




# **Projects to bury medium-voltage power lines underground in Great Bustard sites in Hungary**



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**Scientific Symposium on Great  
Bustard Conservation**



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# **The biggest bird species capable of flight**



# The problems caused by powerlines



- **Collision, the most important mortality factor of adult GB:**
  - Medium and high voltage powerlines
  - Railway powerlines
  - Electric and other fences
- Habitat loss
- Landscape conservation aspects

# Accessible Sky agreement

- After decades of cooperation, formal agreement signed on 26 February 2008

- Signatories: HU electricity suppliers, Ministry of Environment, MME/BirdLife Hungary (others joined later)



- Goal: to eliminate bird mortality along powerlines by 2020

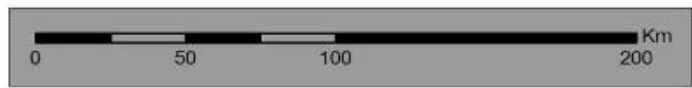
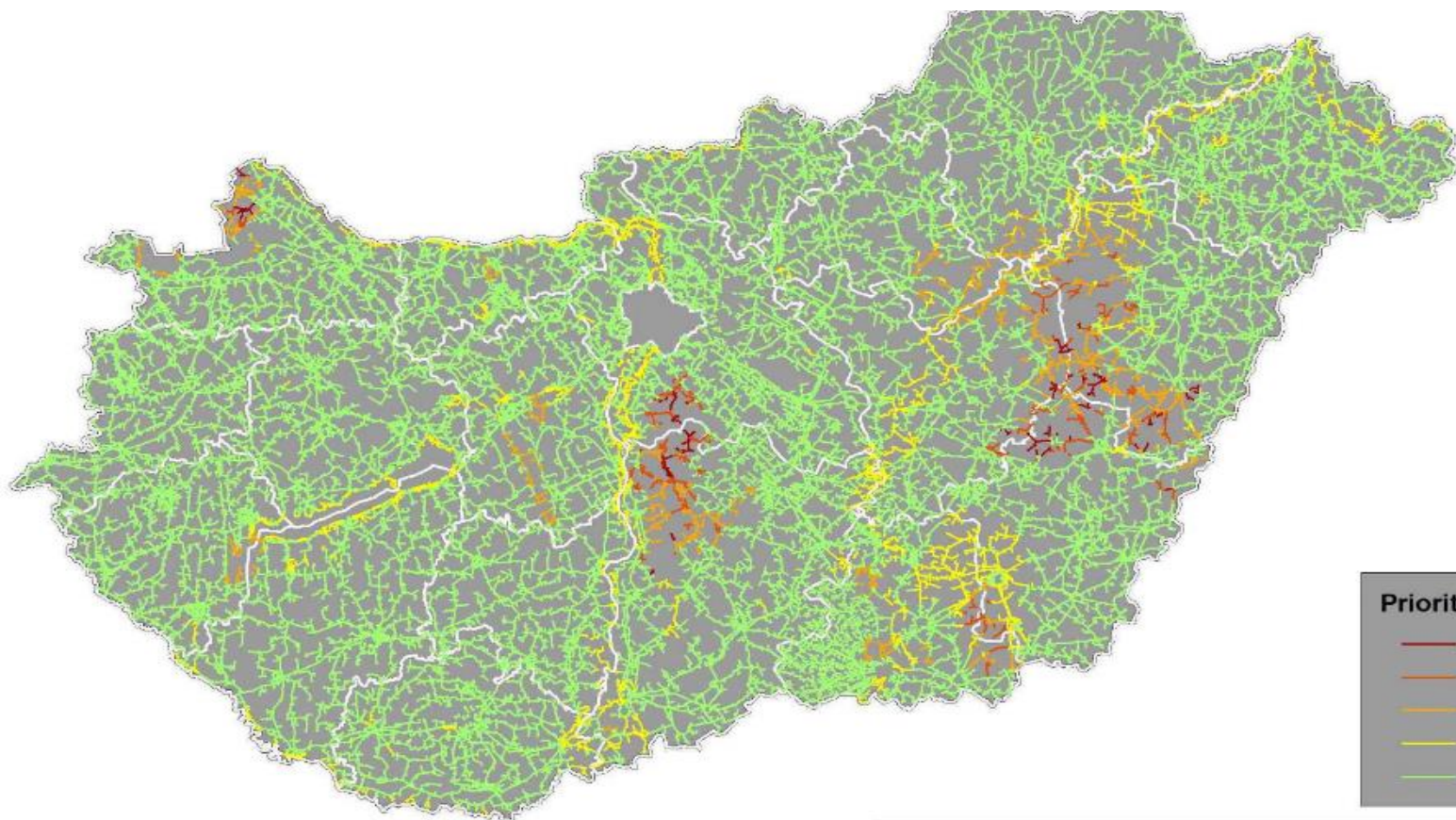
- Tasks:

- Enhance legislation (new power lines must be bird-friendly)
- Elaborate bird-friendly designs in joint effort
- Prioritisation of power lines and scheduling of retrofitting
- Provision of funding (LIFE, Environment and Energy OP, electricity suppliers, state budget)

- Goals not accomplished, so collaboration continues

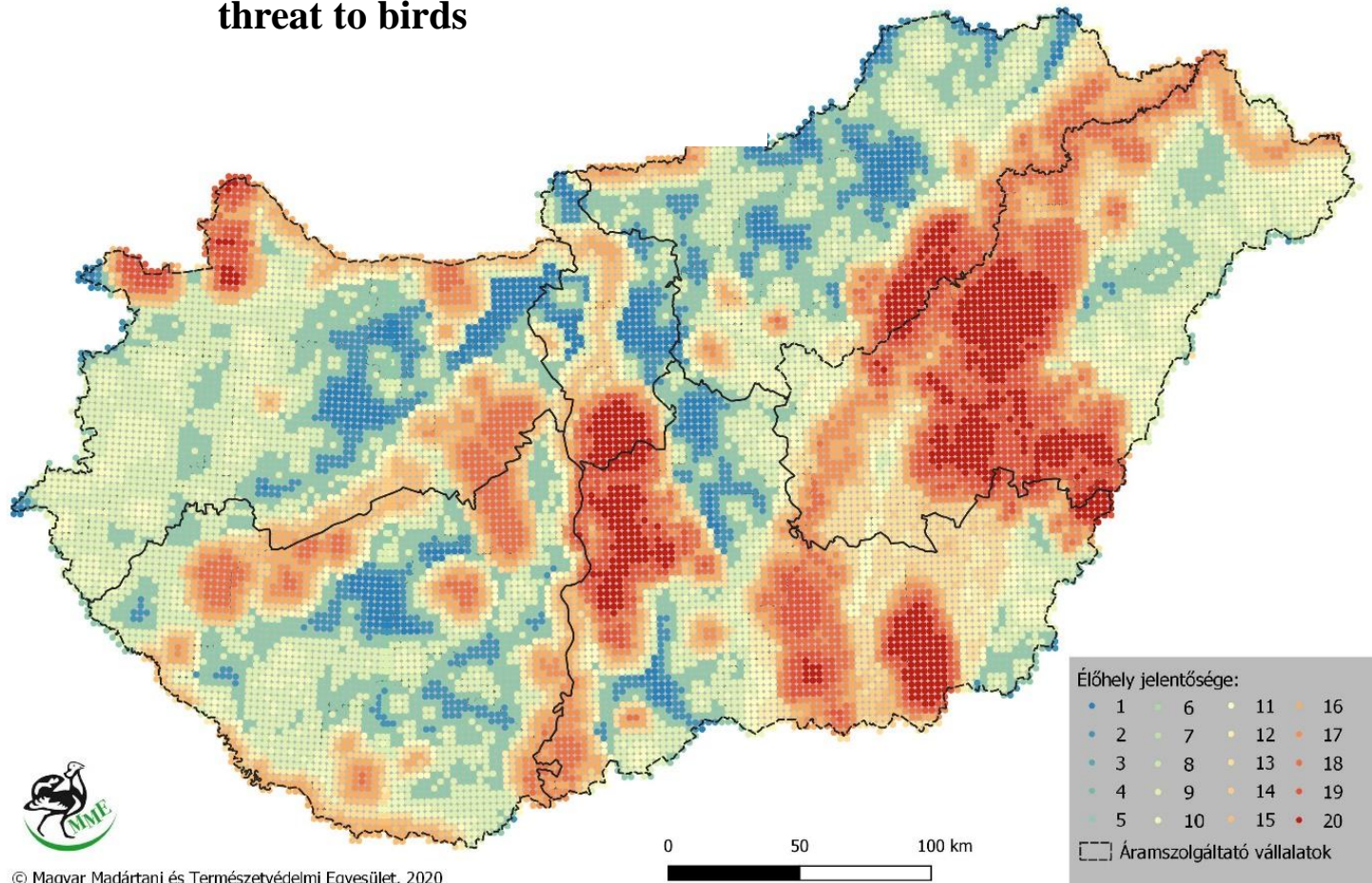
# Conflict map of bird collisions: 2008

Medium voltage powerlines prioritised by level of potential collision threat to birds



# Conflict map of bird collisions: 2021

Prioritisation by level of potential collision threat to birds

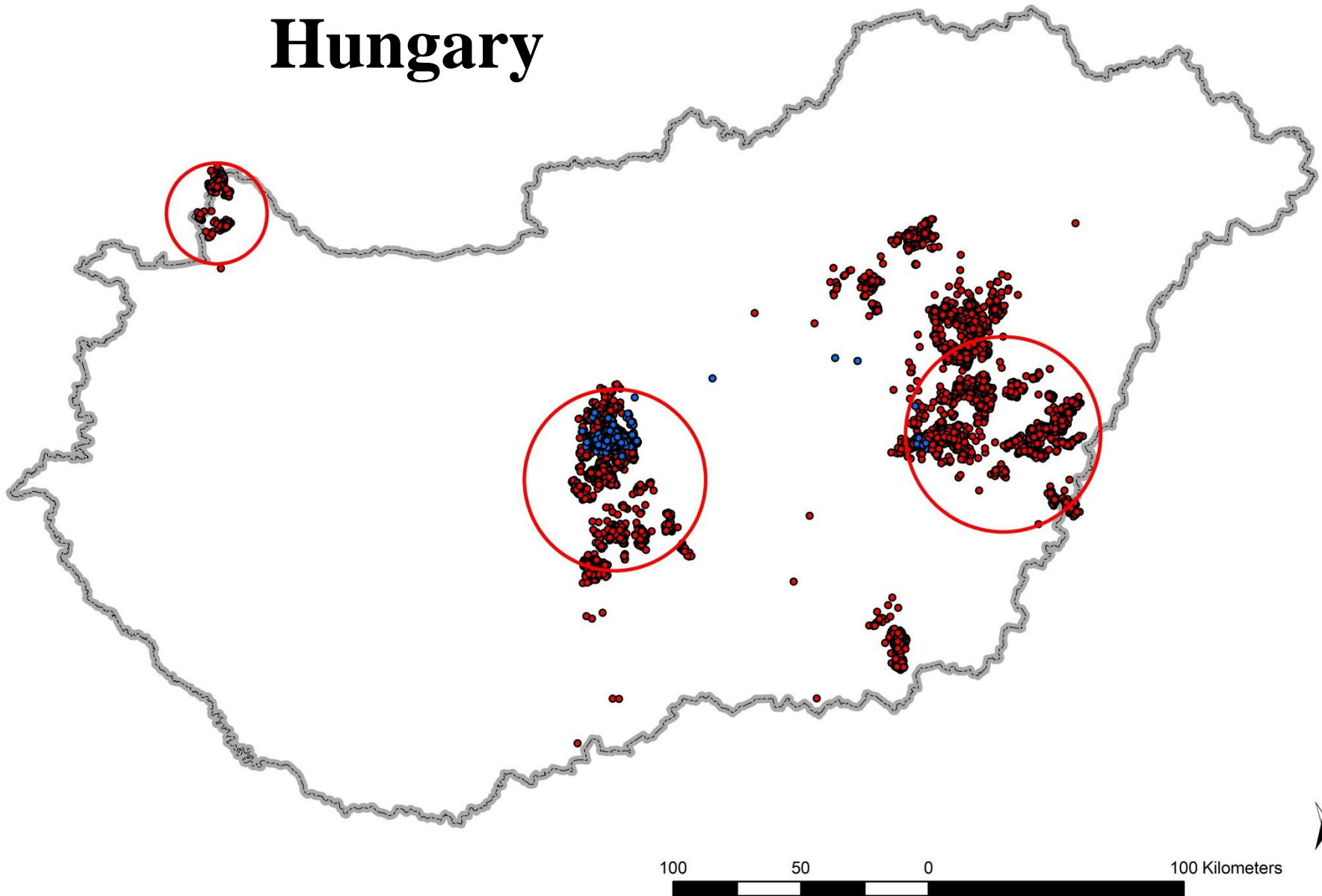


# Difficulties

- Power line burial...
  - ...has huge costs
  - ...was not formally part of the Accessible Sky agreement
  - ...visibility enhancement (FireFly) did not prove satisfactory
  - Great Bustard mortality due to collision with power lines still very high:
    - 81% of known adult mortality (e.g. 5 out of 7 adults found dead in the Kiskunság NP in 2017)
    - 1.12% of adults/year



# The most important GB sites in Hungary





# Great BustardLIFE project



A túzok határon átnyúló védelme Közép-Európában  
LIFE15 NAT/AT/000834

LIFE NAT/AT/000834; Cross-border protection of the Great Bustard in Central Europe

The biggest activity: burial of power lines

Only ELMŰ-ÉMÁSZ responded positively in 2015

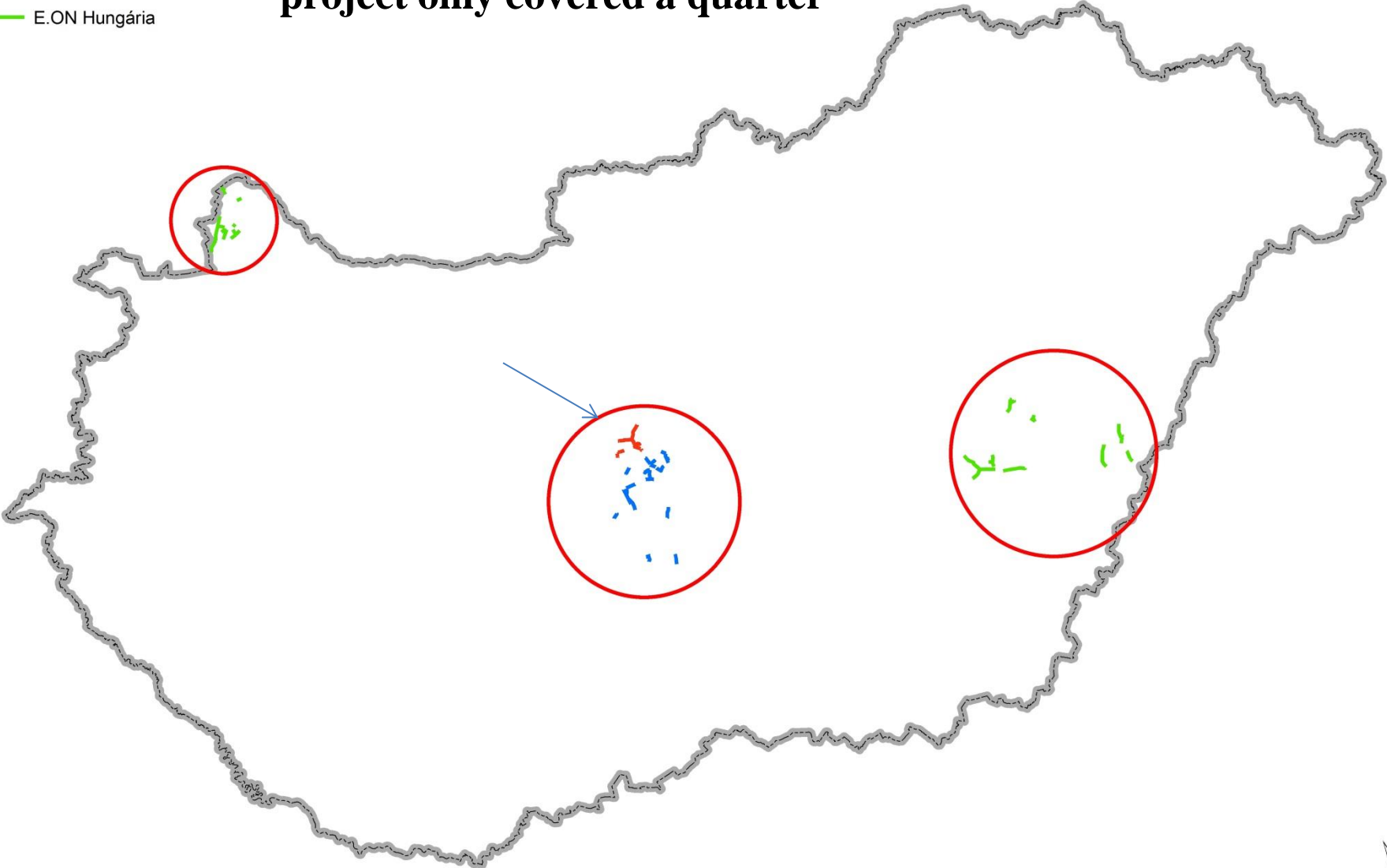
Electricity distribution companies in Hungary in 2016



Forrás: E.ON, Portfolio.hu

# About 110 km priority 1 power lines in GB sites, the LIFE project only covered a quarter

- ELMŰ Hálózati Kft.
- NKM Zrt.
- E.ON Hungária



**In 2017, EDF Démász becomes a state company: Nemzeti  
Közművek Áramszolgáltató Zrt.**



*Forrás: E.ON, Portfolio.hu*

## Deputy Prime Minister Dr. Zsolt Semjén is approached and is very keen to help



With the help of the Deputy Prime Minister, the Nemzeti Közművek Zrt. undertook to bury 31.6 km of power lines in Great Bustard sites from their own budget – this included all priority 1 and priority 2 power lines in their area!



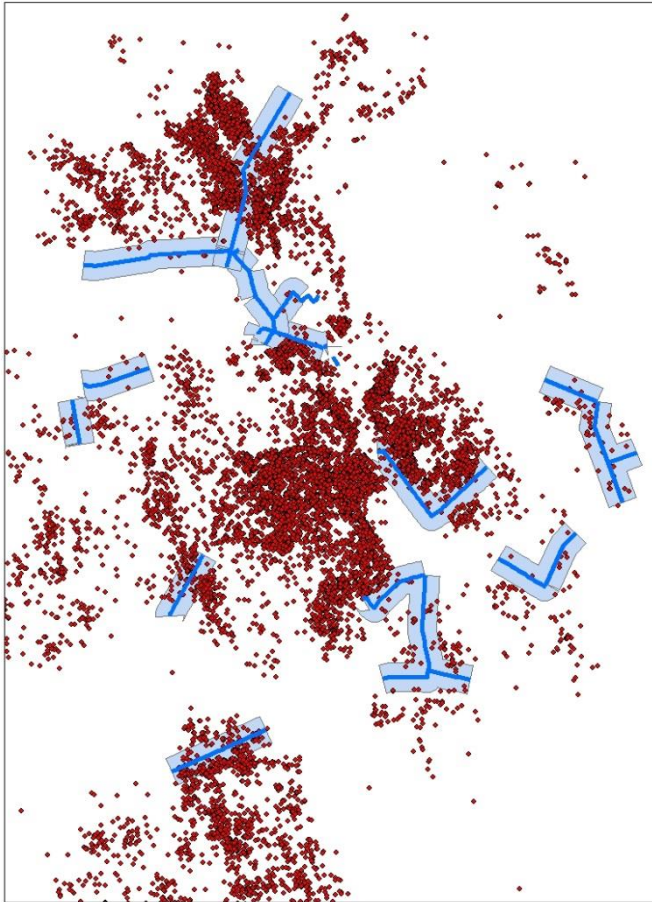


# Powerline burial in the Kiskunság

- **January 2018 to October 2020**
- Elmű Hálózati Kft. (ca 25 km)
  - By October 2020
- MVM Démász Áramhálózati Kft. (ca 35 km)
  - By January 2020



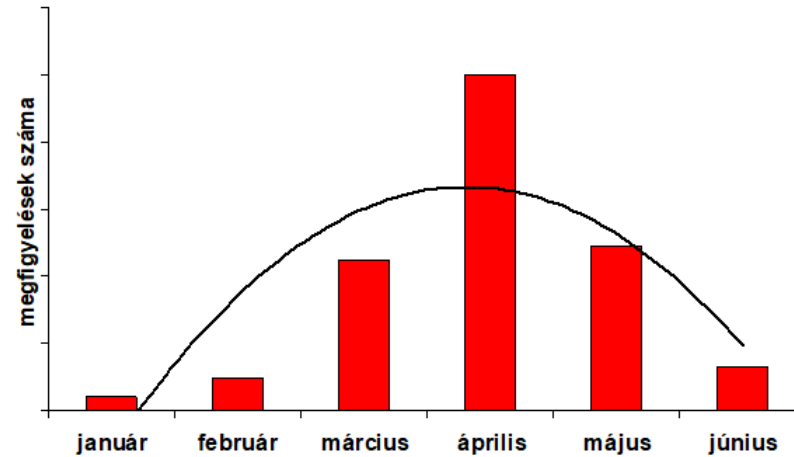
# GB occurrence data along the powerlines



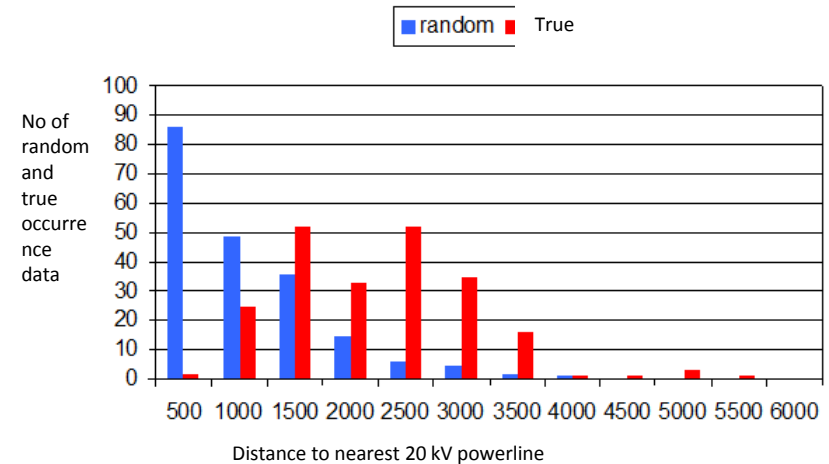
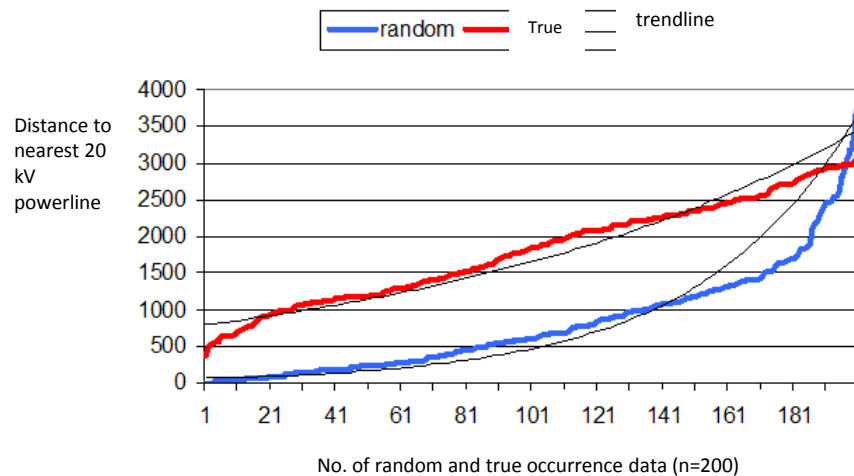
- Occurrence data in GIS database since 2005
- 14 536 records
- Record of satellite-tagged birds are not included



# Lekking season of GB

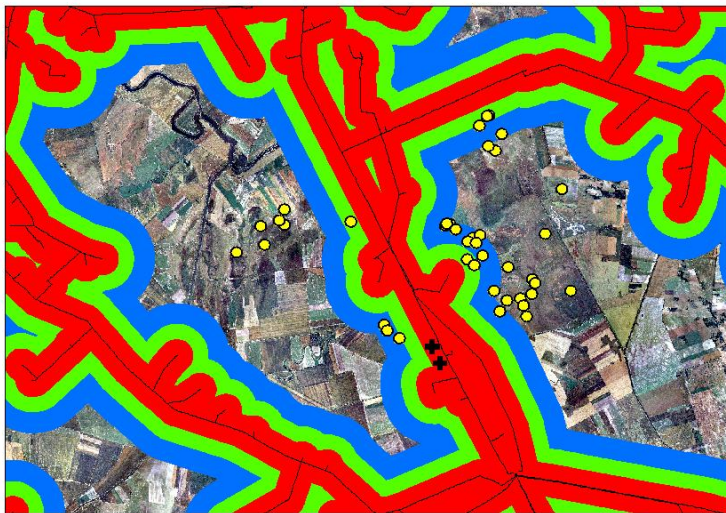
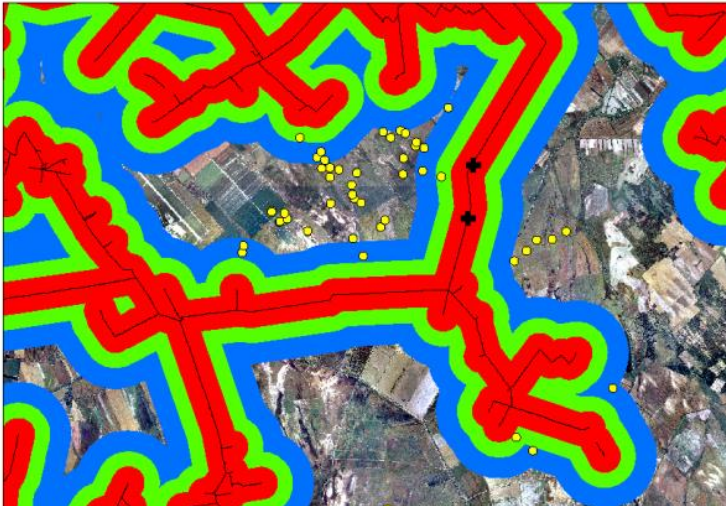


# Effect of medium voltage powerlines on lek site choice of GB

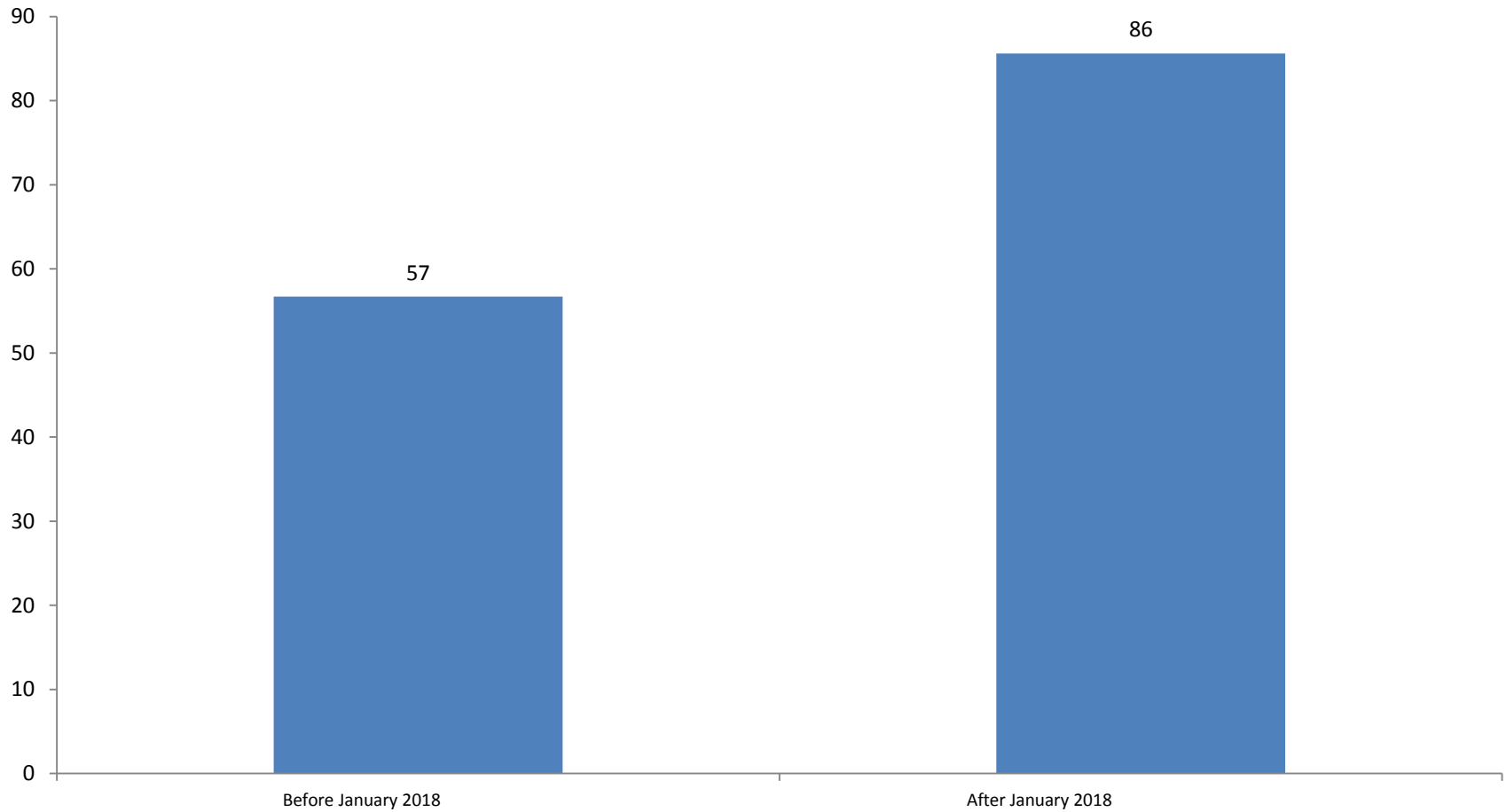


Based on the occurrence data, lek formation is totally absent within 0-500 m of medium voltage powerlines and partly absent within 500-1000 m.

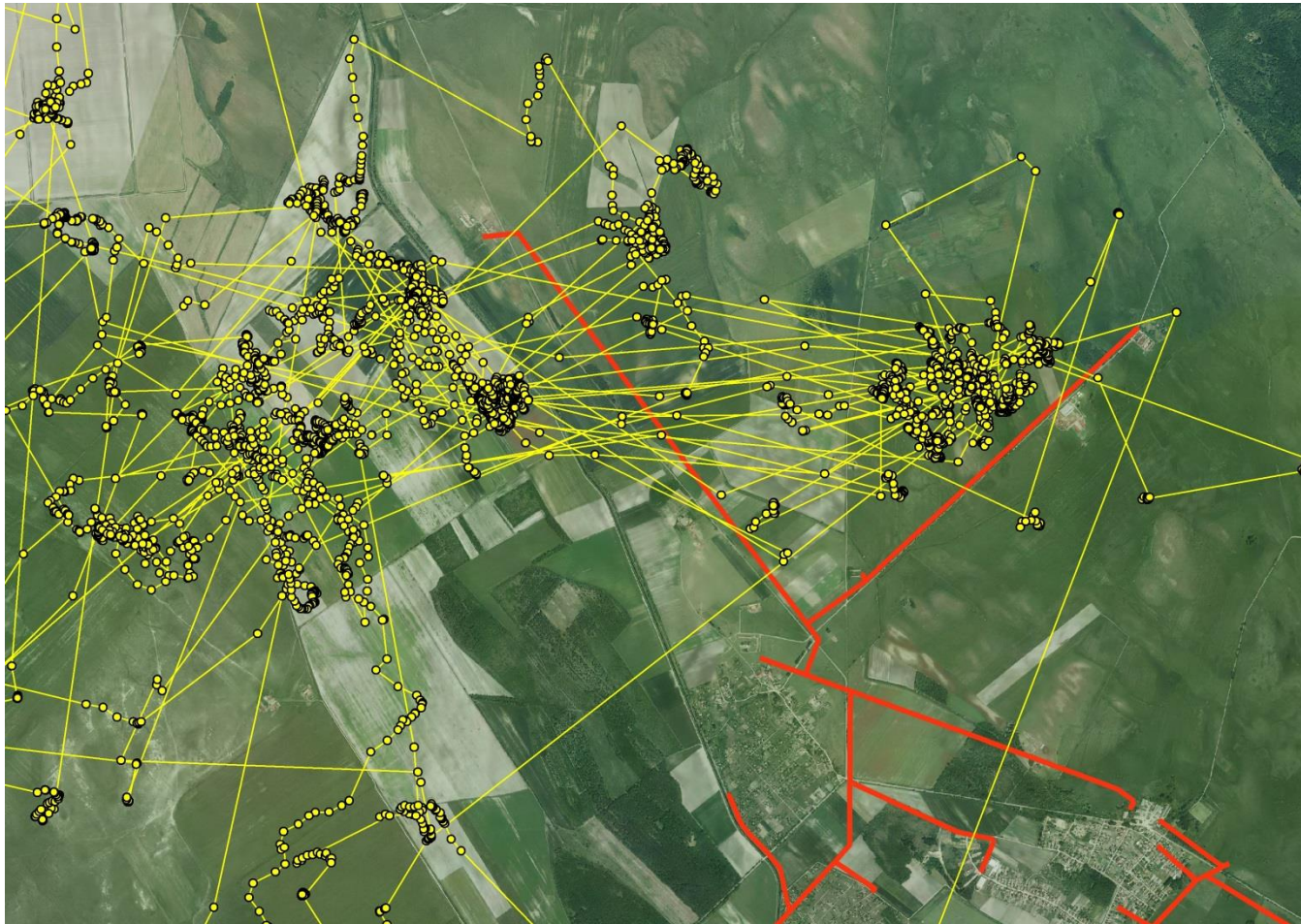
# Habitat loss effect



# GB occurrences within 500 m of buried powerlines



# Satellite-tagged birds in 2019 (after burial of powerlines)



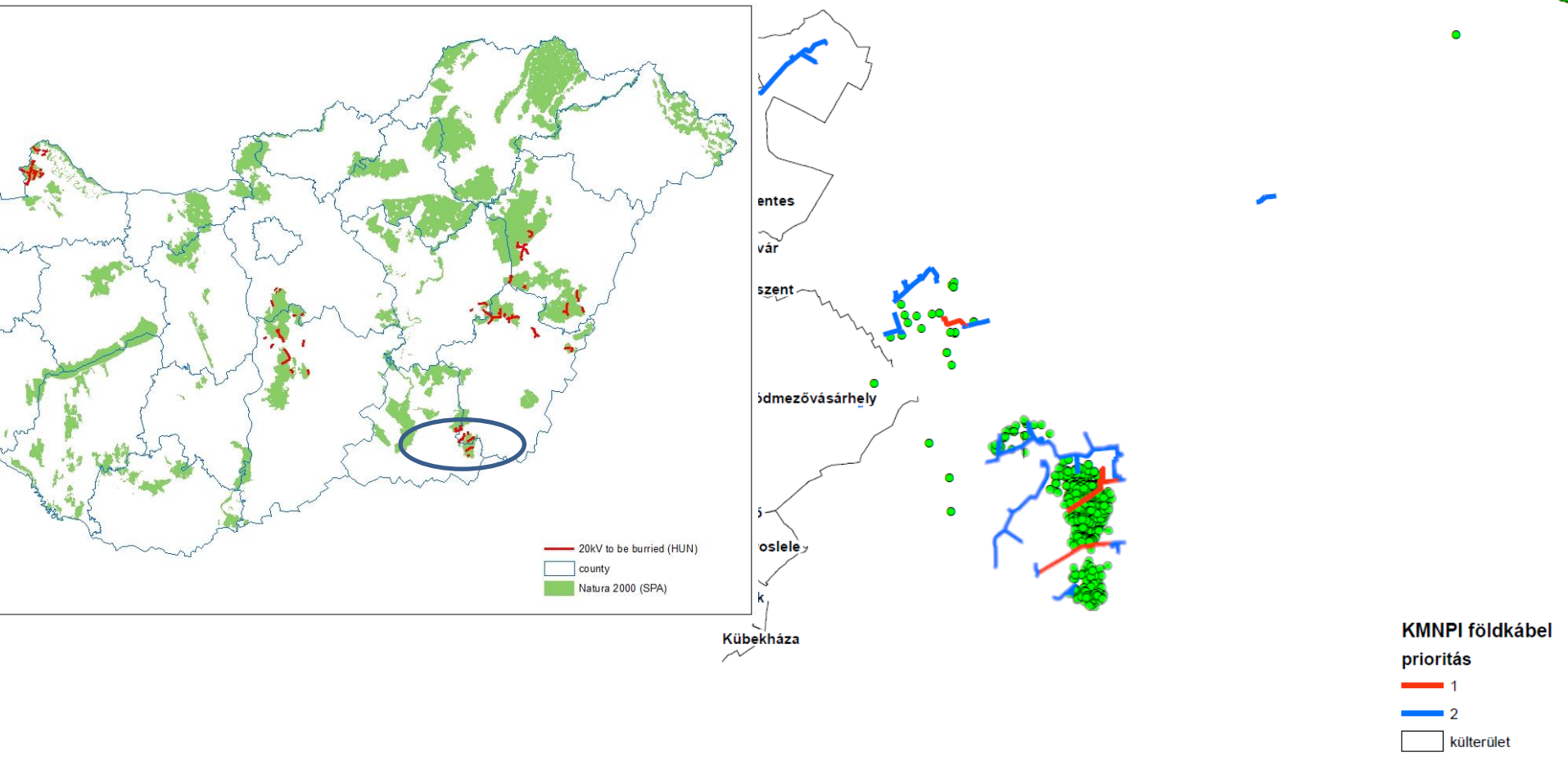
# No collision along buried powerlines...





# Plans for the future

16 km of powerlines to be buried in the recently proposed  
**EUROBUSTARD LIFE** project in SE Hungary





# Alternatives



**Thank you for your attention!**

