

# BIRDS @ AERODROMES



**Albert de Hoon (NL)**

**Nature Protection Expert Team  
IMPEL Open Day - 19 February 2025**

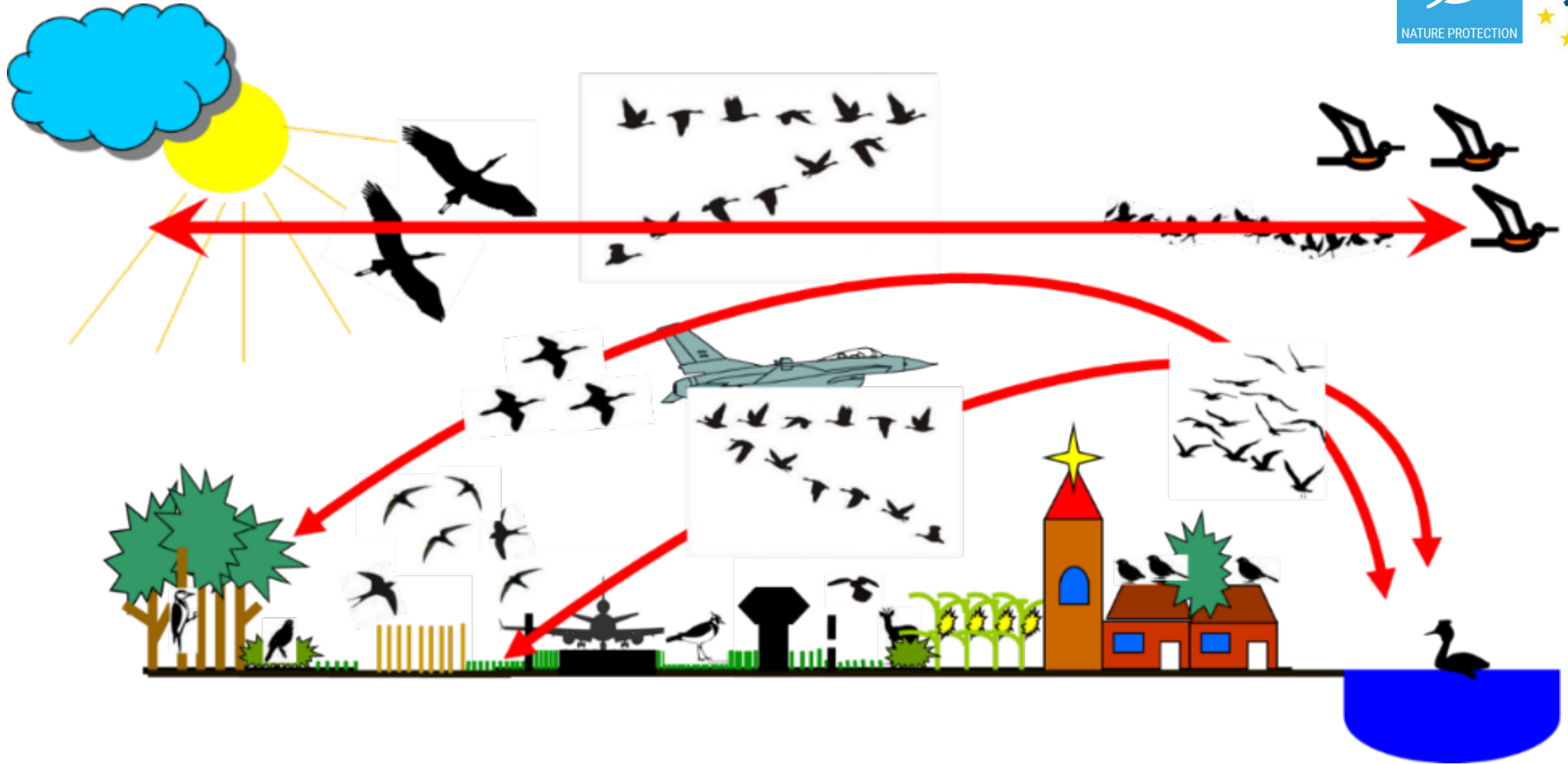


Funded by the  
European Union

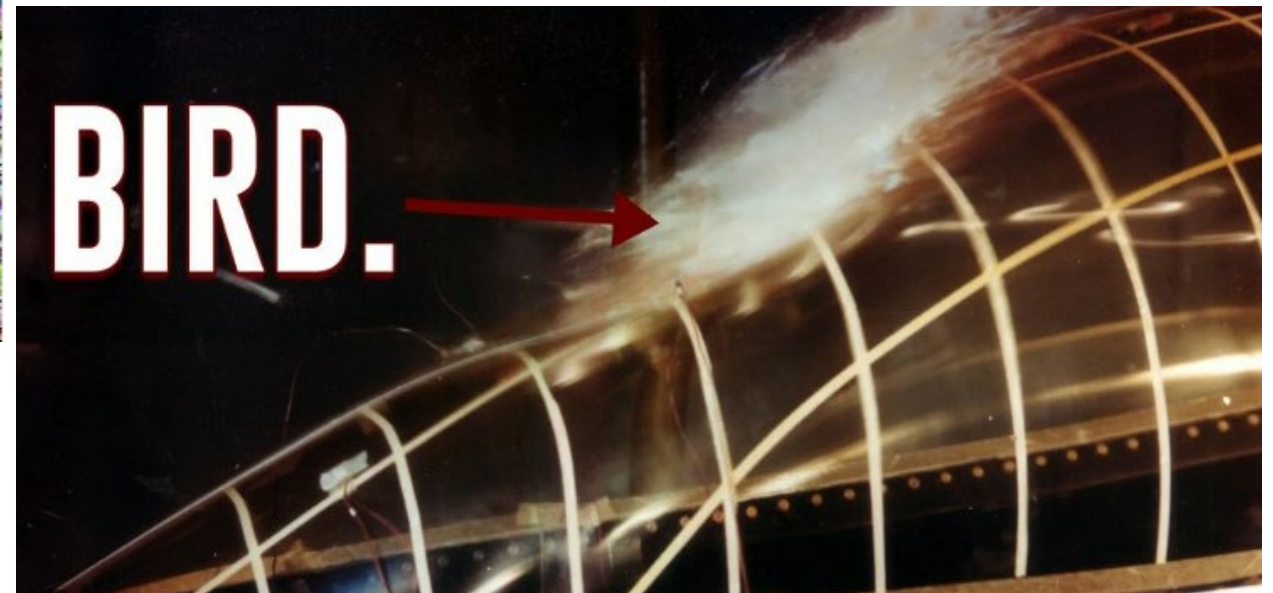
# Aircraft – bird/wildlife collisions



# Birds are everywhere



# aircraft certification tests



# impact energy $E = \frac{1}{2} * m * v * v$



Animal species	Body mass (grams)	Impact energy with aircraft @ 250 km/h	Equivalent mass with your car @ 100 km/h
Butterfly	1 gram	2 Joule	6 gram
Swallow	20 g	48 J	120 gram
Starling	100 g	241 J	600 gram
Lapwing	250 g	603 J	1,5 kg
Francolin	500 g	1,2 KiloJoule	3 kg
Kite	1 kg	2,4 kJ	6 kg
Canada goose	5 kg	12 kJ	30 kg
Kori bustard	19 kg	45 kJ	114 kg
Deer	25 kg	60 kJ	150 kg
Ostrich	100 kg	240 kJ	600 kg
Buffalo	1 ton	2.4 MegaJoule	6 ton
Elephant	5 ton	12 MJ	30 ton

airworthiness

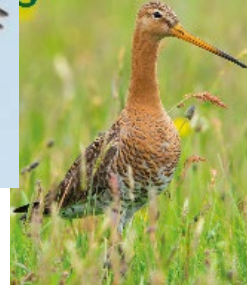


too heavy to lift off



1973

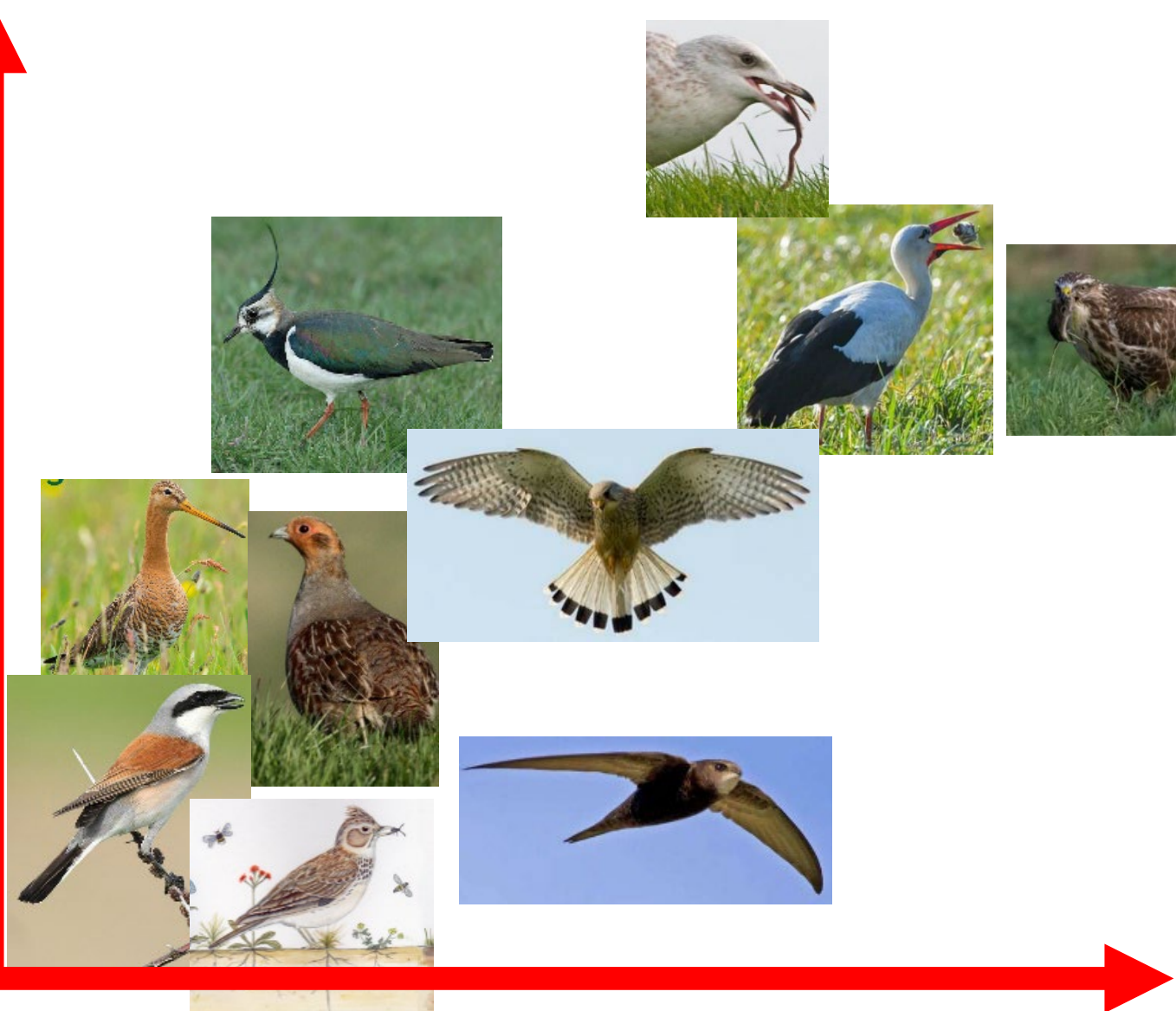
flight safety hazard



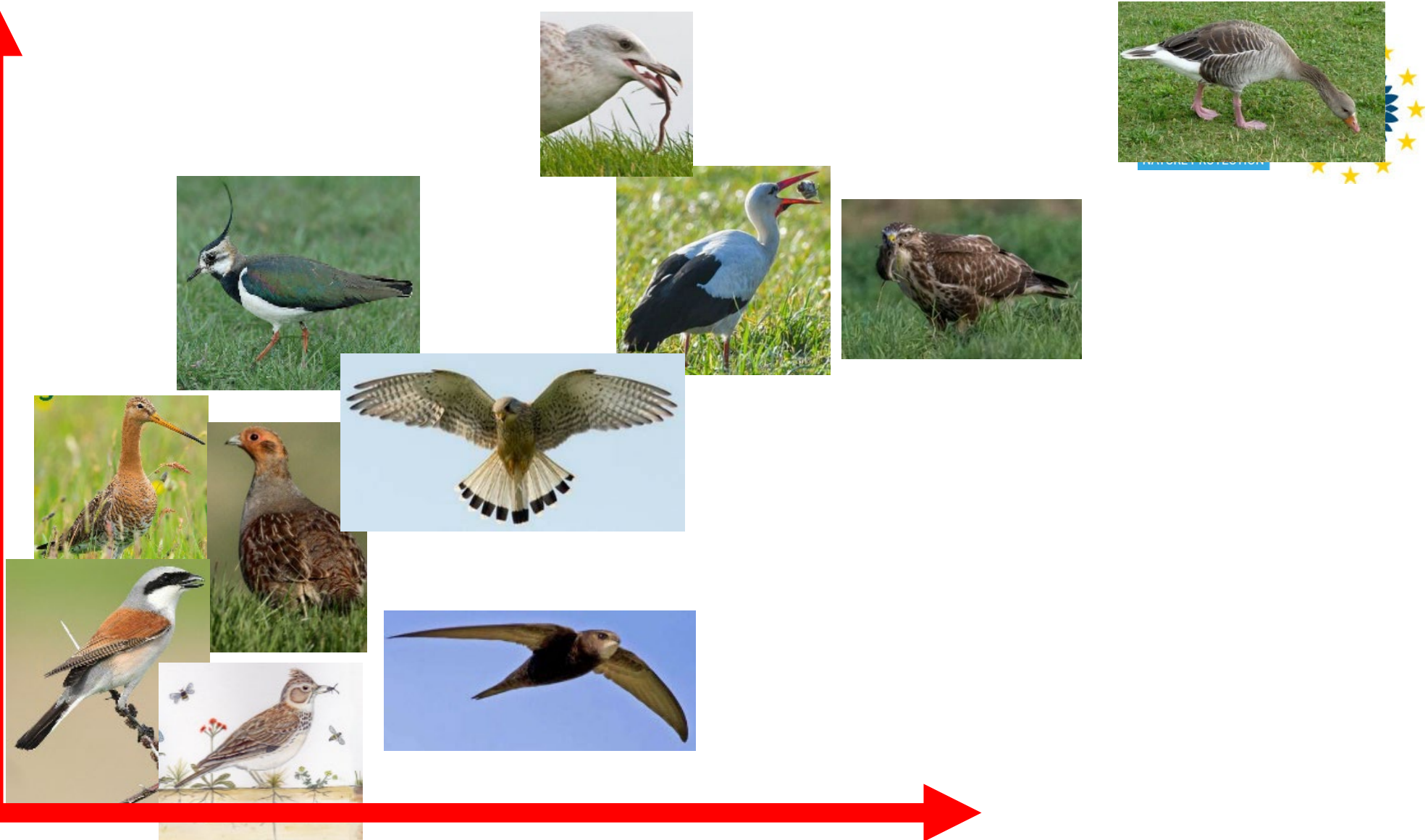
Number of individuals per species

2024

*flight safety hazard*



Number of individuals per species



# farmland birds declining



## 2023 UPDATE

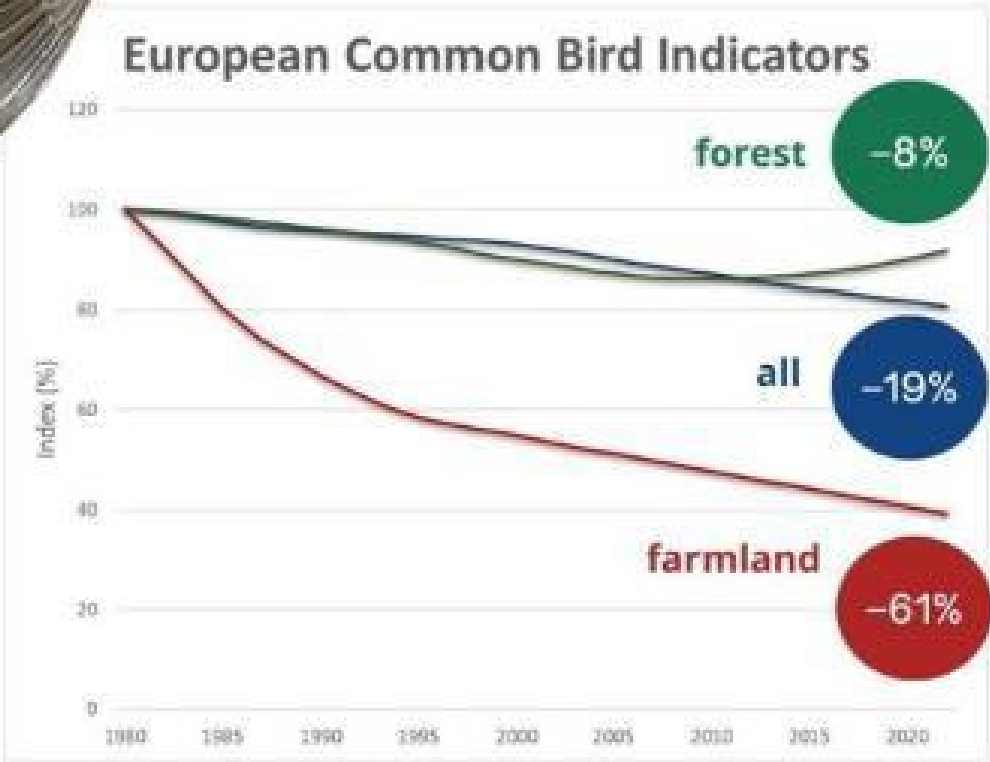
168 species

30 countries

43 years

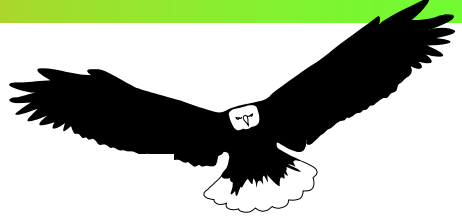
(1980-2022)

[www.pecbms.info](http://www.pecbms.info)





**flight safety** ↔ **nature protection**



**UNEP**  
United Nations  
Environment Programme

UNITED NATIONS



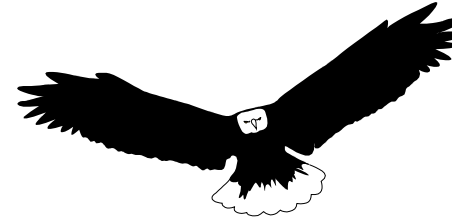
Derogation: Not possible  
→ Flight safety is nr 1 priority

Derogation: yes, but!

flight safety



nature protection



**EU BIRDS DIRECTIVE** - Article 9



1. Member States **may derogate** from the provisions of Articles 5 to 8, where there is **no other satisfactory solution** for the following reasons:

- (a) - in the interest of public health and safety.
- in the interests of air safety,

# WHM Strategies



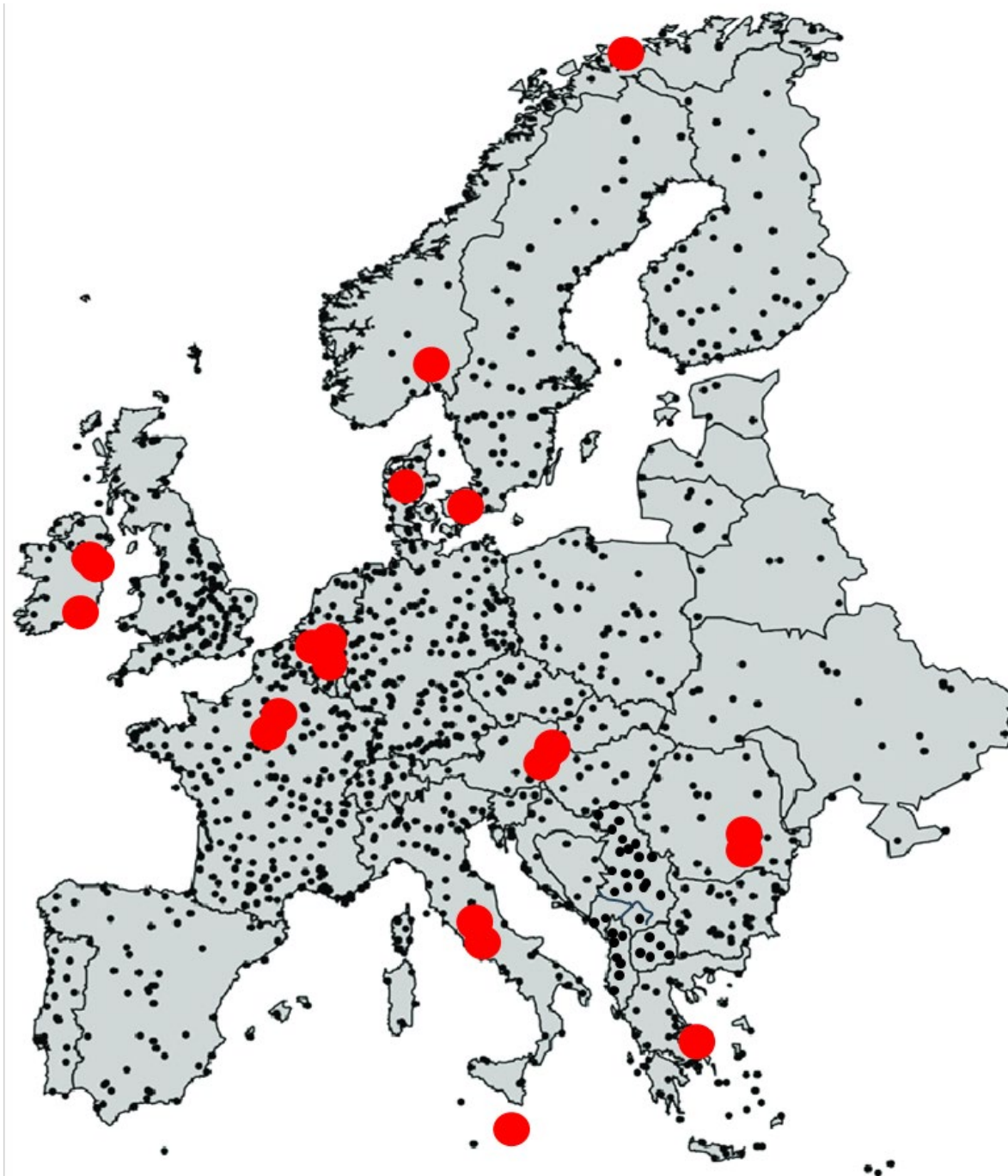
KILL

RELOCATE

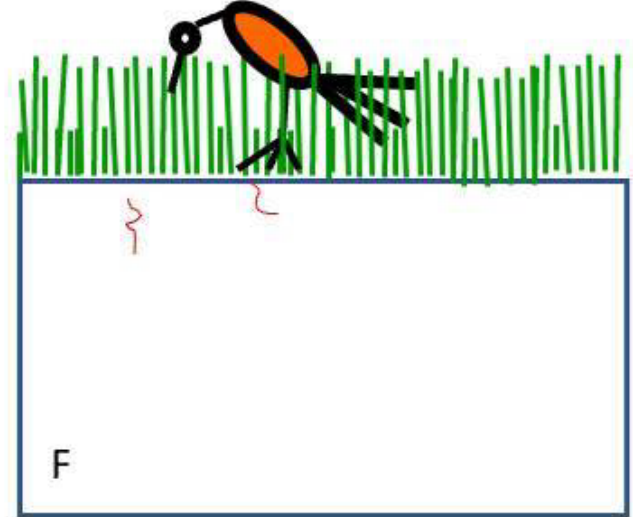
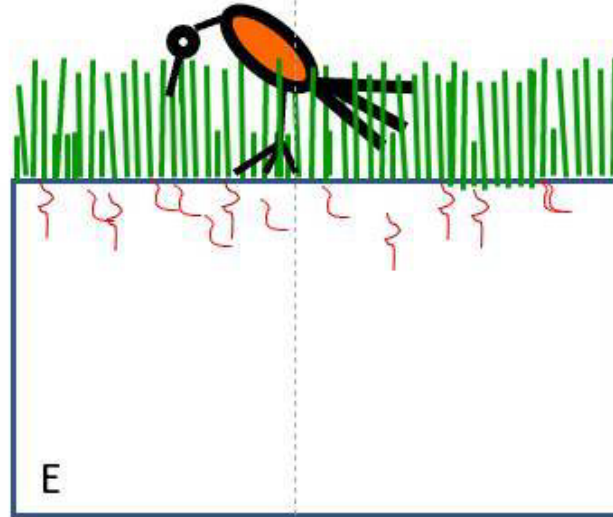
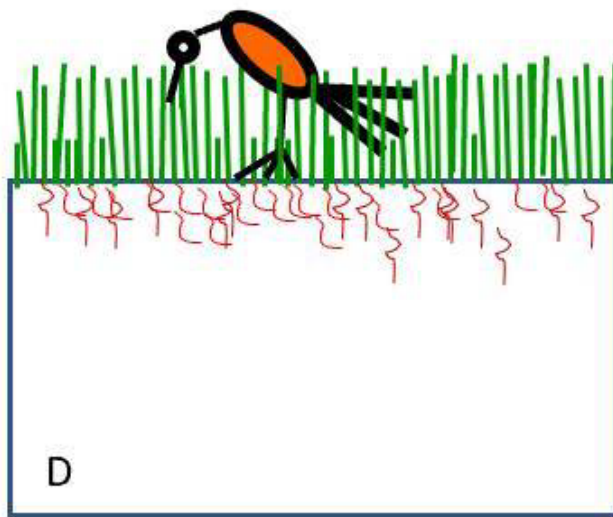
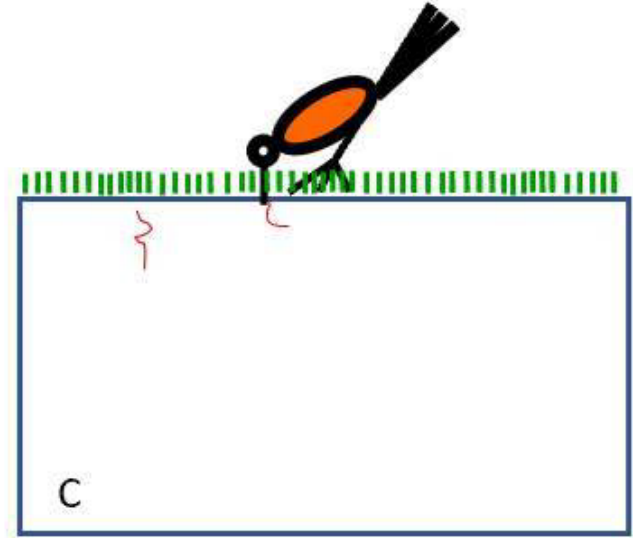
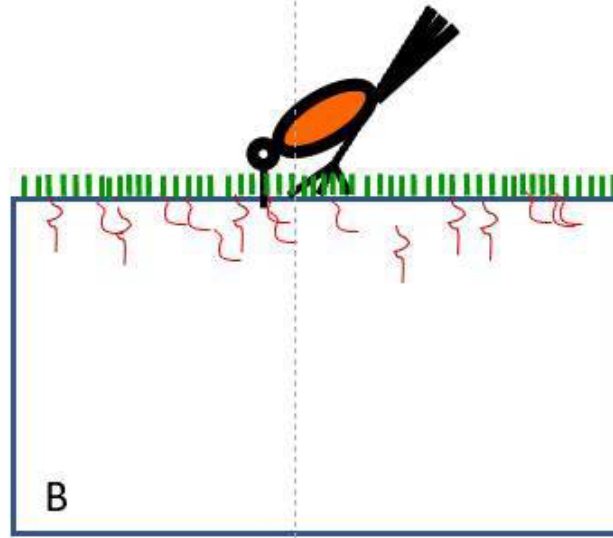
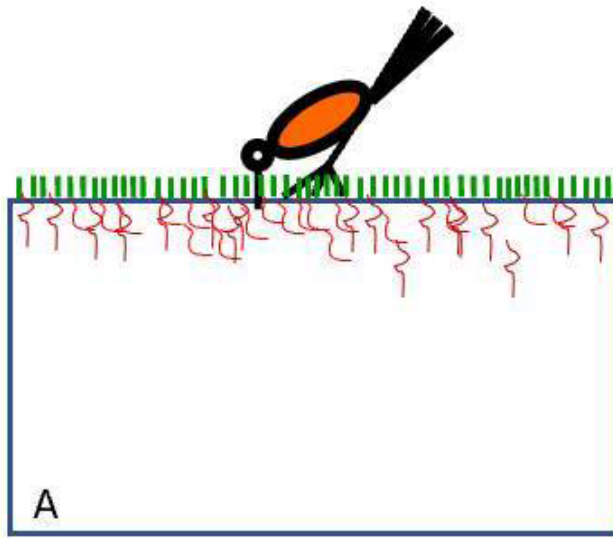
EXPEL / HARASS

**HABITAT MANAGEMENT** (fence -  
vegetation - water - infrastructure)

# 2023 - 2024



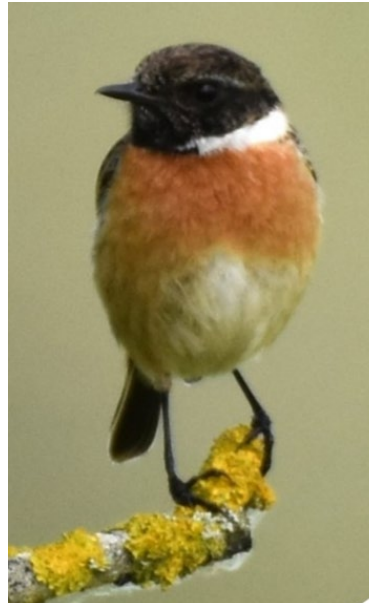
# Vegetation management



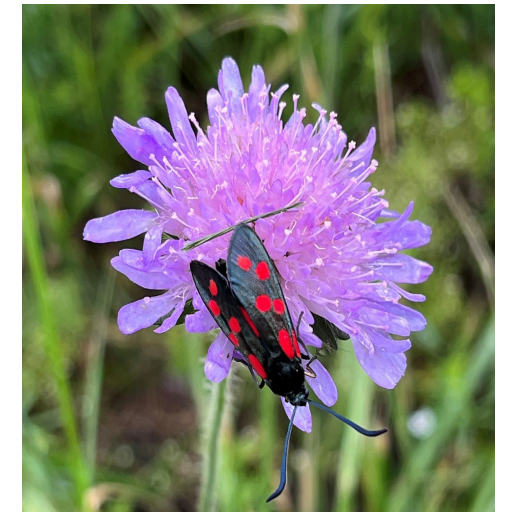
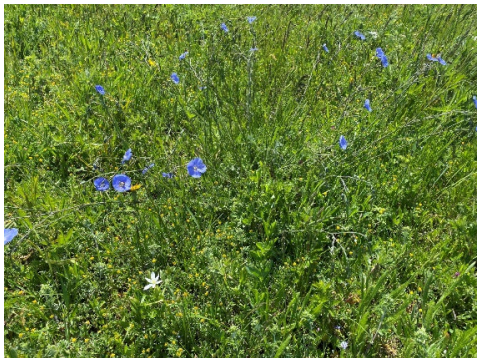
# Vegetation management



# non-hazardous birds @ aerodromes



# non-hazardous biodiversity @ aerodromes





# 2025 - 2027



Develop a Risk Assessment Tool (RAT) to help

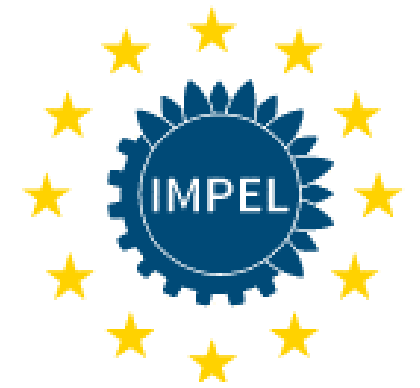
1. departments that issue/oversee the Derogations
2. aerodromes

to apply the best possible win-win methods for

1. wildlife strike prevention / flight safety
2. Nature conservation / biodiversity



Hope to welcome you  
soon at the  
Birds @ Aerodromes  
project!



## Contact information:

- ✓ **For joining this project:** If you work for an IMPEL member organisation and would like to join the project or receive further information, **please contact the National Coordinator of your country and the Project Manager at [albert.de.hoon@minienw.nl](mailto:albert.de.hoon@minienw.nl)**
- ✓ **For becoming a member of IMPEL:** If you are from an Environmental Authority or association of authorities that is based in a member state of the EU, a candidate country or another country applying Community law and would be interested in becoming a member of IMPEL, **please contact IMPEL Secretariat at [info@impel.eu](mailto:info@impel.eu)** for more information.
- ✓ **For all other interested parties:** please check out our new website for further information!  
[www.impel.eu](http://www.impel.eu)



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