Funded by the European Union

European Union Network for the Implementation and Enforcement of Environmental Law

Implementation of the Birds and Habitats Directives at European Aerodromes

An IMPEL project

Albert de Hoon

Bird/Wildlife Strike Prevention Workshop

Date: 22 September 2026

Venue: Tivat, Montenegro

Organizer: ICAO EUR/NAT Office

IMPEL

- The European Union Network for the **IMP**lementation and Enforcement of **E**nvironmental **L**aw (IMPEL)
- An international non-profit organisation of **environmental authorities**
- Founded in **1992.** Legal seat in Brussels; https://www.impel.eu
- **55 members authorities** from **36 European countries**
- **>850 involved experts**



- The European Union Network for the **IMP**lementation and Enforcement of **E**nvironmental **L**aw (IMPEL)



Industry and Air



Water and Land



Waste



Nature Protection

IMPEL Nature Protection

Focus on practical implementation and enforcement of European Union Nature legislation:



Birds Directive

Habitats Directive

EU Birds and Habitats Directives

- Birds directive (1979) aims to protect all European wild birds

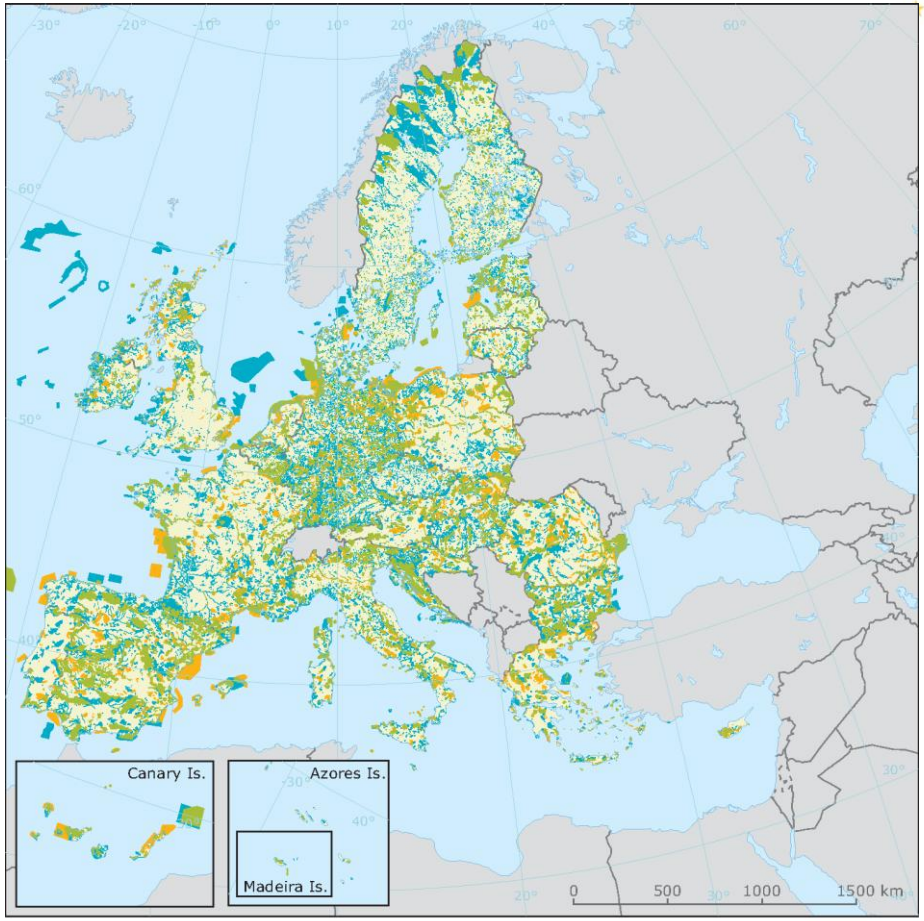
- Habitats directive (1992) aims to ensure the conservation of flora and fauna species by protecting their habitats





NATURA 2000

EU

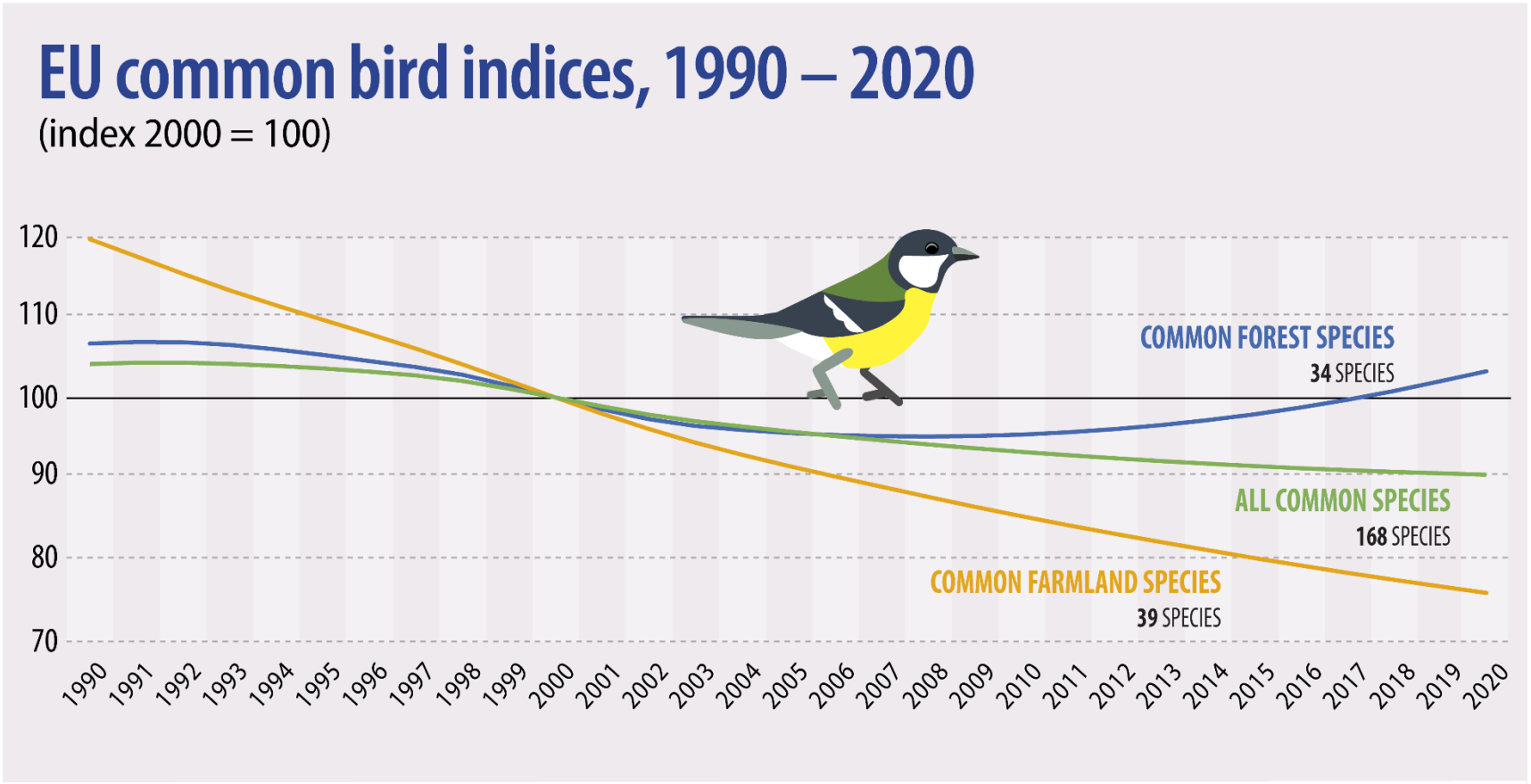


NATURA 2000

- Sites–or parts of sites–belonging to both Directives
- Habitats Directive sites, pSCI, SCI, SAC
- Birds directive sites (SPA)
- Outside coverage

European Environment Agency

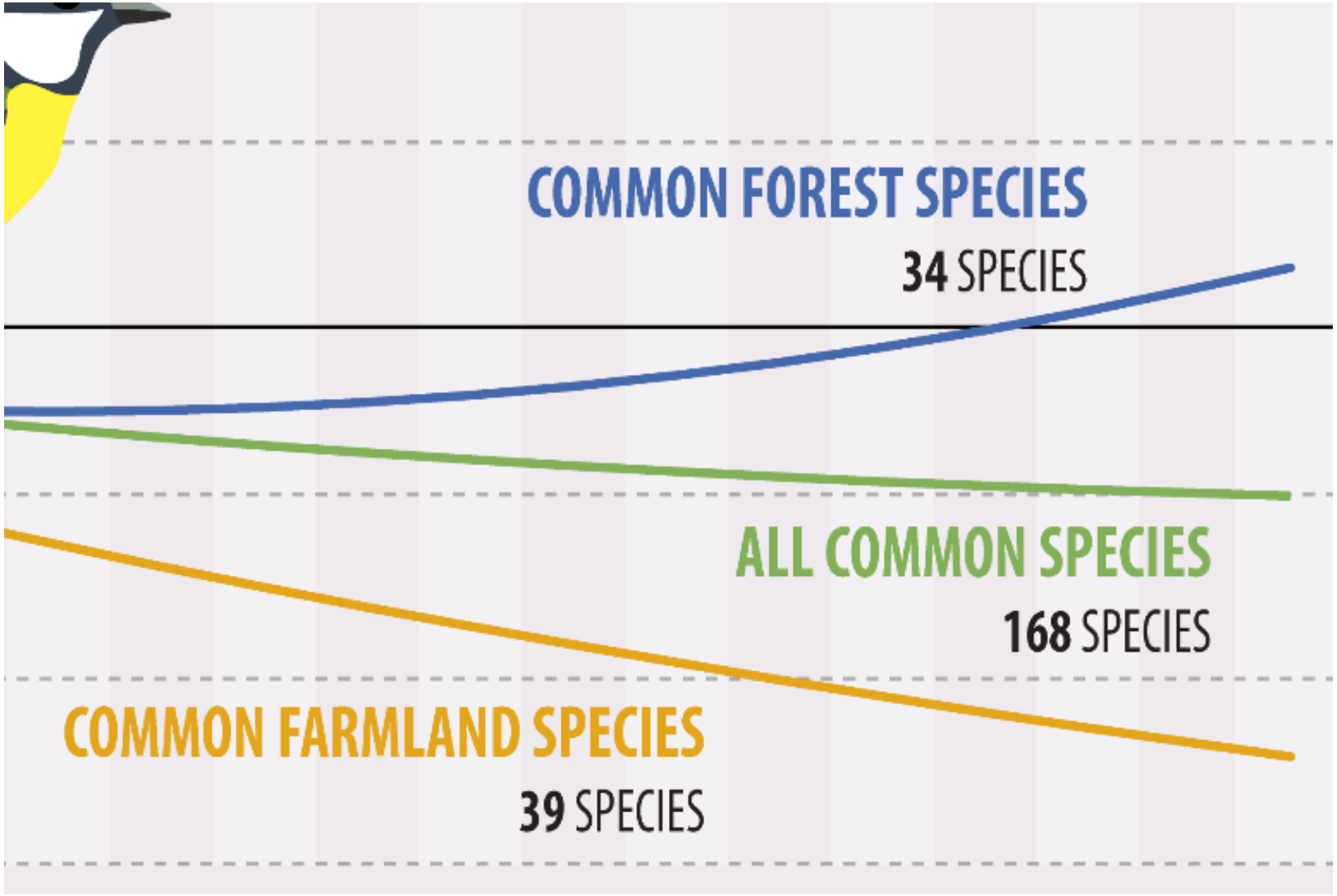
What is the result of all efforts?

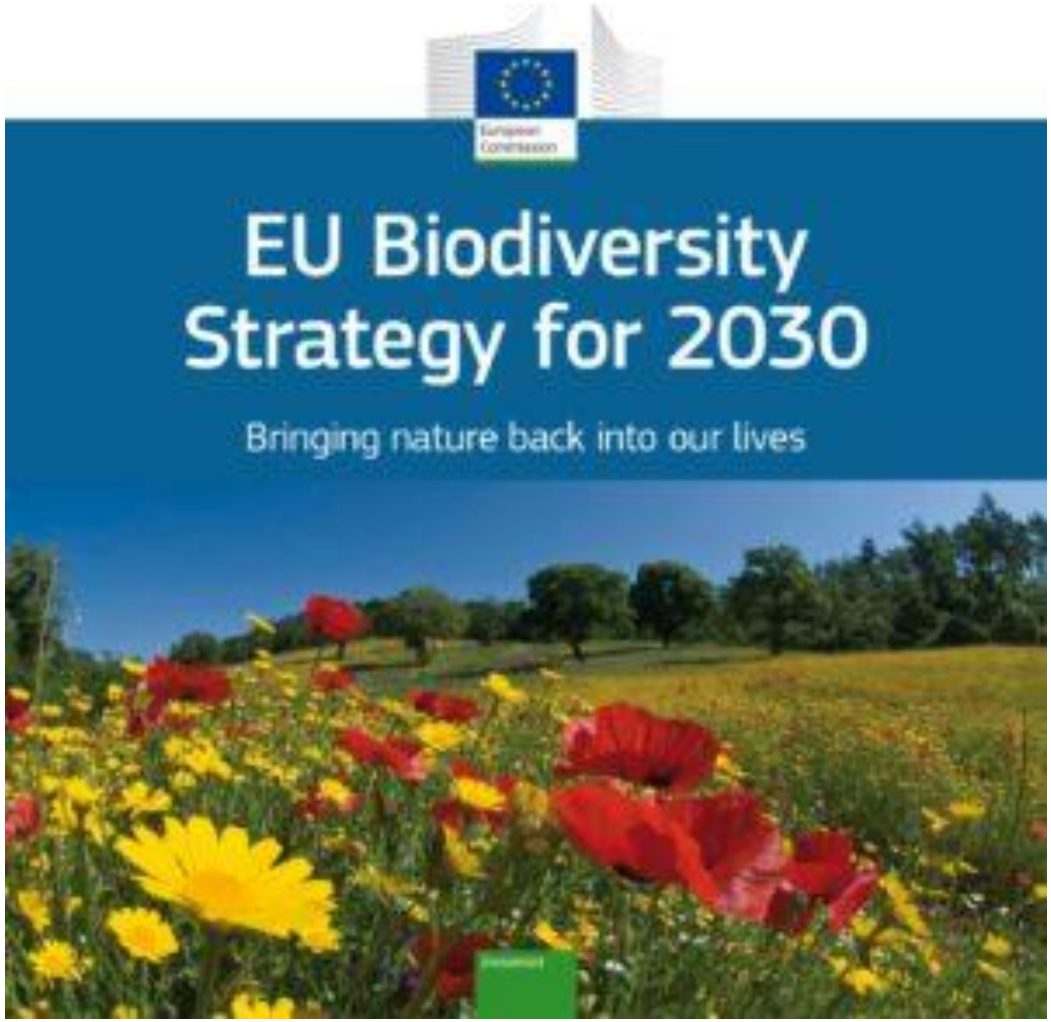


2020: data are estimated.
Malta: data not available. As a result, the EU indices are based on 26 EU Member States.
Sources: European Bird Census Council (EBCC); national BirdLife organisations;
Royal Society for the Protection of Birds (RSPB); Czech Society for Ornithology (CSO)

ec.europa.eu/eurostat

What is the result of all efforts?





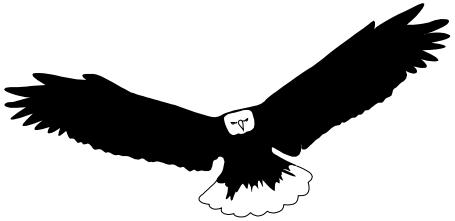
Key pillar of the

EU Green Deal

flight safety ⟷ nature protection











Regulations ~ flight safety







International Civil **A**viation **O**rganisation



ADR.OPS.B.020 Wildlife strike hazard reduction

Regulation (EU) No 139/2014

The aerodrome operator shall:

(a) assess the wildlife hazard on, and in the surrounding, of the aerodrome;

(b) establish means and procedures to minimise the risk of collisions between wildlife and aircraft, at the aerodrome; and

(c) notify the appropriate authority if a wildlife assessment indicates conditions in the surroundings of the aerodrome are conducive to a wildlife hazard problem.

Regulations ~ nature conservation

UNITED NATIONS

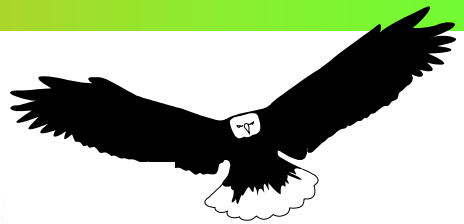
EU

UNEP
United Nations
Environment Programme



flight safety ⟷ nature protection





ICAO · OACI · ИКАО
国际民航组织 · ايكاو

UNITED NATIONS

UNEP
United Nations
Environment Programme

EASA
European Aviation Safety Agency

EU

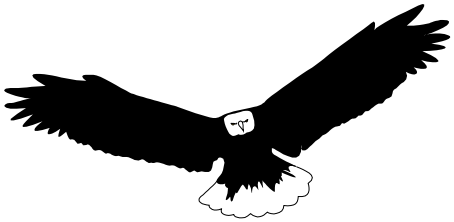


Derogation: Not possible
→ Flight safety is nr 1 priority

Derogation: yes, but!

flight safety ⟷ nature protection





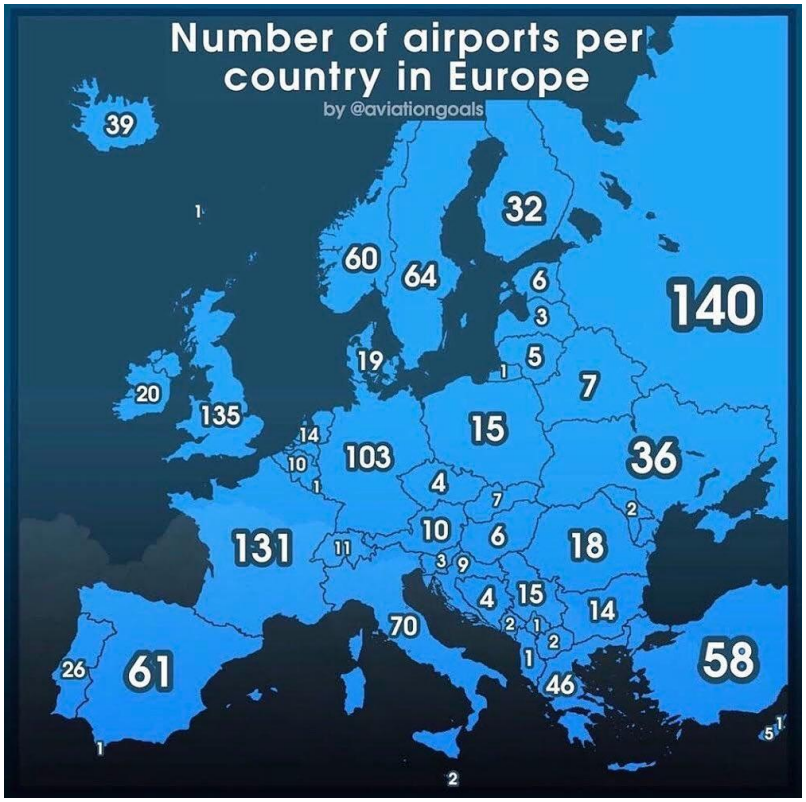
EU BIRDS DIRECTIVE – Article 9

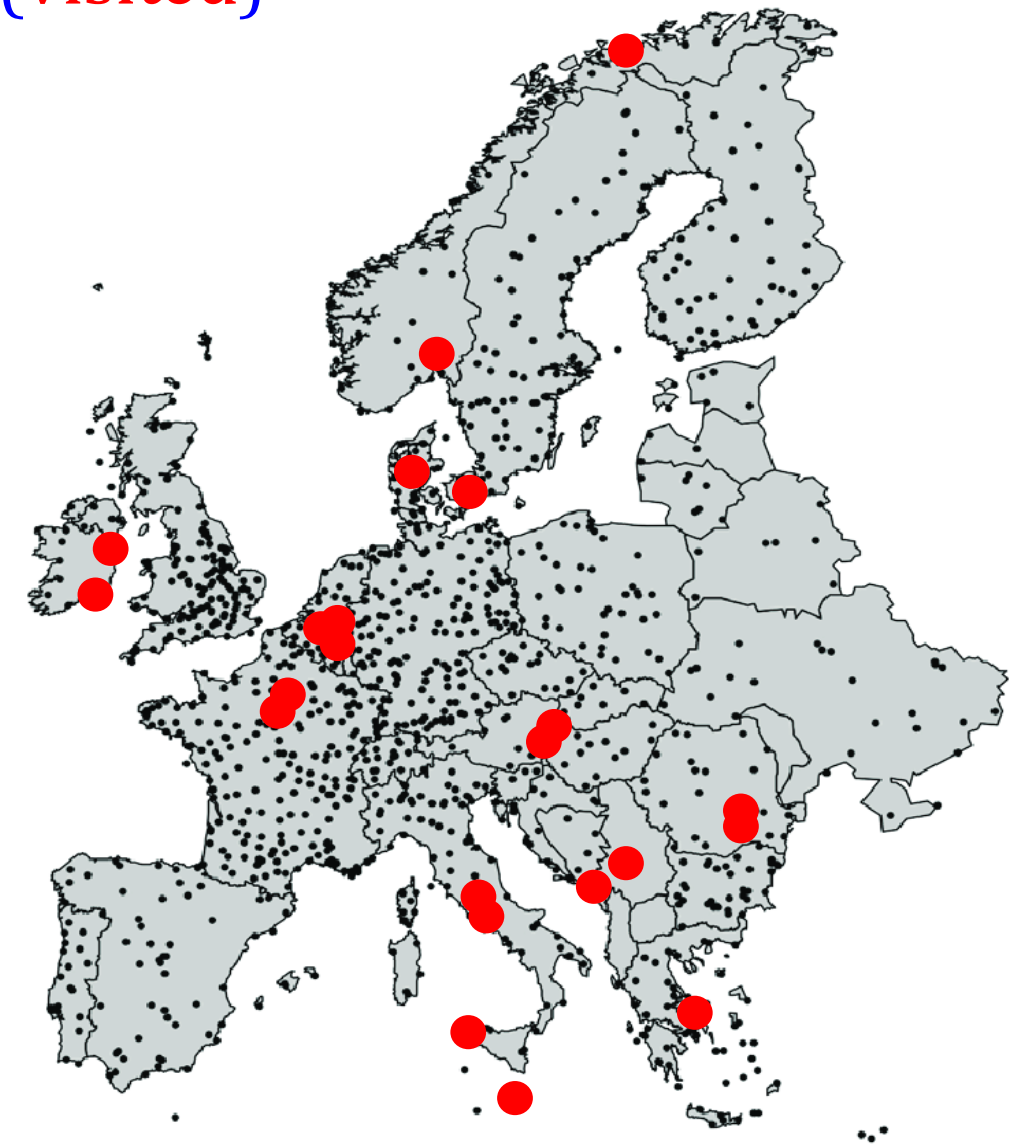
1. Member States may derogate from the privisions of Articles 5 to 8, where there is no other satisfactory solution for the following reasons:

(a) – in the interest of public health and safety.

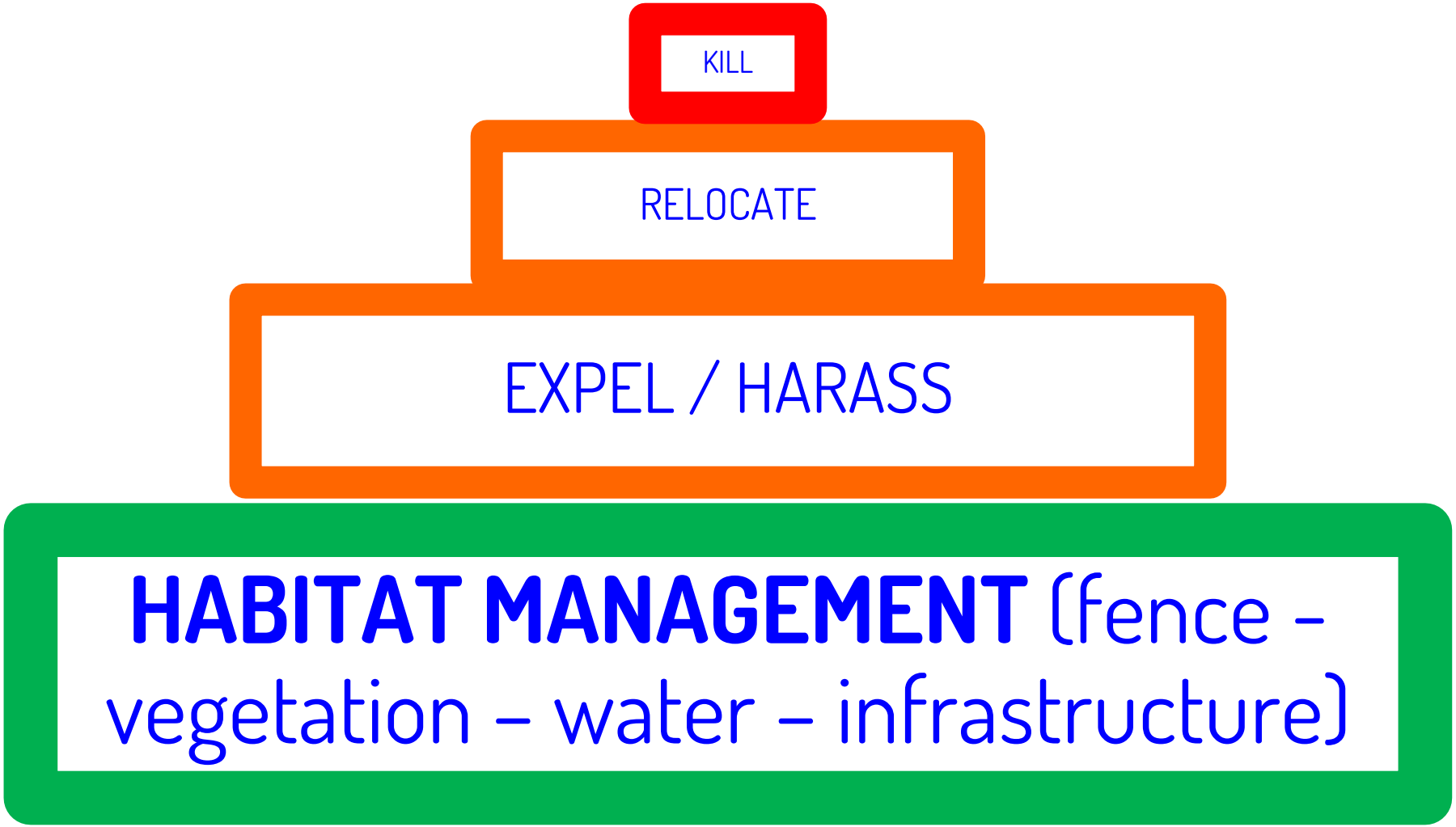
– in the interests of air safety,

Aerodromes in Europe (visited)





WHM Strategies



Harassment techniques











KILL

RELOCATE

EXPEL / HARASS

HABITAT MANAGEMENT (fence – vegetation – water – infrastructure)



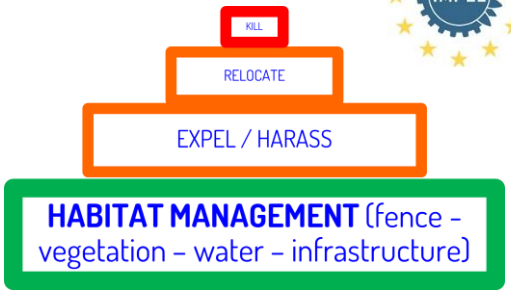


Trap and relocate

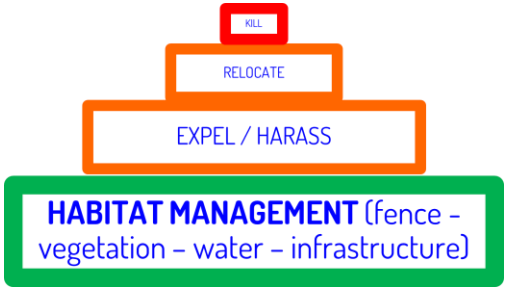


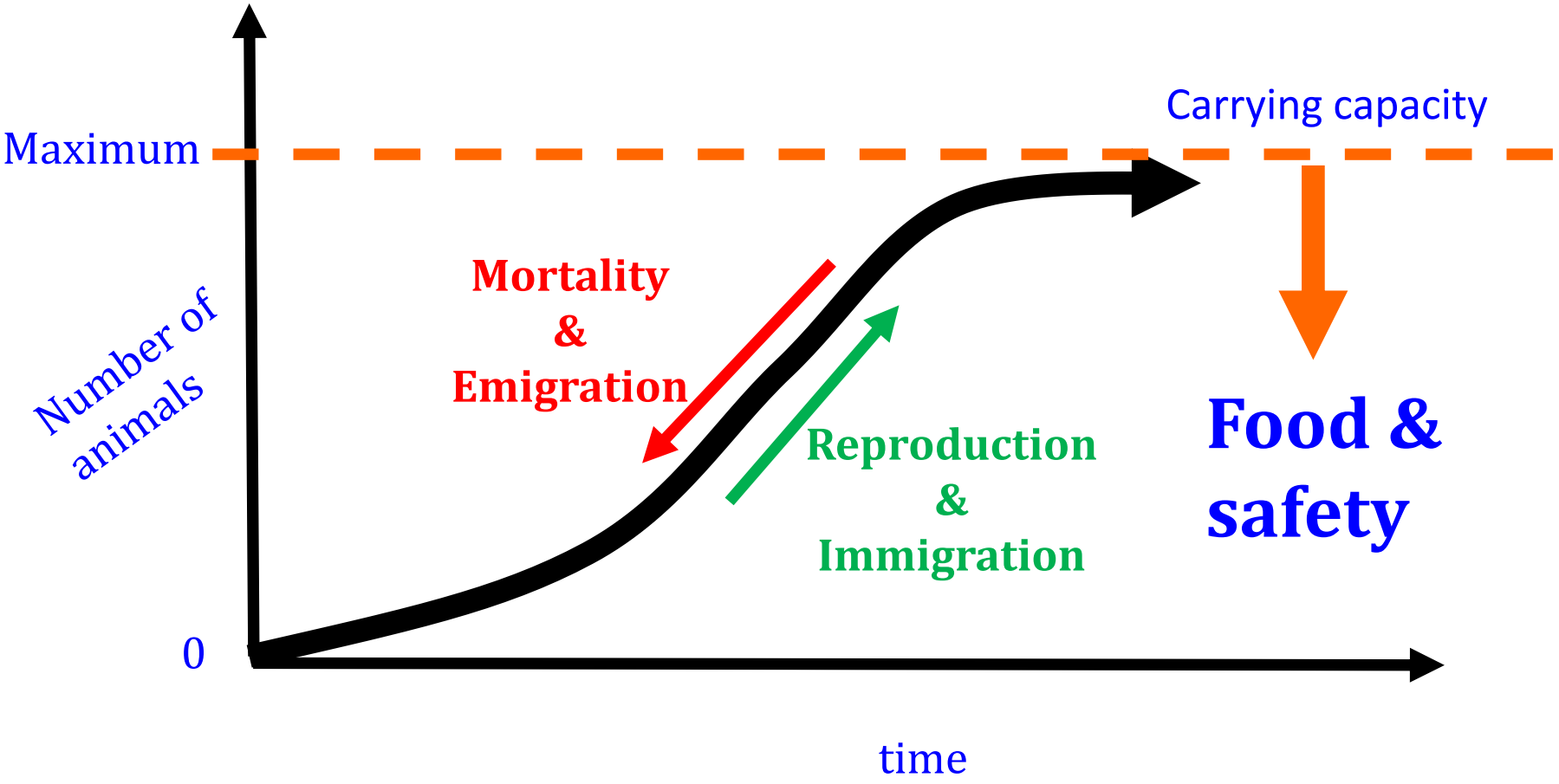






Ecological Carrying Capacity





Flight safety ← → Nature Conservation













Flight safety ← → Nature Conservation







Flight safety ← → Nature Conservation



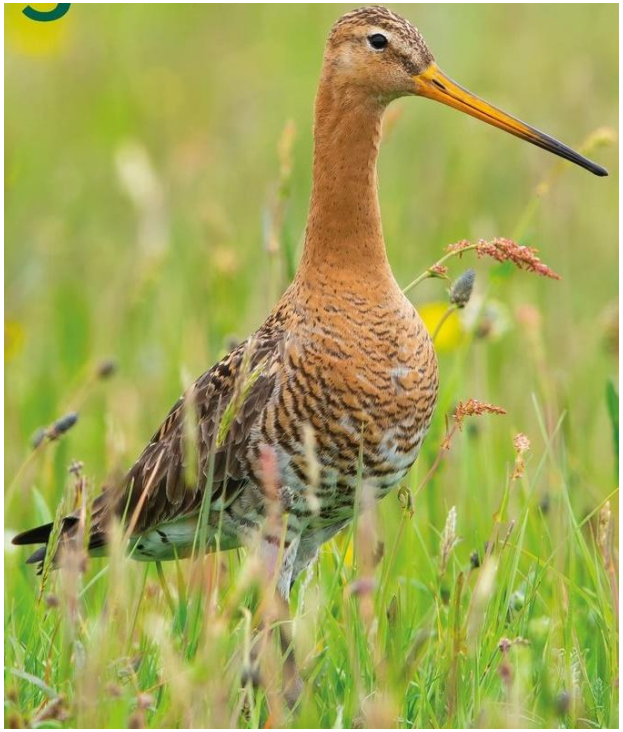




Flight safety ← → Nature Conservation









Flight safety ← → Nature Conservation

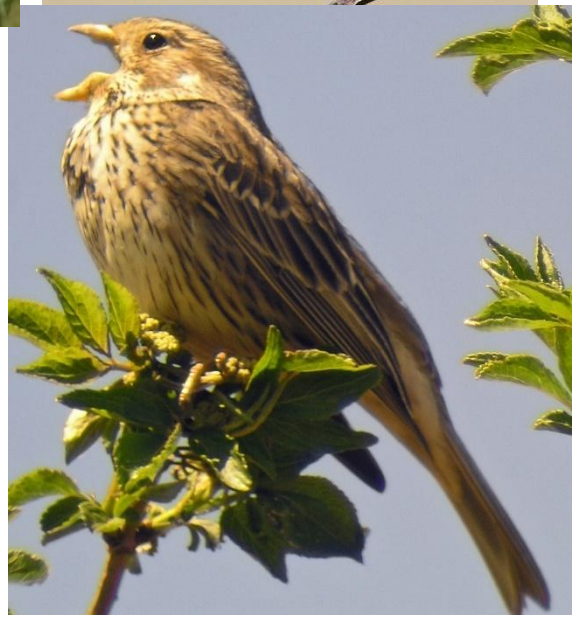






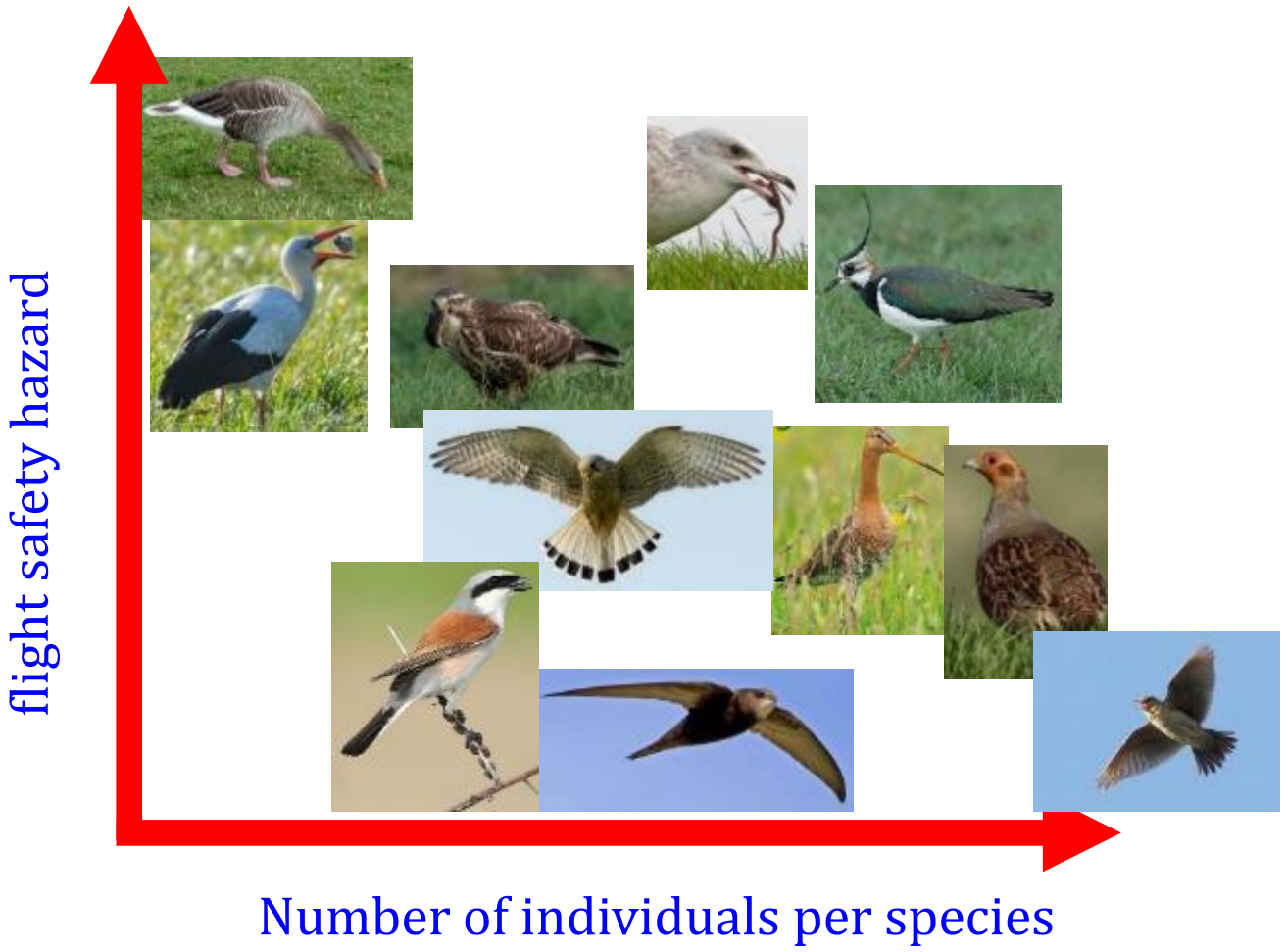






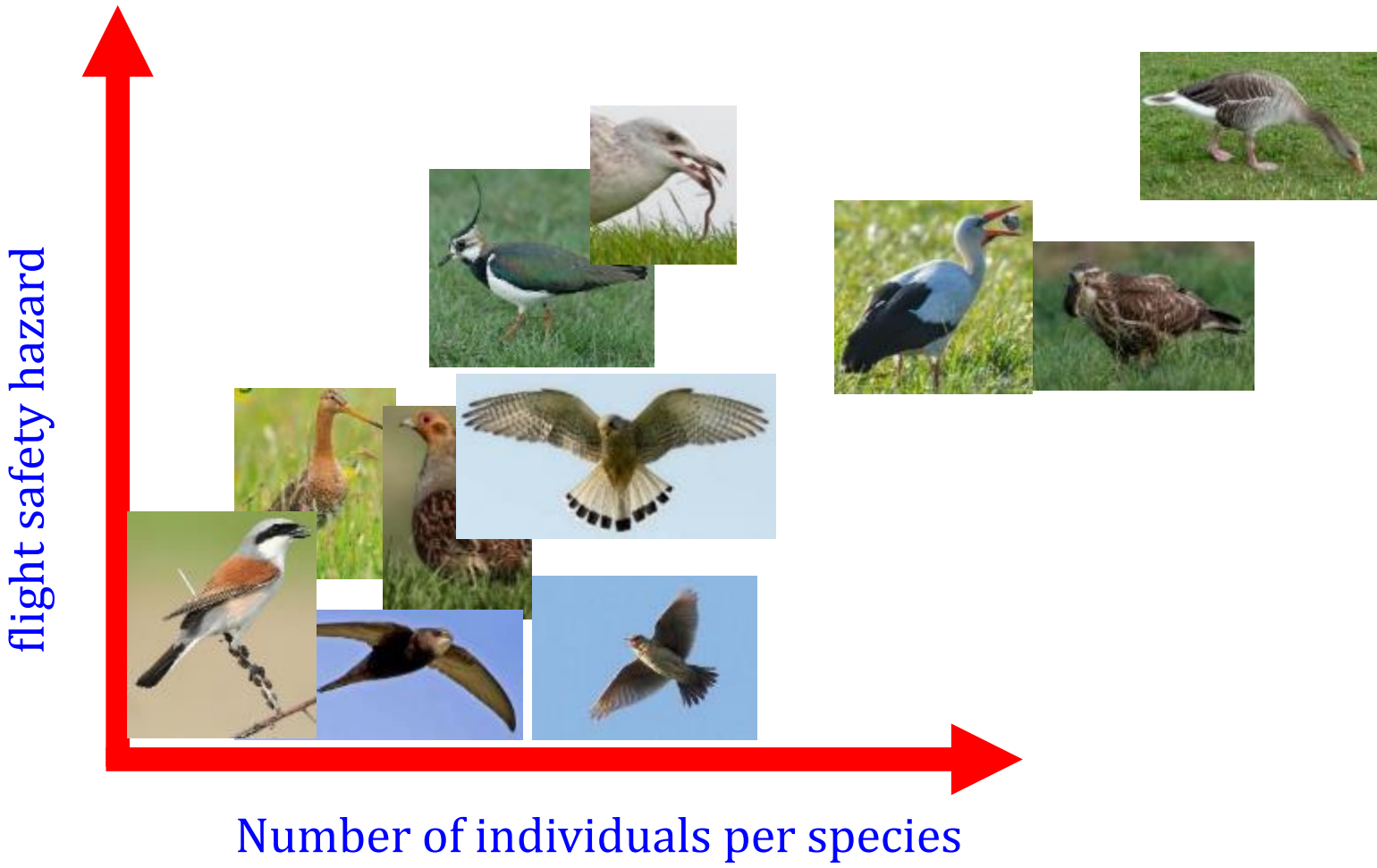
Shifting bird composition

1973



Shifting bird composition

2025



Not only birds…

Populations of large mammals are increasing as well.

Wild boar and deer are present at many aerodromes.

Most mammal strikes cause severe damage.



Bird mass



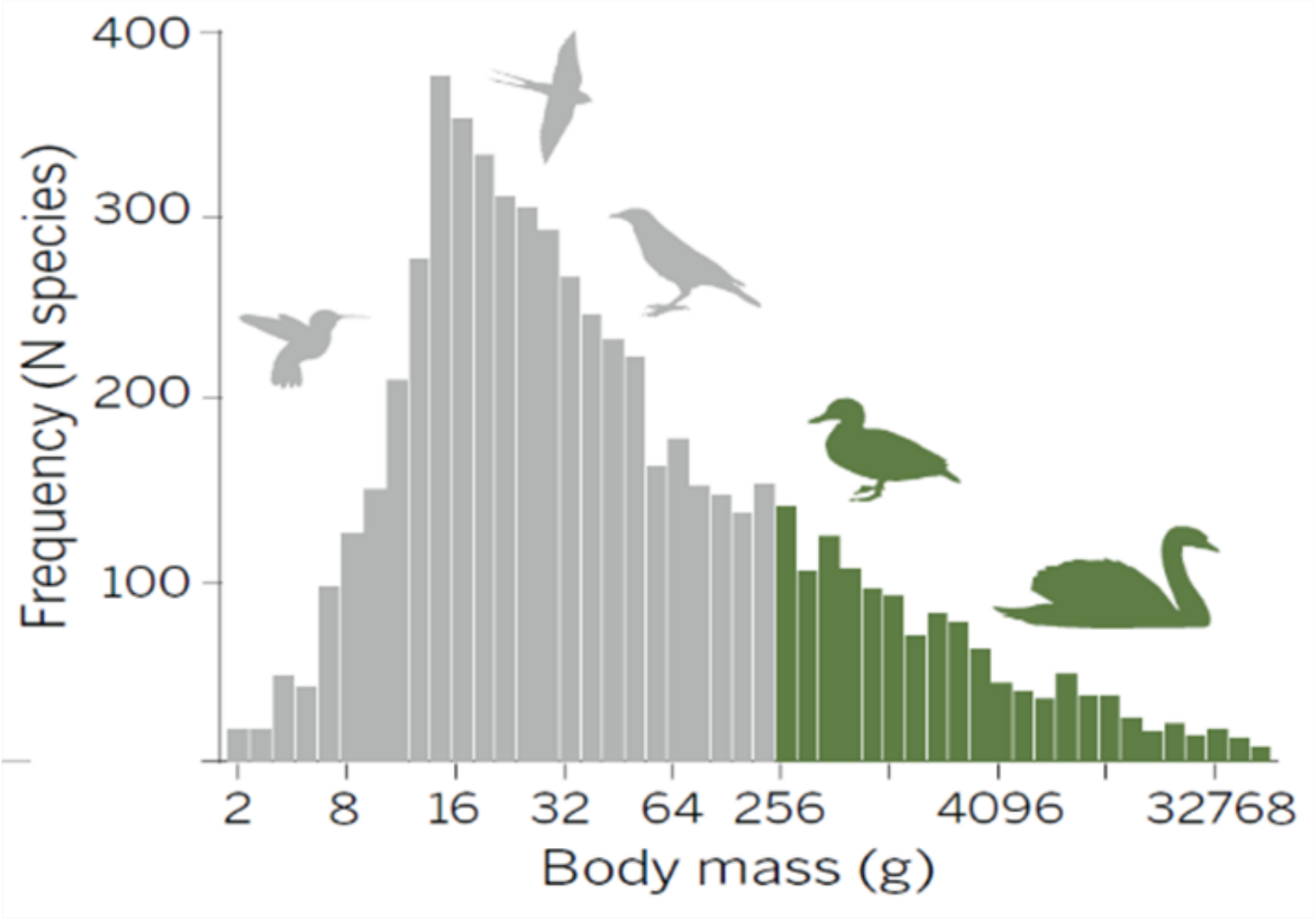
Gold crest = 6 grams



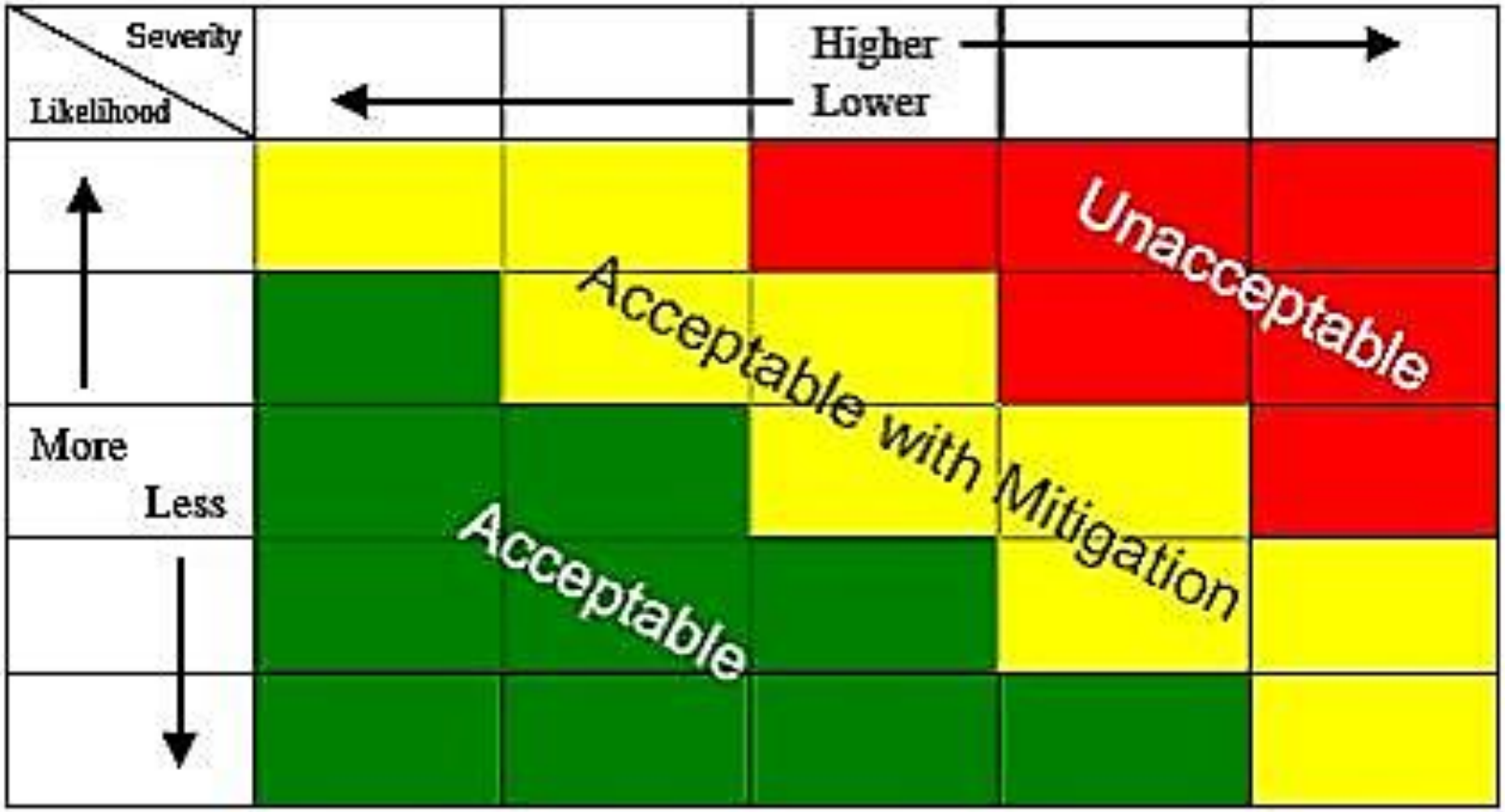
Great bustard = 18 kg

The difference in impact energy = 3,000

Bird mass

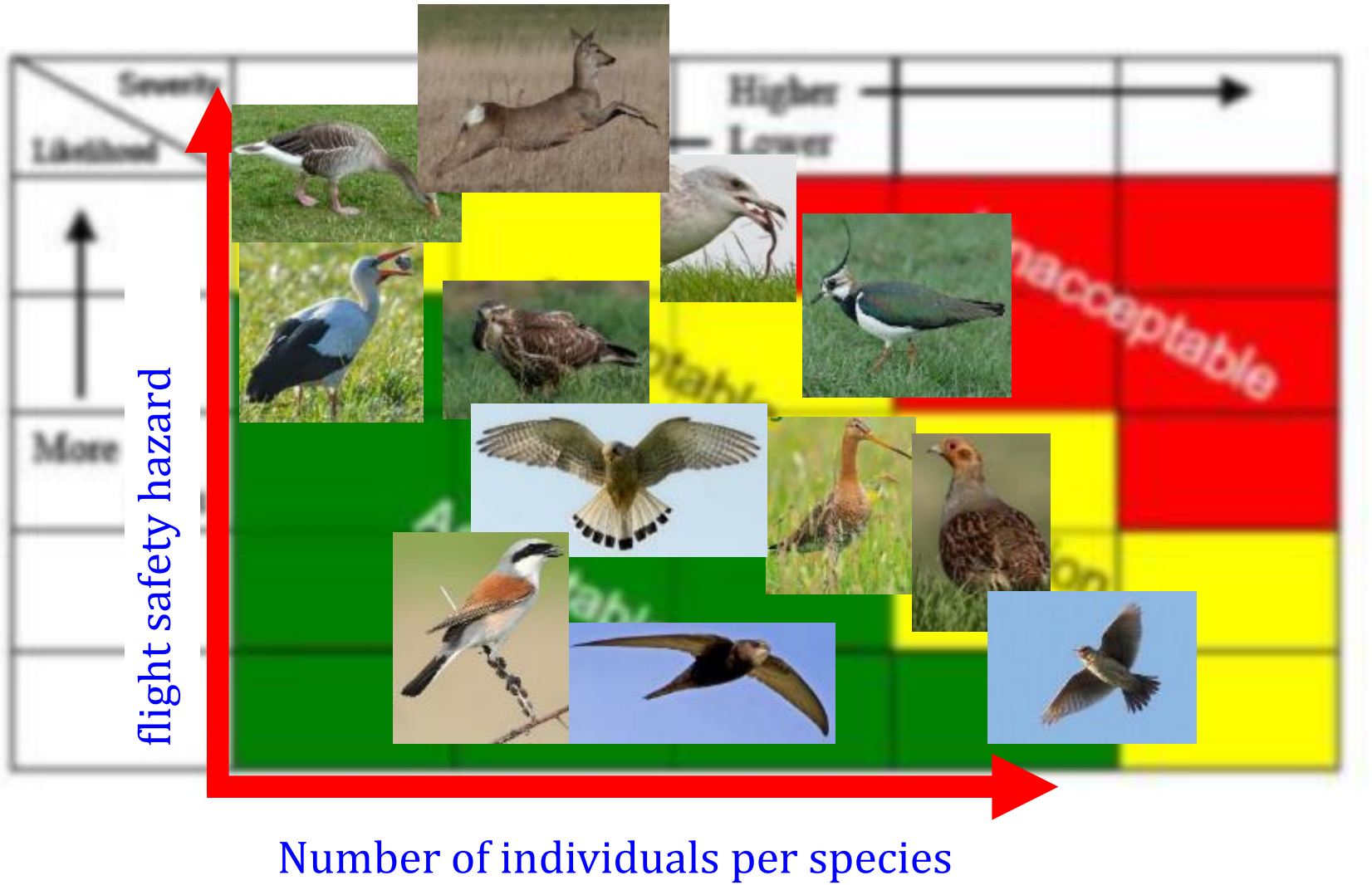

400
300
200
100
Frequency (N species)
2
8
16
32
64
256
4096
32768
Body mass (g)

Risk matrix


Severity
Likelihood
Higher
Lower
More
Less
Unacceptable
Acceptable with Mitigation
Acceptable

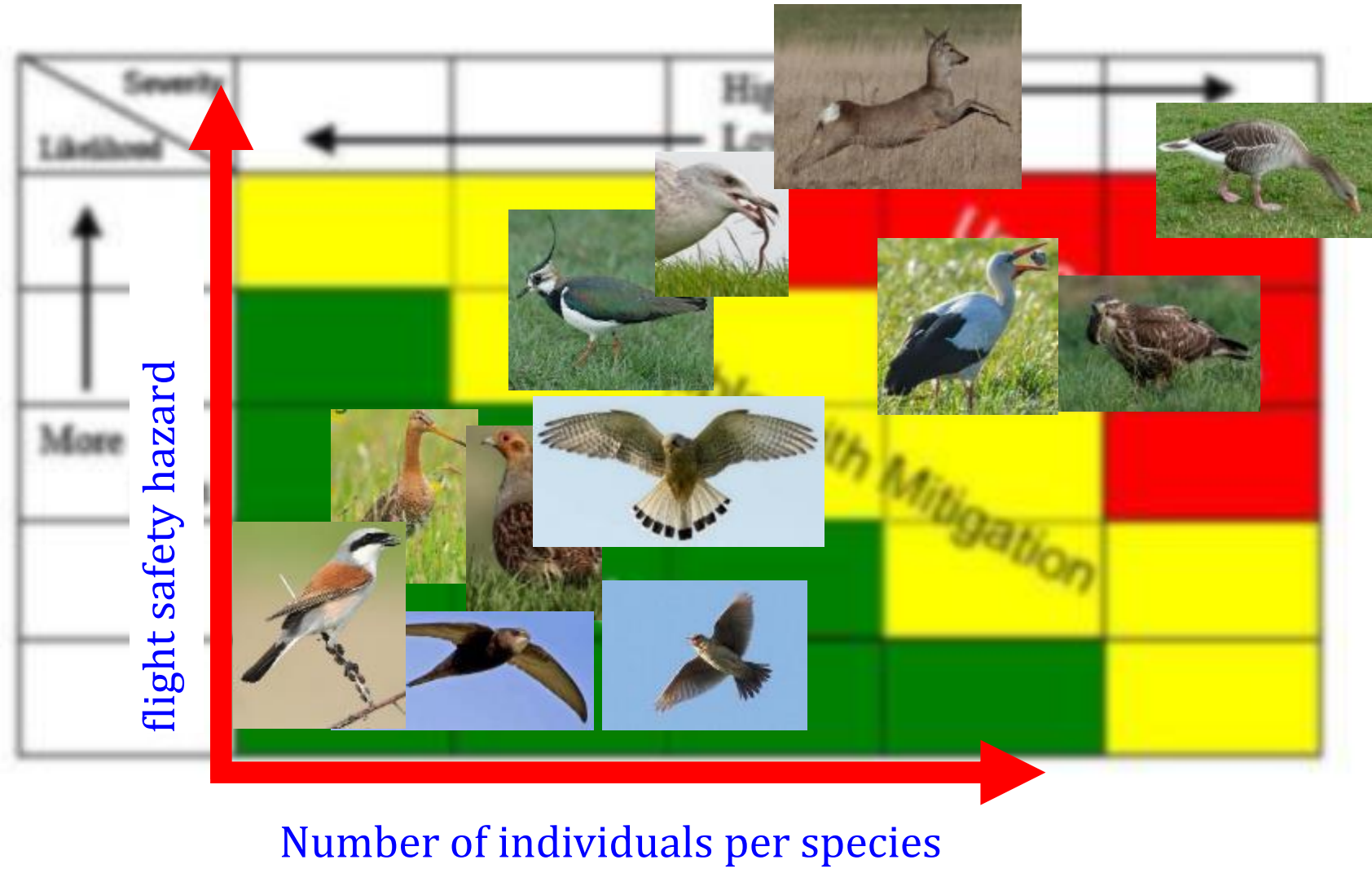
Risk assessment

1973



Risk assessment

2025



WHM Challenges in Europe

European Union Network for the Implementation and Enforcement of Environmental Law



Funded by the European Union

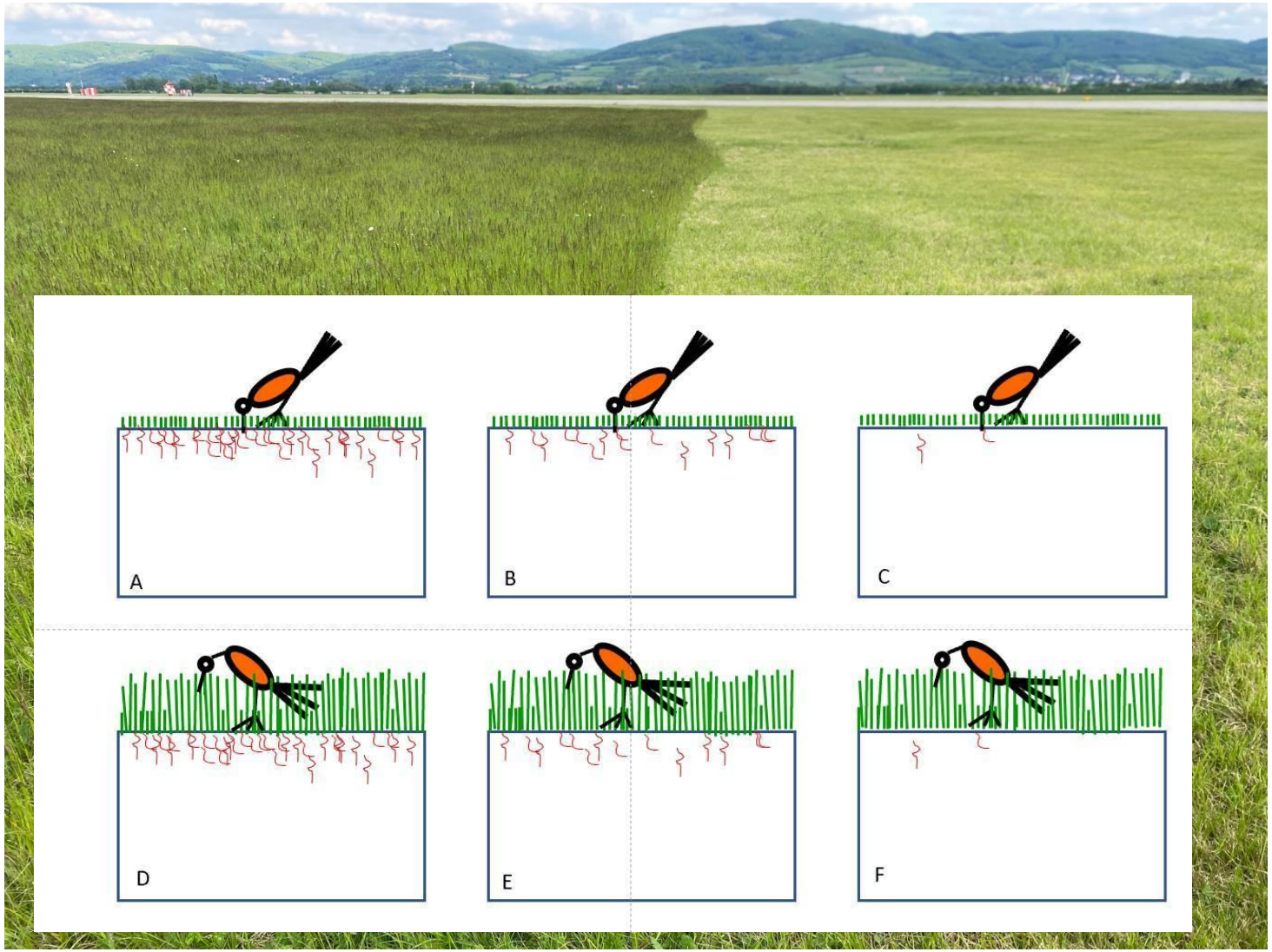
IMPEL is funded by a "FRAMEWORK PARTNERSHIP AGREEMENT" with European Commission DIRECTORATE-GENERAL FOR ENVIRONMENT - LIFE PROGRAMME (ENV.E.4/FPA/2022/001 – IMPEL)

1. Increasing
   - air traffic
   - number of hazardous wildlife

   → **Escalating wildlife strike risk**
2. Public request for non-lethal control
3. Competent WHM personnel
4. Vegetation management
5. Biodiversity (non-hazardous) management
6. Water / drought management
7. Harassment techniques
8. Data collection
9. Farmers in the vicinity
10. Sharing data, good and bad practices

Knowledge gaps

Vegetation management strategies – to cut or not to cut?



Knowledge gaps

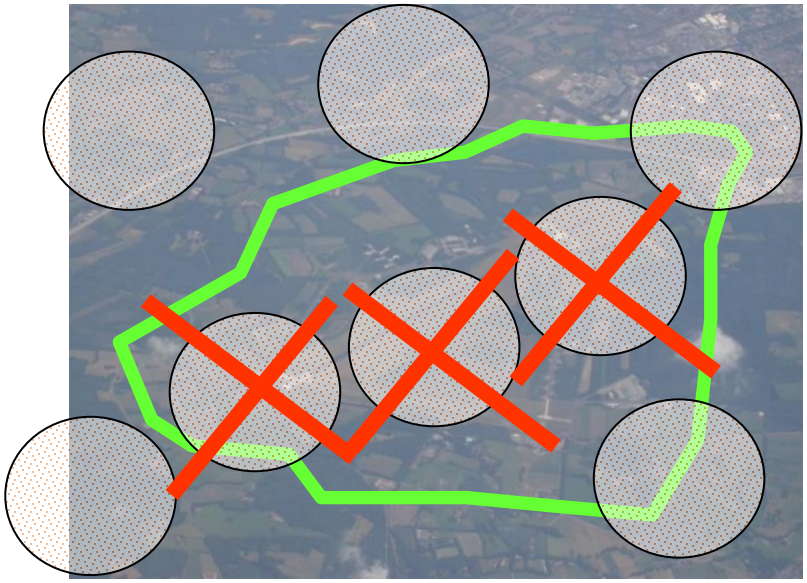
Vegetation management strategies

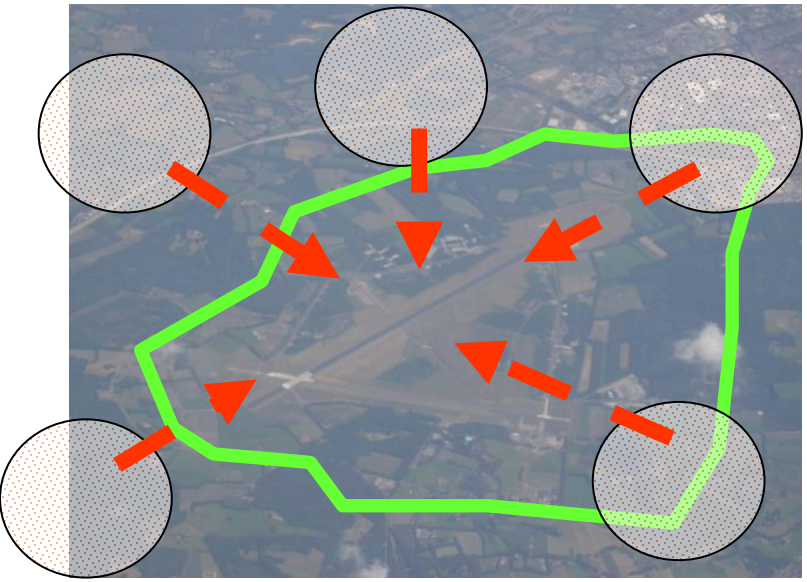
natural or cultivated vegetation?





Knowledge gaps





Creating

animal-free aerodromes

or

ecological traps

European Union Network for the Implementation and Enforcement of Environmental Law

Thank you!

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