



*Great Bustard MoU Meeting  
Bad Belzig, 14 March 2018*



## Report at MOS4 according to Agenda Item 4.2: The Great Bustard in Austria



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Westliches Weinviertel

CZ

A

Marchfeld

SK

**Distribution of the West-Pannonian  
Great Bustard population  
in the period 1/6/2002 to 31/5/2017**  
(with elevation model and waterbodies)

- Distribution of Great Bustard
- SPAs for the West-Pannonian  
Population of Great Bustard:  
Austria (43,194 ha), Hungary  
(13,097 ha), Slovak Republic  
(4,164 ha)

Data source:  
Raab et al. (Austria, parts of Hungary,  
Slovak Republic and Czech Republic)



1:700,000

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



Background data:  
Globe 1990, SRTM 90



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

Rauchenwarther Platte

Parndorfer Platte

Heideboden

Mosonszolnok

Hanság

H

0 25 50 km



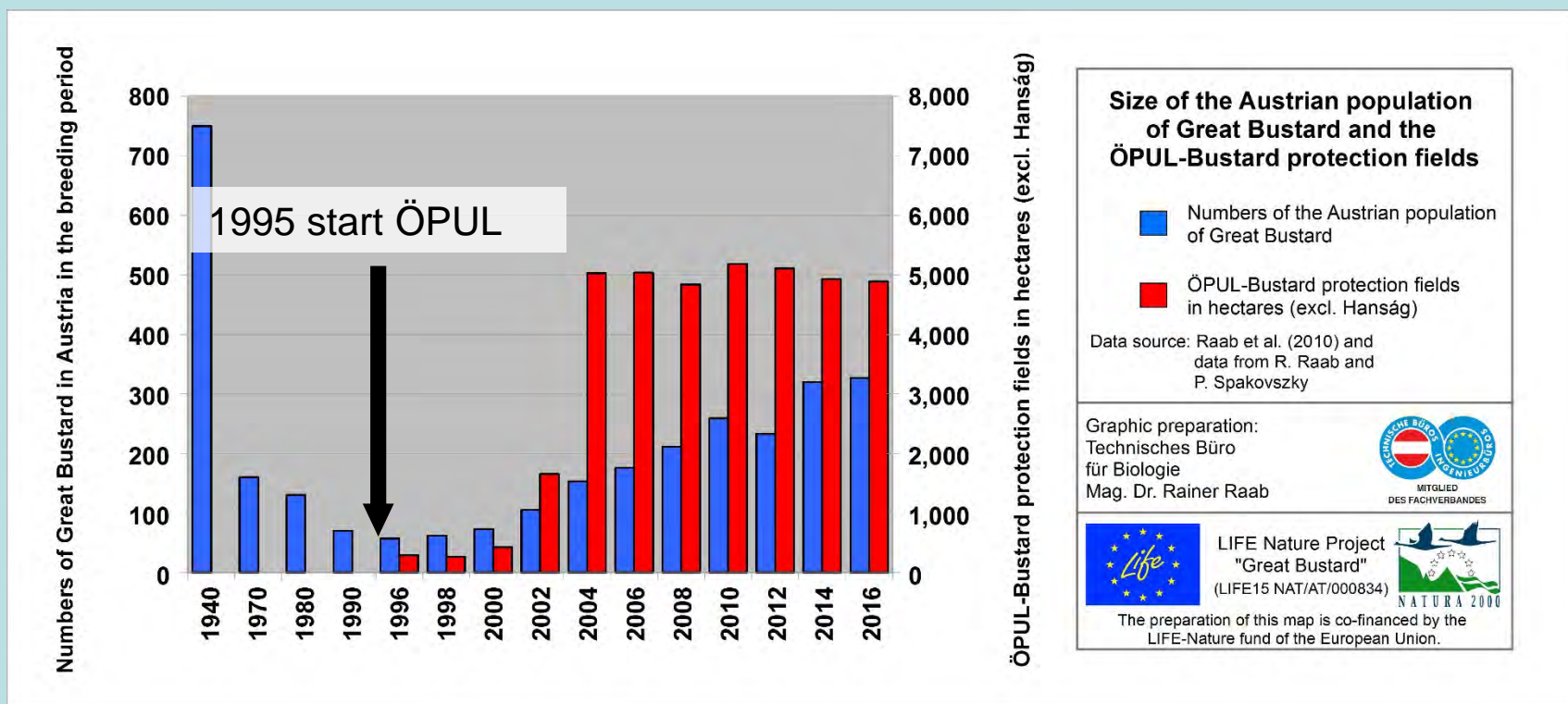
The Austrian Great Bustard population declined from a total of 700-800 individuals around the middle of the 20<sup>th</sup> century to a low of about 60 individuals at the end of the century. By the breeding season of 2017 it had increased again to a population size of 368 to 481 individuals.



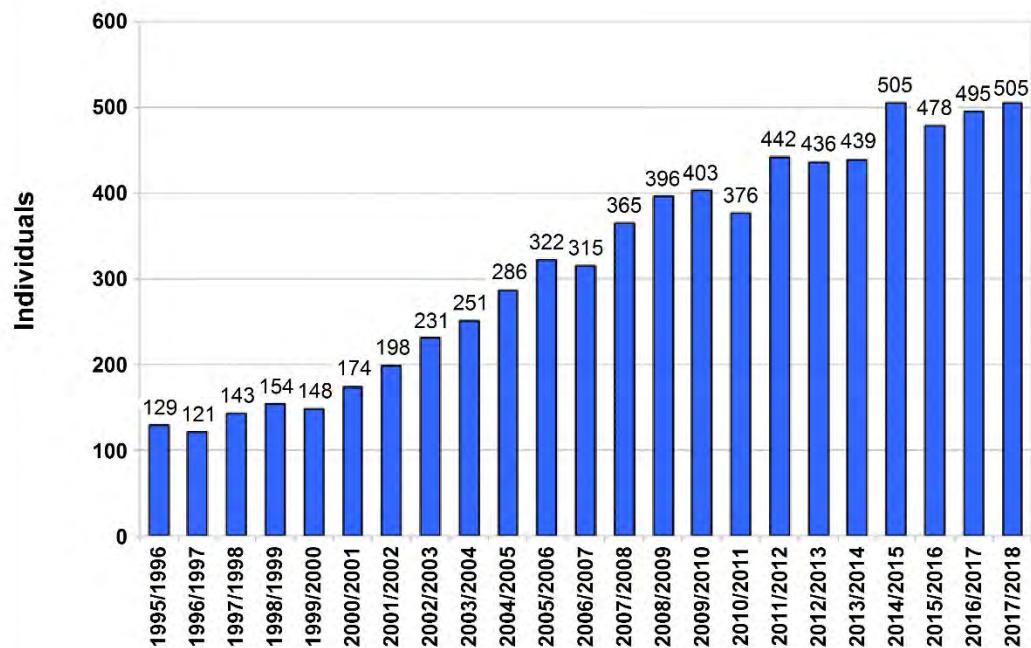
2017: 368-481 individuals  
No. of adult males: 103-156  
No. of females: 265-325  
2008: 205-216 individuals  
Increased by 100 % over the last 10 years



# Numbers of the Austrian population of Great Bustard from 1940 to 2016 and the ÖPUL-Bustard protection fields







### Numbers of the West-Pannonian population of Great Bustard in winter

in the period 1995/1996 to 2017/2018

■ Numbers of the West-Pannonian population of Great Bustard in winter

Data source: Raab et al. (2010) and data from R. Raab and P. Spakovszky

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



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.

- For many years collisions of flying Great Bustards with power lines were the most serious threats to the Great Bustard population in Austria. In the period from June 2002 to December 2017, 40 (35 %) out of 115 Great Bustards have been proven to have died through collision with power lines in Austria.

**Dead individual of Great Bustard  
in the period 1/6/2002 to 31/5/2017**

(with elevation model and waterbodies)

-  collision with power line (43)
-  predation (21)
-  other causes (11)
-  natural death (66)

Data source:  
Raab et al. (Austria, parts of Hungary,  
Slovak Republic and Czech Republic)



1:700,000

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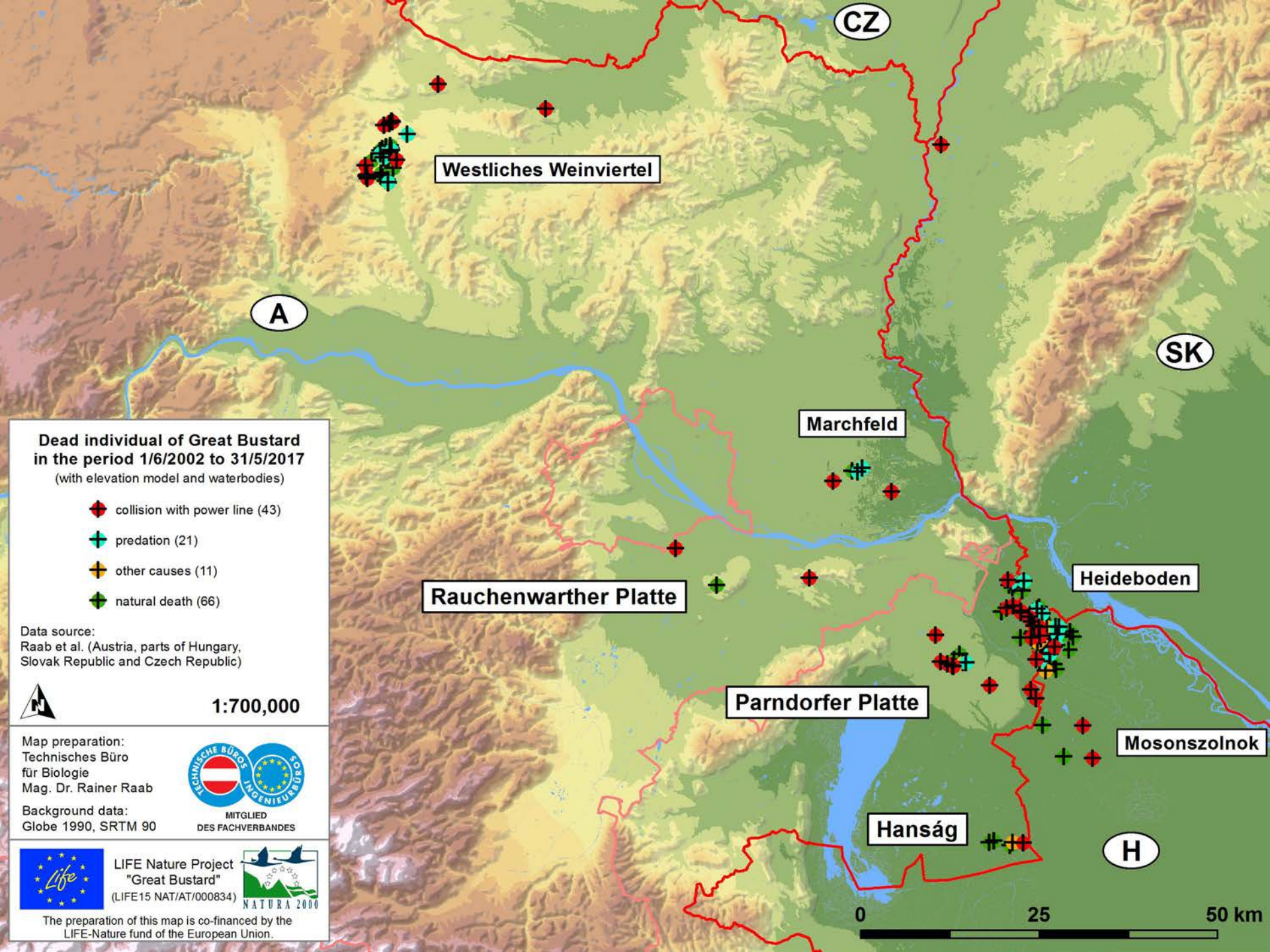
Background data:  
Globe 1990, SRTM 90



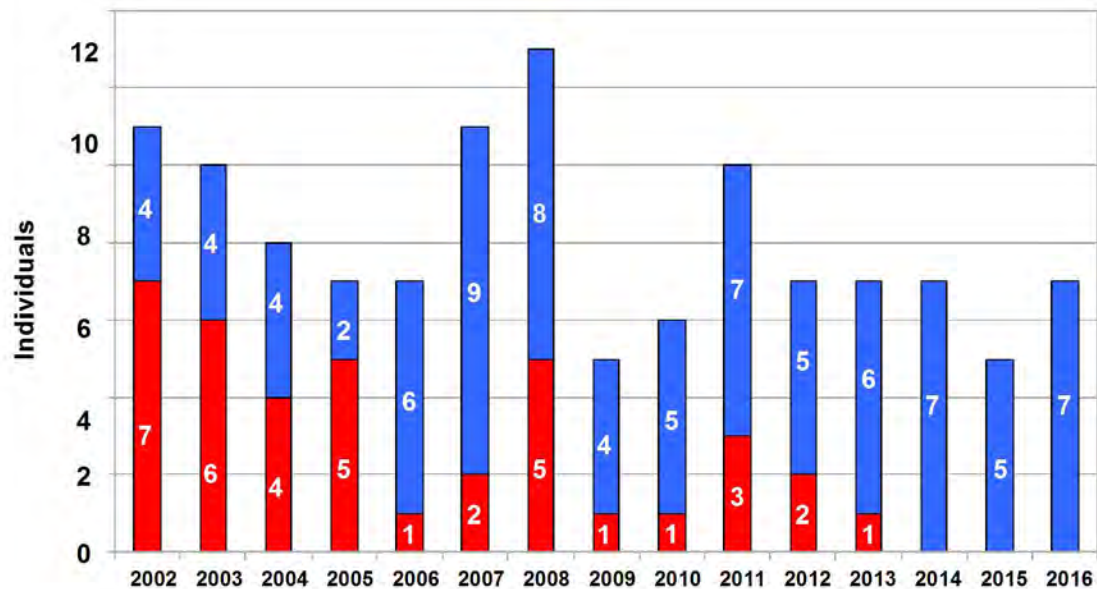
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LIFE-Nature fund of the European Union.







### Dead individuals of the West-Pannonian population of Great Bustard separated by years

in the period 6/2002 to 5/2017,  
while year is the period from June, 1st to  
May, 31st of the following year

- other causes of death
- death caused by collision with power line

Data source: Raab et al. (2010) and  
data from R. Raab and  
P. Spakovszky

Graphic preparation:  
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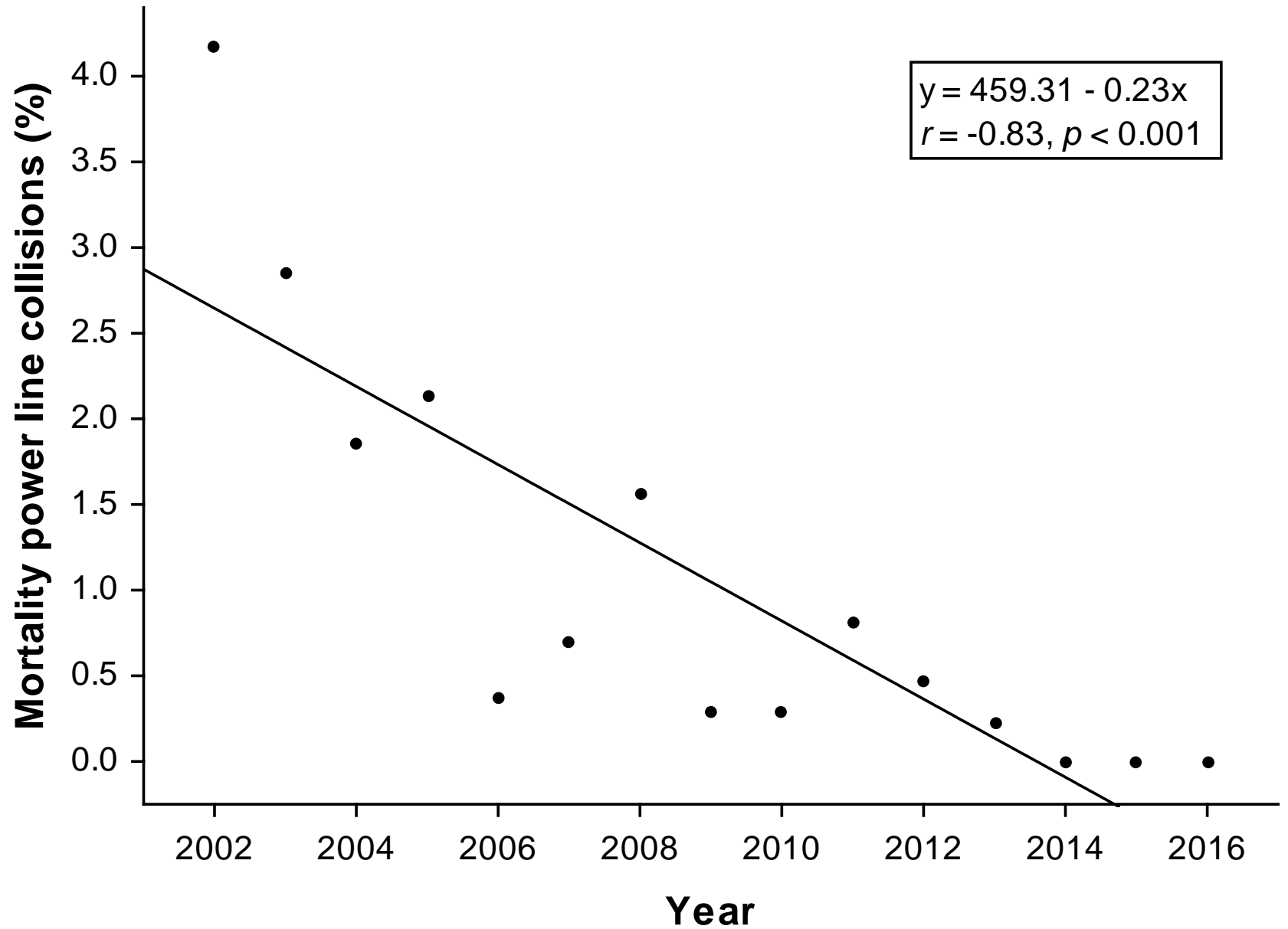


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Annual mortality rate due to power line collisions declined significantly in the whole West Pannonian population:

- with increasing length of underground power lines  
(Spearman rank correlation:  $r_s = -0.88$ ,  $p < 0.001$ )
- with increasing length of marked power lines  
(Spearman rank correlation:  $r_s = -0.86$ ,  $p < 0.001$ )



- In the reporting period 01/01/2013 to 31/12/2017 a total of 30 dead Great Bustards were found in Austria, 4 (13 %) died through collision. Out of these 4 casualties 1 died on medium voltage power lines, 2 on high voltage power lines and 1 on train power lines.

- In Burgenland and Lower Austria in the period 2005 till 2015 altogether ca. 100 km of medium voltage power lines have first been transferred into the ground and then the overhead cables and pylons have been removed. Therefore larger power line-free areas were recreated for Great Bustards by means of the two LIFE projects "Great Bustard".





*Foto: S. Raab*







- In these areas the risk of collisions with power lines was eliminated. Furthermore high voltage power lines have been marked to improve their visibility. Within the two LIFE Projects around 150 km of high voltage power lines have been marked with bird warning flags, bird warning plates and bird warning balls. They improve the visibility of the power lines and should therefore reduce the risk of collisions for Great Bustards and for other bird species.









- Together with other projects some hundred km of high voltage power lines have been marked with bird protection markings within the last years. Since that time only few individuals died on marked sections.

Most of the collisions occurred on power lines, but on 13/12/2017 the first (very certain) collision with a wind power station in Austria was recorded. An adult male collided in the Nordburgenland on a wind power station from Enercon (E 101, “Nabenhöhe” 135 m and “Rotordurchmesser” 101 m) in the Windpark Halbturn on a station that was built in 2013.

Following figures show some details of this case. It was the first case in the whole West Pannonian population in the period 2002 to 2017, although there is a current population of approx. 500 individuals and 129 dead individuals (not included young birds that were not able to fly when they died) were found and analysed in the period 01/06/2002 to 31/12/2017.





38.5°N 17°01'38.6"E - Google Maps - Internet Explorer

https://www.google.at/maps/place/47%C2%BD050'38.5%22N

Seite Sicherheit Extras

**Hol dir Google Chrome**  
Testen Sie jetzt den neuen, sicheren Browser mit autom

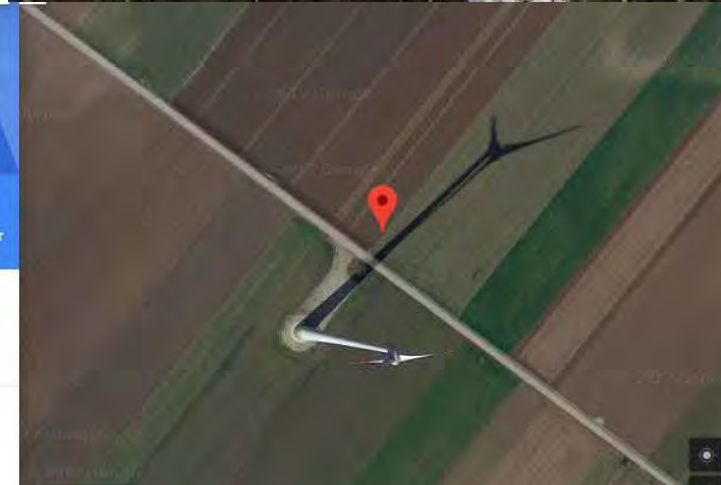
47.844035,17.027378

50°38.5'N 17°01'38.6'E  
4035, 17.027378

Rutenplaner


SICHERN IN DER NÄHE AN MEIN SMARTPHONE SENDEN TEILEN






Fehlenden Ort hinzufügen







# Distribution of Great Bustard in the period 1/8/2002 to 22/12/2017


 Great Bustard:  
collision with power line 13.12.2017

-  1
-  2 - 5
-  6 - 25
-  26 - 75
-  76 - 384

 Wind turbine (Status: 8/2017)

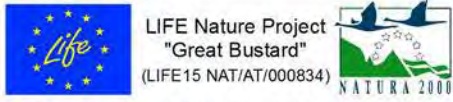
 Project-Sub-Area  
"Parndorfer Platte - Heideboden" (PPH)

 Project-Sub-Area  
Waasen - Hanság (WHA)

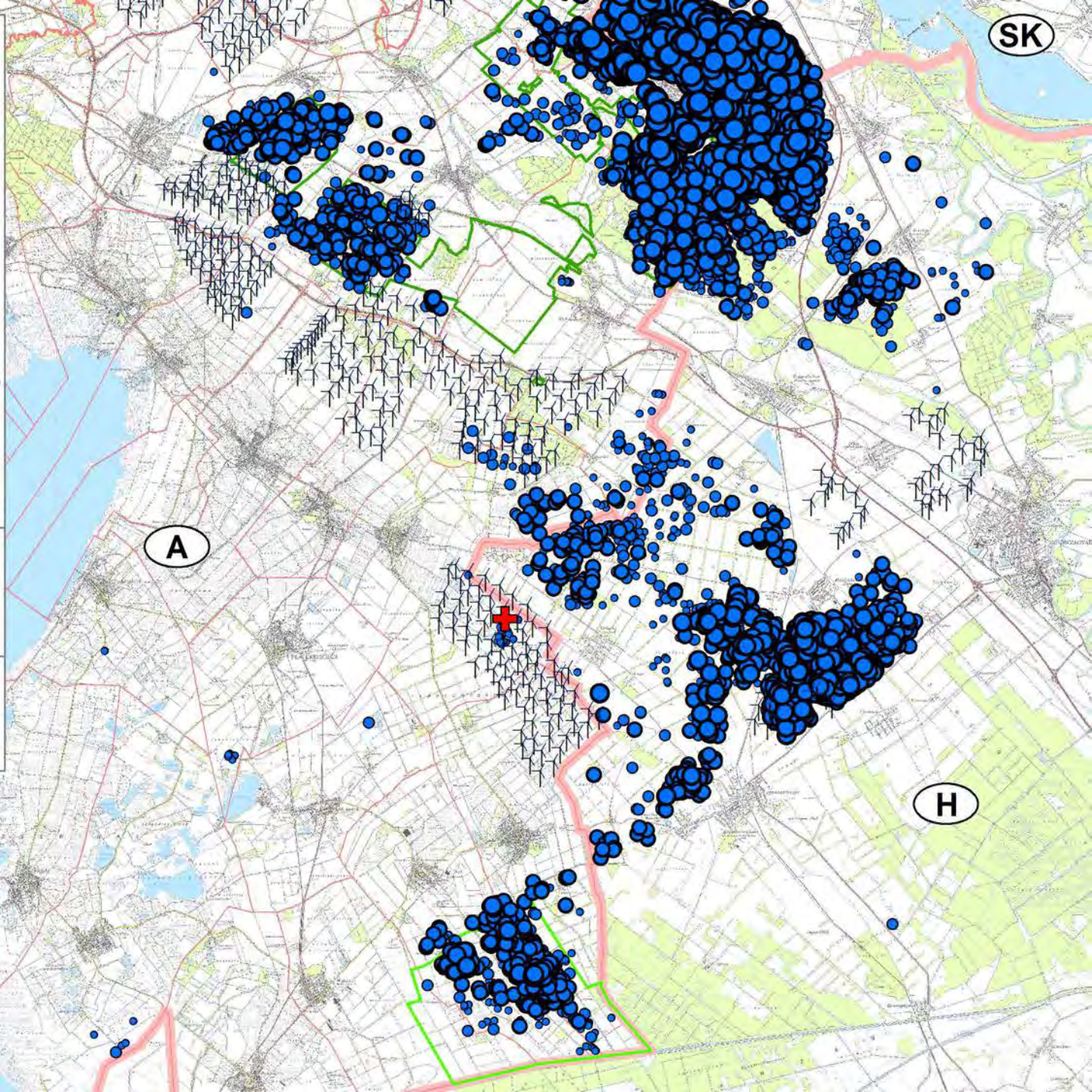
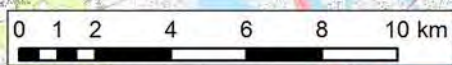
 community borders

 1:200,000

Map preparation:  
Technisches Büro  
für Biologie  
Mag. Dr. Rainer Raab  
Background data:  
BEV, Land BGLD,  
APG, Netz BGLD



The preparation of this map is co-financed by the  
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# Distribution of Great Bustard in the period 1/5/2004 to 13/9/2017



Great Bustard:  
collision with power line, 13.12.2017

- 1
- 2 - 5
- 6 - 25
- 26 - 27



Wind turbine (Status: 8/2017)

community borders



1:30,000

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



Background data: BEV,  
Basemap, Land BGLD



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**Great Bustard observations:**  
28.08.2009 - 03.10.2009  
18.09.2011 - 11.10.2011  
01.10.2012





# LIFE Project: «Cross-border protection of the Great Bustard in Central Europe»

Project acronym: «Great Bustard»



PROJECT LOCATIONS: 4 in Austria and 5 in Hungary



## BUDGET INFO:

Total amount: 8,399,265

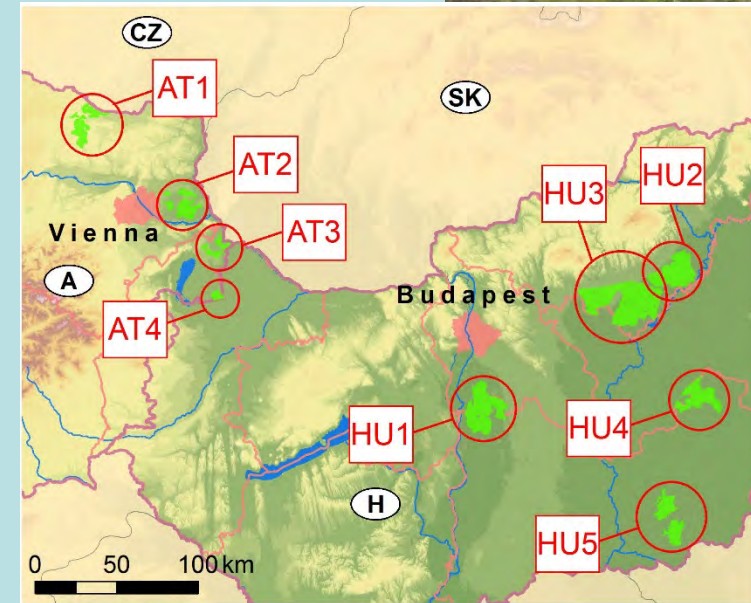
% EC Co-funding: 70.99 %

DURATION: 25/07/16 - 31/12/23

## PROJECT'S IMPLEMENTORS:

Coordinating Beneficiary: Austrian Society for Great Bustard Conservation

9 Associated Beneficiaries (4 from AT and 5 from HU)





## MAIN OBJECTIVE

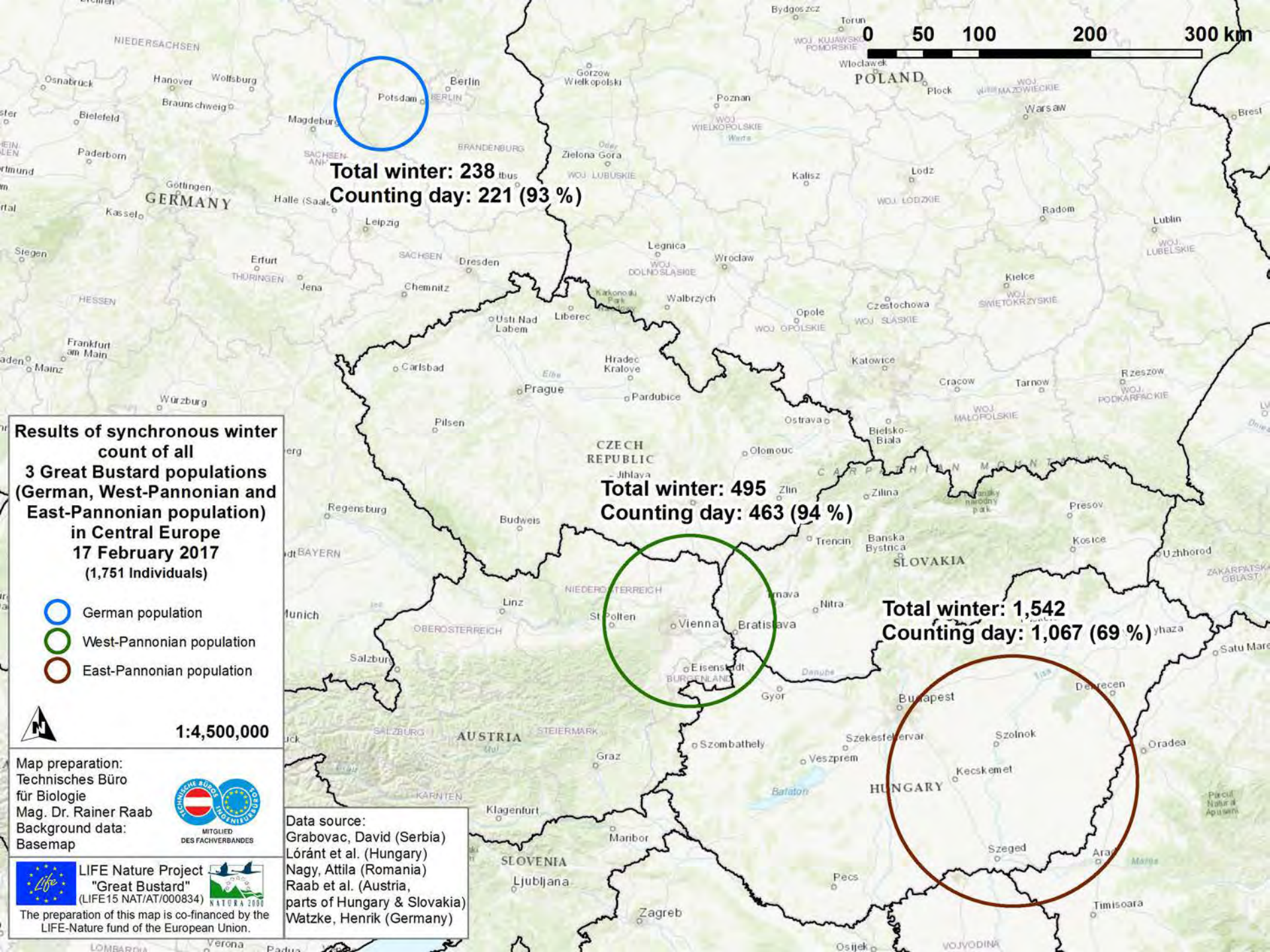
The objectives of this LIFE project are to reduce the threat of collision with power lines, for many years the no. 1 mortality factor for adult and immature Great Bustards not only in Austria.

Transfer of 41.5 km (16.0 km in AT and 25.5 km in HU) of medium voltage power lines below the soil with the support of the energy supplying companies concerned and monitoring of the effectiveness.





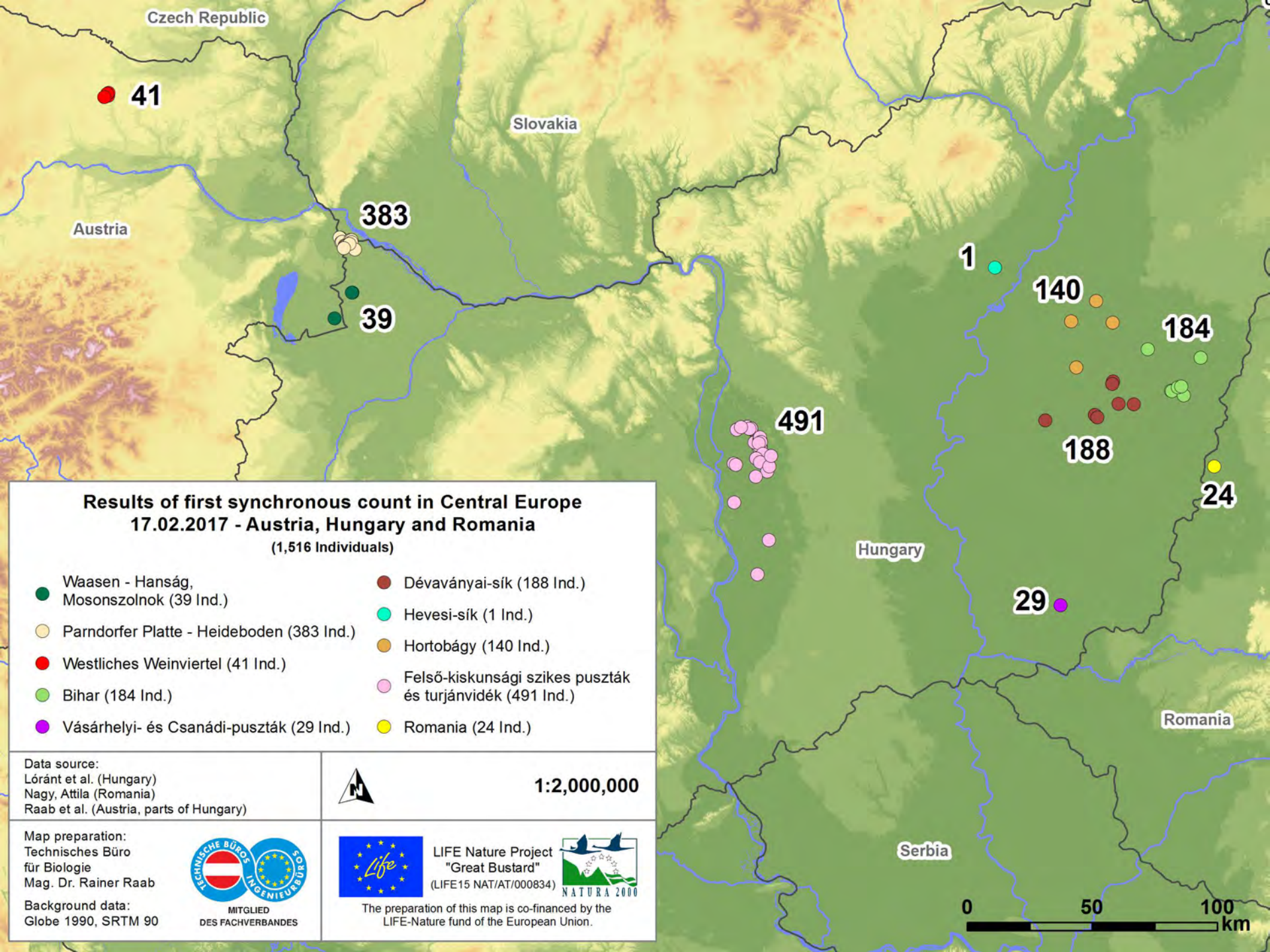












**Results of first synchronous count in Central Europe  
17.02.2017 - Austria, Hungary and Romania**

(1,516 Individuals)

- |                                              |                                                                |
|----------------------------------------------|----------------------------------------------------------------|
| ● Waasen - Hanság,<br>Mosonszolnok (39 Ind.) | ● Dévaványai-sík (188 Ind.)                                    |
| ● Parndorfer Platte - Heideboden (383 Ind.)  | ● Hevesi-sík (1 Ind.)                                          |
| ● Westliches Weinviertel (41 Ind.)           | ● Hortobágy (140 Ind.)                                         |
| ● Bihar (184 Ind.)                           | ● Felső-kiskunsági szikes puszták<br>és turjánvidék (491 Ind.) |
| ● Vásárhelyi- és Csanádi-puszták (29 Ind.)   | ● Romania (24 Ind.)                                            |

Data source:  
Lóránt et al. (Hungary)  
Nagy, Attila (Romania)  
Raab et al. (Austria, parts of Hungary)



1:2,000,000

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



Background data:  
Globe 1990, SRTM 90



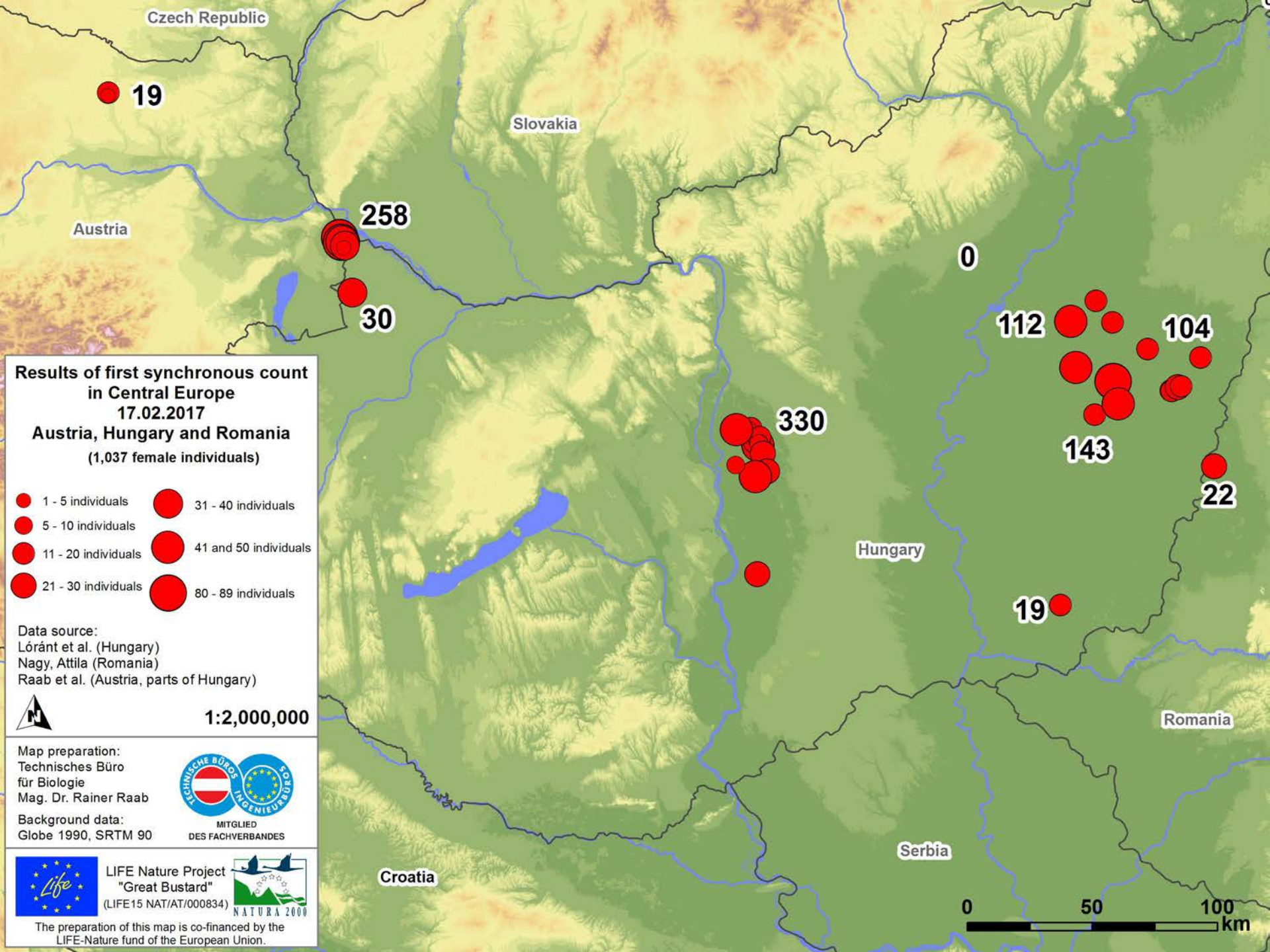
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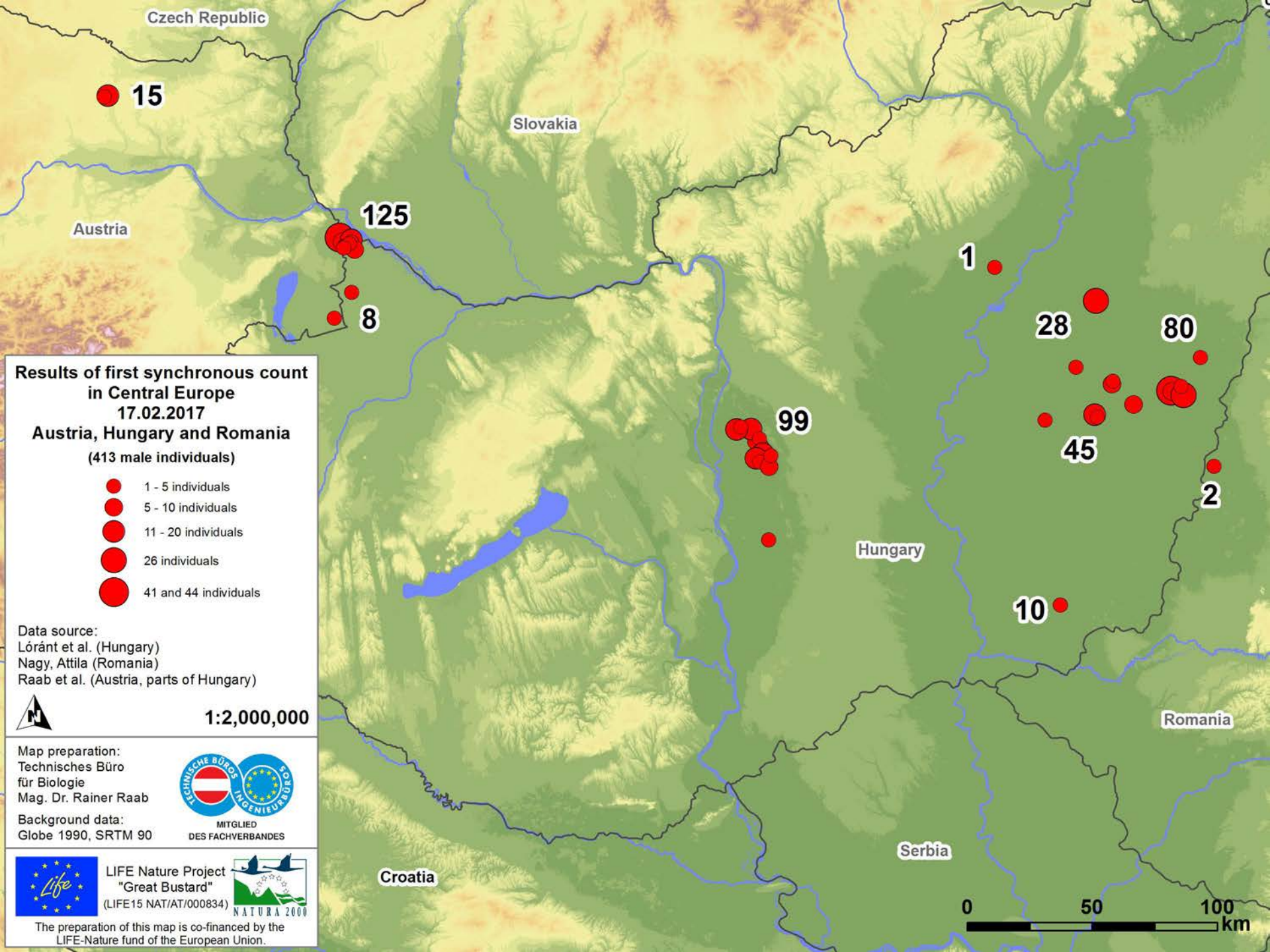
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0 50 100 km













Imperial Eagle  
(*Aquila heliaca*)

*Photo: R. Katzinger*







0 2,5 5 10 km

## Great Bustard Telemetry Hungary

- Great Bustard telemetry point  
in the period 10/10/2017 to 6/3/2018
- Great Bustard telemetry point  
in the period 24/7/2017 to 10/10/2017



1:150,000

Map preparation:  
Technisches Büro  
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Background data:  
Basemap



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0 2,5 5 km

# **Great Bustard Telemetry Hungary Devavanya 01, AUKI77, AAB23**

● Devavanya 01 telemetry point  
in the period 10/10/2017 to 22/10/2017

● Devavanya 01 telemetry point  
in the period 24/7/2017 to 10/10/2017



1:100,000

Map preparation:  
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Background data:  
Basemap



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0 2,5 5 km

# **Great Bustard Telemetry Hungary Devavanya 02, AUKI79, AAB25**

● Devavanya 02 telemetry point  
in the period 1/12/2017 to 6/3/2018

● Devavanya 02 telemetry point  
in the period 10/10/2017 to 30/11/2017



1:100,000

Map preparation:  
Technisches Büro  
für Biologie  
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Background data:  
Basemap



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0 2,5 5 km

# **Great Bustard Telemetry Hungary Devavanya 03, AUKI80, AAB26**

- Devavanya 03 telemetry point  
in the period 1/12/2017 to 6/3/2018
- Devavanya 03 telemetry point  
in the period 10/10/2017 to 30/11/2017
- Devavanya 03 telemetry point  
in the period 28/8/2017 to 10/10/2017



1:130,000

Map preparation:  
Technisches Büro  
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Background data:  
Basemap



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0 2,5 5 km

**Great Bustard Telemetry  
Hungary  
Devavanya 04, AUKI81, AAB27**

● Devavanya 04 telemetry point  
in the period 2/3/2018 to 6/3/2018

 1:100,000

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



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*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:



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FÜR NACHHALTIGKEIT  
UND TOURISMUS

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