TECHNICAL PROPOSALS

TO FAVOR THE CONSERVATION OF

BARN OWL (Tyto alba)

IN THE COMMUNITY OF MADRID

Brinzal is a non-profit organization dedicated to the study, conservation and rehabilitation of nocturnal raptors

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BACKGROUND

In 15 years, the Barn Owl has gone from being an abundant and almost homogeneously distributed species throughout the Community of Madrid to having an alarmingly low number of couples. It is very important to be aware of the very serious situation of this species in the region. As an example, we currently have less than half of the breeding pairs of Lechuza than of the Iberian imperial Eagle (Aquila adalberti), a species classified as "endangered."

During the year 2019 we have executed the project “Influence of agricultural uses in the ecology of endangered wild species: the case of the Barn Owl”, with the support of the Biodiversity Foundation of the Ministry for Ecological Transition and the Ministry of Environment, Territorial Planning and Sustainability of the Community of Madrid. Most of the project's actions have allowed us to deepen our knowledge of those components of its ecology that affect its conservation, with the aim of promoting changes in agricultural and livestock management that make this use of the territory compatible with the maintenance of the population of the species.

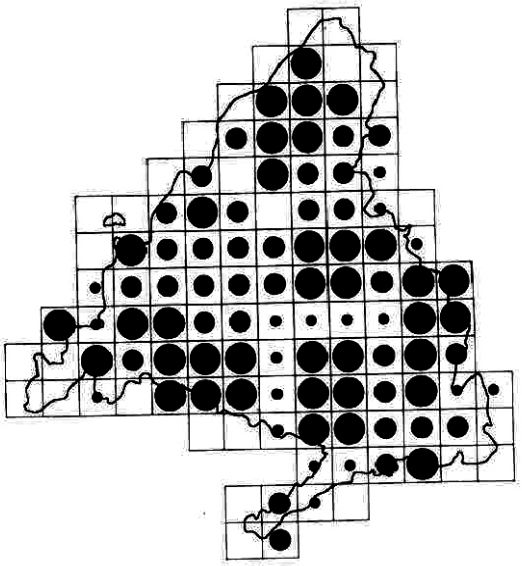
The following guidelines, derived from the results of these actions, are aimed at alleviating the current limiting factors, so that they can be part of a management program for the barn owl population in the Community of Madrid.

PROPOSALS

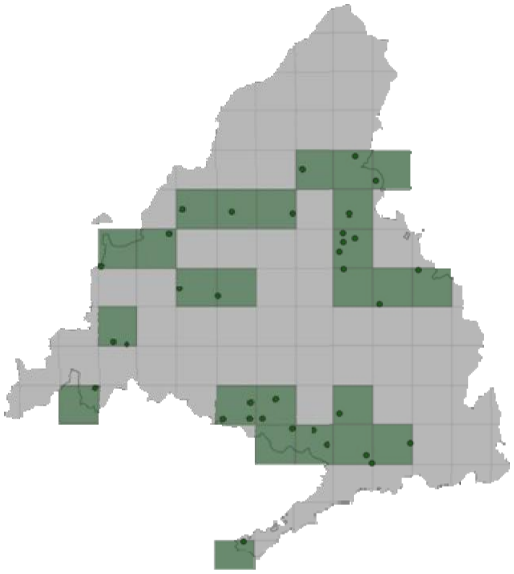
I. Review of the situation of the Barn Owl in the Regional Catalog of Endangered Species of Wild Fauna and Flora, and of Singular Trees of the Community of Madrid.

In Decree 18/1992, of March 26, which approves the Regional Catalog of endangered species of wild fauna and flora and creates the category of unique trees, the Barn Owl was classified as “of special interest”, that is, it deserves particular attention based on its scientific, ecological, cultural value or its uniqueness. However, almost 18 years have passed since the approval of this Decree and the situation of the Barn Owl has changed dramatically.
According to the results of the Atlas of nesting birds in Madrid, of the Environment Agency of the Community of Madrid and SEO / Birdlife, of 1994, the Barn Owl was present as a breeder in 87 of the 115 UTM grids of 10 x 10 kilometers that make up the Community of Madrid. In the census conducted by Brinzal in 2018, only presence was detected in 25 of the grids.

Regarding the number of couples, although there are no previous estimates for our community, judging by the densities reached by the species and the still abundant space that it can occupy in Madrid, we can estimate the reproductive population at the beginning of the 1990s. The 2018 Census of Brinzal reduces this figure to 25-37 breeding pairs. With these data, which reflect a drastic and rapid reduction, of the species in the Community of Madrid, it is necessary to urgently review its cataloging.



Atlas of the nesting birds of Madrid, 1994



Census of 2018

The inclusion of the Barn Owl in a category that reflects its real situation, regardless of the possible actions of the public administrations aimed at the species, would favor the implementation by the private initiative of projects aimed at its conservation.

II. The Need to deepen the knowledge of the factors involved in the regression of the species.

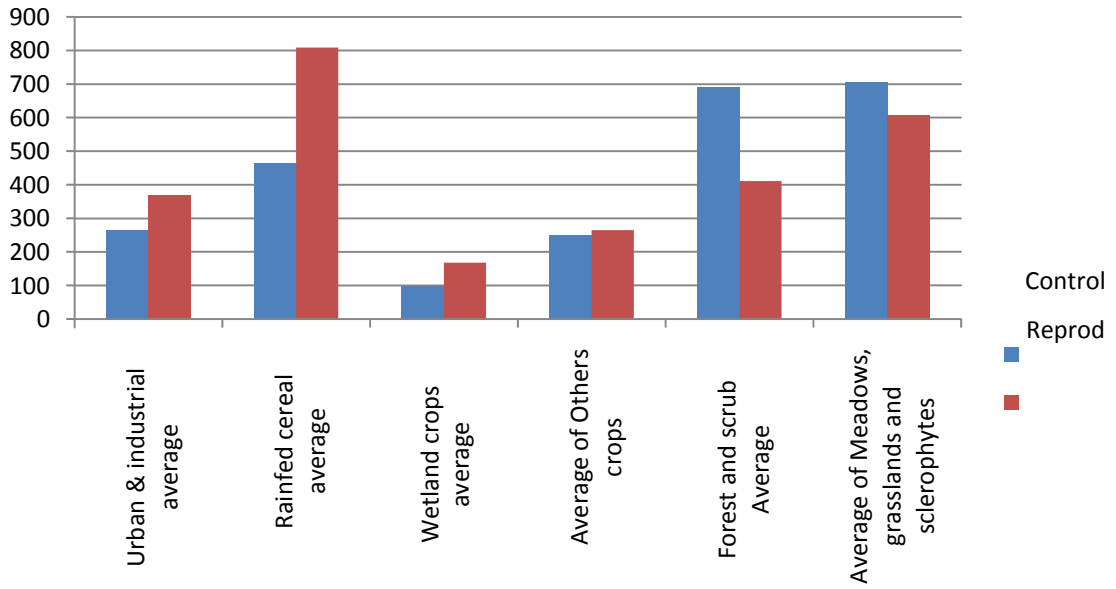
The study of the current habitat selection of the Barn Owl that we have carried out in the framework of our project during 2019, has allowed us to know the requirements of the species in this regard, as well as to investigate whether the habitat is the factor that limits its population.

As can be seen in the following graph, dryland cereal is the majority selected habitat, the differences with the results of the control group being significant. These areas are those of searching and in which the barn owls obtain their food.

Urban and industrial land also show significant differences: it provides nesting sites. Forest areas, on the other hand, are systematically avoided.

The rest of habitat groups (irrigation, other crops, meadows and pastures, etc.) do not show statistically significant differences. Despite this, we know that a good number of couples are installed in cattle pastures.

Thus, it is clear that human activity, both agricultural and livestock, provides the conditions that barn owls need. However, the loss of rainfed agricultural habitat in the Community of Madrid since 1990 has been minimal, therefore there is no direct relationship between the distribution of the species and the amount of apparently available habitat.



Average of Ha of different land uses included in polygons of 3 km radius

It is also important to note that this population decline of the Barn Owl in the Community of Madrid, is being experienced by a large part of the species that also depend on rainfed agricultural systems, such as European Little Owl, Montagu's Harrier, Lesser Kestrel, Little Bustard, Pin-tailed Sandgrouse or Calandra Lark.

The study of the availability and use of trophic resources that we have also carried out during this year, has shown that the average abundance index of possible Barn Owl dams is double in livestock areas than in agricultural areas. This loss of trophic resources in the agricultural media, historically more favorable to the species, may be behind its decline or disappearance in areas such as southeast Madrid. Especially striking is the great shortage of potential preys of the species in areas where it was

present and has disappeared in recent years, and in which, in addition, intensive agriculture is practiced.

The catch rates, expressed by the formula nº copies / (nº traps x nº of nights) in agricultural land occupied by owl were 0.08 to 0.13, while in livestock areas that had Barn Owls the index turned out to be 0.19 . The catch rates obtained in agricultural areas historically occupied by Barn Owls but currently without their presence are 0.01 to 0.03.

These figures give us the idea that for Barn Owls to be established on agricultural land, there must be significant populations of micromammals in them.

Although there is still a large amount of rainfed agricultural habitat, the management that is carried out on it - and that can greatly change its qualities - must be the key that explains the alarming decrease in the number of Barn Owls in Madrid. Therefore, and despite the fact that these data are revealing, it is still necessary to know the physiognomy of the agricultural habitat that allows the presence of this and other species linked to these areas.

III. Promotion of effective measures in the next Common Agricultural Policy that contribute effectively to the conservation of species linked to agricultural means.

The concern for agricultural sustainability and environmental conservation has been gaining weight in the Common Agricultural Policy over the years. The Greening or "green payment" established since 2015, which complements the basic payment to farmers in the CAP, has encouraged good environmental practices in agricultural production, as well as the maintenance of surfaces that are beneficial for the climate and the environment. However, these practices do not seem to be improving the population trends of species dependent on agricultural habitats.

The measures implemented by the Greening - crop rotation, maintenance of permanent pastures and the presence of surfaces of ecological interest on the surfaces - have led to indisputable improvements. However, there are also many aspects that must be improved. For example, the woody crops, with the weight that they suppose in the agricultural surface of our country, are outside these measures, assuming that, already of themselves, they are favorable and, ignoring, the intensification that the sector is undergoing in the last years.

Several studies question the validity of these measures. Elena Concepción and Mario

Díaz, researchers from the National Museum of Natural Sciences (MNCN-CSIC) have evaluated the effectiveness of the CAP conservation tools for the conservation of birds linked to agricultural environments. According to their studies, the effectiveness of agri-environmental measures varies depending on the regions and groups of birds. However, there are some measures aimed at promoting certain crops (such as legumes), fallows, borders and natural vegetation spots, which are effective for many species.

We are at the door of a new CAP reform, so it is essential to take stock of the validity of the measures that have been implemented in the 2015-2020 period and that this new reform contributes effectively to conservation of biodiversity that depends on agricultural activity. For this, studies such as that of the previous authors and projects, such as LISA (Landscape, Infrastructures and Sustainable Agriculture), that the Global Nature Foundation coordinates in Spain and that evaluates the most valuable ecological infrastructures for the agricultural landscape must be taken into account and the effectiveness of the Greening of the CAP in generating benefits for the environment.

IV. Establishment of practical and effective measures from the competent administrations.

The regional administrations have legislative and executive powers in agricultural matters, so they have ample room for maneuver to implement measures that promote the conservation of biodiversity dependent on agricultural habitats.

Since these are agricultural practices that favor the sustainability and conservation of biodiversity, regional regulations can and should facilitate and encourage the conversion of intensive and ecological crops, among other things, with tax incentives.

In addition, it must bet in a brave way for the implementation of real and tangible measures that have proven effective in enhancing biodiversity and the health of agricultural environments, such as the promotion of ecotones, fallows, crop borders and spots of natural vegetation, plant cover, and the cultivation of legumes vital for the conservation of certain species.