CAAT
สำนักงานการบินพลเรือนแห่งประเทศไทย
The Civil Aviation Authority of Thailand

AOT

U-TAPAO RAYONG PATTAYA
INTERNATIONAL AIRPORT

Bangkok Airways

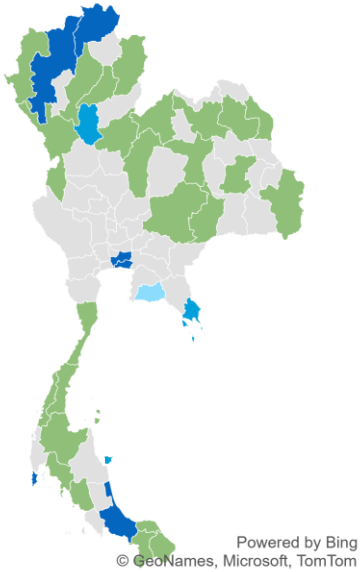
กรมท่าอากาศยาน
DEPARTMENT OF AIRPORTS

Thailand :

Sharing State's/aerodrome operator's experience in managing WHM issues

AP–WHM/WG/6 at ICAO APAC

Content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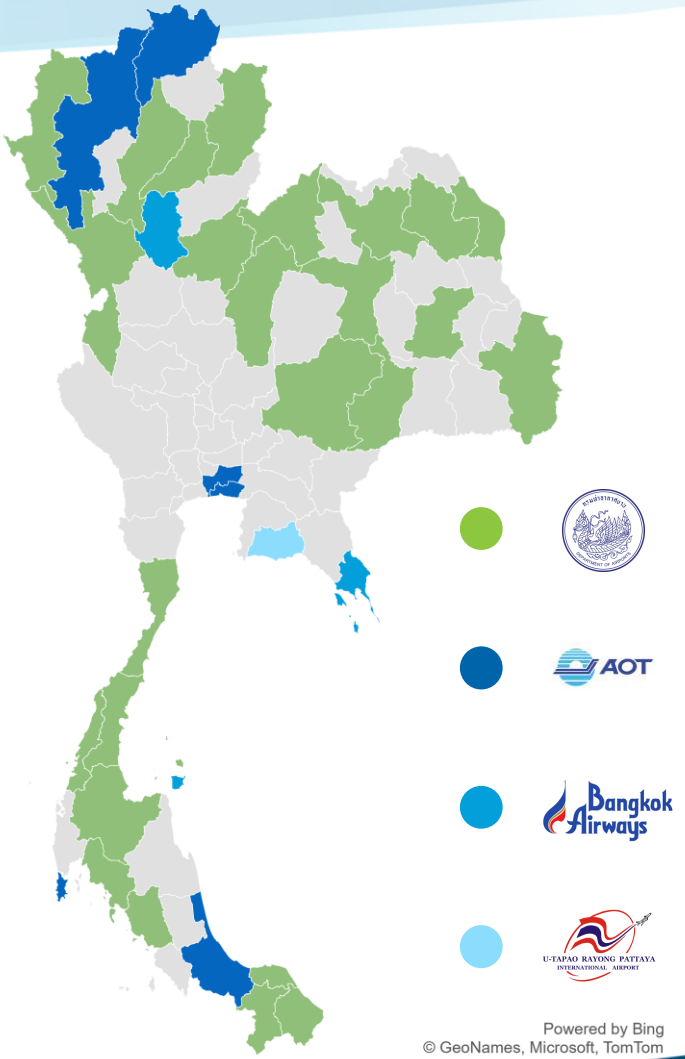


4

OPERATORS

39

AIRPORTS

>980

BIRD SPECIES

AIRPORTS OF THAILAND PLC.
บริษัท ท่าอากาศยานไทย จำกัด (มหาชน)

Wildlife Hazard Management

Bird survey and data collection

6th Meeting of the Asia/Pacific Wildlife Hazard Management Working Group (AP WHM WG/6)

15 May 2024

Wildlife Hazard Management

ROLES AND RESPONSIBILITIES

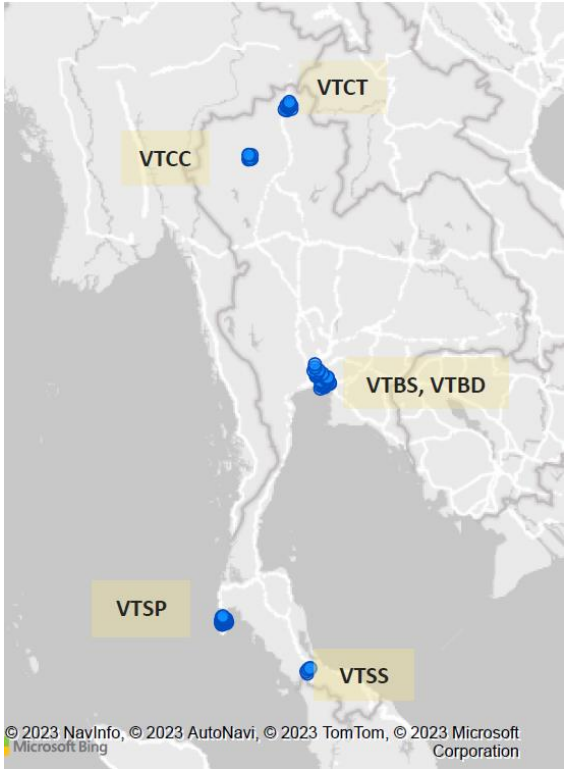
HABITAT MANAGEMENT

EVALUATION

BIRD SURVEY AND RISK ASSESSMENT

DATA COLLECTION

TRAINING

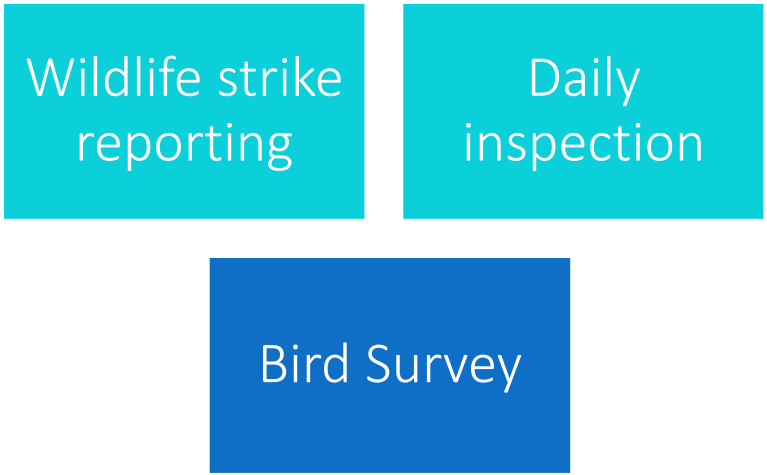


Challenges of Bird Data Collection

- Daily patrols and inspections provide valuable data but may miss some wildlife activity.
- Bird strike reports often lack species identification due to missing physical evidence.

Enhancing Data Collection with Bird Population Surveys

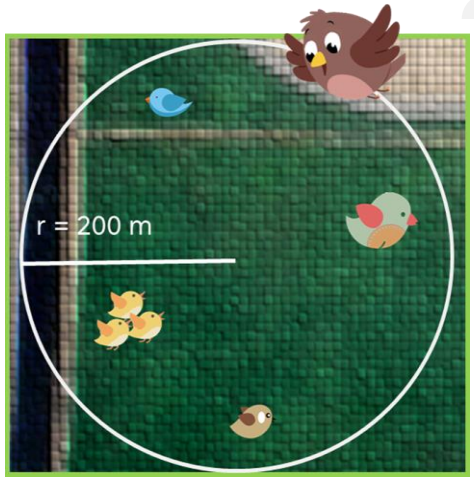
- Implementing point count surveys to estimate bird populations at the airport.
- Surveys will be conducted at various locations and throughout different seasons.



Bird Population Surveys and risk assessment

Goal	Methodology	Risk assessment and mitigation
Estimate bird populations Seasonal variation	Point count (Avian Survey Methods for Use at Airport, Blackwell et al., 2014)	Assess with previous bird strike data Choose suitable measure for target species

Bird Survey



Sampling

- randomly select points representing sample of airport habitat (grassland, wetland, etc.)

Observation period

- morning: 30 min before sunrise – 10 AM
- midday : 12 AM – 3 PM
- evening: 4 PM – 30 min after sunset

Count

- radius = 200 m
- 3 min./point (within 2 hr./travel time)
- record any birds and activities

Bird Survey

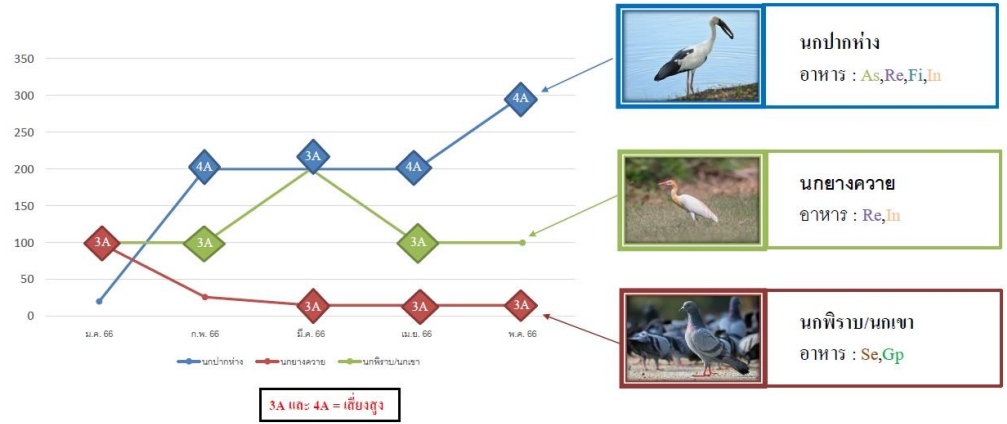
- Recorded data
  - Species
  - Behaviors
  - Utilization
  - Habitat (on airport and hotspot)
- Using data log sheet and application (VTSP)

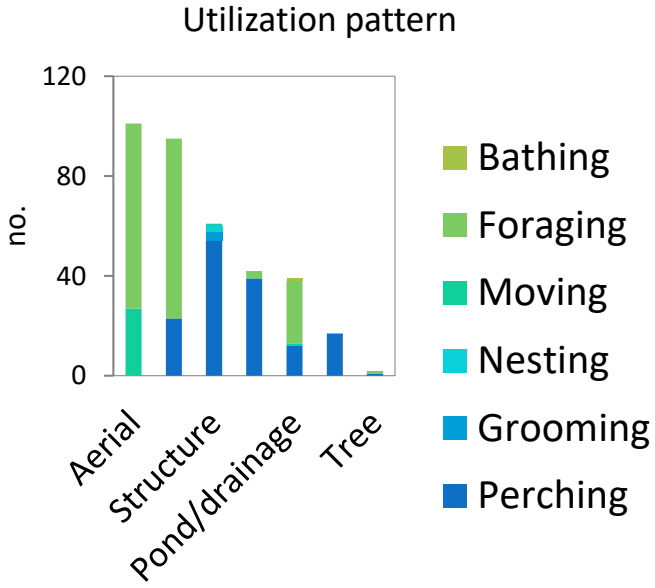
Training

- Initial Training
  - National and local regulations, standards and guidance material
  - Bird identification and observation, use of field guides and bird survey methods
  - Documentation, identification, and reporting measures of wildlife strikes etc.
- Recurrent Training

Data analysis, Risk assessment and mitigation measures from airport

Common Name	Scientific Name	status	Guild	Density (no./Ha)	Max	Utilization pattern (%)			Risk
						Perching	Foraging	Moving	
Eurasian Tree Sparrow	*Passer montanus*	R	Granivorous	21.40	6	90.91	9.09	0.00	2E
House Sparrow	*Passer domesticus*	R	Granivorous	1.95	1	100.00	0.00	0.00	1E
Baya Weaver	*Ploceus philippinus*	R	Granivorous	13.62	7	0.00	0.00	0.00	1E
Scaly-breasted Munia	*Lonchura punctulata*	R	Granivorous	5.84	3	100.00	0.00	0.00	1E
Greater Coucal	*Centropus sinensis*	R	Omnivorous	3.89	2	100.00	0.00	0.00	1E
Purple Heron	*Ardea purpurea*	R, N	Piscivorous	11.67	1	16.67	50.00	33.33	2C
White-breasted Waterhen	*Amaurornis phoenicurus*	R, N	Omnivorous	5.84	2	0.00	100.00	0.00	1E





Conclusion

- Implementing bird population surveys will significantly enhance our wildlife hazard management program.
- Data analysis to identify high-risk areas and bird species
- Targeted mitigation strategies for effective bird strike risk reduction

Content

Repellent Strategies

at U-Tapao Airport

Audio Repellents

The U-Tapao Airport Authority utilizes various audio repellent techniques to deter wildlife from the airport's vicinity. These include the use of pyrotechnics (fireworks/crackers), distress calls, and alcohol cannons - portable bird repellent devices.

Visual Repellents

In addition to audio repellents, the airport also employs visual deterrents, such as the presence of human personnel and vehicles, as well as the use of lasers to scare away hazardous animals.

Relocation

The airport may also consider relocating wildlife that poses a significant threat to aviation operations. This approach is carefully evaluated and implemented in coordination with relevant authorities to ensure the well-being of the animals and the safety of the airport's operations.

Repellent Strategies

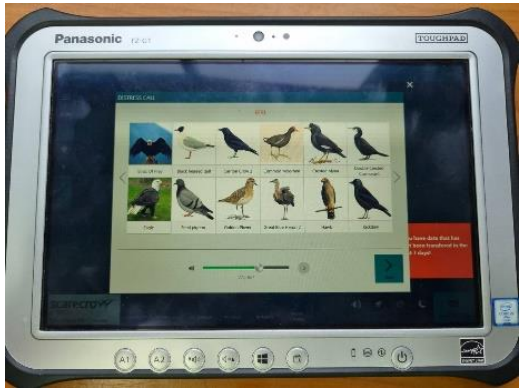
Audio Repellents

Pyrotechnics (Using fireworks/cracker)

Repellent Strategies

Audio Repellents

Distress calls (Using sound)



Repellent Strategies

Audio Repellents

Alcohol Cannon (A portable bird repellent)

Repellent Strategies

Visual Repellents

Lasers






Repellent Strategies

Visual Repellents

Presence of humans and vehicles

Repellent Strategies

Relocation

Habitat Management

Content

Off-Aerodrome WHM Challenges and Experiences Challenges:

Environmental & Cultural Characteristics

Various kinds of protection ➔ Conflicts

- Wetlands
- Protected Areas
- Religious Animal Sanctuaries
- Agricultural Areas & Farmlands

- Local Business, Tourist Attraction
- Inefficient Waste Management

Gourami Fish:
Traditional harvesting method

MICHELIN GUIDE

How Do MICHELIN Restaurant Chefs Elevate Local Thai Gourami Fish?

Here are gourami fish dishes you'll want to try at these MICHELIN-suggested restaurants.

fish | Thailand | Thai

Bangkok Post

A small fish with a long history

'Pla salit' has been eaten by Thais for centuries and its special flavour when dried makes it a chefs' favourite.

SOCIAL & LIFESTYLE

PUBLISHED : 30 AUG 2015 AT 01:41

Ecological Services VS Safety

Asian Openbill

- Royal Thai Force F5 jet accident (Dec 2021)
- Rice Fields in Central basin and north-eastern Thailand
- Diet: Freshwater Snails

☺ Happy Farmers but ☹ High Risk

- Dry Season:
  - Airports as waterbirds' refugia
  - Drought = food more prone
- Home ranges: varied

  1.6 - 23,608 km^2 / month

  (Ratanakorn *et al.*, 2018)

→ National Level Management

Golden Apple Snails
(invasive species)

Wildlife Forensic Science Centre has identified the large bird which collided with a Royal Thai Force F5 jet, causing it to crash into a rice field in Lop Buri as an open-billed stork.

https://www.thaipbsworld.com/open-billed-stork-blamed-for-f5-plane-crash-in-lop-buri-in-early-december/

Religious Animal Sanctuaries

Dry Season: "The grass always green on the airport side of the fence."

Pesticides

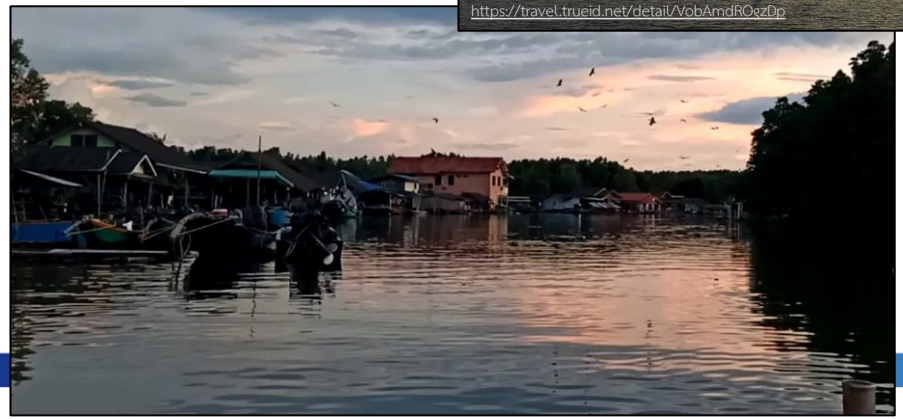
VS

Organic Green Space in Movement Areas

Tourist Attractions

Brahminy Kite fed with pork fat

- 2003: Start
- 2014: Well-known
- 2021: Veterinarian Warning



Bangkok Post

Kites of fancy

Feasting birds of prey have become an unusual tourist draw out east

TRAVEL

Brahminy kites swoop down to pluck food from the surface of a pond next to Khon Phlad Thin restaurant, whose owner feeds them regularly on chunks of bread and pork fat. Catfish that surface to nibble at

https://www.bangkokpost.com/life/travel/405238/kites-of-fancy

Thai PBS

หน้าหลัก NOW ข่าว ข่าวเด่น หมวดข่าว ข่าวรอบวัน

ไขคำตอบ! ห้ามใช้มันหมูล่อ "เหยี่ยวแดง" กินผิดธรรมชาติเสี่ยงอ้วน

สิ่งแวดล้อม 3 พ.ย. 64 17:15 755

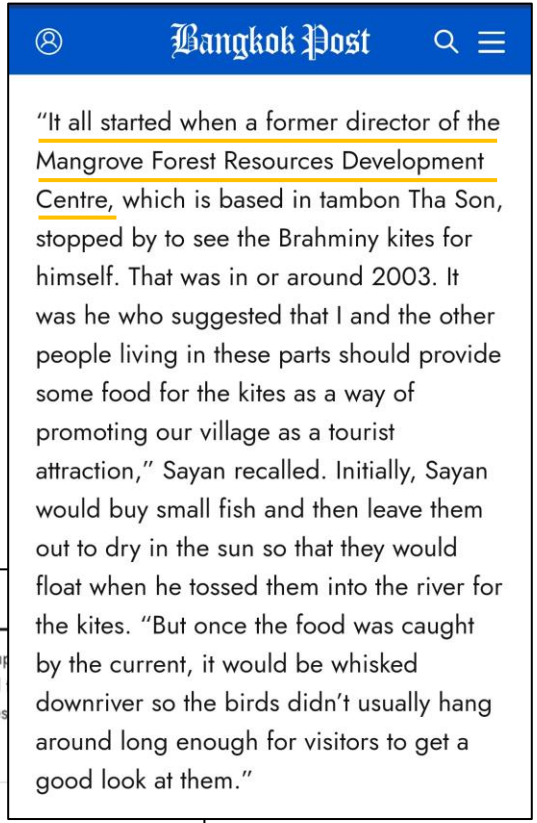
สัตวแพทย์ มก.เตือนห้ามใช้ "มันหมู" ล่อเหยี่ยวแดงลงมากิน หลังพบจัดกิจกรรมชมเหยี่ยวแดงในพื้นที่ภาคตะวันออก ห่วงพฤติกรรมนกเปลี่ยน ติดใจอาหารฟรี จนลืมล่าเหยื่อกินเอง แถมเสี่ยงเป็นโรคอ้วน ไขมันพอกตับตายส่งผลประชากรลด

วันนี้ (3 พ.ย.2564) นายสัตวแพทย์เกษตร สุเตชะ นายสัตวแพทย์ประจำศูนย์วิจัยและบริการวิชาการทางสัตวแพทย์ คณะสัตวแพทยศาสตร์

แชร์

Challenges: Local Understanding

- **Local Understanding and Awareness** on
  - Safety Issues
  - Ecological Literacy
- **Capacity Building** → either airport personnels or local communities
- More works on **socioeconomic and educational aspects**
  - Outreaches and Practices
  - Direct / Indirect Actions



Bangkok Post

"It all started when a former director of the Mangrove Forest Resources Development Centre, which is based in tambon Tha Son, stopped by to see the Brahminy kites for himself. That was in or around 2003. It was he who suggested that I and the other people living in these parts should provide some food for the kites as a way of promoting our village as a tourist attraction," Sayan recalled. Initially, Sayan would buy small fish and then leave them out to dry in the sun so that they would float when he tossed them into the river for the kites. "But once the food was caught by the current, it would be whisked downriver so the birds didn't usually hang around long enough for visitors to get a good look at them."

COMMENT

Comments will be moderated at 06:00-18:00 (UTC+7). Multiple du
immoral, unlawful, obscene, threatening, libelous, anything related
self-advertising, or racist comments will be ignored. For full policies
www.bangkokpost.com/policy (section 1.1.1).

Galong Posted : 1,726 | 17 Apr 2014 at 18.27

Not natural, not healthy for the birds, and completely unethical... just what one would come to respect here. Feeding wild animals should be prohibited. It creates all sorts of problems, but then again, anything for a baht.

3 4 Report abuse REPLY

Content

Department of Airports

Collaboration strategies between airport
and other local stakeholder around the airport

Collaboration strategies between airport and other local stakeholder around the airport

Department of Airports (Thailand) practices for coordinating with local agencies/stakeholder surrounding the airport.

Knowledge Dissemination:

- Community awareness campaigns on bird strike risks and disease transmission.
- Educational signage around the airport discourages bird feeding.

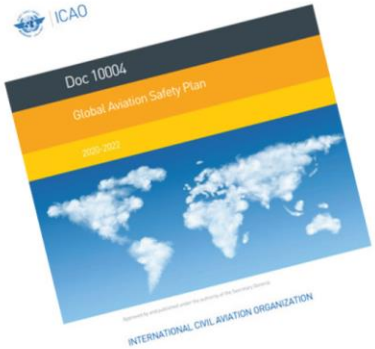
Cooperation with Local Authorities:

- Joint efforts with animal control agencies for wildlife removal.
- Airport Safety Committee facilitates dialogue with community leaders and local government.

Content

Thailand Aviation Safety Action Plan – TASAP

Globally



Regionally

Nationally

State safety objectives

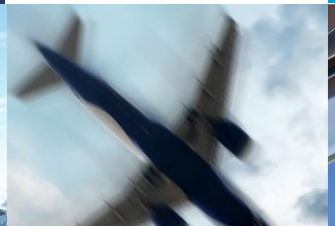
1. Generic Organisational Objectives (GEN)

GEN objectives focus on implementing and improving safety management at every level of the system that drives the work of CAAT and other stakeholders to develop the necessary structural and organisational capabilities to improve aviation safety.

2. Specific Operational Objectives (OPR)

OPR objectives focus on safety outcomes to reduce numbers and severity of safety events. OPR objectives intend to address identified safety issues in Thailand. These need to deal with the High-Risk Category (HRC) occurrences defined in the GASP and AP-RASP and are, by nature, outcome oriented..

OPR-1 CFIT	OPR-2 LOC-I	OPR-3 MAC	OPR-4 RE	OPR-5 RI	OPR-6 Bird Strikes



OPR – 6

To reduce the rate of bird strikes with damage to aircraft parts

Bird strike is a collision between a bird and an aircraft. The majority of bird collisions occur near or at airports during take-off, landing, and associated phases of flight. Although most bird strikes do not result in significant events, the potential for an aircraft to lose both engines as a result of hitting large flocking birds is real. The Thai ecosystem together with the number of bird strikes reported to CAAT demonstrate that bird strikes is a safety issue that needs to be addressed.

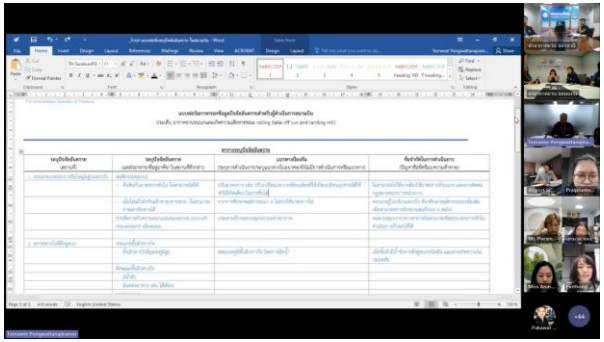
Examples of Contributing factors

- Birds inhabiting airport and surrounding areas
- Inadequate bird scaring activities

Examples of Contributing factors

- Large flocking birds sighted in close proximity to an aircraft

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Rate of occurrences related to bird strikes with damage to aircraft per million aircraft movements per year	Decreasing rate of occurrence related to bird strikes with damage to aircraft per million aircraft movement per year	Continuous

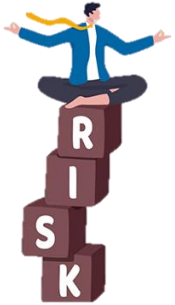


Wildlife Hazard Management – Task Force

Representative : CAAT, aerodrome operators, air operators, and air navigation service providers
Responsibility : To reduce the likelihood and severity of wildlife event consequences

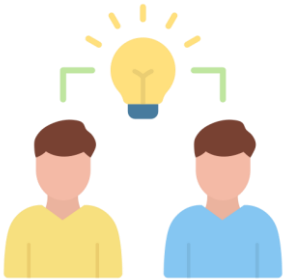
Wildlife Hazard Management – Task Force Activities

Data Analysis



Mitigation Measures

Information Sharing



Best Practice Exchange

Collaboration

Thank you

The Floor is yours!