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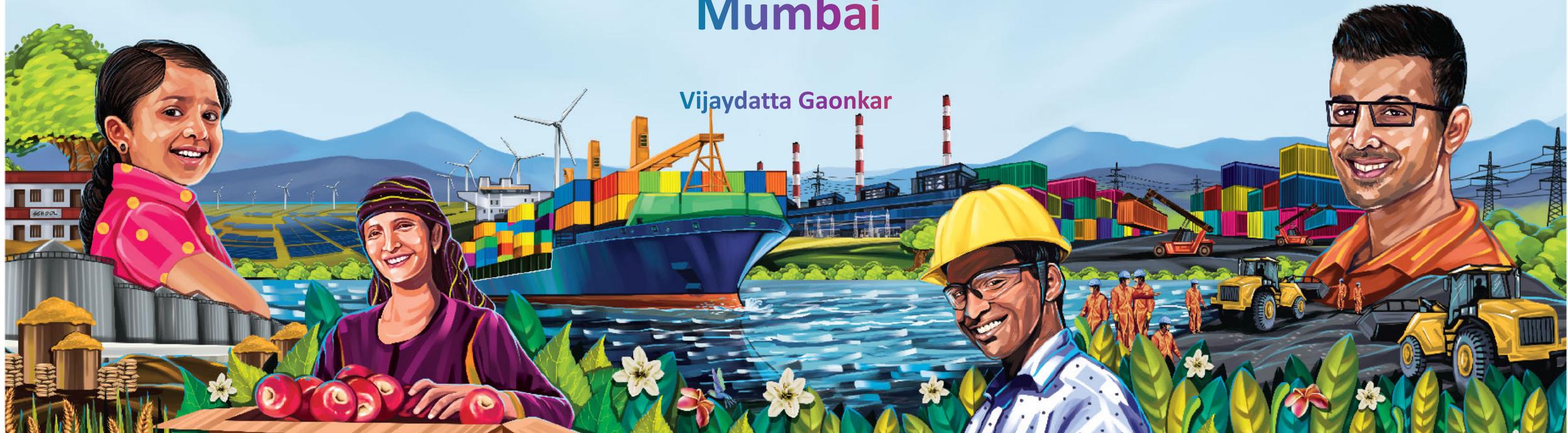


Wildlife Hazard Management

At

Chhatrapati Shivaji Maharaj International Airport Mumbai

Vijaydatta Gaonkar



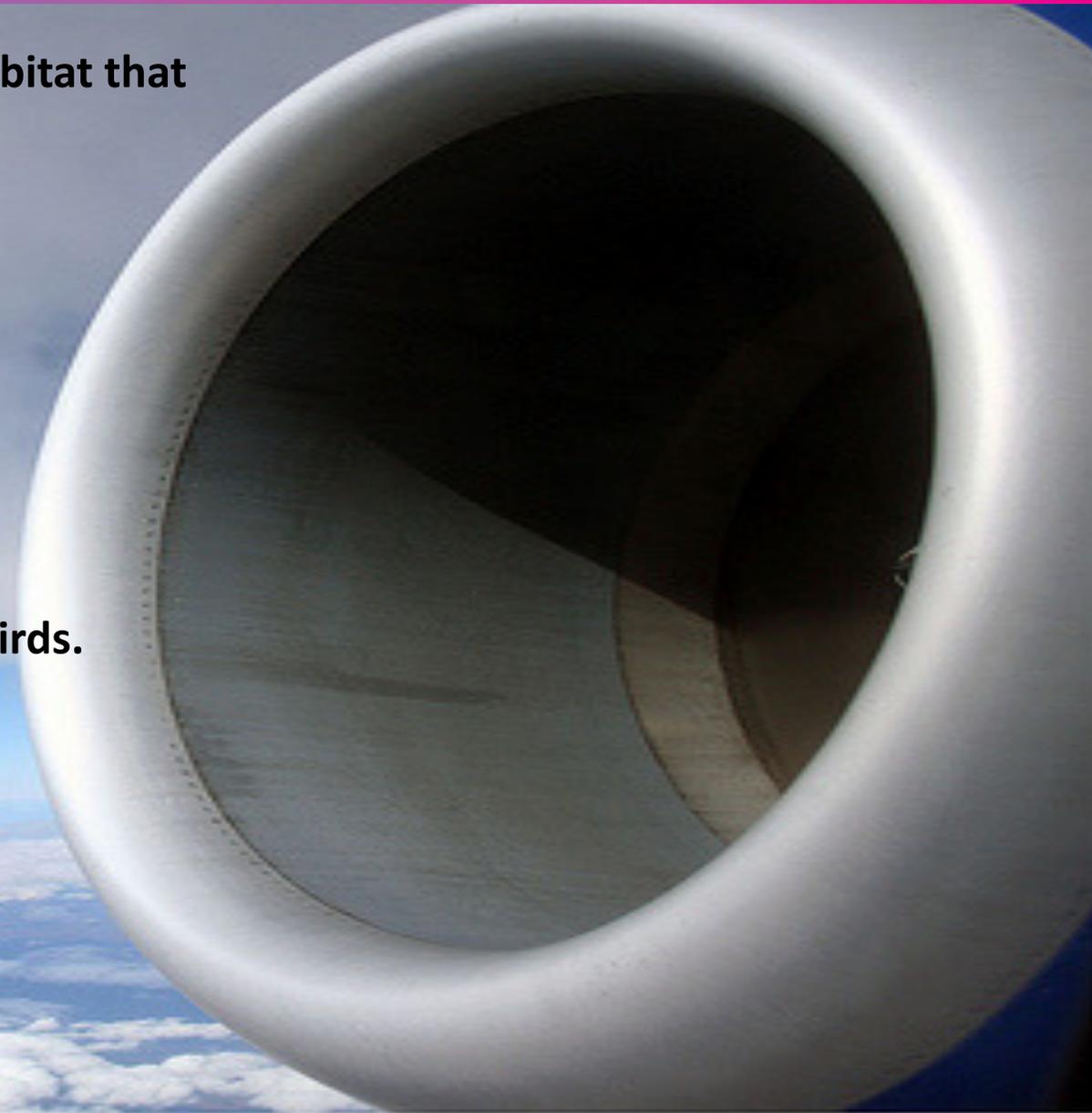
- Wildlife Hazard Management Facts
- Measures taken at airport
- Environment management & challenges outside airport
- New initiatives

Wildlife Hazard Management Facts



Mumbai Airport has the few operating environment and habitat that increases **probability** of wildlife strike.

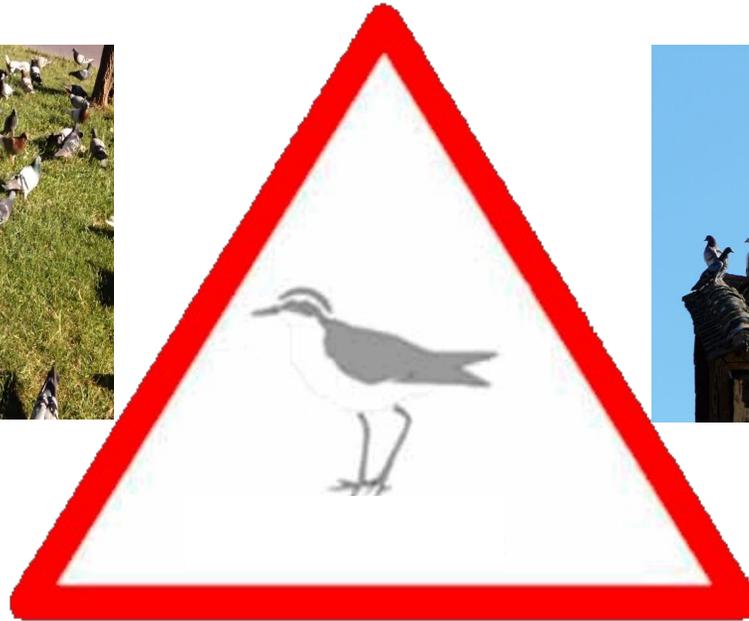
- ✓ High density operations
- ✓ slums without proper garbage disposal system
- ✓ River and opens drains
- ✓ Public and private premises that support habitation of birds.
- ✓ Open disposal by food stalls in the vicinity
- ✓ Illegal meat shops and slaughterhouses
- ✓ Abandoned structures
- ✓ Wild vegetation, Forest



Bird population is supported by an environment where all the three are available together



Feeding



Roosting



hovering



Nesting



- ✓ To achieve bird and wildlife free aerodrome.
- ✓ To establish and implement appropriate strategies and effective measures in order to reduce risk associated with the bird and wildlife strikes to a level that is as low as reasonably practical.

Prevention of wildlife, particularly birds, is an important element of the operations at any Airport.

Airport provides grassland habitat for bird species and other wildlife in the vicinity of airport boundary.

Bird are attracted

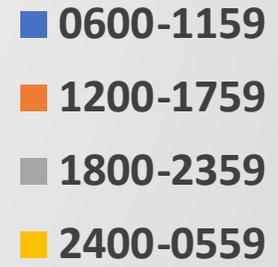
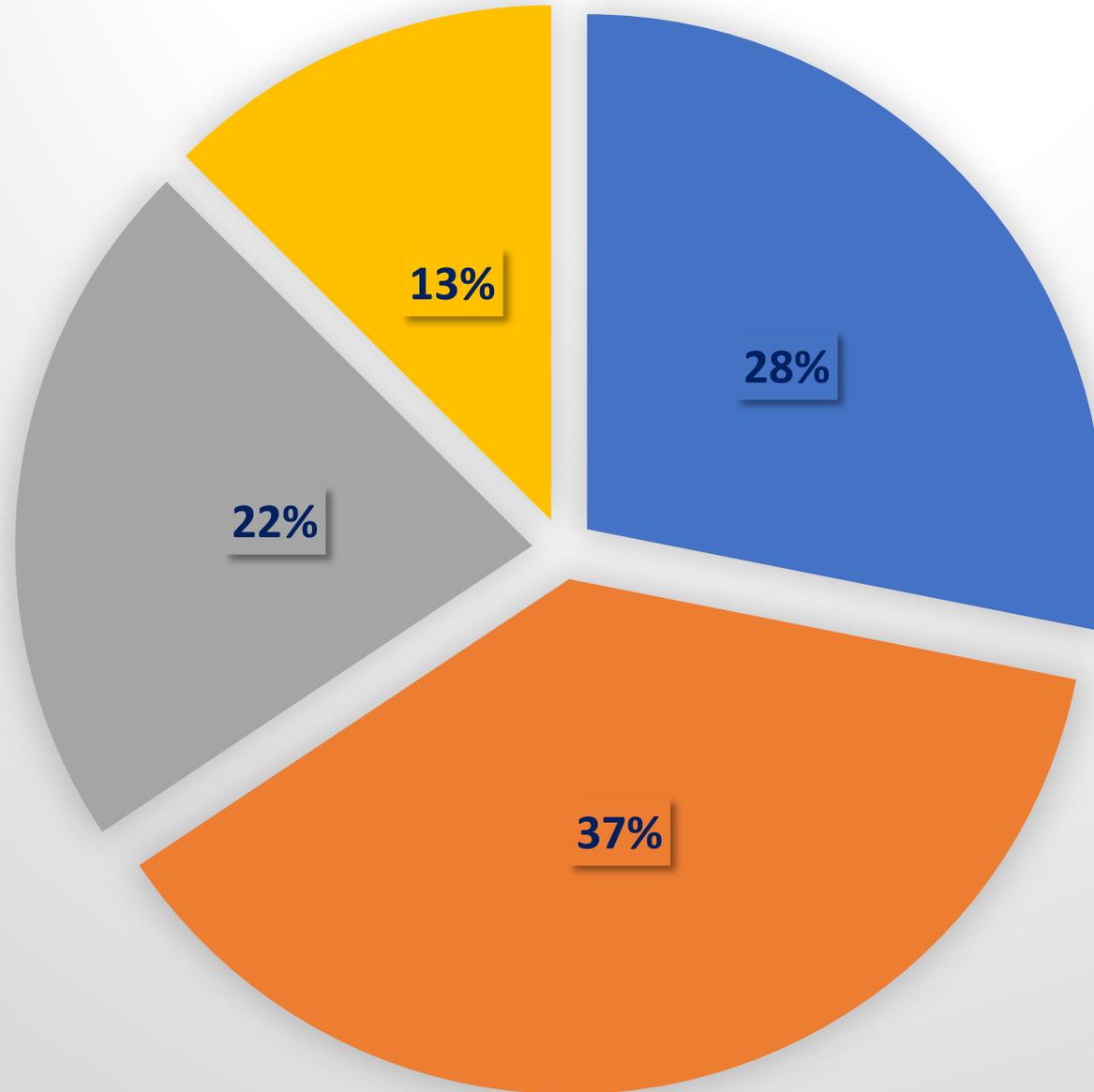
- Inside airport: Feed, perch, roost, breed
- Outside Airport: open disposal waste and garbage, improper disposal by meat shops, fish markets, illegal slaughtering, open drains, etc.

Types of wildlife associated with aircraft safety issues at CSMI Airport, Mumbai includes birds, animal, mammals, and reptiles.

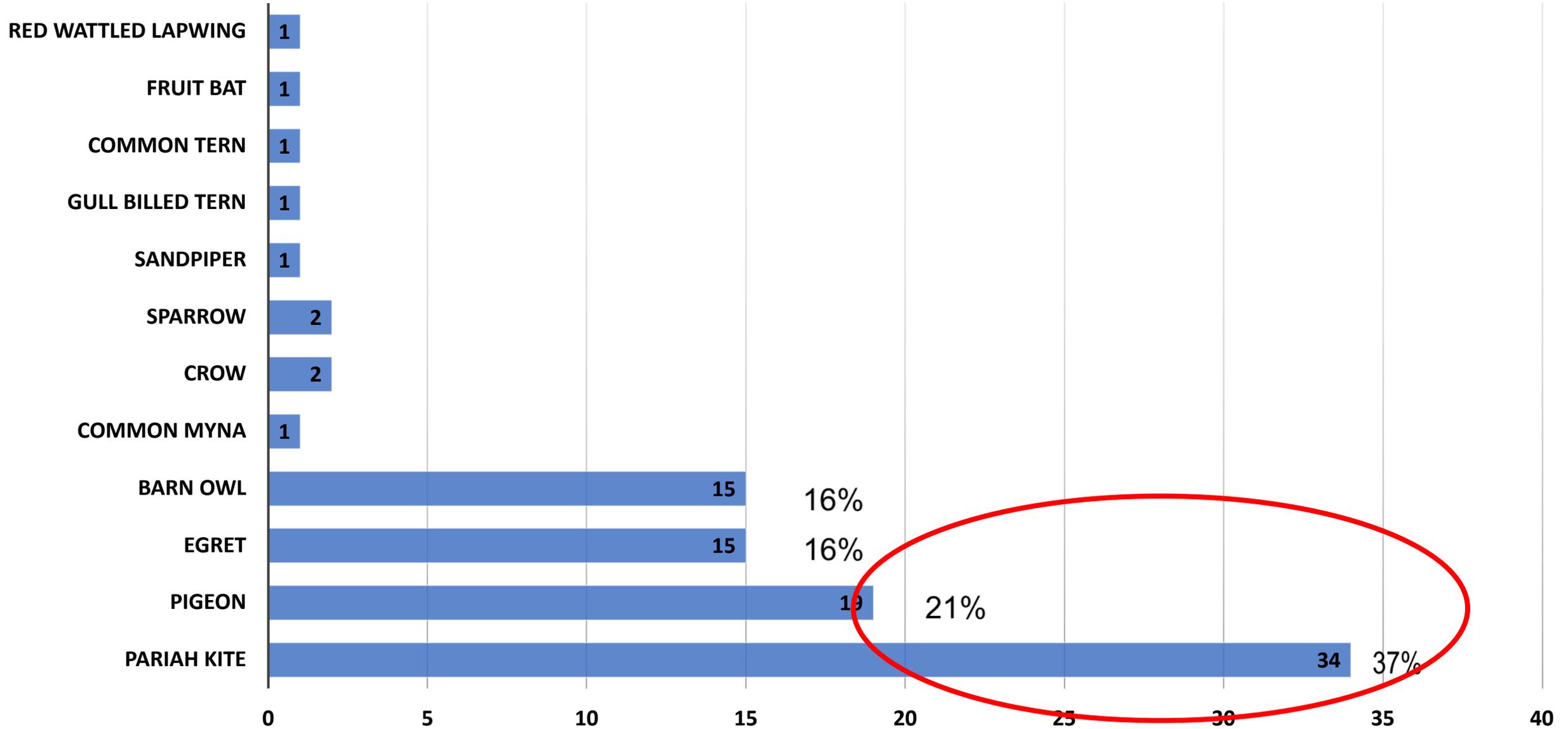
At CSMIA, bird's species are responsible for 99.5% of reported strike while animal, mammals and reptiles are just .5%,

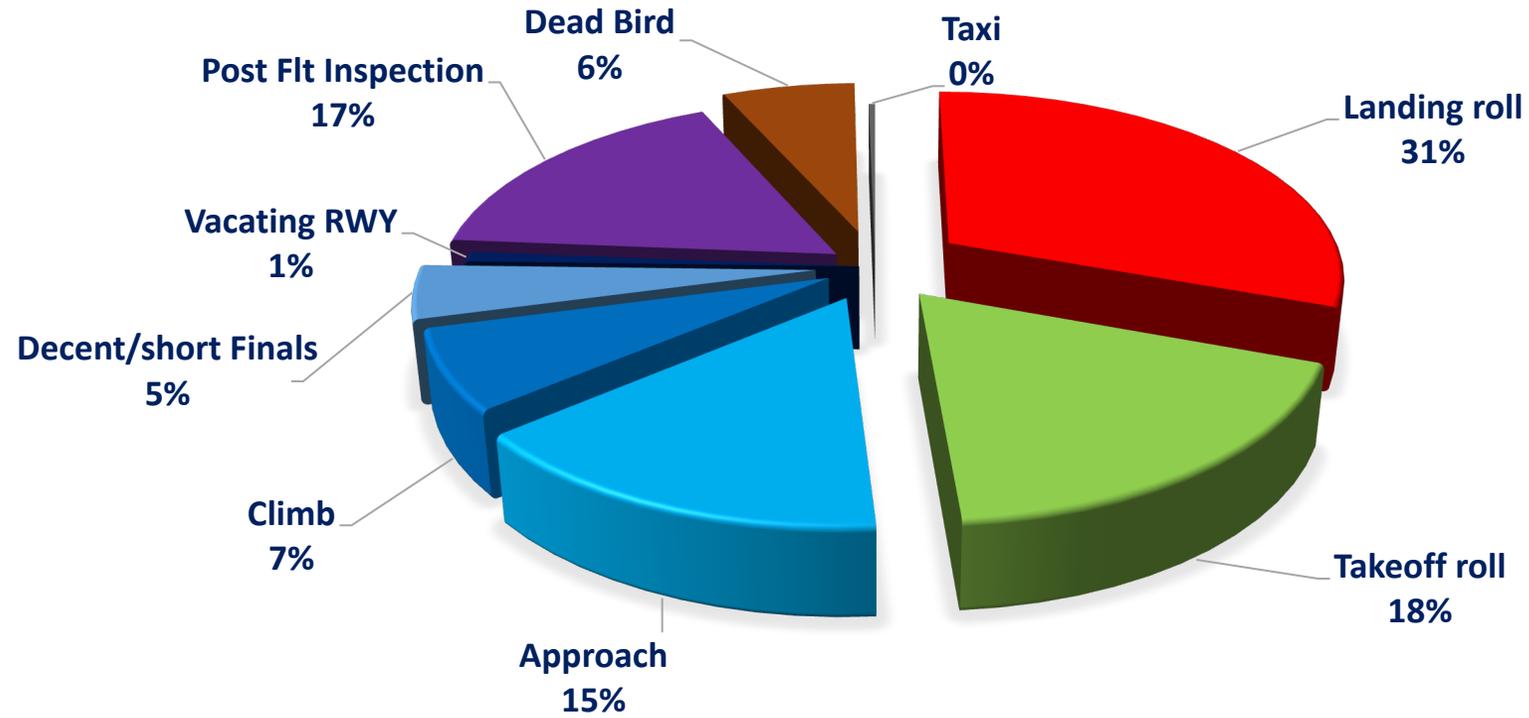
Pariah Kites, Blue Rock Pigeons, Egrets are the common birds at daytime and Barn Owls are at nighttime, involved in strikes.

Bird Strikes Timewise



Bird Species involved in strikes

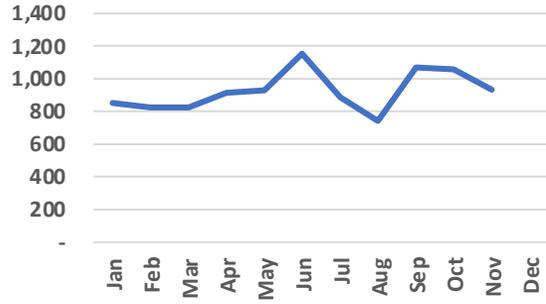




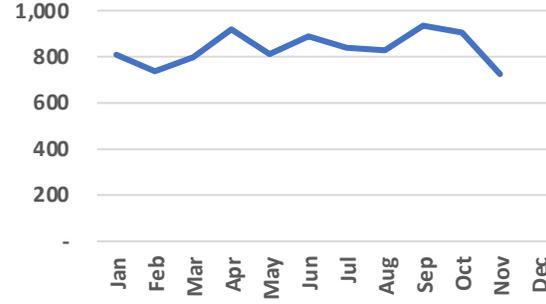
Measures taken at Chhatrapati Shivaji Maharaj International Airport



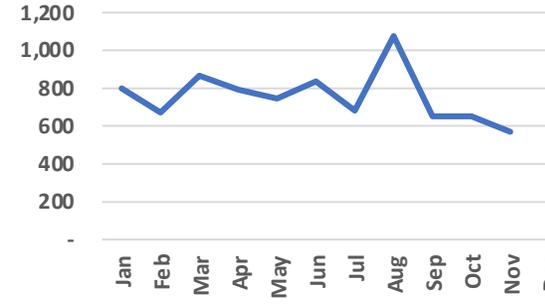
E3



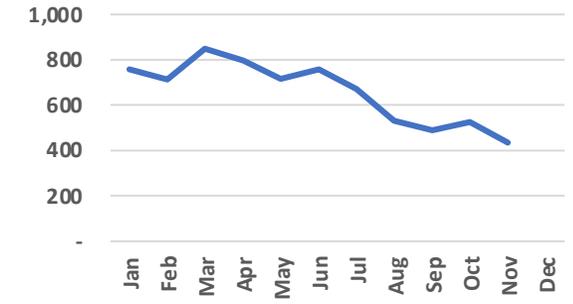
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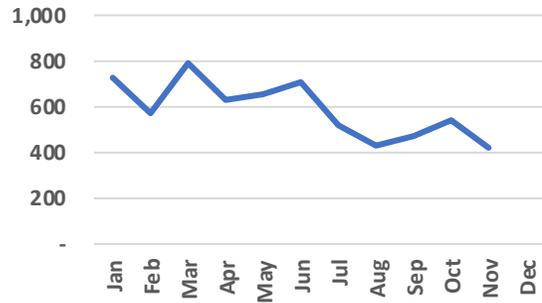
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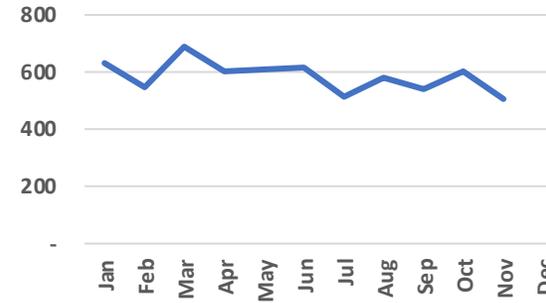
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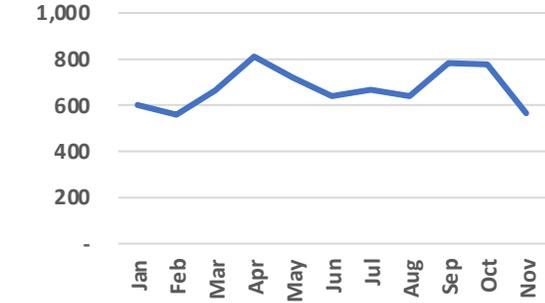
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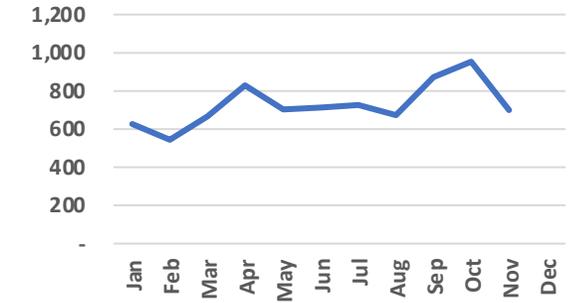
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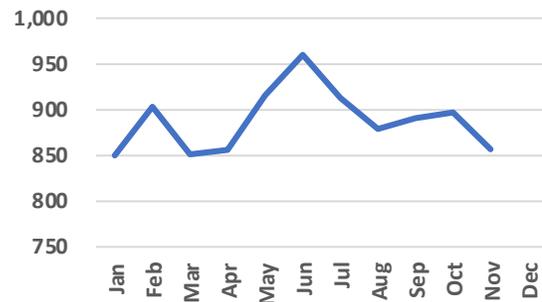
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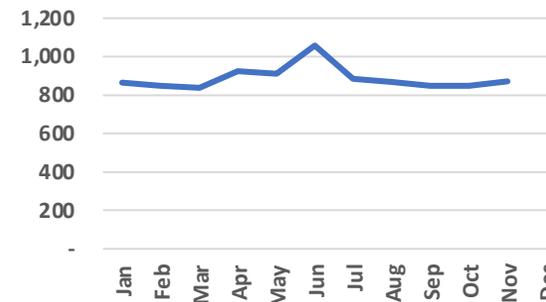
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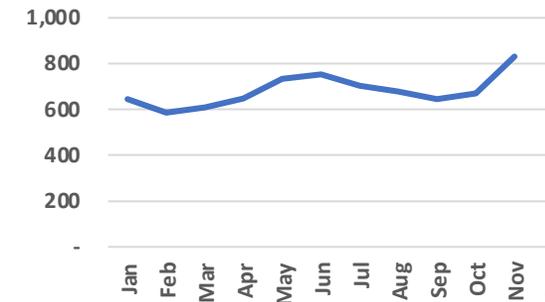
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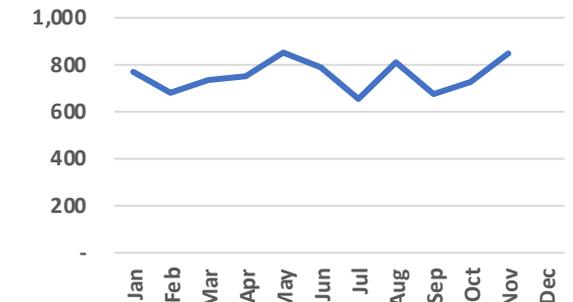
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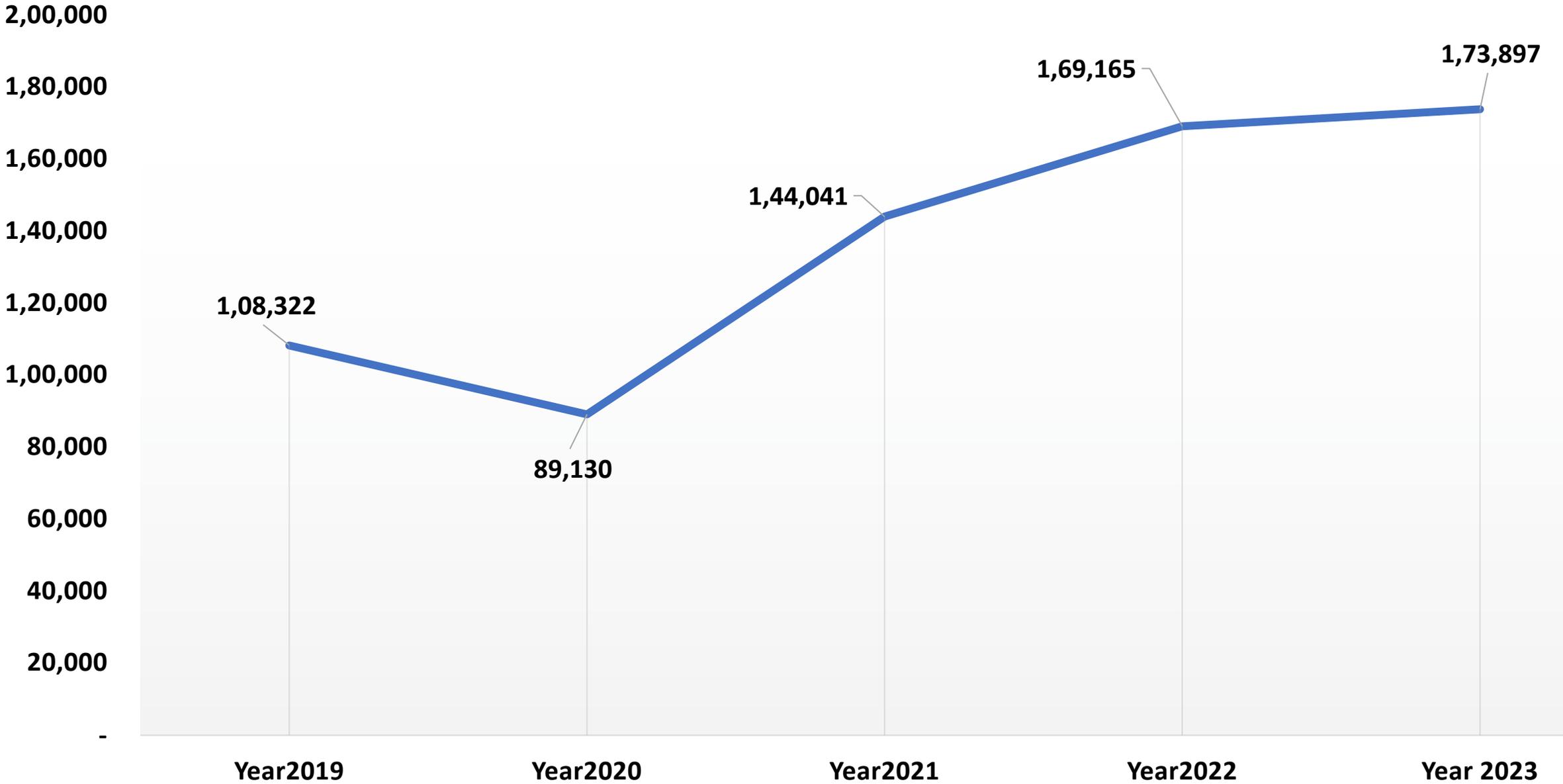


D7



D8



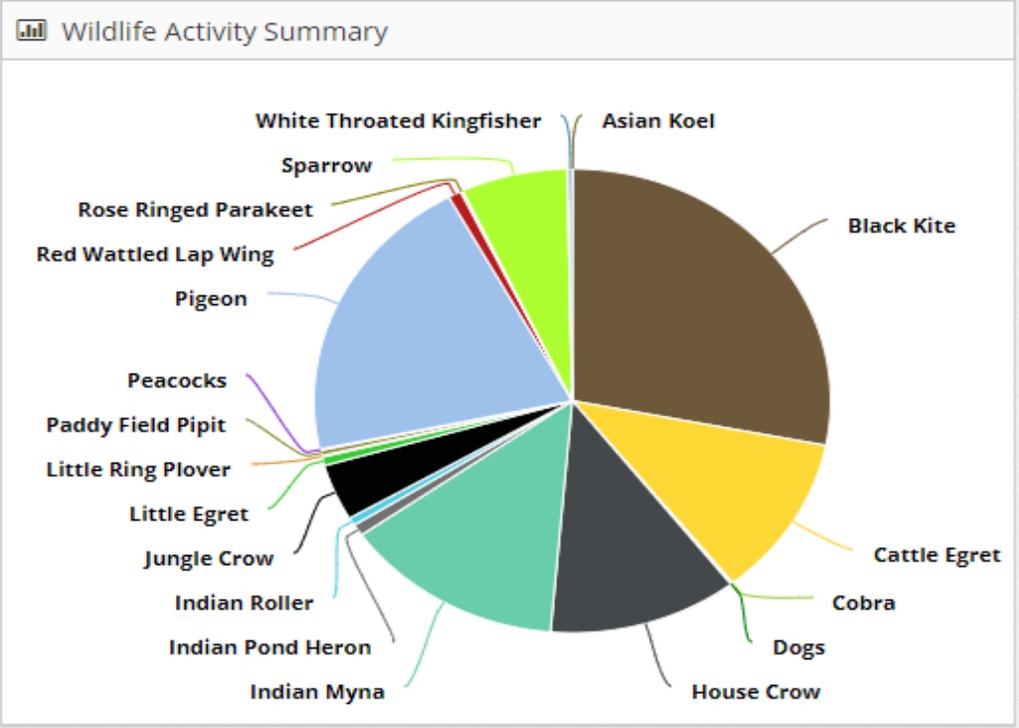


StrykerAV

Vijay

- Dashboard
- Overview
- Messages
- Data Entry
- Data Correction
- Habitat
- Reports
- Bird Strike Data
- Wildlife Library
- Configuration

Home / Dashboard / Overview



Weather Forecast

CHATRAPATI SHIVAJI MAHARAJ INTERNATIONAL AIRPORT, MUMBAI
Dec 01 2023 09:09 AM (India Standard Time)

79°F

26 °C
SUNNY

Feels Like : 82 °F (27 °C)
Heat Index : 79 °F (26 °C)
UV Index : 7

RIGHT NOW

Wind
4 MPH - NNE

Humidity
68 %

Dew Point
64 °F (17 °C)

Pressure
1014 hg mb

Visibility
6 mi

Wildlife Reports **Wildlife Activity** Wildlife Strike Default

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Habitat Management Strategies (Passive Proactive)

Action taken to **limit habitat attraction**

These techniques are generally those that alter habitat or permanently exclude entry. These includes but not be limited to

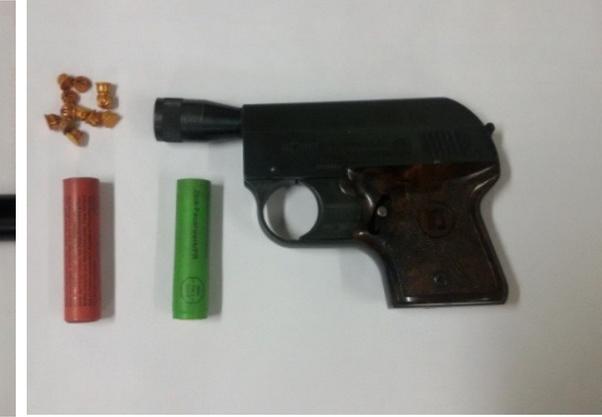
- ✓ grass management,
- ✓ use of insecticides,
- ✓ waste management,
- ✓ water drainage management
- ✓ rodent, insects control
- ✓ bird proofing on hangars/buildings
- ✓ meetings and inspection of adjacent areas
- ✓ fence, boundary wall

Active Management Strategies (Reactive)

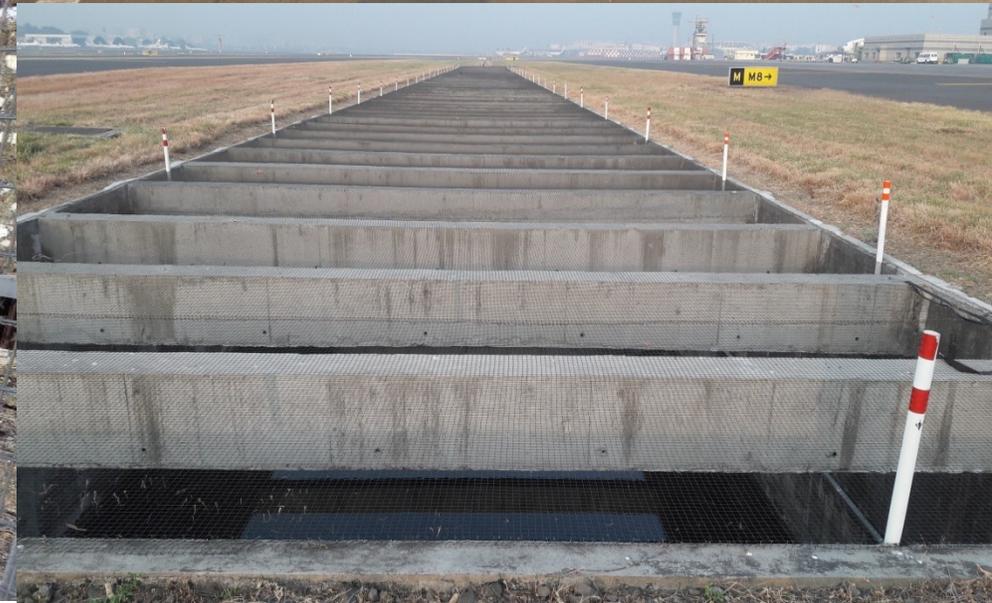
Action taken **directly against wildlife**

These strategies are generally those that disperse or remove wildlife from the airport.

- ✓ deployment of manpower.....using firecrackers,
- ✓ use of different deterrents....like Sound distractor, scaring guns, Laser torch, vehicle mounted scarecrow
- ✓ deployment of wildlife catchers.....for trapping, removal







- Airfield grass management – Maintaining height upto 20 - 30 cms to avoid birds perching
- Evaluation of the bird hazard by competent personnel – Bird survey, study and assessment by professionals
- Landscape management – Use soil that doesn't generate seed grass
- Solid Waste management – Engaged contractor to collect garbage

Primarily there are two types of grass policy namely long grass and short grass. Long grass policy envisages maintaining grass height of above 20 cm upto 30 cm and short grass policy a height of 20 cm or less.

As a policy based on experience, MIAL will maintain long or short grass as per the table given below.

Area	Period	Grass policy
On the runway strip within 90m from the center line of runway.	June - November	Long grass policy (up to 30cm)
	December – May	Short grass (up to 20cm)
Other areas at airside beyond 90m from center line of runway	January – December	Short grass (up to 20cm)

- a) **Wildlife attractant at the airport:** Various hazards inside the airport is identified and appropriate measures are being taken to mitigate the risks possess toward aircrafts operating at CSMIA.

- b) **Species involved in wildlife strikes:** Various wildlife species are available inside the airport which are the hazards to aviation. Species are identified which are involve in wildlife strike with aircrafts and all appropriate actions and measures are being taken to mitigate the risks possess as per species toward aircrafts operating at CSMIA.

Wildlife Categorization based on body mass

The Wildlife Hazard Management Programme is available which provides the strategy for reducing the risk that wildlife poses to safe airport operations.



References:

Doc 9137 Part 3

Doc 9981 PANS aerodrome.

Guidance materials developed by
AP-WHM/WG

- Periodic evaluations of WHMP
- All the activities undertaken by WHM are maintained and evaluated to achieve safety targets.
- Checklists available for evaluation of WHMP
- Performance measurement matrix, leading indicators and targets for different components are considered.
- Records are maintained.



Environment Management & Challenges outside Airport





Oct 22, 2022 10:24:58 am

Current practice of open dumping of garbage waste attracts birds - poses a severe threat
Due to the proximity to the airport, outside airport bird strikes occur

- ✓ Conducting monthly joint inspection outside Airport with local government officials upto 10 Kms.
- ✓ Coordinating with Municipal officials for clearing waste/garbage which are open dumped, also inspecting meat/chicken shop owner, fish vendor and slaughterhouse
- ✓ Conducting of AEMC (Airfield Environment Management Committee) meeting
- ✓ Study of bird habitat and behavioral pattern in the vicinity of Airport, in order to devise control and mitigation measures.
- ✓ Coordinating for cleaning of major nallas, rivers
- ✓ Tree trimming – Approach, takeoff path and adjacent to airport boundary

To control bird activity in the vicinity of airport few initiatives in coordination with local municipal officials is taken

- ✓ Educating people in monthly joint inspection
- ✓ Meetings with local Municipal officials
- ✓ Educating slum dwellers, meat shop / slaughterhouses owners
- ✓ Distribution of disposable garbage bags
- ✓ Distribution of waste garbage bins
- ✓ Encouraging for door-to-door garbage collection



Awareness drive for chicken/mutton shops, slaughterhouses, fish markets situated in the vicinity of airport boundary alongwith officials of Municipal Market and licensing department.



Awareness programmes in schools related to bird hazard mitigation for safe aircraft operation at CSMI Airport.



Swachh Gully Swachh Nagar (SGSN) Campaign

CSMIA hired **Har Ghar Hara Ghar** an NGO to bring **community involvement** to address the problem of improper waste disposal which attracts birds.

Activities carried out are

- **Community outreach** – women’s meetings, *nukkad nataks*, distribution of waste segregation posters
- **Outreach in area schools** – presentations in classrooms, sensitized them by bird strike clips, awareness *nukkad nataks*
- **Clean Up drive** - cleanup of areas where garbage was piled up and neglected for pick up



- ✓ More support required from local government authorities
- ✓ Dense slums adjacent to airport boundary
- ✓ Un cleaned River & Nallas
- ✓ Open disposal of garbage/waste
- ✓ Illegal chicken/Mutton shops/ fish vendors
- ✓ Abandoned structures
- ✓ Forest
- ✓ Tonnes garbage generating in a day, in the vicinity of airport.

पक्षियों से विमानों को क्षति !!!!!..... खतरनाक हैं

- ✓ यात्रियों को असुविधा और राष्ट्र को वित्तीय नुकसान।
- ✓ विमानों की आपातकालीन / प्राथमिकता लैंडिंग करना
- ✓ विमान द्वारा टेकऑफ़ रोकना
- ✓ इंजन / संरचनात्मक क्षति
- ✓ अनावश्यक देरी



इससे बचें:

- ✓ हवाई अड्डे के पास खुला कचरा मत फेंको,
- ✓ हवाई अड्डे के पास बूचड़खाने की आवश्यकता नहीं है
- ✓ हवाई अड्डे के पास जल भराव से बचें
- ✓ यदि आप हवाई अड्डे के आसपास के क्षेत्र में रह रहे हैं, तो अपनी कॉलोनी / चॉल के लिए उचित कचरा निपटान योजना बनाएं।
- ✓ नालियों के अंदर कचरा न फेंके



In 2015 engaged and conducted first Assessment of Wildlife Hazard Management of CSMIA by Ela Foundation, Pune

In 2024, MIAL engaged Grus (Bengaluru) to conduct Assessment of the wildlife (bird) hazard problem at CSMIA and in the vicinity upto 10 Kms from boundary wall

In 2019, MIAL engaged Bombay Natural Society (BNHS) to conduct Assessment of the bird hazard problem at CSMIA and Formulating a Bird Hazard Management Plan for the Airport



- Entomological Bio-solution to control insects
- Door to door awareness



In Process –
Automatic Bird Detection and Deterrence System

Thank You

Any Question



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INTERNATIONAL AIRPORT
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*Making airports a safer place to
fly*

