




2024
WINGSPAN

**Partnerships for a bird-friendly energy
transition**



Programme & More



Side activities

- 16 Oct:
 - Tattoo table – Share your picture on SoMe using [#Wingspan 2024](#)
 - Poster session – [Foyer 1](#)
 - Workshop for grid operators, NGOs and authorities – [Foyer 3](#)
- 17 Oct: Field excursion
 - Departure at [7:45 at Place Flagey 24](#)
 - Arrival in Brussels at [15:30](#)



Panel

Balancing nature-positive with accelerated
renewable energy deployment



MODERATOR

Liam Innis

Senior Manager – Energy Ecosystems

Renewables Grid Initiative



Miguel Mascarenhas

Biologist and Environmental Specialist

Bioinsight



Lukas Zantopp

Head of Env. Planning & Nature Protection

Amprion



Zuzana Guziová

Executive Director

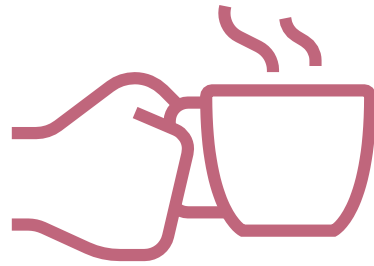
Raptor Protection Slovakia



Dr Sebastian Dunnett

Senior Programme Officer on Nature Economy

UNEP-WCMC



Coffee Break





Presentations

Case studies of successful multi-stakeholder collaborations



Manon Quetstroey

Manager– Energy & Nature

Renewables Grid Initiative



Dr. Rainer Raab

CEO

TB Raab



Olivia Geels

Environment Expert

Elia



Jean-Yves Paquet

Director – Department of Studies

Natagora

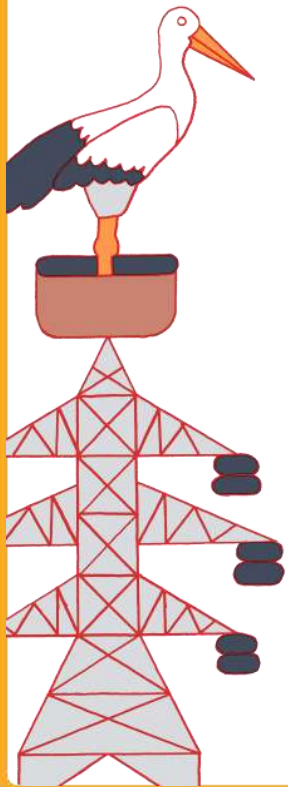


SafeLines4Birds

Collaborative actions to safeguard
birdlife along the electricity grid

Manon Quetstroey

Renewables Grid Initiative



Renewables 
Grid Initiative



SafeLines4Birds - Context

- Co-financed by LIFE Programme
- 6 years, 2023 - 2028
- France, Belgium & Portugal
- 15 partners involved: DSOs, TSOs, NGOs, Research Institute
- 13 target species



Objectives



Reducing bird collision



Reducing bird electrocution



Reducing bird disturbance



Improving & sharing knowledge

Target species



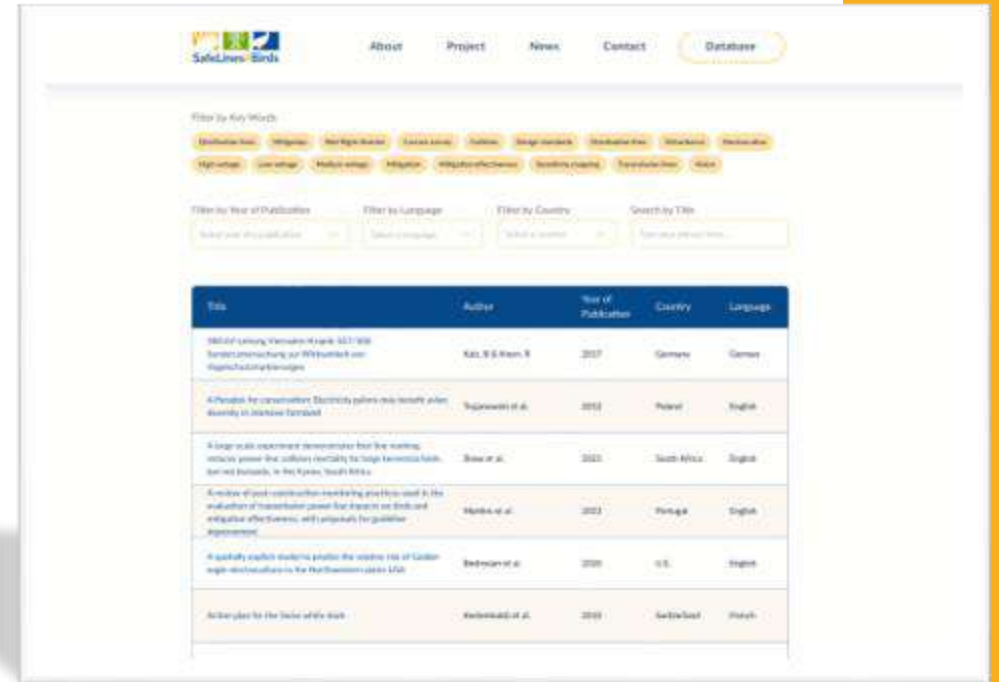
GPS-Tracking of Black Storks in France

- Electrocution & collision primary causes of Black Stork mortality in Europe
- 38 juvenile were tagged & tracked using GPS technology in France and 13 in Belgium
- First results:
 - 2 carcasses in the nest following the electrocution-related death of a parent
 - 4 carcasses found in Portugal & Spain attributed to collisions
- Play a crucial role in identifying high-risk areas for species



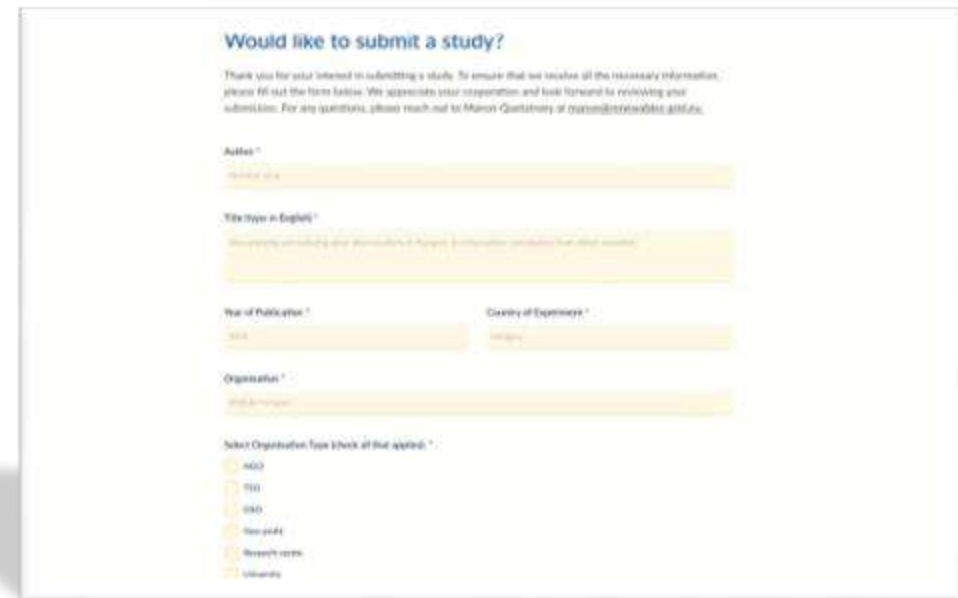
Scientific database

- On SafeLines4Birds website
 - Gather all scientific studies in one place
 - Freely accessible
 - Users can submit studies by fill out a form
- ➔ safelines4birds.eu/database



The screenshot shows the 'Database' page of the SafeLines4Birds website. It features a navigation menu with 'About', 'Project', 'News', 'Contact', and 'Database'. Below the menu are search filters for 'Filter by Key Words', 'Filter by Year of Publication', 'Filter by Language', and 'Filter by Country'. A table of scientific studies is displayed with the following data:

Title	Author	Year of Publication	Country	Language
1800er Längsversuche in der Göttinger Tierärztlichen Schule zur Wirkung von Narkotika bei Tieren	Kal, S & Klein, R	2017	Germany	German
Algorithms for conservation: Electronic patient data identify avian diversity at landscape level	Sapichowski et al.	2018	Poland	English
A large scale experiment demonstrates that the nesting success of the African Red-footed Booby is determined by the quality of the nesting site	Blair et al.	2015	South Africa	English
Analysis of post-embryonic mortality and its role in the evolution of transposable element insertion in Drosophila melanogaster	Hartley et al.	2013	Portugal	English
A quality explicit evidence of the positive role of G-protein-coupled receptors in the development of the brain	Bednarek et al.	2010	U.S.	English
Antibodies for the detection of the virus	Helmreich et al.	2011	Switzerland	French



The screenshot shows the 'Would like to submit a study?' form. It includes a thank-you message and instructions. The form fields are:

- Author *
- Title (in English) *
- Year of Publication *
- Country of Experiment *
- Organization *
- Select Organization Type (check all that apply):
 - NGO
 - IRI
 - IAD
 - Non-profit
 - Research center
 - University

New brochure on Collaborative partnerships

- Importance of collaboration between academia, NGOs & grid operators
- Showcasing best practices & successful projects
- Source of inspiration which can help grid operators to overcome challenges they face



'Connecting biodiversity' workshop

- 8 & 9 November 2023 in Berlin
- 30+ NGO participants from Europe
- Outcome of discussions: 7 Principles from the conservation community
- Endorsed by 24 NGOs across 18 countries in Europe
- Potential guiding points for decision-makers

June 2024

Connecting Biodiversity
Reconciling nature and the electricity grid

8-9 November 2023
Centre Français de Berlin
Müllerstrasse 74
13349 Berlin, Germany

nergies | Session Three BERLIN →
for European Civil Society

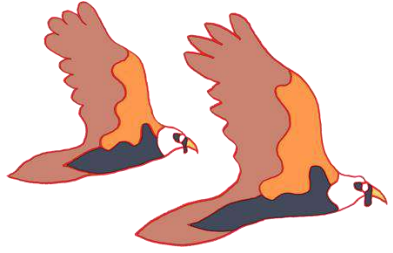
Key Principles for a Bird-Friendly Electricity Grid in Europe
from the European conservation community

The Renewables Grid Initiative (RGI) acted as a convener and moderator of the workshop. Opinions expressed in this document are those of the NGO participants and do not necessarily reflect those of RGI.

This document summarises the workshop discussions and offers an overview of key principles for a bird-friendly electricity grid across Europe. The participants acknowledge that strong collaboration is needed for the principles presented below to be implemented in an effective way. Therefore, they will be discussed in a follow-up workshop in 2024 that will include electricity grid operators and other key stakeholders.

The European civil society signatories present the following seven principles that could serve as guiding points to be considered by decision-makers and further discussed with relevant stakeholders:

- 1 Meaningful and constructive European multi-stakeholder exchanges
- 2 Member State level collaborations
- 3 Sustainable funding sources for civil society
- 4 Standardisation of bird data collection within an open-source approach
- 5 Comprehensive nation-wide bird risk maps
- 6 Improved implementation of the European legislative and regulatory framework
- 7 Strong European technical guidelines



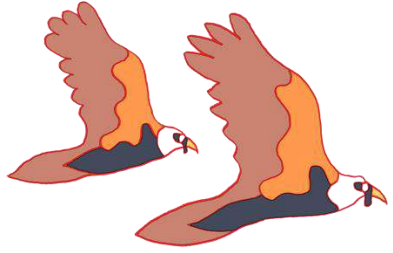
Contact us



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manon@renewables-grid.eu



Follow us



safelines4birds.eu





Presentations

Case studies of successful multi-stakeholder collaborations



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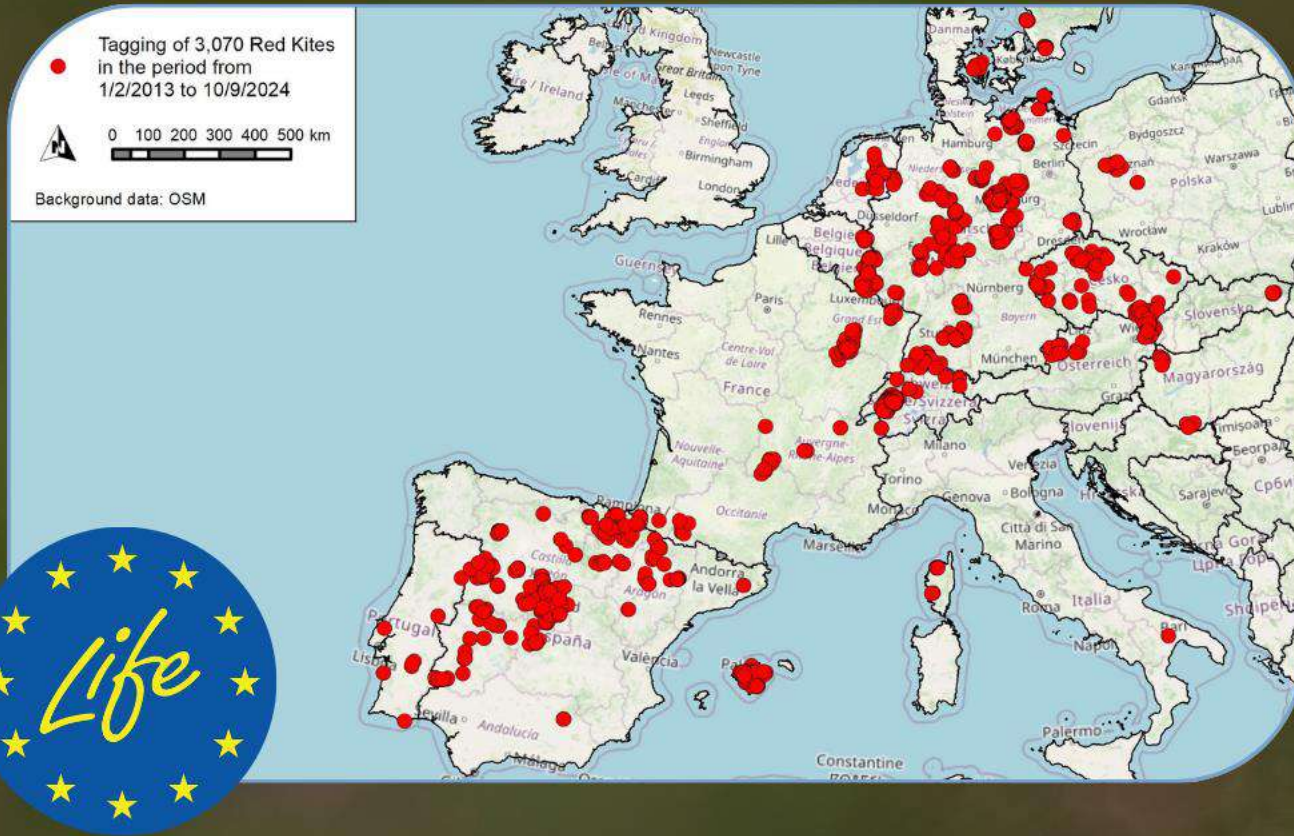
LIFE EUROKITE (LIFE18 NAT/AT/000048)

„CROSS-BORDER PROTECTION OF THE RED KITE BY
REDUCING HUMAN-CAUSED MORTALITY”

WINGSPAN CONFERENCE
BRUSSELS, BELGIUM
16. 10.2024
DR. RAINER RAAB, CEO, TB RAAB GMBH



PROJECT OVERVIEW - LIFE EUROKITE



- Project countries:
26 countries in Europe
- Budget:
Total: € 9.537.423
EU-financed: € 5.722.454 (60%)
- Period:
07.12.2019 – 31.01.2027
- Coordination & Management:



Mitteuropäische Gesellschaft
zur Erhaltung der Greifvögel (MEGEG)
(Central European Society for Raptor Protection)



TB Raab GmbH

PROJECT OVERVIEW - LIFE EUROKITE



- Core idea:
 - use **telemetry** data
 - identify **habitat use** of target species
 - quantify the **main causes of mortality** of raptor species in the EU
- Main target species:
 - **Red Kite** (*Milvus milvus*)
- Other target species:
 - Eastern Imperial Eagle (*Aquila heliaca*),
 - White-tailed Eagle (*Haliaeetus albicilla*),
 - Black Kite (*Milvus migrans*)
- Additional tagged species:
 - Osprey (*Pandion haliaetus*),
 - Honey Buzzard (*Pernis apivorus*)

PROJECT OVERVIEW - LIFE EUROKITE

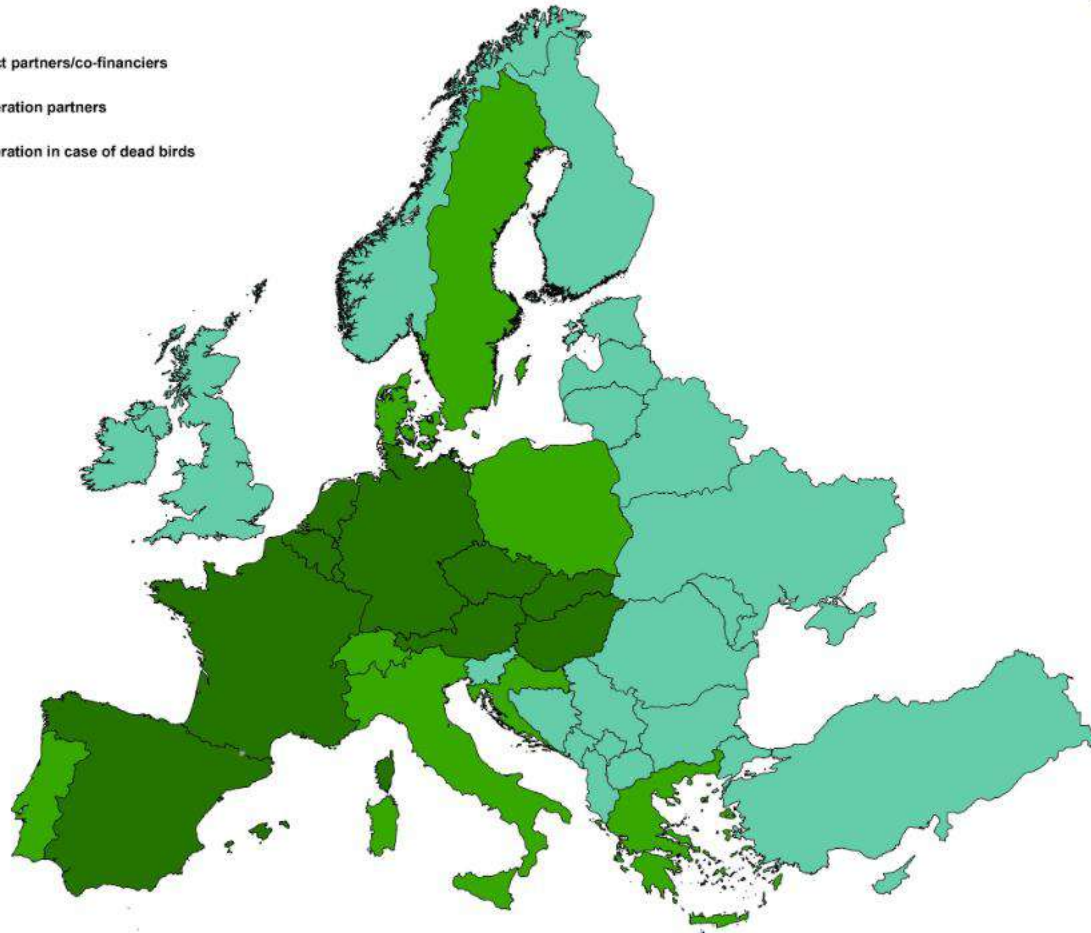
European-wide cooperation

- 18 Associated Beneficiaries (Project partners)
 - NGOs
 - Network operator
 - Regional authorities
- 10 Co-financiers
 - Ministries
- More than 70 Cooperation partners
 - Universities
 - NGOs
 - Authorities
 - Ministries
 - Energy producer
 - Technical offices

10 countries with project partners/co-financiers

16 countries with cooperation partners

30 countries with cooperation in case of dead birds



10 countries with project partners/ co-financiers

16 countries with cooperation partners

30 Countries with no cooperation partner,
but cooperation in case of dead birds



PROJECT OVERVIEW - LIFE EUROKITE

Status: 09.2024

- 3.070 tagged red kites in the database of the LIFE EUROKITE project in the period from 2013 to 2024
- Red kites (*Milvus milvus*)
 - Tagged within the project: 1.496
 - Purchased: 136
 - Tagged red kites shared by (cooperation) partners: 1.438
- Other tagged species in the LIFE EUROKITE project
 - 30 Eastern Imperial Eagle (*Aquila heliaca*)
 - 38 Black Kite (*Milvus migrans*)
 - 28 White-tailed Eagle (*Haliaeetus albicilla*) (+ 3 purchased)
 - 20 Osprey (*Pandion haliaetus*)
 - 19 Honey Buzzard (*Pernis apivorus*)

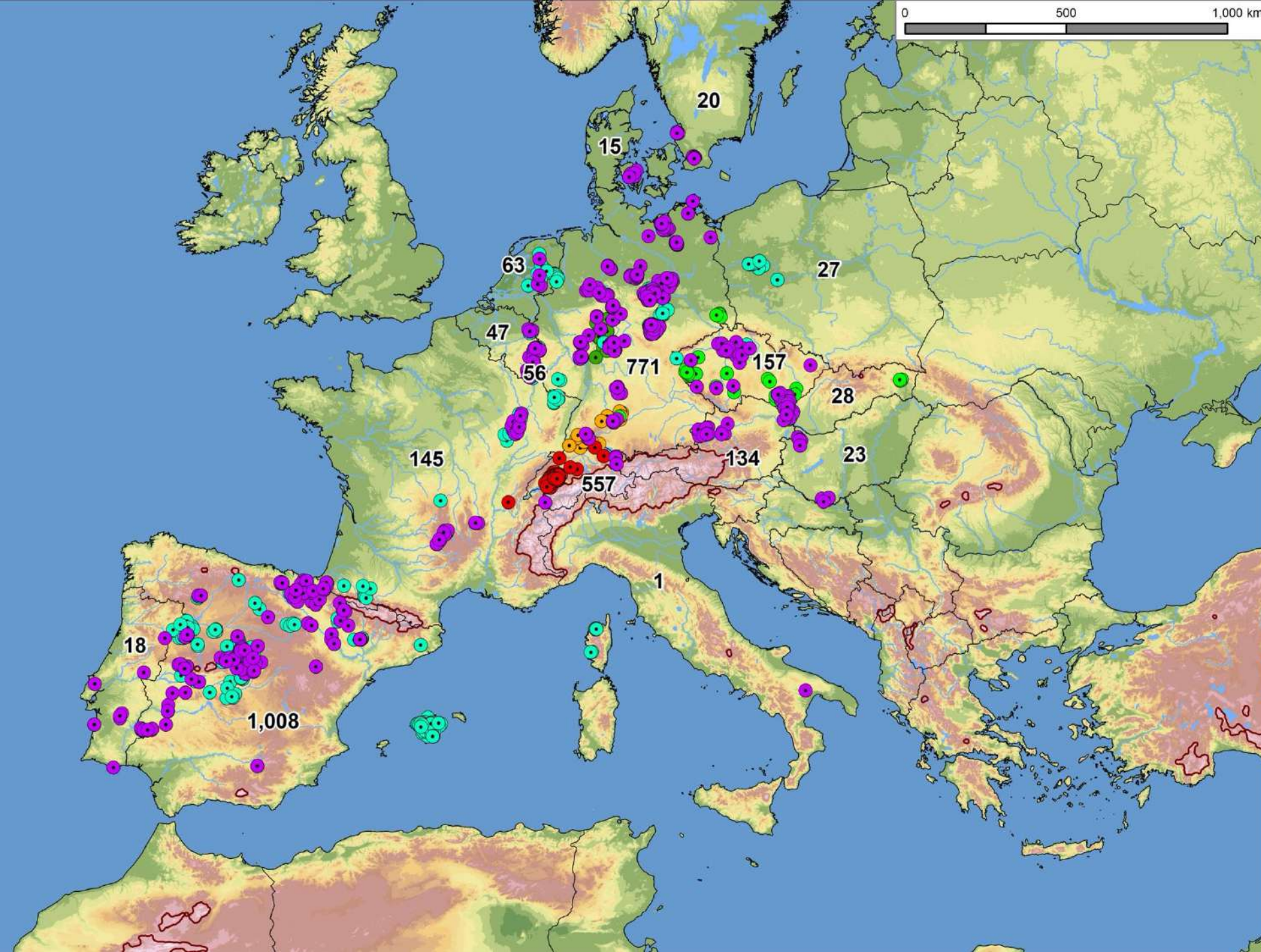
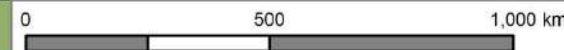


Red Kite telemetry 2013 - 2024: Tagged Red Kites (Status: 9/2024)

Tagging of 3,070 Red Kites in whole Europe

- LIFE EUROKITE (1,632 RK)
- shared by SOI with LIFE EUROKITE (559 RK)
- shared by partners with LIFE EUROKITE (593 RK)
- shared by TB Raab with LIFE EUROKITE (228 RK)
- shared by MPIO with LIFE EUROKITE (34 RK)
- shared by TB Raab and AG Naturschutz, Philipps-Universität Marburg with LIFE EUROKITE (24 RK)

- altitude above 2,000 m
- country border



Map preparation:
TB Raab GmbH

Background data:
Globe

LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

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

Project partner

Co-funder

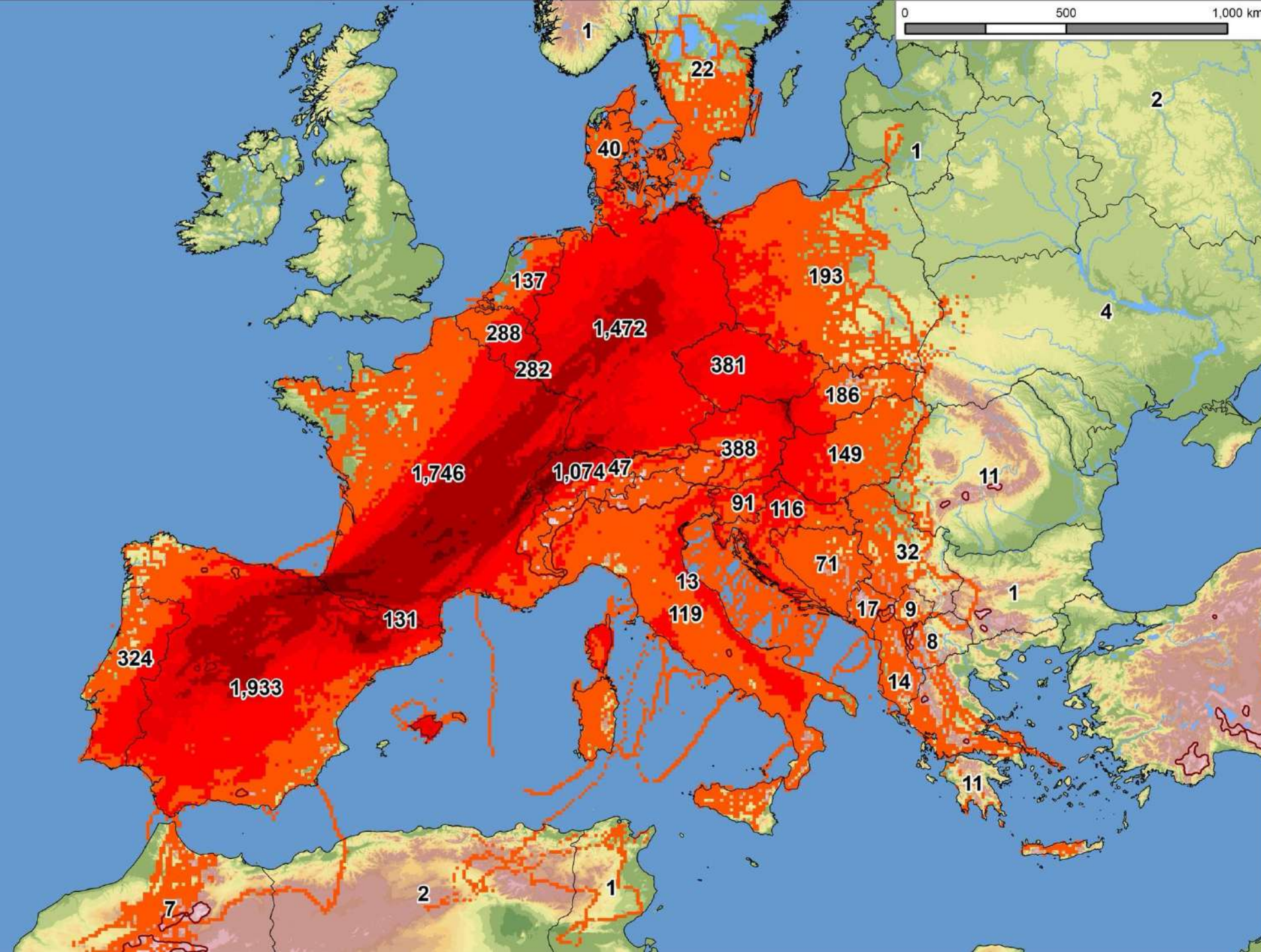
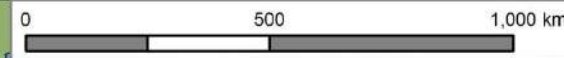
Cooperation partners who provide telemetry data

Red Kite Telemetry 2013 - 2024:
Number of different individuals with telemetry points in a 10 x 10 km grid (Status: 8/2024)

Number of different individuals (analysis of 3,006 Red Kites)

- 1 - 9 Red Kites (15,423 x)
- 10 - 49 Red Kites (7,959 x)
- 50 - 99 Red Kites (3,237 x)
- 100 - 249 Red Kites (3,238 x)
- 250 - 598 Red Kites (226 x)

- altitude above 2,000 m
- country border



Map preparation:
 TB Raab GmbH

Background data:
 Globe

LIFE Nature Project "LIFE EUROKITE"
 (LIFE18 NAT/AT/000048)

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Project partner

Co-funder

Cooperation partners who provide telemetry data

Tagged Red Kite individual:

— RK_0006 (31/5/2015 to 30/12/2022)

— RK_0266 (15/2/2019 to 24/12/2021)

— RK_1249 (12/6/2021 to 16/9/2024)

— RK_1382 (15/6/2021 to 4/11/2022)

Number of tagged Red Kites in a 10x10 km grid
in the period from 2013 to 2023:

1 - 9 Red Kites (15,489 x)

10 - 49 Red Kites (8,028 x)

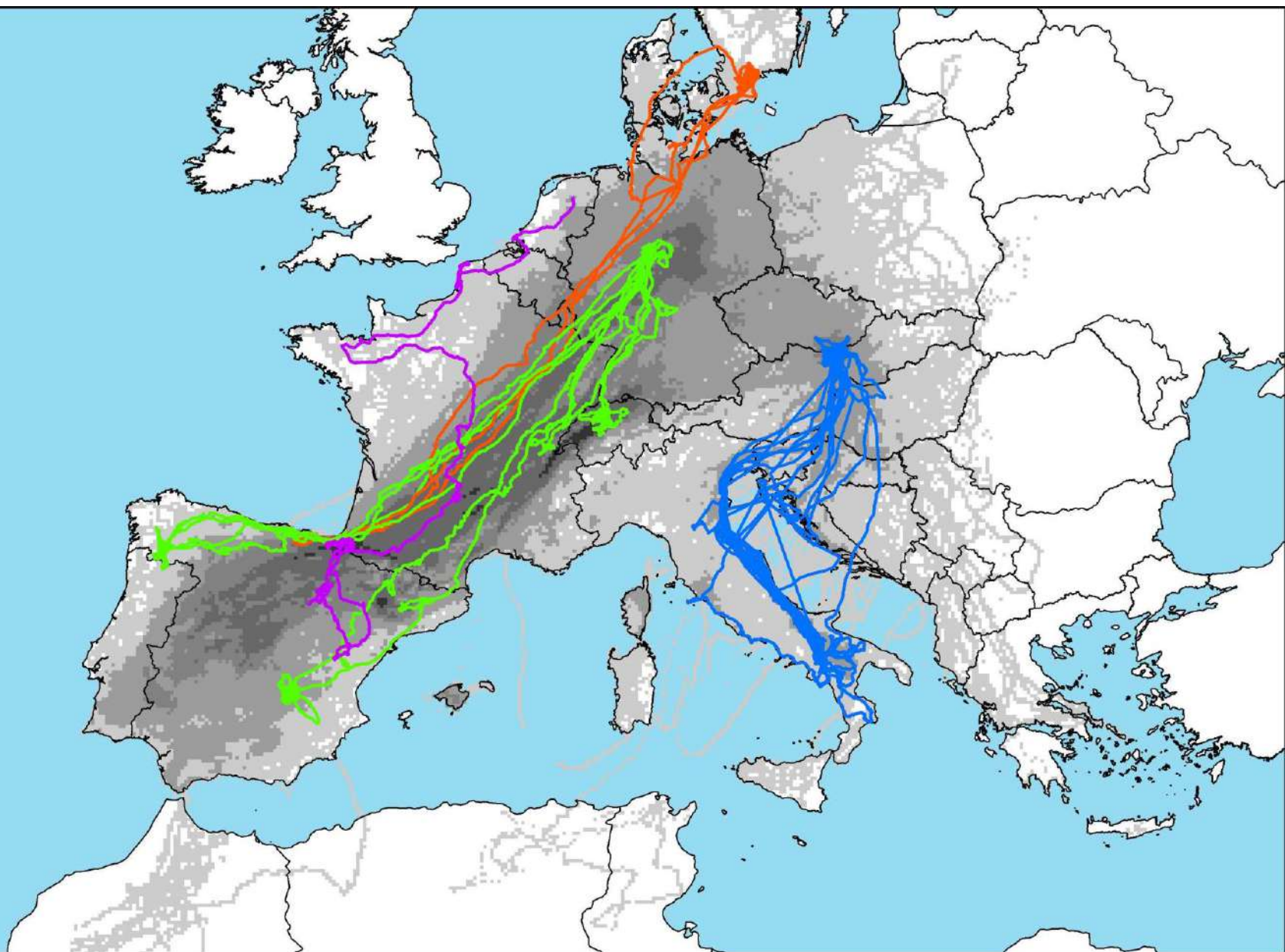
50 - 99 Red Kites (3,190 x)

100 - 249 Red Kites (2,630 x)

250 - 570 Red Kites (117 x)



0 200 400 600 800 1,000 km



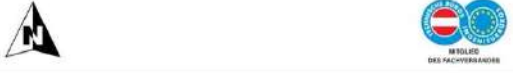
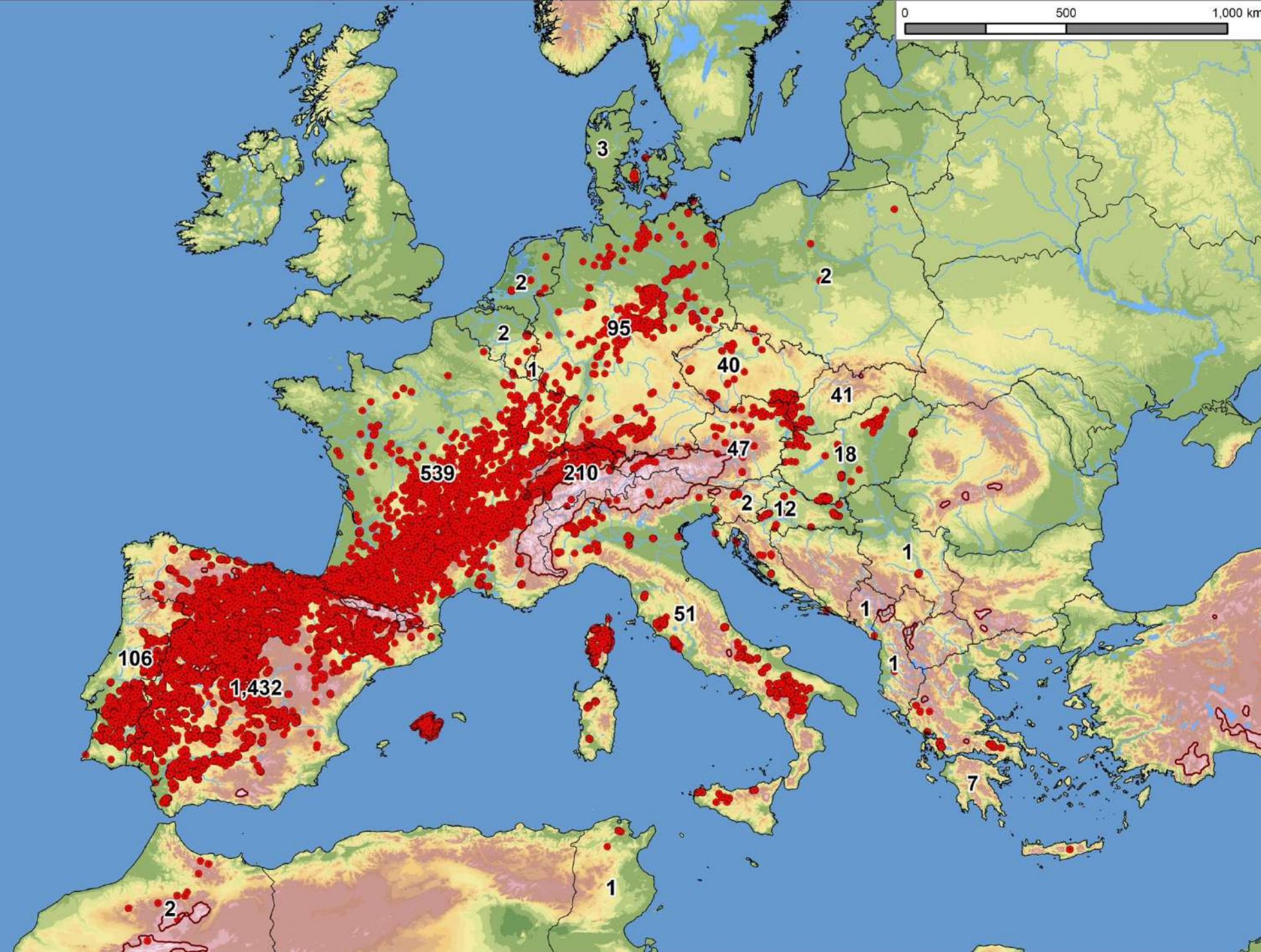
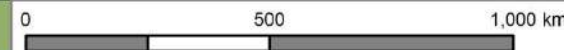
**Red Kite telemetry 2013 - 2024:
Roosting sites in January
(Status: 8/2024)**

Roosting sites of 2,019 tagged Red Kites

● Roosting site in January

□ altitude above 2,000 m

□ country border



Map preparation:
TB Raab GmbH

Background data:
Globe

TB Raab
Technisches Büro für Biologie

LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

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

Project partner

Co-funder

Cooperation partners who provide telemetry data

**Red Kite telemetry 2013 - 2024:
Roosting sites in July
(Status: 8/2024)**

Roosting sites of 2,627 tagged Red Kites

● Roosting site in July

□ altitude above 2,000 m

□ country border



Map preparation:
TB Raab GmbH



Background data:
Globe

LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

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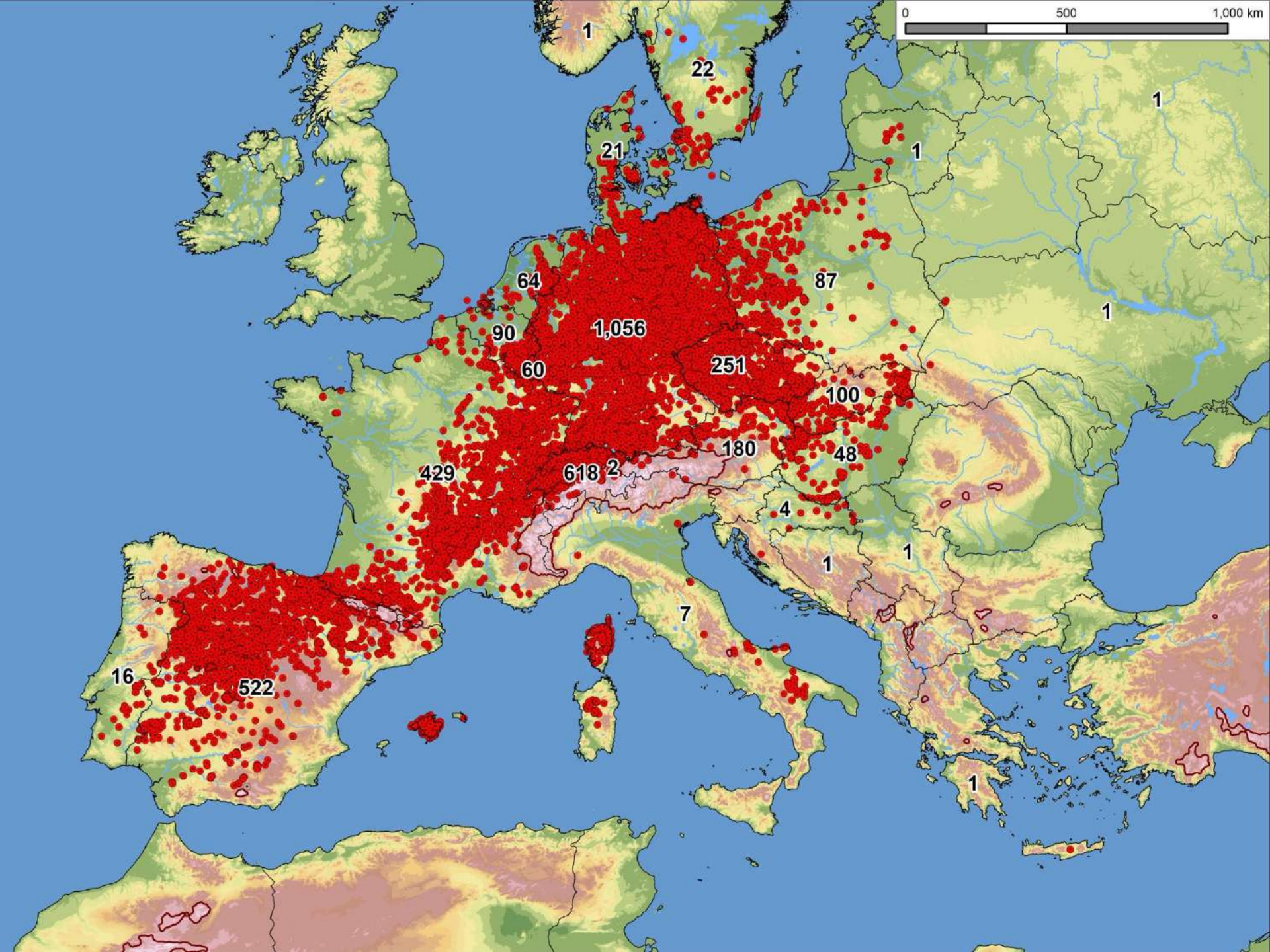
Project partner



Co-funder






Cooperation partners who provide telemetry data

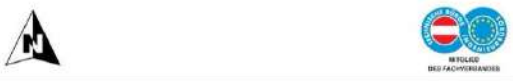


Red Kite telemetry 2013 - 2024: Finding of dead Red Kites (intermediate results until 31.08.2024)

Finding of 1,377 dead Red Kites
in whole Europe

 Finding of dead Red Kite

 altitude above 2,000 m
 country border



Map preparation:
TB Raab GmbH

Background data:
Globe



Technisches Büro für Biologie

LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

The preparation of this map is
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the European Union.



Project partner



eg-d



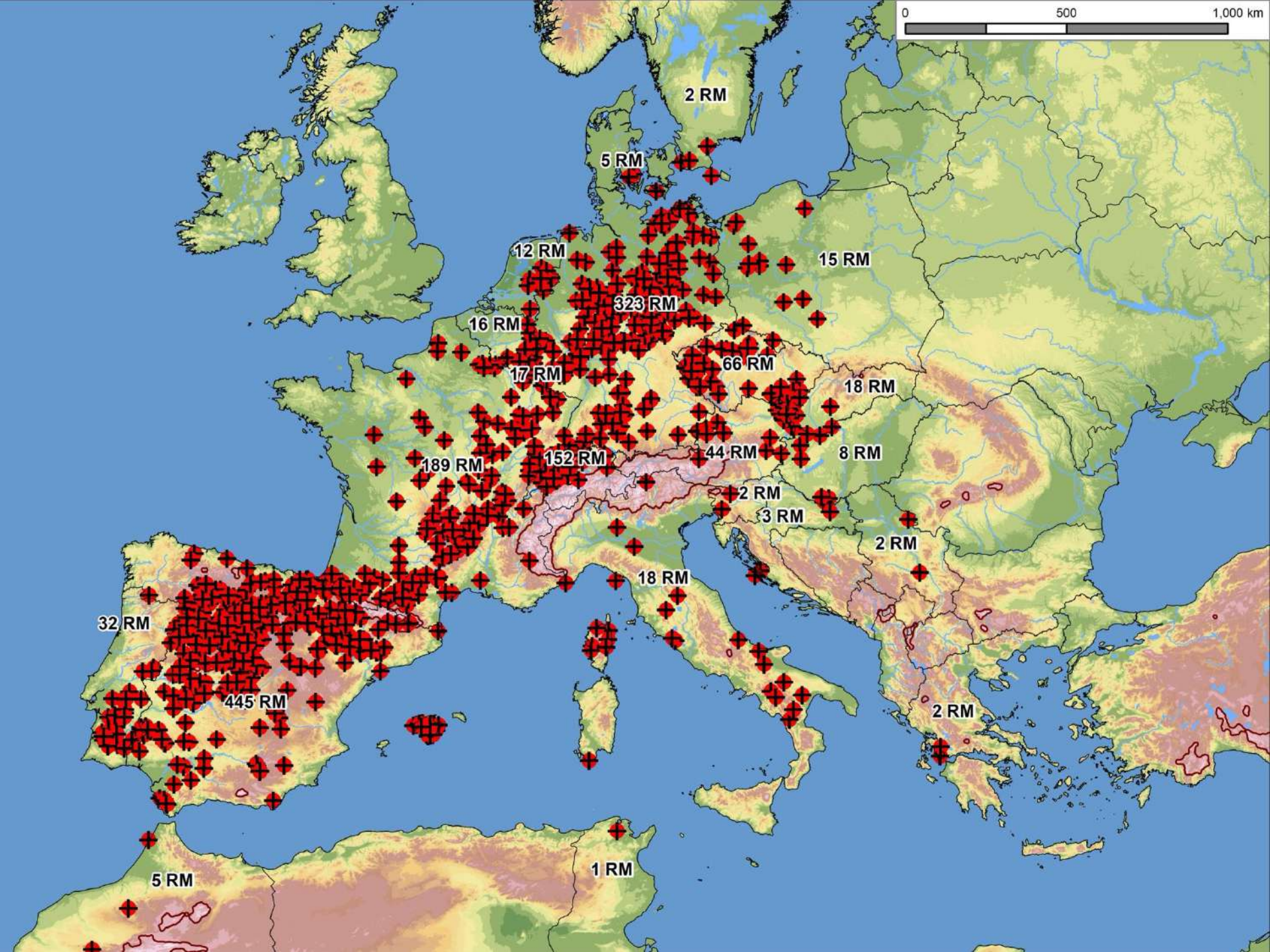
NO Netz



Co-funder



Cooperation partners who provide telemetry data

Red Kite telemetry 2013 - 2024: Cause of death poisoning (intermediate results until 31.08.2024)

Poisoning of 195 Red Kites in whole Europe

- ◆ Poisoning sure (119 x)
- + Poisoning probable (48 x)
- + Poisoning possible (28 x)

altitude above 2,000 m
 country border



Map preparation:
TB Raab GmbH

Background data:
Globe

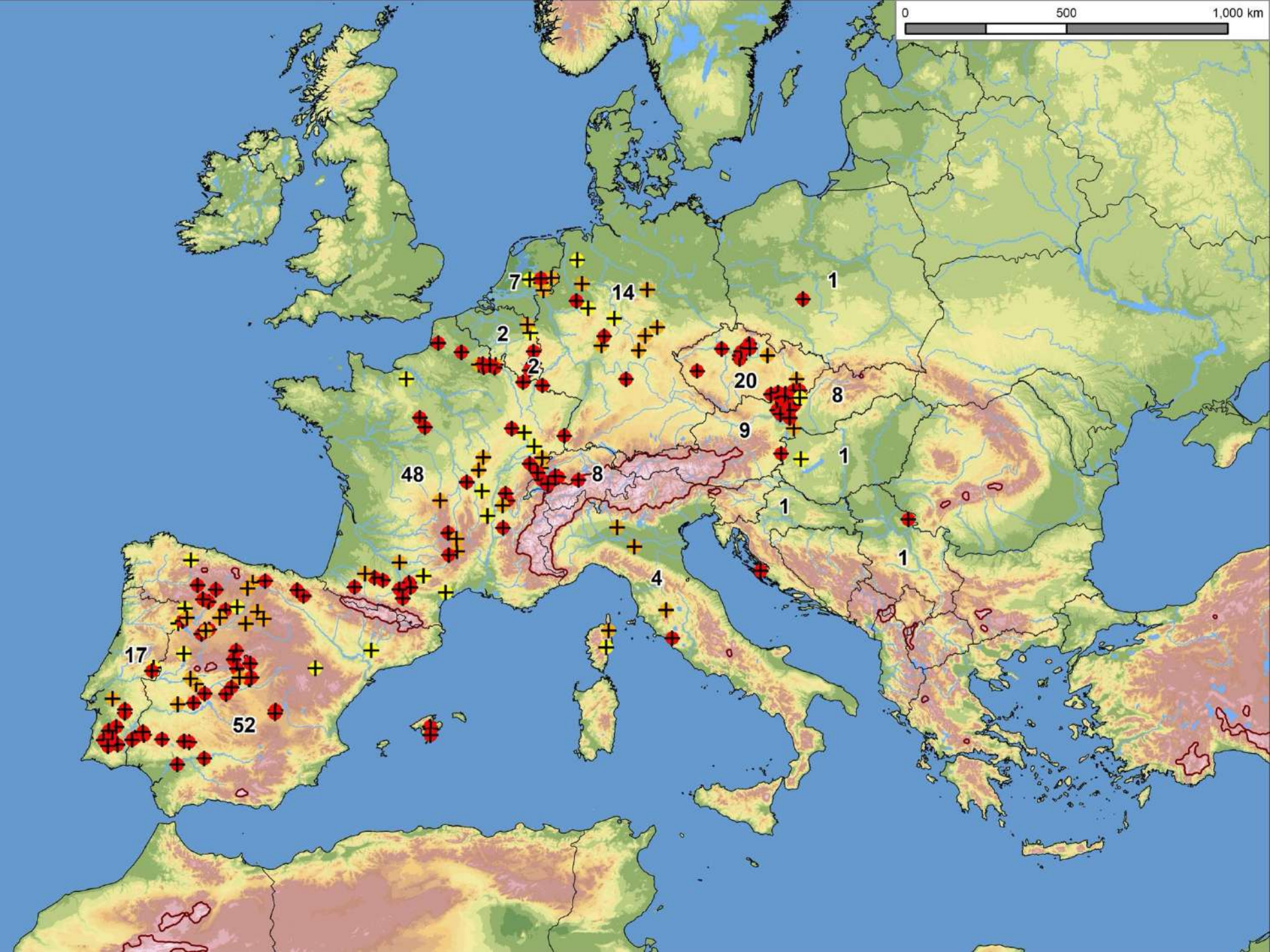
LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

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

Project partner

Co-funder

Cooperation partners who provide telemetry data



**Red Kite telemetry 2013 - 2024:
Cause of death shot
(intermediate results until 31.08.2024)**

**Shots of 54 Red Kites
in whole Europe**

- ◆ Shot sure (21 x)
- ⊕ Shot probable (17 x)
- ⊕ Shot possible (16 x)

- ▭ altitude above 2,000 m
- ▭ country border



Map preparation:
TB Raab GmbH

Background data:
Globe

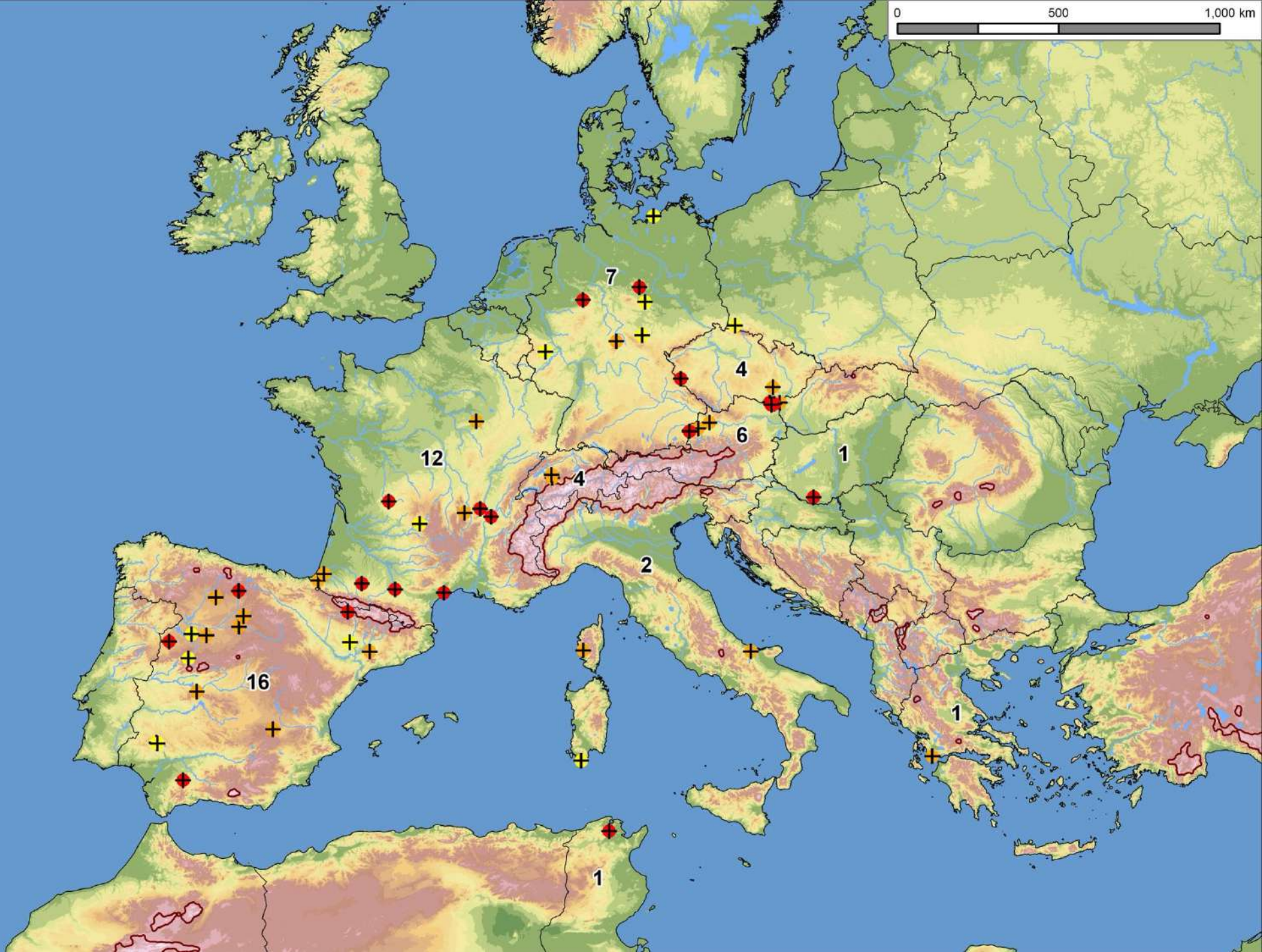
LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

The preparation of this map is
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Project partner

Co-funder

Cooperation partners who provide telemetry data



Red Kite telemetry 2013 - 2024: Cause of death power line - electrocution (intermediate results until 31.08.2024)

Power Line - Electrocution of 61 Red Kites in whole Europe

- ◆ Electrocution sure (35 x)
- ⊕ Electrocution probable (14 x)
- ⊕ Electrocution possible (12 x)

- ▭ altitude above 2,000 m
- ▭ country borders



Map preparation:
TB Raab GmbH



Background data:
Globe

LIFE Nature Project "LIFE EUROKITE"
(LIFE18 NAT/AT/000048)

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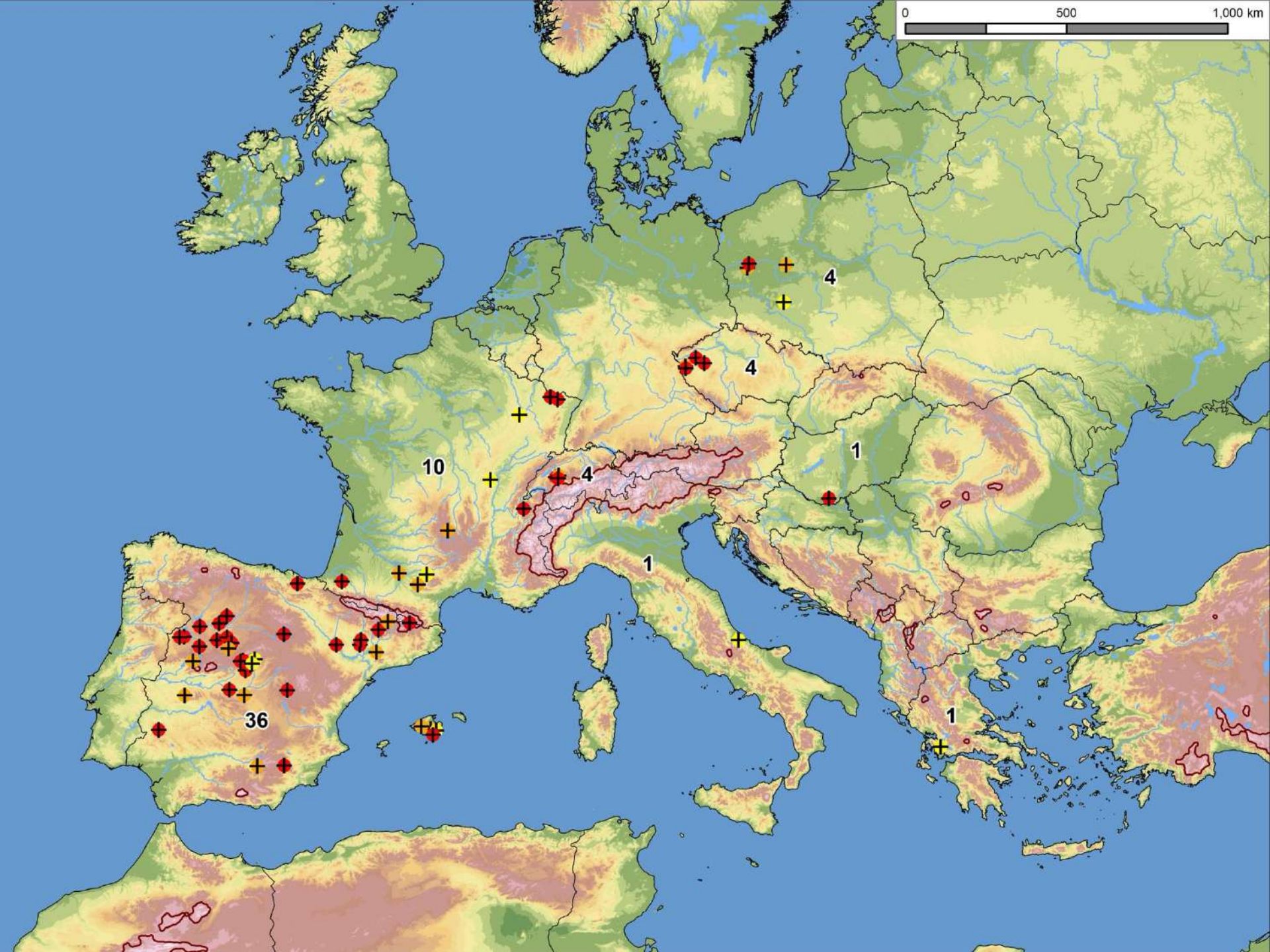
Project partner



Co-funder



Cooperation partners who provide telemetry data



**Red Kite telemetry 2013 - 2024:
Cause of death power line - collision
(intermediate results until 31.08.2024)**

**Power Line - Collision of 25 Red Kites
in whole Europe**

- ◆ Collision sure (8 x)
- + Collision probable (9 x)
- + Collision possible (8 x)

- altitude above 2,000 m
- country border



Map preparation:
TB Raab GmbH

Background data:
Globe

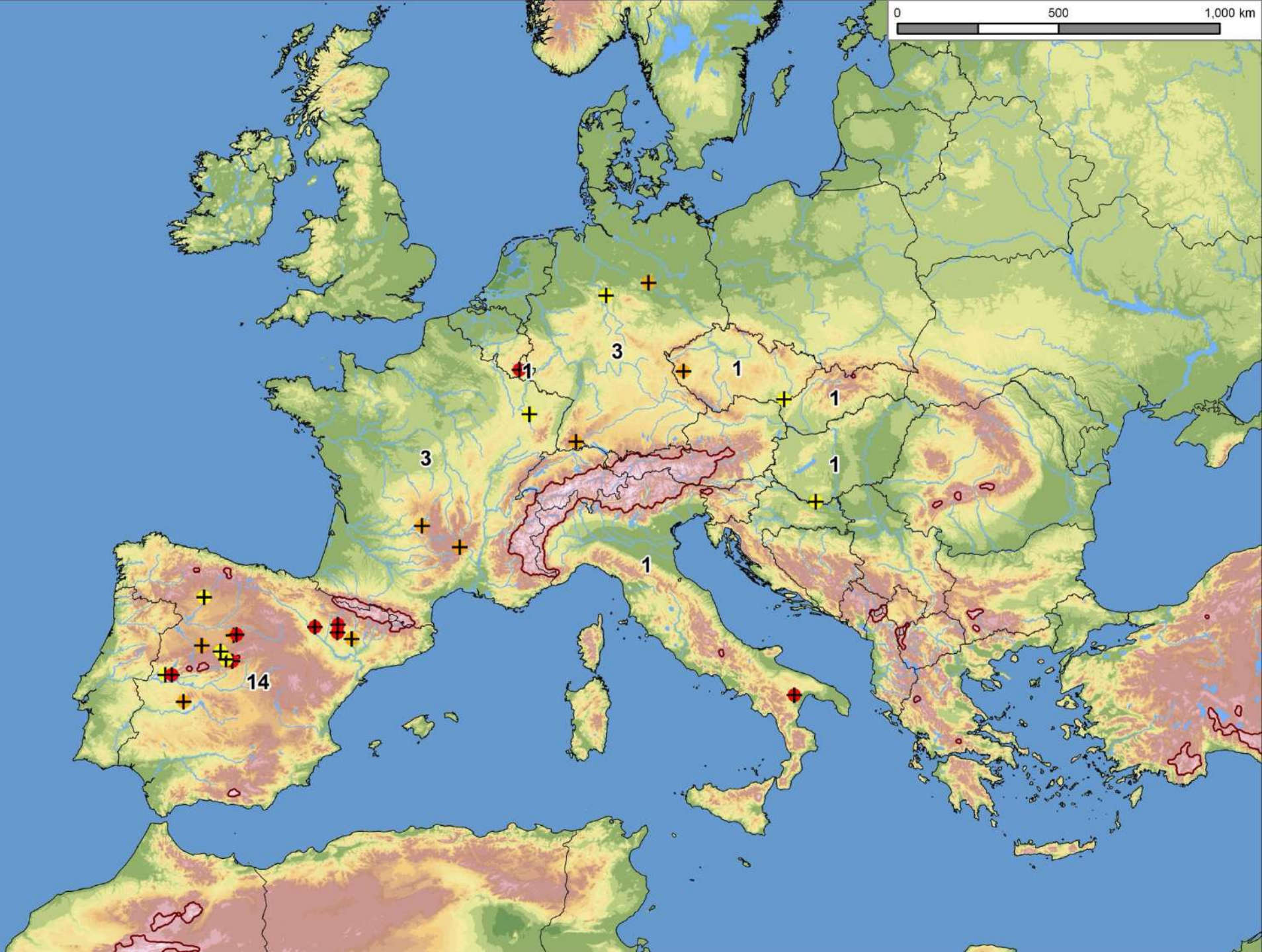
LIFE Nature Project "LIFE EUKOKITE"
(LIFE18 NAT/AT/000048)

The preparation of this map is
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Project partner

Co-funder

Cooperation partners who provide telemetry data



A Red Kite is shown in flight, soaring from the left side of the frame towards the right. The bird's wings are fully extended, revealing the intricate patterns of its feathers. The upper wings are dark, while the lower wings and tail are a lighter, reddish-brown color. The bird's head is turned slightly to the right, showing its sharp beak and keen eyes. The background is a clear, bright blue sky, which provides a stark contrast to the bird's colors. The overall composition is dynamic and emphasizes the bird's powerful flight.

**THE MOST IMPORTANT CAUSES OF
MORTALITY OF RED KITES
IN EUROPE**



THE MOST IMPORTANT CAUSES OF DESTRUCTION OF RED KITES IN EUROPE

- **Illegal activities**
 - Illegal activities are more frequent compared to mortality caused by infrastructure (road and rail traffic, power lines and wind turbines) for Red Kites in Europe.
 - Poisoning and shooting are the main anthropogenic mortality reasons for Red Kites in Europe.
- **Collisions and electrocution**
 - Collisions in road and rail traffic
 - Electrocution
 - Collisions with wind turbines and power lines
- **Habitat loss**
- **Fragmentation of habitat**

A Common Buzzard is shown in flight, its wings fully extended. The bird has a grey head, a yellow beak, and brown and white patterned wings and tail. The background is a clear, bright blue sky.

**WHAT TO DO TO ACHIEVE
A BETTER PROTECTION FOR RAPTORS
IN WHOLE EUROPE?**



INVESTIGATION

Final Conviction in the case of the shot White-tailed eagle of the LIFE EUROKITE project in Germany

- Fine of 1,800 euros (90 daily rates of 20 euros each)
- A clear sign against wildlife crime, even if the total amount of fine imposed is disproportionate to the damage done to nature
- **The first time in Germany that a perpetrator was identified with the help of telemetry data and finally convicted**



INVESTIGATION

Steps forward in the case of a poisoned red kite of the LIFE EUROKITE project in Spain

- A person was arrested for interrogation
- Excellent cooperation with SEPRONA of the Civil Guard, as well as Agents of the Natural Environment of the Regional Government of Extremadura, veterinarians of the AMUS wildlife hospital and the Toxicology Laboratory of the Faculty of Veterinary Medicine of the University of Extremadura
- **The use of new technologies, such as GPS tagging of threatened and protected wild species, is an essential tool for the detection of crimes against wildlife**

PUBLIC RELATION WORK RAISING AWARENESS



RED KITE BOOK

Editor:

Austrian Power Grid AG, Wagramer Straße 19, IZD Tower,
A-1220 Vienna, www.apg.at

Authors:

Rainer Raab, Adrian Aebischer, Hannah Böing,
Franz Josef Kovacs & Sven Aberle

Design and print:

Gerin Druck GmbH

1. Edition 2022

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MONITORING OF THE POPULATION

Results of the "1st LIFE EUROKITE Winter Count of 267 selected regularly counted Red Kite roosting sites in whole Europe"
08.01.-10.01.2021
(extended to 02.01.-23.01.2021)

Impact monitoring of the LIFE EUROKITE Project



Cross-border protection of the Red Kite in Europe by reducing human-caused mortality
Organised by the LIFE EUROKITE Project with the help of the partners
Reporting Date: 25.03.2021



Project: LIFE18 NAT/AT/000048 – LIFE EUROKITE

Results of the "2nd LIFE EUROKITE Winter Count of 267 selected regularly counted Red Kite roosting sites in whole Europe"
07.01.-09.01.2022
(extended to 04.01.-23.01.2022)

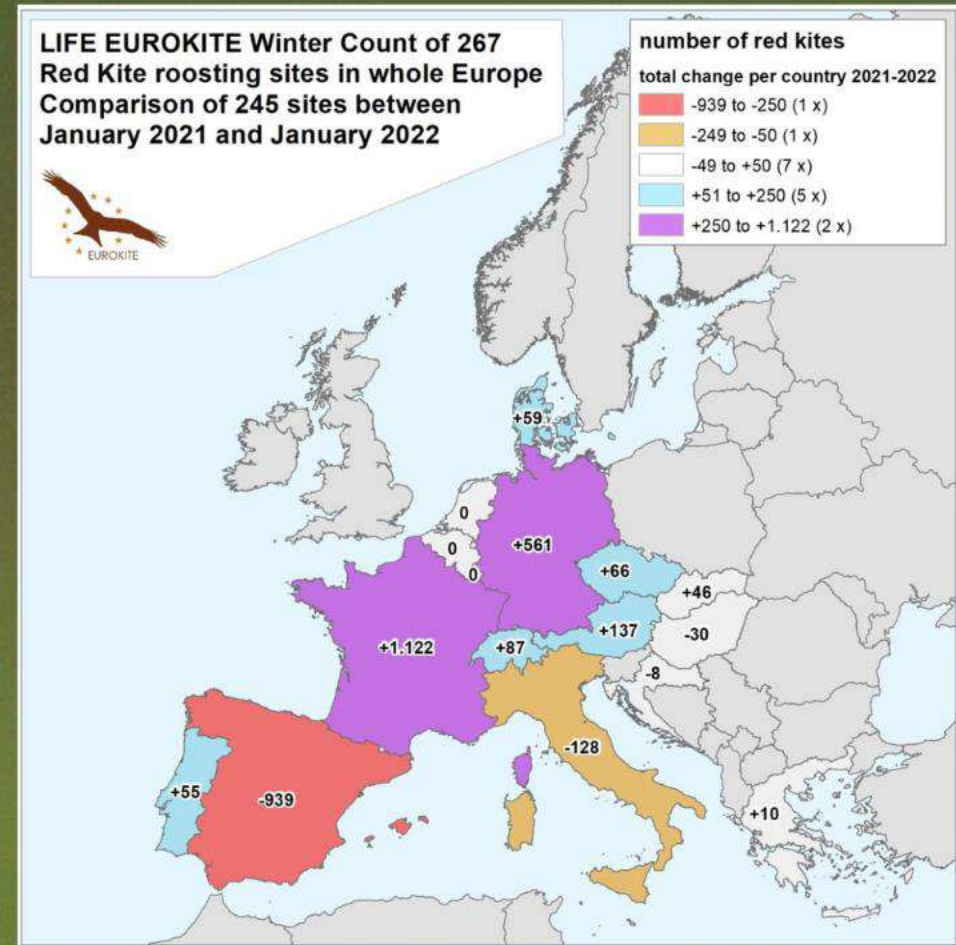
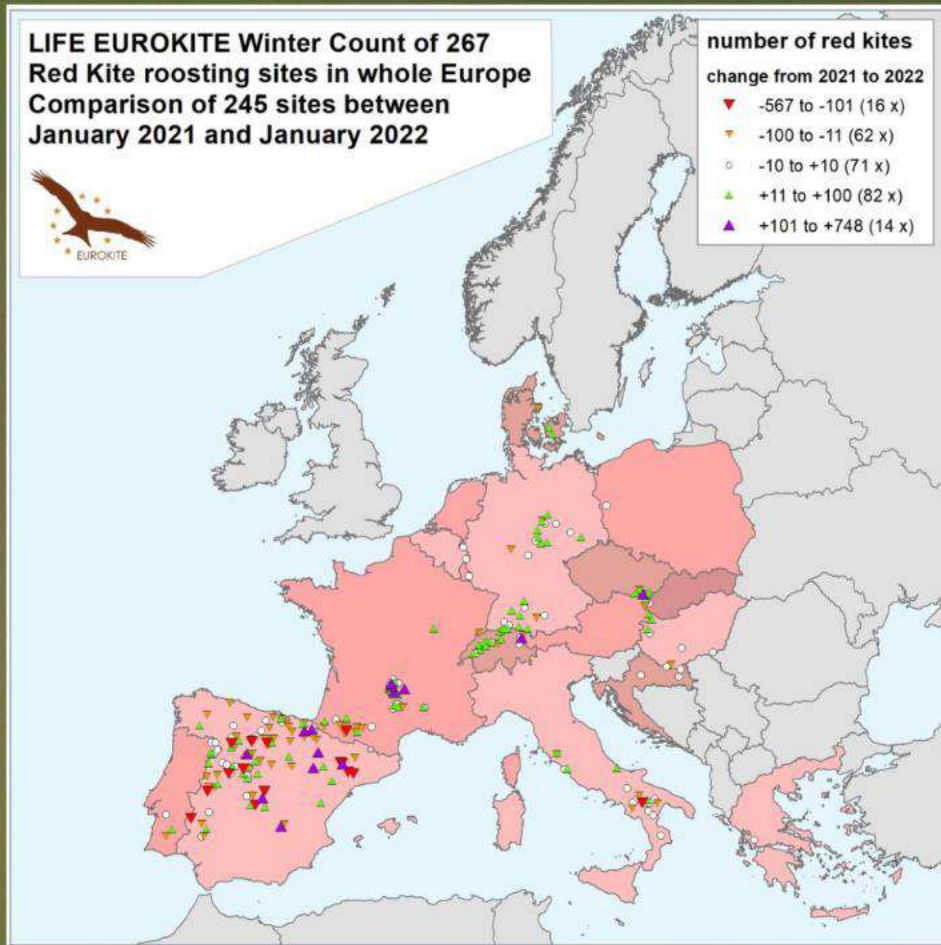
Impact monitoring of the LIFE EUROKITE Project



Cross-border protection of the Red Kite in Europe by reducing human-caused mortality
Organised by the LIFE EUROKITE Project with the help of the partners
Reporting Date: October 2022



Project: LIFE18 NAT/AT/000048 – LIFE EUROKITE



Data from 245 roosts, which were monitored in both years (2021 & 2022) were checked.

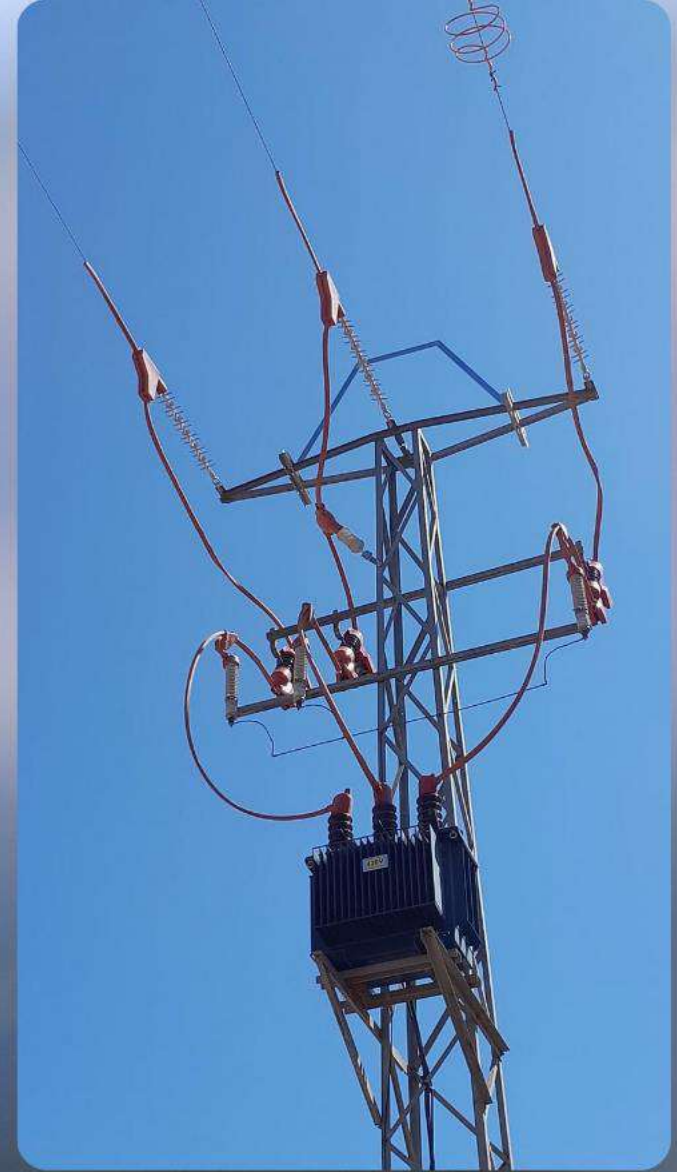
Number of red kites 2021 (max.): **21.848**

Number of red kites 2022 (max.): **22.886**

Change per country for 245 roosts 2021 & 2022

Total change: +1,038 red kites

MODIFICATION OF ELECTRICITY PYLONS



CAMPAIGN AGAINST CRIMINAL POISONING OF EUROPEAN WILDLIFE (CPEW)

Goal: Raising awareness on the Criminal use of poison to kill wildlife in Europe

Target group: General Public (adults)

Start: End of October 2024

WINGSPAN 2024 (ONGOING)

Nature-positive energy transition

2024 Theme: Partnerships for a Bird-friendly energy transition

15. – 17. October 2024, Brussels



POISONING IS THE DIFFERENCE.

THESE CRIMES MUST STOP.
SIGN OUR PETITION NOW.



Management and Marketing



Mag. Dr. Rainer Raab
Chief Executive Officer (CEO)



Mgr. Slávka Urbanová
Marketing

Team Administration and Finance



Blanka Raab
Team leader



Nicole Ludwig
Administration assistant and sales



Dragana Nikic
Administration assistant and sales

Team LIFE projects and Environmental Impact Assessments (EIA)



Hannah Böing, MSc
Team leader



Mia Bausch, BSc
Assistant for LIFE projects



DI Jochen Steindl
Deputy team leader and Ecs



Andrea Richter, MSc
EIA and flora mapping



Tom Nilles, MSc
EIA and fauna mapping

Team Fauna mapping, tagging and videomonitoring



Thomas Gaida
Management assistant and Coordinator



DI Péter Spakovszky
Fauna mapping and Europe-wide tagging



Ján Svetlík, MSc
Fauna mapping



Előd György, MSc
Fauna mapping and Europe-wide tagging



Eva Pejchalová
Data preparation video monitoring



Brigitte Reiter
Data preparation and video monitoring



Simon Patschka
Fauna mapping

Team conservation projects, Environmental Impact Assessments (EIA) and Ecological construction supervision (Ecs)



DI Patrick Hacker, MSc
Conservation projects, flora and fauna mapping and Ecs



DI Manuel Wojta
EIA, fauna mapping and telemetry data coordinator



Elmar Pfaffel, BA
EIA and fauna mapping



Rainhard Raab, BSc
Deputy Chief Executive Officer



Mag. Katharina Raab
Team leader



Eike Julius, MSc, MSc
Database management



Mgr. Jan Škrábal
Ecologist, modeling and scientific studies



Kurt Gruber, MSc
Data analyst



Mag. Soňa Svetlíková, PhD.
Ecologist and scientific studies



Adam Šupčík, MSc
Data preparation and GIS analyst



Mgr. Ladislav Nado, PhD.
Scientific modeling

Team IT, software engineering and databases



DI Dr. Maximilian Raab, MSc
Chief Operating Officer (COO)



DI Dr. Philipp Winkler, MSc
Chief Operating Officer (COO)



Luisa Scholze, MSc
Lead telemetry data coordinator

Project administration and animal welfare



DI Andreas Gärtner
Project administrator LIFE EUROKITE



Mag. med. vet. Verena Strauß
Animal welfare officer

Coordinating Beneficiary



The TB Raab was commissioned to implement the LIFE EUROKITE project after a pan-European public tender.



Project partner (Associated Beneficiary)



Co-financier



This project is co-financed by the LIFE Nature Programme of the European Union



Cooperation partner



Additional cooperation partners for specific research questions in the field of renewable energy



This project is co-financed by the LIFE Nature Programme of the European Union





MORE INFORMATION



CONTACT & FOLLOW US



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TB Raab GmbH



TB Raab Ltd.



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Presentations

Case studies of successful multi-stakeholder collaborations



Manon Quetstroey

Manager– Energy & Nature

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Dr. Rainer Raab

CEO

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Olivia Geels

Environment Expert

Elia



Jean-Yves Paquet

Director – Department of Studies

Natagora



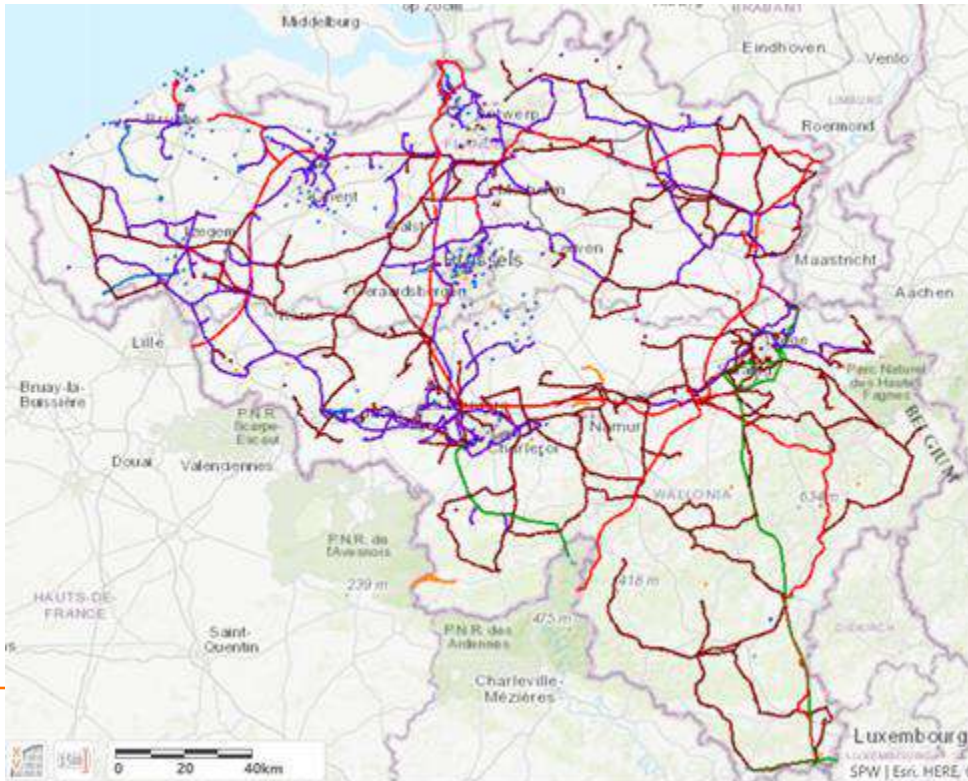


How a successful collaboration can help to reduce bird mortality

Olivia Geels, Elia | Jean-Yves Paquet, Natagora

Who is Elia ?

- Elia is the Belgian TSO. We are part of Elia Group
- Our network counts around 6.000 km of overhead lines (+3.000 km of cables) and 800 substations
- The voltage levels range from 30 kV to 380 kV



How do we collaborate with NGO's ?

- The “Oudenaarde” case : 65 dead/injured birds in less than 2 months
- In 2012 : First risk map was published



RESEARCH INSTITUTE
NATURE AND FOREST

- In 2015 : Risk map was complemented by field observations
- In 2020 : New version of the risk map by Natagora & Natuurpunt



Placement of bird markers is Elia Group's ambition

- ✓ Between 170.000 and 500.000 birds killed each year in Belgium because of collisions with OHL (=between 30 and 90 victims/km/yr)
- ✓ Objective both for Elia and 50 Hz to install bird markers on most dangerous lines
- ✓ Public commitment, announced to our external stakeholders in 2021
- ✓ Progress followed in annual report and in discussions with investors



ACT NOW
FOR A SUSTAINABLE WORLD



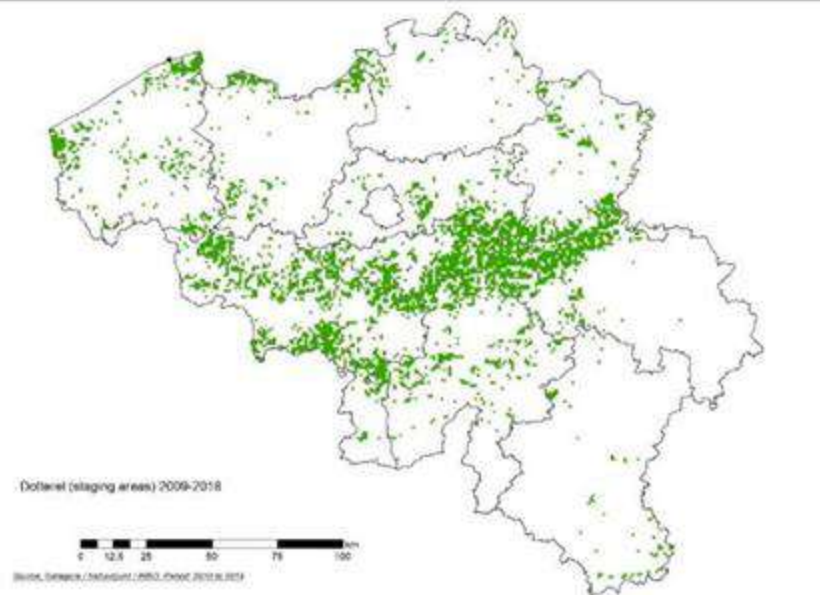
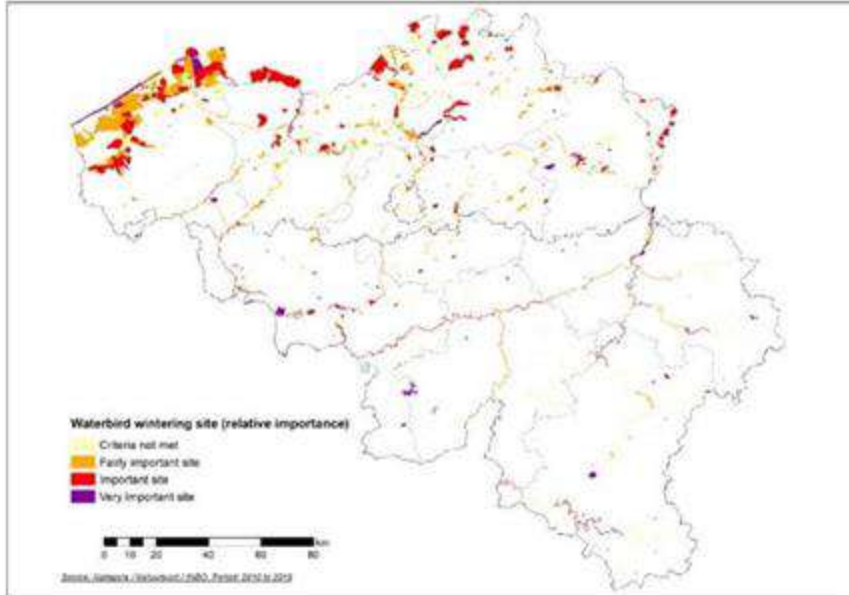
Who are Natagora and Natuurpunt ?

- Major NGO's for nature conservation in Belgium
- 1000's ornithologists in the field
- Long-term biodiversity monitoring schemes
- About 4 millions bird records every year

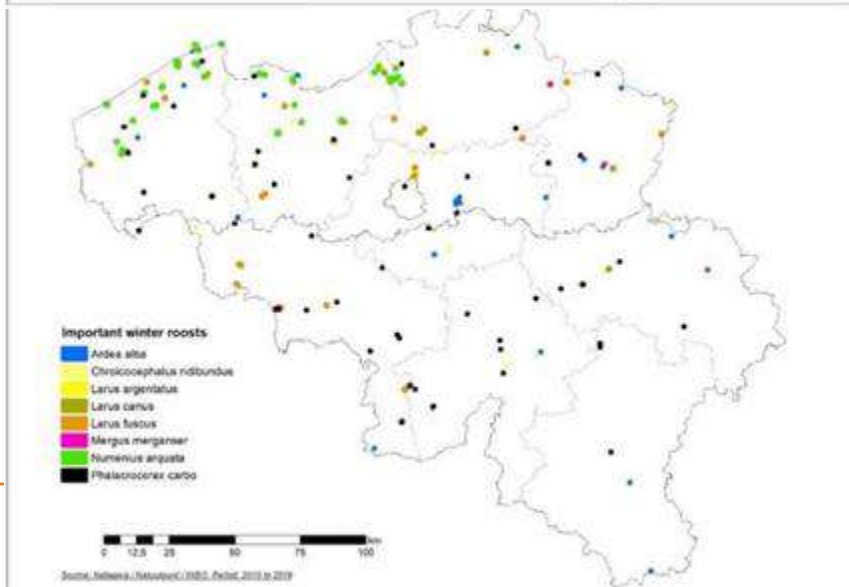


In 2012, publication of a first risk map for bird collision on powerlines

How was the risk map created ? (1/2)



© JS Rousseau-Piot



- Identification of the most susceptible bird species to collision
- Production of 17 layers of high-resolution spatial information on the sensitive species

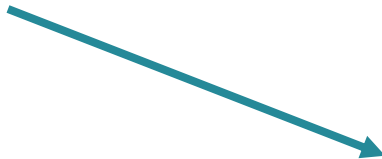


In 2012, publication of a first risk map for bird collision on powerlines



How was the risk map created ? (2/2)

The 17 layers were combined using an expert-based scoring system



Spatial layer considered (Table 1)	Distance buffer from the site				
	Inside the site	Less than 1 km	Between 1 and 3 km	Between 3 and 5 km	Over 5 km
Important waterbird site	If very important, 30; if important, 25; if fairly important, 20	14	9	4	0
Important roosts	If very important, 25; if important, 20	14	9	4	0
Important colonies	If very important, 25; if important, 20	14	9	4	0
(no buffer considered below)					
Rare-bird area	10 points for an area with one rare species, 20 for an area with two or three rare species, 25 for an area with four or five rare species, and 30 for an area with more than five species				
Migration corridor	8 points if inside, 12 if it is the coastal corridor				
Plover staging area	5 points for each of the three species, when presence cut-off is reached				
Widespread breeding bird	4 points for each species, when presence cut-off is reached				
Woodcock area	4 points if Woodcock presence cut-off is reached				
Geese foraging area	5 points in the areas of occurrence defined by the spatial models				

More information: Paquet et al. (2022) Nature Conservation 47: 215–233 doi: 10.3897/natureconservation.47.73710



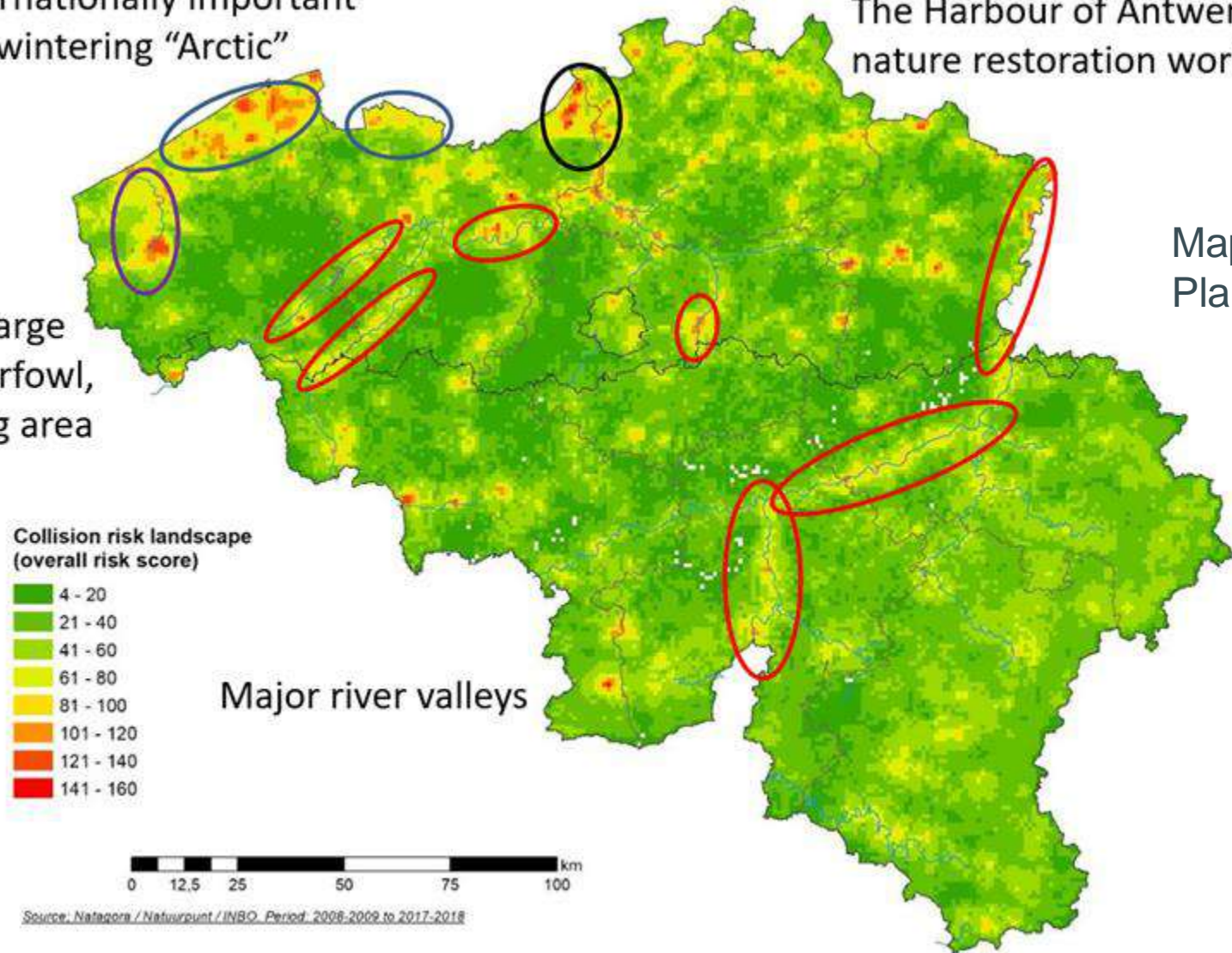
The resulting “landscape of collision risks” in Belgium

The Polders: internationally important numbers of overwintering “Arctic” Geese

The Harbour of Antwerp: nature restoration works

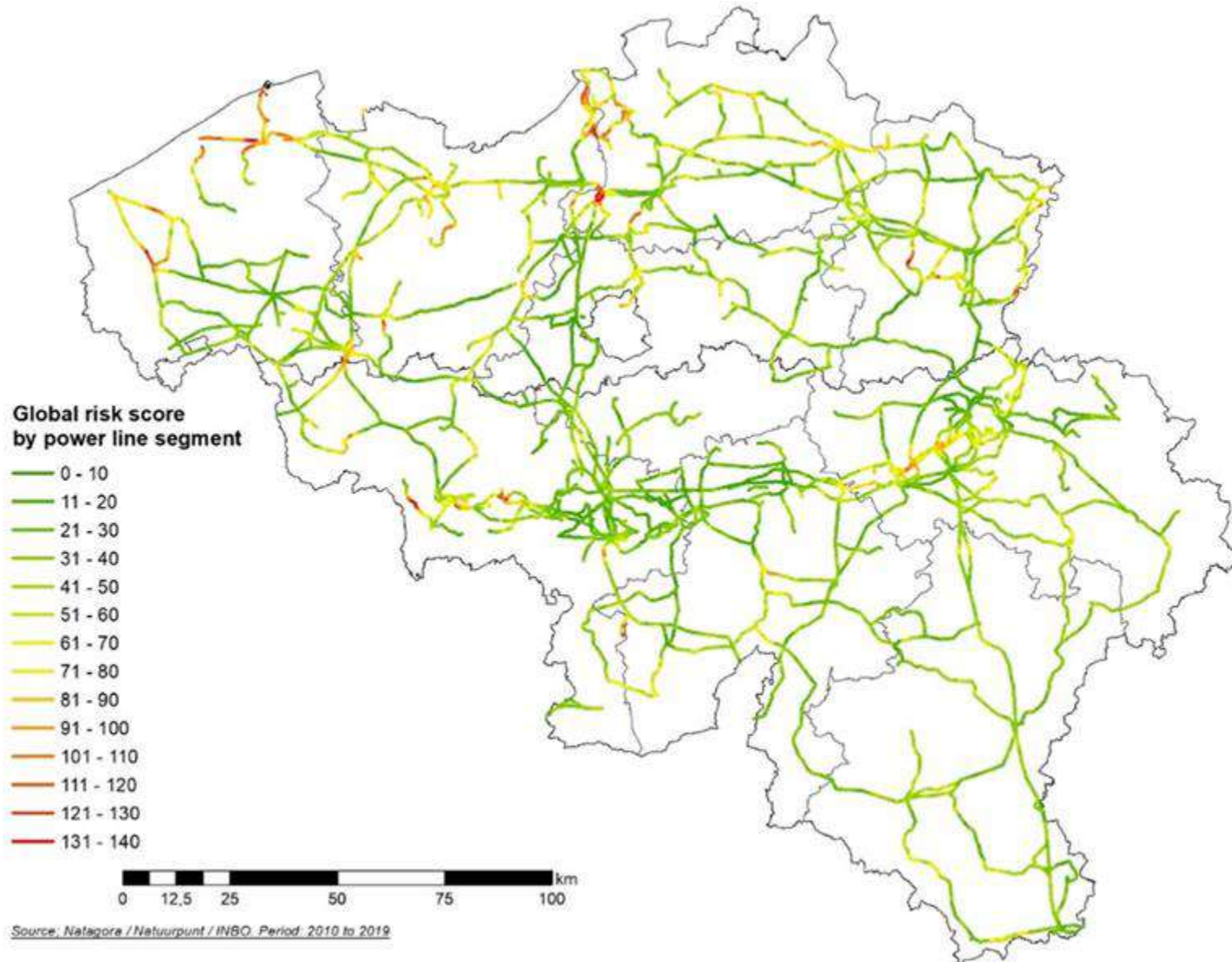
The Yser Valley: large numbers of waterfowl, important staging area

Map updated in 2020
Plan to update it every 6 years



Source: Natagora / Natuurpunt / INBO. Period: 2008-2009 to 2017-2018

When applied to the ELIA overhead network: the risk map

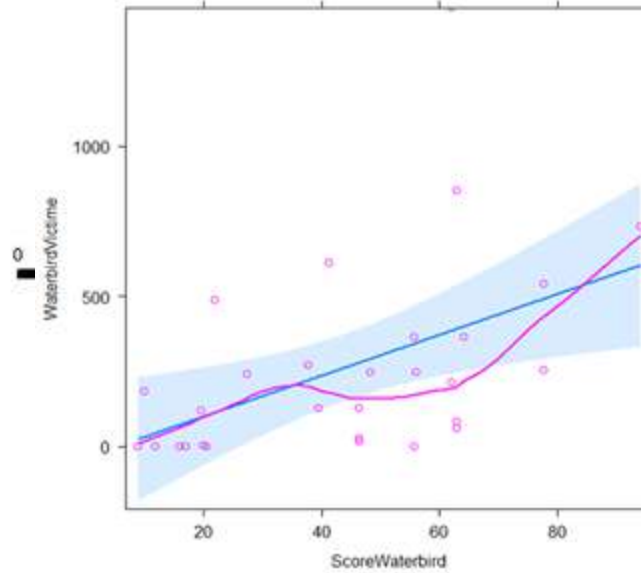
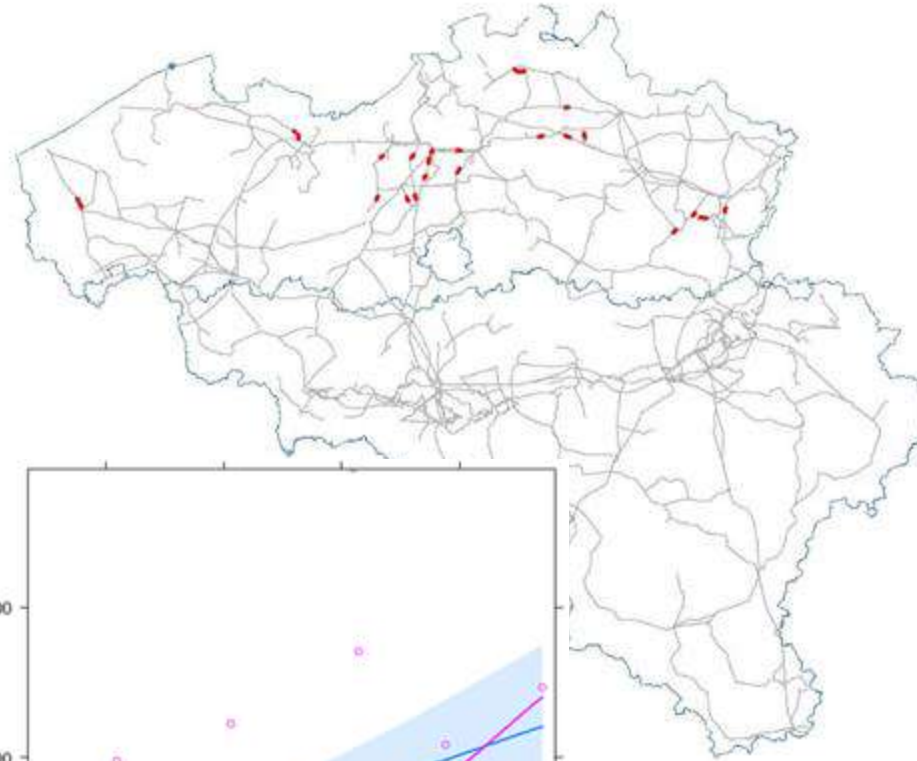


Identification of “hot spot of mortality”



Is this just theoretical ?

Carcass searches at 29 sites



Positive correlation ($p < 0.009$) between risk score and number of victims found



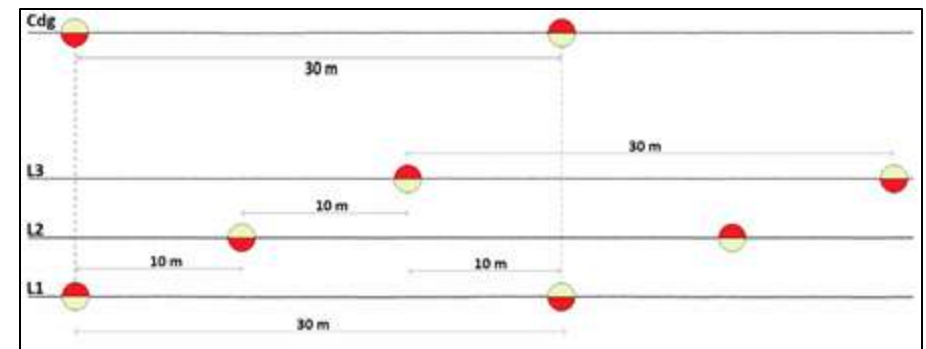
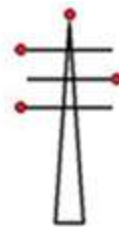
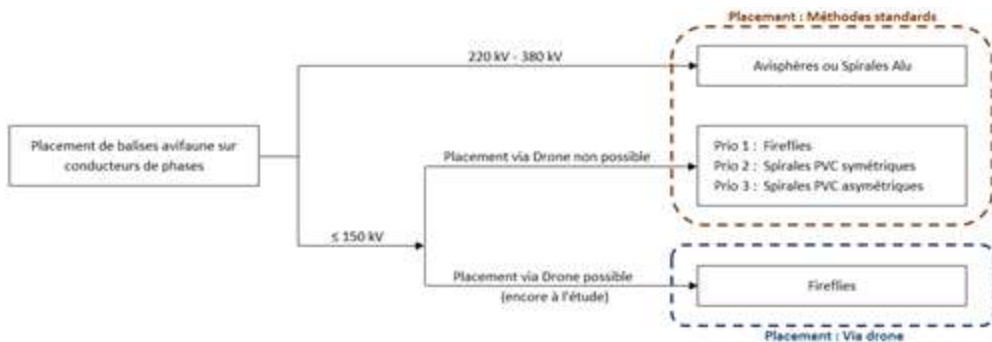
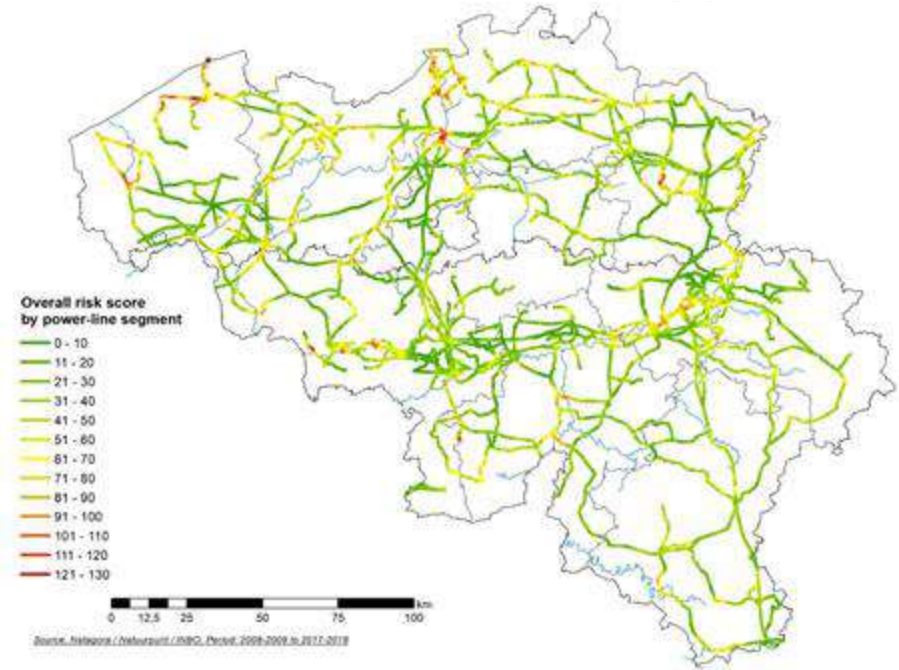
The risk map is part of Elia's internal policy

Elia places bird markers if risk score is above a certain value

- 25 % most dangerous spans : if project on this line
- 5% most dangerous spans : on existing lines

Input from Natagora and Natuurpunt during elaboration of policy

- Choice of markers (efficiency)
- Position on the lines



Wire marking really reduce bird collision on “hot spot of mortality”



Verbelen D, Bovens W, Dwyer JF, Swinnen K (2024)
 “Wire marking reduces bird collisions with a transmission powerline in western Belgium”
Bird Conservation International, **34**, e25, 1–10



Table 2. Waterbird and gull collisions decreased in 2021 after line marking

Group and year	Collisions counted	Birds counted in the area	Collision rate (ratio)	Collision rate (decimal)	Change in 2021 after line marking
Waterbirds*					
2001	12	35,400	1:2,950	0.000339	85% decrease
2018	42	100,600	1:2,395	0.000417	88% decrease
2021	3	57,875	1:19,292	0.000052	—
Gulls*					
2001	6	1,916	1:319	0.003132	100% decrease
2018	11	7,002	1:637	0.001571	100% decrease
2021	0	2,596	<1:2,596	0.000000	—

*Waterbirds considered were Common Coots and Eurasian Teals. Gulls considered were Black-headed Gulls, Common Gulls, and Herring Gulls because these species were prevalent in collision and abundance data.

A successful collaboration thanks to continuous exchanges

- Collaboration during the creation of Elia's internal policy on how to place the bird markers on overhead lines (2022)
- Partners in the SafeLines4Birds project (2023-2028)
- Training of Elia colleagues on the topic of bird markers (2024)
- New version of the risk map foreseen in 2025

But also :

- Various studies to monitor the efficiency of the bird markers
- Monthly reports from the casualties recorded in the database
- Advice on the new types of bird markers
- Continuous availability for questions on birds

... **To be continued !**



Key takeaways

- A good collaboration between TSO's and NGO's is essential to avoid a lot of bird casualties
- A good risk-atlas is a very useful tool to help to TSO's, both to plan new power lines and to decide which existing power lines have to be equipped first with bird-deterrent devices
- Recent datasets on the occurrence of birds are essential for sensitivity mapping & Volunteers are of key importance to collect such data
- If partners have a mutual trust in one another, they can work wonders



Thank you.





Presentations

Case studies of successful multi-stakeholder collaborations



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Renewables Grid Initiative



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CEO

TB Raab



Olivia Geels

Environment Expert

Elia



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Director – Department of Studies

Natagora



LIFE Great Bustard

Cross-border protection of the Great Bustard in Central Europe 2016 - 2024

Dr. Rainer Raab, CEO, TB Raab GmbH
WINGSPAN conference
Brussels
16.10.2024





Over the last 20 years, 6 LIFE projects have been/are being carried out in Austria, Slovakia and Hungary specifically for the Great Bustard (*Otis tarda*):

1. LIFE04 NAT/HU/000109; OTISHU-Conservation of *Otis tarda* in Hungary (2004-2008)

2. LIFE05 NAT/SK/000115; Conservation of *Otis tarda* in Slovakia (2005-2009)

3. LIFE05 NAT/A/000077, Cross-border Protection of the Great Bustard in Austria (2005-2010)

4. LIFE09 NAT/AT/000255, Cross-border Protection of the Great Bustard in Austria - continuation (2010-2015)

5. LIFE15 NAT/AT/000834, LIFE Great Bustard - Cross-border protection of the Great Bustard in Central Europe (2016-2024)

6. LIFE20 NAT/SK/001077, LIFE STEPPE on border (2022-2027)

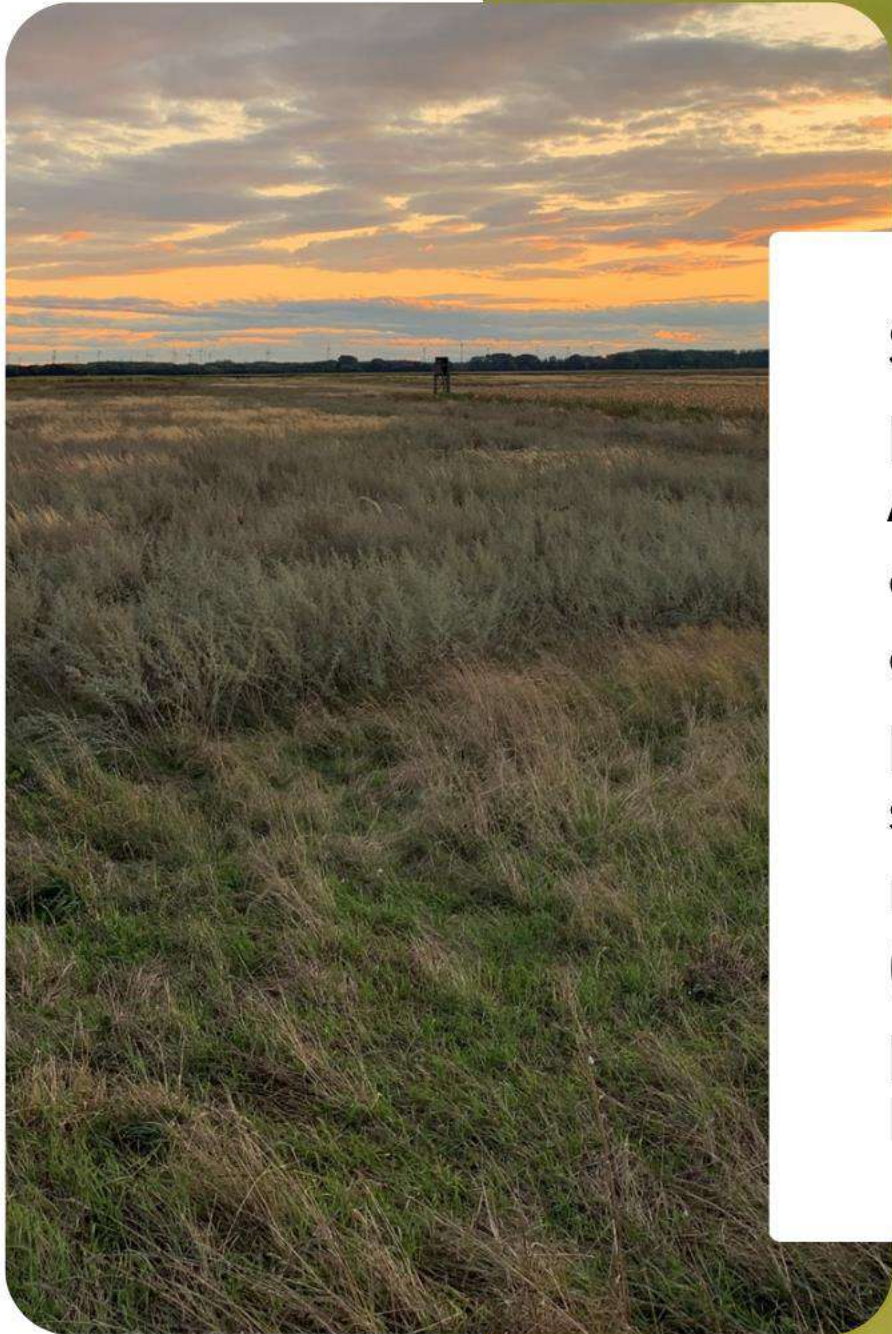
7. Application sent in September 2024 'LIFE EUROBUSTARD' (planned for 2025-2033)

Main project objectives

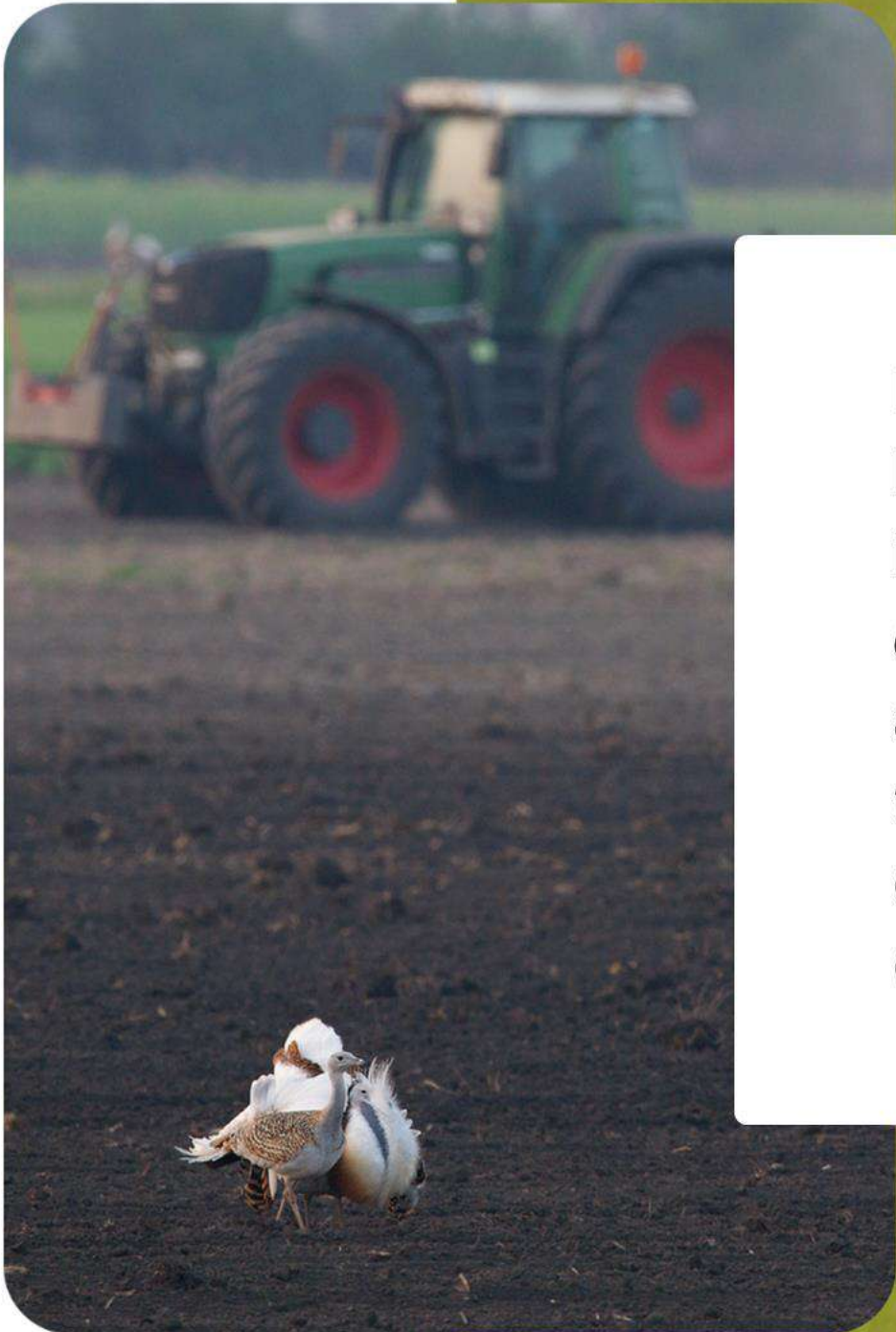
AT and HU have been very active in Great Bustard conservation for several years. Both EU countries are implementing together a huge cross-border protection project for Great Bustards in central Europe.

The objectives are to continue intensive habitat management efforts, to reduce the threat of collision with power lines and to reduce predation.





Several thousand hectares of bustard protection areas are financed by the Austria's programme for the promotion of an agricultural system that is environmentally sound, extensive and protective of natural habitats, supports the environmentally benign management of agricultural areas (ÖPUL) and the Hungarian funding programme "System of the Areas of High Natural Value (HNVA)".



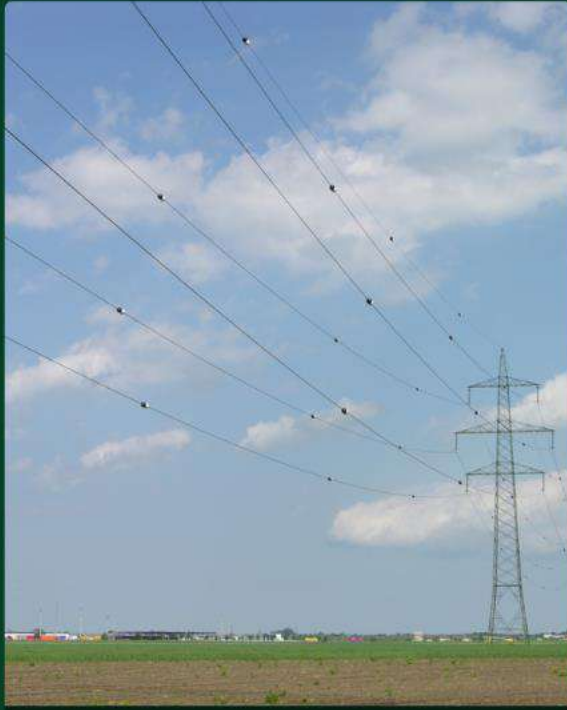
Farmers and hunters were helping ***to keep disturbance as low as possible*** and were also ***involved in the successful monitoring*** of the Great Bustard conservation actions.

Within the cross-border protection of the Great Bustard in Austria, more than 700 people (550 farmers and more than 100 hunters) are involved in Great Bustard conservation projects.

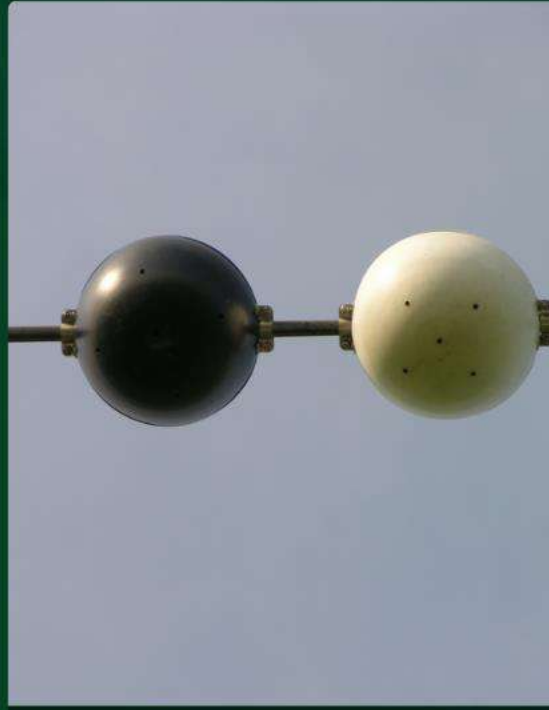


Reduction of the risk of collision with power lines

Marking of power lines and underground cabling are the most effective measures to protect the Great Bustards.



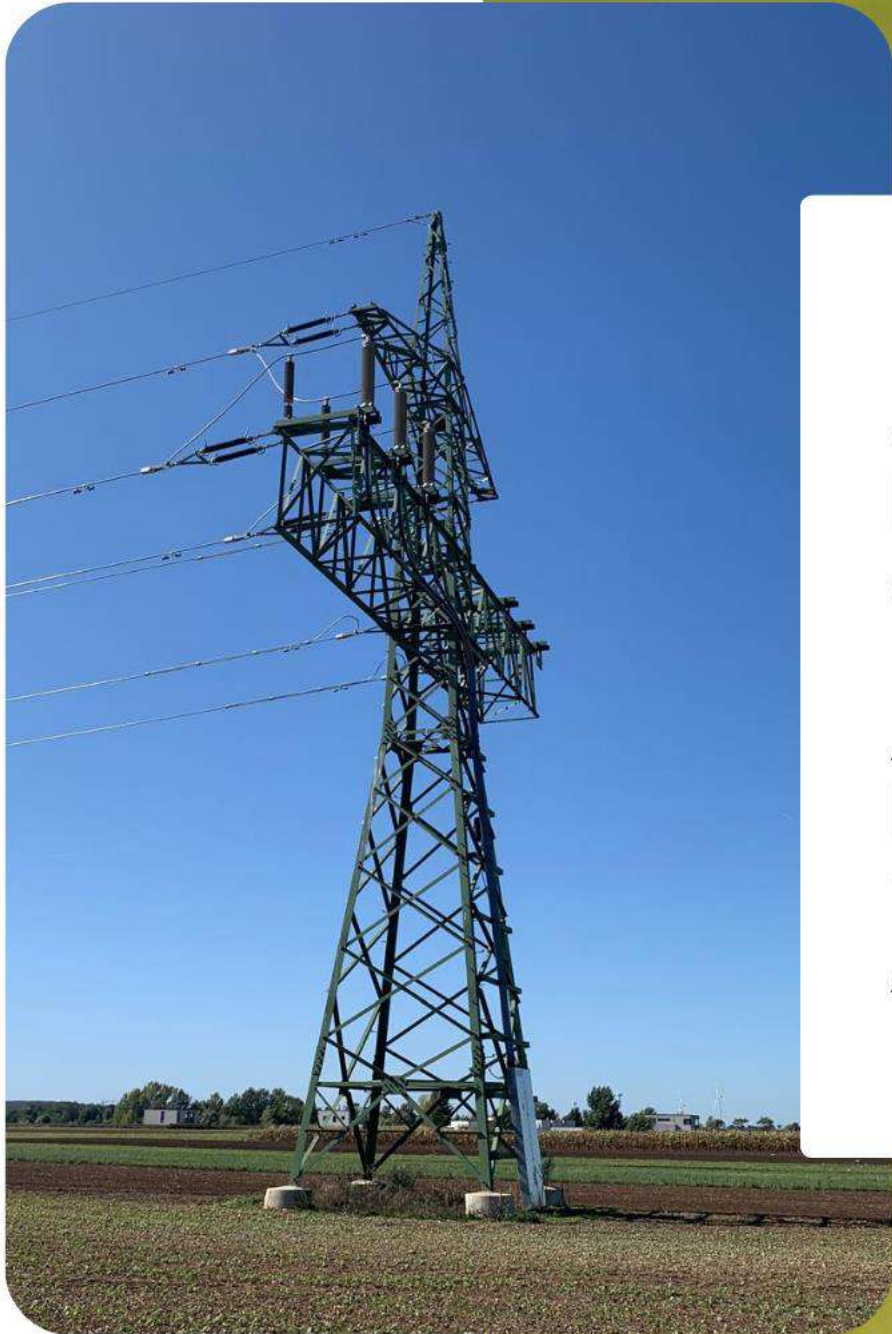
Marked high voltage power lines in Austria



Bird warning balls



Underground cabling of power lines in Austria



In the last 20 years, no new overhead power lines have been built in the Austrian Great Bustard areas.

Additionally, a new 110 kV power line has been buried underground in the Bustard area in Burgenland, Austria.

Measures against collision with power lines - before

Distribution of Great Bustard in the Project-Sub-Area "Parndorfer Platte - Heideboden" and measures against collisions with power lines

in the period 1/8/2002 to 1/12/2006
(Individuals)

- 1
- 2 - 5
- 6 - 25
- 26 - 75
- 76 - 198

— 20 kV power line, which was removed in the course of the LIFE Project between 2005 and 2010, the LIFE+ Project between 2010 and 2015, the LIFE Project "Great Bustard" between 2016 and 2023 and the LIFE EUROKITE project in 2024 (51.0 km, including additional removals)

— 110, 220 or 380 kV power line, which was marked between 2006 and 2009 (57.8 km)

— existing high and medium voltage power line and railway overhead line

— national border



1:125,000



Map preparation:
TB Raab GmbH

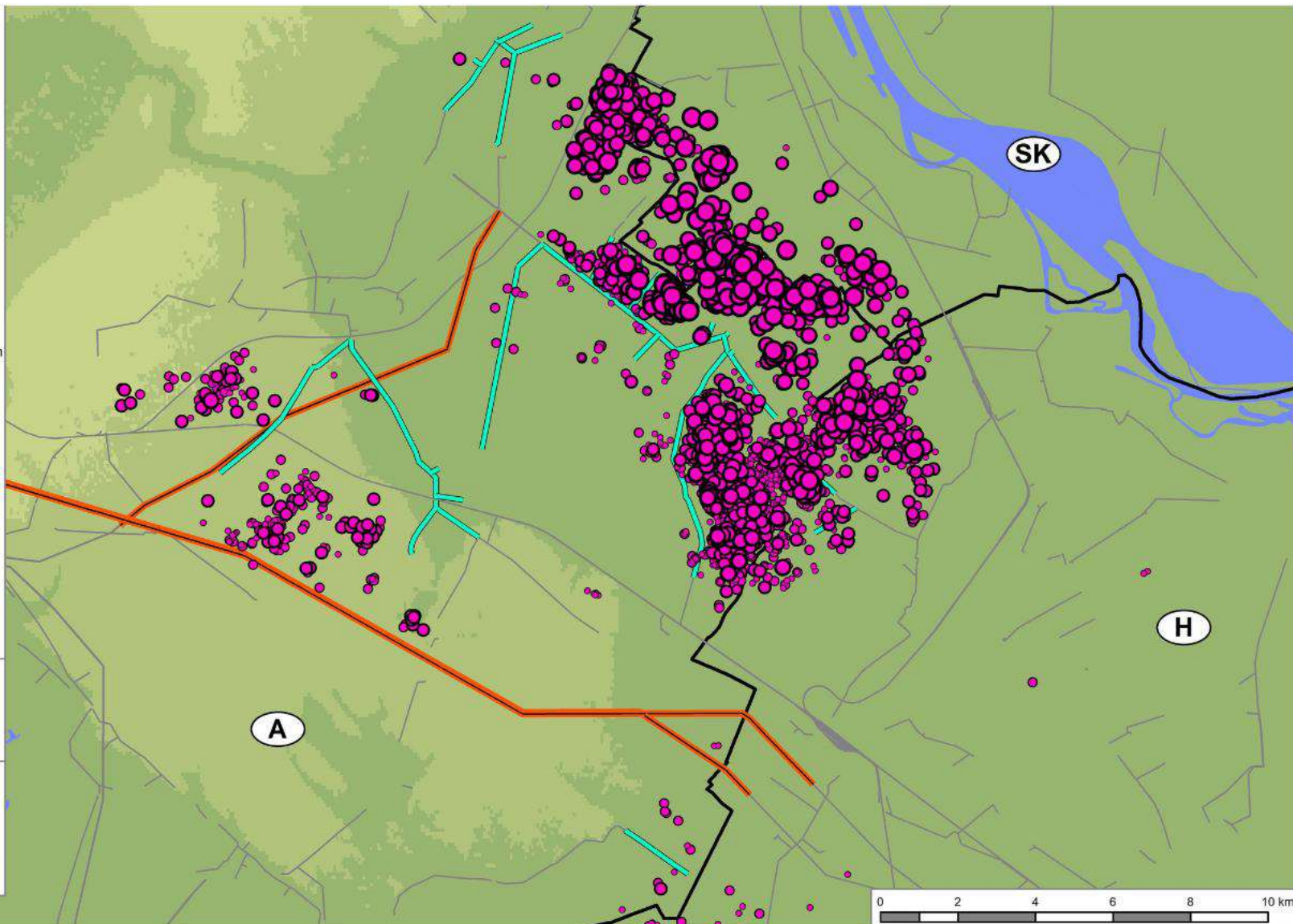
TB Raab
Technisches Büro für Biologie

Background data:
BEV, Land BGLD, EC

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



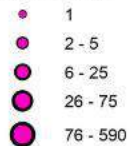
The preparation of this map is co-financed by the LIFE-Nature fund of the European Union.









Measures against collision with power lines - after

Distribution of Great Bustard in the Project-Sub-Area "Parndorfer Platte - Heideboden" and measures against collisions with power lines

in the period 2/12/2006 to 15/7/2024
(Individuals)



-  20 kV power line, which was removed in the course of the LIFE Project between 2005 and 2010, the LIFE+ Project between 2010 and 2015, the LIFE Project "Great Bustard" between 2016 and 2023 and the LIFE EUROKITE project in 2024 (51.0 km, including additional removals)
-  110 kV power line, which had been marked in September 2007 and was removed in 2023 (1.9 km)
-  110 kV power line built as underground cable between 2013 and 2017 (12.0 km)
-  110, 220 or 380 kV power line, which was marked between July 2006 and August 2017 (61.4 km)
-  existing high and medium voltage power line and railway overhead line
-  national border



1:125,000



Map preparation:
TB Raab GmbH

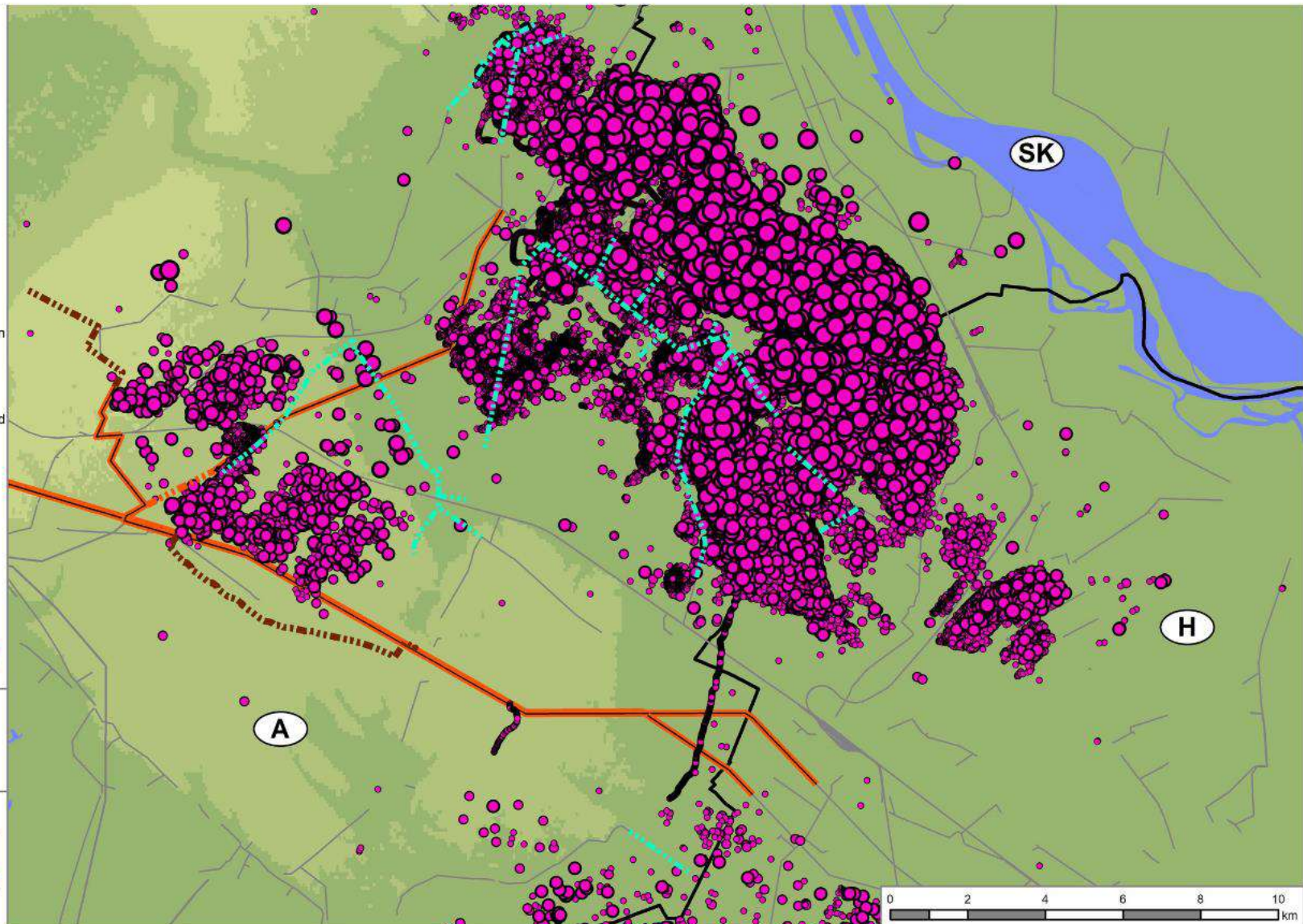


Background data:
BEV, Land BGLD, EC

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

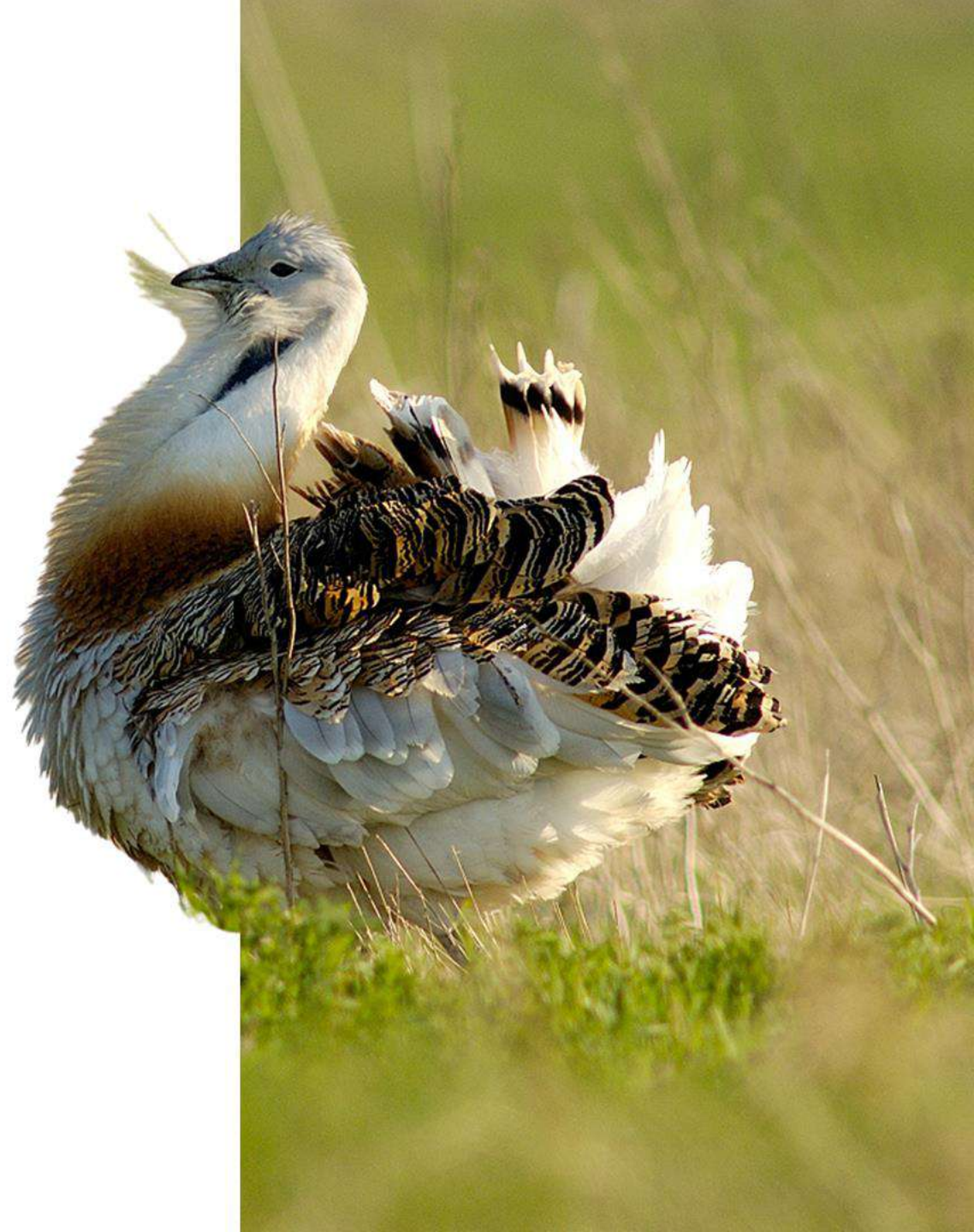


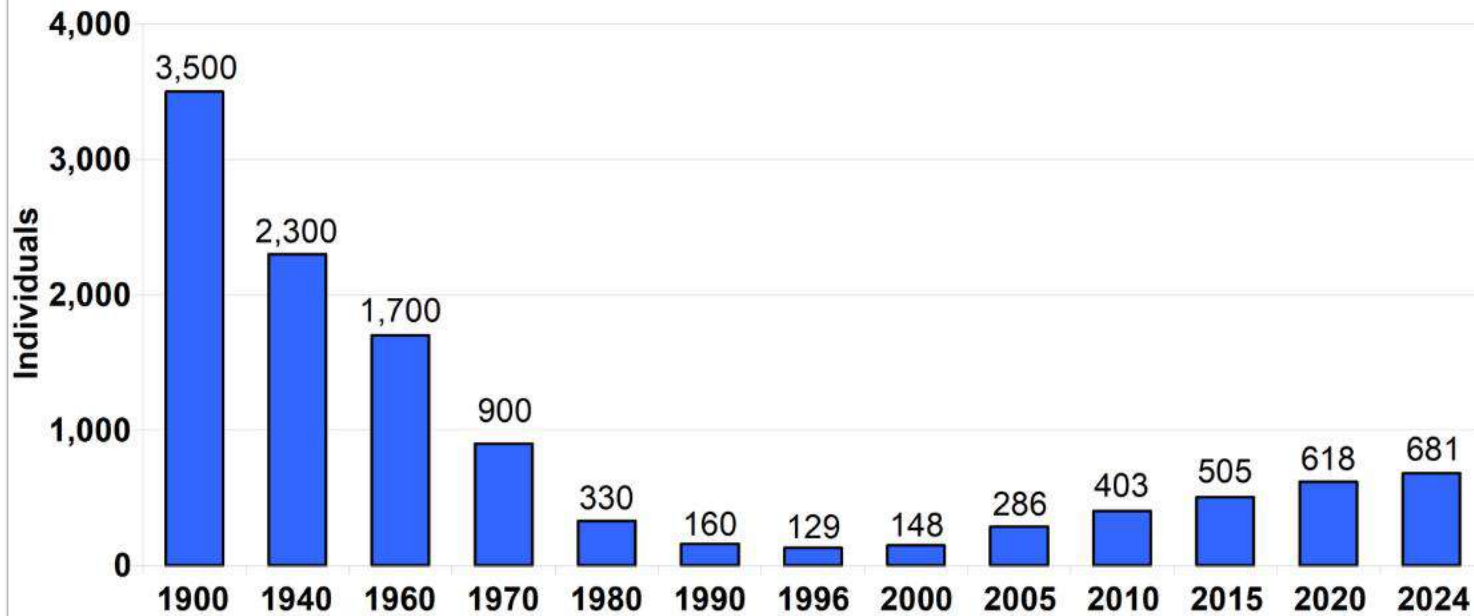
The preparation of this map is co-financed by the
LIFE-Nature fund of the European Union.



The West Pannonian
Great Bustard population
has been **significantly
increasing for nearly
two decades***.

*from 286 individuals in 2005 to **681 in 2024**





Numbers of the West-Pannonian population of Great Bustard

in the period 1900 till 2024

■ Numbers of the West-Pannonian population of Great Bustard

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

Graphic preparation:
TB Raab GmbH

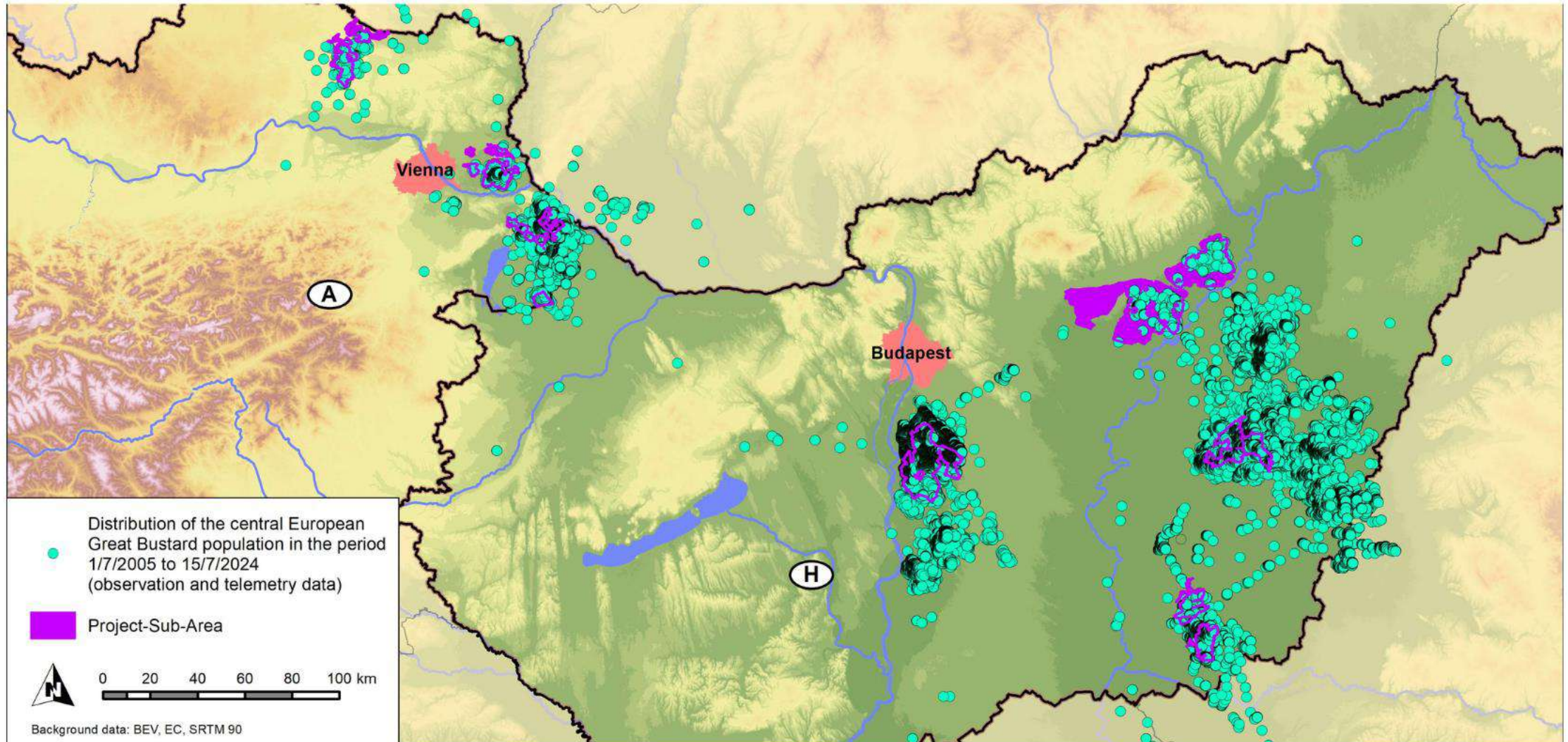
TB Raab
Technisches Büro für Biologie

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



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

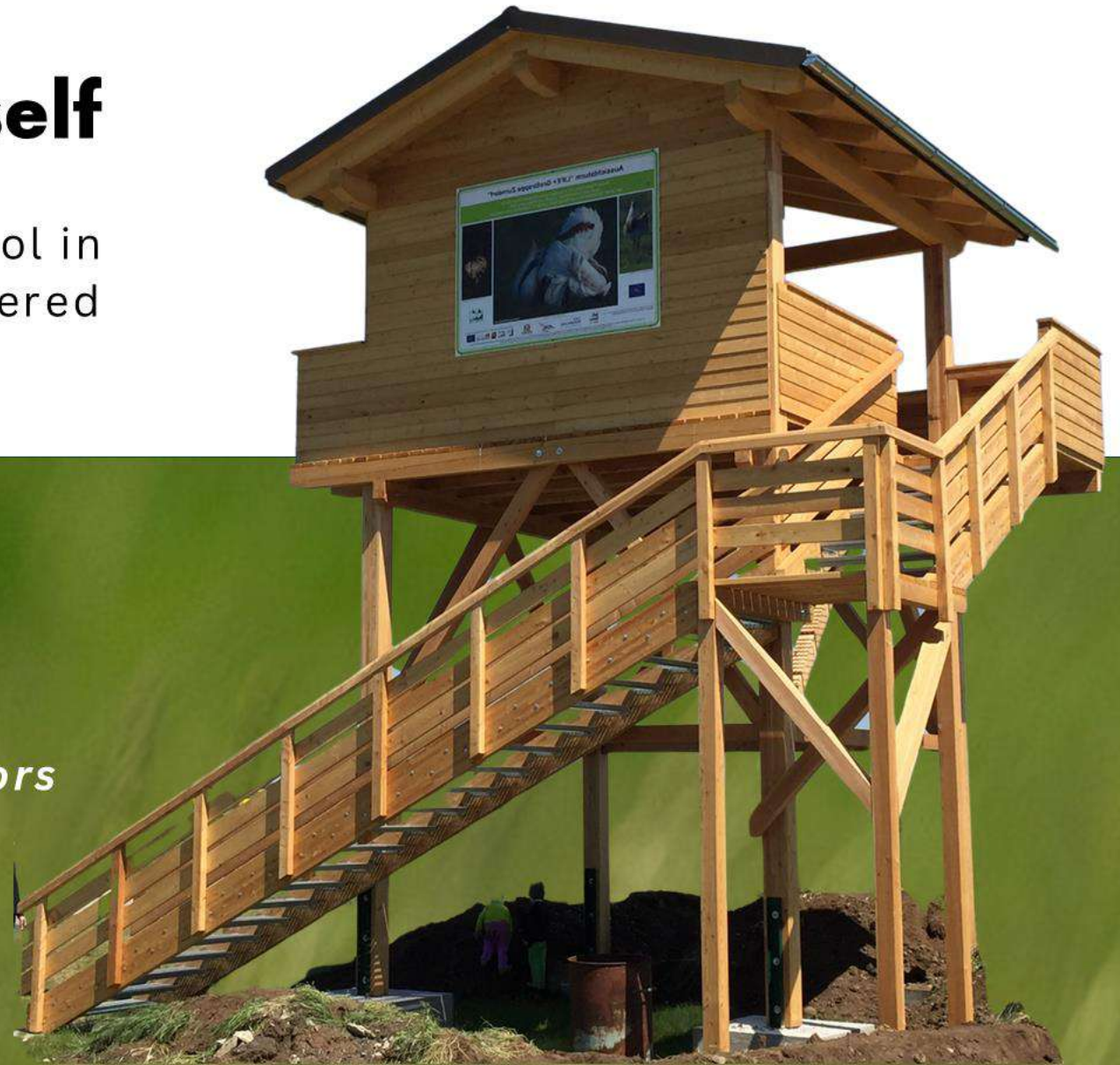
Map of distribution of the Pannonian Great Bustard population

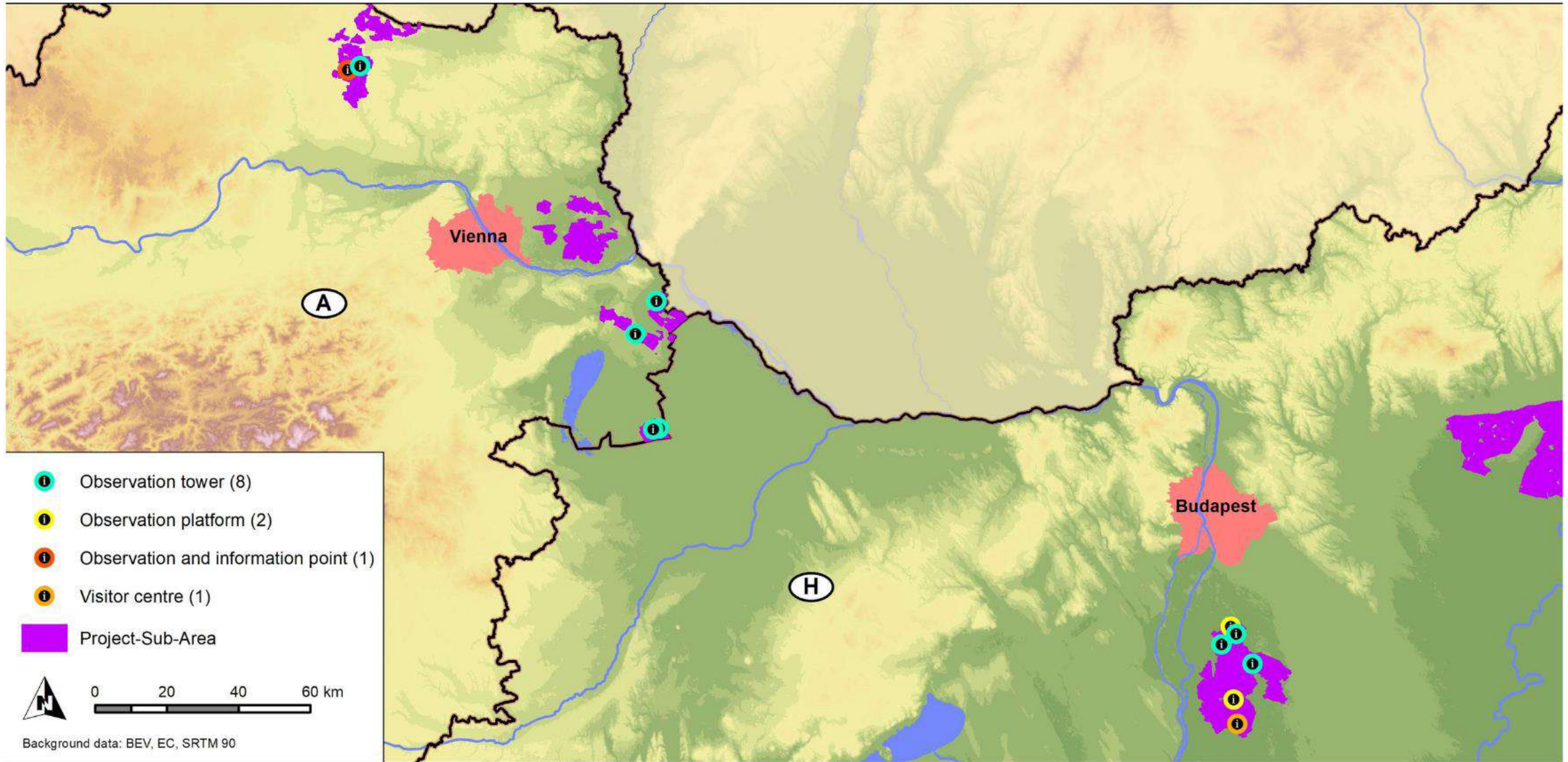


Explore the beauty of Great Bustards yourself

Raising awareness is an important tool in terms of the conservation of endangered species like the Great Bustard.

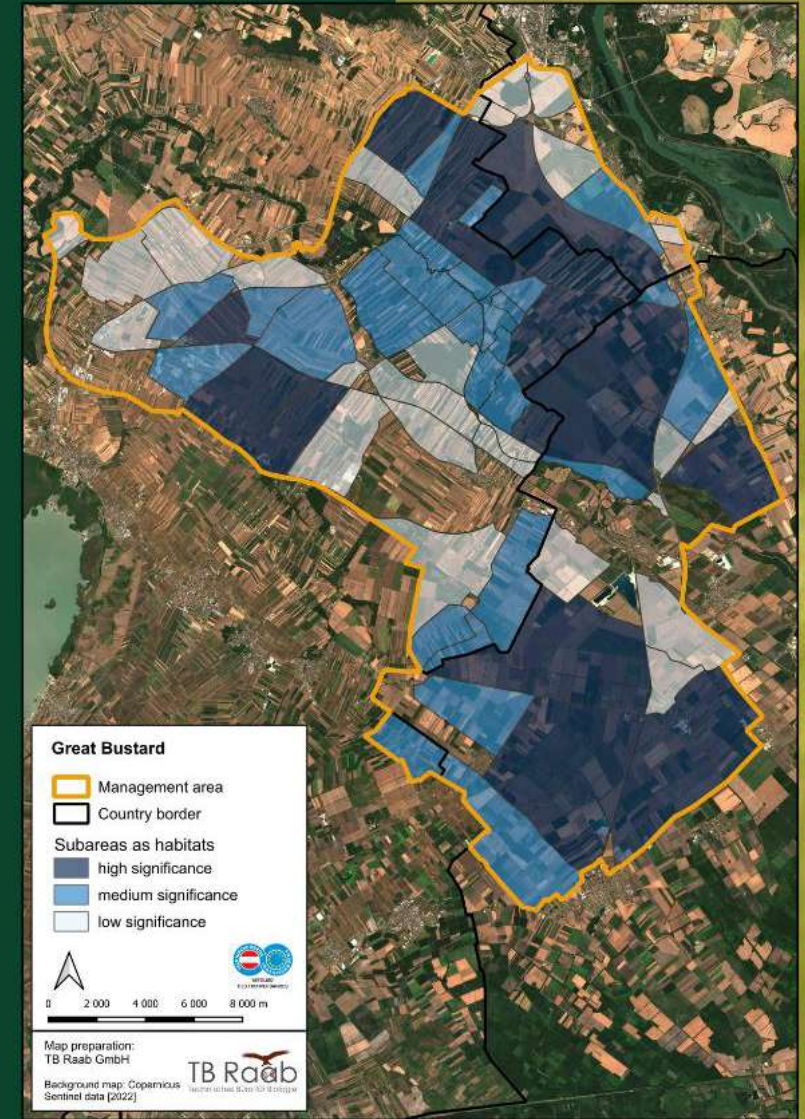
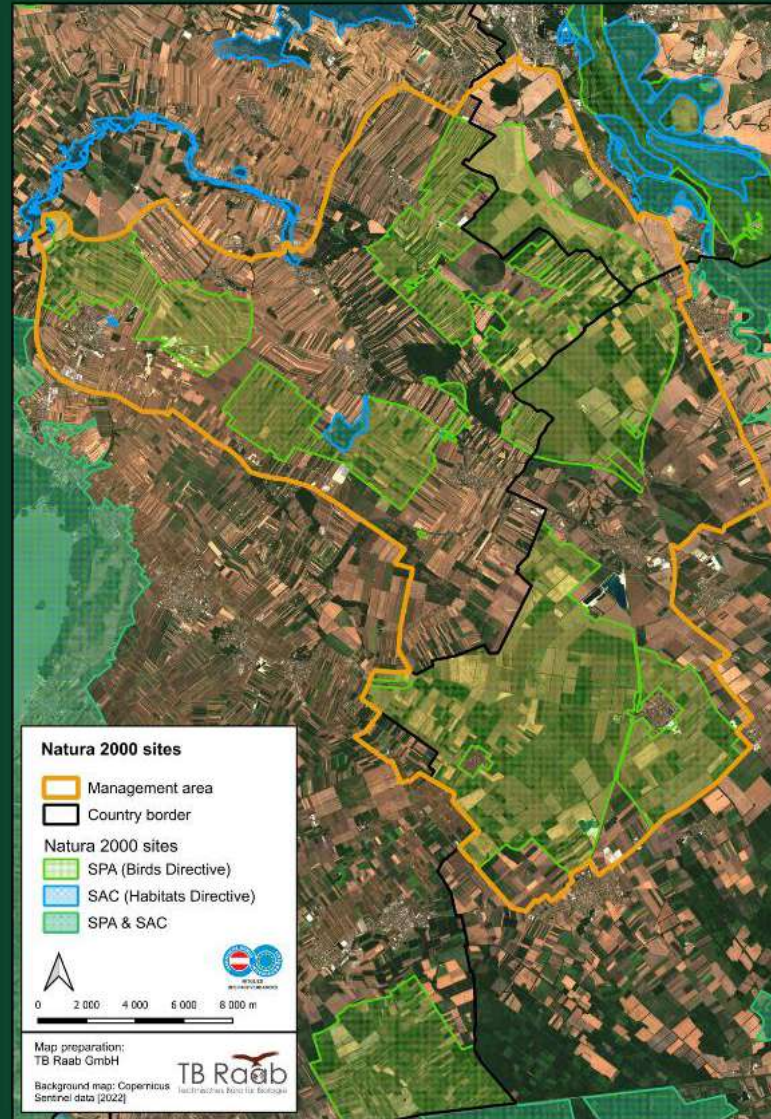
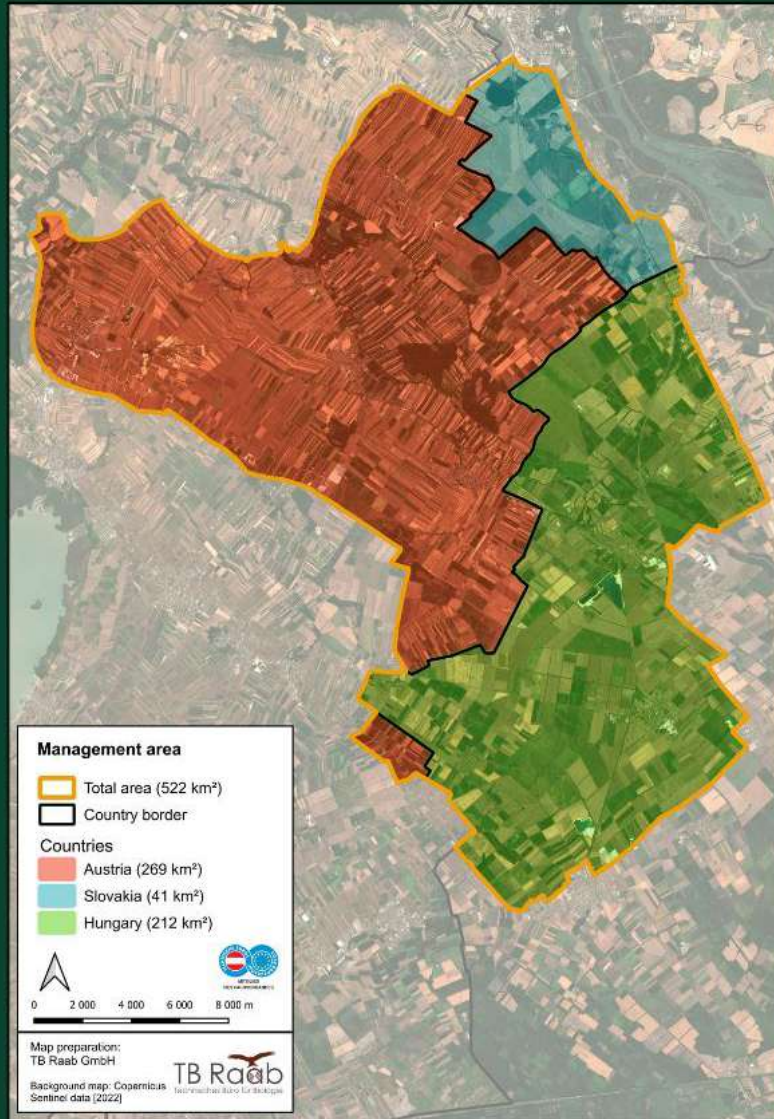
Within the LIFE project for the protection of the Great Bustard **information and observation points** were built during the last years. They are used by **thousands of visitors** every year.





Management plan for the European protected area 'Parndorfer Platte - Heideboden'

Importance of the 'Parndorfer-Platte Heideboden' area as a habitat for the Great Bustard





The successful protection through many years of international cooperation between various projects and organisations will be continued



Declaration for the long-term protection of the Great Bustard 'in the tri-border region of Austria, Hungary and Slovakia and its surroundings' was signed in September 2023.



International 'Multi-species Action Plan to conserve African, Eurasian and Australian Bustards'



One main topic - Bustard conservation, 7 speakers from Europe and Asia, 137 participants from all over the world - this was one of the most successful side events of the COP 14 in Uzbekistan

Coordinating beneficiary

ÖSTERREICHISCHE
GESELLSCHAFT
GROSSTRAPPENSCHUTZ

The TB Raab GmbH was
commissioned to implement
the LIFE Great Bustard project.



Project partners (Associated beneficiaries)



Land
Burgenland

NÖ
Netz
EVN Gruppe




netz
BURGENLAND



elmű hálózat



Co-financiers and cooperation partner

 Bundesministerium
Klimaschutz, Umwelt,
Energie, Mobilität,
Innovation und Technologie



Thank You!

Dr. Rainer Raab
TB Raab GmbH

Contact Me



+43 664 452 75 63



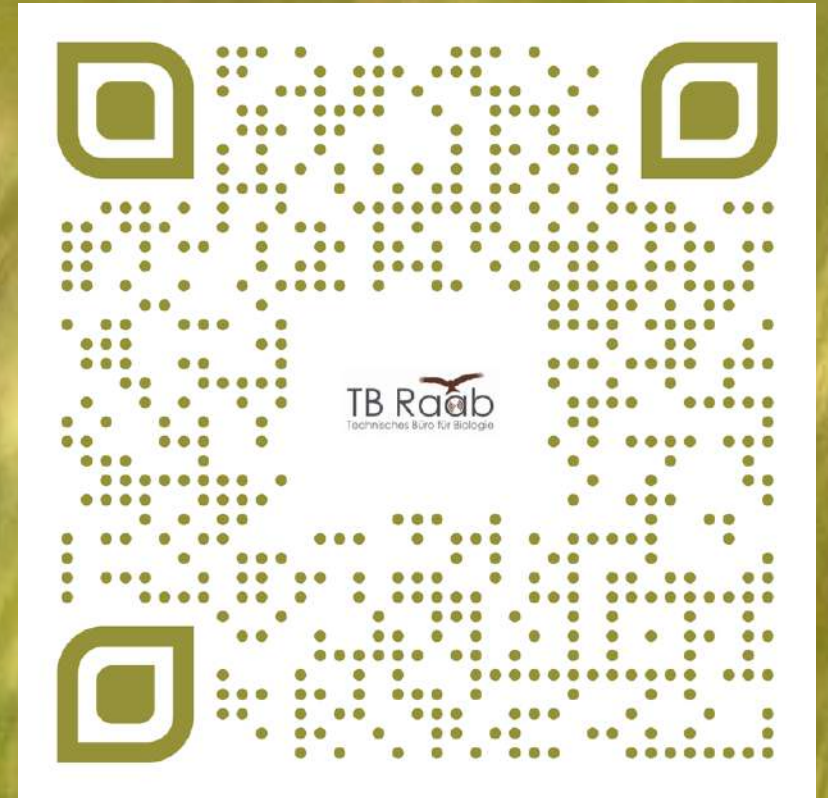
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Presentations

Case studies of successful multi-stakeholder collaborations



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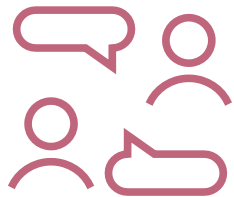


What's next?

Group One

Workshop:

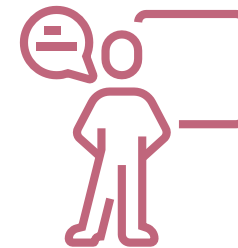
Connecting Biodiversity 2.0

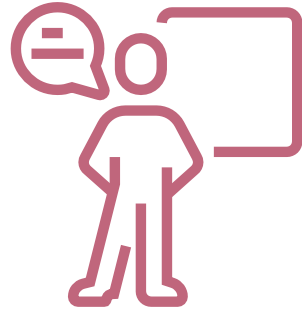


Group Two

Poster Session

& Networking Opportunity





Poster Presentations



1

The importance of high-quality data about wind energy infrastructures
for biodiversity conservation – [Jacopo Cerri](#)

2

Conservation of threatened birds through retrofitting of hazardous overhead
powerlines in Natura 2000 sites in Western Bulgaria – [Mariya G. Georgieva](#)

3

Cumulative impact of wind energy on red kite population in Wallonia and
feedback on the use of two automatic bird detection systems – [Arnaud Beckers](#)

Poster Presentations



4

Effects of wind turbine dimensions on the collision risk of raptors:
a simulation approach based on flight height distributions – [Tonio Schaub](#)

5

We make the power lines along the Danube river safe for birds – [Marek Gális](#)

6

Towards a better understanding of bird collisions in windfarms using data
from ADS – [Charlène Gémard](#)

7

Mitigating Bird Electrocution: Conservation Efforts and Successes
in Andalusia, southern Spain – [Jose Rafael Garrido](#)

Poster Presentations



8

The value of cooperation and knowledge transfer to reduce raptor mortality due to power lines in the Western Mediterranean – [Helena Clavero-Sousa](#)

9

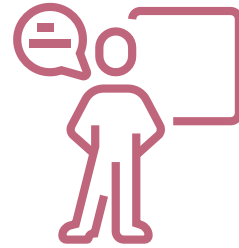
Predict to protect: developing trait-based vulnerability indices to wind energy development for birds and bats – [Arnaud Vansteenkiste](#)

10

Effective collaboration method between NGOs and grid operators in Spain – [Alfonso Godino & Catarina Machado](#)

Poster Presentations

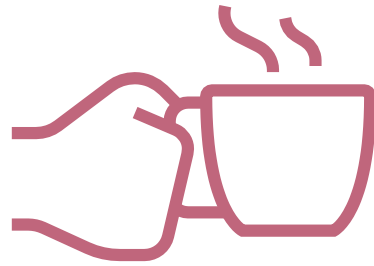




Lunch Break

& Poster Session

2024
WINGSPAN



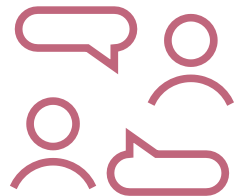
Coffee Break



Group One

Workshop:

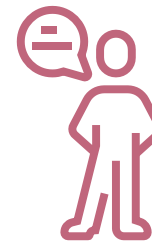
Connecting Biodiversity 2.0



Group Two

Presentations

Global Solutions for Global Challenges





Group Two

Presentations

Global Solutions for Global Challenges: Case studies from around the world



André Botha

Vulture for Africa Programme Manager

Endangered Wildlife



Vidhi Modi

PhD Candidate

M. K. Bhavnagar University



Dr. Ivan Maggini

Scientific Coordinator

Austrian Ornithological Centre



Dr. Larissa Biasotto

Science Officer Birds & Energy

BirdLife International



The Great Unknown -

The Impact of Energy
Infrastructure on Vultures and
other Wildlife in Africa

André Botha

Vultures for Africa Programme

Endangered Wildlife Trust, South Africa

Africa in the dark: **600 million people** in **Sub-Saharan Africa** have no electricity



THAT'S EQUAL TO
the entire population of
33 COUNTRIES IN AND
AROUND WESTERN EUROPE



Power Africa

- US govt lead partnership
- Double electricity access by 2030 (sSA)
- Add 30,000MW and 60M connections
- Established 2013

- **To date:**
- **107** power projects commissioned and operational
- **8,187 MW** of cleaner and more reliable electricity online
- **7,665 KM** of power lines





What are the impacts of existing and future energy developments on wildlife in Africa?

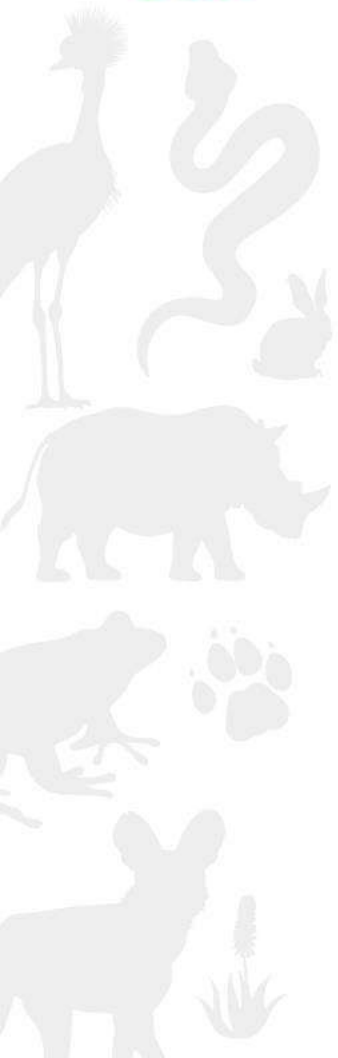
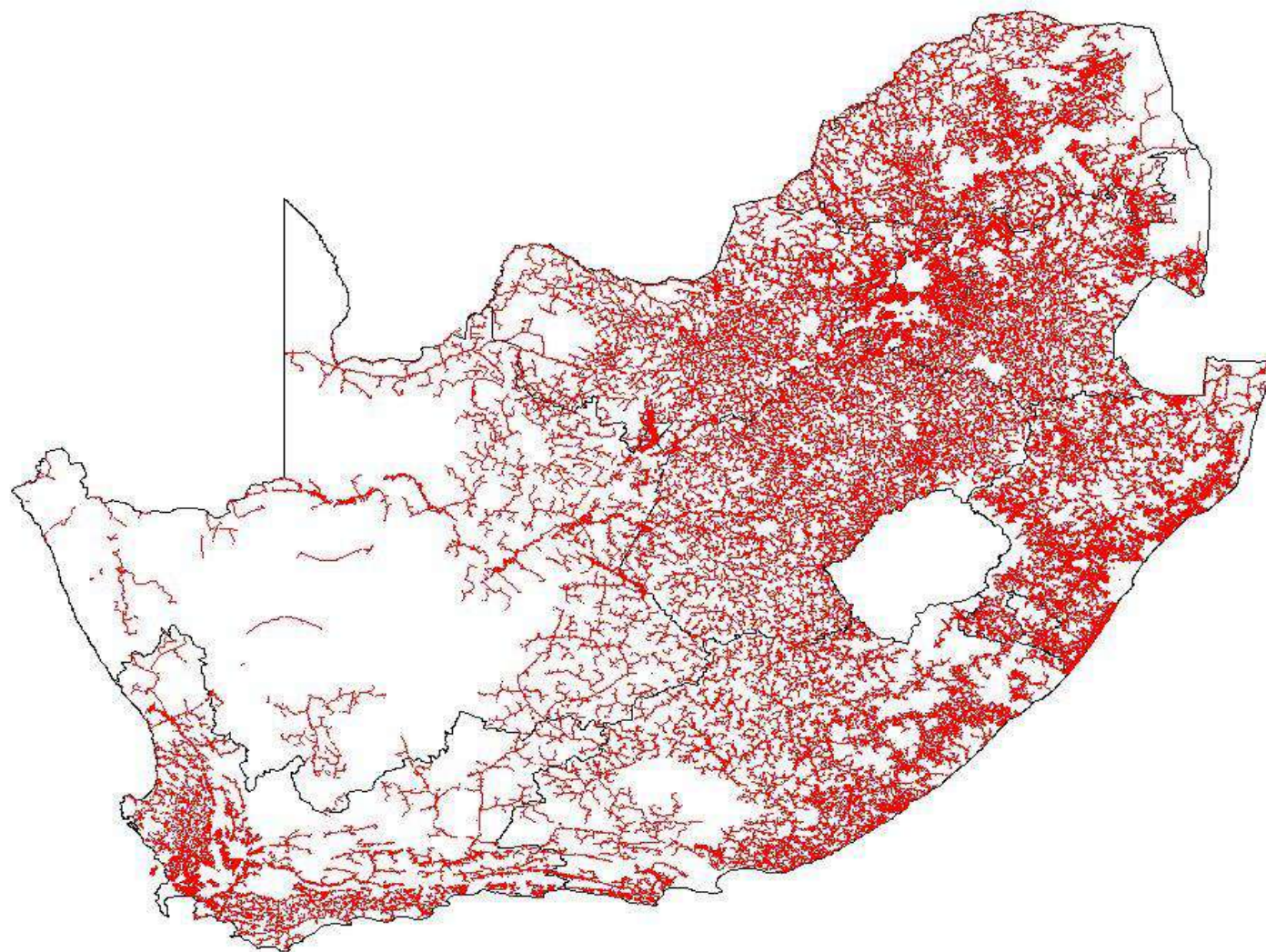
Known initiatives focused on Energy/Wildlife Interface – sS Africa

- Kenya
 - Zimbabwe
 - Zambia
 - Mozambique
 - Ethiopia
 - Namibia
 - Lesotho
 - Uganda
 - Botswana
-
- Often have limited geographical or topical focus
 - National data and assessments are often lacking
 - Where guidelines and policies exist, implementation and enforcement are sometimes a challenge



SOUTH AFRICA – The EWT-Eskom Partnership

Distribution Network



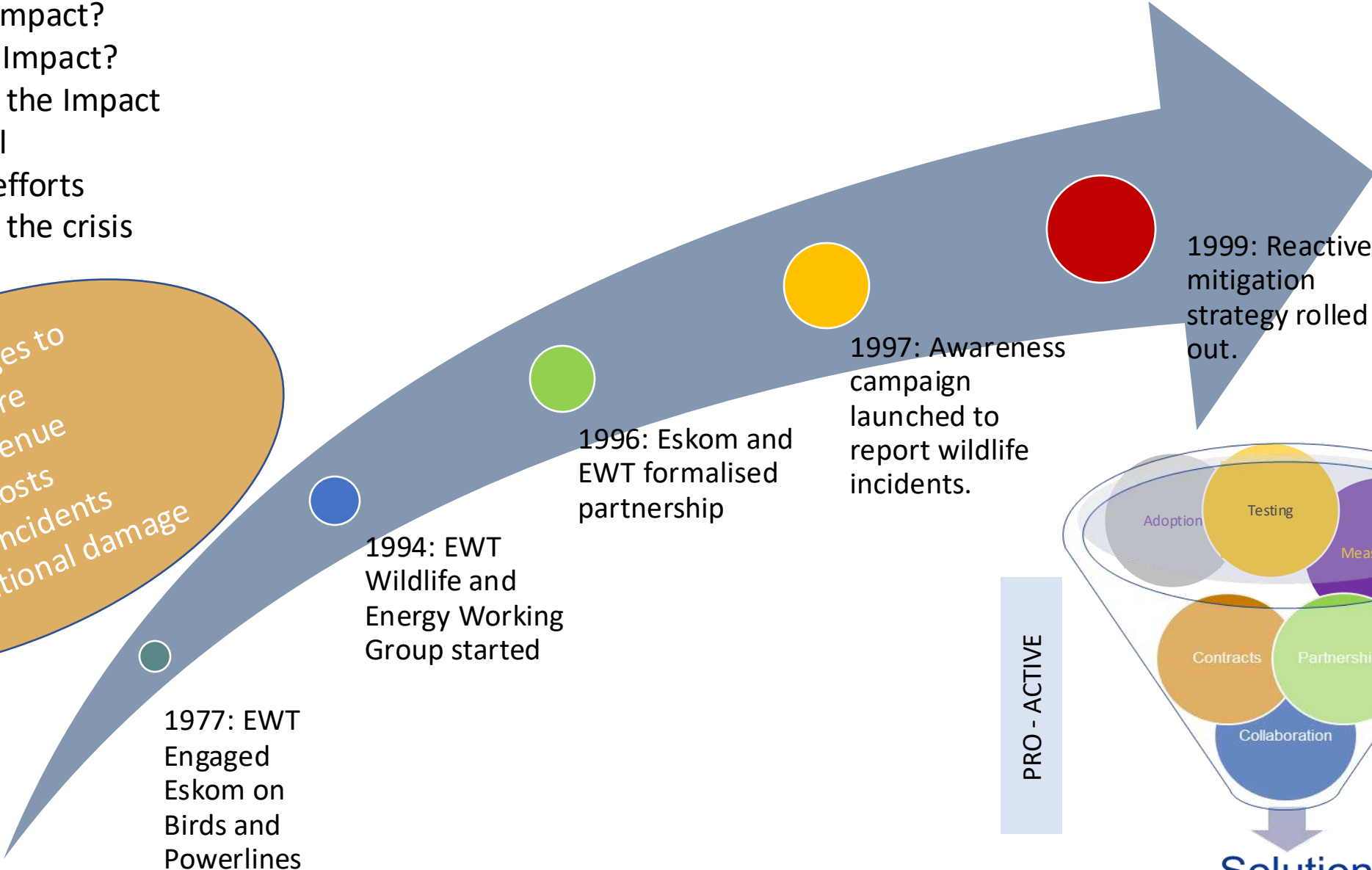
Evolution of the Partnership

PROBLEM STATEMENT

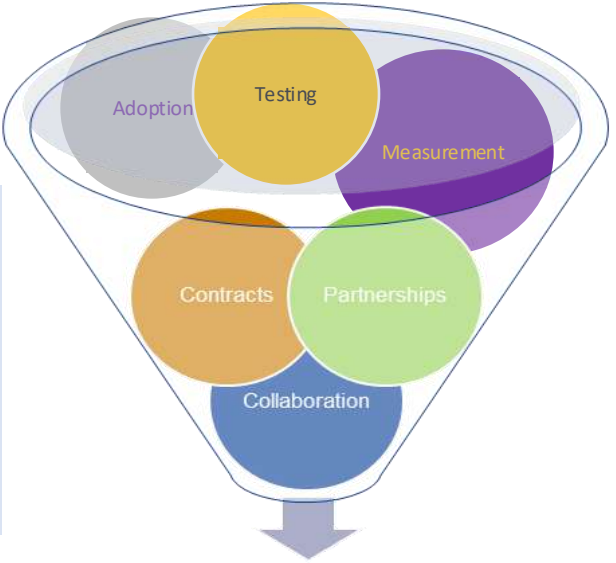
REACTIVE

- Is there an Impact?
- What is the Impact?
- Understand the Impact
- Take Control
- Apply own efforts
- Understand the crisis
- Reach-out

- costly damages to infrastructure
- Loss of revenue
- Call-out costs
- Repeat incidents
- Reputational damage

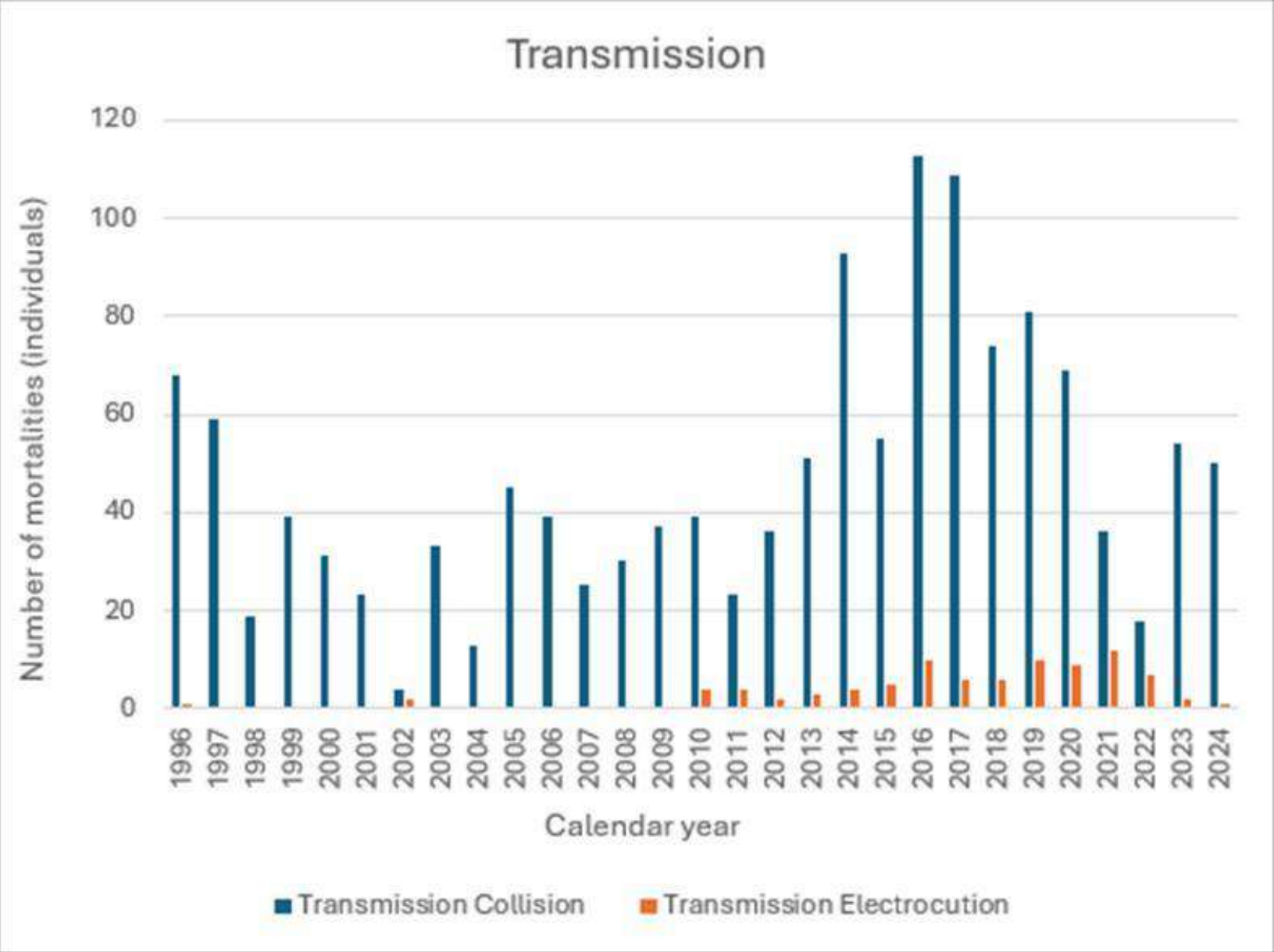


PRO - ACTIVE



Solution

Central Incident Register : Collision vs Electrocution





ENDANGERED
WILDLIFE TRUST
Protecting forever, together.

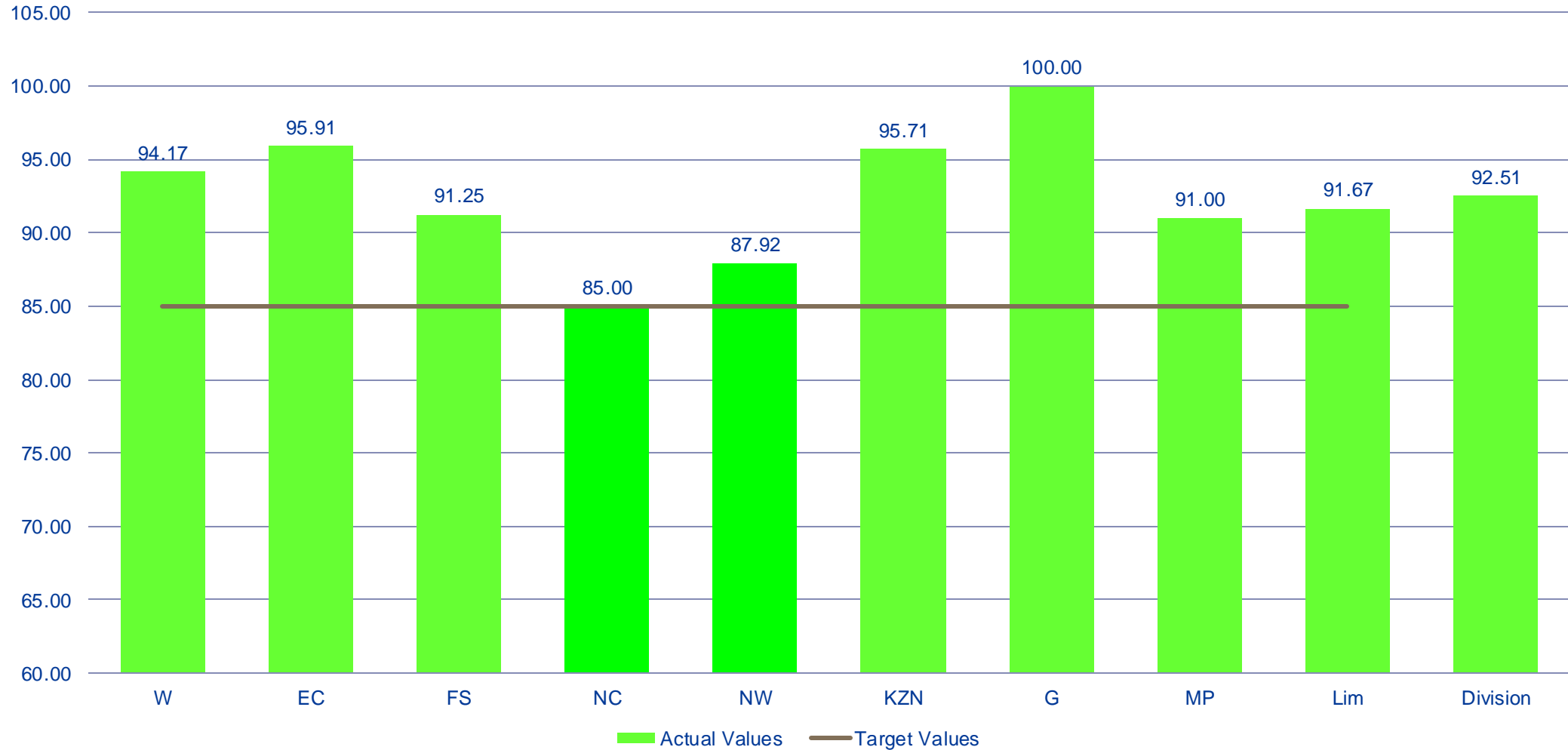


STRATEGIC PARTNERSHIP

Mitigation Implementation



Percentage of Wildlife Interactions mitigated < 4 months





Endangered
Wildlife Trust



Eskom

Strategic Partnership



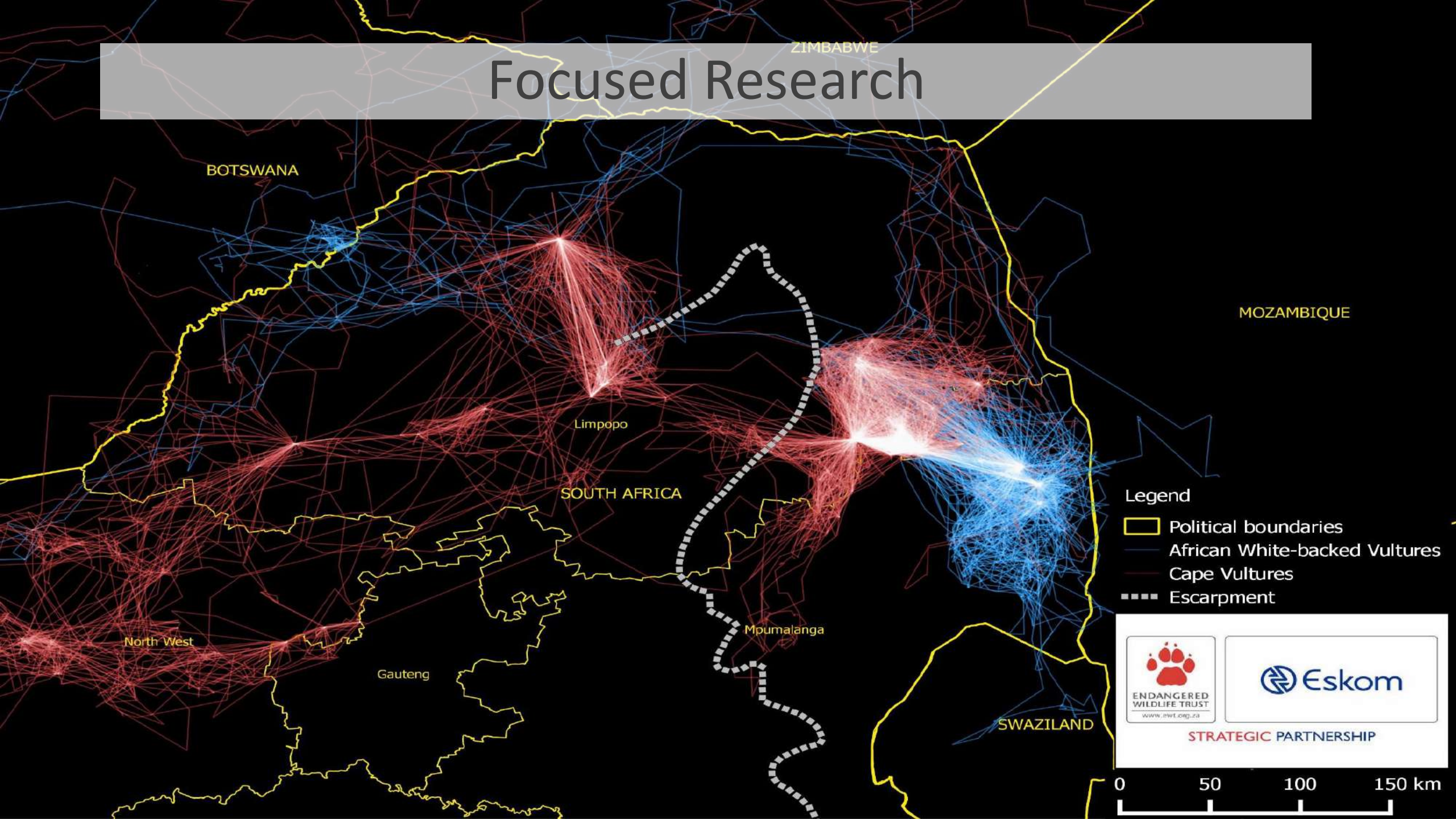
**Wildlife & Power Line Interaction
Training Manual**



Innovation – cost and safety

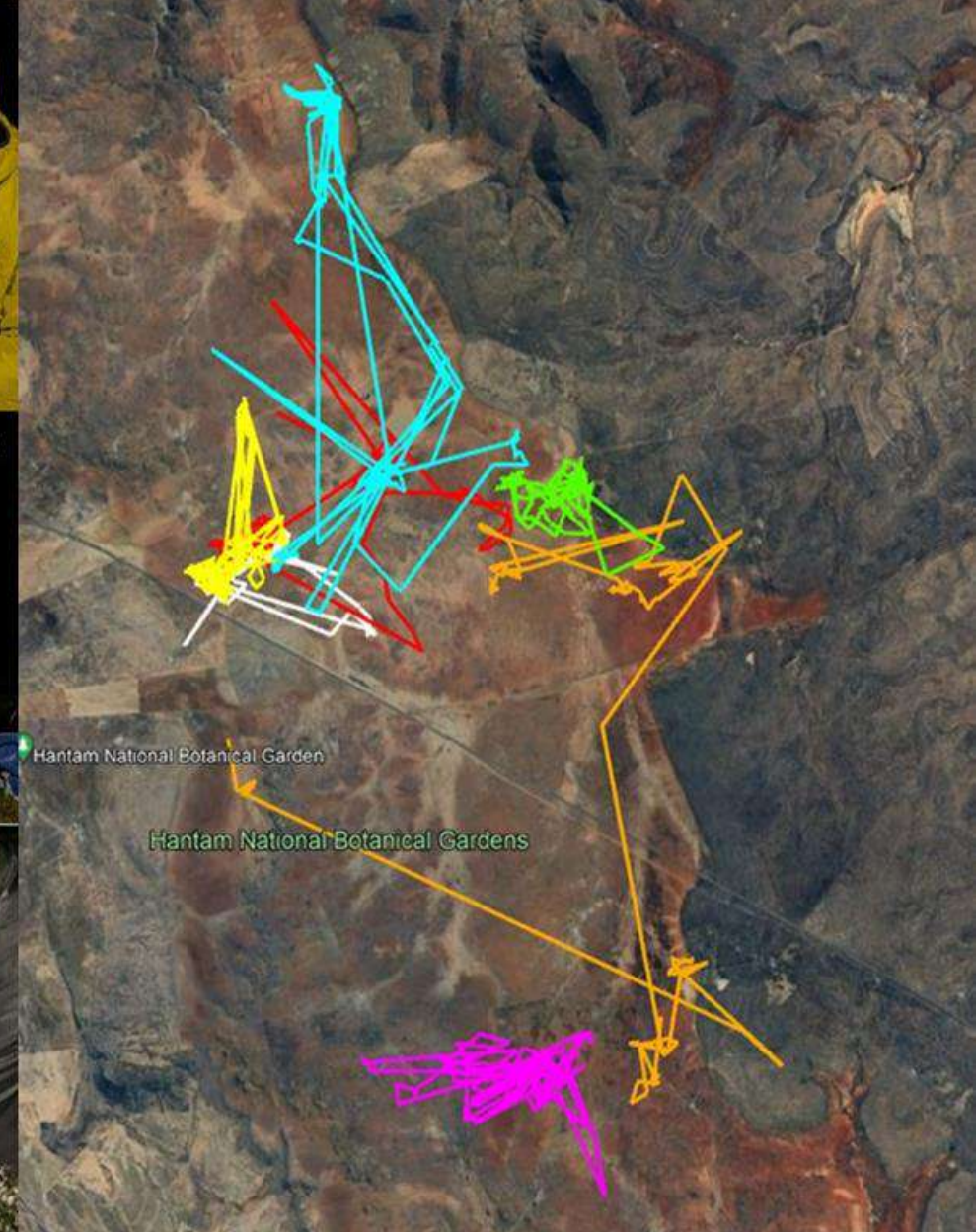


Focused Research





Nocturnal Collision Mitigation Devices



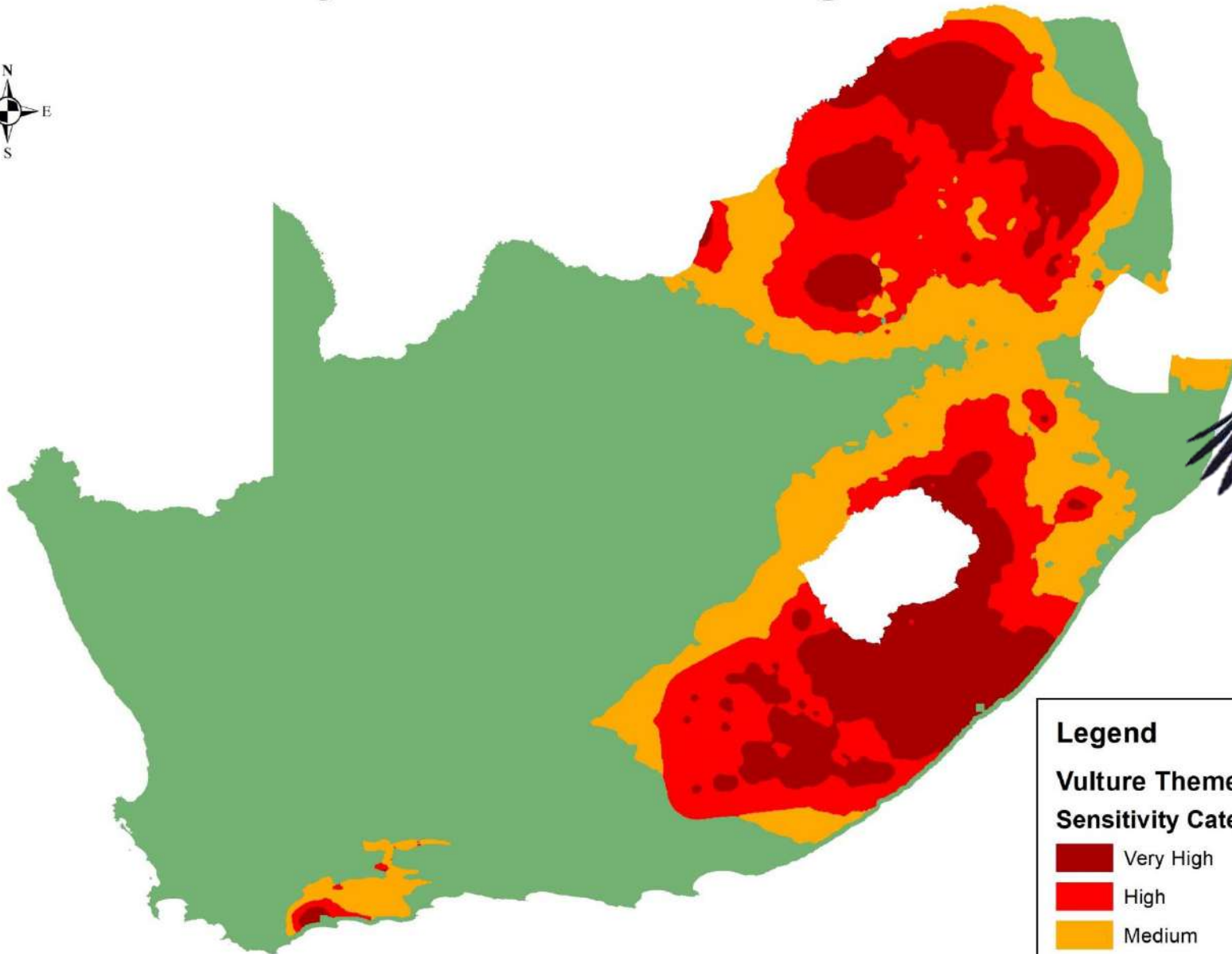
Bird protection measures at renewable energy sites



- Pre construction measures (EIA process)
- Construction phase - rehabilitation
- Observer led vs automated - In South Africa and Kenya
- Blade painting



Vulture Sensitivity Data for the Screening Tool



300 150 0 300 Kilometers

Legend

Vulture Theme

Sensitivity Category

- Very High
- High
- Medium
- Low





Can this model be duplicated elsewhere in Africa?




- Better understanding of the scale and impact of energy infrastructure nationally.
- Utilities understand cost benefit of preventative measures as well as the need for retro-fitting of old infrastructure and are willing to contribute.
- Buy-in and support from relevant governmental and regional structures.
- Willing conservation partners who can provide avifaunal expertise, support and overview.
- Training of existing staff and providing incentives to report problems/challenges.
- Use/create opportunities to cooperate across borders and learn from other utilities/organisations/countries.



MAINSTREAMING WILDLIFE
INCIDENT MANAGEMENT
INTO UTILITIES IN **EAST AFRICA**





Impact of Overhead Power Lines on Avifauna of Important Bird Areas in Coastal Taluka (Abdasa) of Kutch District, Gujarat, India

Presented by

Ms. VIDHI MODI

PhD Candidate, M. K. Bhavnagar
University

&

Senior Research Fellow, The
Corbett Foundation



Group Two

Presentations

Global Solutions for Global Challenges: Case studies from around the world



André Botha

Vulture for Africa Programme Manager

Endangered Wildlife



Vidhi Modi

PhD Candidate

M. K. Bhavnagar University



Dr. Ivan Maggini

Scientific Coordinator

Austrian Ornithological Centre



Dr. Larissa Biasotto

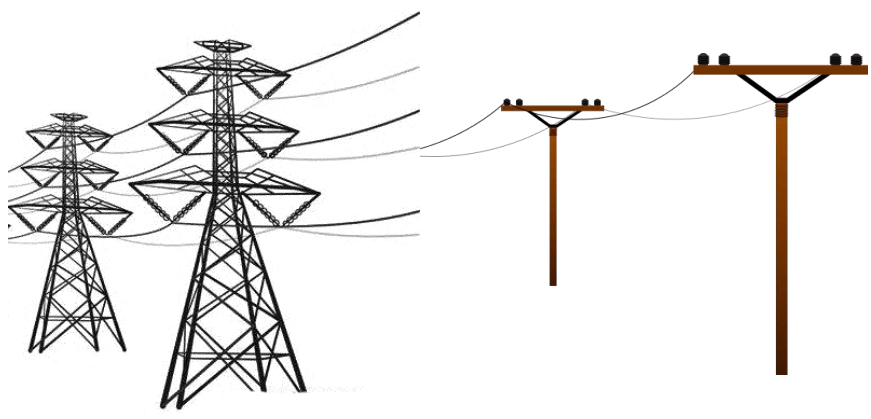
Science Officer Birds & Energy

BirdLife International

India's Overview



3rd largest energy-consuming country



Addition of
14.4 million ckm
in 73 years



47.19 GW in 2024



21.04 GW in 2014



89.43 GW in 2024



2.82 GW in 2014

Great Indian Bustard nearing extinction due to high

voltage power lines: Env Ministry

Conservation of migratory species of wild animals: Experts concerned about risks posed by power lines to birds

Yadvendra Jhala, Dean of Wildlife Institute of India, said that power lines in grasslands of Kutch district of Gujarat and Rajasthan, the main habitat of the critically endangered GIB, were a major threat to these birds

Printed from

THE TIMES OF INDIA

Gujarat: '30,000 birds killed by Kutch power lines'

TNN | Jun 20, 2021, 09.03 AM IST

Printed from

THE TIMES OF INDIA

'19,000 birds die due to high-tension wires every month in Jaisalmer-Barmer region'

Experts concerned about risks posed by power lines to birds

Experts stressed that efforts to mitigate climate change can result in pressures on wildlife if energy project siting is not done carefully.

Power transmission lines single-biggest threat to Great India Bustard

According to a WII study, high-voltage transmission lines with multiple overhead wires are the largest threat for GIB.

Anshul Joshi | ETEnergyWorld | Updated: March 25, 2020, 20:01 IST

Demise of Great Indian Bustards

Time seems to be running out for the GIB, a bird that is often compared to the 'flying fortress' heavy bomber p 1930s and 1940s

Great Indian Bustard and grasslands are in face-off with solar parks

The rare birds often collide against the high-tension overhead wires and die, pushing the species to the brink of extinction. Now, power companies plan to file a revision plea in SC against laying power lines underground

Are power lines turning Kutch into a bird graveyard from a bird paradise?



RONAK GAJJAR

19 MAY 2022 GUJARAT CLEAN ENERGY



MONGABAY

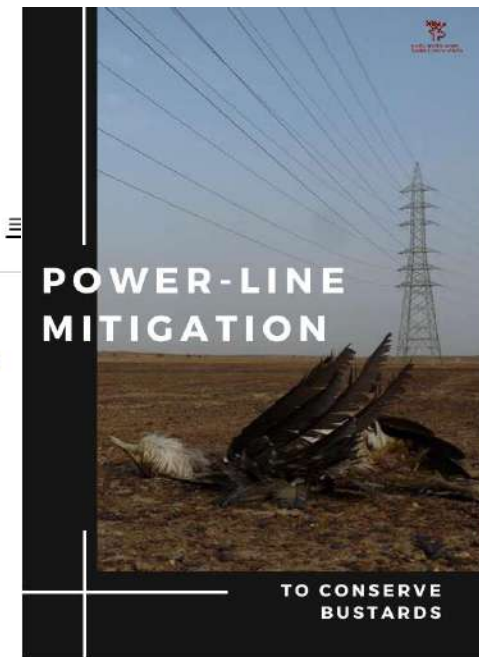
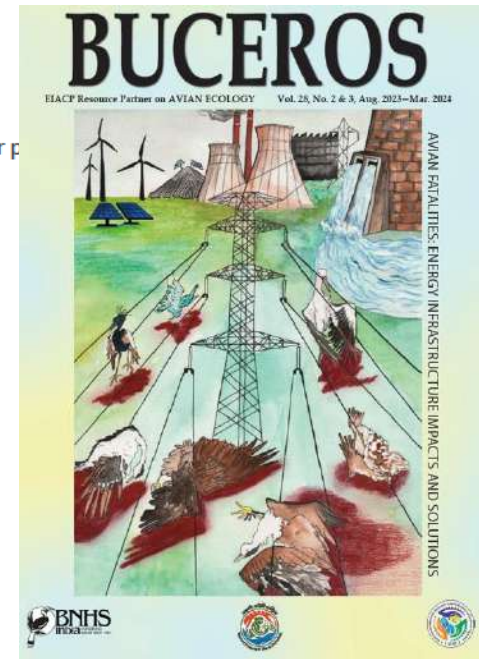
GaonConnection
YOUR CONNECTION WITH RURAL INDIA

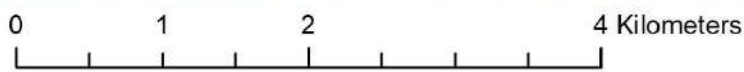
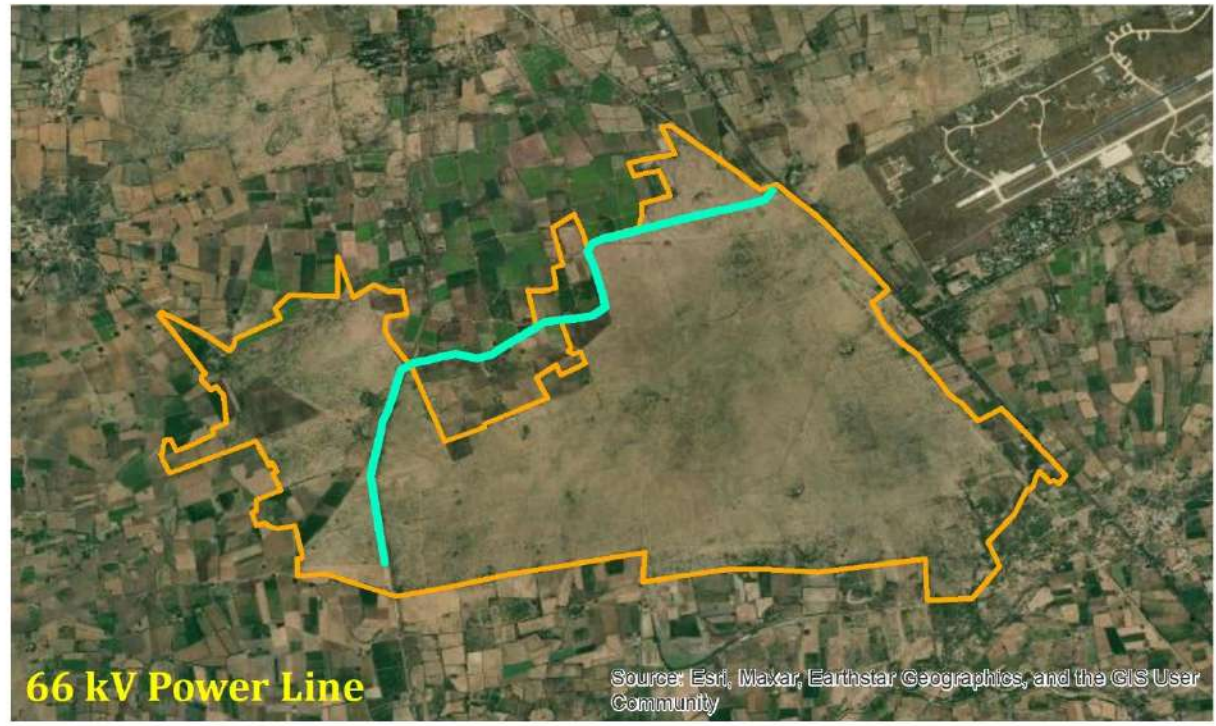
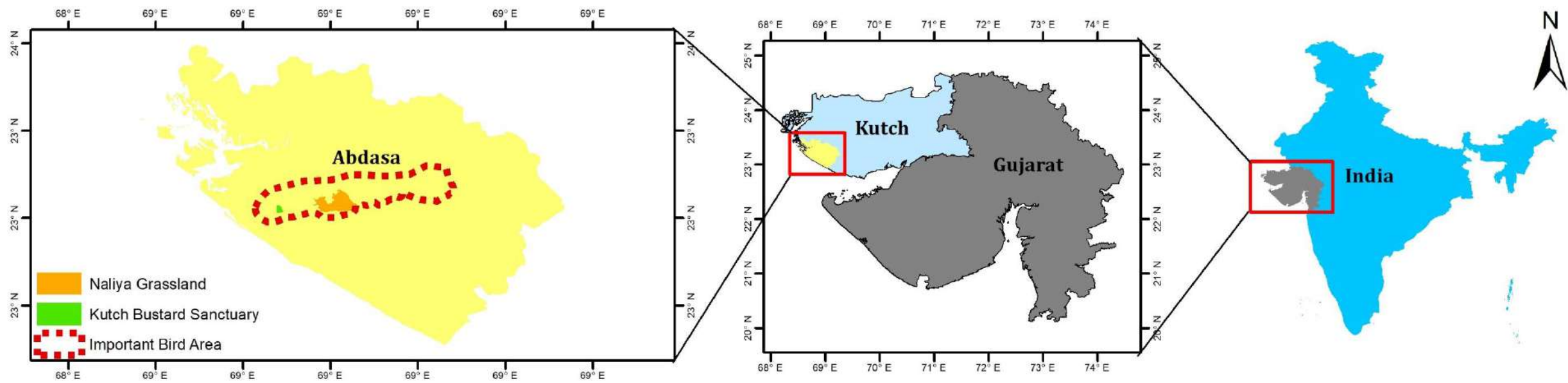
Migratory birds take the early flight into Rajasthan; but many of them crash into overhead power lines

Policy analysis

High bird mortality due to power lines invokes urgent environmental mitigation in a tropical desert

Mohib Uddin, Sutirtha Dutta*, Vishnupriya Kolipakam, Hrishika Sharma, Farha Usmani, Yadvendra Jhala





Introduction



Creek



Saltpan



Coastal Grassland



Wetland



- One IBA
- **34** Threatened bird species
- Three Bustard species
- Part of the Central Asian Flyway (CAF)
- ~390 migratory & resident species

66 kV Naliya Grassland



11 kV Jakhau Saltpans



RESEARCH OBJECTIVES



1

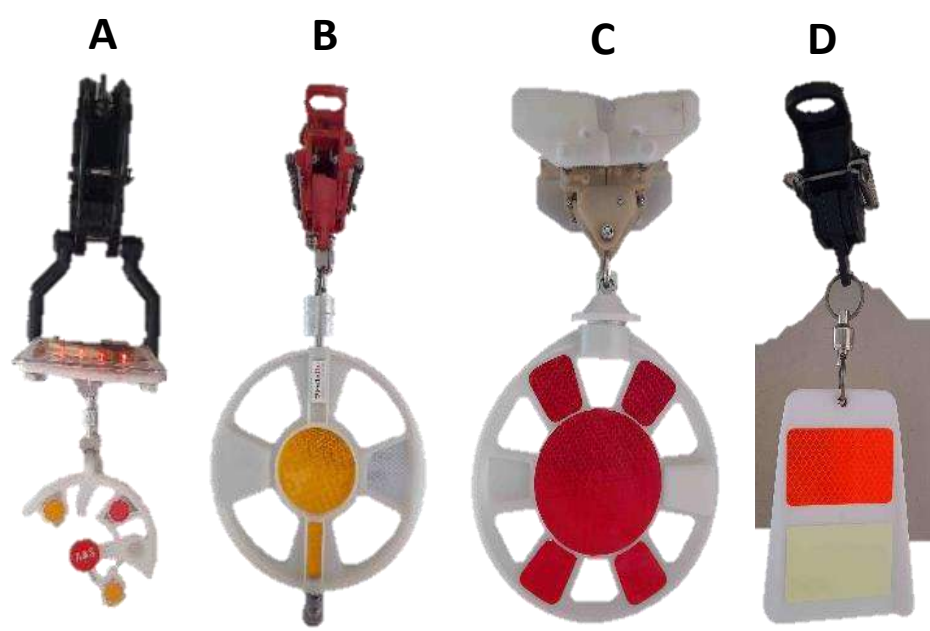
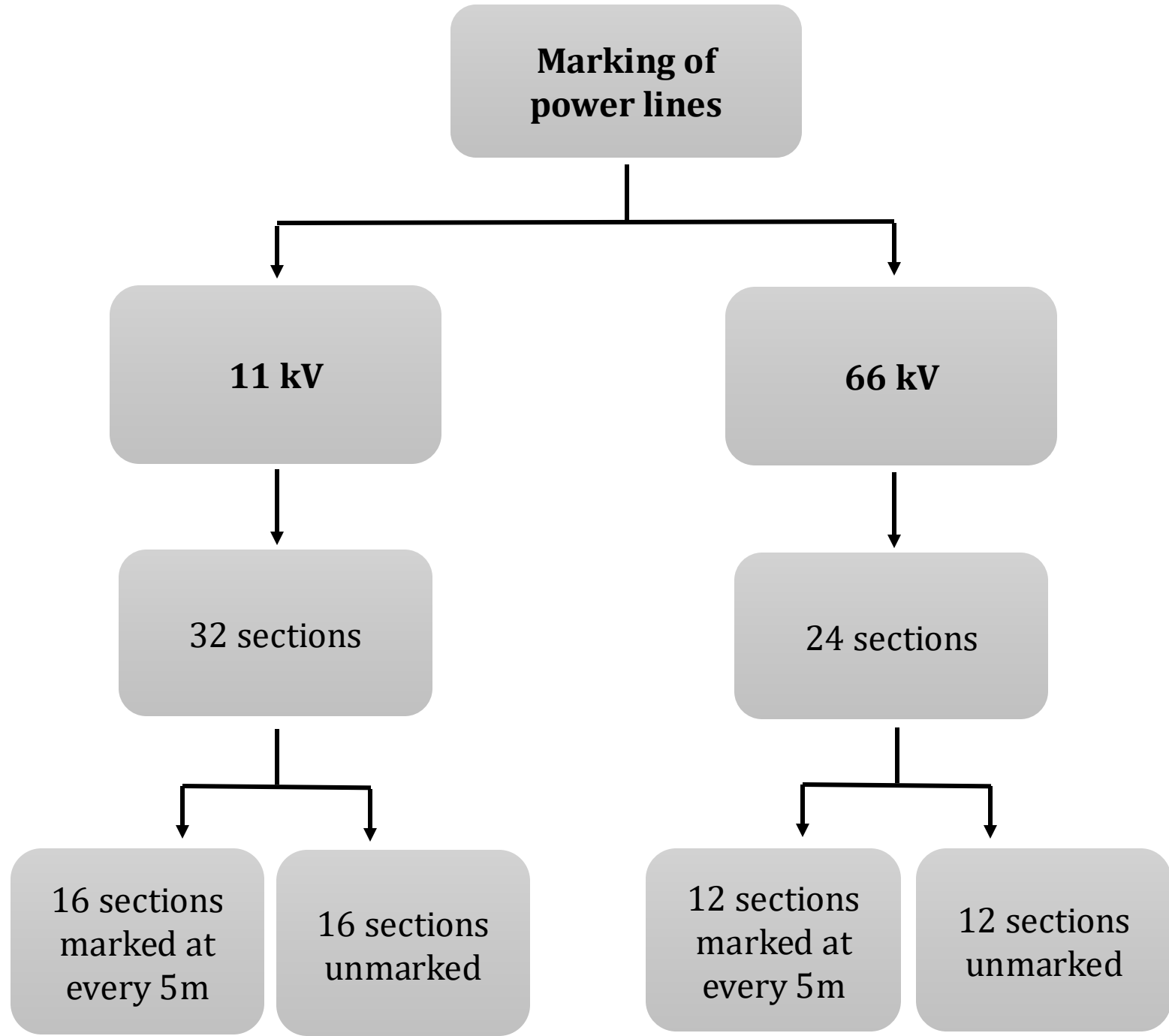
Assessing the avian mortality in identified critical power lines

2

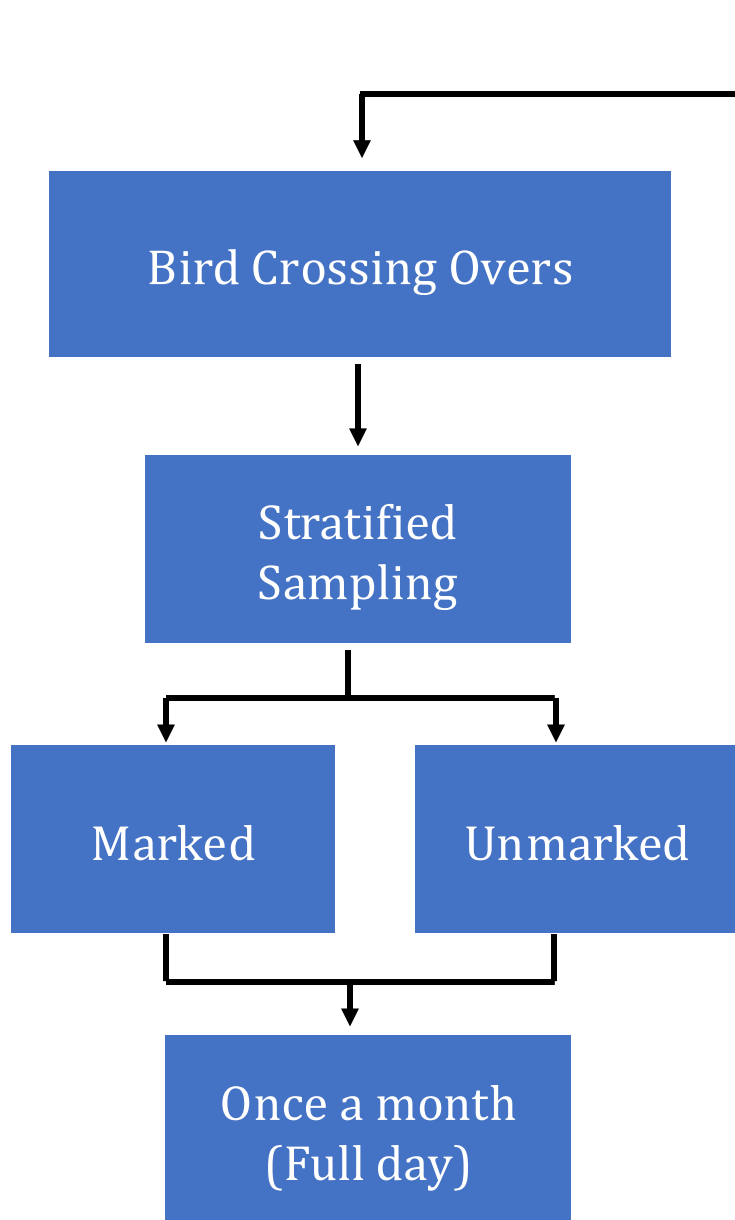
BFDs effectiveness in reducing avian collision due to overhead power lines

3

Evaluate the persistence of BFDs



Methodology



Methodology

Bird Mortality

Line Transects

Carcass Searches

Every week
(30m belt transect)

Carcass
Disappearance

Monitored on 2, 4,
6,...12, 14 days



Methodology



Efficacy of Bird Flight
Diverters (BFDs)

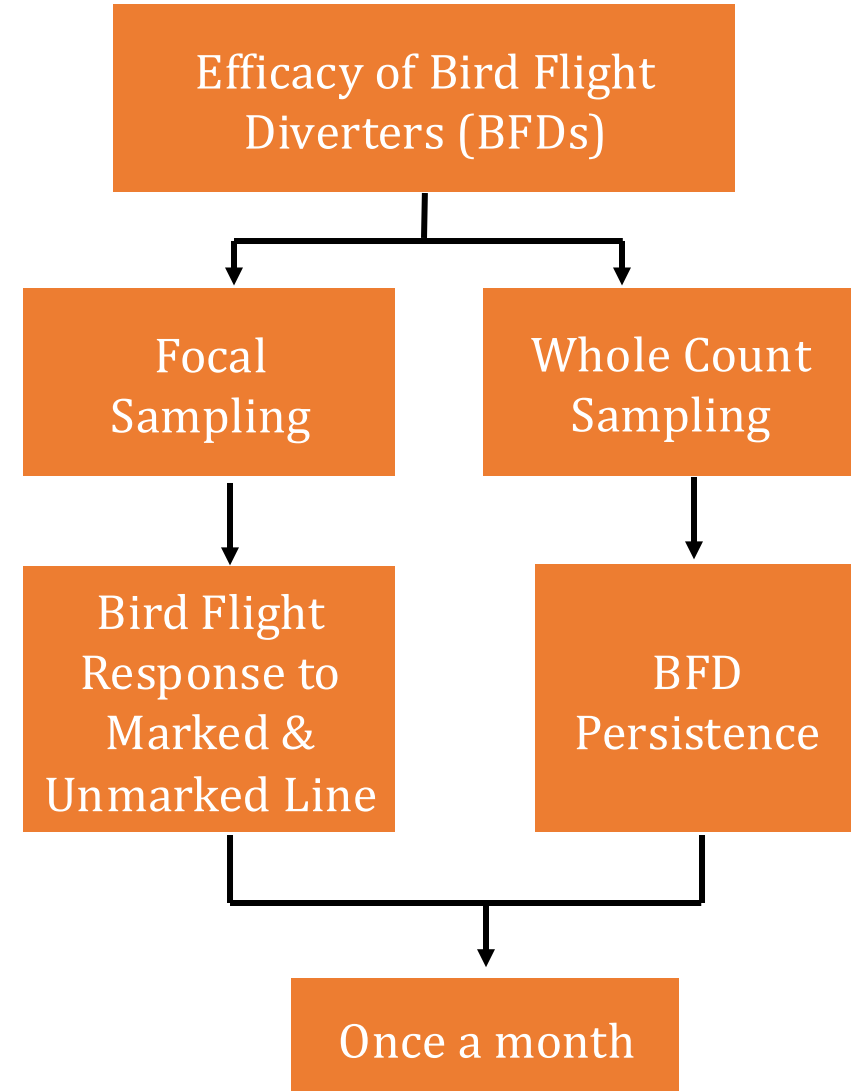
Focal
Sampling

Whole Count
Sampling

Bird Flight
Response to
Marked &
Unmarked Line

BFD
Persistence

Once a month



**BFDs
PERSISTENCE**

**CROSSOVERS
& BFDs**

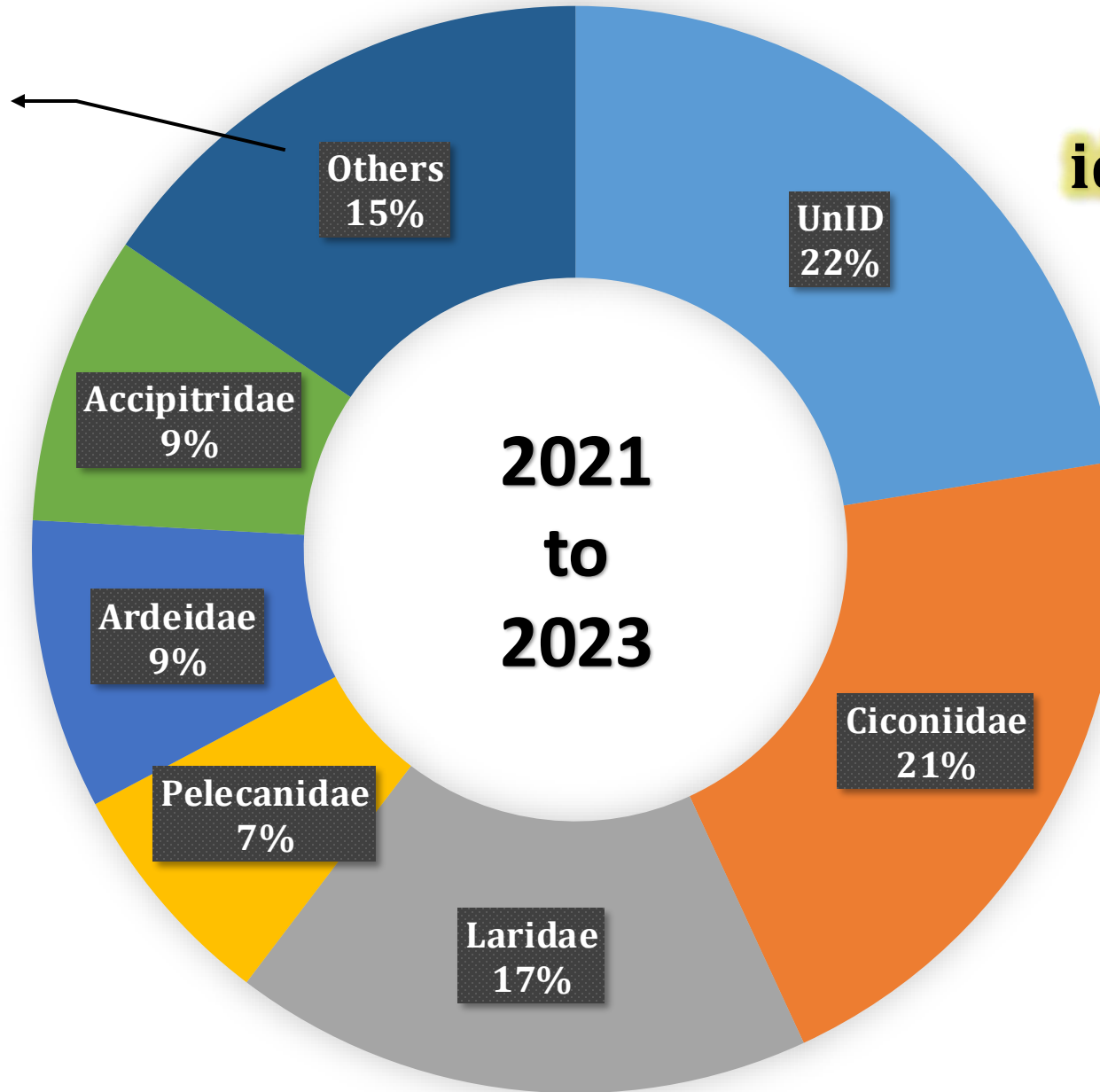
**BIRD
MORTALITY**

Results



Carcass Searches

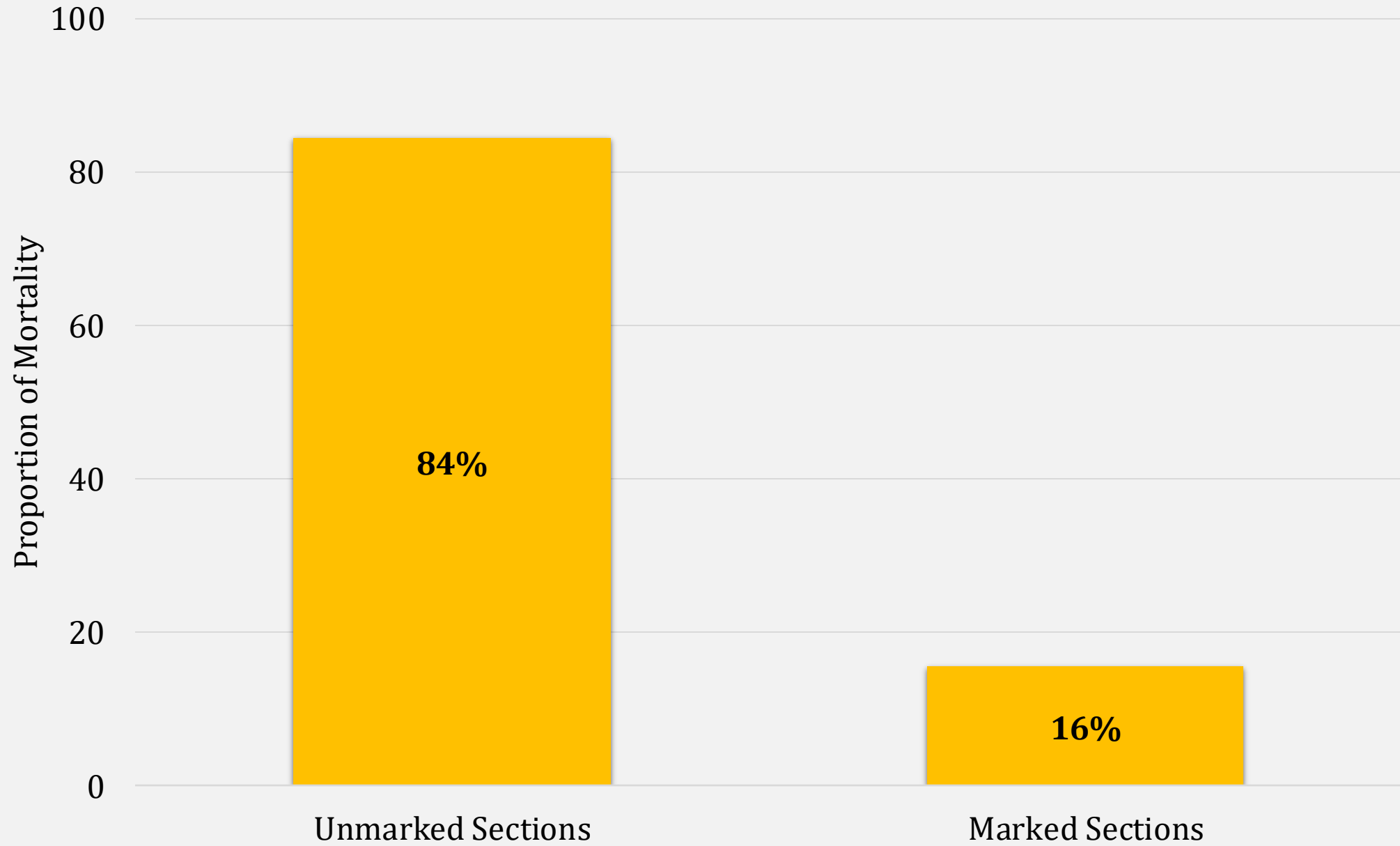
1. Scolopacidae
2. Phoenicopteridae
3. Falconidae
4. Otididae
5. Threskiornithidae
6. Pyconotidae
7. Recurvirostridae
8. Alaudidae



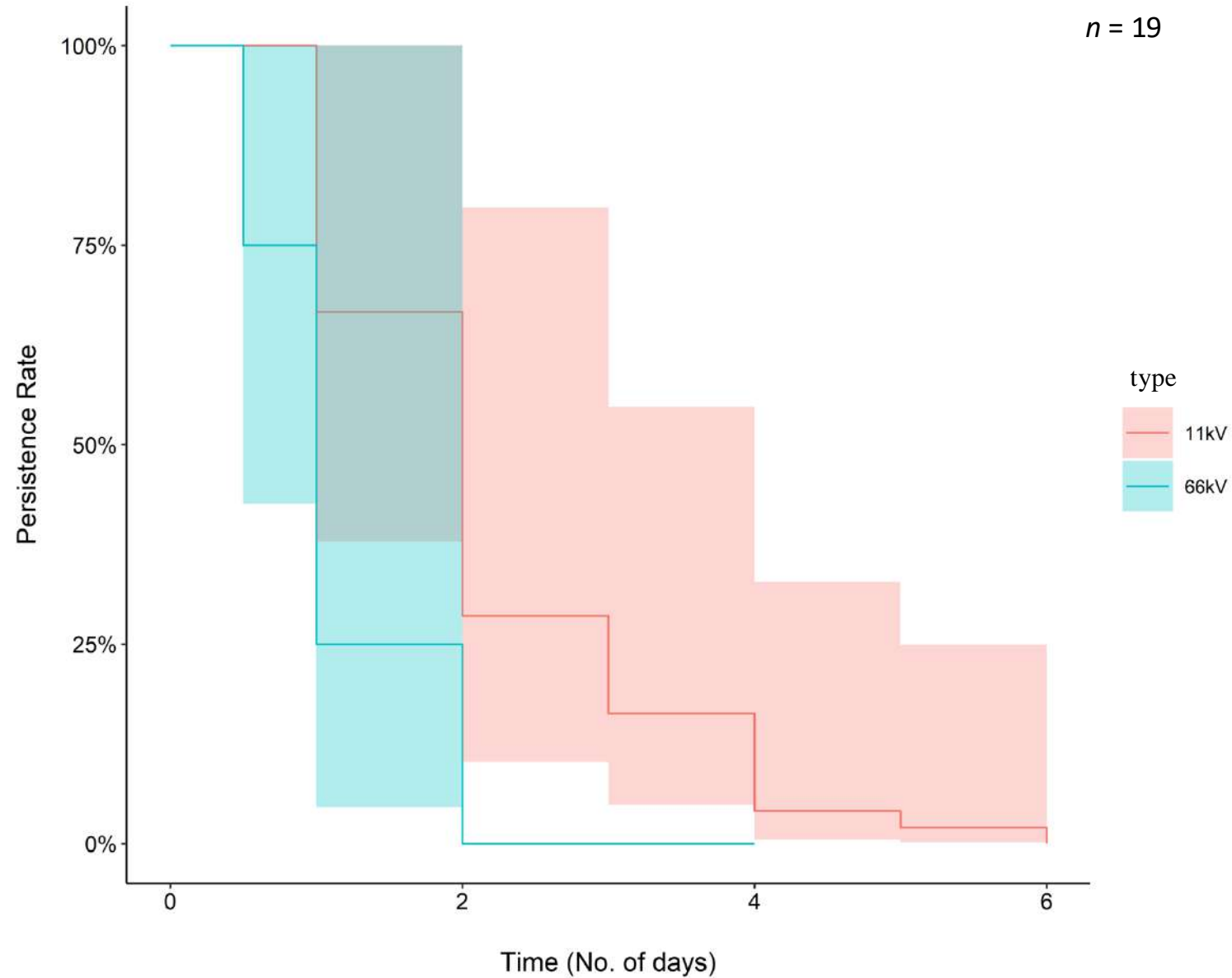
78%
identified up to
genus

25
species

Observed Mortality

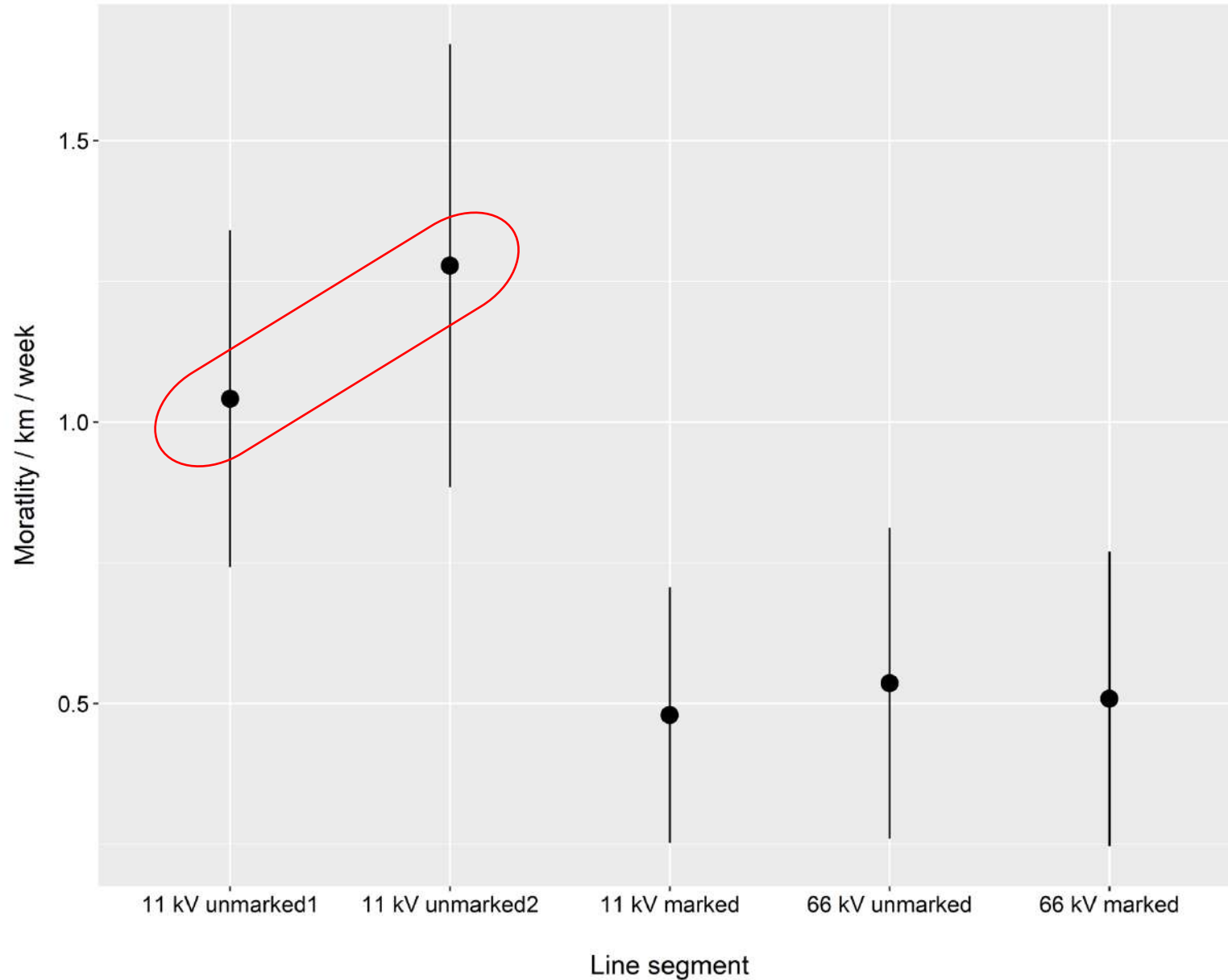


Carcass Disappearance



>50% of the fresh carcasses disappeared within two days

Probability of Bird Mortality



11 kV

- 3 mortalities/km/ week
- 749 mortalities/ year

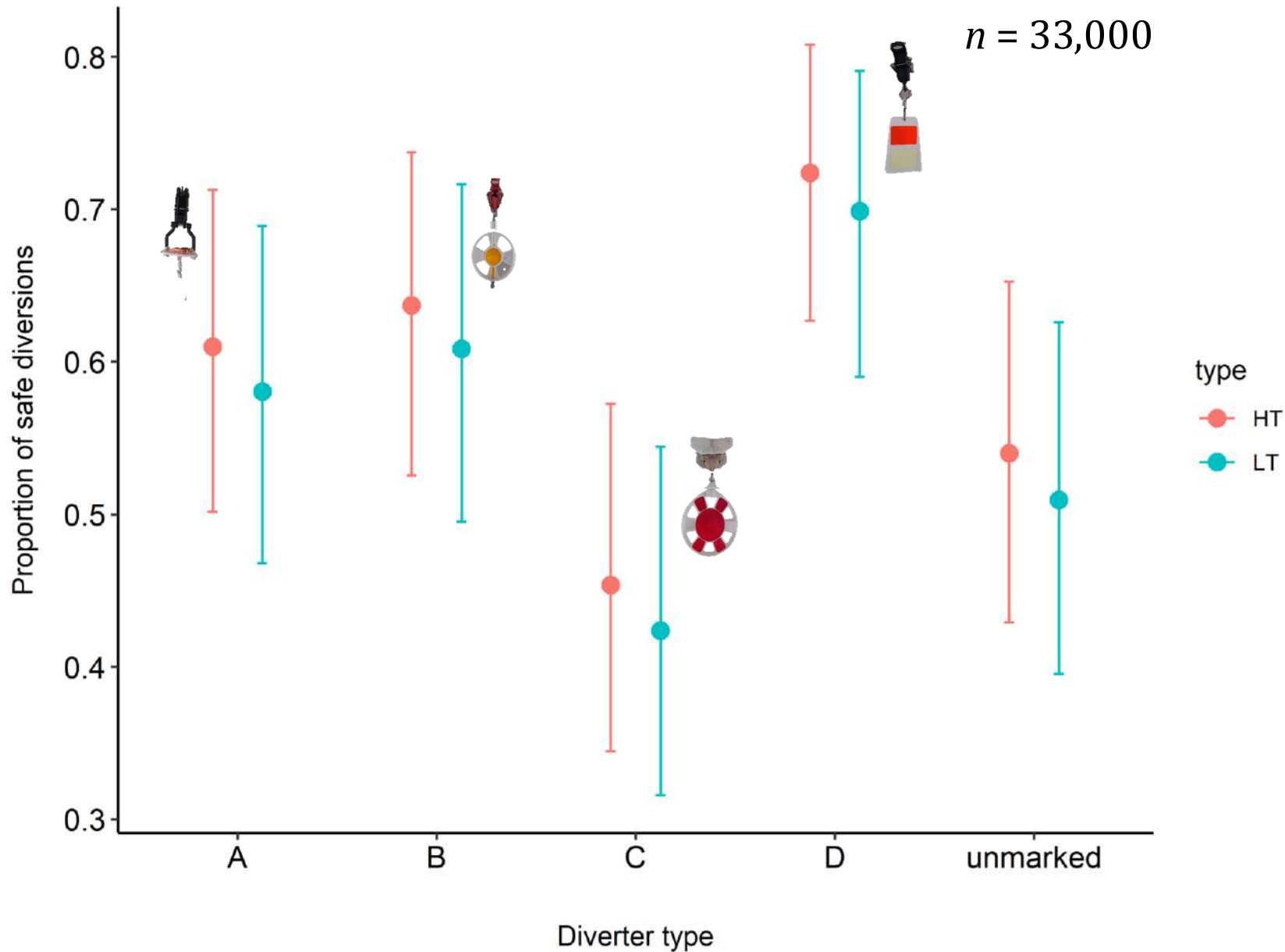
66 kV

- 1 mortality/km/ week
- 176 mortalities/year





Bird Crossing Overs



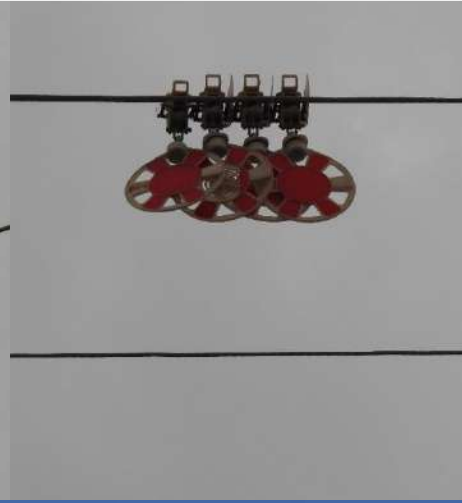
113 species



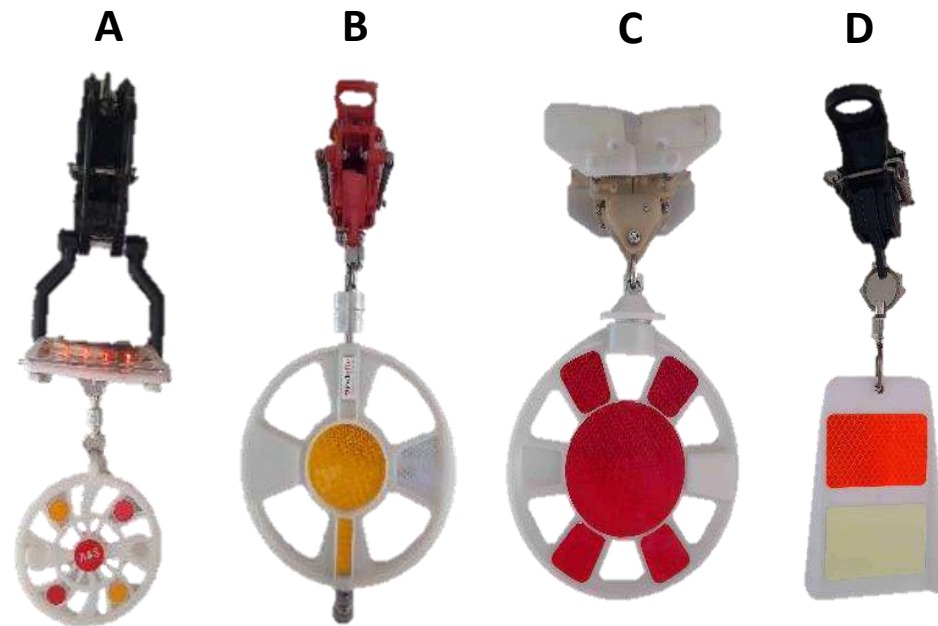
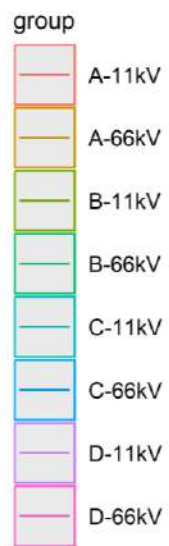
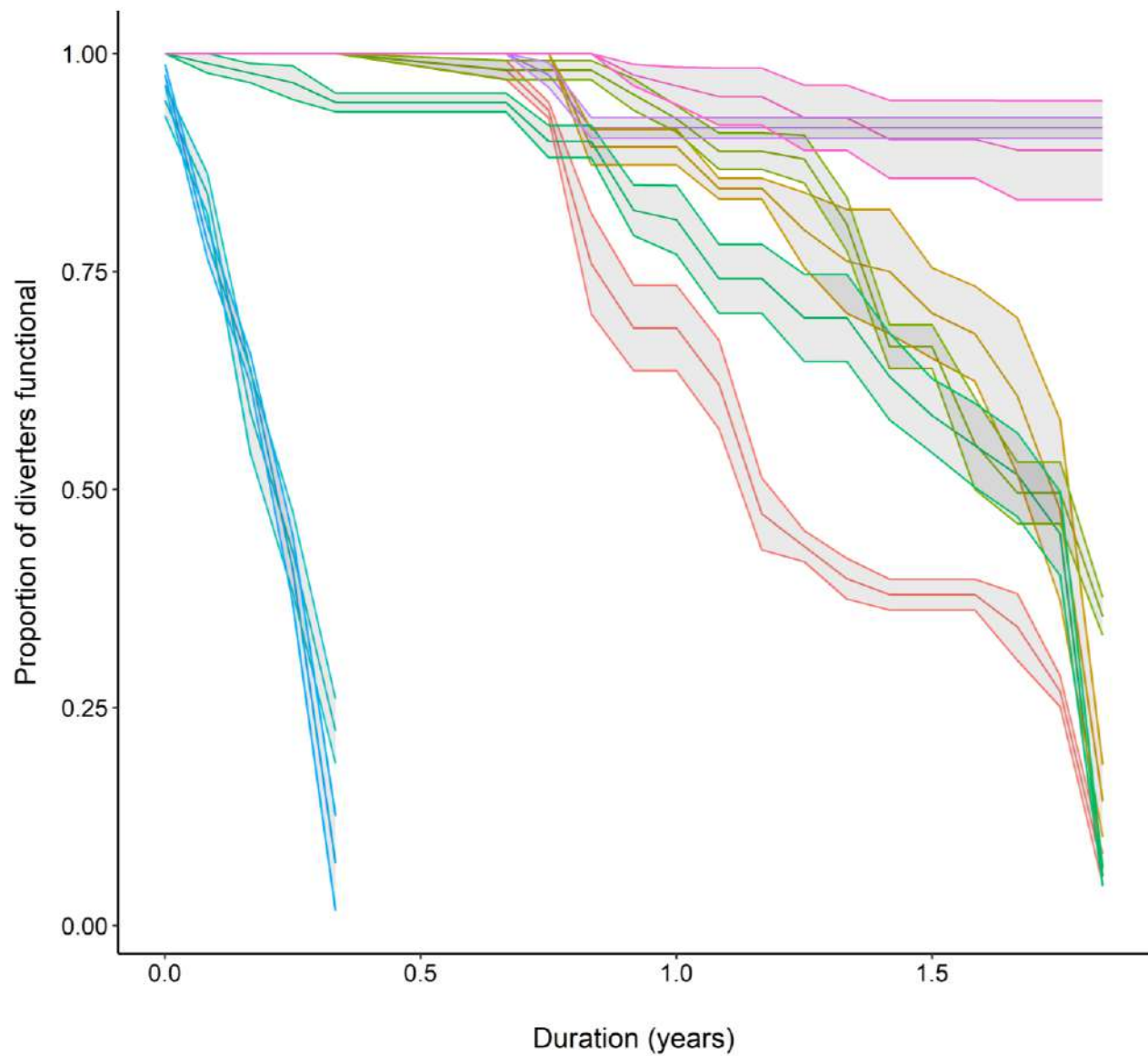
Alaudidae



Damaged Diversers

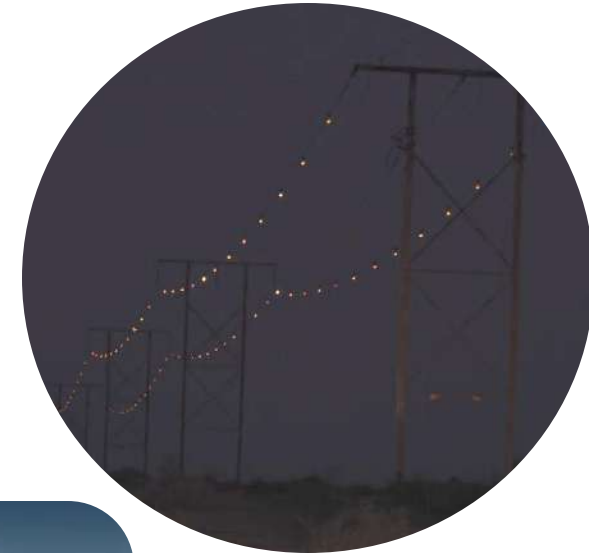


BFDs Persistence

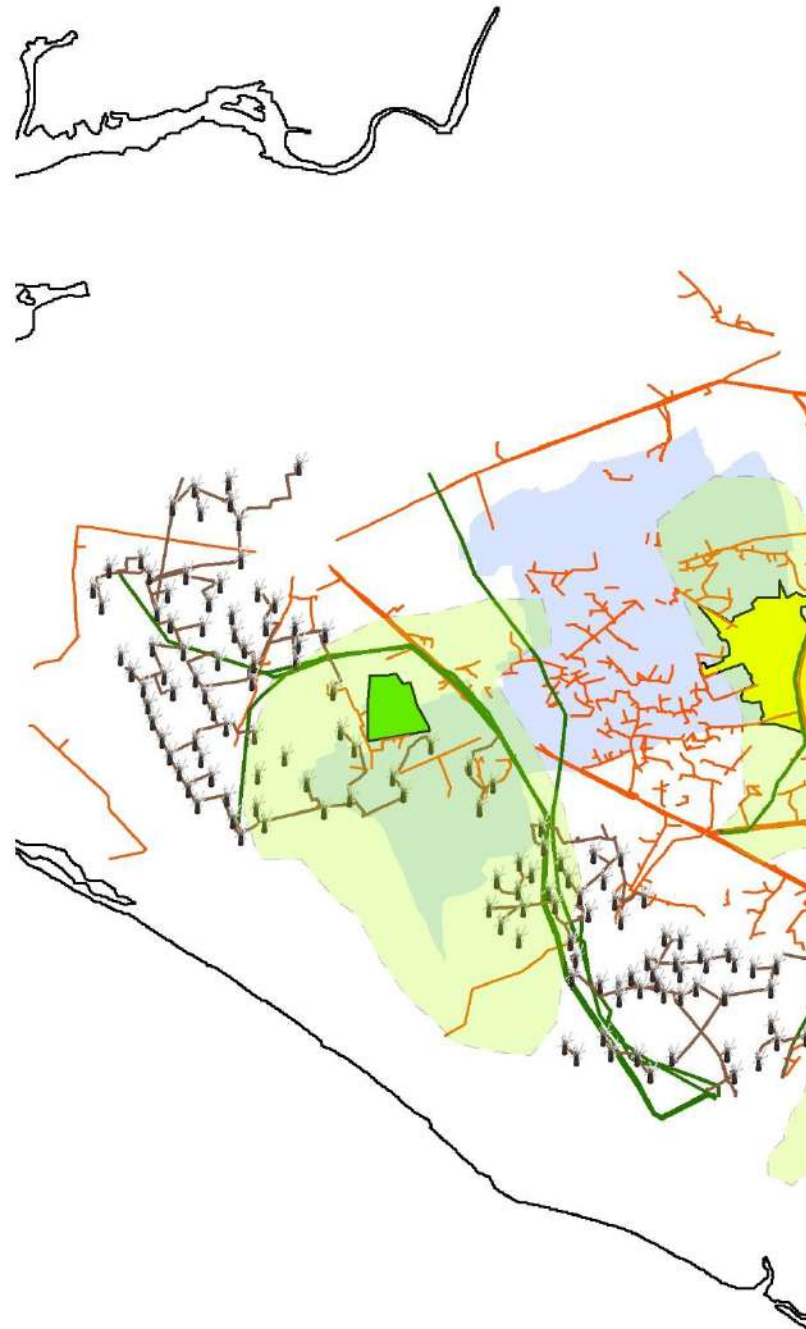


Way Forward

- **Expansion** of the current study
- **Re-routing** or **undergrounding** of critical power lines or critical sections
- Horizontal Alignment of conductors/
Aerial Bunch Cables or Bundling
- Parallel Lines / Power Line Corridor
- Improvement in quality and design of BFDs



Power Line Distribution in GIB Habitat, Abdasa, Kutch, Gujarat



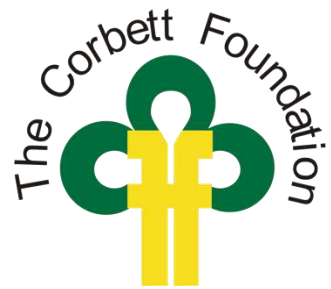
Legend

- Abdasa Taluka
- Kutch Bustard Sanctuary
- Naliya Grassland
- Eco Sensitive Zone
- GIB Priority Area
- 11kV (815.06 km)
- 66kV (201.09 km)
- 220kV (12.32 km)
- 33kV Windmill Lines (113.27 km)
- Windmills
- New line in progress





Acknowledgements



Let's work together to save these CR Species

Great Indian Bustard



© Radheshyam Bishnoi

Lesser Florican



© Dr. Mohan Ram



Group Two

Presentations

Global Solutions for Global Challenges: Case studies from around the world



André Botha

Vulture for Africa Programme Manager

Endangered Wildlife



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Dr. Larissa Biasotto

Science Officer Birds & Energy

BirdLife International



EUFLYNET

COST Action

A European flyway research network for the
effective conservation of migrant landbirds

Ivan Maggini



Review article

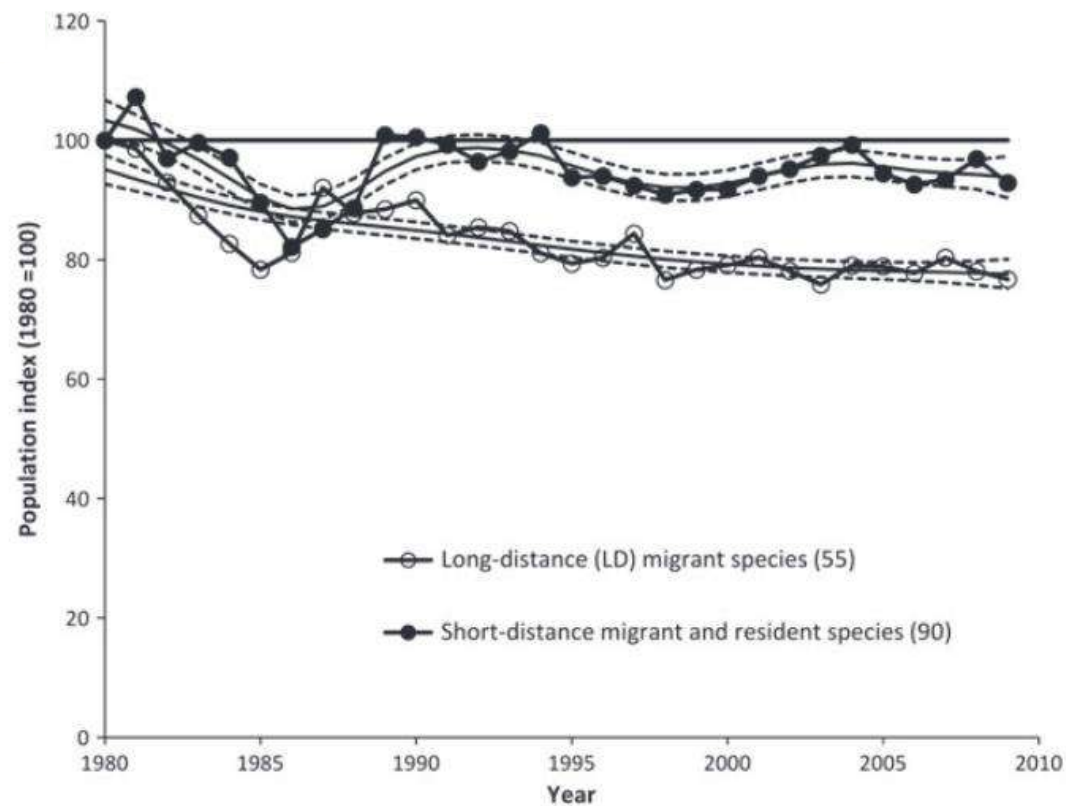
The decline of Afro-Palaeartic migrants and an assessment of potential causes

JULIET A. VICKERY,^{1*} STEVEN R. EWING,¹ KEN W. SMITH,¹ DEBORAH J. PAIN,^{1†} FRANZ BAIRLEIN,²
JANA ŠKORPILOVÁ³ & RICHARD D. GREGORY¹

¹Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire SG19 2DL, UK

²Institute of Avian Research, 'Vogelwarte Helgoland', An der Vogelwarte 21, 26386, Wilhelmshaven, Germany

³Pan-European Common Bird Monitoring Scheme, Czech Society for Ornithology, Na Bělidle 252/34, CZ-150 00,
Prague 5, Czech Republic

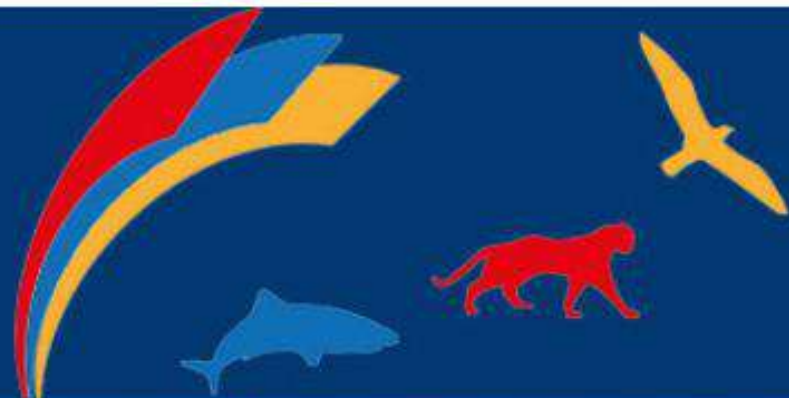




Time for Action !

COP11

4-9 Nov 2014
Quito, Ecuador





Time for Action!

COP11

4-9 Nov 2014
Quito, Ecuador



CMS



CONVENTION ON MIGRATORY SPECIES

Distribution: General

UNEP/CMS/Resolution 11.17

Original: English

ACTION PLAN FOR MIGRATORY LANDBIRDS IN THE AFRICAN-EURASIAN REGION

Adopted by the Conference of the Parties at its 11th Meeting (Quito, 4-9 November 2014)



Science

Volume 354, Issue 6312: Pain

Research

Nov 2016

ARTICLE

Migratory birds under threat

[View article page](#)

Franz Bairlein

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Threats to European–African migrants

Bird populations are in steep decline despite not migrating across the blackspots of illegal killing. Habitat degradation and loss are likely the most important causes, but climate change also affects populations.

Climate change

Earlier arrival at breeding grounds causes ecological mismatch between birds and their insect prey.

Pied flycatcher

Habitat degradation and loss

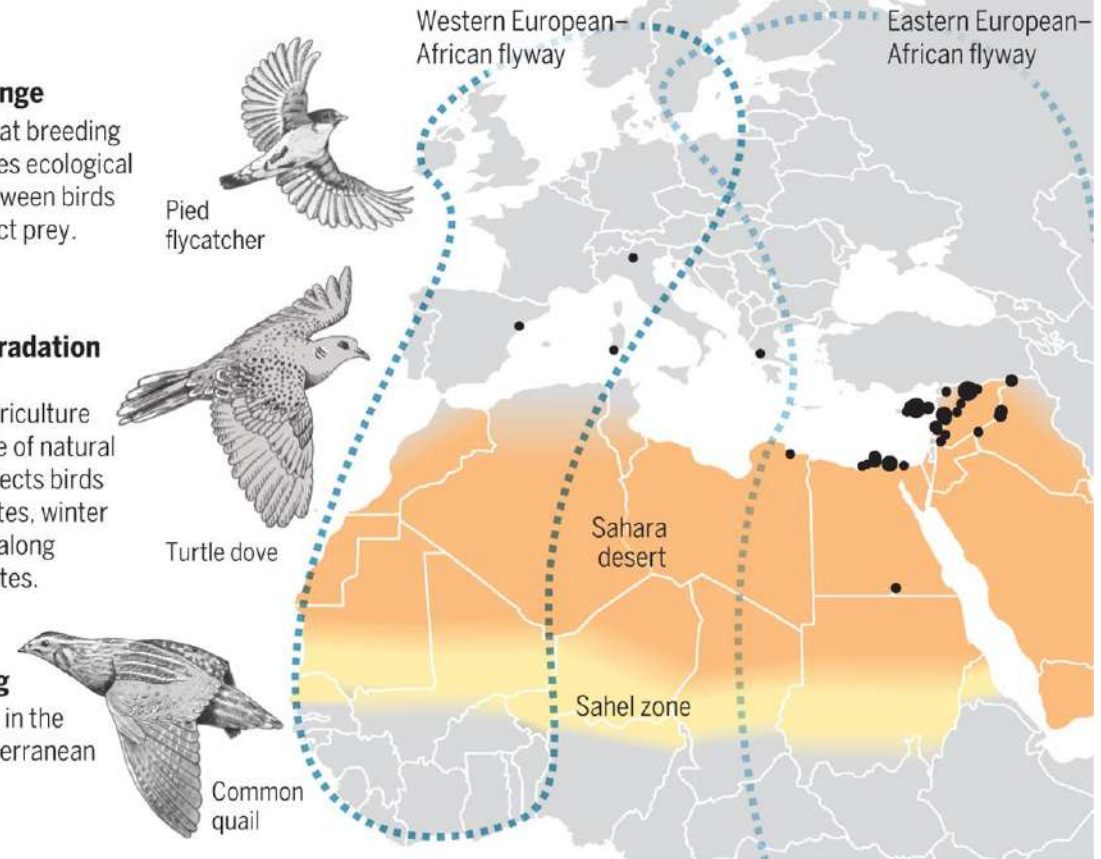
Increase in agriculture at the expense of natural vegetation affects birds at breeding sites, winter habitats, and along migratory routes.

Turtle dove

Illegal killing

Concentrated in the eastern Mediterranean (black dots)

Common quail



illegal taking and killing can be stopped. The required political instruments, such as the African-Eurasian Waterbird Agreement and the African-Eurasian Migratory Landbird Action Plan, are already in place. We just need to act, and we can if we wish. ■



Science
Volume 354, Issue 6312: Pain
Research
Nov 2016

ARTICLE
Migratory birds under threat
[View article page](#)
Franz Bairlein

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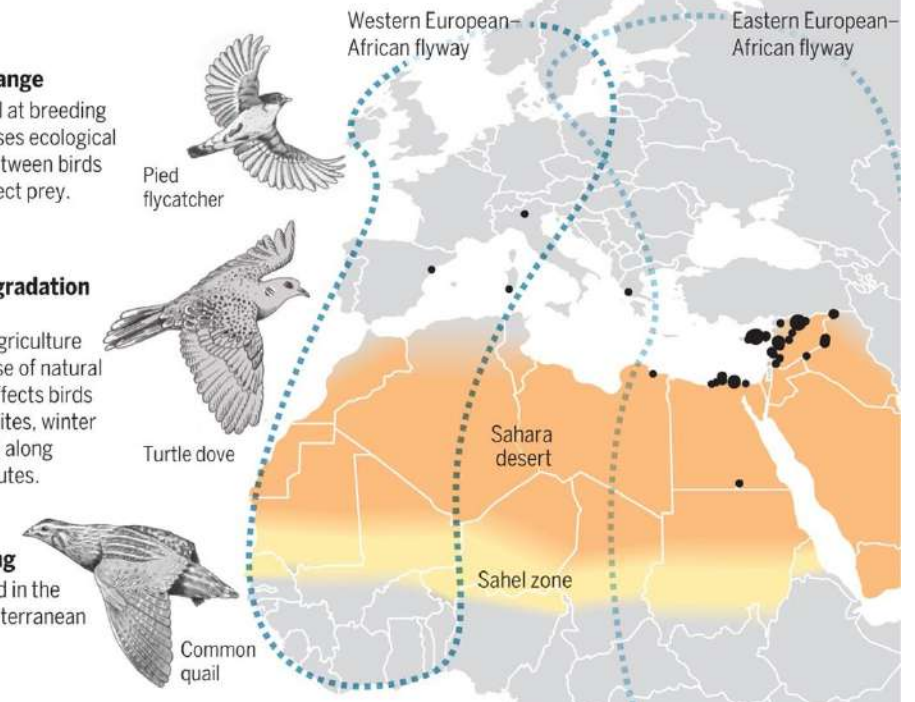
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Habitat degradation and loss

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Illegal killing

Concentrated in the eastern Mediterranean (black dots)





African-Eurasian Migratory Landbirds Action Plan (AEMLAP)

**Improving the Conservation Status of Migratory Landbird Species
in the African-Eurasian Region**

(Prepared by the African-Eurasian Migratory Landbirds Working Group)

Version 28 April 2014



4.3 Understand causes of population change in migratory landbird species

To focus conservation action effectively and efficiently it is necessary to accurately diagnose the factors that may be driving population declines, their relative impacts at different stages of the annual cycle and the interactions and carry-over effects that may operate. There is a need to understand the demographic mechanisms underlying population changes, i.e. whether declines are being driven by conditions in the breeding areas, staging grounds or non-breeding areas. This information is essential in developing habitat prescriptions that will guide conservation intervention at sites within the flyways.

Also, the linkages between the limiting ecological factors (e.g. insufficient food for refuelling due to habitat degradation) with socio-economic factors (e.g. intensification of agriculture) and drivers of change (e.g. agricultural policies, markets, subsidies) need to be better understood, in order to develop effective interventions that restore bird populations.

4.4 **Build capacity** and improve the exchange of information, collaboration and coordination between researchers studying migratory landbird species

In parts of Africa, Central Asia and the Middle East, there is need to build capacity of national agencies to collate data, and to develop or revive their own national database(s), particularly using online resources so that such data is accessible to a wider community.

Compared to other groups of birds, for which there exist various sorts of specialised international and national working groups, there has been less collaboration between experts on migratory landbird species. Furthermore, **research and monitoring of these birds by non-European researchers is still limited.** There is an urgent need for capacity building and exchange to fill these gaps, and for better dissemination of research outputs.

5.0 EDUCATION AND INFORMATION

5.1 **Improve public awareness and understanding about migratory landbird species**

For effective conservation of migratory landbird species, the general public, local communities in key areas and decision makers and donors need to be aware of the value of taking care of these birds for intrinsic as well as for cultural and economic reasons, and their conservation needs.

CA22117 - A European flyway research network for the effective conservation of migrant landbirds (EUFLYNET)

 Downloads

[Home](#) > [Browse Actions](#) > A European flyway research network for the effective conservation of migrant landbirds (EUFLYNET)

Description

Management Committee

Main Contacts and Leadership

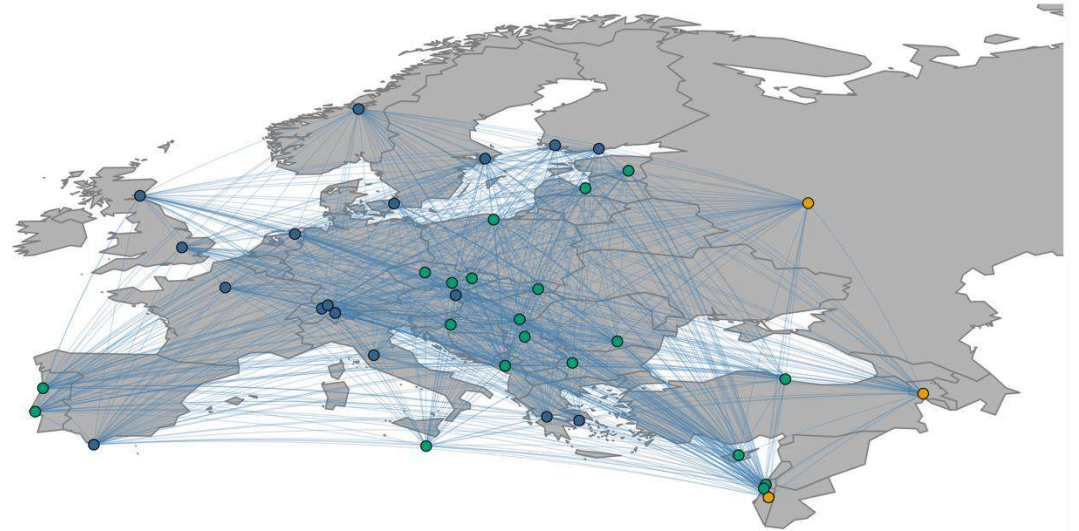
Working Groups and Membership

Description

<https://www.cost.eu/actions/CA22117/>

Aims

- Coordination of research
 - Flyway-level
 - Multidisciplinary
 - Improve analytical and technological tools
 - Species Action Plans
- Capacity building
 - Training in less research-active countries, peripheral countries
 - Interaction with policy-makers, education, **land use and other relevant stakeholders**



Working Groups

1. Involving relevant stakeholders from economics, social sciences, and education
2. Capacity building and training to equalize the network
3. Research priorities and Species Action Plans

Join here: <https://www.cost.eu/actions/CA22117/>

Time frame: 12 October 2023 to 11 October 2027

Meetings **twice a year** (one online, one in-person meeting)

Working Group members application

- Apply via the COST website
- Specify WG preference (one or more!), scientific background, motivation, WG contribution
- Approved WG members will appear on the COST website

CA22117 - A European flyway research network for the effective conservation of migrant landbirds (EUFLYNET)

Downloads

Home > Browse Actions > A European flyway research network for the effective conservation of migrant landbirds (EUFLYNET)

Description Management Committee Main Contacts and Leadership **Working Groups and Membership**

Working Groups

Number	Title	Leader
1	Involving relevant stakeholders from economics, social sciences, and education	TBA
2	Capacity building and training to equalize the network	TBA
3	Research priorities and Species Action Plans	TBA

Express your interest to join any of the working groups by applying below.

It is required to have an e-COST profile to submit your application. If needed, [create it first](#) and then click 'Apply'.

Apply

Working Group members application



CA22117 - A European flyway research network for the effective conservation of migrant landbirds (EUFLYNET)

Downloads

Home > Browse Actions > A European flyway research network for the effective conservation of migrant landbirds (EUFLYNET)

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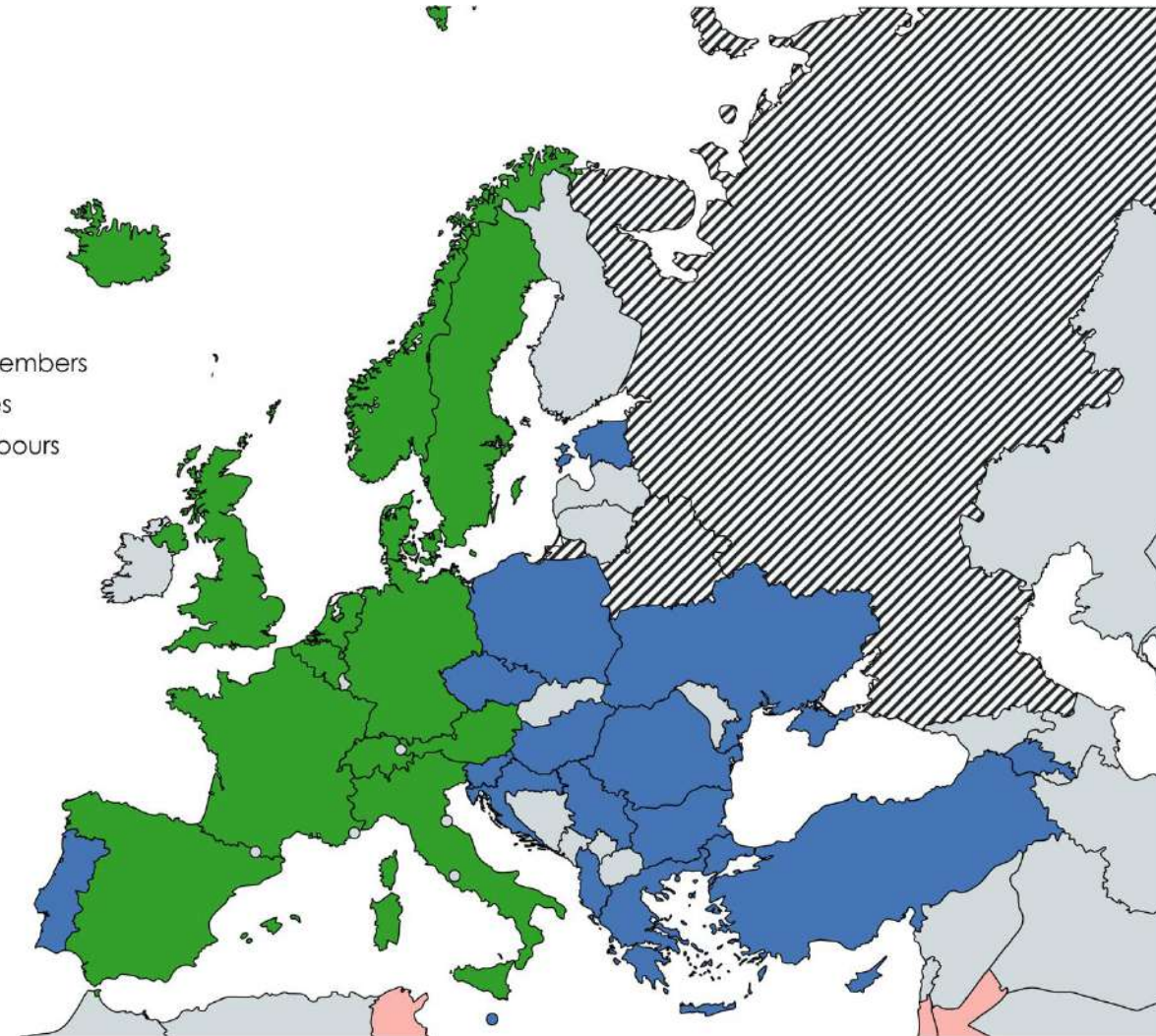
It is required to have an e-COST profile to submit your application. If needed, [create it first](#) and then click 'Apply'.

Apply

The EUFLYNET participants



- 220 participants
 - 40% females
 - 51% ECR
- 35 countries
 - 17 ITC
 - 4 Near-neighbour
 - South Africa
- WG1: 52 members
- WG2: 148 members
- WG3: 176 members





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[Activities](#)

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[Contact](#)

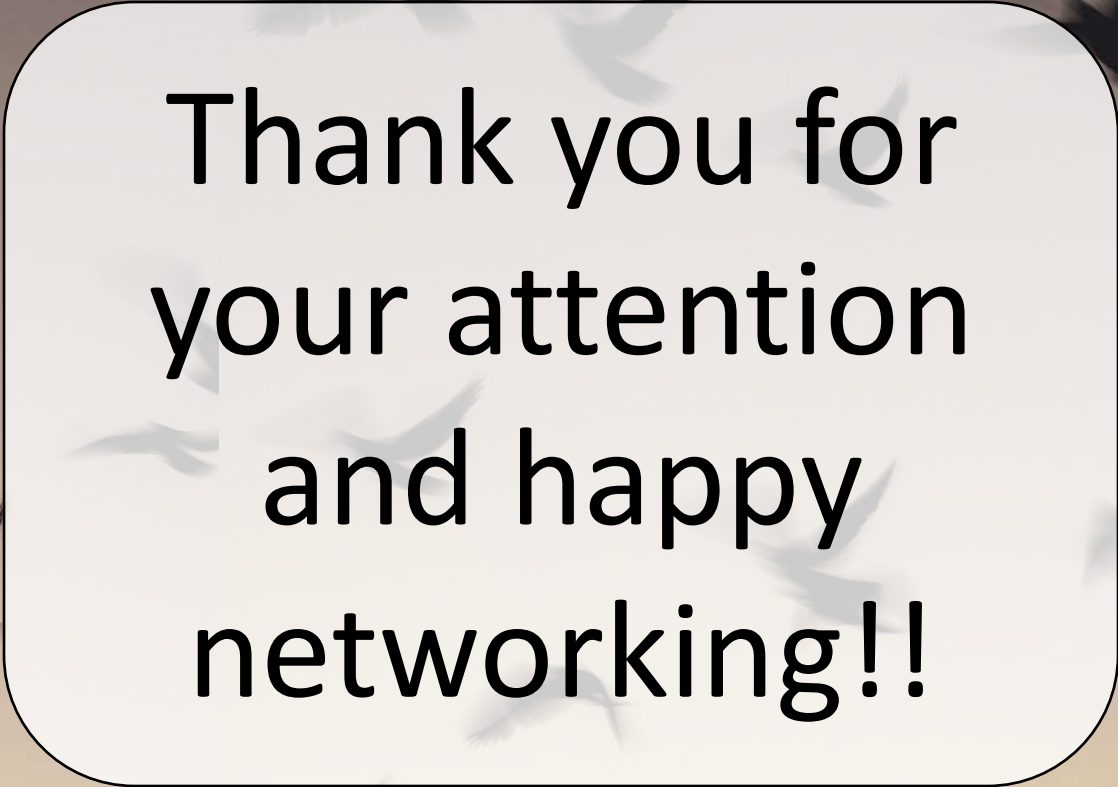
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Thank you for
your attention
and happy
networking!!



Group Two

Presentations

Global Solutions for Global Challenges: Case studies from around the world



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PhD Candidate

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Austrian Ornithological Centre



Dr. Larissa Biasotto

Science Officer Birds & Energy

BirdLife International

Mapping priority areas to reduce bird electrocution: a case study of the Lear's Macaw (*Anodorhynchus leari*)

Ph.D Larissa Donida Biasotto

BirdLife International - Science Officer (Birds & Energy)

larissa.biasotto@birdlife.org

October 2024



→ **Bird electrocutions in Brazil:**







Few occasional records

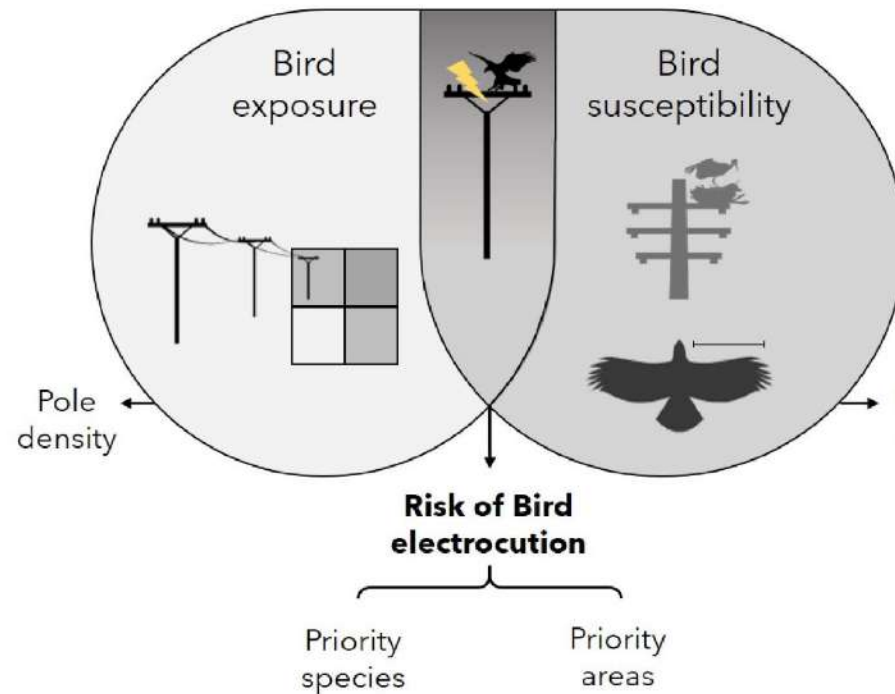
Due to the extensive energy grid and biodiversity, there are no environmental, technical, or economic reasons to have an optimistic scenario in Brazil!



How to deal with scarce data?

Risk of bird electrocution in power lines: a framework for prioritizing species and areas for conservation and impact mitigation

L. D. Biasotto^{1,2} , F. Moreira³ , G. A. Bencke⁴ , M. D'Amico^{5,6} , A. Kindel^{1,2}  & F. Ascensão⁷ 



Photographs: Glayson Bencke and Mariana Diniz

-
- **Psittacids** are vulnerable to electrocution, but little research has focused on studying electrocution considering this group;
 - Unfortunately, only **occasional deaths** or anecdotal cases of electrocution are being reported

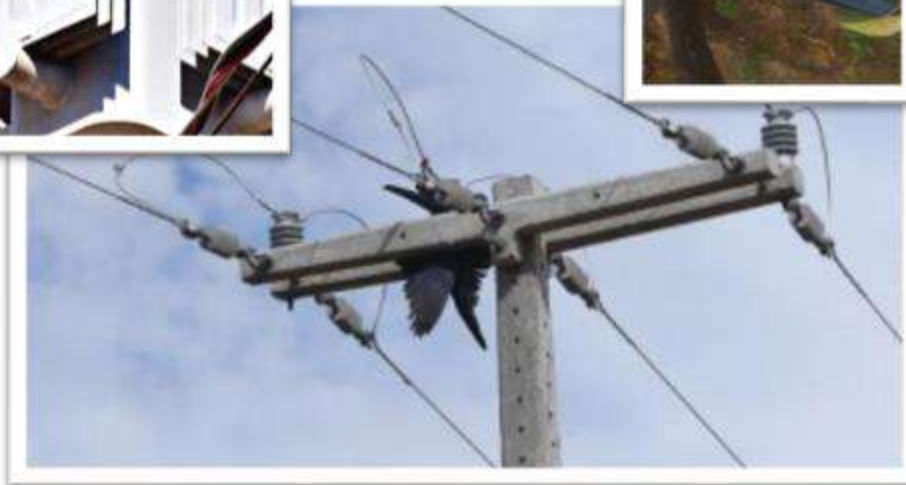
Golden Parakeet (J. Gonçalves)



Blue and yellow Macaw (Vinicius Santana)



Red-and-green Macaw
(Tinoco et al 2022)



Lear's Macaw (Thiago Filadelfo)

Electrocutions in power lines: a threat to the Lear's macaw



© Thiago Filadelfo



Ibis (2022)

doi: 10.1111/ibi.13139

Short Communication

Power line electrocution as an overlooked threat to Lear's Macaw (*Anodorhynchus leari*)

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FERNANDA R. PASCHOTTO,^{5,6}

THIAGO FILADELFO,⁵ MÁILA B. COUTO,⁵

ANTONIO EMANUEL B. A. SOUSA,⁷

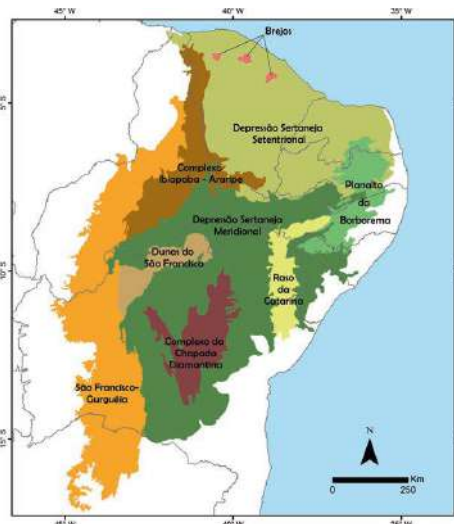
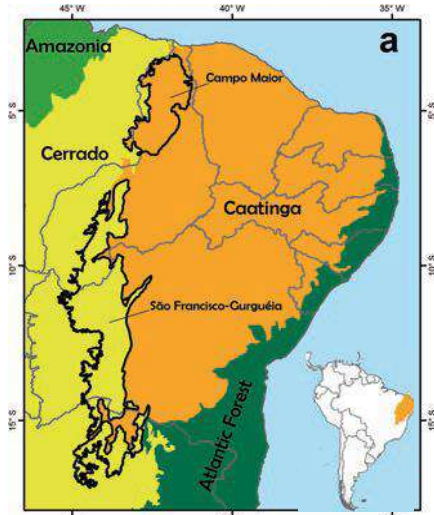
PLINIO MANTOVANI,⁸  LUIS FÁBIO SILVEIRA,⁴

FERNANDO ASCENSÃO⁹ JOSÉ L. TELLA³ &

ANDREAS KINDEL^{1,2}

Lear's Macaw electrocution: local context

→ Caatinga biome and local community



<https://www.institutoaguaviva.org.br/posto-dia-do-sertanejo>

- The largest tropical dry forest region in South America
- Sertão is one of the most populated semi-arid regions in the world
- About 1.7 million people live in darkness
- The energy grid is rapidly expanding

Lear's Macaw electrocution: local context

→ Lear's Macaw behaviour



- Ten roosting sites, ~ **2550 indiv.**
(CEMAVE 2024)
- Licuri palm is the key food resource
- Using pylons to perch



Lear's Macaw electrocution: local context

→ Lear's Macaw behaviour



- Ten roosting sites, ~ **2550 indiv.**
(CEMAVE 2024)
- Licuri palm is the key food resource
- Using pylons to perch
- Intense social behaviour

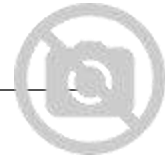




Mapping priority areas for reducing bird electrocution: a case study of the Lear's Macaw

Why does it matter?

- Guide robust sampling designs for estimating the number of fatalities
- Study the magnitude of deaths by electrocution to infer their consequences for population dynamics
- Systematize the installation of the mitigation measures and the study of their effectiveness



Mapping priority areas for reducing bird electrocution: a case study of the Lear's Macaw

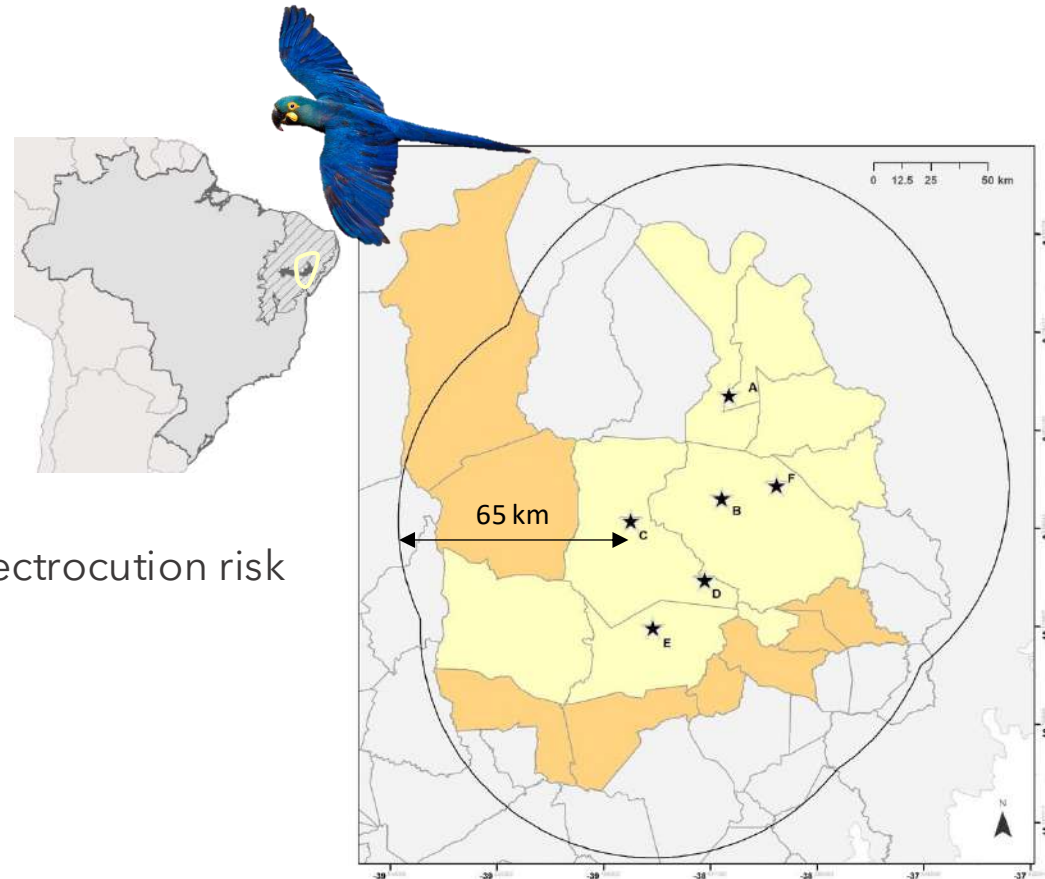
- **Study area:**

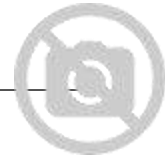
Ecoregion RASO da Catarina

Average daily displacement: 65 km

- **Spatially explicit approach** to electrocution risk

Resolution = 1 km²





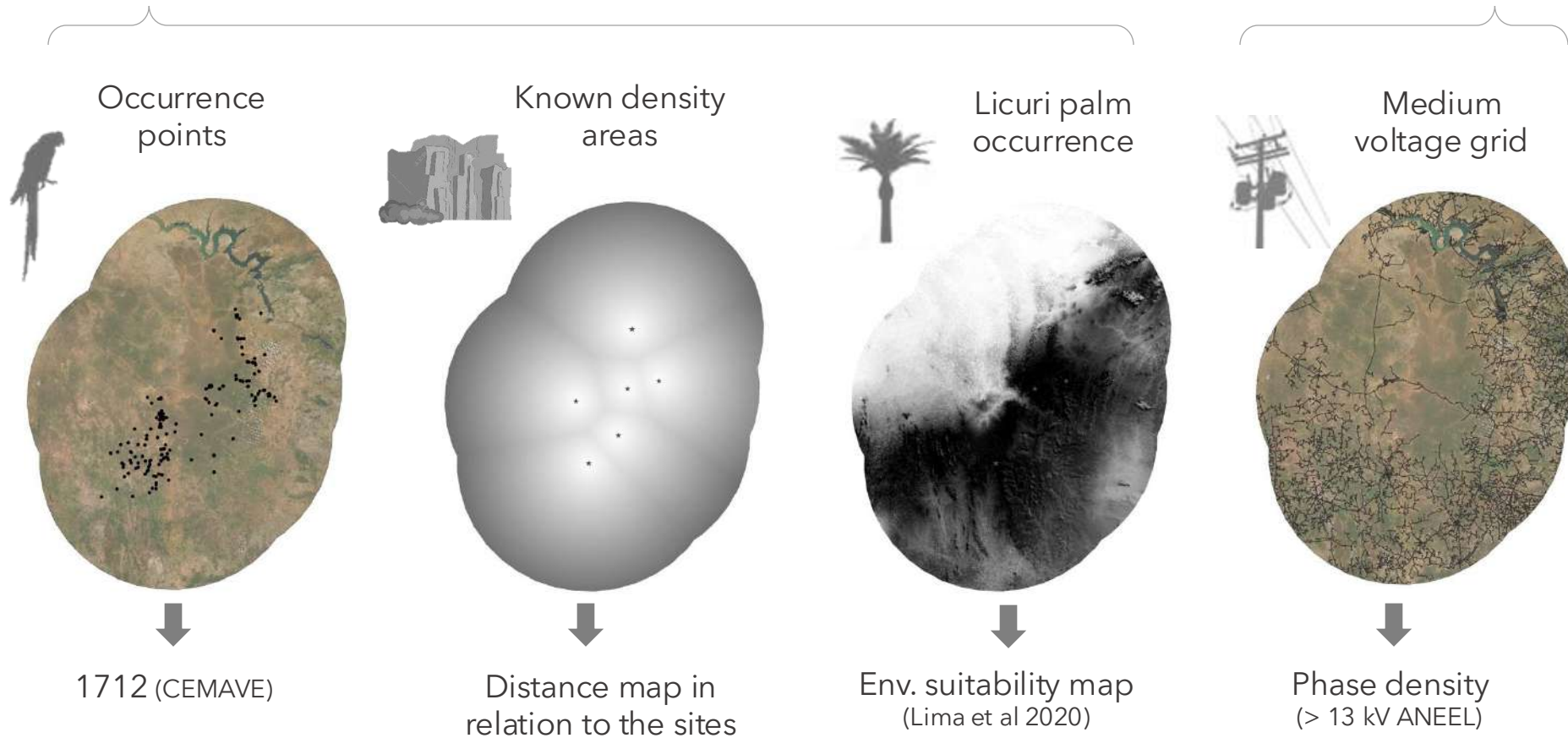
Identification of priority areas in relation to the risk of electrocution

MaxEnt

Model areas of highest likelihood of activity

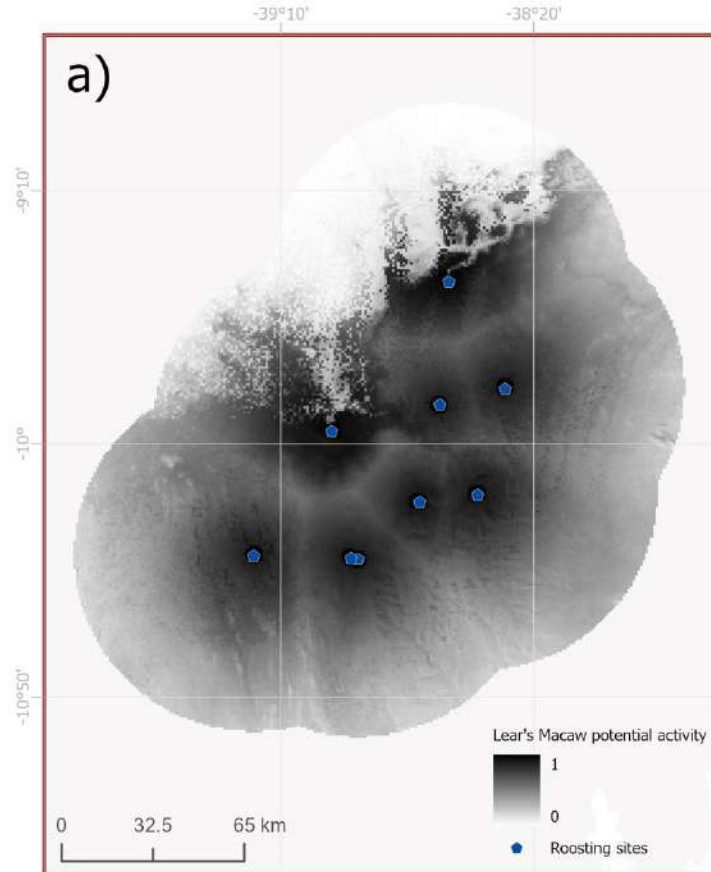


Map the highest exposure to electrocution risk

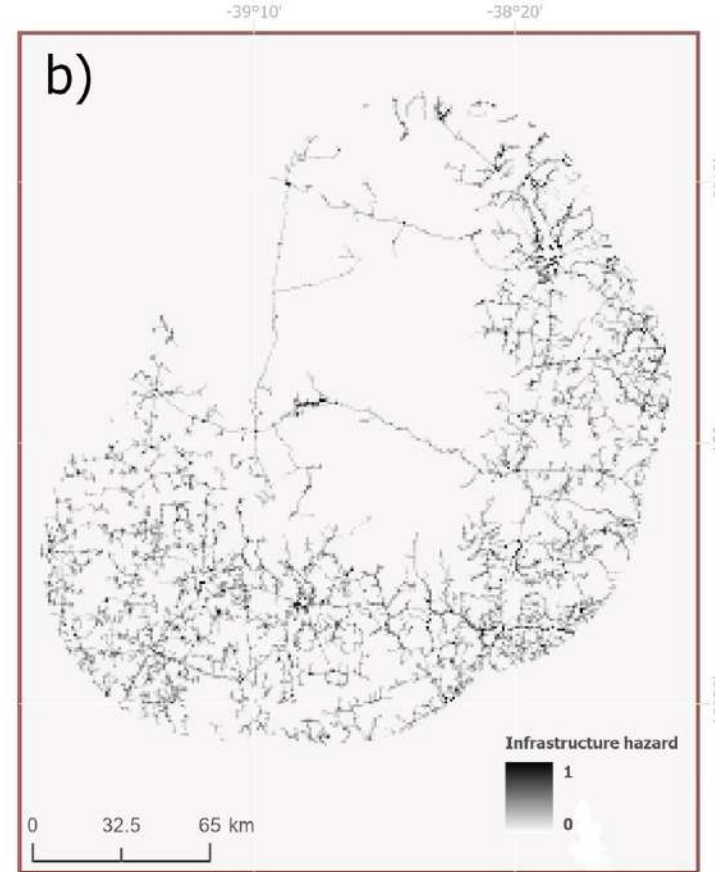




Areas of potential activity



Exposure

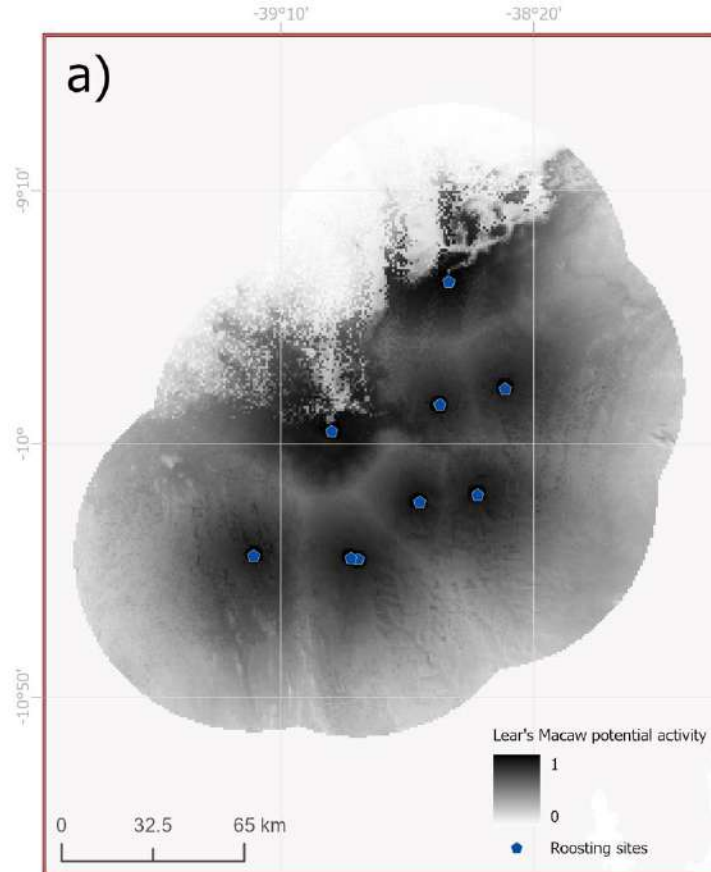


- 277 grid cells representing presences
- ten replicates, 80% training and 20% testing.
- **Bias layer** about occurrence records
Ex: bias towards areas closer to roads or populated

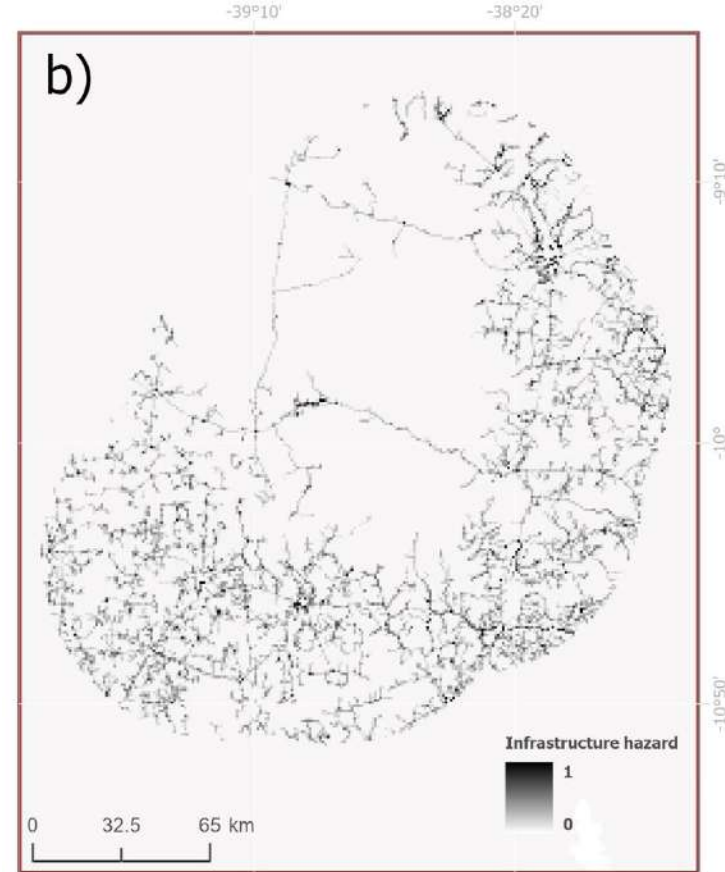
- 243,285 pylons
- Phase number of pylons per grid cell
- Exclusion of urban areas



Areas of potential activity



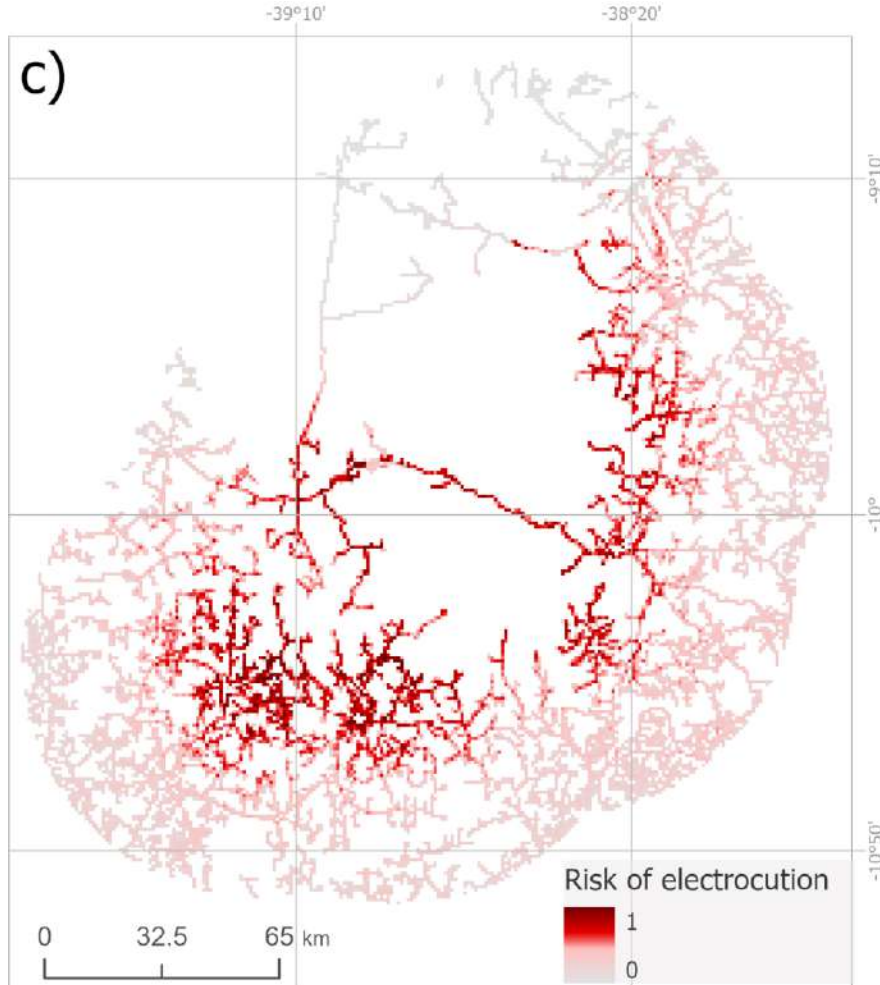
Exposure



- AUC = 0.86 (sd = 0.007)
- Variable contribution:
 - Distance from roosting sites: 85.5%
 - Prob. of occurrence of Licuri: 14.5%

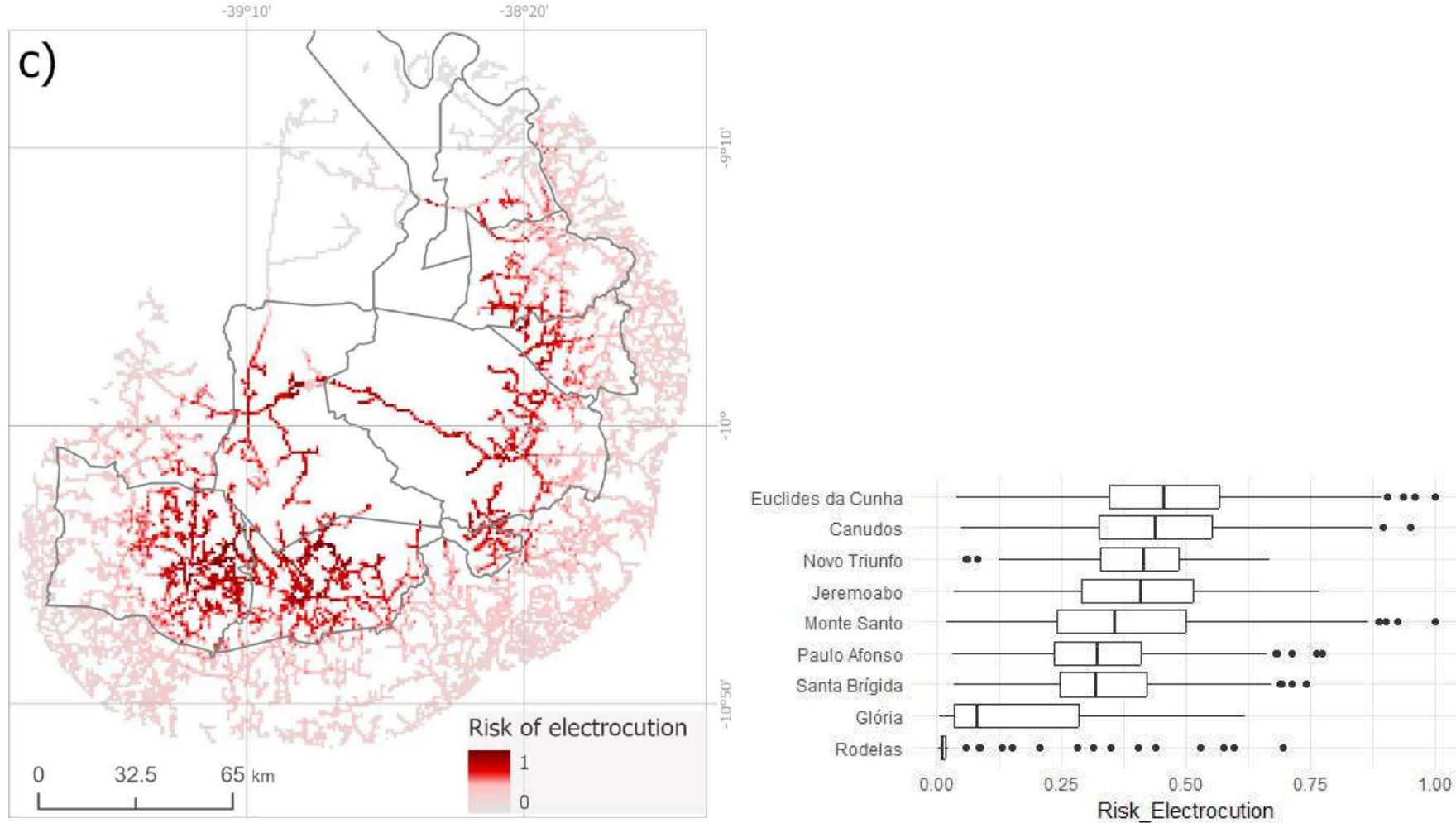
Areas with higher potential activity are more likely to be placed close to the roosting sites and in regions with a higher likelihood of having Licuri palm!

Risk of electrocution

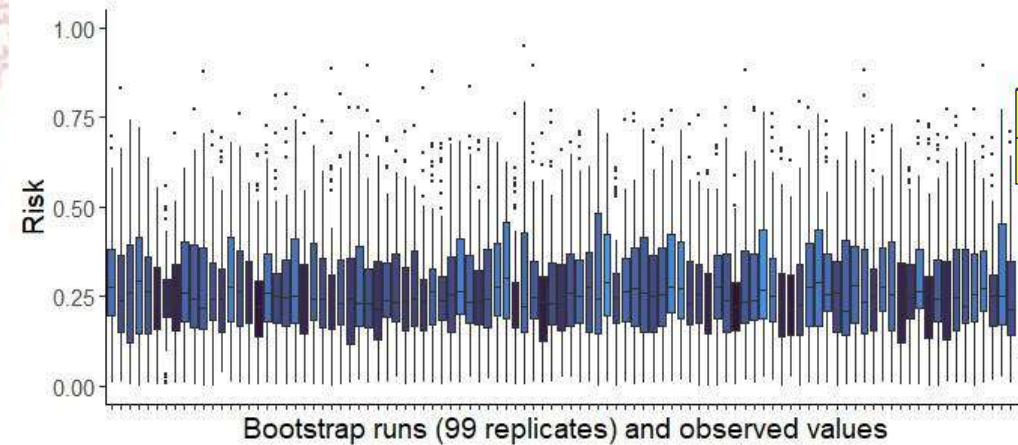
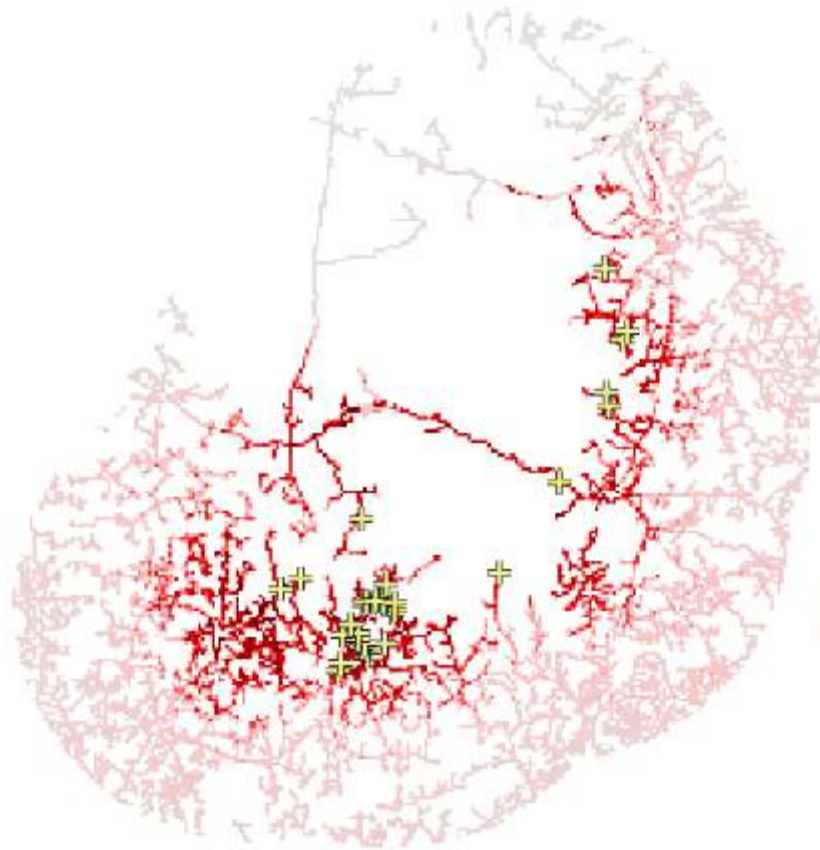
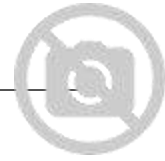




Risk of electrocution

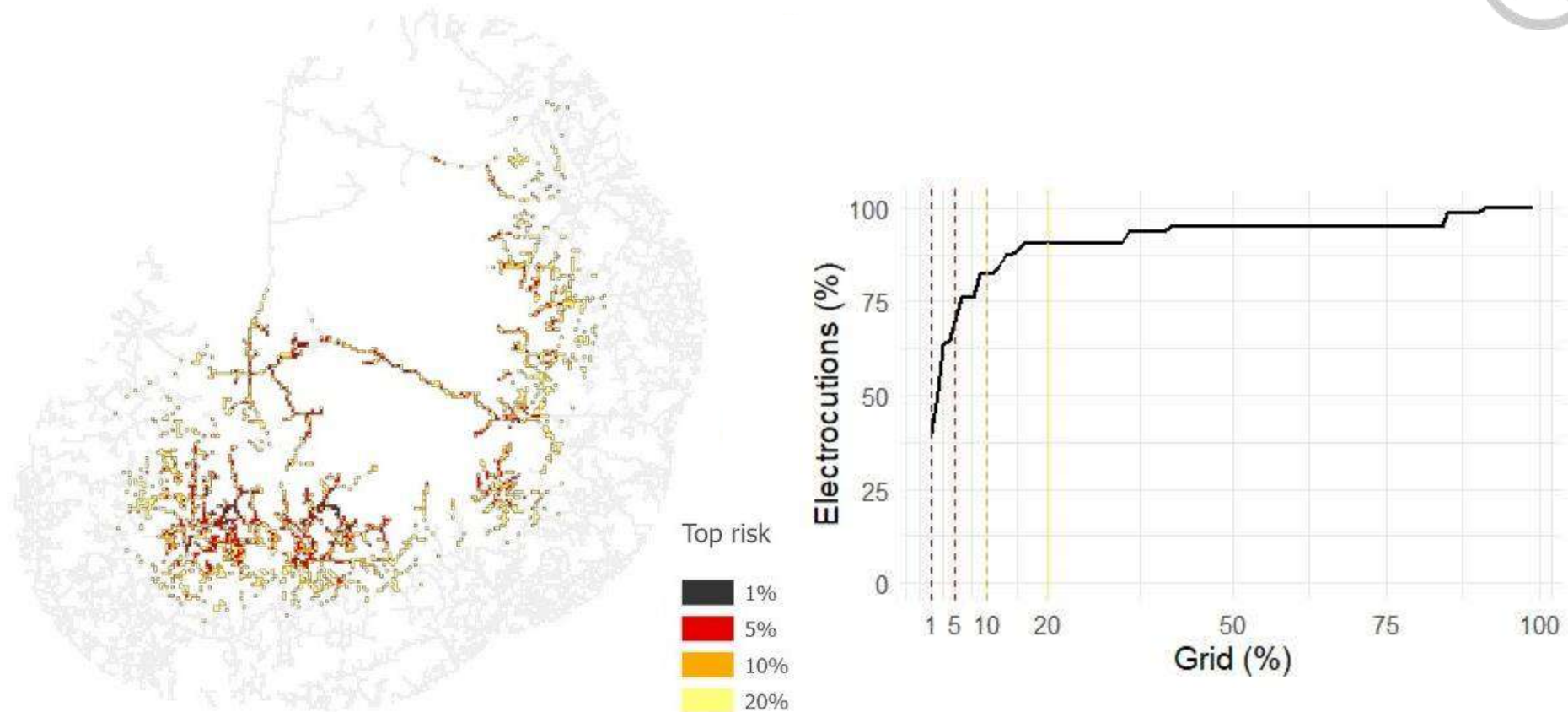
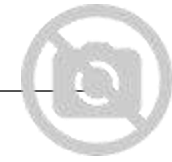


→ The modeling is independent of fatality data... but Euclides da Cunha accounts for 72% of known fatalities!



- 78 individuals electrocuted; 63 electrocution events [by Nov 2022];
- Calculating the average of the risk cells in which the 63 events occurred;
- Plotting 63 random points on the risk surface 99 times, each time calculating the average

→ Cost-benefit analysis: tradeoff between fatalities & pylon mitigation

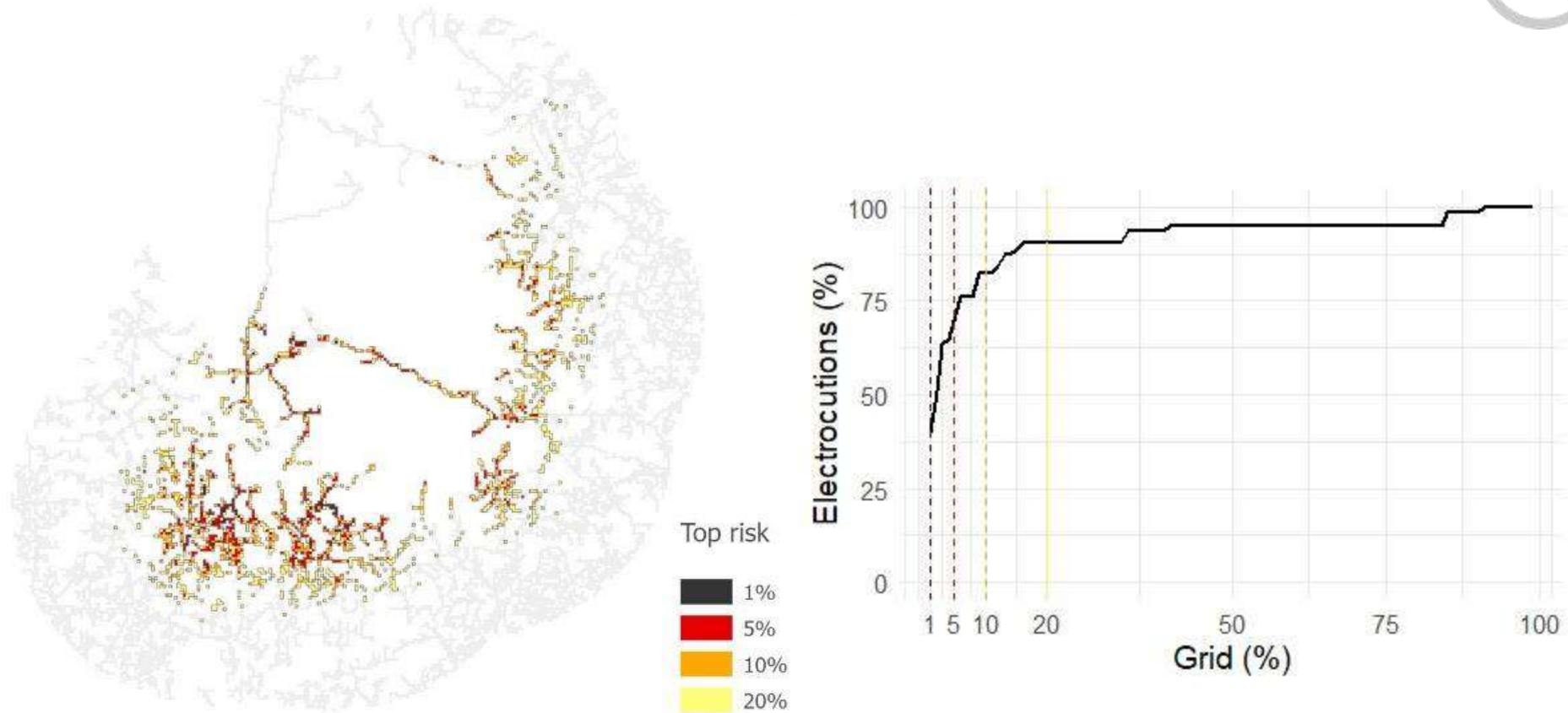
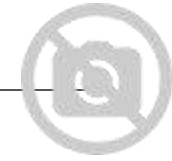


→ Mitigating the top **1%** of risky cells could avoid about **35% of known electrocutions** and mitigate almost **5,668 energy pylons**,

may not be enough to ensure the future population viability!

→ Mitigating the top **5%** could imply avoiding about **60% of known electrocutions** and correcting **22,037 pylons**,

→ Cost-benefit analysis: tradeoff between fatalities & pylon mitigation



→ Mitigating **10% and 20% of risky cells**, there may be an increase in **the reduction of known electrocutions of up to 90%**. However, the pylon mitigation reaches up to **37,412 and 63,966 pylons, respectively**;

It may not be financially and logistically feasible

→ Applied work

- Systematize the installation of mitigations and study of their effectiveness

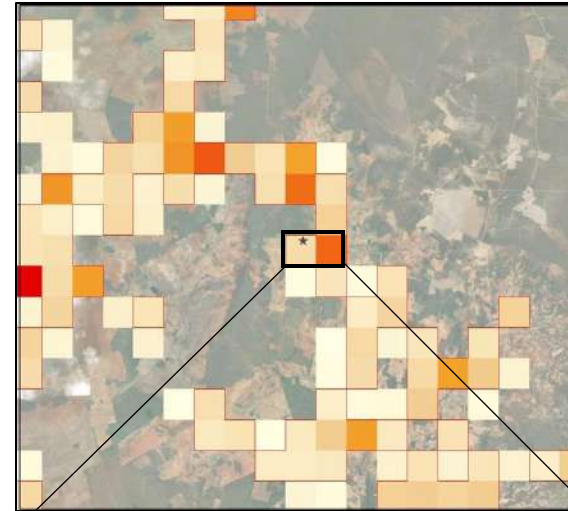
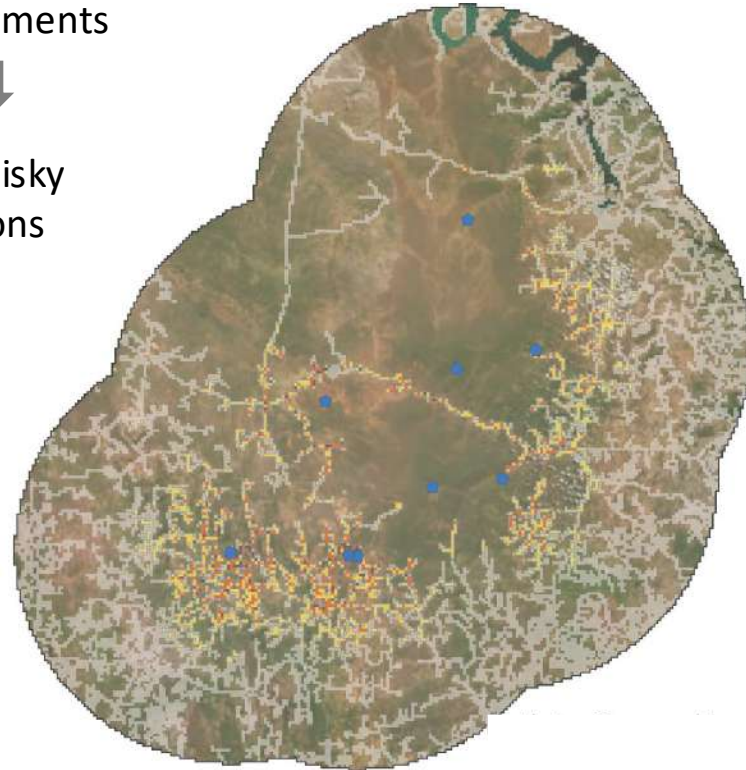
Focal municipalities



Priority energy grid segments

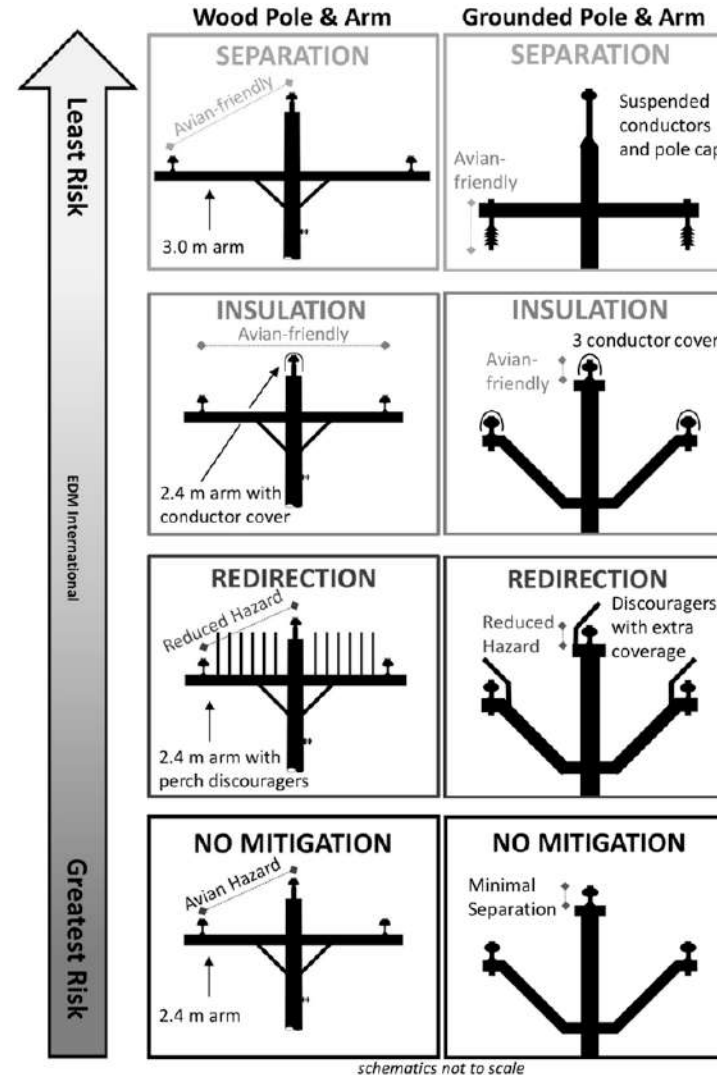


The risky pylons



→ Mitigations to consider

- Installing redirection devices to avoid pylon usage
- Insulating energized structures with resistant material
- Minimum separation between cables (species wingspan and length)
- Installing new pylons with alternating cable arrangements



→ Limitations and What could be improved

- **We use the best data available to date. A collaborative effort is still needed to share different data;**
- **Many other carcasses were probably never found, leading to a spatial bias in the distribution of electrocutions towards less remote areas;**
- **Other technical aspects related to pylon configuration were not accessible but are also relevant for determining electrocution risk;**
- **Movement ecology studies would help to provide more precise answers to identify areas where macaws interact more often with the energy grid;**



→ Next steps towards a conservation agenda

- **Estimating the monetary cost of mitigation for priority areas**
- **Study of the macaw's behaviour in the presence of energy structures**
- **Development of a device to reduce electrocution specifically for psittacids**
- **Knowing the real magnitude of mortality is a fundamental step and would contribute to the population viability analysis of Lear's Macaw in the face of this new threat**





Acknowledgments

Collaborators: Andreas Kindel; Erica C. Pacífico; Thiago Filadelfo; Fernanda R. Paschotto; Gabriela Favoretto; Antônio Emanuel E. A. Sousa; Aldicir Scariot; Fernando Ascensão



Support:





Thanks for your attention

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BirdLife International - Science Officer (Birds & Energy)

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Group Two

Presentations

Global Solutions for Global Challenges: Case studies from around the world



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Endangered Wildlife



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Scientific Coordinator

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Science Officer Birds & Energy

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2024
WINGSPAN

**Partnerships for a bird-friendly energy
transition**





Manon Quetstroey

Manager– Energy & Nature

Renewables Grid Initiative



Dr. Rainer Raab

CEO

TB Raab



Liam Innis

Senior Manager – Energy Ecosystems

Renewables Grid Initiative

Closing Words



Field excursion

- Meeting point at 7:45 at Place Flagey 24
- Departure at 8:00
- Arrival in Brussels at 15:30

**Thank you
for joining!**

2024
WINGSPAN

