

BONELLI'S EAGLE CAPTIVE BREEDING PROGRAM, A SUCCESSFUL PROJECT.

Alvarez, E.; Feas, F.; Garcés, F. ; Grau, A.; Iglesias, J.J.
GREFA (Grupo Para la Rehabilitación de la Fauna Autóctona y su Hábitat.) www.grefa.org.



INTRODUCTION

GREFA is an NGO founded in 1981 and located in Madrid, Spain. In the beginning was a wildlife hospital and in 1994 founded a raptor breeding center. In this moment Bonelli's eagle, golden eagle, lesser kestrel, Eurasian black vulture.. are being breed in the center.

Bonelli's eagle is listed endangered in Madrid, and the law 2/1991 sets the engagement of adopting measures for conservation and recovery of the species. A draft of the Conservation Plan was done in 1997 but it has not been still approved. Since then periodic surveys have been done and the breeding pairs are followed closely every year.



Wild adult male captured and tagged in 2009.

GREFA is also satellite tagging adults and young birds in trying to define high mortality points , important areas for conservation and dispersive areas for the young born in Madrid.

It is important for all this reasons to invest in an ex-situ and in-situ conservation strategy for bonelli's eagle, with a captive breeding and reintroduction project, to avoid the extinction of the species in Madrid and guarantee a long term stable recovery.

THE CAPTIVE BREEDING PROGRAM

The bonelli's eagle breeding program started in 1997 with the always hard work of getting nonreleasable birds from the rehabilitation centers all around Spain. It took some years to put together enough individuals as to from three couples suitable for breeding. In 2007 the Junta of Andalusia started to send chicks taken from wild nests to be incorporated to the program. Since then a total of 5 chicks have been taken from the wild, always with technical supervision.

The main objectives of the program are:

- Create a reproductive stock and genetic pool of the species.
- Get specific knowledge of the species behavior and captive needs.
- Obtain a number of chicks enough to allow a reintroduction project in Madrid or otherwise.

The method followed for breeding program in known as "natural breeding", means that the couples copulate and lay the eggs with no human intermission. At this moment we are starting to work in the artificial insemination program using imprinted birds.

The cages for the adults are 5*4*5 m with a nest protected from the rain and the direct sun. The birds are feed daily and always have clean water available. All the nests are controlled by video cameras The eggs are incubated for one third of the total incubation period by the natural parents, if possible. If this is not possible they are taken once they are lied and incubated using the Brinsea contact incubation system. Once this period is completed the eggs are transfer to a Grumbach forced air incubator, temperature of 37.2 and humidity between 30 and 40%.

The first chicks were born in 2009. A total of 5 fertile eggs were obtained all of them from the same couple. A second pair lied two clutches but all eggs where infertile. Incubation period is of 38 days until pip and 24-48 hours for hatching. One of the eggs needed to be open because the chick had difficulties for hatching, finally the chick died in a few hours.

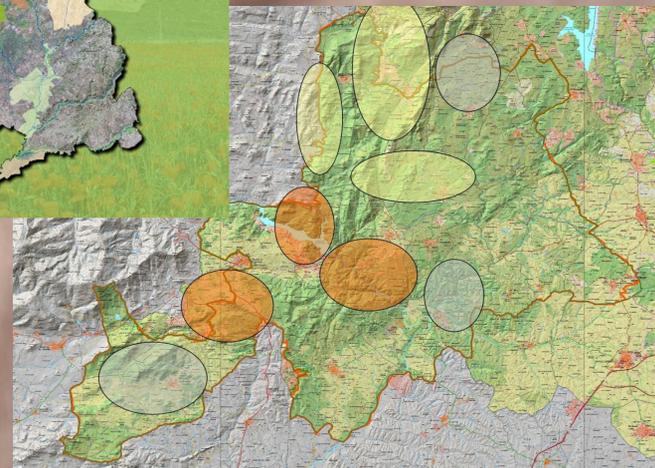
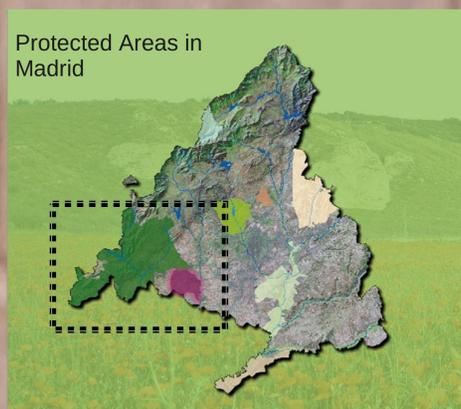
All the chicks breed in 2009 will be kept as part of the breeding stock in GREFA, the purpose is to get at least 15 breeding pairs. At this moment we count five adult couples suitable for breeding and six more formed by young and sub- adult birds.

REINTRODUCTION FEASIBILITY STUDY

The study was made in 2007 by FICAS. The results show population has been in the same number for the las decade, with two breeding pairs . There are two more pairs in the vicinity of Madrid that seem to have part of the territory into the region. The population was estimated in the late 70s and the early 80s of the past century in a minimum of 15 breeding pairs

For determining the ideal releasing areas information about areas used in the past by the species was contrasted with the known presence of competitor species or other endangered species. After the preliminary selection all the areas have been prospected for determining their quality.

Reintroduction starting date is depending upon the evolution of the breeding program. Other than Madrid proposals for reintroduction have been received from Baleares Islands , Navarra and Burgos .



STUDIED REINTRODUCTION AREAS:

- Orange: confirmed reproductive areas in the past
- Yellow: Probable reproductive areas in the past
- Grey: Potential reproductive areas

ACKNOWLEDGMENTS

Victor García-MARM, Junta de Andalusia, Junta de Extremadura, Generalitat Valenciana, Comunidad de Madrid, Deiroleucus center, FICAS, FIDA, Diana del Río, Pablo Izquierdo, Isabel Elguero, Nacho Otero, Isabel Moreno, Manuel Galan., and all the volunteers of GREFA.



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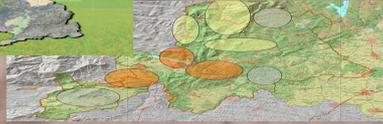
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Protected Areas in Madrid



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