

06th
May

Greetings to all



Preface to the global and national avian hazard management:
Need of Perspective changes.

Session will start soon

BASHM, Bangalore International Airport Limited

The purpose of this module is to give an overview of national and international wildlife hazard management and the necessity of a shift in perspective.

Evolution, Adaptations, Behavior and Migration

Omnipresent birds



European starling – 1.3 billion



Most abundant House sparrow – 1.6 billion



Ring billed gulls – 1.2 billion



Barren swallows – 1.1 billion



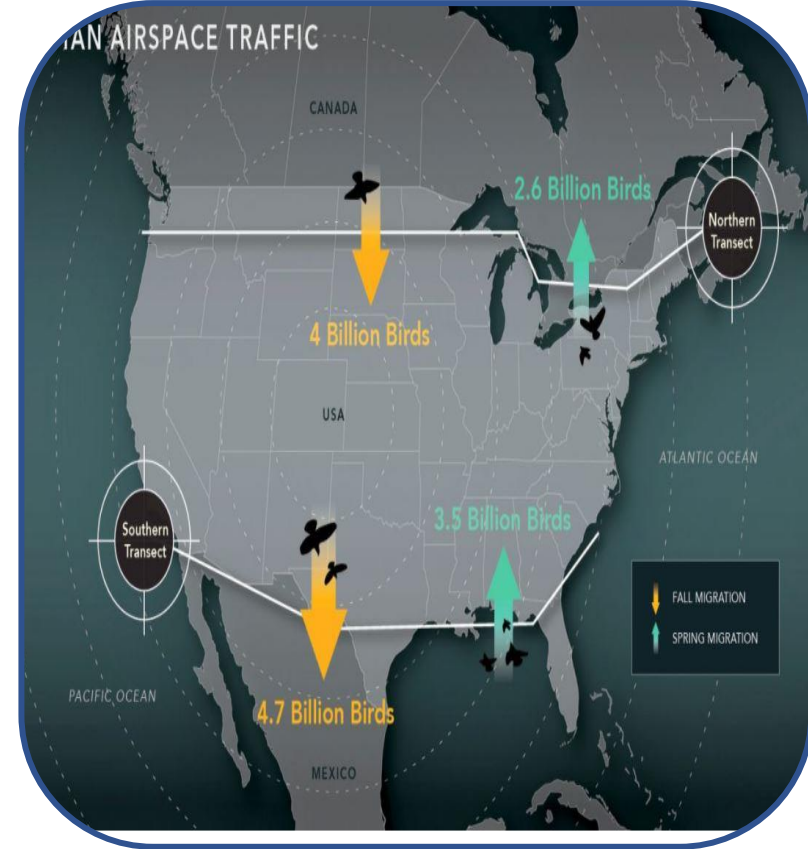
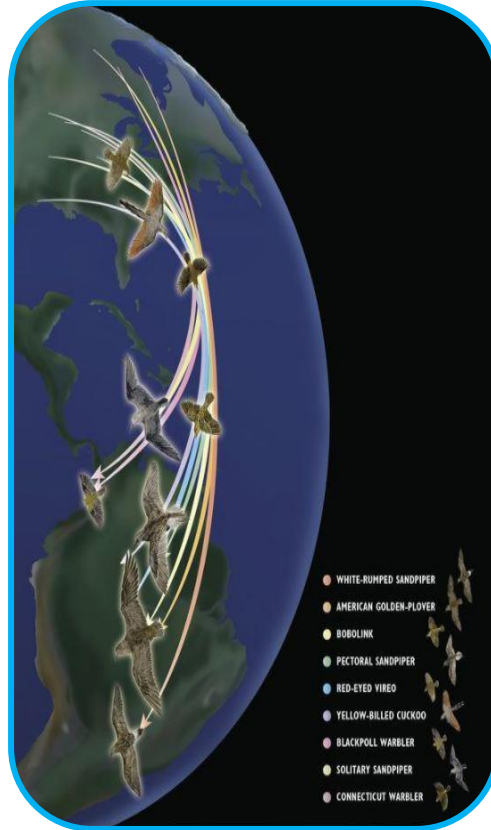
Glaucous gulls – 949 million



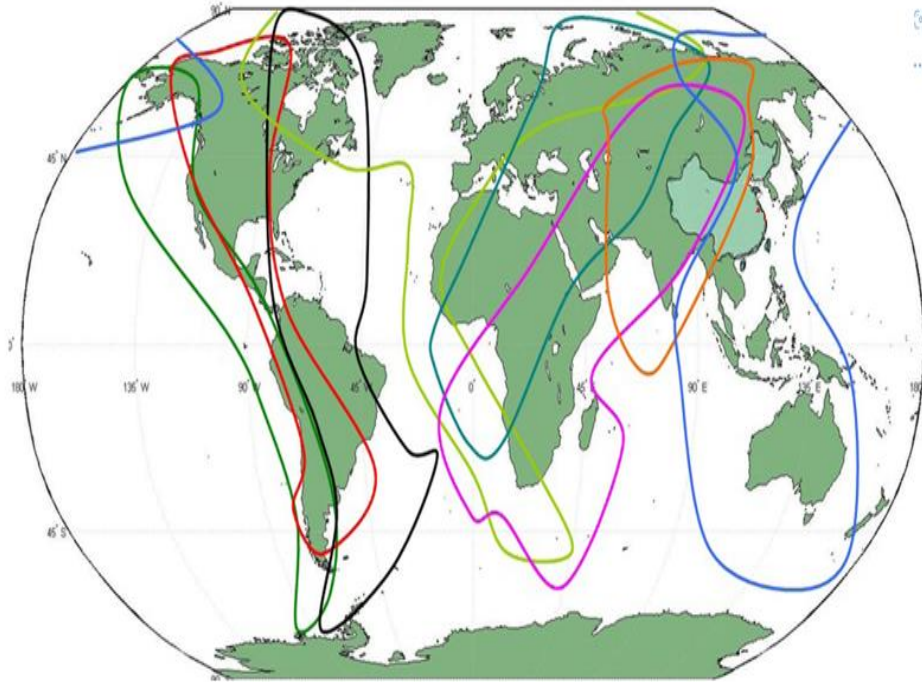
Alder flycatcher – 896 million

Research paper from University of New south Wales in Sydney estimates there are likely between 50 billion to 428 billion birds on Earth

The sky Above : It is not just Air but a Habitat



Migratory routes - Natural Spectacle



- About 11188 species of birds
- 50% of them are migratory (incl local)
- 8 Major routes covering all continents
- Coastlines, mountain ranges, plains, river & valleys
- Use the same overland routes during both north (spring) and southward (fall) migrations.

Chiroptera (Bats) Emerging Risk Species

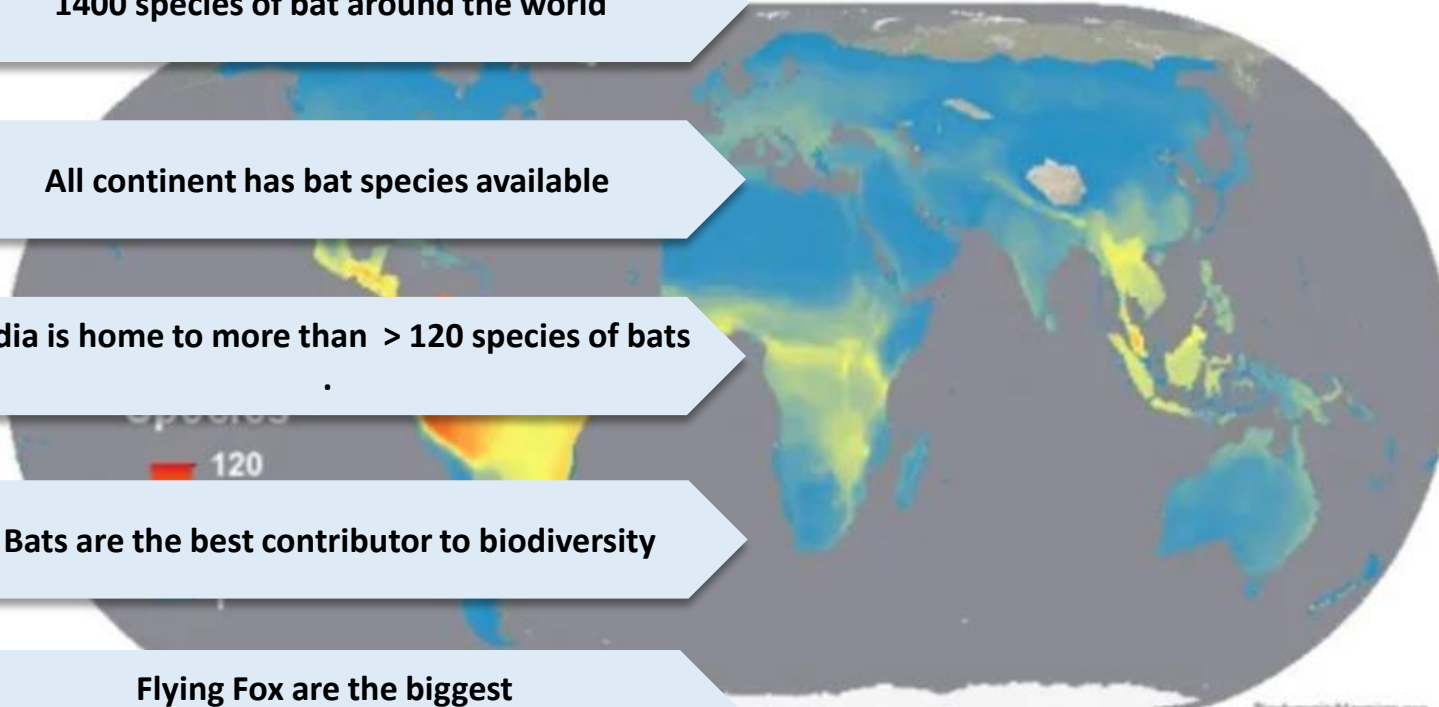
1400 species of bat around the world

All continent has bat species available

India is home to more than > 120 species of bats

Bats are the best contributor to biodiversity

Flying Fox are the biggest
(40cm x 1.7m)



Airspace occupancy - A glance

INDIAN AIRSPACE

US AIRSPACE

UK AIRSPACE

8000 - 20000 Planes in Air

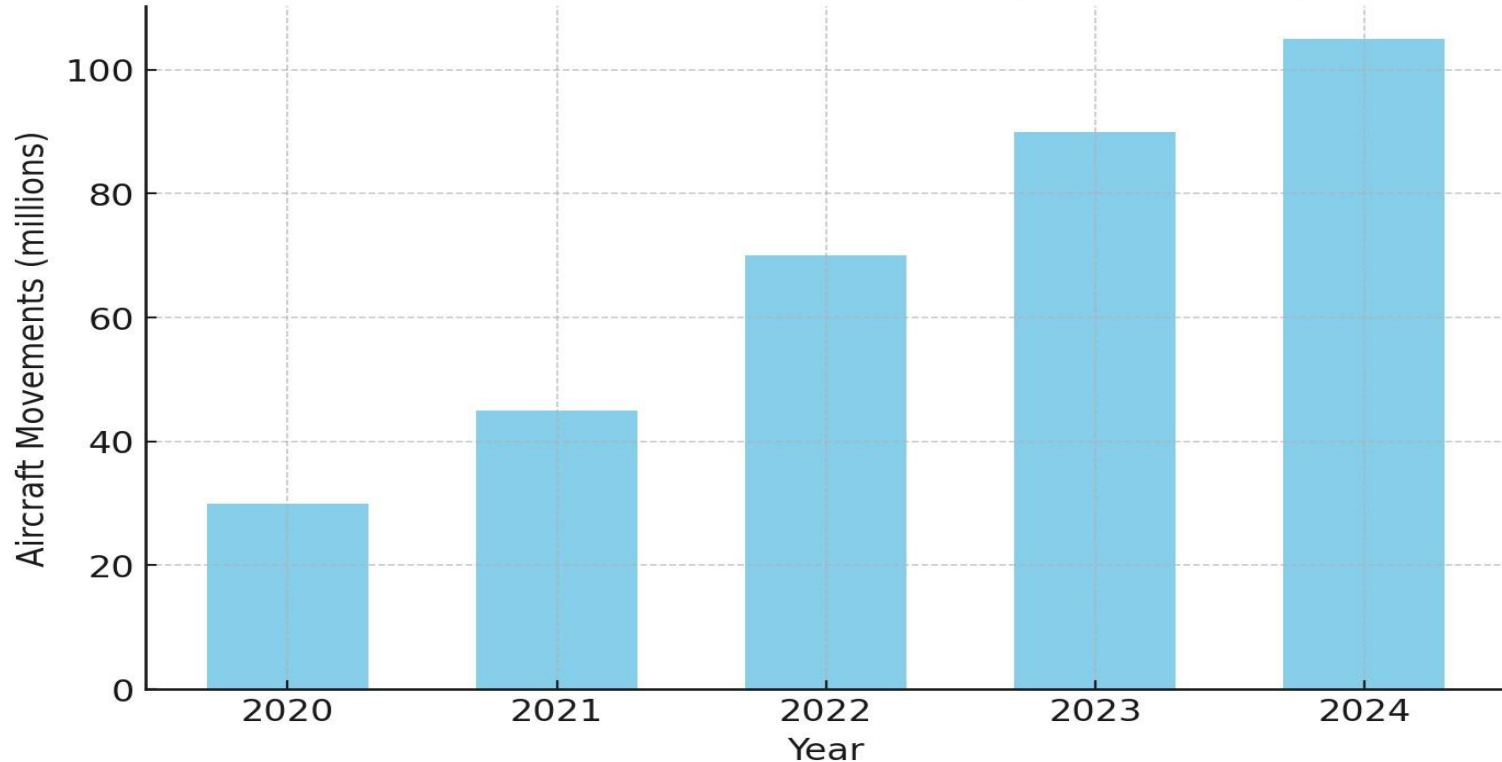


Source : Flightawaredata

Factors influencing the bird strikes

– Growing Air Traffic

Global Aircraft Movements (2020-2024)



Global Top 20 Markets by Total Passenger (2000-2053)

Region North America Asia-Pacific Europe Latin America-Caribbean Middle East Africa



2025

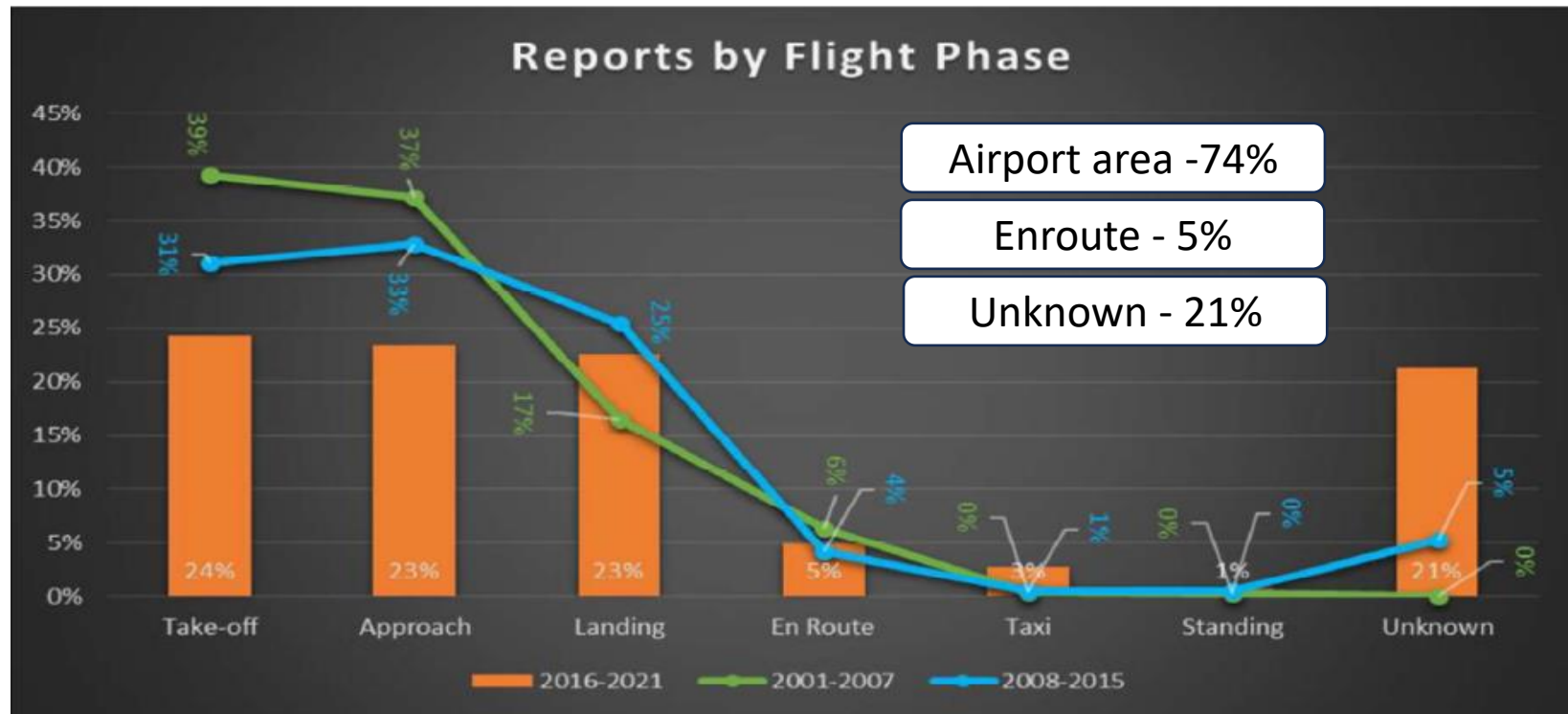
Global Top 20 Markets by Total Passenger (2000-2053)

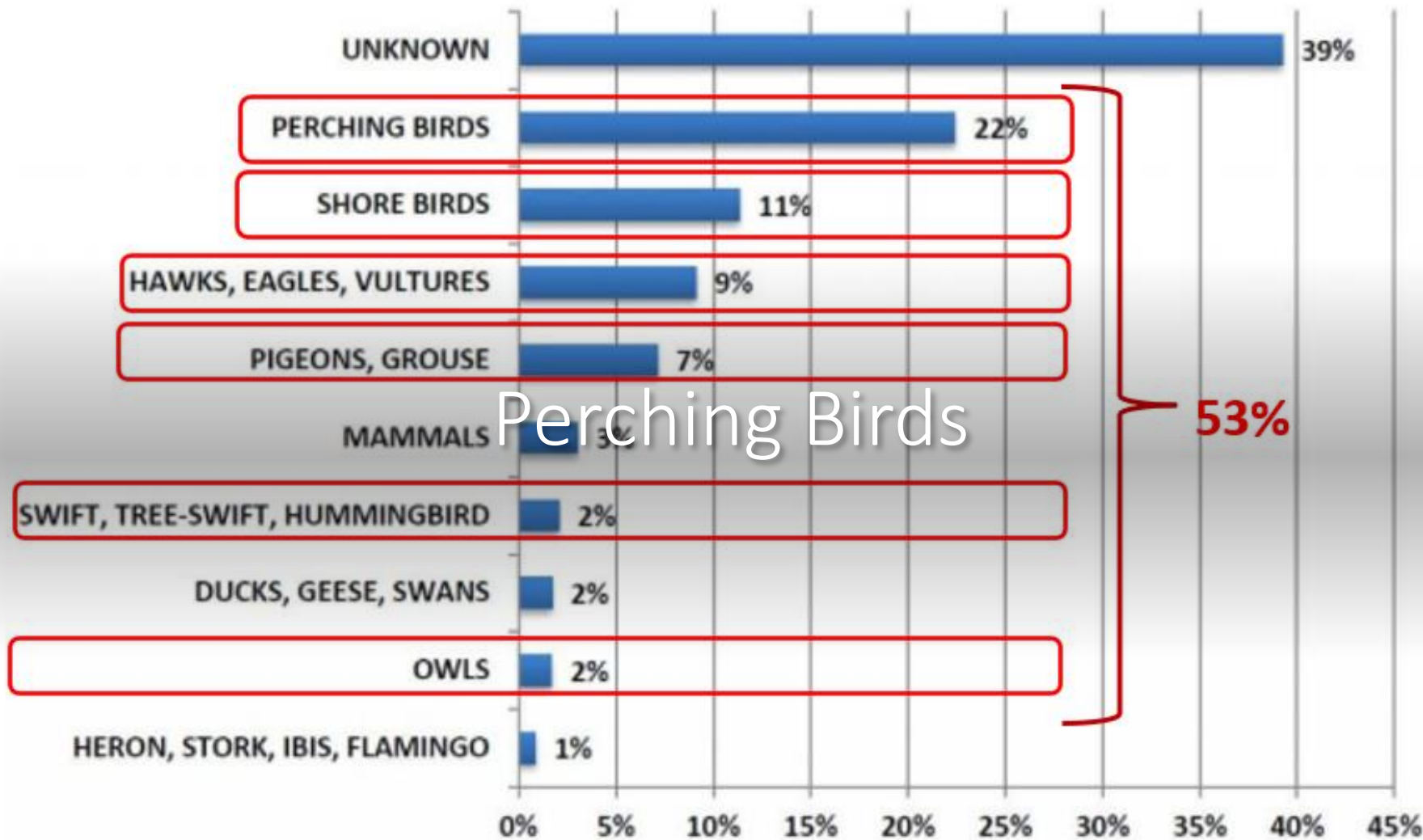
Region ■ North America ■ Asia-Pacific ■ Europe ■ Latin America-Caribbean ■ Middle East ■ Africa



2050

Importance of Aerodrome WHM







Baikal Teal (*Sibirionetta formosa*)

Jeju Airlines – 179 lives

Globally wildlife strikes have killed 441 people and destroyed over 251 aircraft since 1988.



Did any one investigated :

- What happened on 29 Dec 2024
- Why this birds Baikal teal moved on to air
(Breeds in Eastern Russia and winters in East Asia)
- Bird wave
- Did they fall in WHM Radar
- Is there any NOTAM existing
- What would have caused these species moving into AMP

Man vs bird

Agencies / Updated: Jun 5, 2022, 06:00 IST

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HIGHLIGHTS

- Fishers bursting crackers at small waterbodies to ward off waterbirds have lake activists up in arms
- Fishermen given licences from panchayat, fisheries dept

Airframe Certification Standards 14 CFR Part 25-571& in EASA CS-25.631



14 CFR Part 25-571 and in EASA CS-25.631

FAA (only) addl reqs under 14 CFR Part 25-631

Both EASA CS-25 and 14 CFR Part 25

CFR Stds	Engine 1.8Kg hit @ Vc 830-920 km/h	Engine 3.6kg @ Vc 830-920 km/h	Windhield 1.8 kg @ Vc 830-920 km/h
Criteria	CFTND	CFTND	CFTND
Year	2008	2013	2021
Impact	Rome - Flock of starlings down B -737	USA - A-330 disable both engine by MSB	USA - LSB R engine A 320 Neo
PoF	Landing 220-280 km/h	Take off 280-330 km/h	Take off 240-300 km/h

Are we doing an EIA and taking adequate measures

Are we checking the kind of land are you converting to airport

Are we using treated soil for airport construction landfill



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Pest/insects diversity

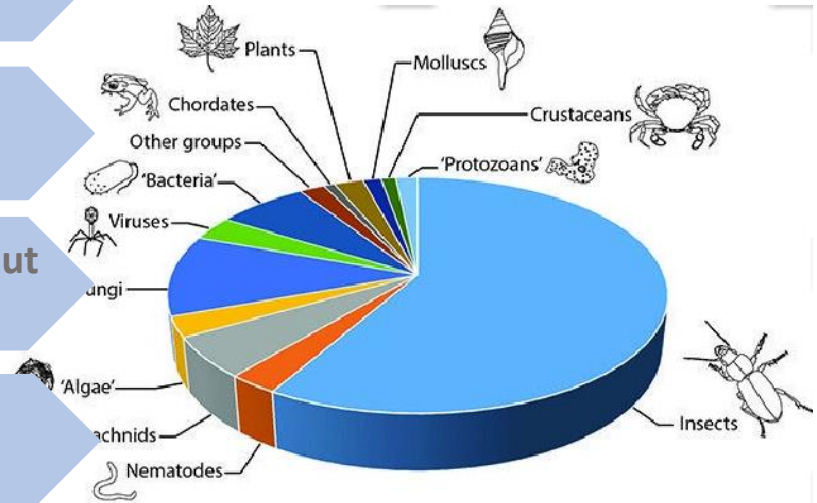
Thousands of insect species reside in the soil environments (Easy to manage terrestrial insect)

Most of them are falling in the food web of birds

Critical ones are the subterraneans , most sought out feed of a variety of perching birds

They emerge during breeding season/ecological change

Carabids have about 400000 types of diversity



Problem species – in a broad classification Perching birds

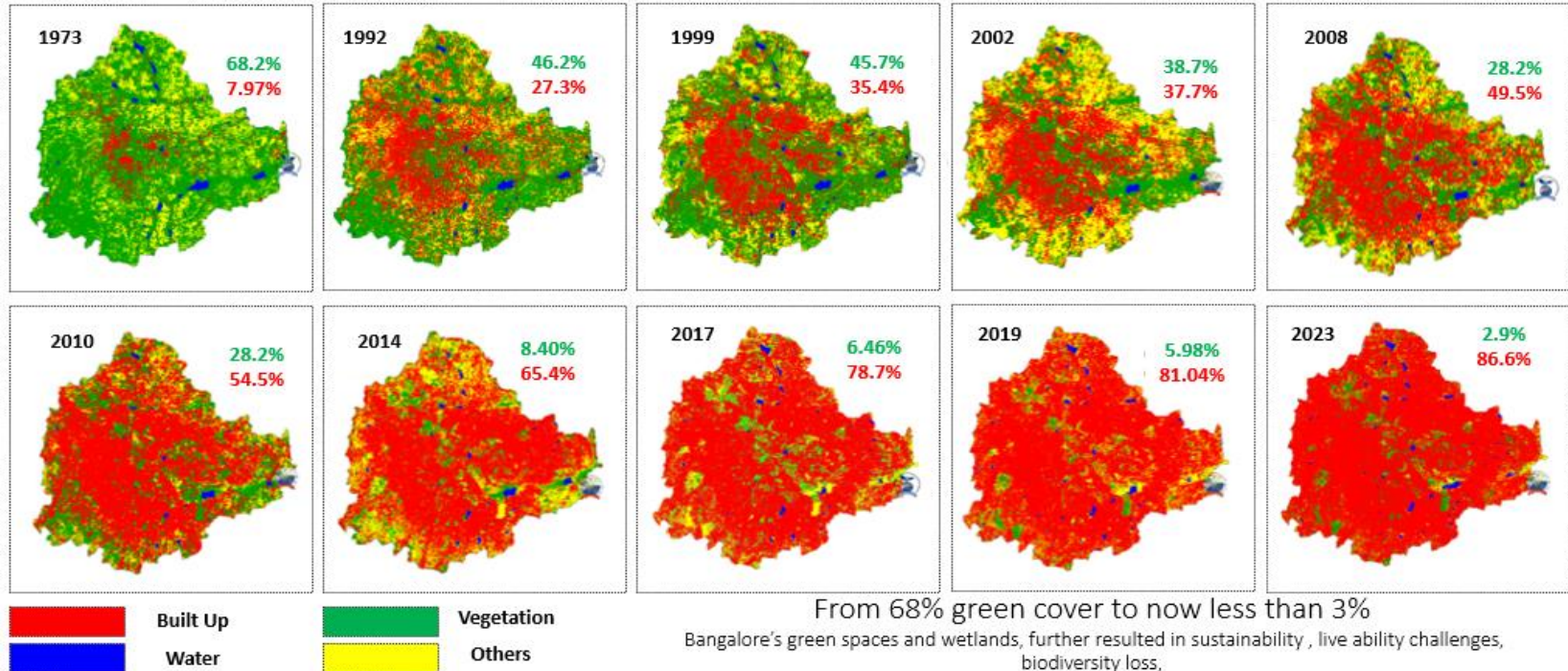
<i>Data</i>	2001-2007	2008-2015	2016-2021
<i>States reporting</i>	51	91	136
<i>States/territories of occurrence</i>	145	105	194
<i>Strikes reported</i>	42 508	97 751	273 343
<i>Day time strikes</i>	63%	68%	68%
<i>Night time strikes</i>	24%	25%	19%
<i>Peak month activity</i>	12% (August)	14% (August)	12% (July and August)
<i>Strikes during takeoff</i>	39%	31%	24%
<i>Strikes during approach</i>	37%	33%	23%
<i>Strikes during landing</i>	17%	25%	23%
<i>Wildlife specie most frequent</i>	Perching birds	Perching birds	Hawks, eagles and vultures
<i>Part struck most frequent</i>	Engines and Radome	Engines and Radome	Engines and Radome
<i>Part damage most frequent</i>	Engines and Wing/Rotor	Engines and Wing/Rotor	Engines and Wing/Rotor

93%

89%

70%

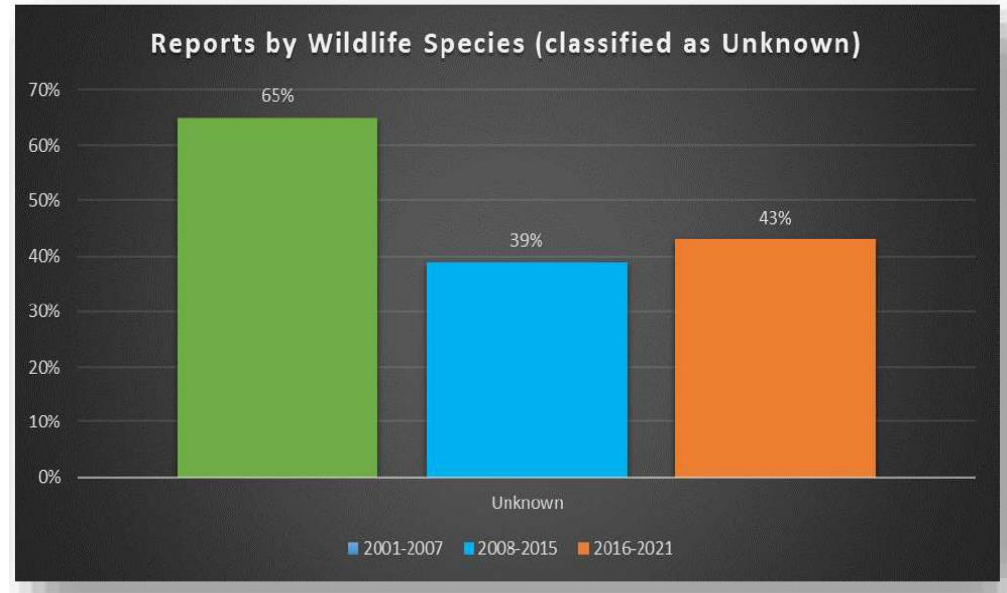
Aerodrome – A Fragile Ecosystem



Statics on species

On 7th September 1908, Orville Wright while piloting the Wright Flyer, had believed to be the first pilot to experience collision between an aircraft and a bird, what is now known as a bird strike, A gull entangled and jammed the control resulting the aircraft to plunge out of control

- Unknown cases are more still
- Are we safe at air with these many unknown cases around
- Are we at the right track
- Do we have a right person on the job
- Do we have a procedure to identify the species involved
- Do we have a WHM data management in place
- Are we following the best practices to mitigate the risk
- Do you have the legislation support from state in mitigating the risk



Conclusion



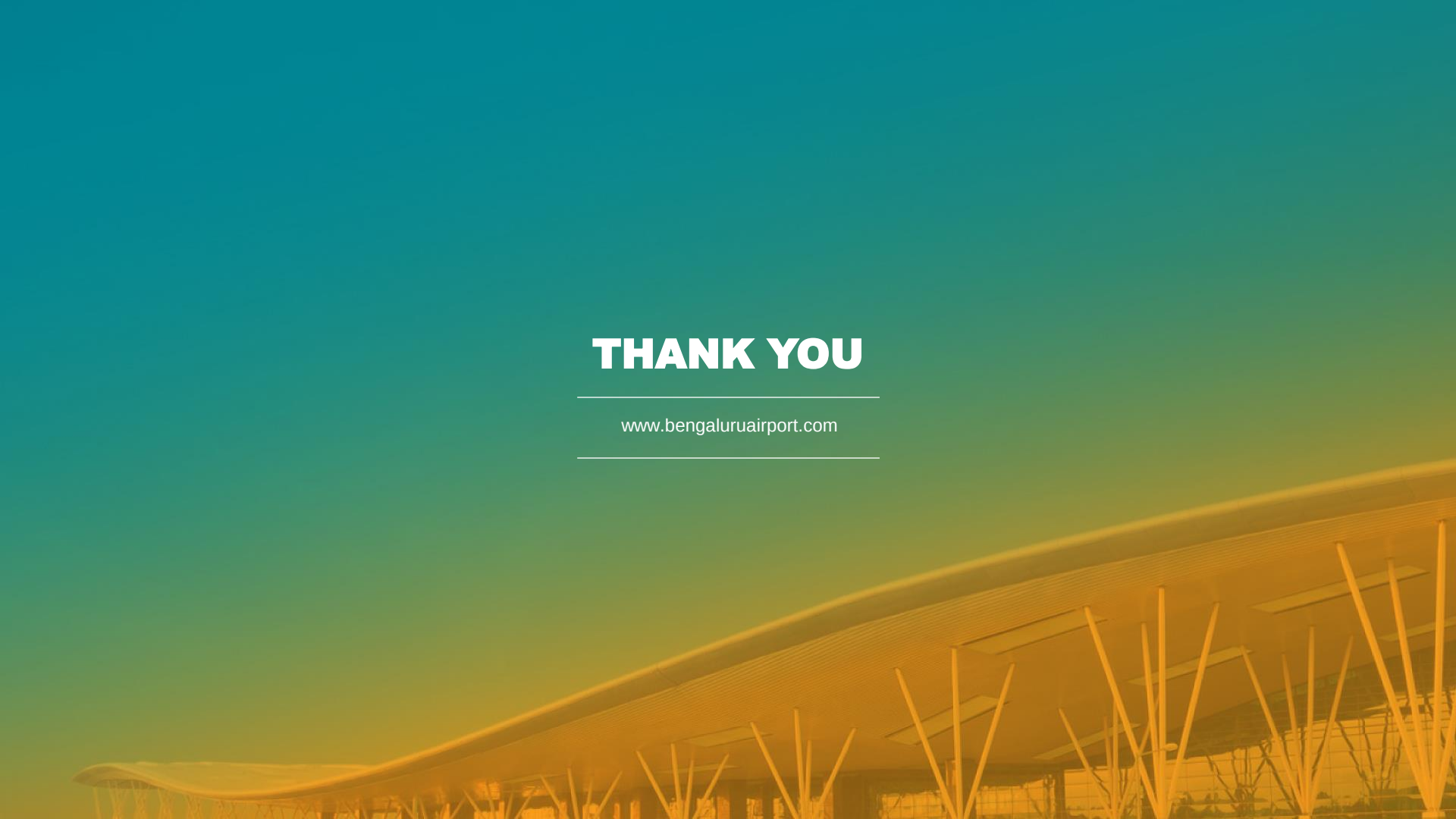
Wildlife Hazard Management is a multifaceted and intricate field that demands a comprehensive understanding of ecological dynamics, regulatory frame works and stake holder engagements



Effectively mitigating wildlife relates risks at aerodromes involves addressing several complex challenges



Aerodrome Wildlife hazard Management



THANK YOU

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