

# **Guideline for the different Agri-Environmental Schemes for the benefit of the Great Bustard (*Otis tarda*)**

Prepared by:

Miklós Lóránt, Hungary – Kiskunság National Park Directorate

Péter Tóth & Éva Fejes, Hungary

Rainer Raab, Austria – TB Raab

Dr. Torsten Langgemach, Germany

Jozef Ridzoň, Slovakia



Endorsed by the Signatories  
to the Memorandum of Understanding on the Conservation and Management  
of the Middle-European Population of the Great Bustard (*Otis tarda*),  
via electronic correspondence procedure on 22 December 2023.

## **Table of contents**

1. Introduction
2. The relationship between the Great Bustard and the agrarian environment
  - 2.1. Agrarian habitats as displaying grounds
  - 2.2. Agrarian habitats as breeding sites
  - 2.3. Agrarian habitats as moulting areas
  - 2.4. Agrarian habitats as wintering grounds
3. Expectation of the agri-environmental schemes on Great Bustard sites
4. References
5. Annexes I-IV Range states with applied agri-environmental schemes focusing on Great Bustard conservation
  - 5.1. Austria
  - 5.2. Hungary
  - 5.3. Slovakia
  - 5.4. Germany

## 1. INTRODUCTION

The development of agricultural technologies, the intensification of cultivation and animal husbandry, - along with several other threats - , led to the collapse of the Central European Great Bustard population, and resulted in a large decline in almost all populations worldwide. Out of the nine threats listed in the “International Single-Species Action Plan for the Western Palearctic Population of Great Bustard, *Otis tarda tarda*”, five are related partly or entirely to agriculture:

Threat 1: Loss of undisturbed open habitats with suitable vegetation structure

Threat 3: Destruction of eggs or chicks during agricultural works

Threat 5: Disturbance

Threat 6: Insufficient invertebrate food supply

Threat 9: Catastrophic mortality in harsh winters

The effects of agricultural practices can be direct (such as destroying eggs), or indirect (such as insufficient invertebrate food supply or changes to habitat structure).

## 2. THE RELATIONSHIP BETWEEN THE GREAT BUSTARD AND THE AGRARIAN ENVIRONMENT

### 2.1. Agrarian habitats as displaying grounds

#### *Description*

Great Bustard displaying grounds are generally large, open and undisturbed areas with low vegetation. As the displaying behaviour of the adult males is a visual signal to the females, the large open areas and the whitening of the feathers makes the detection of the males for the females much more effective.

Displaying grounds are traditional, more or less the same spots are used by the birds for mating year by year, which makes the planning of management of displaying sites relatively easy. As the displaying period, from the beginning of March until the end of June, is the most intensive period of the Great Bustards, when both males and females move the most intensively between displaying, breeding and wintering grounds (“exploring movements”), the planning of management and monitoring of this critical period should cover and include almost the whole distribution area of the species.

Displaying areas should be managed in line with the following **criteria**:

- Open area, preferably without any interruption of different kinds of natural and artificial landscape elements, such as trees, tree-lines, forests, canals, wind farms, power lines etc.
- Suitable vegetation structure, with generally low vegetation, with some higher plant mosaics, like different types of crops, or grassland of different height (e.g. uncut stripes or patches)
- **No disturbance** in the main displaying period **between 15 March and 1 June**, and generally low disturbance throughout the year.
- Sufficient food supply

The management of the displaying sites (**arenas**) where severe males are present during the mating season is similar to those places where a lower number of males are displaying; however the importance of the arenas is higher due to more intensive behaviour of birds. Especially the last criterion, the sufficient food supply is important, as the continuous fight and competition between the males takes a lot of energy and the lack of suitable feeding possibility in the vicinity of the leks can cause exhaustion, or even death by the end of the mating period. These arenas are anyway the most common locations of finding carcasses of adult males, as these 2.5 months are the most intense period of their lives, apart from extreme weather conditions in winter.

#### *Recommendation on management*

The displaying grounds are one of the best known Great Bustard habitats, as most of the display grounds are very well mapped in all Range States. The reason is the display being one of the most visible periods of the species' life. Thanks to that, most of these sites became protected areas as one of the first steps of Great Bustard protection, and due to their site fidelity, this is the first and very often the most important steps of conservation.

Very often, but not exclusively, these sites are dominated by natural, or semi-natural **grasslands**, their maintenance and management are very often based on extensive grazing activities.

The low grassland vegetation can be reached by **grazing or mowing**, however the regular mowing without the presence of livestock leads to the lack of sufficient invertebrate food supply. The most common grazing animals on display grounds are sheep, cattle, sometimes horses and water buffalos. As the bigger arenas are located on mosaic grasslands, the best quality grasslands can be maintained by keeping two or more types of grazing animals. Grazing can be carried out by applying human resources (shepherds, stockmen) or by using electric fences.

The followings should be ensured by using **electric fence**:

- The grazing units should be large enough to avoid fragmentation of grassland, usually larger than 100 hectares.
- The line of electric fence should follow “natural” borders, like canals, dams, tree-lines etc. If there is not any, then the use of electric fence should be avoided.
- The density of grazing animals during the display period (15 March – 1 June) should be very low to prevent disturbance.
- If the display ground is grazed during the displaying period, no veterinary treatment should be applied; therefore only extensive types of animals (typically traditional breeds) should be applied.

If the grazing is carried out by shepherds or stockmen, they should avoid grazing in the heart of the display ground during the displaying period. Grazing should start on the peripheral sites, the central area should be approached gradually by the end of the displaying period. Well-trained dogs and appropriate personnel are required.

For the proper implementation of grassland management on display grounds an elaborated **management plan** is needed, which should include

- the timing,
- the location and
- the type of management adapted to the local situations.

If the dominant vegetation is **not grassland** on the display ground, the proper crop rotation, the proportion of favourable crops and their management are essential. The choice of crops grown determines their management. Some of the crops cannot be managed economically and in a Great Bustard-friendly way, but some can (see more under chapter 2.5.). The main principle is to prefer winter crops (sown in autumn), and crops which do not need any treatment during springtime, to avoid disturbance during the displaying period. The omission or very low level of chemical use, and the suitable proportion of perennial crops (like alfalfa, grass, set-aside fields and fallow-lands) can guarantee the sufficient food supply. Ultimately the goal is to keep the disturbance at a very low level, or exclude it if possible. If any management is needed and the disturbance cannot be excluded entirely, it should be planned during the daytime between 10am and 4pm, as the activity of the Great Bustards is the lowest in this period.

## 2.2. Agrarian habitats as breeding sites

### *Description*

The breeding sites are probably the Great Bustard habitats mostly affected by agriculture. The reason is probably that these sites are traditional and Great Bustards show strong site fidelity, and breeding is the most immovable and long-lasting period of the life of the species.

The incubation period takes about 28 days. The hatchlings are completely flightless, their movements are very limited in the first few weeks. The chicks at the age of 6-8 weeks are able to fly smaller distances, but prefer to walk as far as possible. It means the hen and her nestling(s) have to spend 2.5-3.0 months being “flightless” in the agrarian environment. It is obvious, that the most sensitive period of the birds and the nowadays commonly widespread farming technology, the generally intensive use of land are not compatible.

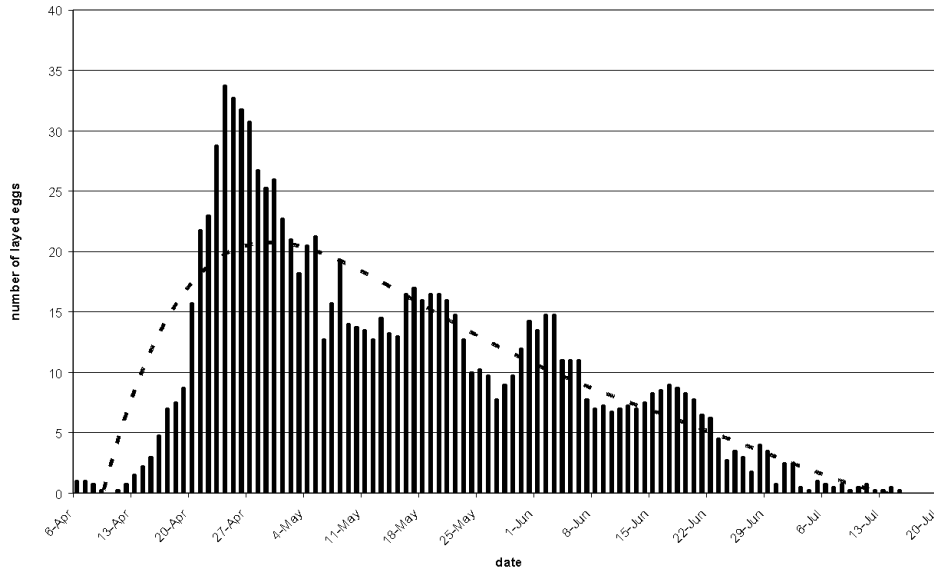
Breeding sites should be managed in line with the following **criteria**:

- Relatively large open areas with suitable vegetation structure, offering possibilities for the birds to select the best location within the region by having various types and heights of vegetation.
- Vegetation should be high enough to be able to hide the incubating hen, but not too dense to allow the smaller chicks to walk around the nest in the first few weeks.
- Sufficient invertebrate food supply for the hens and the growing chicks as well, which can be provided by larger plots of favourable crops, or smaller ones providing a variety of habitats.
- Low number of predators.
- No disturbance before laying eggs and no direct threats or even disturbance during incubation and the chick-raising period.

According to the facts mentioned above, first of all the mapping of breeding sites should be implemented at each Great Bustard habitat, and on these sites farming in a Great Bustard-friendly way should be introduced, with the growing of favourable crop rotation, the best choice of crops and their management.

### *Recommendation on management*

The management of Great Bustard breeding sites should take the **breeding period** of the local Great Bustard population into consideration. The Pannonian population according to the examination of eggs originating from natural Great Bustard breeding sites in Hungary shows the following pattern on the timing of laying eggs:

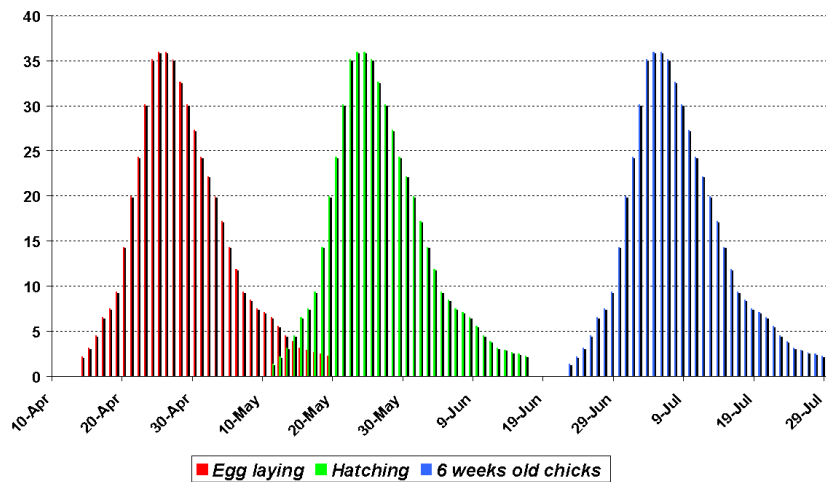


*Timing of egg-laying of the Pannonian Great Bustard population*

As it can be seen on the graph, the egg-laying period in the natural environment is markedly asynchronous and covers a long period from 6 April until 13 July. As it covers almost 3 months, it is obvious that in the graph shows the first clutches and the eggs originating from replacement breeding, too, which indicates a high proportion of unsuccessful broods leading to replacement clutches.

If the **management regulations** focus on protecting all breeding birds, they should regulate agricultural activities between the beginning of April (when the first eggs are laid) and the end of August (when the last chicks are 6 weeks old). In practice it would mean an absolute ban on farming activity.

To deal with this problem, the suggestion is to focus on the first clutches, and by giving full protection to these birds, the number of replacement clutches as a result of unfavourable agricultural activity can be minimised. The graph showing the **breeding activities of the first clutches** of the Pannonian Great Bustard population gives the following **sensitive periods for the individuals**:



### *Timing of incubation and chick-rearing of the Pannonian Great Bustard population*

The sensitive period is determined between 15 April and 15 July.

The recommendation on management of Great Bustard breeding sites is to avoid any farming activity, especially sowing, mowing, spraying, cultivating and even harvesting in the sensitive period.

According to this principle, the following **crop production and basic management** are recommended with the adaptation of local characteristics:

**Grassland:** natural, or semi natural habitats managed by grazing and/or mowing. Grazing is not allowed between 15 March and 15 June. Mowing can not be done earlier than 15 July, the later the better. The preferred order of activities is grazing first and mowing later in autumn and winter. Grasslands are planted mostly at lower elevations.

**Set-aside fields and fallow lands:** created by sowing/seeding or just naturally grown vegetation on plough lands. Mowed or cut as late as possible, but not earlier than 1 August. It can be grazed after mowing, but not necessarily.

**Alfalfa and other perennial crops:** a compulsory element of crop rotation, mowed not earlier than 1 July, preferably after 15 July. Due to the late harvesting, the mixture of alfalfa and grass is recommended for seeding, pure alfalfa overgrows and gets easily rotten by this time of the year. The first cut is normally used for making hay or silage for sheep or beef cattle as part of the extensive animal husbandry.

**Cereals:** seeding mostly in the autumn, but not later than 1 April. No spraying or other treatment of crops during the breeding period. To avoid the overgrowth of weeds, applying a higher density at seeding is recommended instead of the use of weed-killers, or other chemicals. Early harvested cereals, like barley, are not recommended.

**Winter pea and other annual crops:** seeding mostly in the autumn but not later than 1 April. No spraying or other treatment of crops during the breeding period, earliest harvesting is 1 July.

### 2.3. Agrarian habitats as moulting areas

#### *Description*

Large moulting areas cannot be identified so distinctly like in the Iberian Peninsula, but obvious aggregation of moulting birds can be observed year by year at almost all Great Bustard populations in Central Europe as well. This topic is probably the most under-watched of all, and although the large movements (up to a few hundred kilometres) of the Central European birds to the moulting areas might be excluded, seasonal “vanishing” of Great Bustards can be detected by the end of the summer and early autumn. On the other hand this is the least active period of the species’ life, due to the limited flight ability because of the moulting of flight feathers.

The sites nominated as moulting areas - according to our little information about them - match the following **criteria**:

- Large open areas, with continuous and undulating landscape, often with the mosaic of wetland patches (smaller reed beds) at lower elevations, which gives the opportunity to hide even larger flocks.
- Most commonly continuous stubble-fields of cereals, or oilseed rape, but often grasslands or alfalfa plots with sufficient food supply.
- No or minimal human disturbance in August and September.

The moulting areas are first visited by the adult males, right after the mating season (by this time the leks are completely deserted), and are followed by the females with unsuccessful or failed breeding, and by the young males. The females with first-year juveniles join the flocks mostly at the wintering grounds.

#### *Recommendation on management*

There is relatively little information about the proper management of the moulting areas, but in general the low disturbance and the sufficient food supply must be ensured. Regarding perennial crops (like alfalfa or grass) the timing of mowing should be in late July, early August or in September. Smaller plots or numerous land users within the moulting areas are normally not wanted, due to unsynchronized visits on fields causing regular disturbance.

On cultivated lands - after the harvest of cereals or the oilseed rape, the cultivation of stubble-fields, or the removing (often by the use of chemicals) - the weeds can reduce the food supply. As moulting takes an extra amount of energy, easily accessible food and the minimization of disturbance causing extra losses of energy are the main principles of the management of moulting areas.

### 2.4. Agrarian habitats as wintering grounds

#### *Description*

The main winter food of the Central European Great Bustards is the leaves of the oilseed rape, sown in the autumn, alternative feeding sites can be the alfalfa or the Savoy cabbage plots.

Wintering grounds, - which are normally traditional regions, but the choice of certain plots are influenced by the yearly conditions and crop rotation of the site - should be managed in line with the following **criteria** (see more in the “*Guideline on Measures to Secure the Successful Wintering of Great Bustards*” – UNEP/CMS/GB/MOS5/Doc.7.1):



- Large open areas with undulating landscape, where suitable feeding sites, such as oilseed rape fields are available, where human disturbance is low enough (principle wintering ground).
- Alternative feeding plots are also present in the vicinity in case of disturbance, such as hunting, travelling or agricultural activities (secondary and tertiary wintering ground).
- Suitable, undisturbed roosting sites can be found in the vicinity with low vegetation, from where approaching the feeding sites is easy.

In the wintertime the movements and behaviour of Great Bustards, apart from extreme weather conditions, are relatively well predictable. A regular and more or less simple daily routine for the birds consists of visiting the feeding sites (if not roosting on them) in the morning, spending the whole day with feeding then in late afternoon flying (or sometimes just walking) back to the roosting sites. Due to the predictable daily movements of the birds and the well-known plots normally used by Great Bustards, **winter counts** can be carried out at feeding or at roosting sites. It is much easier to count while the birds are feeding, especially if the vegetation is covered with snow.

On **mild days** the Great Bustards regularly visit the plots of perennial crops, especially grasslands and alfalfa fields for resting around mid-day. These plots often serve as roosting sites as well. One of the reasons that the birds tend to “have a rest” at these sites is the fact that when the temperature gets higher, their feet can get stuck in the mud, which makes walking difficult. The other reason is that various food supplies are offered by these habitats, as there is a good opportunity to find insects or smaller rodents on warmer days during winter months.

On **harsh winters**, when the leaves of the oilseed rape have thick snow cover, or when the snow is frozen on the surface, it is difficult for the birds to get to the food source. In these cases, especially if these conditions last for several days or weeks, the birds can easily move longer distances, where the weather conditions are milder. For Central European Great Bustards, as they are not obligatory, but partial migrants, it can result in movements even to the Mediterranean. The losses encountered during migration can have a negative impact on the entire breeding population.

### ***Recommendation on management***

The management of wintering grounds should cover the management of feeding sites, roosting sites (which are commonly display or nesting sites as well) and also the regular monitoring of the wintering flocks.

The management of **feeding sites** is primarily based on the establishment of one or more oilseed rape plots within or in the vicinity of the traditional wintering grounds. As the seeds of the oilseed rape are small, the first and very important step is the optimal preparation of the soil before sowing. Also the timing of sowing has an effect on the quality of the leaves. In Central Europe, the oilseed rape is sown in late August or early September. If sown in time, the plants can spring forth and have time to grow big enough to be able to last all winter and offer suitable nutrition for the Great Bustards. The overgrowth of the weeds often causes problems by reducing the viability of the oilseed rape plants. To avoid this, application of weed-killers might be needed in autumn.

Beside the fact that the plots should be undisturbed, open and possibly a bit undulating areas, the presence of various relief elements for **shelter** to the birds against strong wind or heavy

snowfall can be important. Thanks to the relief, there will be always snowless, bare patches, where the Great Bustards can find the leaves of oilseed rape.

Once the plots are created and occupied by the birds, the regular **monitoring** of wintering flocks and weather conditions is necessary. In case of **harsh winters** with thick snow cover the “cleaning of feeding sites” is needed to avoid movements of the birds and keep them in a well-watched and safe location. If the access for edible leaves is not ensured the unpredictable movements might cause unpredictable losses to the Central European Great Bustard population.

**Cleaning** can be done by the use of snow-plough connected to a tractor, or simply by pulling 2 or 3 larger tires by a tractor or even by a 4-wheel drive car. Normally 1 or 2 hectares are enough to clean for a while, but it depends on the size of the flock and the weather conditions. According to the monitoring results, this activity might need to be repeated, until the weather conditions turn better.

According to the experiences, by the **end of winter** (January or February), when the moustache, the obvious sign of the beginning of mating season of the adult males starts to grow as a result of the body moult, the motivation for larger movements becomes lower and lower. The birds normally stay sedentary even if the end of the winter or the early spring weather turns severe, but there are some exceptions, as it happened in the past.

As these occasional movements are usually unknown, following our best practice, regular monitoring and carrying out further research are the principles of management activities.

### **3. Expectation of the agri-environmental schemes on Great Bustard sites**

As the modern technologies and the intensive way of agrarian production often are not reconcilable with the ecological needs of the Great Bustard, the elaboration and introduction of agri-environmental schemes was necessary for the protection of the Central European populations of the species.

The use of agri-environmental schemes means a general extensification in the use of land, makes restrictions in management practices, has effect on the selection of crops grown and type of animals kept, and sometimes even leads to the transformation of the whole farming structure. The shortfall caused by the regulations of the agri-environmental schemes obviously should be compensated, especially right after its introduction, but the program should result in a sustainable and “self-propelling” system.

As the Great Bustard is a bird species with special ecological needs (first of all, its ontogenesis takes several months) and with a large territory, all **restrictions** have a serious economical aspect, due to their large spatial and temporal extension.

A well-developed agri-environmental scheme established for the benefit of the Great Bustard will **increase the breeding success and reduce the mortality rate** in the distribution area of the species by proper **management** of the agricultural environment.

The four main **principles** are:

1. Maintain and/or improve the habitat structure on the living area of the Great Bustard
2. Offer suitable breeding sites by creating optimal vegetation structure and by growing favourable crops and to avoid endangering nests and chicks by agricultural activities.
3. Reduce disturbance of birds around the year, especially during the reproductive season and in the wintertime.

4. Ensure sufficient food supply around the year, especially during the reproductive season and in the wintertime.

Due to the special requirements related to the Great Bustard conservation measures, the **spatial distribution** of the agri-environmental scheme is essential in order to make the program effective and successful as well as to determine the most effective **conservation measures**.

For this reason a comprehensive **monitoring system** needs to be elaborated and maintained to identify the current and potential locations of the Great Bustard protection program, which should be part of the scheme. The monitoring should cover the effects of the different kinds of measures as well, and from time to time, revision of these regulations is needed by the regular analysis of monitoring results.

The annexes contain examples from four countries regarding the structure and the development of different kinds of agri-environmental schemes within the range of the Central European Great Bustard populations.

#### 4. REFERENCES

- dr. Grónás V., Skutai J., Belényesi M., dr. Centeri Cs. A Nemzeti Agrár-környezetvédelmi Program (NAKP) pályázati rendszer bevezetésének hatása a kijelölt mintaterületek földhasználatára és természeti értékeinek védelmére
- Németh Á., Lóránt M., Vadász Cs. (2009) How effective are the management regulations of the Great Bustard Protection Agri-Environmental Program? in Természetvédelmi Közlemények 15, pp. 226-234
- Nagy, Szabolcs (2018) International Single-species Action Plan for the Western Palearctic Population of Great Bustard, *Otis tarda tarda*. Version adapted for the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*).
- <https://termeszetvedelem.hu/magas-termeszeti-erteku-teruletek-mtet/>

## **5. Annexes I-IV: Range states with applied agri-environmental schemes focusing on Great Bustard conservation**

- I. AUSTRIA
- II. HUNGARY
- III. SLOVAKIA
- IV. GERMANY

### **ANNEX I. AUSTRIA**

The Austrian agri-environment scheme (ÖPUL)

#### **1. Introduction**

The history of Great Bustard conservation shows that only large-scale habitat management together with professional site supervision can preserve the species in Central European agricultural landscapes.

In Austria, the main emphasis in Great Bustard conservation lies on providing suitable habitat. Starting in 1995, Lower Austria began to implement bustard conservation measures under the ÖPUL agri-environment scheme in the three bustard ranges “Westliches Weinviertel”, “Marchfeld” and “Rauchenwarther Platte”. From the year 2000 onwards, existing habitat management measures were extended significantly. Lower Austria and Burgenland created large-scale SPA's (Natura 2000 sites for birds), and dedicated bustard conservation measures are being implemented primarily inside these areas on more than 5,500 ha of land under the Austrian agri-environment scheme "ÖPUL" (Austrian programme for an environmentally appropriate, extensive and natural habitat friendly agriculture). More than 500 farmers from Lower Austria and Burgenland are taking part in this programme. Since the start of the ÖPUL measures for the Great Bustard in Austria the population has increased. It is clear to see that an increase in measures has a positive impact on the population (Figure 1).

#### **Basics of Great Bustard protection – most important measures:**

- Bustard fallow land
- Planting of greenery or cultivation of winter rapeseed at least twice
- No driving on the area if a Great Bustard clutch is found within a radius of 50 m
- Chopping or mowing of arable land only in consultation with the area manager
- Participation in the monitoring project and events

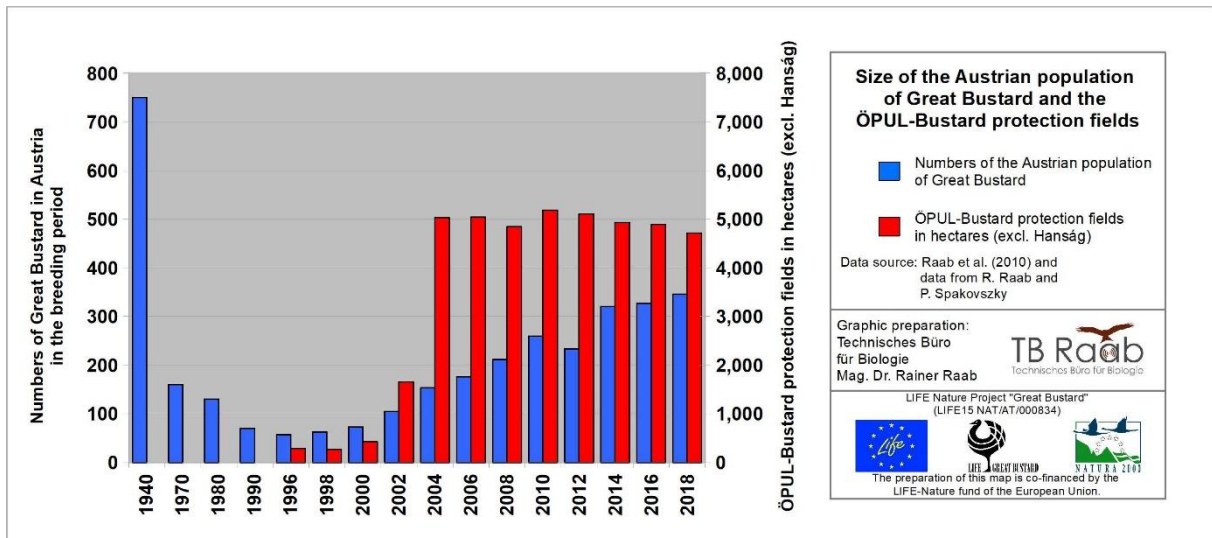


Figure 1: Size of the Austrian population of Great Bustard compared to the ÖPUL Bustard protection fields in “Parndorfer Platte – Heideboden”, “Sandboden und Praterterrasse” and “Westliches Weinviertel”.

## 2. ÖPUL 1995+

Starting in 1995, Lower Austria began to implement bustard conservation measures under the ÖPUL agri-environment scheme in the three bustard ranges Western Weinviertel, Marchfeld and Rauchenwarther Platte.

From 2001 onwards, the project "Bustard conservation in Western Weinviertel, Marchfeld and Rauchenwarther Platte" significantly increased the area under agri-environment measures. Many hectares of dedicated bustard conservation measures ("K" and "WF") were established inside the Natura 2000 sites Western Weinviertel and Marchfeld and in the Rauchenwarther Platte area.

Lower Austria offered four nature conservation measures under the framework of its 5-year agri-environment plan ÖPUL 2000, all of which were taken up for Great Bustard protection. Prior to the year 2000, only the "K-measure" (set-aside) was offered. Then, in order to make bustard conservation more attractive to farmers in Lower Austria, the Distelverein society, together with Rainer Raab, coordinator of the species conservation project for the Great Bustard, designed special agri-environment measures for bustards in Marchfeld. These were then also offered in Rauchenwarther Platte and with modifications in Western Weinviertel in project areas selected according to systematic criteria.

Here, only a short overview is given about the measures. Detailed current information can be found on the website of the provincial government of Lower Austria under section ÖPUL.

In Marchfeld and Rauchenwarther Platte, for example, areas of arable land were cultivated specially to suit Great Bustards in order to provide appropriate habitat for breeding and chick rearing.

These were strips of "bustard cereal" combined with strips of set-aside on one or both sides. "Bustard cereal" is a field on which cereals or rape seed are grown and which is neither fertilised nor treated with pesticides. In addition, irrigating the field or walking or driving through is not permitted from 1<sup>st</sup> April until harvest. The cereal strip should be at least 50 m wide, and on one or both sides of it a strip of set-aside at least 20 m wide must be provided. The bustard cereal is financed through the "WF" agri-environment measure (management of ecologically valuable sites), the set-aside is financed under the "K" agri-environment measure (creation of new landscape elements). Each site covered by this bustard conservation measure should have a minimum size of 3 ha in one piece. It may be provided by one farmer or by several farmers together. Conditions for participating in 2001-2005 were as follows:

- Location inside a current or potential bustard range
- Minimum size of 3 ha
- At least one 20 m strip of set-aside next to it

Sites must be under contract for a minimum period of 5 or 10 years and are selected by the site supervisor.

### 3. ÖPUL 2007+

#### “WF” Measures for the Great Bustard

Starting with 2015 the basic model for the protection of the Great Bustard was introduced in the “Westliches Weinviertel”, which includes following requirements and conditions:

- Participation of the Establishment in the Monitoring Project Great Bustard
- Participation at Events in the measure of five hours until latest in the year 2018
- No windbreakers to be planted in the project area
- No increase of field plots
- Plantation of high-growing plants (Chinese Silver Grass, poplars, robinia) is not allowed
- No putting up of Scarecrows
- No driving on the area after detecting a Great Bustard clutch in the radius of 50 m
- No laying down of foil as well as putting up foil tunnels or glass houses
- No burning of straw
- Chopping or mowing of farmland area only after agreeing with the site supervisor
- Rape seed to be planted at least twice

The basic model for the protection of the Great Bustard can be combined with following models:

#### Maintenance Model “Winter wheat”

Conditions:

- Observance of the conditions under the basic model in Great Bustard conservation areas (see above)
- Winter wheat to be planted at least twice in five respectively six years
- No driving or walking on winter wheat fields after 20th of April until harvest
- No irrigation of winter wheat
- No poisoning of rodents or any form of pest control against the field vole

#### Maintenance Model “Corn Renounce”

Conditions:

- Observance of the conditions under the basic model in Great Bustard conservation areas
- No planting of corn

Bonus: Depending on the combination of conditions a bonus between 309 €/ha and 495 €/ha is calculated. If there is no use of pesticides (except substances according to VO-Nr. 834/2007) an additional Bonus is paid.

#### Great Bustard fallow

Conditions:

- Participation of the Establishment in the Monitoring project Great Bustard
- Participation at Events in the measure of five hours until latest in the year 2018
- No driving on fields except for cultivation
- Fertilisation, use of pesticides as well as use of vegetation is not allowed
- Yearly chopping between 1st of September and 15th of October
- On fields between 0.75 ha and 3 ha it is necessary to leave an area of 10% and max. 20% of the whole area on different parts of the field plots

Bonus: For Great Bustard fallows a Bonus of at least 529 €/ha is paid.

#### Greened agricultural fields

Conditions:

- Participation of the Establishment in the Monitoring project Great Bustard
- Participation at Events in the measure of five hours until latest in the year 2018
- Greened agricultural fields with hay meadow or pasture usage
- Delay of harvest with earliest mowing on August 20th

Bonus:

For greened agricultural fields a bonus of 700 €/ha is paid.

**"WF" agri-environment measure for Great Bustards**

Conditions:

- No pesticides, no artificial fertiliser, no sewage or sewage compost
- No manure
- No irrigation from 1st April until harvest
- No access to site from 1st April until harvest
- Crop specified: only cereals or rape seed, no maize, no sunflowers
- Crop rotation: cultivation of cereals at least 4x (including summer cereals at least 2x), rape seed no more than 1x.

Payments:

- Soil grade < 30 EURO 581.38 / ha / year
- Soil grade 30 - 60 EURO 690.39 / ha / year
- Soil grade > 60 EURO 799.40 / ha / year

May be combined with:

- Crop rotation stabilisation, payment level 1 (+EURO 87.21 / ha / year)
- Basic payment (+EURO 36.34 / ha / year)

Maximum agri-environment payment, however, was EURO 872.07 / ha / year. In addition, farmers complying with arable area payment guidelines were eligible for arable area payment, EURO 331.90 / ha / year.

**"K" agri-environment measure for Great Bustards**

Creation of new bustard set-aside

Conditions:

- No pesticides, no artificial fertiliser, no sewage or sewage compost
- No manure
- No irrigation
- No access to site except for maintenance from 1st April until harvest
- No use of set-aside for agricultural purposes

Payment, depending on contract duration and soil grade:

Soil grade	< 30	30 - 60	> 60
Contract duration			
5 years	EURO 327,03	EURO 399,70	EURO 472,37
10 years	EURO 381,53	EURO 454,21	EURO 526,88
20 years	EURO 472,37	EURO 545,05	EURO 617,72

Additional payments for maintenance:



Medium effort: (+EURO 145.35 / ha / year), mowing once between 1st April and 30th September in conformity with species conservation requirements. Exact extent and time of maintenance is agreed with the project site supervisor each year.

High effort: (+EURO 218.02 / ha / year), 1x mowing between 1st April and 30th September in conformity with species conservation requirements. Exact extent and time of maintenance is agreed with the project site supervisor each year. In addition, part of the area is sown with bustard-friendly crops every year.

- Measure K sites may not be counted for ordinary set-aside payments
- Measure K sites may be counted for "winter cover", payment levels A, B or C
- Measure K sites receive the basic payment

Sowing measure K sites:

Vegetation coming up naturally is ideal for bustard set-aside, because the resulting plant cover is the most diverse. However, in order to suppress weeds and make sure that vegetation cover develops quickly, low, drought-resistant species may be sown. In this case, sowing rate should be low (10-15 kg/ha) in order to allow for a proportion of natural vegetation and hence increase diversity. The following mix was recommended for bustard set-aside:

Sowing in the years 2000 - 2005	kg per ha	%
<i>Grass-clover-rape-mix</i>		
White clover ( <i>Trifolium repens</i> )	0,8	5,0
Black medick ( <i>Medicago lupulina</i> )	0,8	5,0
Alfalfa ( <i>Medicago sativa</i> )	0,8	5,0
Sainfoin ( <i>Onobrychis viciifolia</i> )	0,8	5,0
Red fescue ( <i>Festuca rubra</i> )	5,3	35,0
Sheep fescue ( <i>Festuca ovina</i> )	3,0	20,0
Smooth meadow-grass ( <i>Poa pratensis</i> )	2,3	15,0
Rape seed ( <i>Brassica napus</i> )	1,5	10,0
Total	15,0	100,0

From 2003 onwards, measure "WS" (conservation of valuable features) was offered in Western Weinviertel in addition to measures K and WF. Initially, only payment level 1 was on offer, payment level 3 was added after a concept had been worked out by the site supervisor. Offering measure WS was crucial for extending the area under bustard conservation measures substantially and achieving coverage of nearly 100%.

#### **"WS" agri-environment measure for Great Bustards, payment level 1**

Until March 2003, only payment level 1 of measure WS was granted in the Western Weinviertel bustard range, with the following conditions:

- Location inside the bustard protection area Western Weinviertel
- No windbreakers to be planted in the project area
- Field sizes not to be increased (reference year 2002)
- If a Great Bustard clutch is found, the site is to be left undisturbed 50 m around the nest (unless agreed otherwise with the site supervisor)

In addition, two payment level 3 variants of the WS measure were introduced in order to improve conditions and food availability for bustards further, namely a "rape seed" and a "winter wheat" variant. The same requirements as for payment level 1 apply, plus further management obligations. These payment level 3 agri-environment measures are not offered universally, but only in areas considered important.

### **"WS" agri-environment measure for Great Bustards, payment level 3, "rape seed" variant**

Conditions:

- Compliance with conditions for payment level 1 (see above)
- Winter rape to be planted once in 5 years
- No poisoning of rodents or any form of pest control against hamsters, Eurasian ground squirrels and field voles for entire duration of contract

### **"WS" agri-environment measure for Great Bustards, payment level 3, "winter wheat" variant**

Conditions:

- Compliance with conditions for payment level 1 (see above)
- Winter wheat to be planted at least twice in 5 years
- No access to winter wheat fields after 20th April until harvest
- No poisoning of rodents or any form of pest control against hamsters, Eurasian ground squirrels and field voles for entire duration of contract

Payments, depending on contract duration and soil grade: Since soil grade exceeds 60 for most soils in Western Weinviertel, level 3 payments for the WS measure are set at EURO 254.40 per hectare, i.e. EURO 145.40 above payment level 1, according to the agri-environment directive (ÖPUL 2000). For lower soil grades (30-60), payment level 3 amounts to EURO 181.70 per hectare, i.e. EURO 109.00 above level 1.

## **4. ÖPUL 2023+**

In the special protection areas “Parndorfer Platte – Heideboden”, “Sandboden und Praterterrasse” and “Westliches Weinviertel”, management measures are being promoted as part of the ÖPUL nature conservation measure, which contribute to the habitat protection of the Great Bustard. These management measures are updated regularly and together with the coordinator of the species conservation project for the Great Bustard important Great Bustard sites are located and included in the scheme. In the home areas of the great bustard, meadows are cultivated very extensively or fields are set aside so that undisturbed courtship, breeding and rearing of young is possible for the Great Bustard. A distinction is made between two management systems:

Businesses that take part in the bustard protection measures have the opportunity to undergo regular further training. The trainings serve the exchange as well as the raising of awareness. For example, there is Great Bustard monitoring. After training, companies have to document the management of their ÖPUL nature conservation areas and bustard sightings every year and receive a bonus for this. The monitoring thus contributes to raising awareness and provides important data on the habitat use of the Great Bustard.

Bonus: For participating in the monitoring € 220 per company and year (for selected companies in Great Bustard areas).

For participating in the regional nature protection plan € 250 per company and year (for selected companies in Great Bustard areas).

#### **Great Bustard fallows mowed**

5. At least 1x mowing per year including removal (several uses possible)
6. 1<sup>st</sup> mowing no earlier than 25.08. and latest 15.10 at the
7. Fertilisation and the use of plant protection products are prohibited
8. Chopping is prohibited
9. Mowing is prohibited on 5-15% of the area, leaving the uncultivated area until mowing in the following year, annual rotation of the uncultivated area

Bonus: € 1.005/ha and year

#### **Bustard fallows chopped**

### Bustard fallows 1 x chopped

- 1x chopping per year between 01.10. and 15.12.
- Fertilisation, use of pesticides and use of growth are prohibited
- Driving on the area is prohibited except for management purposes
- Chopping is prohibited on 5-15% of the area, leaving the uncultivated area until chopping in the following year, annual rotation of the uncultivated area

Bonus: € 500,00/ha and year

Protection surcharge Great Bustard: € 100/ha and year

### Bustard fallows with soil upheaval & sowing

- 1x chopping per year between 01.10. and 15.12.
- Fertilisation, use of pesticides and use of growth are prohibited
- 1x ploughing and new sowing until 15.04. in defined year with:
  - Alfalfa (20 kg/ha) and sainfoin (5 kg/ha)
  - seed mustard (1 kg/ha), buckwheat (2 kg/ha), forage rape (0.5 kg/ha), seed sunflower (4.5 kg/ha), sainfoin (5 kg/ha) and alfalfa (7 kg/ha) Ha)
  - Mixture for bio farms: bio alfalfa (15 kg/ha), bio buckwheat (5 kg/ha), and other mixing partners of your choice (e.g. white clover)
  - Mixture according to project confirmation or according to agreement with the BERTA/Rainer Raab association (e.g. hunter mixture Zurndorf)
- Driving on the area is prohibited except for management purposes
- chopping is prohibited on 5-15% of the area, leaving the uncultivated area until chopping in the following year, annual rotation of the uncultivated area

Bonus: € 565,00/ha and year

Due to the various management requirements, a coexistence of freshly cultivated areas, which provide food, among other things, and grassy fallow land, which offer protection, can be guaranteed. Due to the pause in management during the breeding season, other protected species, such as the short-eared owl or the Montagu's Harrier, also benefit from these measures. In addition, so-called winter grazing areas can be applied for in the ÖPUL nature conservation measure in the winter shelter areas. Crops will continue to be grown on these fields, but 2x winter grain (excluding rye) and 2x greening or winter rape must be grown during the commitment period. For reasons of protection of the eggs, when winter grain is being cultivated, driving on the field is prohibited from April 20<sup>th</sup> until harvest and a bypass requirement for Great Bustard nest sites. Cultivating these selected crops ensures the availability of food in winter and provides safe nest sites.

### **Winter grazing areas**

- Cultivation of winter grain without winter rye (at least 2x in the contract period), no driving and walking on the winter grain after April 20<sup>th</sup> until harvest, no irrigation of winter crops, application of rodenticides and control of field mice in winter crops are prohibited
- Creation of greening or cultivation of winter rape according to the specifications of the agency responsible for nature conservation (at least 2x in the contract period):
  - Mustard (50%), buckwheat (30%) and rapeseed (20%)
  - Mustard (50%) and radish (50%)
  - Pea (90%) and buckwheat (10%)
  - Clover mixture of at least 2 types (e.g. lucerne, white clover, red clover, Persian clover,...), whereby the 2nd type must reach at least 10%

- Sweet peas (30%), buckwheat (30%) and at least 1 other mixing partner (e.g. horse beans, oilseed radish, vetches, clover, peas...)
- Oilseed rape (100%)
- It is forbidden to drive on the area if a Great Bustard clutch is found within a radius of 50 m
- Planting tall plants (e.g. elephant grass/sedge, poplars, willows, robinia) is prohibited, scarecrows are prohibited
- Laying out foils and setting up foil tunnels or greenhouses is prohibited
- Chopping or mowing of arable (fodder) areas only in consultation with the area manager of the agency responsible for nature conservation
- optional: no maize and/or no pesticides

Bonus: € 350.00/ha and year

Incl. waiver of maize € 430.00/ha and year

Incl. waiver of pesticides € 510.00/ha and year

Pesticide and maize waiver 590.00/ha and year

#### 4.1 Waasen – Hanság

Also, in the special protection area Waasen - Hanság the extensive management of meadows and the set-aside of areas is promoted as part of the ÖPUL nature conservation measure. Since the area is an important breeding habitat not only for the Great Bustard, but also for some protected species, including the corn crane, whinchat and Montagu's harrier, the Hanság is monitored by breeding bird monitoring. The management measures are defined as follows:

##### **Mowing**

- at least 1x mowing per year incl. removal (several uses possible)
- Mowing date of your choice:
  - 1st mowing from 09.06.
  - 1st mowing from 23.06.
  - 1st mowing from 07.07.
  - 1st mowing from 01.08.

Completion of the 1st mowing by September 1st at the latest.

- Fertilisation and use of pesticides prohibited
- Chopping is prohibited
- Grazing is prohibited
- If a clutch is found, the mowing date will be postponed to a later date, including adjustment of the premium

Bonus: between €655.00/ha- €1,005/ha

Breeding bird monitoring makes it possible for livestock farms to use their land early on without violating bird protection interests. If clutches of protected goods are found, mowing is postponed to a later date so that breeding success is guaranteed. In addition to using the meadows, they can also be set aside:

##### **Chopping**

- Chopping half of the field 1x per year between 01.09. and 15.10.; Rotation of the chopped half per year
- Fertilisation, use of pesticides and use of growth are prohibited
- Driving on the area is prohibited except for management purposes

Bonus: 500€/ha

Around 800 ha are currently being used as mowing areas and 150 ha as chopping areas in the Waasen - Hanság by around 200 companies (as of 2023).

## **5. Site supervision**

Intensive site supervision in all bustard areas in Austria ensures implementation of ongoing conservation measures. The site supervisor responsible for most areas has a background in nature conservation. One area has an additional site supervisor from a hunting background.

- Habitat management takes first priority among the tasks of the site supervisor. The aim is to improve and conserve suitable habitats for Great Bustards. Above all, this entails working out maintenance and cultivation schedules fitted to the bustards' requirements in time and space. These measures must dovetail with the conservation objectives of Natura 2000 sites and the interests of the local population. Site management is recorded in a Geographical Information System (GIS).
- A further task is improving clutch and chick survival through adequate measures.
- A third important task is to ensure that the interests of the local population are met, in particular farmers, hunters and politicians. This requires regular meetings and contacts with representatives and with the people concerned.

## **6. Habitat management**

The history of Great Bustard conservation shows that only large-scale habitat management together with professional site supervision can preserve the species in Central European agricultural landscapes.

In Austria, the main emphasis in Great Bustard conservation lies on providing suitable habitat. For this reason, existing habitat management measures were extended significantly from the year 2000 onwards. Burgenland and Lower Austria created large-scale Special Protected Areas (SPA's, i.e. Natura 2000 sites for birds), and dedicated bustard conservation measures are being implemented primarily inside these areas on more than 5,500 ha of land under the Austrian agri-environment scheme "ÖPUL" (Austrian programme for an environmentally appropriate, extensive and natural habitat friendly agriculture).

Managing habitats in order to optimise existing bustard conservation measures is therefore one of the main emphases of site supervision. This requires good cooperation with the local population.

The site supervisor of course takes into account the habitat requirements of other protected bird species and other conservation objectives of Natura 2000 sites when deciding on maintenance and cultivation measures for existing bustard sites.

It is essential for the optimisation of bustard conservation sites that the entire project area is looked at and evaluated every year before management measures are decided upon. Individual management plans have to be worked out for all sites requiring maintenance, taking into account the interests of the local population and accommodating the spatial and temporal requirements of Great Bustards. All measures are documented in a Geographic Information System (GIS).

Good documentation of management measures is a prerequisite for evaluating effectiveness. Monitoring the effectiveness and suitability of measures can be done through analysing, at different times of the year, how frequently Great Bustards use sites under dedicated management, compared to adjacent sites without management. In this way, the significance of standard cultivation processes and dedicated management measures can be evaluated, and bustard conservation sites can be improved continually in the future.

Evaluation of measures is the basis for future provision of significant amounts of agri-environment funding for maintaining or even increasing the areas under dedicated conservation measures for bustards. Since rape seed fields are so important for Great Bustards in winter, Burgenland may wish to consider funding adequate areas of rape seed in bustard winter ranges in addition to "bustard set-aside", if bustard conservation sites are extended.

## **7. Safeguarding reproductive success**

Safeguarding reproductive success is obviously crucial for a healthy bustard population and is therefore a major aim of site supervision. While most breeding sites are now protected from losses through intensive agriculture thanks to the large-scale implementation of dedicated bustard conservation measures, nests, chicks and even incubating females outside the areas under agri-environment schemes may be threatened through cultivation processes. A strong emphasis of site supervision in the breeding season therefore lies on minimising such threats. Accordingly, at this time of year the site supervisor must concentrate on observation and redouble efforts to stay in close contact and exchange information with local farmers and hunters. This increases the chances of spotting or being told about nests and young which may be at risk. If there is imminent danger for a clutch or for bustard chicks, one possible solution is to compensate farmers for omitting certain critical cultivation measures.

The fact that Great Bustards are very sensitive and may give up their nest after a single instance of disturbance means that disruptions unrelated to agricultural activity, too, must be avoided at nesting sites. In areas close to neighbouring states it is therefore necessary to make agreements with the army patrolling the border in these areas and to guarantee a regular exchange of information.

The site supervisor puts together a predator management concept in agreement with the nature conservation authority and the hunting association of the province concerned. This may, for example, entail synchronised hunts at fox burrows with dogs. Naturally, a deliberate reduction of rare species is not the aim of conservation activities, even if they pose a potential threat to bustards, such as the Eastern Imperial Eagle or the White-tailed Eagle.

In addition, the site supervisor maintains good contacts with hunters and works towards voluntary agreements with hunters that help to keep all disturbances in bustard areas to a necessary minimum. In some bustard areas, such agreements have been reached already.

Targeted observations in the breeding and chick rearing season allow a large proportion of non-breeding, breeding and parenting females to be recorded. However, the Austrian breeding population can change markedly through relatively minor movements of females in the border areas with Hungary and Slovakia. This is because Great Bustards in Austria, in particular in the Natura 2000 site Parndorfer Platte and Heideboden, are only a part of the cross-border west-pannonic population, i.e. of the cross-border Austro-Hungarian-Slovak-Czech population. Monitoring of breeding females obviously aims to avoid any disturbance by observers and is therefore restricted to selected points, for example elevated hunting hides on the edge of breeding territories. Consequently, a proportion of breeding females is not recorded, especially those with nests located in set-aside with tall vegetation. However, this does not mean that reproductive success of these females will be low, because cultivation measures are unlikely to pose a threat on bustard set-aside, thanks to the conditions that apply under agri-environment regulations. Guarding Great Bustards against disturbance therefore takes precedence over detailed observations, even if that makes it difficult or impossible to record exact numbers. These circumstances must of course be taken into account when evaluating reproductive success. In the cross-border breeding range, therefore, breeding success can only be estimated, not monitored comprehensively. On the other hand, autumn and winter tend to concentrate sub-populations at a small number of points, allowing the total population to be counted more accurately. Hence, retrospective conclusions can be drawn about reproductive success.

In this way, breeding success is monitored carefully as a criterion for evaluating effectiveness, without jeopardising breeding success itself in the process. It is also important to remember that reproductive success depends on a number of factors besides those that projects can address, such as weather in the breeding and chick rearing season.

## **8. Balancing of interests**

It is only with the involvement of farmers, hunters and regional politicians that the Great Bustard species conservation project can succeed in creating suitable nesting sites and guarding these against disturbance. Apart from casual conversations with farmers and hunters during field work, the site supervisor has to attend regular meetings to warrant good contacts with the people concerned and with representatives. Another important basis for good relations is the successful working of the Austrian Society for Great Bustard Conservation (ÖGG). It serves as a platform for conservation experts, hunters, lobbying organisations and local authorities to exchange views, and thus promotes cooperative implementation of conservation measures in bustard areas.

Since Great Bustard conservation does not automatically fit together with other objectives in the concerned areas, finding a balance of interests should be the aim in most cases. However, there may be interests which directly contradict bustard conservation, so that in exceptional cases a balance of interests would jeopardise the success of protection efforts and must be refused by the site supervisor, citing reasons. Since the site supervisor stays in close contact with the relevant provincial conservation department, judicial steps can be initiated at any time, should this be necessary.

Working on good public relations primarily concerns intensive regular personal contacts between site supervisor and local farmers, hunters and politicians. In addition, occasional events on a larger scale aim to inform the wider public and to promote interest in Great Bustard conservation.

## ANNEX II. HUNGARY

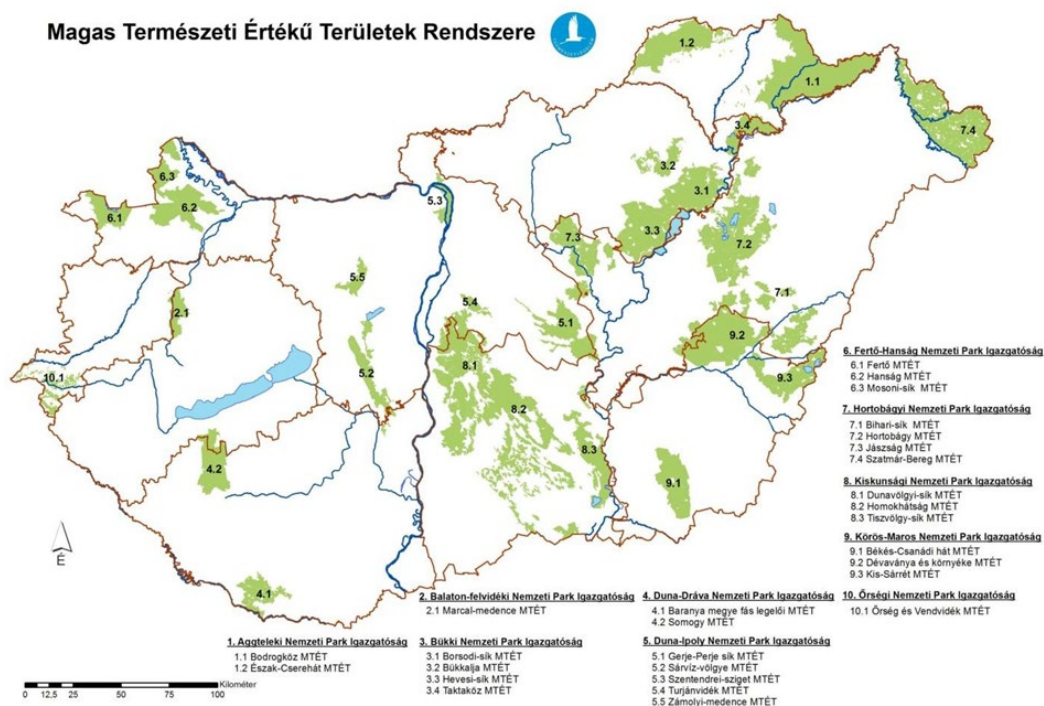
### 1. The system of the Areas of High Natural Value (HNVA)

The zonal agri-environmental schemes for nature conservation announced within the agri-environmental management program of the Rural Development Program are the so-called Areas of High Natural Value (HNVA), where farmers are supported in establishing and maintaining nature-friendly management methods. In these areas, the maintenance of close-to-nature, nature-friendly agricultural utilisation is a particularly important condition for the long-term preservation of the landscape (character), wildlife, and built and cultural values. Almost half of the Areas of High Natural Value are under national or EU-level nature protection (protected natural area and/or Natura 2000 area).

In 2002, within the framework of the National Agri-Environmental Program, the HNVA system was launched on an experimental basis in 11 model areas supported by a joint ministerial decree (MoA-MoENV) on the rules of the designation and delimitation.

In 2004, within the framework of the National Rural Development Program the support for nature-friendly, close-to-nature farming continued in 15 sample areas, and from 2009 - based on the review carried out in the meantime - in ten more places, a total of 25 designated HNVA areas. The areas eligible for HNVA zonal agri-environmental schemes were designated in the Land Parcel Identification System, which forms the GIS basis of the area-based CAP payments in Hungary.

In the next programming period (2016-2020) three new areas (Fertő, Jászság, Tisza-völgy) were added to the designated HNVAs, so more than 1 million hectares became eligible for support within the framework of the HNVA program. This means that in 20% of the Hungarian utilised agricultural areas, specific agri-environment payments for nature conservation may help the farmers to carry out their extensive land management activities.



*The areas covered in Hungary with the HNVA program between 2022 and 2024*



In the 28 MTÉT/HNVA areas that are eligible for support in 2022-2024, those interested can voluntarily undertake zonal agri-environmental schemes targeting arable and grassland areas at an increased nature conservation commitment level and with an increased amount of support.

Programs announced at MTÉT (High Natural Value Areas):

- **HNVA Great Bustard protection on arable lands,**
- HNVA Red-footed Falcon protection on arable lands,
- HNVA Bird protection on arable lands at the Alföld (Great Hungarian Plain),
- HNVA Bird protection on arable lands at mountains and hills,
- **HNVA Great Bustard protection on grasslands,**
- HNVA Bird protection on grasslands at the Alföld (Great Hungarian Plain)
- HNVA Bird protection on grasslands at mountains and hills,
- HNVA Butterfly protection on grasslands.

In each of the zonal agri-environmental schemes available for farmers in HNVA areas, there is a mandatory regulation aimed at the protection of bird species nesting on specially protected land. The temporal and spatial limitation of mowing and grazing and the designation of a protection zone ensure the protection of the nests and chicks of ground-nesting birds in agricultural habitats. By ensuring the appropriate plant cultures for the needs of the target species in the life cycle of the target species, the cropping structure regulations (e.g. oilseed rape, which serves as the winter food base for Great Bustard, or the cultivation of alfalfa, which are essential for the Red-footed Falcon as foraging sites), as well as contribute to the protection against pests and the maintenance of appropriate soil conditions. The restriction of the use of insecticides, the limits applied to the active ingredients of plant protection products and the regulations for maintaining a border free of plant protection products serve to preserve the food base of bird species that feed on insects and larvae found on weed species, and the prohibition of rodent control. With the designation of Jászság MTÉT, the area that can be awarded support for the protection of Great Bustard was expanded by more than 50,000 hectares. The regulations for Areas of High Natural Value already contained elements that served to improve the habitats of certain arthropod species. Within the framework of the Rural Development Program, a separate group of regulations was announced for the protection of diurnal butterfly species.

The Hungarian state nature conservation administration is deeply integrated into the implementation of the HNVA system. Field nature conservation experiences gained by national park directorates are regularly mainstreamed into the planning process of agri-environmental protection programs through the departments responsible for nature conservation within the Ministry of Agriculture. HNVA experts working at the national park directorates ensure the appropriate flow of information to the farmers, which are helped by the numerous information documents (printed and online). HNVA experts of national park directorates also play an important role in providing advice to farmers, and they also participate as experts in the field control of the zonal HNVA schemes carried out by the paying agency. Nature conservation bodies also participated in the impact assessment procedures of the CAP system by field monitoring activities and data provision. This type of cooperation covering the entire implementation process of the agri-environment system is essential for the effective enforcement of nature conservation goals.

## **2. The development of the Great Bustard schemes in Hungary (an evolutionary review)**

### 2.1. Antecedents (the years 2002 and 2003)

The National Agri-Environmental Program (NAKP) as the agri-environmental scheme was introduced for the first time in 2002 at 11 model sites, so called “Environmentally Sensitive Areas” (ÉTT). The effects of the scheme on the land use and on the conservation of natural values were monitored on four sites; on the “Dunavölgyi-sík”, the “Hevesi-sík”, the “Borsodi Mezőség” and the “Észak-Cserehát” sensitive areas, out of which three are nominated as Great Bustard habitats.

The pilot program was followed by five periods:

- 2.2. Period between 2004 and 2009
- 2.3. Period between 2009 and 2014
- 2.4. The year 2015 (absence of the program for HNVA)
- 2.5. Period between 2016 and 2020
- 2.6. Period between 2021 and 2023

### **The key measures in all periods are focusing on the following:**

1. *on arable lands:*
  - 1.1. the regulation of pesticides and fertilisers
  - 1.2. the vegetation structure, including the favourable crops for breeding and wintering
  - 1.3. the size of parcels
  - 1.4. the timing of management (e.g. earliest date of mowing)
  - 1.5. management of fallow-lands and set-aside fields
2. *on grasslands in case of grazing:*
  - 2.1. the grazing pressure
  - 2.2. the timing of grazing, highlighting the preserve zones during breeding period
  - 2.3. the type of grazing (e.g. type of livestock, use of electric fences, etc.)
3. *on grasslands in case of mowing:*
  - 3.1. the timing of management (e.g. earliest date of mowing, ratio of unmown areas, etc.)
  - 3.2. the type of mowing (e.g. type of mower, application of birds friendly measures, etc.)

## **ANNEX III. SLOVAKIA**

**From the beginning of 2023, there are two valid schemes in the framework of CAP, which can be beneficial for the Great Bustard in Slovakia.**

### **1. Agri-environmental scheme**

Targeted directly at the protection of Great Bustard habitats in the framework of the 2nd pillar of CAP, this scheme is implemented by Decree 3/2023 Coll. It is site specific for SPA Lehnice and SPA Sysľovské polia, and can not be applied in any other SPAs in Slovakia. Based on the results of the previous scheme valid until December 2022, it was upgraded by significantly increasing the environmental ambition. In 2023, the agri-environmental measures were applied in SPA Lehnice, while farmers in SPA Sysľovské polia consider joining in 2024.

### **2. Whole-farm ecoscheme**

This scheme sets requirements to be met by all farms to protect Great Bustard habitats. According to the prescription, at least 5% of arable land outside SPAs will be fallows, and at least 7.5% of arable land in SPAs will be designated as fallows. Within SPAs, farmers may opt to convert 4% of land to fallows and 4% to pastures. The other important obligation within SPAs is the division of large fields by 12 m wide biobelts, which can be grassland, clover or flower strips. Fields larger than 20 ha can be either divided by biobelts, or 4% of land has to be converted to fallows and 4% to pastures, but in the latter case the area of arable land must not exceed 50 ha. The ecoscheme is applied in almost all farms in SPAs Lehnice and Sysľovské polia.

Detailed conditions of the agri-environmental scheme for Great Bustard protection in Slovakia are as follows:

Decree n. 3/2023 Coll. § 30 Protection of Great Bustard habitats

(1) Support for operation according to § 28 letter b) of Decree n. 3/2023 Coll. is provided for an agricultural area of arable land located in SPA Lehnice or in SPA Sysľovské polia if the supported area is at least 1 ha.

(2) The recipient of operation according to § 28 letter b) is mandatory in the area according to paragraph 1

a) to ensure the sowing procedure in the representation of:

1. alfalfa at least 10%,
2. fallow at least 5%,
3. winter cereals at least 25%,
4. peas at least 5%,
5. grasses on arable land in a proportion of at least 10%, while at least half of the area of grasses is mowed after July 1,
6. rapeseed at least 15%,
7. together maize and sunflower no more than 15%,

b) do not use plant protection (pesticides) products if they are not labelled according to a special regulation,

c) mow and carry out harvesting work always from the centre of the area to its edges or from one side of the area to its other side; use warning devices and chain slings when mowing and harvesting,

d) after the harvest of cereals and rapeseed, at least 30% of the stubble should be ploughed only in September  
and

1. leave stubble in July and August unplowed or

## 2. sow areas with catch crops.

The most significant modification of the 2022 scheme was the addition of mandatory share of alfalfa, fallow and peas. Besides that, the mandatory share of grasslands was extended, and the share of crops not favorable for the Great Bustard (corn and sunflower) was limited. Payment was also increased to 250 EUR/ha from the previous 86 EUR/ha to engage farmers in the protection of the Great Bustard.

Until December 2022 agri-environmental scheme for protection of Great-Bustard had very weak ambitions. Payment was also rather small (only 86 EUR/ha, compared to 250 EUR/ha today), therefore farmers in SPA Syst'ovské polia did not apply for this agri-environmental scheme. Following rules were valid in agri-environmental scheme for Great Bustard protection until December 2022:

- implement the established sowing procedure:
  - grow at least 4 types of main crops
  - the total share of winter cereals, rapeseed, perennial fodder, grasses on arable land and intercrops in total at least 70%, of which
    - share of rapeseed or perennial fodder at least 15%,
    - share of grass on arable land mowed after 15 July is at least 5%
- completely exclude the application of specified plant protection products (pesticides), the list will be determined in national legislation and in the Bulletin of the Ministry of Agriculture of the Slovak Republic,
- mow and carry out harvesting work always from the centre towards the edges or from one side of the plot to the other side of the plot; use warning devices when mowing and harvesting

From the overview of the scheme valid until December 2022 it is clear that in January 2023 a new condition of mandatory share of alfalfa, fallow and peas was added in Slovakia. Besides that mandatory share of grasslands was extended. The share of crops not favourable for Great Bustard (maize and sunflower) has been limited since 2023.

## **ANNEX IV: GERMANY**

### **Agri-environmental measures in favour of the Great Bustard in Germany (here: State of Brandenburg)**

The CAP is divided into two pillars. In the first pillar of direct payments, the following eco-regulations may be particularly interesting from a Great Bustard perspective:

Eco regulation 1a-d: Provision of areas to improve biodiversity and preserve habitats. These are either fallow areas (or flowering strips in arable land) and unmown areas on “permanent grassland”. The measures are attractively compensated depending on the share of the area.

Eco regulation 4 and 5: Extensification of the entire permanent grassland of the farm as well as extensive management of permanent grassland with at least 4 regional characteristic plant species from a respective list.

In the second pillar, the state of Brandenburg offers different funding opportunities (agri-environmental and climate measures). Regarding the Great Bustard areas, farmers in particular use “KULAP” (“Culture Landscape Program”) or “Biodiversity & Soil Protection”. Measures like fertiliser waiver (both arable land and grassland) or later cutting dates can be added to the basic funding. The flexible instrument of “cooperative measures” with several farms adjusting their measures has been in the state of a pilot project since 2023. It could turn out to be appropriate for Great Bustard conservation.

The CAP funding programs are administered directly by the responsible agricultural authority of the district. The regional conservation authority may be included (which is mandatory in Saxony-Anhalt), not, however, the Great Bustard Conservation staff. Basing on the practical cooperation, however, the staff can give advice to the farmers and recommend bustard-friendly programs or combinations. In practice, mowing large grassland blocks instead of smaller patches (which would be desirable for the bustards) is often preferred by the farmers.

For Natura-2000 areas, there is a funding guideline for the compensation of costs and loss of income for farmers, relevant also for the Great Bustard SPAs. Payments are provided for extensive grassland management □ restricted use of fertilisers and pesticides, fixed mowing dates (not before 16th June / 1st July / 16th August), high water level, extensive production on arable fields (restricted use of fertilisers and pesticides), compensation of difficulties in crop protection / reduced pesticides.

Additionally, nature conservation contracts are offered by the state of Brandenburg. The respective program is designed to fulfil legal EU obligations for species protection and habitat conservation, primarily in the Natura-2000 network. In the Great Bustard areas, this is a flexible means for adapting measures to local situations and circumstances during the breeding season, or promoting the use of special technology (e.g. mowing techniques). This funding opportunity is managed by the Brandenburg State Agency for Environment. Precondition for any contract is that funding from the responsible agricultural authority for the respective purpose is not possible and that it is actually a measure additional to the agricultural programs.

In general, the following measures have proved to be worthwhile in Great Bustard conservation:

- mosaic-like grassland use with different cutting dates □ mowing not before June 16th / not before July 1st / before June 15th. and after August 31st.
- bustard strips/fallow areas in arable land (not used for food production) that provide refuge for birds and insects,
- unmown strips in grassland areas.

In addition, special measures can be paid by other instruments, e. g. removal of poplar rows in order to re-open the landscape in favour of the Great Bustard.