International single species action plan for the Western Palearctic population of Great Bustard, *Otis tarda tarda*

Prepared by:

BirdLife INTERNATIONAL

On behalf of the European Commission

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Milestones in the production of the plan

2nd Meeting of the signatories to the MoU on the Conservation and management of the Middle European Population of the Great Bustard (Otis tarda):
11-12 November 2008
1st draft: 28 June 2009
Second draft: 01 November 2009
Final version: 31 March 2010

This plan should be reviewed and updated in every ten years. An emergency review will be undertaken if sudden major environmental changes, liable to affect occur within the range of the species.

Recommended citation

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Geographical scope of the action plan

The current distribution of the Great Bustard in the Western Palearctic is presented below.

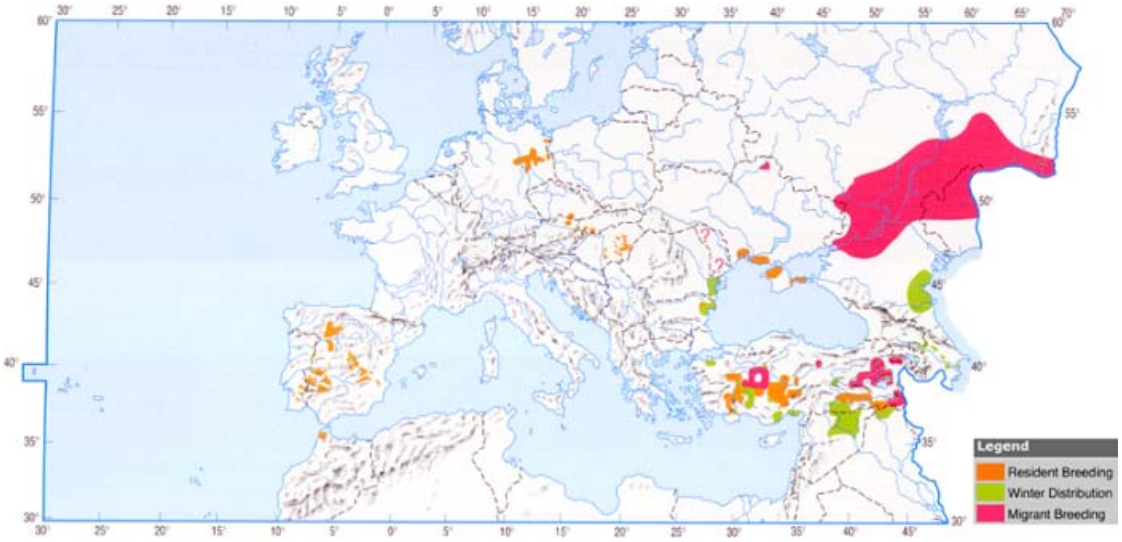

Figure 1. Distribution of the Great Bustard in the Western Palearctic (Morales and Martin 2002).

Table 1. The European range states where this action plan is relevant. The states listed in bold are those where the plan should be implemented.

Breeding	**Migration**	**Wintering**
Austria	*Azerbaijan*	***Austria***
Czech Republic	*Albania*	***Azerbaijan***
Germany	*Armenia*	*Bulgaria*
Kazakhstan[1]	*Croatia*	*Czech Republic*
Hungary	*Georgia*	***Germany***
Moldova	*Macedonia, FYR of*	*Greece*
Morocco	*Russia*	***Hungary***
Portugal	*Serbia*	*Italy*
Romania	*Slovenia*	***Morocco***
Russia		***Portugal***
Serbia		*Romania*
Slovakia		***Russia***
Spain		***Serbia***
Turkey		***Slovakia***
Ukraine		***Spain***
		Turkey
		Ukraine

[1] Only the Northwest part of the country between the Ural River and the Russian border.

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0 - EXECUTIVE SUMMARY

The Great Bustard is considered Vulnerable both in Europe and globally due to its large (>30%) decline over three generations (i.e. from the mid-1960s). The species is listed on Appendix II of CMS, while its Middle European population is listed on Appendix I. A Memorandum of Understanding on the conservation and management of the Middle European population of the Great Bustard came into force on 1 June 2001. The species is also listed on Appendix II of CITES, on Appendix II of the Bern Convention and on Annex I of the Birds Directive. This action plan revises and updates the earlier European Action Plan (Kollar 1996) for the species which was endorsed by the Ornis Committee and by the Standing Committee of the Bern Convention and also formed the basis of the action plan adopted by the CMS Great Bustard MoU. It covers the Western Palearctic populations of the species from Morocco to northwest Kazakhstan (up to the Ural River).

The Great Bustard is strongly attached to lowlands and undulating open countryside with dry soil and low level of annual rainfall. Great Bustard populations are migratory in the east and partially migratory elsewhere. With the advent of mechanised agriculture the species' range severely contracted in the 19th and 20th century and the species has become extinct from many countries. Consequently, the Western Palearctic range of the species is now highly fragmented. The latest estimate of the Great Bustard global population is 43,500–51,200 individuals. Approximately, 90% of the global population occurs within the geographic scope of this action plan. Although the total European population of Great Bustard has not decreased over the last two decades and even increased as a result of concerted conservation efforts in Austria, Spain, Portugal, Germany and Hungary, current numbers are still far lower than three generations before (i.e. in the mid-1960s) and the contraction of the species range continues.

The main threats to the Great Bustard are the loss and degradation of its habitat through agricultural intensification, land-use changes and infrastructure development, increased mortality caused mainly by powerlines and reduced reproductive success due to high-levels of nest destruction by mechanised farming and high chick mortality through predation and starvation.

The **aim** of the plan is to recover the species from its current Vulnerable status in Europe to at least the population levels in 1979. **Objective 1** of the plan is to achieve at least a 10% increase in each biogeographic population within 10 years. **Objective 2** of the plan is to improve the viability of existing isolated populations through restoring part of the species' former range within 30 years. To this end the plan requires reducing the main mortality causes such as collision with powerlines and poaching. In addition, the action plan requires taking measures to reduce the negative impacts of modern agriculture on breeding success.

1 - BIOLOGICAL ASSESSMENT

Taxonomy and biogeographic populations

Phylum: Chordata
Class: Aves
Order: Gruiformes
Family: Otididae
Genus: *Otis*
Species: *Otis tarda* (Linnaeus, 1758)

Polytypic species. The range of the nominate *tarda* Linnaeus, 1758 subspecies extends from Iberia, Morocco, Turkey, and central and south-east Europe east to central Siberia in the upper basin of River Irtysh.

With the advent of mechanised agriculture the species' range severely contracted in the 19th and 20th century (see the section on Population size and trend below). Consequently, the Western Palearctic range of the species is now highly fragmented and the following demographically independent biogeographic breeding populations can be separated (Faragó 1986):

- North African - Morocco
- Iberian - Spain, Portugal
- German-Polish Plain - Germany, Poland
- Carpathian basin – Austria, Czech Republic, Hungary, Slovakia, Serbia, Romania and Bulgaria
- Eastern European – European Russia, Ukraine
- Middle-East – Turkey (extending into West of Iran)

Genetic studies indicate long-term historical separation between the populations from the Iberian Peninsula and mainland Europe (Pitra *et al.* 2000) and between Iberia and Morocco (Alonso *et al.* 2009a).

Distribution throughout the annual cycle

Great Bustard populations are migratory in the east and partially migratory elsewhere. The Russian birds regularly migrate to the Crimea, Ukraine and to the Caspian lowlands of Dagestan and Azerbaijan to winter. Some autumn movements can be observed also through Georgia, Armenia and Eastern Turkey also including Iran and Iraq. In mild winters, the populations from the German-Polish iPlan and from the Carpathian Basin only move to local wintering areas, but in harsh winters with high snow cover, they can be displaced (Faragó 1990a; Streich *et al.* 2006). In such situations, birds from Germany previously moved towards the North Sea countries such as the Netherlands, Belgium and France, while birds from the Carpathian Basin migrated towards Italy through Croatia and Slovenia, as well as to the Balkan (through Serbia, Montenegro, Albania, the FYR of Macedonia to Greece).

However, such movements have not been recorded recently due to the currently small size of these populations and the improved availability of oilseed rape within their home range. On the other hand, telemetry studies proved that the Iberian populations also perform regular short distance movements (Alonso *et al.* 2009b; Alonso *et al.* 2001; Alonso *et al.* 2000; Morales et al. 2000; Palacin 2007; Palacin *et al.* 2009).

Habitat requirements

The Great Bustard is strongly attached to lowlands and undulating open countryside with dry soil and low levels (< 600 mm) of annual rainfall. The species avoids steep or rocky terrains, deserts, wetlands and closed forests. Clear views of over 1 km on at least three directions appears essential. Under natural conditions, the species was probably confined to natural grasslands such as steppes and similar warm open habitats. However, it has adapted well to agricultural landscapes with high diversity of crops and low intensity of cultivation and disturbance (Morales and Martin 2002).

Usually, Great Bustard females select breeding habitats that provide sufficient cover, but also a good view of the surrounding area. Thus, most of the nests can be found in cereals, alfalfa, grasslands (e.g. *Molinia*, *Alopecurus*) and first year fallow land. However, replacement eggs can be also laid in maize, sunflower or potato fields. Females show high levels of fidelity to their natal sites and settle within a few kilometres to it (Alonso *et al.* 2000). Once established, nest areas are normally used every year.

Feeding habitat requirements during incubation are the same as breeding habitats because the female leaves the nest only for short periods. After hatching, the feeding area used by the families gradually increases. After harvest, families congregate on stubble fields. In autumn, flocks gradually aggregate at traditional wintering areas with oilseed rape or alfalfa (Faragó and Széll 1991) and traditional olive groves (Rocha 2006).

Survival and productivity

According to radio telemetry studies in Spain (Martin *et al.* 2007), approximately half of all marked birds died before reaching the age of 120 days, 13.1% at age of 120–240 days, 2.4% between age of 240–365 days and less than 30% survived after their first year. Mortality decreased to 9.8% in the second year and stabilized around this value. This corresponds well with Faragó's (1991) results on captive reared chicks, who found that approximately half of the birds died in the first 30 days of their life and 72% of all chick mortality within the first 100 days occurred in that period.

The age of first breeding is 2-4 years for females and 5-6 years for males (Morales and Martin 2002). The average clutch size was 1.93 eggs in 858 nests found in Hungary

between 1974 and 1990 (Faragó 1992a), but 2.6 eggs in 19 nests in Portugal (Morgado and Moreira 2000). However, the average clutch size was smaller (2.12 eggs) in a larger sample of 86 nests in the latter country in 2002-2004 (Rocha 2006). In Central Europe[2], the species regularly lays replacement eggs if the first clutch is lost. However, the reproductive value of replacement clutches is lower due to a higher proportion of infertile eggs and weaker chicks (Faragó 1983). However, data from Germany indicates that the fertility of eggs is only lower in eggs laid after the end of May (Langgemach and Litzbarski 2005).

Mean yearly population productivity was 0.14 chicks per female in an 11-year-long study in north-west Spain. Inter-annual variability in population productivity was high (0.04–0.29) and was positively correlated with precipitation in the previous winter (which is believed to influence food supply) and negatively correlated with the number of rainy days during the hatching period. Individual breeding success is higher in females older than 6 years (Morales *et al.* 2002). In another study, Martinez (2008) found that the mean productivity was 0.24 chicks per female in the large population in Castilla y León. However, Watzke (Watzke 2007) and Faragó (Faragó 2001a; Faragó 2001b) reported higher productivity from Russia and Hungary (0.25–0.43 and 0.41–0.48 chick per female respectively), but these figures refer to juveniles observed earlier in the chick rearing period than in Spain and this difference in census timing can explain, at least partly, this difference.

Population size and trend

The latest estimate of the global population of the Great Bustard is 43,500–51,200 individuals (Palacin and Alonso 2008). Approximately 90% of the global population occurs within the geographic scope of this action plan. The populations within the EU Member States account for 65–70%, of which Spain alone holds c. 60% of the global population.

The Great Bustard populations in the Western Palearctic started declining with the retreat of the fallow cultivation system across the Western Palearctic. In the 19th century, the species became extinct from the UK (1832), Sweden (mid-19th century), France (1863) and Greece (end of 19th century). This process continued in the 20th century, with the Great Bustard's extinction from Syria (1931), Azerbaijan (1940–50), Poland (1986) and Moldova (2000) and it can be considered as quasi extinct, with occasional breeding records, from the Czech Republic, Slovakia, Bulgaria and Romania as a breeding species. The populations in Spain, Portugal, Germany, Austria, Slovakia, Hungary, Serbia, Morocco, Ukraine, Russia and Turkey have also suffered large declines during the 20th century. In Spain, Portugal, Germany, Hungary, Austria and Russia, the declining population trend has changed to positive or stable from the 1990s as a consequence of a combination of species conservation measures and extensification of farming at least within some areas. However, the

[2] Central Europe includes the ecologically similar populations of the German-Polish Plain and of the Carpathian Basin.

contraction and fragmentation of the range has continued in most countries (Alonso *et al.* 2004; Alonso *et al.* 2003; Faragó 1993; Pinto *et al.* 2005; Palacín & Alonso, 2009).

Table 2. Population size and trend by country of the Great Bustard

Country	Breeding numbers[3]	Quality	Year(s) of the estimate[4]	Breeding Population trend in the last 3 generations[5]	Quality	Maximum size of migrating or non breeding populations in the last 10 years[6]	Quality	Year(s) of the estimate[7]
Albania	n.a.	n.a.	n.a.	n.a.	n.a.	Few inds.	Poor	2002/2003
Armenia	n.a.	n.a.	n.a.	n.a.	n.a.	Few inds.	Poor	Unknown
Austria	185–198	Good	2008	Moderate decline	Good	320	Good	2007/2008
Azerbaijan	n.a.	n.a.	n.a.	n.a.	n.a.	10-100s	Poor	Last record?
Bosnia-Herzegovina	n.a.	n.a.	n.a.	n.a.	n.a.	No record in the last 10 years		
Bulgaria	0-6	Poor	2007	Large decline	Poor	Few inds.	Medium	2008
Czech Republic	0–2	Good	2008	Large decline	Medium	Few inds.	Medium	2008
Croatia	n.a.	n.a.	n.a.	n.a.	n.a.	No record in the last 10 years		
Georgia	n.a.	n.a.	n.a.	n.a.	n.a.	Few inds.	Poor	Unknown
Germany	112-116	Good	2009	Large decline	Good	Breeding population estimate is based on winter count		
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	Few inds.	Poor	Unknown
Hungary	1,582	Good	2009	Large decline	Good	Breeding population estimate is based on winter count		

[3] In*dividuals*.
[4] In case of extinct populations, the approximate time of extinction is given.
[5] The action plan guidelines (BirdLife International 2008a) require, in line with the IUCN Red List guidelines (IUCN S.S.C. 2001), the use of 3 generations or 10 years, whichever is longer. The generation length of Great Bustard is 14 years (BirdLife International 2004). Hence 3 generations equals to 42 years, i.e. 1966 is used as baseline for trend estimates.
[6] Three generations would reflect historical numbers instead of the current importance of the country. Therefore numbers refer to 1.
[7] Last known record

Country	Breeding numbers[3]	Quality	Year(s) of the estimate[4]	Breeding Population trend in the last 3 generations[5]	Quality	Maximum size of migrating or non breeding populations in the last 10 years[6]	Quality	Year(s) of the estimate[7]
Italy	n.a.	n.a.	n.a.	n.a.	n.a.	No record in the last 10 years		
Kazakhstan (NW)	Few inds	poor	n.a.	Large decline	Medium	Unknown		
Macedonia, FYR	n.a.	n.a.	n.a.	n.a.	n.a.	No record in the last 10 years		
Moldova	Extinct	Poor	2001	Large decline	Medium	No record in the last 10 years		
Morocco	91–108	Medium	2005	Large decline	Medium	Min. 82	Medium	2001/2002
Poland	Extinct	Good	1986	Large decline	Good	No record in the last 10 years		
Portugal	1,893	Good	2009	Large decline	Medium	Similar to breeding numbers		
Romania	0–5	Poor	2007	Large decline	Medium	Few inds.	Poor	Unknown
Russia	6,000–12,000	Medium	2008	Unknown	Medium	Unknown		
Serbia	35–38	Good	2008	Stable	Medium	Similar to breeding numbers		
Slovakia	0–3	Good	2008	Large decline	Good	270	Good	2007/2008
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.	No record in the last 10 years		
Spain	27,500–33,000	Good	2008	Large decline	Medium	Similar to breeding numbers		
Turkey	762–1,250	Poor	2004	Large decline	Medium	Unknown		
Ukraine	520–680	Medium	2008	Large decline	Medium	8,650–10,800	Medium	2005-2007
Totals	**39,800–46,000**							

2 - THREATS

General overview

The main threats to the Great Bustard are the loss and degradation of its habitat through agricultural intensification, land-use changes and infrastructure development, increased mortality caused mainly by powerlines and reduced reproductive success due to high-levels of nest destruction by mechanised farming and high chick mortality through predation and starvation.

List of critical and important threats

Loss of undisturbed open habitats with suitable vegetation structure

The Great Bustard is closely associated with flat or gently undulating, open habitats with little disturbance. Changes in crop pattern (i.e. ploughing up grasslands, shifting from cereals to sunflower and maize) or in grazing pressure, which was encouraged by the specialisation of agriculture, price changes and policies, have created unsuitable conditions in several parts of the range. Often crop changes are associated with the introduction of irrigation, which allows the replacement of drought resistant cereals by maize. Afforestation had a negative impact on several populations (e.g. Sterbetz 2000). In the European Union and in many other countries, afforestation has been subsidised to reduce deflation and to reduce agricultural surpluses. Expansion of settlements, industrial areas, transport infrastructure (Osborne *et al.* 2001; Palacín 2007) and, most recently, the installation of wind farms (Raab *et al.* in prep) have all reduced habitat availability. Although these changes individually may affect only a smaller or larger proportion of the species' habitat and hence represent only local to medium threat, their cumulative effect can be considered as a major threat to the species.

Impact: Critical

Collision with powerlines

Great Bustard is particularly vulnerable to collision with powerlines because of its congregations at feeding areas in winter and at display grounds in spring (Janss and Ferrer 2000; Raab *et al.* in prep; Reiter 2000). Collisions were also reported for post-breeding period in Portugal where 16 birds collided with a powerline during one year (Marques et al. 2005). Although reported from the entire range, the impact of collision on the population is difficult to assess. Martin et al. (Martin *et al.* 2007) reported that collision with powerlines was responsible for 55% of deaths during the second year of subadult Great Bustards and it appears to be the main cause of mortality for adult birds as well. The importance of this threat is assessed as high for the entire population, but it can be critical for some local populations (e.g. AT).

Impact: High

Destruction of eggs or chicks during agricultural works

In a modern farming landscape, Great Bustard nests are destroyed during various

agricultural works, such as ploughing up fallow land, mowing of alfalfa or grass and, to a lesser extent, application of pesticides or mechanical cultivation of crops or harvesting of cereals. The species is particularly affected by farming operations because it prefers the crops (i.e. alfalfa and cereals) where its nest is most likely to be destroyed (i.e. these crops act as 'ecological traps'). According to questionnaire surveys in the 1990s and monitoring activities carried out in the framework of the OTISHU LIFE project, 30-35% of the nests are destroyed by agricultural works in Hungary (Faragó 2001b; Kalmár and Faragó 2008). In Portugal, 15% of 74 nests studied were destroyed by agricultural activities (Rocha 2006).

Impact: High

Predation of eggs, chicks or juveniles

Predation of eggs by Corvids and mammalian predators have been reported from several range states (Faragó *et al.* 2001; Langgemach 2005; Martin *et al.* 2007). In Central Europe, Red Fox populations have increased substantially following the extensification of agriculture and the start of immunisation against rabies.

Impact: Medium

Insufficient invertebrate food supply

The productivity of the Great Bustard can be influenced by chick mortality caused by starvation if invertebrate food supply is limited (Martin *et al.* 2007; Morales *et al.* 2002). Food supply is influenced by the development of vegetation, winter precipitation (Litzbarski and Litzbarski 1996) and by pesticide use (Faragó 1990b; Hellmich 1992; Litzbarski *et al.* 1989; Quaisser *et al.* 1998; Sprick 1999).

Impact: Medium

Climate change

Climate envelop models (Huntley *et al.* 2007; Osborne *et al.* 2008) suggest that the total climatically suitable area will decrease by some 20% between 2010 and 2020. According to the models' projections, the loss of climatically suitable habitat ranges between 45% (Turkey) and 100% (Kazakhstan). In this context, the future of the Hungarian and the Russian populations are of the greatest concern considering of their size.

Impact: Medium

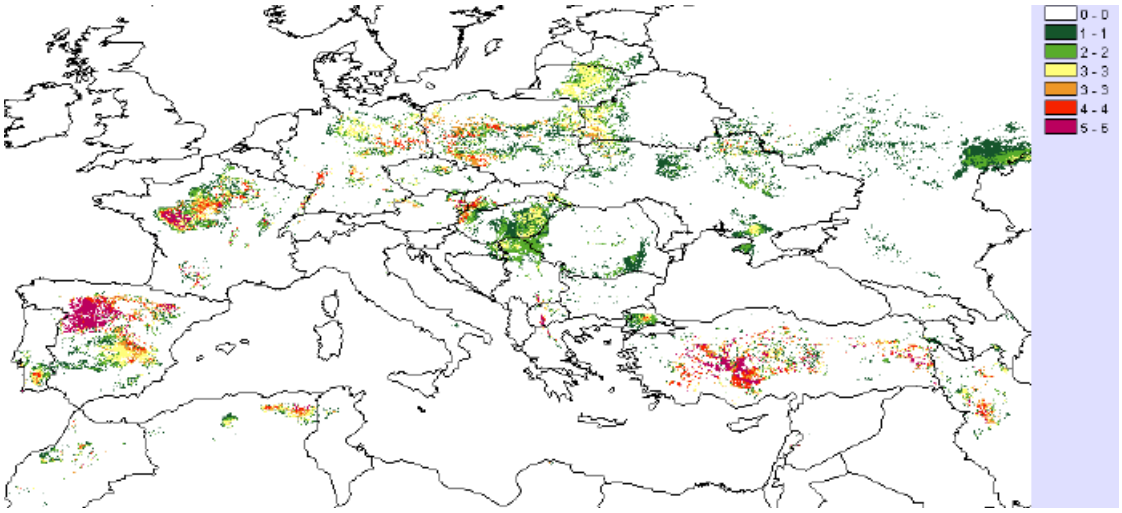


Figure 2. Number of decades over which areas are predicted to be climatically suitable for Great Bustards (Osborne *et al.* 2008)

Poaching

The Great Bustard has been considered a game species in most countries within its range and many authors consider that poaching has been a *critical* factor in the decline of the population at the level of taking at that time, when accounting for the sensitivity of the population to small increases in adult mortality. Therefore, hunting has now been officially banned in all range states. In most countries, introduction of a hunting ban has been followed by temporary (e.g. Hungary) or sustained population growth (e.g. Spain) depending on the impact of other factors influencing the population (Palacin and Alonso 2008; Sterbetz 1978). Despite the legal ban, poaching still occurs to some extent. In some countries, such as Russia, Ukraine and Turkey, even organised forms advertised through the Internet occur. The importance of this threat is assessed as low for the entire population, but possible *medium* in the above-mentioned countries.

Impact: Low

Catastrophic mortality in harsh winters

In exceptionally harsh winters when a thick blanket of snow prevents access to food, forcing the population to disperse out of its normal wintering area, catastrophic mortality exceeding 15% can occur (Faragó 1990a; Streich *et al.* 2006) as a result of starvation, collision with powerlines and poaching. Although this would normally cause only longer term fluctuations in population numbers, it can accelerate the decline of the population when reproductive rate is limited.

Impact: Low

Disturbance

Frequent disturbance can disrupt feeding and mating activities and can increase the probability of collision with power lines. A study by Sastre et al. (2009) in central Spain showed that car traffic and walkers were the main sources of disturbance, although motorcyclists, dogs, helicopters and aeroplanes were also harmful in

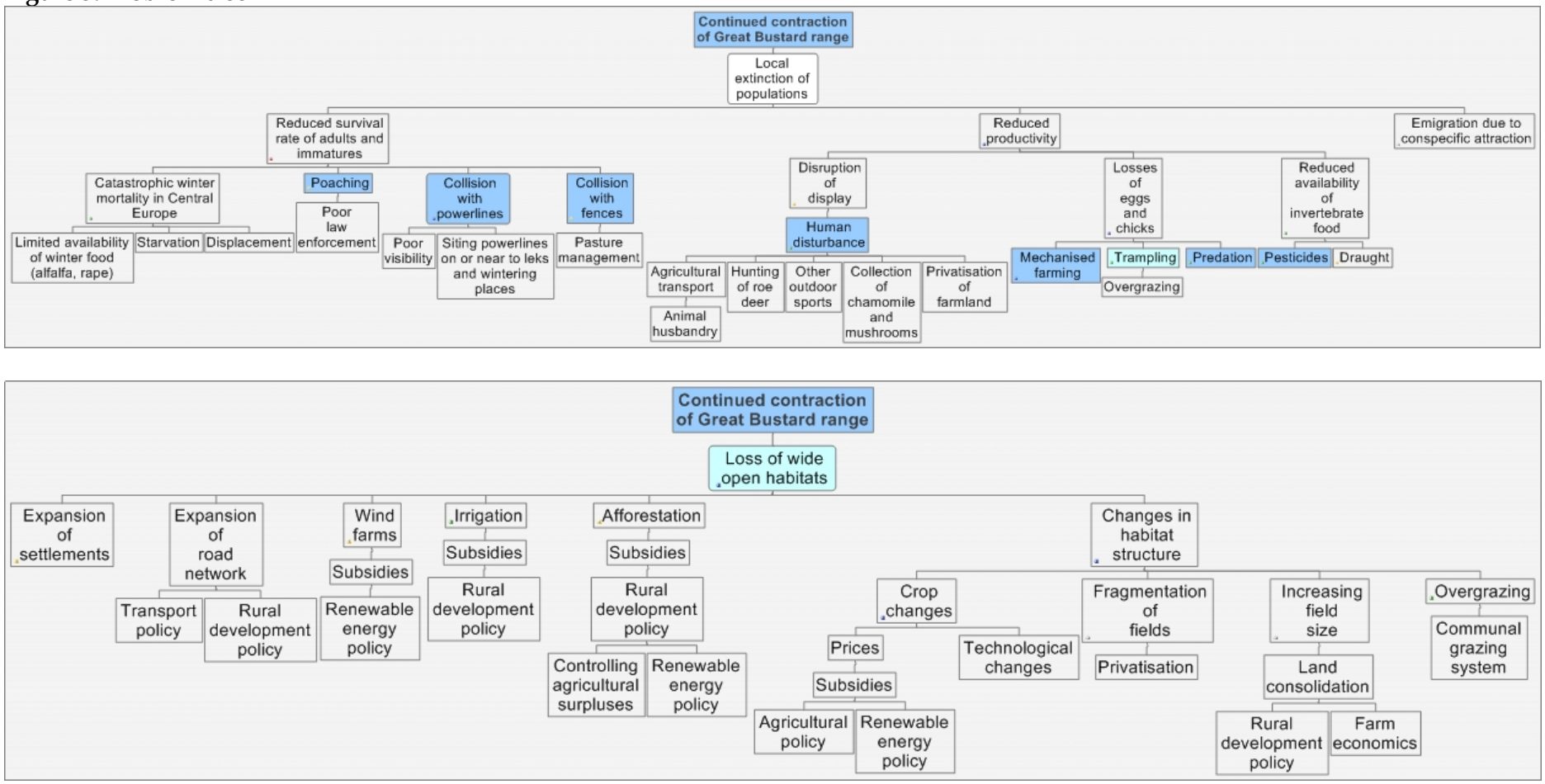
relation to their abundance and time of permanence. Farming and shepherding produced little disturbance and did not usually cause a flight response. Hunting caused an increase in the frequency of disturbance on weekends and holidays with respect to working days.

Impact: Low

Population Viability Analysis

Over the last decades, several PVAs have been prepared for the Great Bustard covering the Iberian (Alonso *et al.* 2004; Lane and Alonso 2001; Pinto *et al.* 2005), the German (Streich *et al.* 1996; Streich 2000), the Hungarian (Faragó 1992b) and the Saratov, Russian (Streich 2007) populations of the Great Bustard. All PVAs agree that the extinction risk of a Great Bustard population is most sensitive to the survival of females and to productivity. However, relatively small changes in survival rates can be compensated only by relatively high increases in productivity. Modelling also suggests that increases in productivity through agri-environmental measures is sensitive to the proportion of the range covered by the scheme and to having it targeted to crops particularly attractive to the species but at high risk of being cultivated during the breeding season - such as alfalfa and grass (Nagy 2008). PVAs for the Hungarian population (Faragó 1992b) have highlighted the conservation implications of periodic catastrophic winter mortality which can occur in harsh winters. Conspecific attraction may also contribute to an accelerated decline of marginal populations and further increase of populations in high quality habitat (Alonso *et al.* 2004; Pinto *et al.* 2005).

Figure 3. Problem tree[8]



[8] Blue colours mark threats mentioned in the previous European action plan (Kollar 1996)

3 - POLICIES AND LEGISLATION RELEVANT FOR MANAGEMENT.

International conservation and legal status of the species

The Great Bustard is considered globally Vulnerable (A2c, A3c, A4c) based on both past and on suspected future decline of the range (BirdLife International 2009). In Europe, the species is classified as Vulnerable (A2b) by BirdLife International (BirdLife 2004) considering its large (>30%) decline.

The species is listed on Appendix II of CMS, while its Middle European population is listed on Appendix I. A Memorandum of Understanding on the conservation and management of the Middle European population of Great Bustard came into force on 1 June 2001. The species is also listed on Appendix II of CITES, on Appendix II of the Bern Convention and on Annex I of the Birds Directive.

A European Action plan was produced under the auspices of the European Commission and the Bern Convention and another edition of the same plan under the CMS Great Bustard MoU (CMS 2000; Kollar 1996).

National policies, legislation and ongoing activities

The species is legally protected across its European range, being either as a protected species (Austria, Albania, Bulgaria, Czech Republic, Hungary, Germany, Slovakia, Spain, Portugal, Russia, Ukraine and Turkey) and/or as a game bird with a year-round closed season (Austria, Germany, Former Yugoslav Republic of Macedonia and Slovakia). However, poaching still continues in several ranges states (e.g. Ukraine, Russia and Turkey).

Most of the internationally important sites are designated as Special Protection Areas under the Birds Directive within the European Union Member States. However, the designation of several sites still remains incomplete. Outside of the European Union, designation of key sites as protected is still insufficient. In Ukraine, less than half of the display, breeding, stop-over and wintering sites are covered by protected areas. In Turkey and Russia, only a small proportion of the population is within protected areas.

Ongoing activities for conservation of the species

Over previous years, the species' requirements have been increasingly incorporated into the Rural Development Plans within the EU Member States. Agri-environmental schemes support habitat management measures in Austria, Germany, Hungary, Slovakia, Portugal and Spain. In Germany, farmers are also supported under extensification schemes. However, the potential negative impact of abolishing the set-aside obligation under the Common Agricultural Policy was reported from Austria and Germany. In 2007, Hungary introduced legislation on Natura 2000 payments to compensate for the restrictions on grassland management within these areas. Similar

payments are also available in Germany. However, problems have been reported concerning scheme prescriptions, coverage, payment levels and conflicts with other schemes (Nagy and Crockford 2004; Nagy *et al.* 2008; Onate *et al.* 1998). Outside of the European Union, targeted habitat conservation measures are carried out mostly as part of NGO initiatives, covering only a small proportion of the range and are not integrated into national agricultural policy (BirdLife International 2008b).

Habitat fragmentation has not been effectively addressed in most range states, although the increased coverage of SPAs provides some safeguard within these areas. Some measures have been taken as part of LIFE or other projects in Germany, Hungary, Spain, Portugal and Ukraine to address the problem of collision with powerlines.

Nest safeguarding or rescue and captive management measures were applied only in Germany, Hungary and Russia. However, only Germany has made good progress in repatriating captive reared birds. Captive reared birds from Saratov, Russia have been used in the trial reintroduction scheme in the UK since 2003, which resulted in successful breeding of the species in 2009 after more than 175 years.

4 - FRAMEWORK FOR ACTION

Aim

To recover the species from its Vulnerable status in Europe to at least the population levels in 1979.

Objectives

Objective 1: Within 10 years, each biogeographic population increased by at least 10%.

Objective 2: Within 30 years, part of the species' former range restored to improve the viability of existing isolated populations.

Results

Result 1.1 Average annual adult survival rate is above 90%in each population

Result 1.2 Average productivity exceeds 0.25 chicks per female in each population

Result 1.3 Extent of suitable habitat maintained across the range of the species

Result 1.4 Knowledge gaps filled

Result 2.1 Effective habitat management and repatriation methods available to assist restoration of Great Bustard populations

Actions

Table 3 includes all the results and actions necessary to achieve the objectives of the plan.

Table 3. Actions corresponding to the results and ranked according to their importance, following from the problem tree.

Result	*Action*	*Priority*	*Time scale*	*Organisations responsible*
1.1 Average annual adult survival rate is above 90%in each population	1.1.1 Reduce collision with powerlines through avoiding key areas for Great Bustard, through marking and, if necessary, even through removal of existing dangerous sections of powerlines **Applicable to: all range states**	High	Long	Competent national authorities, electric companies
	1.1.2 Prevent the occurrence of catastrophic winter mortality events in Central and Eastern European countries through supporting the production of oilseed rape and alfalfa at suitable undisturbed locations far from existing powerlines within the traditional wintering areas and establish capacity to clear snow from fields in emergency situations **Applicable to: DE, AT, CZ, SK, HU, SB, UA, RU, TR**	High	Ongoing	Competent conservation and agricultural authorities, site managers
	1.1.3 Maintain hunting ban in all range states and step up efforts to stop poaching where it still occurs **Applicable to: all range states**	Essential	Ongoing	Competent conservation and game management authorities

1.2 Average productivity exceeds 0.25 chicks per female in each population	1.2.1 Identify and apply adequate compulsory restrictions on breeding sites on agricultural practices that significantly reduce the breeding success of the species, such as mowing of alfalfa or grass according to the local breeding phenology of the species, and provide compensation to farmers **Applicable to: all breeding range states**	High	Short	Competent conservation and agricultural authorities
	1.2.2 Apply complementary nest safeguarding and captive rearing measures where necessary and appropriate **Applicable to: all breeding range states**	Low	Ongoing	Competent conservation authorities, NGOs
	1.2.3 Restrict grazing on key breeding areas where trampling significantly reduces the breeding success **Applicable to: all breeding range states**	Medium	Ongoing	Competent conservation and agricultural authorities
	1.2.4 Support extensification of agricultural practices in key areas for Great Bustard, including the promotion of set-aside schemes **Applicable to: all breeding range states, but AT, DE, HU, SK, CZ, SB, RO and RU in particular**	High	Short	Competent conservation and agricultural authorities
	1.2.5 Monitor impact of predators on breeding success and apply predator control measures if necessary **Applicable to: all breeding range states**	Medium	Short	Competent conservation and game management authorities

	1.2.6 Create enclosures in the breeding areas of populations if the main reason of breeding failure is predation **Applicable to: DE, HU, UA**	Low	Ongoing	Competent conservation authorities, site managers
	1.2.7 Reduce human disturbance by restricting movements at display and breeding grounds as necessary **Applicable to: all breeding range states**	Medium	Ongoing	Competent conservation authorities, site managers
	1.2.8 Promote eco tourism and bird watching in Great Bustard areas, under the appropriate regulatory framework to improve economic viability of Great Bustard areas. **Applicable to: all breeding range states**	Low	Long	Competent conservation and rural development authorities, NGOs
1.3 Extent of suitable habitat maintained across the range of the species	1.3.1 Designate all sites holding internationally important populations of Great Bustards listed in Annex 2 as Special Protection Areas in the EU Member States or under national legislation in other countries **Applicable to: all range states**	High	Short	Competent conservation authorities
	1.3.2 Introduce, or continue where they already exist, agri-environmental schemes or similar incentive measures to promote farming techniques compatible with the species' requirements and monitor the effectiveness of such measures **Applicable to: all range states**	Essential	Medium	Competent conservation and agricultural authorities

	1.3.3 Ensure that afforestation, irrigation, wind energy, transport and other projects which can negatively affect the Great Bustard's habitat do not take place in areas with internationally important numbers **Applicable to: all range states**	High	Ongoing	Competent conservation and agricultural authorities
1.4. Knowledge gaps filled	1.4.1 Identify all key areas for Great Bustard across its European range **Applicable to: RU, TR**	High	Medium	Competent conservation authorities, research institutes, NGOs
	1.4.2 Monitor the size, sex and age composition and productivity of each internationally important population listed in Annex 2, based on standardised counts in winter, spring and autumn **Applicable to: all breeding range states**	High	On-going	Competent conservation authorities, research institutes, NGOs
	1.4.3 Expand telemetry studies in the Central and Eastern European populations to improve understanding of seasonal movements, survival and mortality factors **Applicable to: AT, HU, RU, UA, TR**	Medium	Medium	Competent conservation authorities, research institutes, NGOs
	1.4.4 Expand genetic studies to quantify the rate of movement between populations **Applicable to: all breeding range states**	Medium	Long	Research institutes
	1.4.5 Monitor and improve the effectiveness of captive breeding, rearing and release programmes **Applicable to: all countries with such programme**	Low	Long	Competent conservation authorities, research institutes, NGOs

	1.4.6 Study the impact of climatic changes on the productivity and survival of the Great Bustard and on its habitat. If necessary, develop habitat management techniques for mitigating the impacts of climate change **Applicable to: HU, PT, RU, UA**	Low	Long	Research institutes, site managers
2.1 Effective habitat management and repatriation methods available to assist restoration of Great Bustard populations	2.1.1 Develop effective reintroduction methods **Applicable to: former range states that will become climatically suitable**	Low	Long	Research institutes
	2.1.2 Develop feasibility studies and management plans to restore transboundary populations and expanding the habitats in these regions **Applicable to : BG, RO, HU, SB, SK**	Low	Long	Research institutes

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ANNEX 1

Threats important at population/group of countries level

Type of threat	North Africa	Iberia	German-Polish Plain	Carpathian Basin	Chernozem region	Middle East
Loss of undisturbed open habitats with suitable vegetation structure	High	High	Critical	Critical	High	High
Collision with powerlines	Medium	High	High	High	High	Medium
Destruction of eggs or chicks during agricultural works	Medium	Medium	High	High	Medium	Medium
Predation of eggs, chicks or juveniles	Unknown	Medium	High	High	Medium	Medium
Insufficient invertebrate food supply	Unknown	Medium	Medium	Medium	Unknown	Unknown
Poaching	High	Low	Low	Low	Medium	Medium
Catastrophic mortality in harsh winters	None	None	Medium	Medium	Medium	Low
Disturbance	Low	Low	Low	Low	Low	Low
Climate change	Medium	Medium	Low	Medium	Medium	Low

Notes:
- ✓ *The description of threats should reflect the actual understanding of the situation with the species, according to the latest available knowledge and the workshop participants' best judgment. It is not necessary to follow a formal threat classification system. The logical problem analysis and cause-effect relationships among the main threats are the important aspects to focus the plan on.*
- ✓ *Threats are not hierarchical, but clustered according to type of effect.*
- ✓ *Threat score: Critical, High, Medium, Low, Local, Unknown.*

ANNEX 2

Key sites for conservation of the species (Important Bird Areas) in the EU and their protection status

Country	IBA National name	Pop. min	Pop. max	Year	Season	Quality	IBA Area (km2)	SPA Code	SPA name (EU only)	% of IBA protected/ overlap
Austria	Österreichischer Teil des Hanság	15 (9-14 m, 6f)	20 (9-14 m, 6f)	2005	resident	good	44.81	AT1126129	Waasen - Hanság	66.99%
	Parndorfer Platte und Heideboden	112 (59-70 m, 53 f)	123 (59-70 m, 53 f)	2005	resident	good	278.56	AT1125129	Parndorfer Platte und Heideboden	26%
	Westliches Weinviertel	62 (25 m, 37 f)	62 (25 m, 37 f)	2005	resident	good	316.19	AT1209000	Podyji	0.06%
	Zentrales Marchfeld	10 (1-2 m, 9 f)	11 (1-2 m, 9 f)	2005	resident	good	345.43	AT1204V00	Donau-Auen Oestlich von Wien	46.37%
Germany	Unteres Rhinluch-Dreetzer See / Havelländisches Luch / Belziger Landschaftswiesen	46	46	1997	resident	unknown	158.05	DE3341401	Unteres Rhinluch-Dreetzer See / Havelländisches Luch / Belziger Landschaftswiesen	88%
Hungary	Hanság	0	0	2009	breeding	good	107.18	HUFH30005	Hanság	98.00%
	Hortobágy	110	120	2009	breeding	good	1500.84	HUHN10002	Hortobágy	70.81%
	Felső-kiskunsági szikes puszták	570	580	2009	breeding	good	443.39	HUKN10001	Felső-kiskunsági szikes puszták és turjánvidék	79.10%
	Kolon-tó	2	5	2009	breeding	good	36.00	HUKN30003	Izsáki Kolon-tó	92.20%
	Dévaványai Ecsegi-puszták	400	430	2009	breeding	good	286.97	HUKM10003	Dévaványai-sík	87.09%
	Kis-Sárrét	30	40	2009	breeding	good	123.26	HUKM10002	Kis-Sárrét	58.65%
	Borsodi-Mezőség	20	30	2009	breeding	good	390.18	HUBN10002	Borsodi-sík	94.64%
	Bihari-síkság	100	110	2009	breeding	good	508.87	HUHN10003	Bihar	87.76%
	Mosoni-sík	50	80	2009	breeding	good	74,19	HUFH10004	Mosoni-sík	81.22%
	Hevesi-sík	5	10	2009	breeding	good	639.59	HUBN10004	Hevesi-sík	82.78%

Country	IBA National name	Pop. min	Pop. max	Year	Season	Quality	IBA Area (km2)	SPA Code	SPA name (EU only)	% of IBA protected/ overlap
	Csanádi-puszták	15	25	2009	breeding	good	92.19	HUKM10004	Hódmezővásárhely -környéki és csanádi-háti puszták	98.14%
	Jászkarajenő környéki puszták	0	5	2009	breeding	good	80.66	HUDI10004	Jászkarajenői puszták	99.18%
Portugal	Castro Verde	1413	1413	2009	breeding	high	835.79	PTZPE0046	Castro Verde	102.11%
	Vila Fernando/Veiros	31	31	2009	breeding	high	20.15	PTZPE0052	Veiros	97,22%
	Vila Fernando/Veiros	52	52	2009	breeding	high	54.72	PTZPE0053	Vila Fernando	96.13%
	Planície de Monforte	43	43	2009	breeding	high	15.94	PTZPE0051	Monforte	118.32%
	Mourão, Moura e Barrancos	2	2	2009	breeding	high	896.47	PTZPE0045	Mourão, Moura e Barrancos	94.74%
	Alter do Chão	12	12	2009	breeding	high	13.17	---	----	0.00
	Planície de Évora	21	21	2009	breeding	high	531.34	PTZPE0055	Évora	27.68
	Serra de Penha Garcia e Campina de Toulões	0	0	2005	breeding	high	156.79	----	-----	0.00
	Campo Maior	103	103	2009	breeding	high	95.77	PTZPE0043	Campo Maior	100.03%
	Cuba	89	89	2009	breeding	high	50.49	PTZPE0057	Cuba	80.83%
	Rio Guadiana	36	36	2009	breeding	high	765.78	PTZPE0047	Vale do Guadiana	99.96%
	Torre da Bolsa	22	22	2009	breeding	high	27.20		Torre da Bolsa	31.94%
	-	42	42	2009	breeding	high	0.00	PTZPE0058	Piçarras	---
	São Pedro de Solis	27	27	2009	breeding	high	143.14	----	---	0.00%
Slovakia	Syslovské polia	5	15	1997	resident	good	19.29	SKCHVU029	Syslovské polia	90%
Spain	Villafáfila	1026	2198	1996	breeding		327.34	ES0000004	Lagunas de villafáfila	99.01%
	Embalse del Esla	44	44	1995	breeding		266.81	ES0000004	Lagunas de villafáfila	0.03%
	Belver de los Montes-Gallegos del Pan	200	250	1996	breeding		444.78	ES0000004	Lagunas de villafáfila	32.06%
	Tordesillas - Mota del Marqués	100	100	1996	breeding		210.78	#N/A	#N/A	Unknown
	Fuentelapeña-Jambrina	150	250	1996	breeding		250.97	ES0000208	Llanuras del guareã'a	95.94%

Country	IBA National name	Pop. min	Pop. max	Year	Season	Quality	IBA Area (km2)	SPA Code	SPA name (EU only)	% of IBA protected/ overlap
	Páramos del Cerrato	120	150	1996	breeding		859.19	#N/A	#N/A	Unknown
	Talamanca-Camarma	484	484	1996	breeding		535.84	ES0000139	Estepas cerealistas de los rãos Jarama y Henares	66.16%
	Cortados del Jarama	25	35	1996	breeding		248.44	ES0000142	Cortados y cantiles de los rãos Jarama y Manzanares	88.77%
	Campo de Calatrava	100	100	1996	breeding		1,021.15	ES0000157	Area esteparia del campo de calatrava	6.59%
	Pétrola-Almansa-Yecla	176	176	1994	breeding		794.52	ES0000153	Area esteparia del este de albacete	33.80%
	Campo de Montiel	23	230	1996	breeding		1,381.01	ES0000154	Zona esteparia de el bonillo	15.86%
	San Clemente-Villarrobledo	37	120	1994	breeding		1,073.34	ES0000390	San clemente	8.69%
	Tarancón-Ocaña-Corral de Almaguer	419	579	1994	breeding		1,299.53	ES0000170	Area esteparia de la mancha norte	33.98%
	Llanos de Tembleque-La Guardia	707	1205	1995	breeding		1,288.91	ES0000170	Area esteparia de la mancha norte	42.26%
	Complejo lagunar de Alcázar de San Juan-Quero	14	27	1994	breeding	good	585.00	#N/A	#N/A	Unknown
	Torrijos	139	201	1994	breeding		296.43	ES0000435	Áreas esteparia de la margen derecha del rio Guadarrama	42.88%
	Llanos de Oropesa	24	50	1994	breeding		456.80	ES0000089	Valle del tietar y embalses de rosarito y navalcan	42.76%
	Embalse del Borbollón	40	50	1995	breeding		482.47	ES0000326	Embalse de Borbollón	1.96%
	Embalse de Alcántara-Cuatro Lugares	150	3000	1996	breeding		1,220.12	ES0000014	Monfrague y las dehesas del Entorno	26.48%

Country	IBA National name	Pop. min	Pop. max	Year	Season	Quality	IBA Area (km2)	SPA Code	SPA name (EU only)	% of IBA protected/ overlap
	Sierra de Pela-Embalse de Orellana-Zorita	448	448	1995	breeding		1,434.65	ES0000068	Embalse de orellana y sierra de pela	54.85%
	Trujillo-Torrecillas de la Tiesa	300	300	1996	breeding		1,064.43	ES0000014	Monfrague y las dehesas del Entorno	17.48%
	Llanos entre Cáceres y Trujillo-Aldea del Cano	1300	1300	1996	breeding		1,062.29	ES0000071	Llanos de Cáceres y sierra de fuentes	71.16%
	Malpartida de Cáceres-Arroyo de la Luz	25	70	1996	breeding		458.86	ES0000070	Sierra deSan Pedro	0.22%
	Brozas-Membrío	500	800	1996	breeding		984.83	ES0000368	Rio tajo internacional y riberos	3.76%
	Sierra de San Pedro	150	150	1996	breeding		3,070.94	ES0000069	Embalse de Cornalvo y Sierra Bermeja	44.60%
	Lácara-Morante	0	10	1997	resident	medium	569.00	#N/A	#N/A	unknown
	Botoa-Villar del Rey	332	332	1995	breeding		483.82	PTZPE0043	Campo maior	0.30%
	Olivenza-La Albuera	1500	1500	1996	breeding		807.11	ES0000398	Llanos y complejo lagunar de la Albuera	29.77%
	Villanueva del Fresno	320	320	1995	breeding		97.72	ES4310004	Dehesas de Jerez	97.65%
	Fuente de Cantos-Montemolín	30	30	1996	resident	medium	490.00	#N/A	#N/A	0
	Bienvenida-Usagre-Ribera del Fresno	0	600	1996	breeding		547.63	ES0000325	Campiña sur - embalse de arroyo conejos	0.04%
	Azuaga-Llerena-Peraleda de Zaucejo	1500	1500	1996	breeding		1,550.53	ES0000325	Campiña sur - embalse de arroyo conejos	28.19%
	La Serena	800	800	1996	breeding		1,059.98	ES0000068	Embalse de orellana y sierra de pela	92.23%

Country	IBA National name	Pop. min	Pop. max	Year	Season	Quality	IBA Area (km2)	SPA Code	SPA name (EU only)	% of IBA protected/ overlap
	Estepas de Monegrillo-Pina	10	20	1997	breeding		462.99	ES0000180	Estepas de monegrillo y Pina	52.23%
	Los Monegros (Sur)	75	80	1996	breeding		483.90	ES0000180	Estepas de monegrillo y Pina	60.05%
	Laguna de Gallocanta	52	52	1995	breeding		301.42	ES0000017	Cuenca de Gallocanta	51.67%
	Los Blázquez - La Granjuela - Fuenteovejuna	20	20	1992	breeding		346.90	#N/A	#N/A	0
	Campiña de Carmona	0	22	1996	breeding		353.29	#N/A	#N/A	0
	Condado - Campiña	10	10	1996	breeding		568.33	#N/A	#N/A	0
	Campiña alta de Córdoba	30	30	1996	breeding		1,179.16	#N/A	#N/A	0
	Tierra de Campos	2000	2500	1997	breeding		2,680.20	ES0000194	Oteros-campos	47.01%
	Tierra de Campiñas	2300	2500	1992	breeding		1,889.81	ES0000204	Tierra de Campiñas	75.34%
	Altos de Barahona	46	50	1996	breeding		288.47	ES0000203	Altos de Barahona	99.26%
	Carrión-Frómista	300	400	1996	breeding		570.86	ES0000201	Camino de santiago	39.79%
	Topas	73	150	1997	breeding		292.00	#N/A	#N/A	0
	Carrizales y Sotos de Aranjuez	20	24	1994	breeding		185.08	ES0000119	Carrizales y sotos de Aranjuez	84.74%
	Alange	36	100	1996	breeding		662.02	ES0000072	Sierra grande de hornachos	20.89%
	Don Benito-Guareña	50	60	1996	breeding		338.28	ES0000367	La serena y sierras perifericas	0.08%
	Alcarria de Alcalá	80	120	1997	breeding		72.15	#N/A	#N/A	0
	Llanura cerealista de Ecija-Osuna	0	50	1996	breeding		628.60	ES6180002	Complejo endorreico la Lantejuela	1.43%
	Andévalo Occidental	40	40	1996	breeding		495.33	#N/A	#N/A	0
	Villalba de los Barros	200	200	1996	breeding		141.11	ES0000398	Llanos y complejo lagunar de la Albuera	41.05%

Key sites for the conservation of the species outside of the EU

Country	IBA Code	IBA Name	Pop. min	Pop. max	Year		IBA Area (km²)	Protection status
Kazakhstan	(blank)	Aksu-Dzhabagly State Nature Reserve	0	0	2004	0	1,319	Fully Protected
	(blank)	Arystandy	123	500	2004	2004	198	Not Protected
	(blank)	Irgiz-Turgay Lakes	0	0	1986	0	3,480	Fully Protected
	(blank)	Tentek River Delta	15	30	2007	0	459	Partially Protected
	(blank)	Zhusandala	0	0	2001	2006	2,171	Fully Protected
Russia (European)	RU355	Balka Yablonya	108	150	1999	1999	420	Not Protected
	RU164	Dadynskiye lakes	0	200	1996	0	450	Not Protected
	RU278	Drofinyi area	10	15	2007	2007	792	Fully Protected
	RU481	Dudarevskaya steppe	4	40	1998	1998	300	Not Protected
			20	200				Not Protected
	RU366	Estonka site	42	0	2003	2003	165	Not Protected
	RU359	Fields near village Voskresenka	90	0	2003	2003	406	Not Protected
	RU381	Irgaklinski forest	0	200	1996	1999	24	Partially Protected
	RU479	Kholmanskiye feathergrass steppes	52	0	1999	1999	656	Partially Protected
	RU364	Kumysni pond site	36	0	2003	2003	210	Not Protected
	RU389	Kurnikov liman	20	50	1997	2005	16	Not Protected
	RU394	Outskirts of Arbali village	150	200	2005	2006	16	Not Protected
	RU365	Outskirts of village Il'inka	33	0	2003	2003	205	Not Protected
	RU369	Outskirts of village Lepekhinka	55	0	1999	1999	220	Not Protected
	RU367	Outskirts of village Pervomaiskoye	62	0	2003	2003	260	Not Protected
	RU360	Outskirts of village Rekord	60	0	2000	2000	205	Not Protected
	RU368	Outskirts of village Timofeevo	61	0	1999	1999	205	Not Protected
	RU137	Rovno area	10	15	1996	0	82	Not Protected

Country	IBA Code	IBA Name	Pop. min	Pop. max	Year		IBA Area (km²)	Protection status
			80	150				Not Protected
	RU370	Shcherbakovskaya bend of Volga river	100	150	2000	2001	346	Fully Protected
	RU128	Siniye mountains	50	1000	1997	0	150	Not Protected
	RU358	Steppes in the vicinity of Zeleni Dol village	91	0	2003	2003	164	Not Protected
	RU250	Tazhinski liman	9	10	2007	2007	96	Partially Protected
	RU127	Valley of Safarovka river	50	70	1997	0	25	Not Protected
	RU126	Vicinity of Borisoglebovka (Saratovski [Semenovski] Reserve)	225	0	1996	0	350	Not Protected
	RU475	Vicinity of Poltavka village	53	80	1999	1999	96	Not Protected
	RU132	Vicinity of Voznesenk village	36	36	1997	0	12	Not Protected
	RU357	Vincinity of Eruslan village	0	270	2001	2001	1,350	Not Protected
	RU118	Vorono-Khoperski area	10	10	1997	0	220	Not Protected
	RU361	Yasnaya Polyana site	43	0	2004	2004	250	Not Protected
	RU157	Yeiski salt-lakes	500	500	1996	0	240	Not Protected
	RU139	Zhestyanka	40	60	1996	0	80	Not Protected
	RU323	Zolotarevskaya area	150	0	2004	2004	620	Not Protected
Serbia	YU011	Jazovo-Mokrin	10	12	1997	0	80	Partially Protected
Turkey	AKD016	Acıgöl	30	40			327	Partially Protected
	GDA005	Akçakale Steppes	45	50	*		1,072	
	ORT002	Aliken	40	60	1996		197	Not Protected
	EGE032	Altıntaş plain	40	50	1997		196	Partially Protected
	GDA013	Bismil plain	30	35	*		1,244	Not Protected
	DOG035	Bulanık and Malazgirt plains	150	250	2002		333	Not Protected
	GDA010	Ceylanpınar	15	30	*		3,845	Not Protected

Country	IBA Code	IBA Name	Pop. min	Pop. max	Year		IBA Area (km²)	Protection status
			800	1000	1981			Not Protected
	ORT017	Çöl lake and Çalikdüzü	35	45	2000		422	Not Protected
	ORT030	Ereğli Plan	Present				1,294	
	DOG017	Karasu plain	35	35	*		262	Not Protected
	DOG046	Kavuştuk peninsula	31	35	*		141	Not Protected
	DOG038	Muş Plain	36	46	2002		196	Not Protected
	DOG034	Patnos	31	31	*		194	Not Protected
	ORT006	Polatlı - TİGEM	15	30	2004		845	Not Protected
	ORT016	Samsam lake	20	30	1998		42	Partially Protected
	ORT010	Sarayönü	40	60	1998		353	Not Protected
	ORT033	Seyfe lake	30	30	*		463	Fully Protected
	ORT024	Tuz lake	83	110	2000		5,330	Partially Protected
	DOG033	Upper Murat Valley	30	40	2000		182	Not Protected
	DOG053	Van plains	26	35	*		1,029	Not Protected
	ORT034	Yenipazar	32	44	*		328	Not Protected
	DOG068	Yüksekova	30	40	*		286	Not Protected
Ukraine	UA112	Agricultural lands near Bilorets'ke (Chornozemne village)	200	500	1999	0	170	Not Protected
	UA102	Bagerove	110	120	1995	0	205	Not Protected
			20	0	1996	0		Not Protected
	UA096	Bilogir'ya	30	80	1999	0	320	Not Protected
	UA135	Chauda	120	130	1999	0	560	Not Protected
			300	3500				Not Protected
	UA113	Gajchur river valley	80	100	1999	0	240	Not Protected
	UA115	Kakhovs'ke reservoir (Energodar)	60	60	1999	0	280	Not Protected

Country	IBA Code	IBA Name	Pop. min	Pop. max	Year		IBA Area (km²)	Protection status
	UA069	Syvash Bay	0	1000	1989	0	2,450	Partially Protected
			2	3				Partially Protected
	UA101	Uzunlars'ke lake	500	0	1994	0	96	Not Protected
			0	70	1996	0		Not Protected
	UA065	Yagorlyts'ka and Tendrivs'ka Bays	5	50	1999	0	720	Fully Protected

NOTES

- ✓ ***Population Min - Max.*** *For breeding ('season' column), figures are usually given in pairs; for other seasons, figures are given in individuals*
- ✓ ***Season:*** *Breeding, Migration, Non breeding visitor (wintering)*
- ✓ ***Accuracy: Good (Observed)*** *= based on reliable or representative quantitative data derived from complete counts or comprehensive measurements.*
  Good (Estimated) *= based on reliable or representative quantitative data derived from sampling or interpolation.*
  Medium (Estimated) *= based on incomplete quantitative data derived from sampling or interpolation.*
  Medium (Inferred) *= based on incomplete or poor quantitative data derived from indirect evidence.*
  Poor (Suspected) *= based on no quantitative data, but guesses derived from circumstantial evidence.*
- ✓ ***Protected Area name =*** *Nature Reserve, National Park, Ramsar site, etc.*
- ✓ **Type of protected area**: IUCN Category
- ✓ ***Protection status****: level of overlap between the IBA and a National protected area or International designation.*

ANNEX 3

National legal status[9]

Country	Legal protection	For game species, give opening/closing dates
Albania	Protected	
Austria	Protected	Closed throughout the year
Armenia	Protected	
Azerbaijan	Protected	
Bosnia-Herzegovina	Unknown	
Bulgaria	Protected	
Czech Republic	Protected	
Germany	Protected	Closed throughout the year
Georgia	Protected	
Greece	Protected	
Hungary	Protected	
Italy	Protected	
Macedonia, FYR of	Protected	
Moldova	Protected	
Portugal	Protected	
Romania	Protected	
Russia	Protected	
Serbia	Protected	
Slovakia	Protected	
Slovenia	Protected	
Spain	Protected	
Turkey	Protected	
Ukraine	Protected	

[9] Only for countries marked with bold in Table 1.

Recent conservation measures

Country	Is there a national action plan for the species?	Is there a national project / working group?
Albania	Yes	No
Austria	Yes	Yes
Armenia	No	No
Azerbaijan	No	No
Bosnia-Herzegovina	No	No
Bulgaria	No	No
Croatia	Yes	No
Czech Republic	No	No
Germany	No (only in Brandenburg, but not in Saxony-Anhalt)	Yes
Georgia	No	No
Greece	No	No
Hungary	Yes	Yes
Italy	No	No
Macedonia, FYR of	Yes	No
Moldova	No	No
Portugal	No	No
Romania	No	No
Russia	No	No
Serbia	No	No
Slovenia	No	No
Slovakia	Yes	Yes
Spain	No	Yes
Turkey	No	No
Ukraine	Yes	No

Ongoing monitoring schemes for the species

Country	Is there a national survey / monitoring programme?	Is there a monitoring programme in protected areas?
Albania	*No*	*No*
Austria	*Yes*	*Yes*
Armenia	*No*	*No*
Azerbaijan	*No*	*No*
Bulgaria	*No*	*No*
Bosnia-Herzegovina	*No*	*No*
Croatia	*No*	*No*
Czech Republic	*Yes*	*No*
Germany	*Yes (federal states concerned)*	*Yes*
Georgia	*No*	*No*
Greece	*No*	*No*
Hungary	*Yes*	*Yes*
Italy	*No*	*No*
Macedonia, FYR of	*No*	*No*
Moldova	*No*	*No*
Portugal	*Yes*	*Yes*
Romania	*No*	*No*
Russia	*No*	*No (only Saratov)*
Serbia	*No*	*Yes*
Slovakia	*Yes*	*Yes*
Spain	*Yes*	*Yes*
Slovenia	*No*	*No*
Turkey	*No*	*No*
Ukraine	*No*	*Yes*

Overview of the coverage of the species in networks of sites with legal protection status

Country	National population size	Percentage of national population included in IBAs	Percentage of population included in Ramsar sites	Percentage of national population included in SPAs	Percentage of national population included in protected areas under national law
Austria	185–198	>90%	n/a	<50	
Germany	112-116		n/a		
Hungary	1,582	>50%, <90%	n/a	>50%, <90%	>50%
Portugal	1,893	~100%	n/a	>90%	
Russia	6,000–12,000	>25%,<50%	n/a		>20%, <40%
Serbia	35–38		n/a		>50%
Slovakia	0–3	100%	n/a	100%	100%
Spain	27,500–33,000	>50%, <75%	n/a	>50%, <75%	
Turkey	762–1,250	>90%	n/a		>10%, <25%
Ukraine	520–680		n/a		

✓ *The data in this table is presented only for countries with significant breeding populations, to which a site based approach is feasible.*