8 th Jan	15-16 th Feb 3 rd Mar
	BG 325017070 x BG 322152153	1 st : 29 th Dec	20th Feb (died 23 th Feb)
Private Mr. Stika	BG 470159270 x BG 303009006	-	<i>nest building</i>
ESTONIA			
Tallinn Zoo	BG 431 x BG 436180274	1 st : 31 th Jan	broken/disappeared (18 th Mar)

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LATVIA				
Riga Zoo	BG 327105178 x BG 381159270	1 st : 6 th Jan	broken (17 th Feb)	
FINLAND				
Helsinki Zoo	BG 179154155 x BG 281131132	1 st : 11-12 th Feb	broken (male died 5 th Feb)	
ENGLAND				
Private Center	BG 722154155 x BG 723154155	1 st : ? 2 nd : ? 3 rd : ?	aborted aborted aborted	
ITALY				
Center Monticello (M. Albertini)	BG 234086104 x BG 397201044	1 st : 27 th Jan	aborted	
ARMENIA				
Yerevan zoo	BG 828 x BG 826	1 st : 19 th Jan 2 nd : 25 th Jan	infertile infertile	
BULGARIA				
Rescue Center Green Balkans	BG 461199107 x BG 483108175	-	<i>mating attempts</i>	

TABLE 2. OFFSPRING IN 2014

STUDBOOK NO.	PARENTAGE	SEX	BREEDING STATION/ZOO	DESTINATION
BG 788	BG 297 x BG 115	m	Breeding Center Asters	BREEDING (Destination: Helsinki zoo)
BG 789	BG 180 x BG 274	m	Liberec zoo	BREEDING (Destination: Zoobotanico Jerez zoo)
BG 790	BG 180 x BG 274	m	Liberec zoo	RELEASE (Debanttal, Hohe Tauern, AUSTRIA)
BG 791 ₁₎	BG 108 x BG 175	?	Richard-Faust-Zentrum	DIED
BG 792 ₂₎	BG 286 x BG 153	?	Centro de cría Guadalentín	DIED
BG 793	BG 371 x BG 103	m	Centre de Fauna Vallcalent	RELEASE (Debanttal, Hohe Tauern, AUSTRIA)
BG 794	BG 207 x BG 233	m	Ostrava zoo	RELEASE (Lozère, Grands Causses, FRANCE)
BG 795	BG 017 x BG 070	f	Richard-Faust-Zentrum	RELEASE (Lozère, Grands Causses, France)
BG 796 ₃₎	BG 325 x BG 322	?	Ostrava zoo	DIED
BG 797	BG 174 x BG 118	m	Tierpark Goldau	RELEASE (Calfeisental, SWITZERLAND)
BG 798	BG 313 x BG 330	f	Centro de cría Guadalentín	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 799	BG 371 x BG 103	m	Centre de Fauna Vallcalent	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 800	BG 207 x BG 233	m	Ostrava zoo	RELEASE (Guadalentín, Andalusia, SPAIN)
BG 801	BG 371 x BG 103	f	Centre de Fauna Vallcalent	BREEDING (Destination: Alpenzoo Innsbruck)
BG 802	BG 034 x BG 130	m	La Garenne zoo	RELEASE (Calfeisental, SWITZERLAND)
BG 803 ₄₎	BG 145 x BG 276	?	Tierpark Goldau	DIED
BG 804	BG 340 x BG 338	m	Chomutov zoo	BREEDING (Destination: Alpenzoo Innsbruck)

1) died with an age from 12 days: cause of death unknown.

2) died with an age from 17 days: predated by stone marten (Martes foina)

3) died with an age from 3 days: parents without rearing experience

4) died a few hours after hatching: killed by its mother