THE BEARDED VULTURE EUROPEAN ENDANGERED SPECIES PROGRAMME (EEP) – Results 2016

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Introduction

In 1978 the Bearded Vulture Reintroduction Project started in the Alps (FZG 832/78; WWF 1567/78) based on a captive breeding program. This Bearded vulture captive network has been included in the European Endangered Species programme (EEP) since the EEP began. Between 1978 and 2016, 488 juveniles were reared successfully as part of the programme, creating the possibility to broaden the initial goals and start other reintroduction projects. The reared offspring have been used for re-introduction projects in Europe: in the Alps (210), Andalucía (44), Grands Causses (11), Sardinia (3), Corsica (2), and for the captive breeding network (218). From the 270 released birds, four nestlings have been release within the framework of the LIFE Project GypConnect (FIFE14 NAT/FR/000050): two nestlings in Grands Causses and two in Baronnies. The first reproduction of Bearded Vulture in the wild occurred in 1997 (France) and until 2015 148 nestlings have fledged in the Alpine mountains. In 2015 a great event was achieved by the Andalusia Bearded vulture reintroduction project: after nine years of releases the first chick hatched in the wild from a female that was only five years old.

All these achievements have been possible thanks the constant breeding success achieved at the Alpenzoo Innsbruck, who was inspired to start a reintroduction project based on a captive breeding programme. The essential guidelines along with its *modus operandi* were established during the international meeting held in 1978 in Morges, Switzerland. One of these guidelines was to restrict the programme to the use of Bearded Vultures that were already in zoological parks, or wild birds which had been injured and were not suitable for release. With this in mind, a breeding centre was created on the outskirts of Vienna (Richard Faust Zentrum, RFZ), which is also the coordinating centre for the programme.

Initially, the Frankfurt Zoological Association and WWF Austria provided the financial support for this project and since 1992 the Vulture Conservation Foundation (the former Foundation for the Conservation of the Bearded Vulture) has taken the lead of the project. A general meeting is held yearly, where all ex- and in situ results are presented. During the last years this annual meeting has become a gathering for experts on Bearded Vultures, where people who are monitoring other wild and reintroduced populations present their results and problems, and discuss solutions together.

The captive network as source for reintroduction projects

The Bearded Vulture is a territorial and non-colonial species; thus it is not recommended to hold a group together because as soon as a pair bonding arises they defend their territory (aviary) against their con-specifics. That's why the most appropriate release method for this species is the "hacking" technic, where nestlings are introduced in an artificial adapted nest site. One of the pillars of success of this method is the learning and adaption capacities that result from the age and species. In birds, learning and adaption capacities peak are during the nestling and especially fledgling phase. Furthermore, they recognize the release site as their hatching place, increasing the high return percentage and occupying

territories in the surroundings of the release area. This philopatric inborn behaviour makes possible to build up a local subpopulation.

In 1978 was clear that only offspring from Zoos could be used, because the autochthonous populations were threatened or unexplored. At that time nearly 40 bearded vultures were still distributed throughout European zoos, including only one successful brooding pair. With the help of Hans Psenner, former Alpenzoo Director, and Richard Faust, former Frankfurter Zoologische Gesellschaft President, it was possible to convince all European zoos to cede their birds for this Conservation goal and to transfer most of these birds to the Richard Faust Centre. Paired birds and juveniles went back to the zoo, and so from 1978-1985 the European breeding network emerged and was a precursor of the later established EEP

Goals of the Bearded Vulture EEP

The first objective was to ameliorate the breeding success of the captive population. This would primary satisfy the needs of the zoos, stop the importation of wild birds, and assure a minimum production of chicks per year for the release.

To achieve this first objective the breeding centre Richard Faust Zentrum was created, and most of the birds were transferred to RFZ for pair bonding, to study behaviourally problematic birds, obtain information about the needs of this species to maintain in captivity in well conditions, to reproduce with them and finally develop the housing guidelines for this species.

At the beginning the objectives of this programme was clearly defined and until today followed. One of them is to create a captive stock as genetic reserve, managing genetic and demographic the captive population. At the main time build an ex situ genetic reserve from European autochthonous population (Pyrenees and Corsica). Also to produce chicks able to reproduce as they get sexual maturity and appropriate for the reintroduction. The final goal is the conservation in situ, establishing a wild population capable to survive and reproduce, independently of human intervention. And in collaboration with the Vulture Conservation Foundation (VCF), the ultimate aim of the programme is to set an 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 achieve if chicks are natural reared, fomenting the development of their natural behaviour. That’s why the Logo of the Bearded Vulture EEP is: Quality before Quantity.

To ensure a species appropriate rearing, all chicks are naturally raised by their parents or foster parents

The Alpine Bearded Vulture reintroduction project, has been one of the first projects which fomented in situ conservation trough the ex situ conservation -giving the zoos a new vision on their conservation function-, and promoted the future born of the EEPs.

EEP structure

The Bearded Vulture EEP network is composed of a huge number of different types of institutions: private and municipal Zoos, private collections, NGO institutions and Governmental recovery centers, and several of them are not EAZA members. That's why an international foundation structure (Vulture Conservation Foundation) was created to assure that all partners accept, respect and follow the guidelines of the EEP. There are 38 (mainly European) zoos, 3 large (red spots) and 2 smaller (green spots) specialized captive breeding centres, and 2 private keepers, which are keeping a total of 167 birds. 80% of these are owed by the VCF.


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

Because pair formation in Bearded Vultures can be complicated and dangerous, the EEP decided that it was necessary to create a distinction between centres dedicated exclusively to breeding (zoos and private centres) and centres dedicated to breeding and pair formation (Specialized Breeding Centres:

SBCs). The role of the former is to house already established pairs and to breed the maximum number of offspring from them, while the latter, where specialized staff is working, are responsible for establishing new pairs, take in new founders (injured birds from the wild), adopt chicks, house problematic birds, and create a genetic reserve by receiving specimens from all of the genetic lineages that make up the EEP.

The average breeding success in the Specialized Breeding Centres is 0.89 juvenile/pair, with the first successful breeding at an average of 9.2 years, and the life expectancy is 27.1 years. In the other institutions, the comparative figures are 0.39 juvenile/pair, 12.4 and 16.6 years respectively. This quite considerable difference shows the importance of Specialized Breeding Centres, which is due to the continuous presence of highly experienced staff.

Nevertheless Zoos and other institutions play a crucial role in the EEP and in the conservation of Bearded Vultures. Although the success rate is lower, they still contribute substantially to the annual number of raised animals. Furthermore, by maintaining a captive stock distributed in several separate centres, we reduce the risk of losses because of epidemic diseases. Most importantly zoos contribute by showcasing the species and its conservation plight to hundreds of thousands of people, helping to build the core support for vulture conservation that would otherwise be impossible to achieve.

Future of the Bearded Vulture EEP

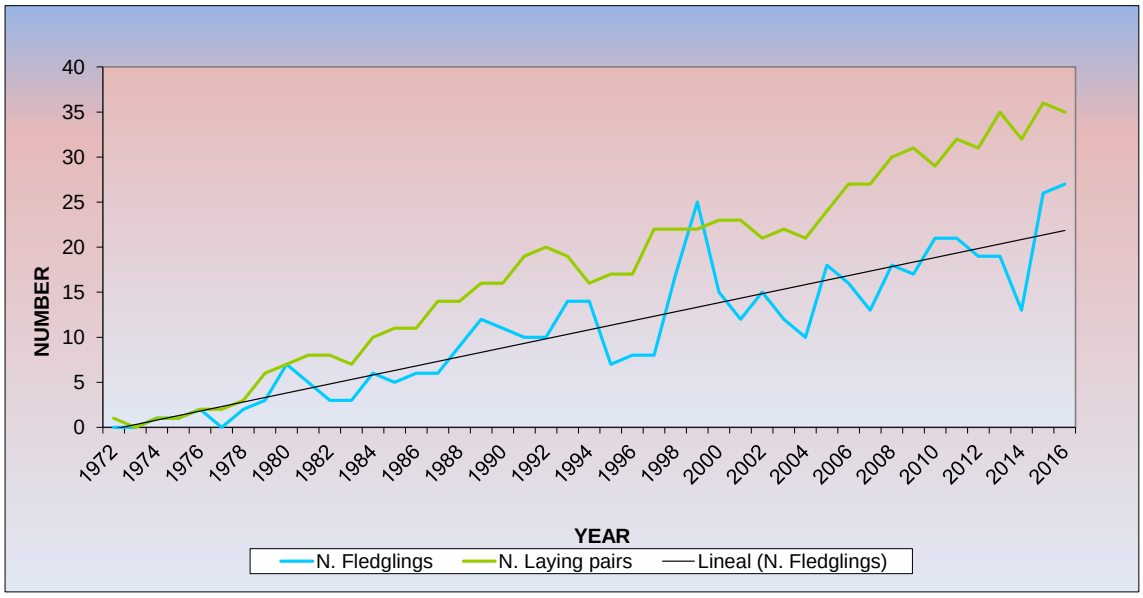
The goal of the EEP network is to enlarge the captive stock until 200 birds. Because of the high demand of birds for the on-running reintroduction projects, the yearly number of nestlings included in the EEP is very low, being necessary to increase the survival rate of the birds at the zoos. That's why the VCF has offered since 2013 a new advisory service, which by request a VCF expert visits the zoo and evaluates the birds and their aviary conditions, giving them recommendations for improvement.

Furthermore, the in situ conservation is dependent from the high breeding success at the SBCs. But the SBCs future is insecure about not having a source of income as zoos (visitors). Otherwise zoos with their low breeding success and higher bird mortality, they could hardly keep the EEP, and even think in situ conservation. The Bearded Vulture EEP is a clear example how only mutual support can be possible to achieve the final goal: Conservation in situ.

Breeding results 2016

This year 2016 again a new record could be archived inside the EEP: the reproduction of 27 fledglings. In total 35 bearded vulture pairs laid 59 eggs, from which 29 hatchlings could be obtained and 27 surviving juveniles. 17 of these were released in the 4 on-going reintroduction projects (Alps, Grands Causses, Corsica and Andalusia), and 10 were added to the breeding network. Of the 27 offspring, 18 came from the specialized captive breeding centers (18 laying pairs), and 9 from Zoos (17 laying pairs).

Since the beginning of this international captive breeding the number of yearly produced chick has continuously increased -as well the yearly number of laying pairs-. But during the last two breeding season we could obtain reproduction records (see figure below).



This is partly due because in one hand that old infertile laying pairs have been substituted by new younger reproducing pairs. Although new young pairs have during their first breeding season lower breeding success, thanks the new advisory service offered by the VCF and new technology applications (video-Skype, webcam, WhatsApp), the VCF staff, sitting thousands of km far away of the pair in question, has the possibility to follow directly its breeding evolution, advise directly the EEP Partners by nest controls and hand-rearing of chicks, and help to take the right decision in every momentary situation.

On the other site, survival rate and average death age have increased significantly at the zoos during the last two years. Although from the beginning of this project several guidelines have been drafted for helping the zoos to ameliorate their housing conditions and increase their survival rate, zoos didn't applied by building their facilities. But the new VCF service, zoos could be directly visited (±20 visited zoos and 6 zoos advised from distance through pictures) and advised how to improve their housing conditions. Additionally two new completed 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 take more attention for this species. As example, actually all French zoos included in the Bearded vulture EEP have rebuild/build new facilities or are rebuilding their facilities following completely the EEP guidelines.

Thanks the improvements at the zoos, we can aspect that the following years similar reproduction results can be obtained like the last two years, and assure that all on going reintroduction projects will be supplied with chicks for their releases.