

NATIONAL REPORT FOR THE GREAT BUSTARD MOU AND ACTION PLAN

HUNGARY

This reporting format is designed to monitor the implementation of the Action Plan associated with the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*). Reporting on the Action Plan's implementation will support exchange of information throughout the range and assist the identification of necessary future actions by the Signatory States. The questions presented here go beyond the scope of information already requested from CMS Contracting Parties for national reports to the CMS Conference of the Parties.

GENERAL INFORMATION

<p>Agency or institution responsible for the preparation of this report</p> <p>Ministry of Environment and Water – Biodiversity Unit</p>
<p>List any other agencies, institutions, or NGOs that have provided input</p> <ul style="list-style-type: none"> • Kiskunság National Park Directorate – co-ordinator for “Conservation of <i>Otis tarda</i> in Hungary’ LIFE-project • Körös-Maros National Park Directorate • Birdlife Hungary • West-Hungarian University
<p>Reports submitted to date:</p> <p>First: ()</p> <p>Second: ()</p>
<p>Period covered by this report</p> <p>(1st) (October) (2004) to (30th) (October) (2008)</p>
<p>Memorandum in effect in country since:</p> <p>[Date: 06 / 06 / 2001]:</p>

Designated Focal Point :

PRÁGER, Anna

Ministry of Environment and Water – Biodiversity Unit
Budapest 1011, Fő utca 44-50., Hungary

Tel.: 00/36/1 395-6857

Fax: 00/36/1 275-4505

E-mail: prager@mail.kvvm.hu

PART I. GENERAL

This questionnaire follows the structure and numbering of the Action Plan annexed to the Memorandum of Understanding to make it easier to read the relevant action points before the form is filled in. In some cases, however, sub-actions were not listed separately for the sake of simplicity and to avoid duplications. They should however be taken into consideration when answering the questions.

0. National work programme

Is there a national work programme or action plan already in place in your country for the Great Bustard pursuant to Paragraph 4(g) of the Memorandum of Understanding?

Yes No

Species action Plan for the Great Bustard (*Otis tarda*), 2004 – published by the Office of Nature Conservation, Ministry of Environment and Water ; approved by the minister of environment and water

1. Habitat protection

1.1 Designation of protected areas.

To what extent are the display, breeding, stop-over and wintering sites covered by protected areas?

Designation of protected areas under national law	Classification of Special Protection Areas according to the requirements of Art.4.1 of the EC Birds Directive
<input type="checkbox"/> Fully (>75%) <input checked="" type="checkbox"/> <u>High</u> (50-75%) <input type="checkbox"/> Medium (10-49%) <input type="checkbox"/> Low (<10%) <input type="checkbox"/> None <input type="checkbox"/> Not applicable ¹	<input checked="" type="checkbox"/> <u>Fully</u> (>75%) <input type="checkbox"/> High (50-75%) <input type="checkbox"/> Medium (10-49%) <input type="checkbox"/> Low (<10%) <input type="checkbox"/> None <input type="checkbox"/> Not applicable ¹

What measures were taken to ensure the adequate protection of the species and its habitat at these sites?
 Most of the leks (display areas) and breeding areas are legally protected; however, a significant extent of the habitats -mostly arable lands important for the Great Bustard- are not included in the traditional protected area system. Regarding protected areas, nature conservation provisions are identified in management plans. The third part of the **management plan documentation** - identifying obligations, restrictions and prohibitions for stakeholders concerning the given protected area - is announced as an enclosure of the Ministerial Decree announcing the area as protected. Thus, the third part of the management plan documentations even **has legal effect**.

Besides the “traditional” protected areas, Natura 2000 sites (**SPA and pSCI**) also have been designated.

6,2 % of the country is considered the distribution area of the Great Bustard – being ~ 580 000 ha land. From this, 32% of habitats nationally protected areas (186 635 ha) and 90 % is part of the Natura 2000 network (516 192 ha) (87 % SPA, 3 % ha pSCI).

¹ The species occurs only irregularly, no regular stop-over or wintering sites identified.

On the whole, **nationally protected areas together with Natura 2000 sites cover almost the whole distribution area (including display, breeding and feeding habitats) of the Great Bustard in Hungary** – including agricultural lands as well.

Activities in the reporting period:

- **13 377 ha of land was announced protected** by Ministerial Decree in 2005 and **2 500 ha** in October 2008 in the Hevesi Füves Puszták for the sake of the Great Bustard – among others.
- **Lands** have been **purchased** on 8 habitat sites of the Great Bustard, altogether resulting in ~ **2 000 ha-s** of new land owned and financially managed by the State.
- **SPA Management plans for all 9 habitats** of the Great Bustard have been prepared (including detailed documentation of the site: site description, conservation value, socio-economic circumstances; management plan: management objectives, threats and constraints, conservation strategies; and management prescription). After series of consultations with the Ministry of Environment and Water (MEW), and relevant authorities, local municipalities, regional economic chambers, important owners and other land users the final SPA management plan documentations were submitted to the State Secretary of the MEW for final approval – being the first set of such management plans in Hungary.
- In 2007 the **legal basis** of grassland management activities regarding Natura 2000 habitats and of compensation criteria were laid down. Both the Government Decree laying down **land use provisions** regarding the preservation of **grasslands** and the Ministerial Decree giving detailed conditions concerning the **compensation** payment, given to farmers working according to Natura 2000 management schemes and having loss of yield or other income due to the restrictions, were adopted.

Where are the remaining gaps?

There are no remaining gaps, since almost all habitats are legally protected.

Are currently unoccupied, but potential breeding habitats identified in your country?

Yes No Not applicable²

If yes, please explain how these areas are protected or managed to enable the re-establishment of Great Bustard.

1.2 Measures taken to ensure the maintenance of Great Bustard habitats outside of protected areas.

Please describe what measures have been taken to maintain land-use practices beneficial for Great Bustard outside of protected areas (e.g., set-aside and extensification schemes, cultivation of alfalfa and oilseed rape for winter, maintenance of rotational grazing, etc.).

As mentioned, 90 % of Great Bustard habitats fall under national or Natura 2000 protection, thus

²Countries *outside* of the historic (beginning of 20th Century) breeding range of the species.

'habitats outside protected areas' is irrelevant. However, **Environmentally Sensitive Area (ESA)** scheme has been established in Hungary which on one hand extends beyond the protected area system, on the other hand, creates new potential habitats for the species.

See activities under 2.2 : ESA scheme

- Outcomes of the management planning exercise were fed into the review of the zonal agro-environmental schemes during the preparation of the new Rural Development Plans for 2007-12 - focusing on the target programs especially dedicated on Great Bustard conservation practices. Inclusion of project areas not yet included in Great Bustard target programs was also proposed. As result all three new target areas (Bihari-sík, Kis-Sárrét, Hortobágy) were nominated and included in approved version of NHRDP with the final result of all project sites included in the zonal agri-environmental schemes of NHRDP for the period of 2007-2012, though new contracts will expectedly be signed with farmers from 2009 on.

To what extent do these measures, combined with site protection, cover the national population?

- Fully (>75%)
 Most (50-75%)
 Some (10-49%)
 Little (<10%)
 Not at all
 Not applicable¹

Are recently (over the last 20 years) abandoned Great Bustard breeding habitats mapped in your country?
 Yes No Not applicable¹

What habitat management measures have been taken to encourage the return of Great Bustard?

One of the aims of the LIFE Programme for the Protection of Great Bustard was to restore previously occupied, but abandoned or potentially suitable habitats for the species. To ensure this, **grassland restoration and alfalfa plantations** were carried out (affecting 6 sites of the species). Seeds of native grass species were sowed resulting in 905 ha grassland – from which 457 ha was established by the local agricultural co-operative in the Kiskunság, being one of the strongholds of the population. Alfalfa was planted on 139 ha, being excellent feeding ground because of its insect fauna, especially in the period of the first two weeks of the chicks' life. While on one hand a parcel covered with alfalfa is a full table for the birds, on the other hand it can be a safe nesting site for them.

If there were any measures taken, please provide information on their impact.

The direct impact of such habitat management measures on Great Bustard populations using certain habitats is not proven.

1.3 Measures taken to avoid fragmentation of Great Bustard habitats.

Are new projects potentially causing fragmentation of the species' habitat (such as construction of highways and railways, irrigation, planting of shelterbelts, afforestation, power lines, etc.) subject to environmental impact assessment in your country? Yes No Not applicable¹

Is there any aspect of the existing legislation on impact assessment that limits its effective application to prevent fragmentation of Great Bustard habitats? Yes No Not applicable¹

(Activities such as the construction of motorways, highways, railways, public roads longer than 10 km, 220 kV power lines longer than 15 km are subject to obligatory detailed EIA. Other activities, like redistribution of land property (in case of protected areas, ecological corridors or lands larger than 300 hectares), alteration of intensive agricultural land-use, meliorization, establishment of animal husbandry facilities in certain cases, construction of 120 kV power lines and 2 MW wind turbines (200 kW in protected areas) may be subject to EIA – upon the decision of environmental authority.

In protected areas, nature conservation has the authorization in its hand.

Moreover, according to the Act on Nature Conservation, threatening and even the disturbance of protected species and its breeding, feeding, resting etc. habitat is prohibited – which is a major tool in the hands of nature conservation authorities in preventing and prohibiting any human activity / investment which might cause negative effects.)

If yes, please provide details.

Have there been any such projects implemented in any Great Bustard habitat in your country since signing this Memorandum of Understanding? Yes No Not applicable¹

(In the reporting period there were two cases when investments were rejected:

1. A road construction
(bypass) plan was rejected due to the fact that it would have lead through Great Bustard breeding areas. The rejection was based on the above mentioned provision of our Act on Nature Conservation and points 1.1.1 and 1.3.2. of the Action Plan of the MoU.)
2. The establishment of an
accumulator processing plant was rejected by the court of highest justice because of possibly affecting Natura 2000 sites being wintering grounds for the Great Bustard.)

Please, give details and describe the outcome of impact monitoring if available.

2. Prevention of hunting, disturbance and other threats

2.1 Hunting.

Is Great Bustard afforded strict legal protection in your country? Yes No

Please, give details of any hunting restrictions imposed for the benefit of Great Bustard including those on timing of hunting and game management activities.

The hunting of Roe Deer in the Great Bustard habitats in May is controlled.

Please, indicate to what extent these measures ensure the protection of the national Great Bustard population?
The national population is covered by restrictions on hunting to prevent hunting-related disturbance:

- Fully (>75%)
- Most (50-75%)
- Some (10-49%)
- Little (<10%)
- Not at all
- Not applicable¹

2.2 Prevention of disturbance.

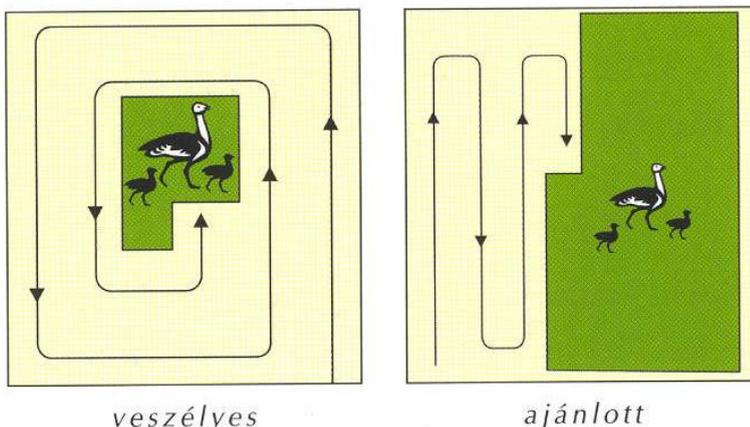
What measures have been taken to prevent disturbance of Great Bustard in your country, including both breeding birds and single individuals or small flocks on migration?

The most serious disturbance to the species is caused by different **agricultural works** in or nearby Great Bustard habitats. To avoid the disturbance agricultural activities are restricted in Great Bustard habitats – if possible. In the case of protected areas, the management plans determine the **management provisions and restrictions**, while in ESA habitats the contract lays down the precise management prescriptions.

The project titles regarding Great Bustard conservation in ESA schemes are 1) arable farming with Great Bustard protection 2) alfalfa with Great Bustard protection and 3) grassland management with Great Bustard protection which contain management prescriptions –inter alia- as follows:

- crop rotation (with determined plant ratios)
- set-aside
- conservation of existing alleys, forest belts, aged trees
- restrictions in the use of fertilizers, herbicides and fungicides
- prohibition of the use of highly toxic pesticides
- prohibition of soil loosening, amelioration, draining and irrigation activities
- restricted cutting (determined harvesting periods, methods and techniques)
- application of game deterring chain during harvesting
- protective zone around the nests
- reporting on the discovery of nests
- determined ploughing measures in areas with fire risk.

The individuals are mostly exposed to disturbance during breeding and nesting time. To prevent this disturbance, row cultivation cannot be done after 1st May, the first cutting of alfalfa must be done before 25th April, and the second cutting cannot be done earlier than 1st July.



The cutting must be done from the center of the field outwards in rows– in order to avoid the trapping and killing of the birds. In case of finding a nest during agricultural activities a protective zone should be maintained around the discovered nests

- **41 gates have been installed to close down dirt roads leading to Great Bustard display and breeding habitats** – to decrease stress caused by human disturbance. (Previously disturbance was not taken as a particularly strong threat that could have negative effect on the entire bustard population, but according to the experiences in the Kiskunság, gained during the implementation of LIFE OTISHU project, we can state that the level of disturbance had been underestimated in case of Kiskunsági szikes puszták project area. Furthermore, a scientific survey on the infertile eggs has also been carried out and results show that infertile eggs have an extremely high stress hormone level. Since it is the biggest Great Bustard display site in Central Europe dirt roads were closed down with 33 gates, in order to protect the birds in the most sensitive period of their life-cycle, namely display period and nesting time. Therefore, the disturbance of ~ 200-250 displaying males was minimised and circumstances for successful copulations were be improved.)

Please, indicate to what extent these measures have ensured the protection of the national population. The national population is covered by restrictions on other activities causing disturbance:

- Fully (>75%)
- Most (50-75%)
- Some (10-49%)
- Little (<10%)
- Not at all
- Not applicable¹

2.3.1 Prevention of predation.

What is the significance of predation to Great Bustard in your country?

It is presumed, that after agricultural activities predation is one of the most crucial factors limiting the population of the Great Bustard. However, the extent is not known.

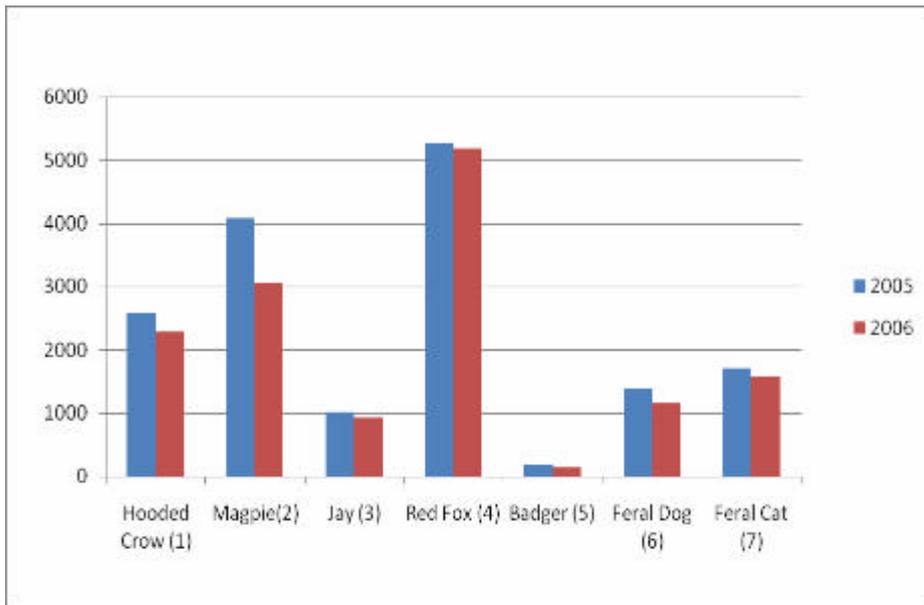
What are the main predator species?

The main predator is the Red Fox (*Vulpes vulpes*). Its population has increased dramatically due to immunization programs against rabies. Besides, badger, hooded crow and magpie are believed to be predator species also. However, there is a lack of information on the accurate determination of pressure exerted by predators on the species. Studies were carried out in North-West Hungary that showed that none of the species of birds of prey was capable of exerting a significant influence on the Great Bustard population size.

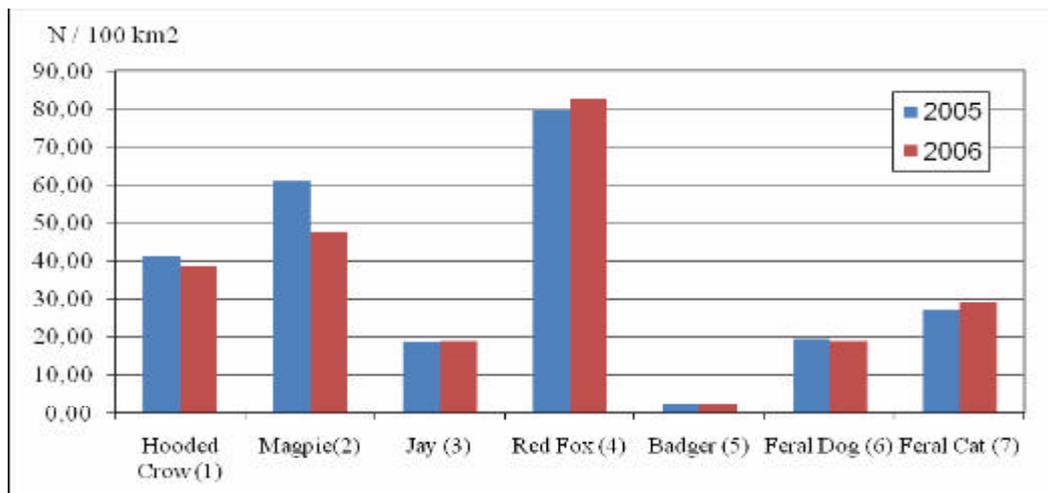
What measures have been taken to control predators in areas where Great Bustard occurs regularly?

In minimizing the threatening factors of the species, one of the most important tasks is to establish effective predator control. To fulfill this in the frame of the LIFE-project monitoring of the predators was continuous in 6 categories as follows:

- 1) Mammal predator monitoring (including Red Fox, Badger, Feral dog and Feral cat species),
 - 2) Burrow monitoring (regarding the Red Fox and the Badger),
 - 3) Bag and bag dynamics of the hunting organizations (see figures below – total number of bag species and density=number / 100 km² of bag species),
 - 4) Bird predator monitoring (including Goshawk, Marsh Harrier, Montagu's Harrier, Eagles, Hooded Crow, Rook, Magpie, Raven, Yellow-legged Gull),
 - 5) Bag of bird species in case of huntable species (Hooded Crow, Magpie and Jay),
 - 6) Nest monitoring of bird predator species.
- **The hunting** of predator species is carried out with the help of gamekeepers / local hunting associations. The figures shows the total number of bag species in the years 2005 and 2006 and the density (number / 100 km²) of them.



Consolidated bag size data of predator species on the 9 project areas (2005 and 2006)



Consolidated bag density data of predator species on the 9 project areas (2005 and 2006)

- Besides intensive shooting, **trappings** and **burrow destroyings** with dogs are carried out.
- The population of the **Hooded Crow** (*Corvus corone cornix*) is also showing an increasing trend. Besides hunting, **F2** superselective poison (3-chloro-4-methyl-aniline-hydrochloride) injected in **eggs** is also used against them.
- In 2006-2007 the draft national strategy on the management of foxes, badger, hooded crow and magpie (**Predator Management Plan**) was compiled by contracted experts of the West Hungarian University. The strategy contains concrete activities regarding hunting units in Hungary and already has been approved by the Hungarian Hunting Association and the Hungarian National Chamber of Hunters. Next steps are to reach agreement and approval between relevant ministries and further to include the strategy in the National Game Management Strategy.
- In the Heves Plain habitat of the Great Bustard (counting only 10-15 individuals, thus being a

threatened subpopulation) a ‘case study’ has been carried out. The investigated question was whether the **furry predators** near threatened nests can be successfully **eliminated**, thus a better hatching rate of the Great Bustards reached by the **installation of an electric fence around the nest**. Besides, we wanted to find out, to what extent do the electric fence and its maintenance disturb the Great Bustard females in breeding and feeding. A Great Bustard nest had been found by farmers in a 40 ha alfalfa field, which afterwards was fenced around by a 210 x 100 meter long double wired electric fence. The result was positive: the use of electric fence together with adequate guarding and checking could keep mammal predators away, so the breeding Great Bustard female and its chicks did not suffer from harm and the female stayed faithful to its nest – accompanied activities did not disturb breeding.

How effective were these measures?

- Effective (predation reduced by more than 50%)
- Partially effective (predation reduced by 10–49%)
- Less effective (predation reduced by less than 10%)
- Not applicable¹

2.3.2 Adoption of measures for power lines.

What is the significance of collision with power lines in your country?

In Hungary **43 Great Bustard** carcasses have been found in the last five years (regarding medium-, high voltage power lines and railway electric wires as well). Therefore the significance of collision with power lines as a mortality factor is quite significant – taking into account that presumably a number of dead individuals cannot be detected or are removed right away by predators.

What proactive and corrective measures have been taken to reduce the mortality caused by existing power lines in your country?

- The most dangerous **11 kms section of power line was buried** in Borsodi- Mezőség.
- On the other hand to prevent collisions with power lines **1 400 pieces of fireflies were put on the electric wires** on 8 sites aiming to prevent collision on approximately 50 kms sections altogether. This tool is a prism visible from different angles, thus birds can spot the line of prisms, usually 3 pieces in 100 metres section, and they can prevent direct collision. Experiences show that there were no dead birds found under the electric line section where these tools had been placed out. Although this method is just in the experimental stage right now, it can be a great help in case of power lines with high risk of collision and where financial sources are not available momentarily.

What is the size of the populations affected by these corrective measures?

The fireflies were put out at 8 project sites, burying occurred at the 9th, namely the Borsodi Mezőség.

How effective were these measures? **Not known**.

- Effective (collision with power lines reduced by more than 50%)
- Partially effective (collision with power lines reduced by 10–49%)
- Ineffective (collision with power lines reduced by less than 10%)
- Not applicable¹

2.3.3 Compensatory measures.

What is the size (in hectares) of Great Bustard habitat lost or degraded for any reasons since the

Memorandum of Understanding entered into effect (1 June 2001)?

(No habitat loss has occurred. One area used by one lonely breeding female Great Bustard was abandoned. The reason is not known (habitat hasn't been altered, the female might have died or other unknown factor exists.)

What is the size of the populations affected?

Were these habitat losses compensated? Yes Partially No Not applicable¹

If yes, please explain how.

Were these measures effective? Yes Partially No Not applicable¹

Please, give details on the effectiveness or explain why they were not effective if that is the case.

3. Possession and trade

Is collection of Great Bustard eggs or chicks, the possession of and trade in the birds and their eggs prohibited in your country? Yes No

How are these restrictions enforced? What are the remaining shortcomings, if any?

The Great Bustard is a strictly protected species in Hungary. According to Act no. LIII of 1996 on Nature Conservation in Hungary, collection, capture, killing, possession, training, exchange or sale and purchase of any individual is prohibited. Authorization shall only be granted out of nature conservation or other public interest. No exemption is granted.

Please indicate if any exemption is granted or not all of these activities are prohibited.

As mentioned, exemption is only granted due to nature conservation or other public interest (e.g. artificial rearing at Dévaványa Great Bustard Rescue Station, repatriation thereof and the export, import, exchange or transport of specimens (feather or blood samples) for scientific purposes). In these cases activities are subject to authorization by the Chief Environmental, Nature Conservation and Water Management Inspectorate.

4. Recovery measures

4.1 Captive breeding* in emergency situations.

Is captive breeding playing any role in Great Bustard conservation in your country? Yes (rearing) No

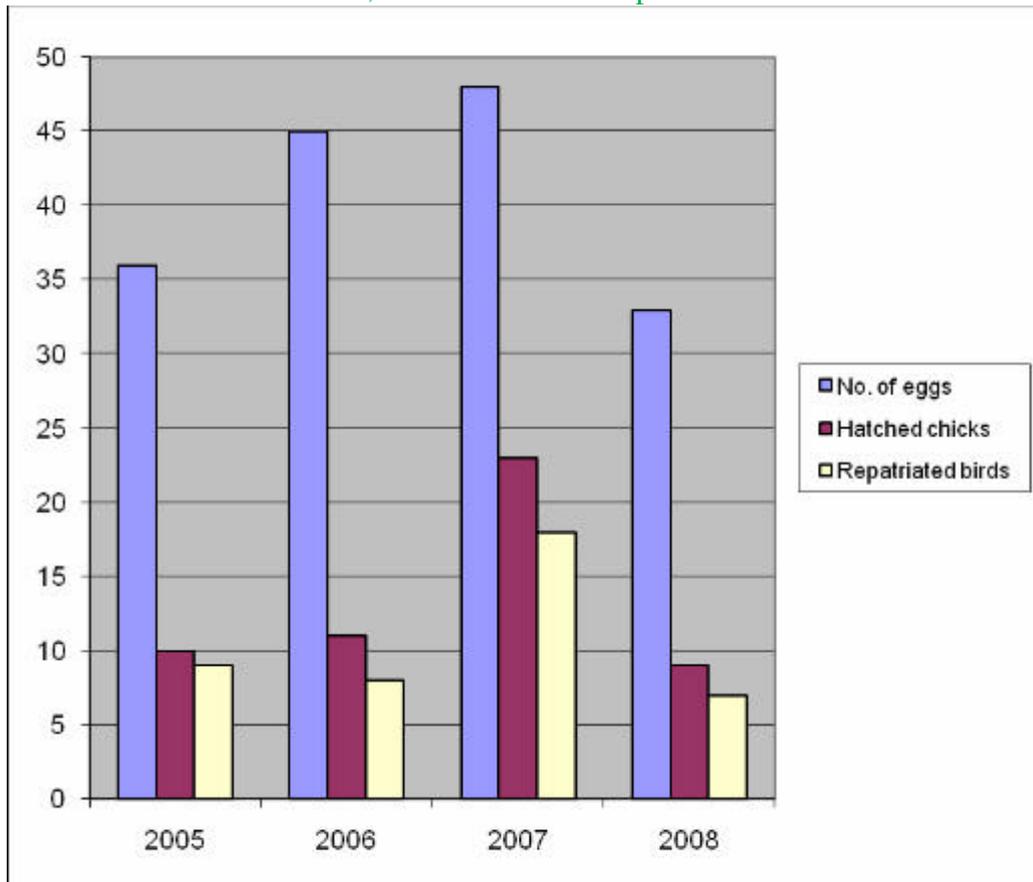
Please, describe the measures, staff and facilities involved and how these operations comply with the IUCN criteria on reintroductions.

Previously there were attempts of artificial breeding at the Great Bustard Rescue Station, however in Hungary captive breeding had not many success so far.

* In effect, "captive breeding" should be read as "captive rearing" according to current practices.

Nest protection and the rescue of endangered eggs has a tradition in the neighbourhood of the village Dévaványa. The Körös-Maros National Park Directorate has been running the **Great Bustard Rescue Centre** since 1978 where the eggs originating from endangered nests from all over the country are **incubated, hatched and the chicks are reared**.

Below the figure shows the number of endangered eggs rescued and taken to Dévaványa / year, the number of chicks that hatched, and the number of repatriated birds thereof.



4.2 Reintroduction.

Have there been any measures taken to reintroduce the species in your country? Yes No

If yes, please describe the progress. If there was any feasibility study carried out, please summarize its conclusions.

4.3 Monitoring of the success of release programmes.

Are captive reared birds released in your country? Yes No

- In the vicinity of the **Great Bustard Rescue Centre** there is the 400 ha area enclosure (providing a mosaic-like habitat for the birds) where the repatriation of the chicks is possible in a predator-free, but otherwise natural environment. Today the practice is voluntary repatriation. At present, the chicks are put into the enclosure at an age of 6-8 weeks; in this way, their

natural behavior can develop and they can adapt to their environment as early as possible. Human help and even presence is minimized. The workers of the Körös-Maros National Park Directorate help the chicks learn to fly and urge them to take off by a small airplane. In this way, they try to habituate the birds to look for food more efficiently and to be able to escape from their predators.

- In 2007 **6 birds** (5 males and 1 female) reared in Dévaványa were repatriated (substitute clutches, release took place on 4th September) **in Hevesi Plain** with the aim to strengthen the subpopulation – only holding 12-19 individuals. To make repatriation more efficient, electric fence for the exclusion of furry predators was used. One bird died, but others joined wild birds outside the enclosure, however, later we lost sight of them. One male appeared in the Kiskunság – showing also the connectivity between subpopulations.

If yes, please summarize the experience with release programmes in your country. What is the survival rate of released birds? What is the breeding performance of released birds?

To define the survival rate of the released birds (and the breeding performance as well) is very hard if not impossible. Several marking methods were tried out and later discarded, because they can cause possible harm to the birds. At the Körös-Maros National Park Directorate in the year of 2008 only coloured rings were used for marking purpose.

Time to time there are observations of the released birds but these observations are so casual that an accurate survival rate is not possible to be counted.

What is the overall assessment of release programmes based on the survival of released birds one year after release?

- Effective (the survival is about the same as of the wild ones)
- Partially effective (the survival rate is lower than 75% of the wild birds)
- Ineffective (the survival is less than 25% of wild birds)
- Not applicable³

³ No release is taking place in the country.

5. Cross-border conservation measure

Has your country undertaken any cross-border conservation measures with neighbouring countries?

Yes No Not applicable⁴

Please, give details of your country's collaboration with neighbouring countries on national surveys, research, monitoring and conservation activities for Great Bustard. Especially, list any measures taken to harmonise legal instruments protecting Great Bustard and its habitats, as well as funding you have provided to Great Bustard for particular conservation actions in other Range States.

- In our understanding there are two populations of Great Bustard South-East from Hungary. One in **Romania** and the other in **Serbia**. The Romanian population is small, as a matter of fact a satellite of the also small but increasing population near Mezogyán (Körös-Maros National Park). The census of the Mezogyán population is very accurate and the cross-border communication with our colleagues working in Romania is vivid. The Serbian population is also small counting some 35 individuals. The closest population in Hungary is in Csanádi Puszta (Körös-Maros National Park). The cooperation between the Hungarian and Serbian experts lays mostly in the exchange of experiences. Regularly the members of the interested organisations visit each other and discuss the matters of Bustard protection on field trips and indoor seminars.
- Hungary initiated a **trilateral Great Bustard Meeting with Serbia and Romania**, which took place in Mokrin, Serbia in November 2006 when experiences and views were discussed in combination with a visit to Great Bustard habitats.
- Around the **Austrian-Hungarian-Slovakian** border a cross-border Great Bustard conservation program exists for the common population found in these three countries. The relationship among members of the so-called 'Pannonische Gesellschaft für Grosstappenschutz' society is so close that practically they are in an everyday contact. Joint efforts include synchronized censuses and the sharing of experience on monitoring and habitat management on the monthly meetings.
- Hungary organized the so called '**Technical Workshop on Comparative Studies on Great Bustard**' in Mosonmagyaróvár in November 2006 with the participation of seven countries. A summary of outcomes was produced with four target areas, namely: 1) Predation, 2) Habitat selection, 3) Agri-environmental measures and 4) Infrastructure.

6. Monitoring and research

6.1.1 Monitoring of population size and population trends.

Are the breeding, migratory or wintering Great Bustard populations monitored in your country?

Yes No

- **National synchronized censuses** are undertaken **three times every year**, one in winter and two between the middle of March and the middle of April aiming to obtain absolute population estimate. Sex and age of birds is recorded also. This census involves the entire known

⁴ For countries which do not have any transboundary population.

distribution range of the species in Hungary. Results were published in the annual monitoring report.

- During the **LIFE-project** the preserve zones at each of the 9 project areas were visited **once a week** and data on **Great Bustard occurrences** were recorded.

What proportion of the national population is monitored?

All (>75%)

Most (50-75%)

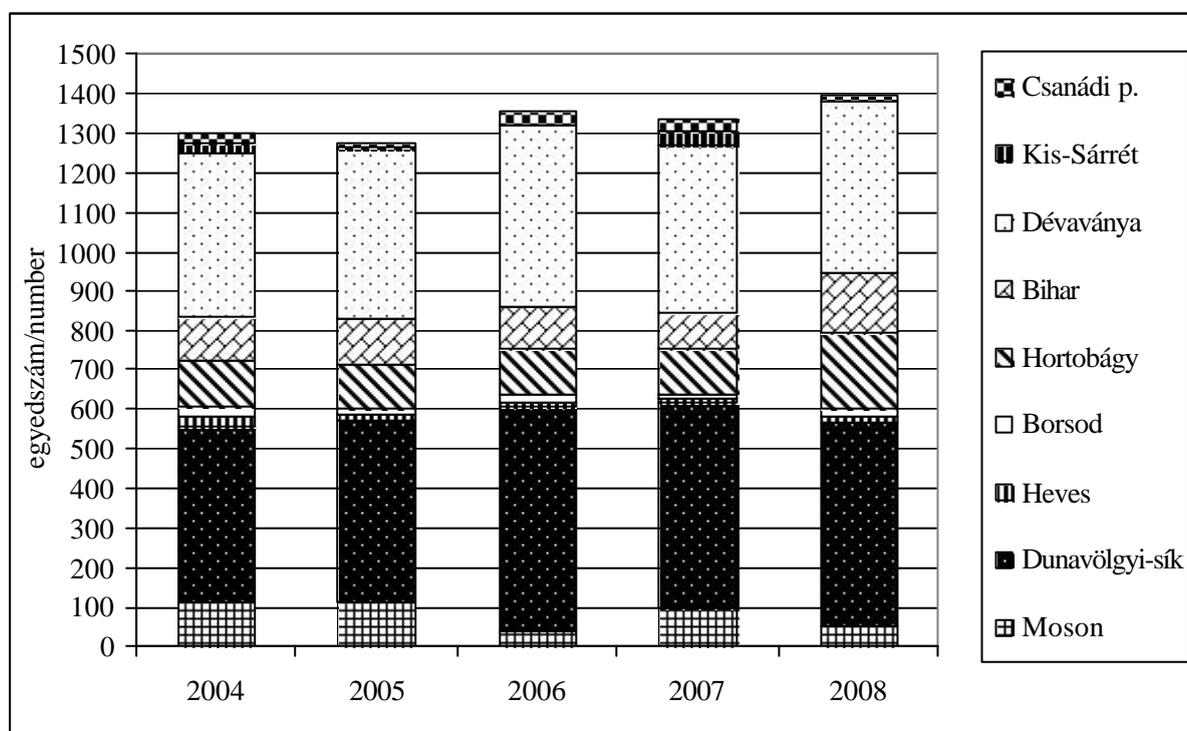
Some (10-49%)

Little (<10%)

None

Not applicable¹

What is the size and trend in the national population?⁵



Results of the Great Bustard synchronous censuses between 2004–2008 concerning the maximum numbers of observations

Breeding/resident population (2008)

No. of adult males: 273

No. of females: 312

Indet.: 812

Summa: 1 397

⁵ Only for countries where the species occurs regularly.

Trend: Declined by ___% over the last 10 years
 Stable
 Increased by 33 % over the last 10 years

For countries where the species occurs only occasionally, please give the details of known observations within the reporting period:

6.1.2 Monitoring of the effects of habitat management.

Is the effect of habitat conservation measures monitored in your country?

Yes Partially No Not applicable¹

Please, provide a list of on-going and completed studies with references if results are already published.

Once a week, the *preserve zones* at each of the 9 project site determined in the **LIFE-project** were visited and data on *O. tarda* occurrences and its habitats were recorded. Data on sites were recorded on maps and stored in a GIS system by the Institute of Wildlife Management at the University of West Hungary and they were published once a year.

Regional Great Bustard Officers use the inland produced DIGITERRA program, which is perfectly suitable for field data-recording. The „sample-areas” got allotted in all nine monitoring area (study site). These areas are specially researched in respect of the **great bustard and predator populations and also of the agricultural pattern and habitat.**

The monitoring of the habitat structures of these sample-areas has been continuous and reported three times a year in all areas on the changes of the habitats and on the actual states of the habitats. By processing the received data, we get continuous view of the factors that are influencing and endangering the great bustard-populations, and as far as possible we try to bat for the best conceivable and overall protection.

A sample transmitter was put on a bustard female in May 2006 in the Kiskunság.

In the frame of **ESA system** permanent monitoring has been carried out from the commencement of ESA designation (agricultural year 2002/2003) in a sample area, the Hevesi-sík. The goal has been to examine whether the Great Bustard finds more advantageous habitat conditions on the supported areas, due to consolidated farming methods, or not. Observations of birds are permanently registered with detecting location and plant culture. By weighting different plant cultures with detected number of individuals the habitat use of the population can be defined. By comparing habitat use with the ratio of plant cultures found in the area habitat preferences have been calculated. Including the habitat supply of the area not only gives a picture of the location of birds, but reveals what kind of habitats the population really prefers and what it only uses because of constraint.

By analyzing these figures on the long run the ideal habitat structure of the population can be identified. Determining these preferred habitats and the non-preferred ones to which expenses can be done is a conservation effort to be followed. By monitoring the monthly change of preference of plant cultures, the degree of threat of different agricultural activities can be estimated and consequently modified if necessary.

What can be learned from these studies?

Thanks to our integrated population and habitat monitoring protocol results were produced on:

1. Sex and age distribution of *O. tarda* population, breeding success, and the dynamics of habitat preference.
2. Preferred areas identified and their habitat usage patterns analysed. Reasons for habitat preferences understood. Impacts of habitat restoration identified at each site.
3. Importance of mortality factors identified at each site.

What are the remaining gaps and what measures will your country do to address these gaps?

6.2.1 Comparative ecological studies.

Have there been any comparative studies carried out on the population dynamics, habitat requirements, effects of habitat changes and causes of decline in your country in collaboration with other Range States?
 Yes No Not applicable¹

Please, provide a list of on-going and completed studies with references if results are already published

Birdlife Hungary in the frame of its Great Bustard Protection Program has been carrying out year-round monitoring in its operational areas: Hevesi-sík, Borsodi-Mezoség and Bihar. They record not only the number of observed birds and the sex ratio, but habitat use and any data important from the species aspect. From these data - gathered since more than a decade- results came up for example on

- female nesting place (vegetation type) preferences,
- comparison of the 3 main vegetations according to nesting results,
- monthly habitat (vegetation) choice,
- reasons of endangered nest findings (= threats factors regarding nesting),
- rate of survival of observed nests.

These data implicate the habitat requirements of the species, and the resulting threats posed concerning different agricultural activities in certain months in different plant cultures. As a result, the appropriate management practices can be determined. Alfalfa and grass are one of the most dominant habitats of the species, but on contrary, despite all efforts made to persuade farmers, alfalfa is still a critical habitat in the species' survival.

Fatér, I. et al. (2005): Results of the MME (Birdlife Hungary) Great Bustard Protection Program (1994-2004).

Szabó et al. carried out representative genetic investigations in Hungary. The investigated genetic samples showed relatively low sequential divergence and the Hungarian haplotypes showed continuity with the Eastern European genetic samples. This is in line with former presumptions that the climate differences have rather important impact on the hatching success differences experienced in different

habitats.

Szabó et al. (2007): Genetic variability of the Hungarian Great Bustard Populations. In: A Kárpát-medence állatvilágának kialakulása, Ed. Forró, L., MTM, Budapest. p. 297-302.

What can be learned from these studies?

See above.

What are the remaining gaps where the Memorandum of Understanding could assist?

Still numerous unanswerable questions exist, where our knowledge is scarce, which hinders effective conservation of the already endangered populations. These are as follows (just to mention a few shortcomings in our knowledge):

- How big a viable population is? As we can see there are several small populations counting 10-30 birds Europe-wide and also in Hungary and in the past we could experience extinction in peripheral populations. Consequently it is an important question to be solved.
- Furthermore less is known on the carrying capacity of habitats regarding the Great Bustard,
- on the correlation of certain predator species and Great Bustard mortality,

on the small scale preferences of habitat choice of the species. The MoU could help conservation efforts by **supporting joint studies** regarding these gaps in our knowledge on the species.

6.2.2 Studies on mortality factors.

Are the causes of Great Bustard mortality understood in your country?

Yes Partially No Not applicable¹

Please, provide a list of on-going and completed studies with references if results are already published.

As mentioned studies discuss the role of vegetation in the distribution and reproductive biology of the Great Bustard. The mortality (especially regarding eggs / females sitting on the nest) caused by **agricultural activities** is assessed.

Effects of hard winters on the Great Bustard population is studied.

Faragó, S. (1990a): (The effect of severe winters on the Hungarian populations of Great Bustard). Állattani Közlemények 76: p. 51-62.

Mortality caused by collision with powerlines is assessed (see above).

What can be learned from these studies?

Agricultural activities: see above. **Winter:** Winter is crucial in Great Bustard protection since food availability is limited and in severe winters it can even lead to the starvation of specimens or to the migration which also can cause losses to the population. Therefore winter protection activities should focus on supplying enough and adequate food and keeping the birds in place. This underlines the inevitable need of good quality and appropriate quantity of rape as winter fodder. Moreover, severe winters require extra winter activities such as removing of snow cover both by snow ploughs and hand, and extra fodder-crop (rape, cabbage leaves) distribution.

-
-

What are the remaining gaps and what measures will your country do to address these gaps?

The MoU could help conservation efforts by **supporting joint studies** regarding these gaps in our knowledge on the species.

6.2.3 Investigation of factors limiting breeding success.

Are the factors limiting breeding success in core populations understood in your country?

Yes Partially No Not applicable⁶

Please, provide a list of on-going and completed studies with references if results are already published

What can be learned from these studies?

Boros et al. (2005) investigated breeding biology measures in eggs collected from 99 threatened nests in two Hungarian populations: central Kiskunság and eastern Tiszántúl (Dévaványa). Notably, the hatching rate has been consequently higher in Kiskunság having a resident population than in Tiszántúl's migrating population. It is assumed that the slightly better breeding condition of the central resident population could correspond with a better survival conditions compared to the eastern migrating population. Conservation efforts therefore should focus on appropriate winter protection to keep the birds at their grounds.

- Boros, E. et al. (2005): Spatial differences and periodical changes in some breeding biology parameters in Hungarian Great Bustard (*Otis tarda*) populations. *Aquila*, Vol. 112: p. 203-210.

-

Detailed studies were carried out on the reproduction model of the Great Bustard. According to the study in a Hungarian Great Bustard population, a hen can raise an average of 0.60 chicks annually. This rate is only enough to maintain the current population, not to increase it. The main mortality factors are intensive agriculture and predation. With regard to the upper reproduction parameters, the lifetime of the population is 14.6 years.

Faragó, S. (1992b): Clutch size of the Great Bustard (*Otis tarda*) in Hungary. *Aquila* vol.: 99, p. 69-84.

What are the remaining gaps and what measures are you going to take to address these gaps?

Taking into consideration that there is a notable difference in the breeding success in the different ranges of the Great Bustard in Hungary, further research activities should be done on potential environmental factors. The CMS could promote activities supporting these conservation gaps.

6.2.4 Studies on migration.

Were there any studies on migration routes and wintering places carried out in your country?

Yes Partially No Not applicable¹

Where are the key sites and what is the size of the population they support?

Do you have any knowledge about the origin of these birds supported by ringing or other marking methods?

What are the remaining gaps and what measures will your country do to address these gaps?

⁶ Only for breeding countries.

7. Training of staff working in conservation bodies

Is there any mechanism in place in your country to share information on biological characteristics and living requirements of Great Bustard, legal matters, census techniques and management practices to personnel working regularly with the species? Yes No Not applicable¹

If yes, please describe it.

In Hungary a “**Great Bustard Conservation Working Group**” has existed since the early 1990s. The group comprises all (about 25) experts working for different nature conservation organizations (rangers, other national park staff, researchers, NGO-s, ministry and inspectorate staff) in different parts of the country. These experts exchange experiences by informing each other on relevant population and nature conservation issues concerning the species during the **regular meetings** of the Working Group, **held twice a year**.

Have personnel dealing with Great Bustard participated in any exchange programme in other Range States? Yes No Not applicable¹

If yes, please give details on number of staff involved, country visited and how the lessons were applied in your country.

In 2006 Hungarian Great Bustard experts (from Birdlife Hungary) together with the colleagues from the UK visited the Saratov Rescue Center in Russia and organized joint workshop on Great Bustard conservation. The aim of the Hungarian delegation was to share Hungarian **nest protecting and egg / chick rearing** methodology and adapt it to Russian conditions.

8. Increasing awareness of the need to protect Great Bustards and their habitat

What measures have been taken to increase the awareness about the protection needs of the species and its habitat in your country since signing the Memorandum of Understanding?

Farmers

A special communication program was carried out in the frame of the LIFE-project to inform farmers working on and around the habitat of *O. tarda*. This included the following activities:

- ~ 60 meetings were held with good attendance,
- 20.000 information leaflets were printed,
- The video film for farmers had been made to promote best practice and it was broadcasted even on national tv channels,
- 5.000 pieces of stickers were made and disseminated among farmers. Stickers are very practical tools to remind farmers all the time they spend in their tractors about the project, their duties in case of nest found, best practice management and the bustard itself.

Hunters

A special communication program was also carried out targeting hunters and gamekeepers to introduce the requirements of *O. tarda* protection into hunting and game management. First, the common interest of protecting *O. tarda* and hunting was highlighted, such as habitat protection and ensuring accessibility of food for *O. tarda* and co-existing species (roe deer, hare, etc.) during winter. Nature-friendly methods of predator control was also be discussed, along with information on how to reduce disturbance of *O. tarda* during various hunting activities.

- 6 Regional Hunter-Nature Conservationist Meetings were held
- 4000 brochures for hunters were made and disseminated at FEHOVA, the largest annual fair for hunters and anglers
- A documentary film for the hunters was made and disseminated at Regional Hunter-Nature Conservationist Meetings, relevant Ministries and Hunting Associations.

General public

- 15 large and 44 small signboards have been erected at locations near Great Bustard habitats, but where highest number of visitors see them. Therefore they are usually not inside the project areas, but in centres of settlements, tourist areas easily accessible for general public in the functional vicinity of LIFE-project areas.
- A project web site has been set up and maintained in both English and Hungarian languages to disseminate information for the general public.
- A film called 'Great Bustard Rescuers' was made for the general public and already broadcasted > 10 times on national tv channels.
- Several articles, radio interviews, press releases were carried out and press conferences were held to bring conservation problems of O. tarda and the results of the LIFE project to the attention of the general public, decision-makers and interest groups.

Do farmers, shepherds, political decision makers and local and regional authorities support Great Bustard conservation? Yes Partially No

What are the remaining gaps or problems and how are you going to address them?

9. Economic measures

Have there been any initiatives taken to develop economic activities that are in line with the conservation requirements of Great Bustard in your country?

Yes Partially No Not applicable¹

What percentage of the population is covered in total by these measures?

- All (>75%)
- Most (50-75%)
- Some (10-49%)
- Little (<10%)
- None
- Not applicable

How effective were these measures?

- Effective (more than 50% of the targeted area is managed according to the species' needs)
- Partially effective (10–49% of the targeted area is managed according to the species' needs)
- Ineffective (less than 10% according to the species' needs)
- Not applicable¹

10. Threats

Please, fill in the table below on main threats to the species in your country. Use the threat scores categories below to quantify their significance at national level. Please, provide an explanation on what basis you have assigned the threat score and preferably provide reference. Add additional lines, if necessary.

Threat scores:

Critical: a factor causing or likely to cause **very rapid declines** (>30% over 10 years).

High: a factor causing or likely to cause **rapid declines** (20-30% over 10 years).

Medium: a factor causing or likely to cause relatively **slow, but significant, declines** (10-20% over 10 years).

Low: a factor causing or likely to cause **fluctuations**.

Local: a factor causing local declines but likely to cause **negligible declines at population level**.

Unknown: a factor that is likely to affect the species but it is unknown to what extent.

Threat name	Threat score	Explanation and reference
Habitat loss	Zero	
Losses of eggs and chicks	High	indirect (due to other factors such as human disturbance and predation)
Predation	Unknown	data exist only on destroyed nests, other cases are hard to estimate
Collision with powerlines	Medium	
Human disturbance	High	
Pesticides	Unknown	
Illegal hunting	Local / Zero	
Others (specify)		