



*Great Bustard MoU and LIFE Project Meeting
Illmitz, Austria, March 9, 2017*



Purpose of the meeting in
context of the species action
plan



*Rainer RAAB, Jochen STEINDL and Manuel WOJTA
Technical Office for Biology (Austria)*

Photo: F. Kovacs

The aim of this talk is to inform about endangering factors and their effect on adult birds and to show them in a context of the species action plan and give an overview of held Memorandum of Understanding Meetings for the conservation of the Great Bustard.



International agreements and implemented measures

- The Memorandum of Understanding is in agreement under the framework of the Bonn Convention, an international agreement on the protection of migratory species.
- The critical conservation status of the Great Bustard in its entire European range prompted the European Union to designate it as a priority species for conservation.
- Member states are therefore obliged to introduce comprehensive conservation measures for the lasting preservation of remaining populations.



MoU Meetings

- 14.-18. September 2004, Illmitz, Austria: Memorandum of Understanding on the Great Bustard – Scientific Symposium and first meeting of signatories
 - 11.-12. November 2006, Mosonmagyaróvár, Hungary: Great Bustard Memorandum of Understanding – Technical Workshop on Comparative Research
- 09.-12. November 2008, Feodosia, Crimea, Ukraine: Second Meeting of the Signatories of the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard

MoU Meetings

- 08.-12. April 2013, Szarvas, Hungary: Great Bustard Scientific Symposium & Third Meeting of the Signatories (MoS3) of the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*)
 - 08.-10. March 2017, Illmitz, Austria, Great Bustard MoU and LIFE Project Meeting
- 2018, Germany: Fourth Meeting of the Signatories and Scientific Symposium of the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*)

MoU Signatories and Range States

- Signatories since 1. June 2001: Hungary, Bulgaria, Greece, Macedonia, Republic of Moldova & Romania
- Signatories since 28. November 2001: Austria & Slovakia
- Signatories since 2002: Albania, Croatia, Germany & Ukraine
- Signatory since 2008: Czech Republic
- Range States: Bosnia and Herzegovina, Italy, Montenegro, Poland, Russian Federation, Serbia, Slovenia

Distribution of the Great Bustard in Europe

 Distribution of the West-Pannonian population from 5/8/1995 till 31/12/2016

 Distribution of the European population from 5/8/1995 till 11/9/2015

MOU status:

-  Not involved
-  Range State since 2004
-  Range State since 2000
-  Signatory State



1:15,000,000

Map preparation:
Technisches Büro
für Biologie
Mag. Dr. Rainer Raab



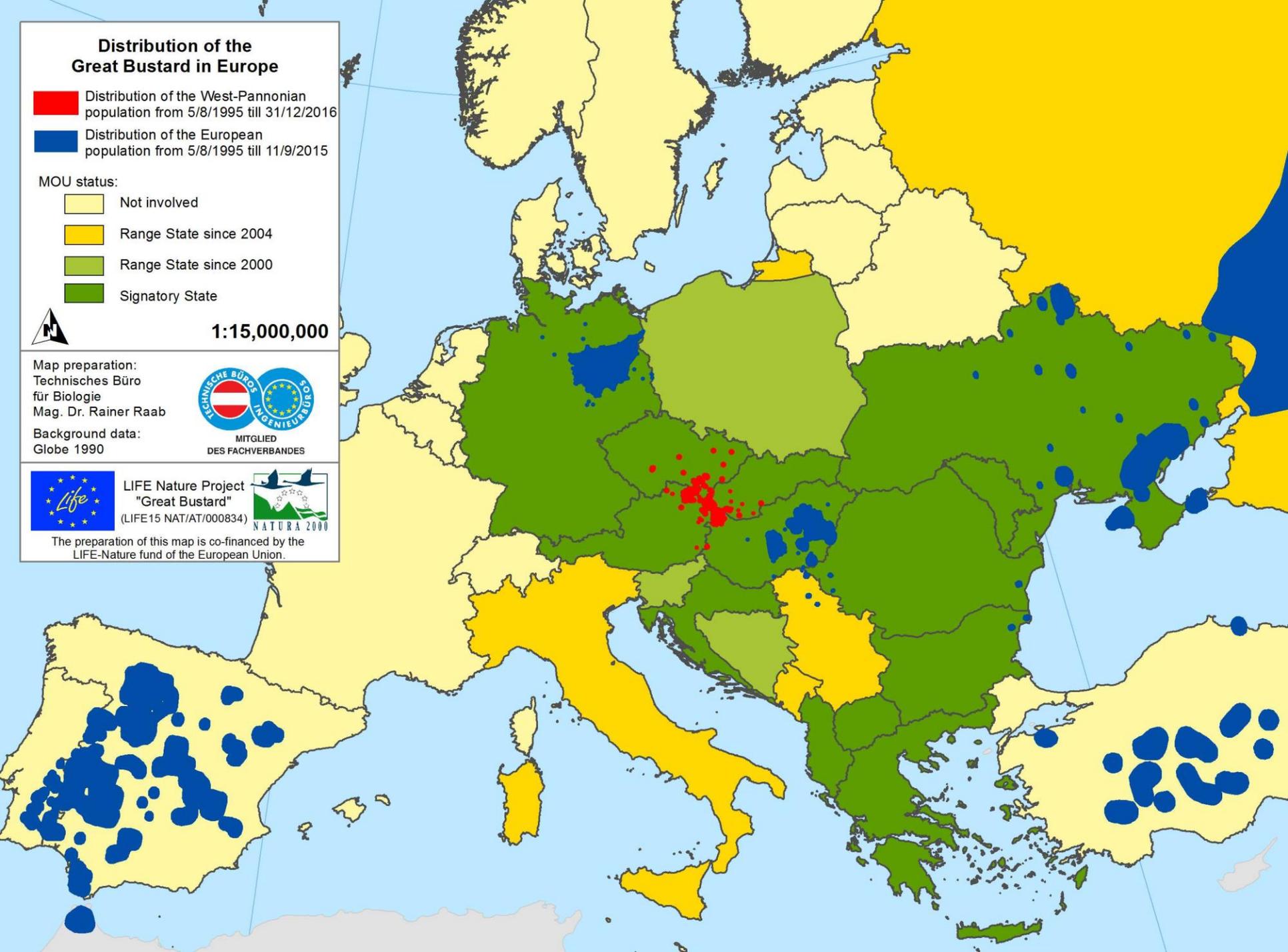
Background data:
Globe 1990



LIFE Nature Project
"Great Bustard"
(LIFE15 NAT/AT/000834)



The preparation of this map is co-financed by the LIFE-Nature fund of the European Union.



Aims of the Memorandum

- Strengthen the Bustard Conservation at the international level
- Support existing habitat conservation programmes
- Ensuring the long-term survival of these programmes by putting them into an international legal context

Action Plan

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



Prepared by:



On behalf of the European Commission



Convention on the Conservation of Migratory Species of Wild Animals
Secretariat provided by the United Nations Environment Programme



THIRD MEETING OF THE SIGNATORIES OF THE MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION AND MANAGEMENT OF THE MIDDLE-EUROPEAN POPULATION OF THE GREAT BUSTARD (*Otis tarda*)
8-12 April 2013, Szarvas, Hungary

CMS/GB/MoS3/Inf.10
Agenda Item 7.2

ACTION PLAN

Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*)

- Nagy, Szabolcs (2009) International single species action plan for the Western Palearctic population of Great Bustard, *Otis tarda tarda*.
- CMS (2013) Action Plan – Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard (*Otis tarda*)

Measures in the Action Plan

- Habitat protection
- Prevention of hunting, disturbance and other threats
- Possession and trade
- Recovery measures
- Cross-border conservation measures
- Monitoring and research
- Training of staff working in conservation bodies
- Increasing awareness of the need to protect Great Bustards and their habitat
- Economic measures

6 major current threats to adult Great Bustards as a result of species-specific characteristics

- Collisions with overhead power lines
- Habitat loss and fragmentation
- Intensive agriculture
- Severe winters
- Predation
- Disturbance

Collisions with overhead power lines

- Since Great Bustards frequently fly and since their maneuverability is limited by their great weight and large wingspan, collisions with power lines occur where there are numerous overhead powerlines inside bustard ranges, in surrounding areas, or on flight paths between different ranges.
- Collisions with power lines have been known as a threat to Great Bustards nationally and internationally since overhead power lines were first being built.

Collision with power lines



Typical injuries from collision with power lines:
broken wings, cuts on neck and breast.

Collision with power lines



Collision with railway power lines (and fences)

- The conflict is similar to the conflict with electric power lines, but more local
- Kiskunság (H), Heideboden (A), Havelländisches Luch (D)
- Marking possible, underground not. Hiding e.g. with shelterbelt

New power lines

- New power lines should not be built overhead in and around bustard areas
- If there is a real need for new overhead high voltage power lines around bustard areas the constructions of the power lines shall obstruct only a minimum of air space in vertical direction, single-level arrangement of cables are preferable.

Habitat loss and fragmentation

- infrastructure development leads to habitat fragmentation or deterioration
- Overhead power lines, wind farms and other structures potentially endanger flying bustards, fragment habitats and hamper exchange between subpopulations

Wind farms

- Collision is possible, but not recorded yet
- Habitat degradation or loss is sure
- Indirectly: risk of collision with connecting power lines
- Generally the theory of prevention is in practice (Palacín & Alonso 2013)

Palacín, C. & Alonso, J. C. (2013): Possible effects of windfarms on Great Bustards. Museo Nacional de Ciencias Naturales CSIC, Madrid, Spain. Manuscript

Wind farms

- Up to now, there is only one study available from Hans Wurm and Hans Peter Kollar (2002) in relation to Great Bustards and wind towers. This reveals that a wind farm in Parndorfer-Platte, Austria has occupied a part of the Great Bustard habitat. In addition, the Great Bustards keep a distance of 600 meters from the wind towers.
- location of the wind power stations is critically important to avoid deleterious impacts of wind farms on birds, meaning nearly the only one reasonable solving

Wind farms

- There are a lot of reliable studies indicating negative effects of wind farms on birds, some reviews collected the main outcomes, e. g. Erickson et al. (2001), Gill et al. (1996), Horch & Keller (2005)

Erickson, W. P., Johnson, G. D., Strickland, M. D., Young, D. P. Jr., Sernka, K. J. & Good, R. E. 2001. Avian Collisions with Wind Turbines: A Summary of Existing Studies and Comparisons of Avian Collision Mortality in the United States is a resource document of the NWCC.

Gill, J. P., Townsley, M. & Mudge, G. P. (1996): Review of the impacts of wind farms and other aerial structures upon birds. Scottish Natural Heritage Review 21, Edinburgh.

Horch, P. & Keller V. (2005): Windkraftanlagen und Vögel – ein Konflikt? Schweizerische Vogelwarte Sempach, Sempach.

Major parts of Great Bustard area are subject to high development pressures. Time and again infrastructure development leads to habitat fragmentation or deterioration.



Transport infrastructure - collision and indirectly

- “Great Bustard use of areas near a highway decreased during and after road construction, implying a significant loss of habitat for this species” (Torres et al. 2011)
- “Car traffic and walkers were the main sources of disturbance. Motorcyclists, dogs, helicopters and airplanes were also harmful in relation to their abundance and time of permanence” (Sastre et al. 2009)

Sastre, P., Ponce, C., Palacín, C., Martín, C. A. & Alonso, J. C. (2009): Disturbances to Great Bustards (*Otis tarda*) in central Spain: human activities, bird responses and management implications. *European Journal of Wildlife Research* 55: 425–432.

Torres, A., Palacín, C., Seoane, J., & Alonso, J. C. (2011): Assessing the effects of a highway on a threatened species using Before–During–After and Before–During–After–Control–Impact designs. *Biological Conservation* 144: 2223–2232.

Transport infrastructure - Habitat loss directly and barrier

- “The Great Bustard strike is fortunately rather rare, due to their strict avoidance attitude, and this kind of accident occurs only occasionally (own unpublished data)
- For most non-flying terrestrial animals, infrastructure implies movement barriers that restrict the animals’ range, make habitats inaccessible and can finally lead to an isolation of populations, for most of the birds, this barrier effect is not so strictly expressed. Field observations attest that a busy highway with its effect-zone can be too big obstacle for Great Bustard, and the flying birds turn back just before the highway (own unpublished data)

Habitat loss and fragmentation

- At the early stage of the Great Bustard studies, it was only known that there are traditional displaying, breeding and wintering sites everywhere in the distribution area. With the help of radio-telemetry, it could be proven that both females and males show a high degree of fidelity to their lek and breeding sites. In Spain, 25 out of 27 adult females (93%) attended the same lek over several years. 21 out of 24 (88%) showed fidelity to nesting area (Alonso et al. 2000)

Alonso, J. C., Morales, M. B. & Alonso, J. A. (2000): Partial migration, and lek and nesting area fidelity in female Great Bustards. *The Condor* 102: 127–136.

Habitat loss and fragmentation

- Also in Spain, all males showed inter-annual fidelity to their lek sites (6 ind.) and all males (4 ind.) also showed fidelity to their postbreeding areas (Alonso et al. 2001)

Alonso, J. A., Martín, E., Alonso, J. C., Morales, M. B. & Lane, S. J. (2001): Seasonal movements of male Great Bustards (*Otis tarda*) in central Spain. *Journal of Field Ornithology* 72: 504–508.

Habitat loss and fragmentation

- “(Great bustards’) genetic diversity was significantly correlated with habitat quality, size and density of the population” (Pitra et al. 2011)

Pitra, C., Suárez-Seoane, S., Martín, C. A., Streich, W.-J. & Alonso, J. C. (2011): Linking habitat quality with genetic diversity: a lesson from Great Bustards in Spain. *European Journal of Wildlife Research* 57: 411–419.

Habitat loss and fragmentation

- „(landscape components and human infrastructure) narrowing down potential Great Bustard habitat to patches of altogether merely 12.7 % of the whole area“ (Schwandner & Langgemach 2011)

Schwandner, J. & Langgemach, T. (2011): Wie viel Lebensraum bleibt der Großtrappe (*Otis tarda*)? Infrastruktur und Lebensraumpotenzial im westlichen Brandenburg (How much habitat is left for the Great Bustard (*Otis tarda*)? Human infrastructure and remaining suitable habitat in western Brandenburg (Germany)). Ber. Vogelschutz 47/48: 193–206.

Intensive agriculture

- high intensity of agricultural use is in some areas the single most important threat to Great Bustards in the breeding season, particularly to nests and young bustards, but also to incubating females, because they frequently left the nest too late to escape from approaching machinery

Conservation activities against intensive agriculture



Special Great Bustard field

Severe winters

- severe winters with a lot of snow may force some populations of Great Bustards to migrate
- associated with such long-distance migration is a greatly increased risk of collision with power lines, as well as other hazards. For this reason, winter migration regularly leads to severe losses



Predation

- especially loss of adult females during the breeding season (but predation is a threat primarily applying to eggs, juveniles and immature Great Bustards)
- in Central Europe the main predators for adult birds are red foxes and in some cases White-tailed eagles



*Haliaeetus
albicilla*

*Photo:
G. Rotheneder*

Conservation activities against predation



Hunters carried out cross-preserve hunts with dogs to reduce the number of foxes

Disturbance

- throughout the year, disturbance usually causes Great Bustards to fly off suddenly, increasing the risk of collision with power lines, and it may weaken them in times of hardship by expending energy unnecessarily
- Great Bustards, particularly in the breeding season, can be disturbed through leisure activities such as horse riding, cycling, photography, nature observation, private aircraft or nordic walking.

Thank you for your attention!



The LIFE Project "Great Bustard"

LIFE15 NAT/AT/000834 is

supported by the EU and the following

project partners and co-financiers:



elmű hálózat

Part of innogy



FÖLDMŰVELÉSÜGYI
MINISZTERIUM

www.grosstrappe.at

In co-operation with:

