

06th
May

Greetings to all



Transforming Approaches to Wildlife Hazard Management in Aerodrome Operations
Bangalore International Airport Limited, India

ICAO earlier focused on the control of birds on, and in the vicinity of, aerodromes. In recognition that other forms of wildlife also pose hazards to the operation of aircraft in land or air, the provisions on bird hazard reduction in the 5th Edition of Annex-14, Volume-I — Aerodrome Design and Operations were expanded to include a broader focus on wildlife strike hazard reduction.

Aircraft crash impact

Crash of DANA Air Flight(MD 11) in Nigeria in 2012. 153 People were reportedly on board and an untold number of people were killed on the ground as the plane crashed into a thickly populated area

Critical phase of the flight
Urbanized area thickly populated

Strategic business location
Fatality of accident is severe in case of an
accident close to airport

Structural take off weight
Huge volume of fuel



Fatal Aircraft Accidents - Birdstrike 1

- Throwback Thursday - 1960
- Lockheed Electra Eastern Airlines
- Logan Airport
- Collided with Cloud of starlings
- 120 feet on take off
- Crashed vertically in Boston Harbor
- Killing 62 souls , completely destroying the ac



Species involved

- Starlings
- Length - 19-23 cm
- Wingspan – 31-44 cm
- Weight – 58-101 gm
- Population size -150-310 MLN
- Life Span 2-23 years
- Top flying speed – 77 Km/H
- Clutch size – 4-5 eggs
- Seasonal behavior - Partial Migrant





Fatal Aircraft Accidents – Birdstrike 2

- Bahir Dar, Airport 1988.
- Aircraft type – Boeing 737 Ethiopian Airlines
- Species involved - Flock of speckled pigeons
- Incident - Take off phase
- One of the engines lost thrust instantly. The other engine failed shortly during an emergency belly landing.
- killing 35 out of 98 souls , completely destroying the ac

- **Spectacled Pigeon**
- **Length - 41 cm**
- **Wingspan – 32-41 cm**
- **Weight – 217-397 gm**
- **Population size -120-310 MLN**
- **Life Span - 6 years**
- **Top flying speed – 77 . 6 MPH**
- **Clutch size – 1-3 eggs**
- **Seasonal behavior - Resident**

Species involved



— Fatal Aircraft Accidents Birdstrike 3

- US Air Force Boeing E 3 1995
- Alaska Airport
- Collided with Cloud of Canada Geese
- 250 feet on take off
- Crashed into forest land
- Killing all 42 souls on board
- Damage – Completed destroyed



- **Canada Geese**
- **Length - 75-110 cm**
- **Wingspan – 125 -187 cm**
- **Weight – 2.5 -6.7 kg**
- **Population size -180340 MLN**
- **Life Span - 10-24 years**
- **Top flying speed – 62.5 MPH**
- **Clutch size – 2- 9 eggs**
- **Seasonal behavior - Migratory**



Species involved

Fatal Aircraft Accidents Birdstrike 4

- Dassault Falcon 20 E Lead air Unijet 1995
- Paris-Le Bourget Airport
- Collided with Lapwings
- AC landed with gear retracted
- Killing all 10 souls on board
- Damage (BRC)

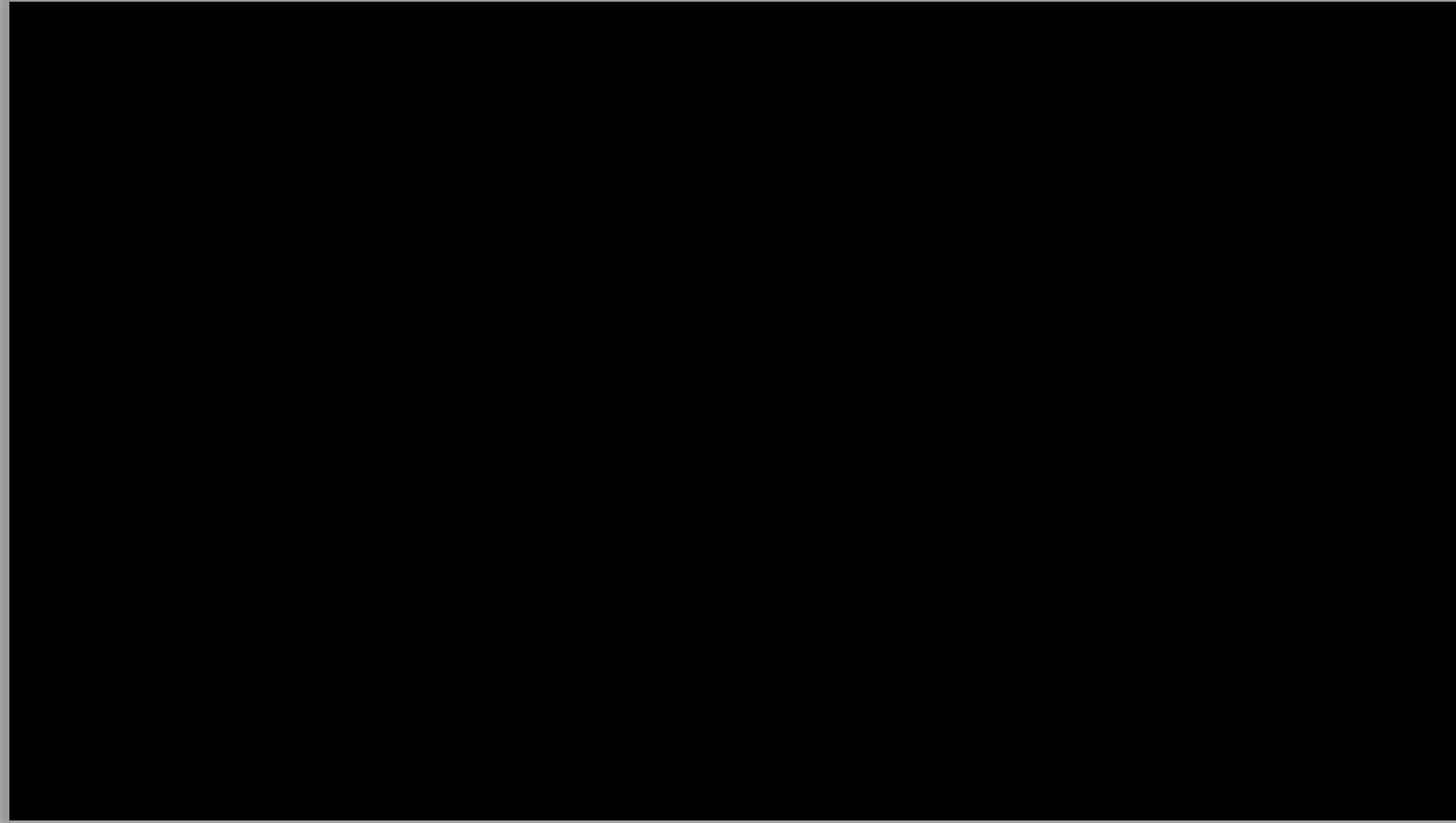


- Lapwings
- Length - 21- 41 cm
- Wingspan – 67 - 87 cm
- Weight – 128 – 330 mg
- Life Span - 15 years
- Clutch size – 4 eggs
- Seasonal behavior - Migratory



Species involved

Birds In distress



Land use pattern 2005

4000 Acres
Forest Land – **2500+** acres
Agriculture land – 2200 acres
Lakes and quarries – 200 acres
Human settlements - 100

Details of fauna as per EIA

Home for about

- 25 species of birds
- 3 species of mammals

Transformation of habitat 2008

Details of fauna at BIAL – 2008

Home for about

- 147 species of birds
- 4 species of mammals
- 11 species of snakes (4 venomous)
- 6 species lizards
- 7 species of toads
- 42 type of butterflies
- 3 species of moths

SEMI TRANSFORMED AREA
890 Acres

Details of fauna at BIAL – 2019

Home for about

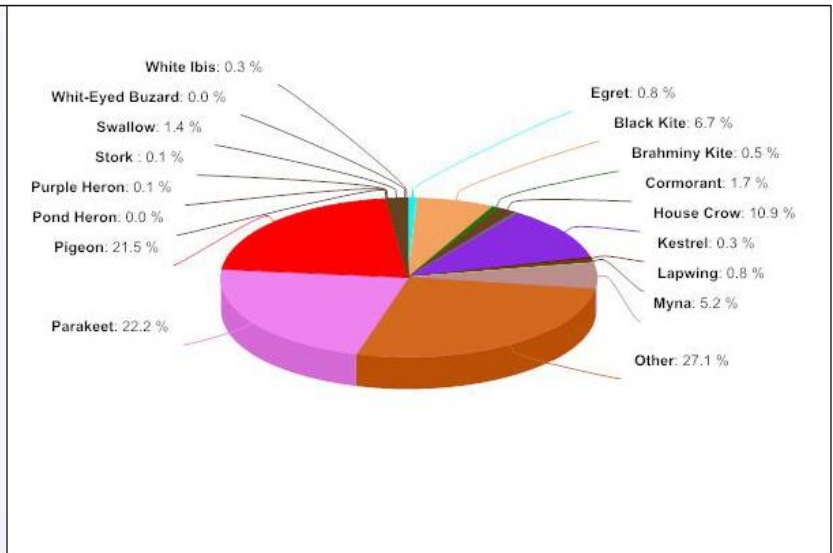
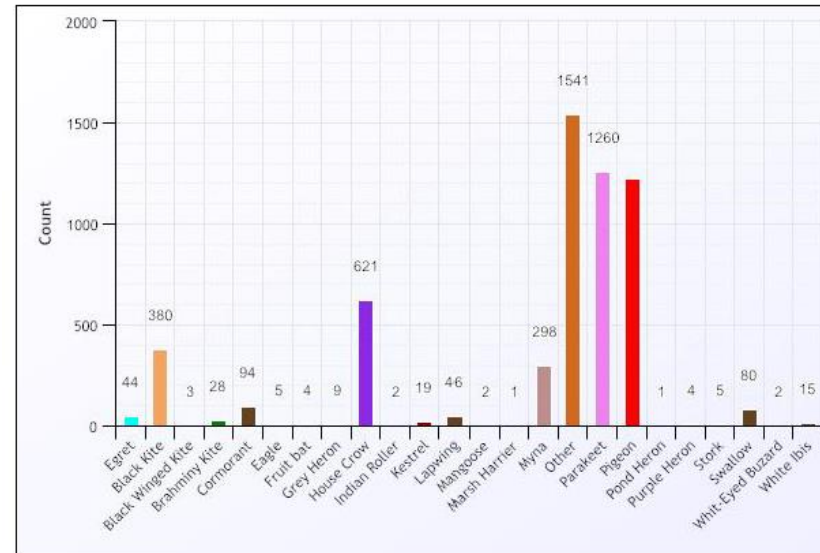
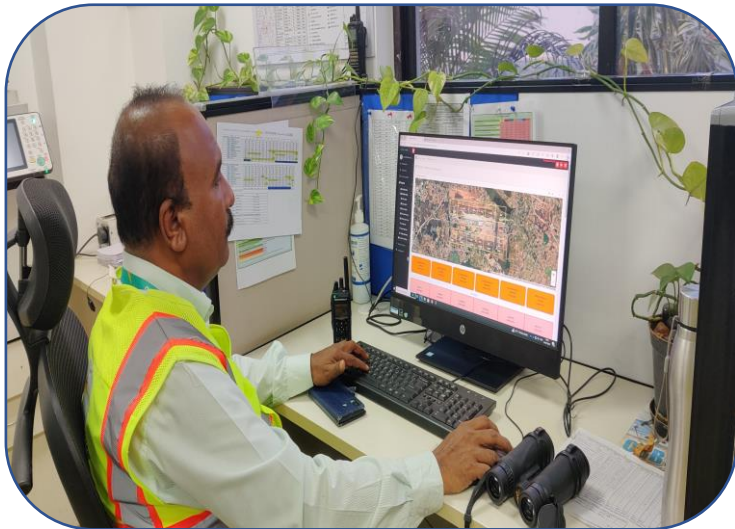
- 154 species of birds
- 3 species of mammals
- 11 species of snakes (4 venomous)
- 8 species lizards
- 5 species of frogs
- 2 species of toads
- 49 type of butterflies
- 3 species of moths
- 2 species near threatened
(Less Grey headed Fish eagle,
Painted Stork, Spot billed Pelican)

Details of fauna at BIAL – 2023

Home for about

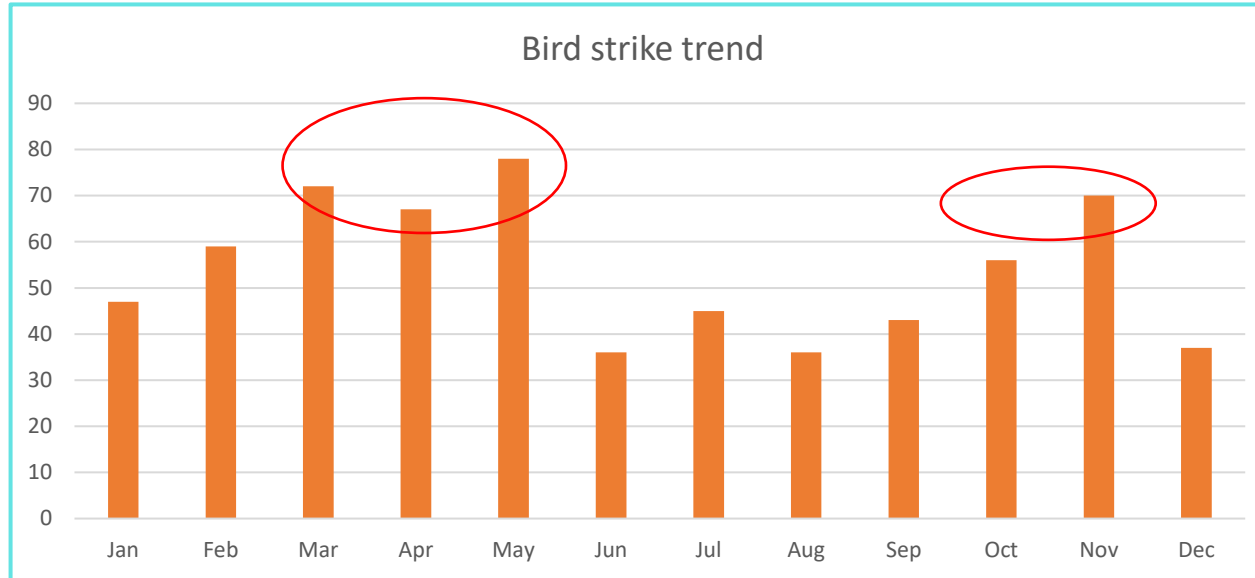
- 157 species of birds
- 3 species of mammals
- 11 species of snakes (4 venomous)
- 8 species lizards
- 5 species of frogs
- 2 species of toads
- 49 type of butterflies
- 3 species of moths
- 4 species near threatened
(Black headed ibis, Indian Pangolin
Painted Stork, Spot billed Pelican)
- Near Threatened – Red necked falcon
- Vulnerable – Indian spotted Eagle

Wildlife data Management

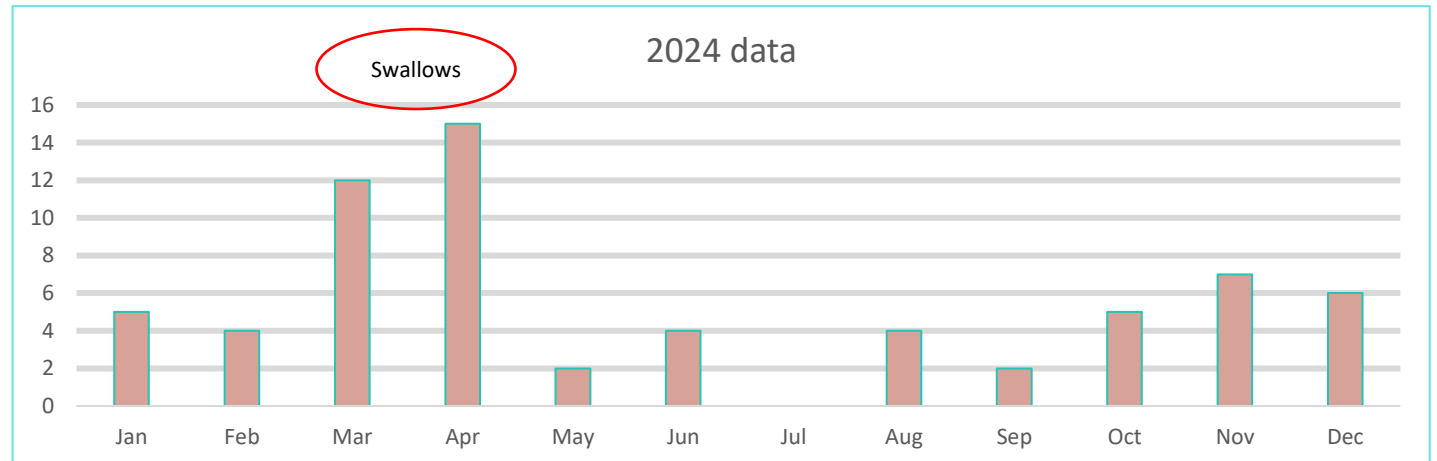


Daily Activity & Movement on - 09/03/2025 to 09/03/2025

Seasonal Impact on Aerodrome Ecosystem



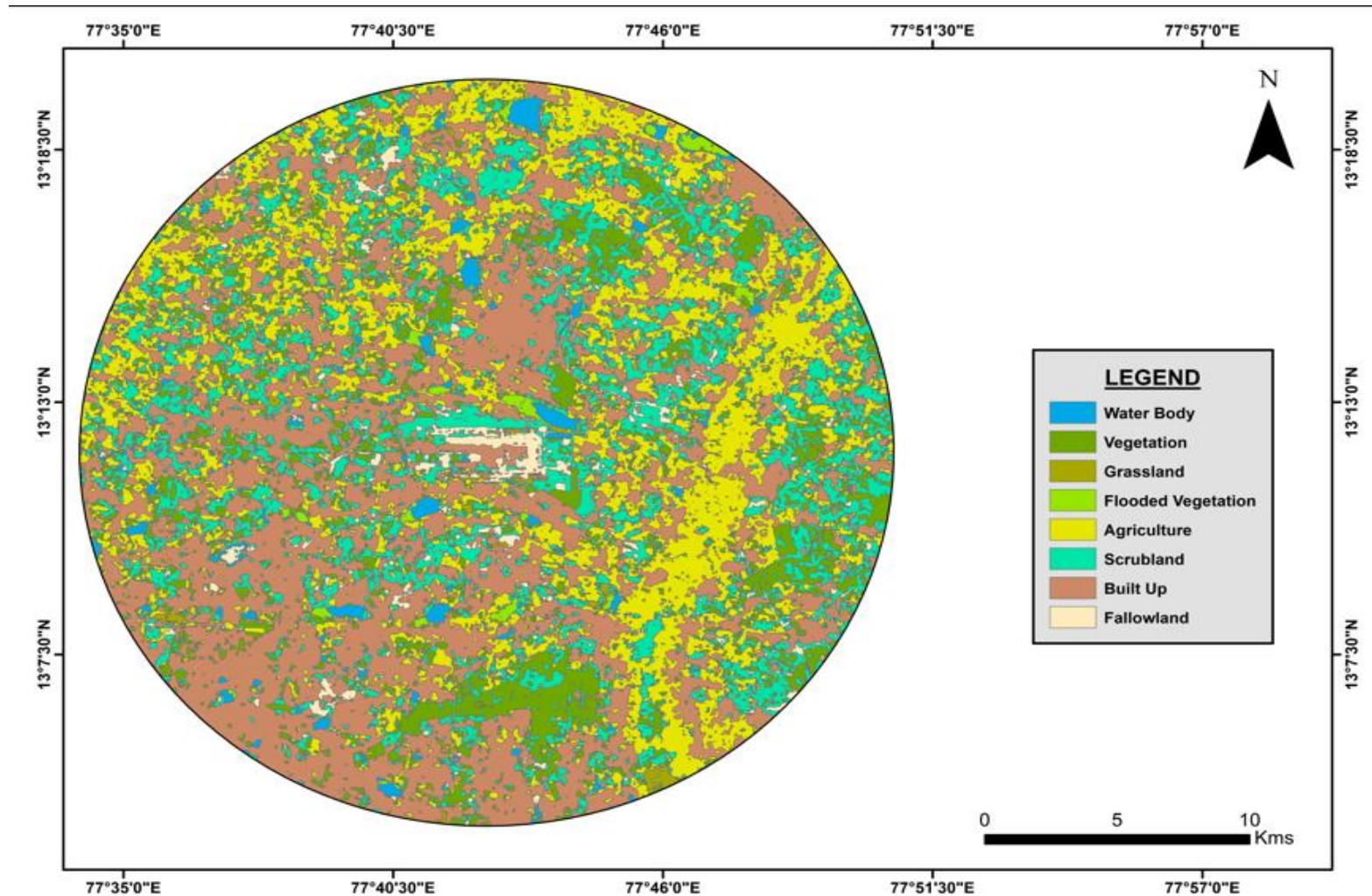
- Critical Seasons
- Migratory season (Mid Sep- Mid Oct)
- Inward**
 - BASW+ROST+MOHA (Within Airport)
 - Migratory birds(outside Airport)
 - Fruit bats (dispersal commuting)
- Fledglings out break
- Runway change (Mar- Apr/Sep- Oct)
- Outward**
 - BASW (Only during 2024)



Airport a Fragile Ecosystem (Land use -13 Km radius)

Class	Area (sq. km)	%
Water Body	13.471	4%
Vegetation	84.712	6%
Grassland	4.759	0.3%
Flooded Vegetation	6.009	0.4%
Cropland	190.598	13.6%
Scrubland	143.639	10.3%
Fallowland	246.951	17.7%
Built Up	707.455	50.6%

46%



Biodiversity in 2024



Fauna

Birds	157 Species
Migratory	17 Species
Mammals	8 Species
Reptiles	19 Species
Venomous	4 Species
Amphibians	8 Species
Butterflies	42 Species

Flora

Grass	25 Species
Plants/Trees	10 Species

- Transformed about 2000+ acres of land
- Contour change by levelling & grading
 - Enhance water flow on surface
 - Developed green cover upto 90% area



Anthropogenic landscapes

29 Apr 2025 12:26:43

B.Marenahalli

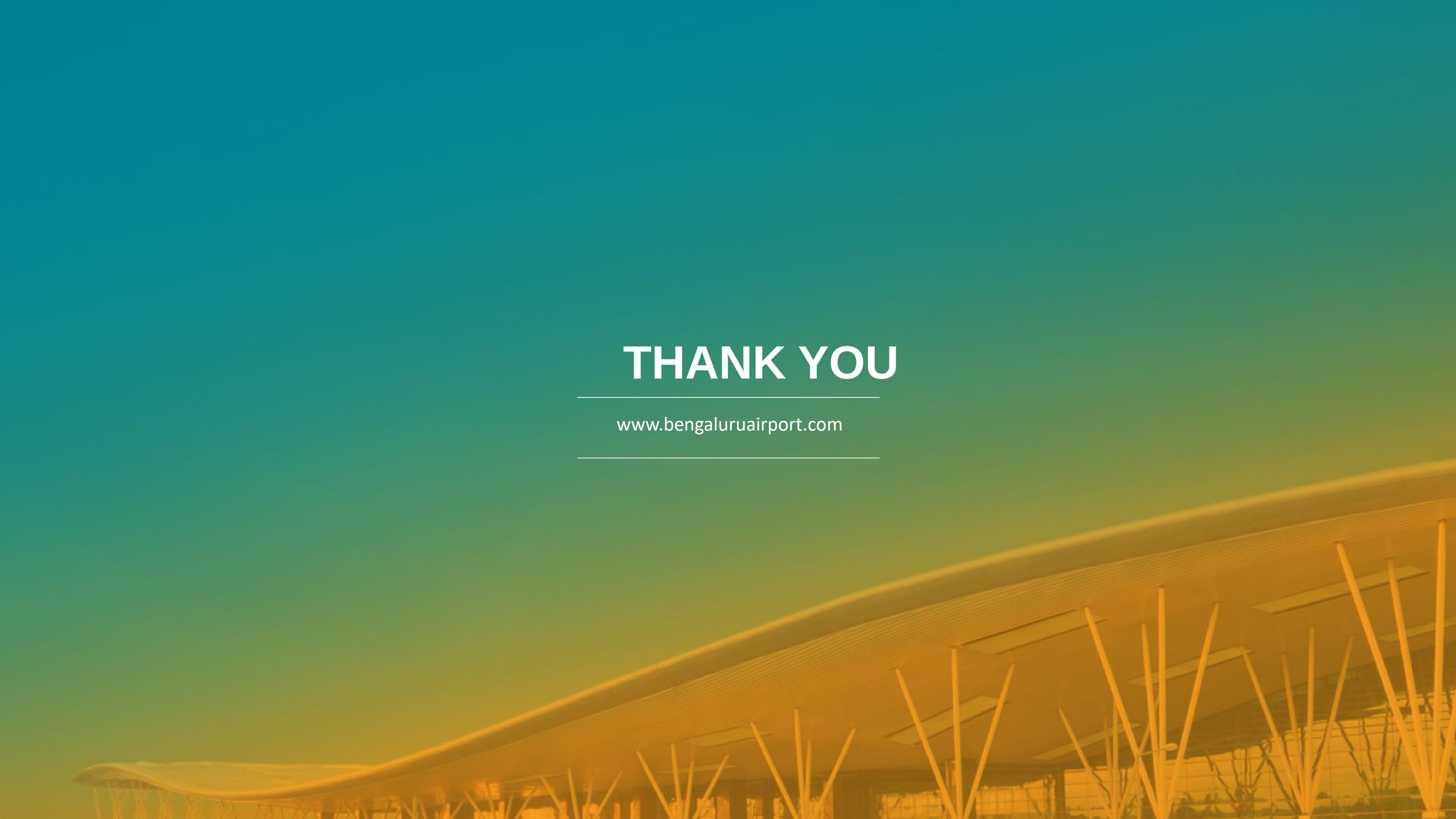
Bengaluru

Bangalore Division

Karnataka

Use of Natural species - - Other than critical area





THANK YOU

www.bengaluruairport.com
