The background of the slide features five white storks with black wingtips and long red beaks, captured in various stages of flight against a uniform grey sky. One stork is at the top center, another to its left, one to its right, one at the bottom left, and one at the bottom right.

## ***Wildlife and Aviation – Quest for silver bullet***

dr Michał Skakuj



**WILDLIFE HAZARDS TO AVIATION IS A FACT**

**ZERO BIRD STRIKES IS A MYTH**

**WILDLIFE STRIKE RISK COULD BE MITIGATED**

as a result of

**EFFECTIVE WILDLIFE HAZARD MANAGEMENT**



What have we learned worldwide from catastrophic events?  
What have we done to avoid similar encounters in a future ?



Are we pro-active in WHM measures on and off aerodromes, considering constance changes in wildlife abundance, migration pattern and behaviour?



## Let's name a few problems:

- Data quality & Definitions
- Hazard and Risk assessment standards,
- Awareness of stakeholders
- Cooperation among stakeholders





## Wildlife Species, how to talk the same language

It is not just a GULL\* :

Species	Wingspan (max)	Weight (max)
Little Gull	70 cm	0,16 kg
Black-headed Gull	100 cm	0.40 kg
Herring Gull	150 cm	1,5 kg
Great black-backed Gull	170 cm	2,3 kg

\*SEA GULL name is good for poetry not for Wildlife Hazard Management



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Ignoring biological information we may expect  
Bird Strike with a chicken-like bird in database.



Wildlife/bird species names needs standardization for good quality of the database and analysis

WBA strongly suggest to use BirdLife Int. World's Checklist



**Handbook of the Birds of the World and BirdLife International Digital Checklist of the Birds of the World:  
Version 5 (December 2020)**

**Citation**

Handbook of the Birds of the World and BirdLife International (2020). Handbook of the Birds of the World and BirdLife International digital checklist of the birds of the world. Version 5. Available at: [http://datazone.birdlife.org/userfiles/file/Species/Taxonomy/HBW-BirdLife\\_Checklist\\_v5\\_Dec20.zip](http://datazone.birdlife.org/userfiles/file/Species/Taxonomy/HBW-BirdLife_Checklist_v5_Dec20.zip).



The „Species concept” means valid information:

- Size (weight, measurement) – impact Energy
- Distribution (where, when, why etc.)
- Habitats preferences (feeding, loafing, resting etc.)
- Flocking behavior (when, how big etc.)
- Migration pattern (where, speed, altitude etc.)

Species identification is a key element to mitigate the risk in a future.







„a BIRD” concept



„the Species” concept

## Quest for Wildlife Hazard awareness:

- Professionals (pilots, UAV operators, ATC, biologists)
- Aerodromes managers
- Aviation Authorities (civil & military)
- Stakeholders



## UAV WHM – a problem of the future?



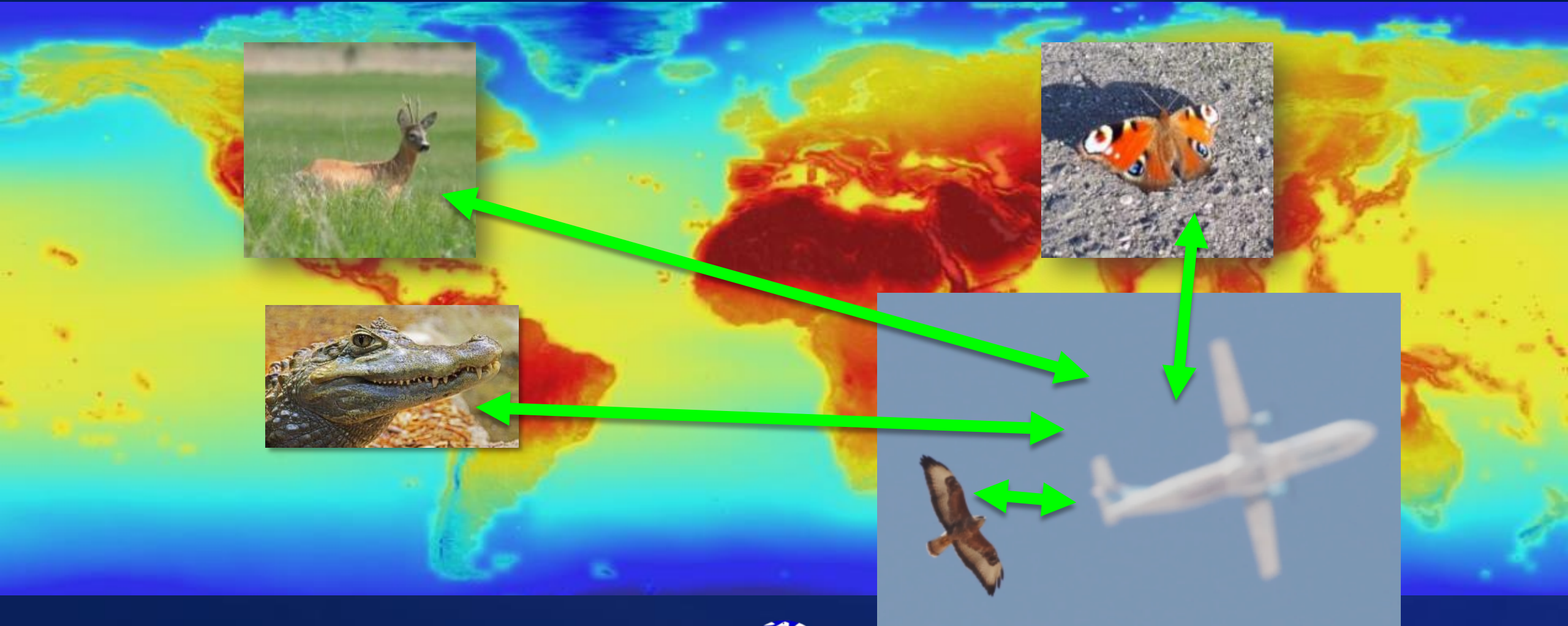
- Urban areas
- UAV activities
- Number of birds species
- Bird Strike mix
- Real and soon present Hazard



# *Wildlife and Aviation - Quest for Silver bullet*

## ANTHROPOGENIC CHANGES

## AVIATION – ENVIRONMENT INTERACTIONS





## Quest for sustainable environment

- Aviation is a part of anthropogenic pressure
- Balance Aviation safety – nature protection
- Environment is our heritage



## Quest for good regulations and how to follow them

- Standards & definitions
- Civil & Military
- Commercial and General Aviation



## Quest for education

- future experts
- Pilots & ATC, UAV operators
- Aviation Authorities

There will be new pilots, ornithologists, ATC, airports, stakeholders  
it will be waste of time if they repeat our mistakes, they shall be better!



# Increasing global problem



# Demands global solution





## Many Quests but rather simple answers:

- there is no Silver bullet
- WHM & evaluation
- biologist & science
- cooperation & discussion
- education & awareness





***Thank you very much for your attention***

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