Airport Wildlife Hazard Management (AWHM)





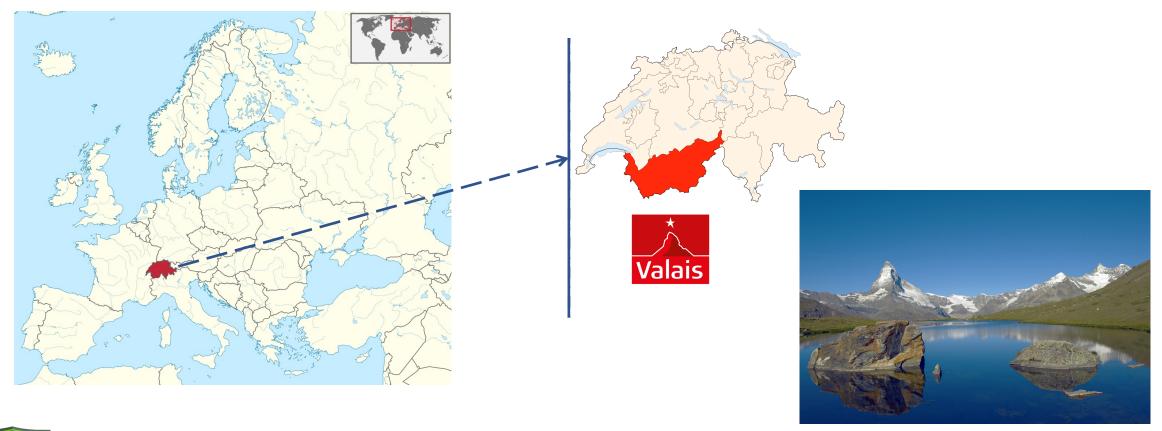




BTEE SA: Who are we?

+ 30 years-old private Ltd company from Switzerland









BTEE SA: Who are we?

+ 25 years experience in Wildlife Management

Wildlife Control at GVA Airport from 2005 to 2023



Our domains:

- **✓** Environment
- ✓ Safety
- ✓ Airport



BTEE SA: Who are we?

+ 25 years experience & know-how in: Providing expertise & training @ +250 airports around the globe over the years

Developing tools & application and even more to support other airports

Multiple certifications training center















Ongoing risk analysis with AWHM

Airport Wildlife Hazard Management







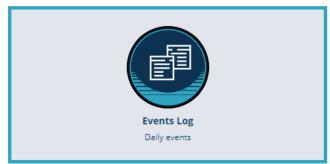
| Username | Username | | | | |
|---------------------|----------|--|--|--|--|
| IATA.XXX | | | | | |
| Password | | | | | |
| | | | | | |
| Password forgotten? | | | | | |
| | LOG IN | | | | |



Ongoing risk analysis with AWHM















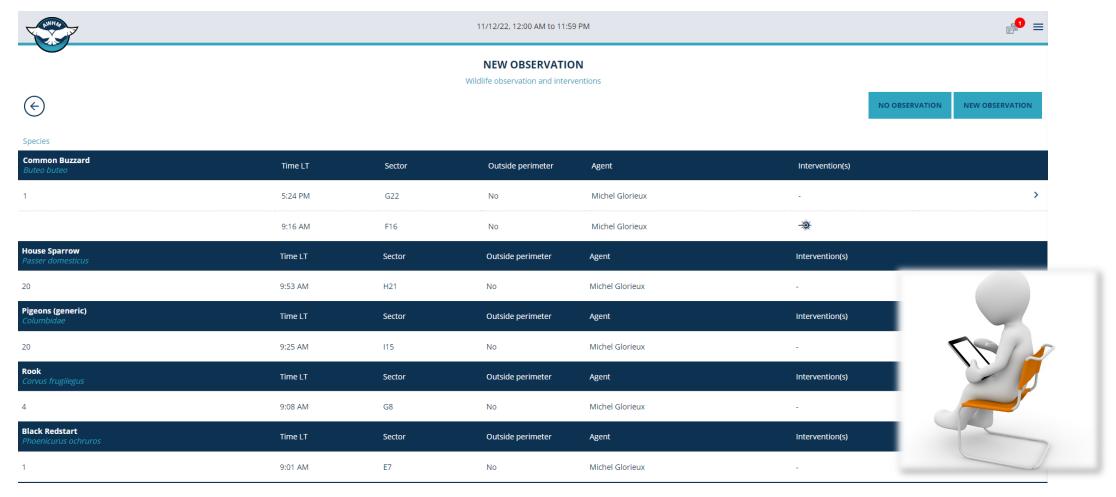






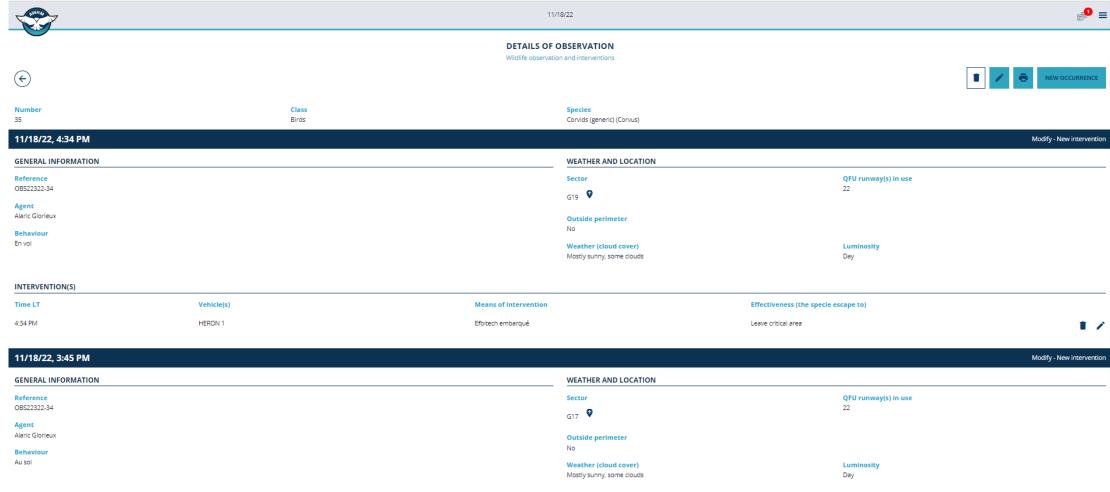


AWHM: Observations captured «live» onsite



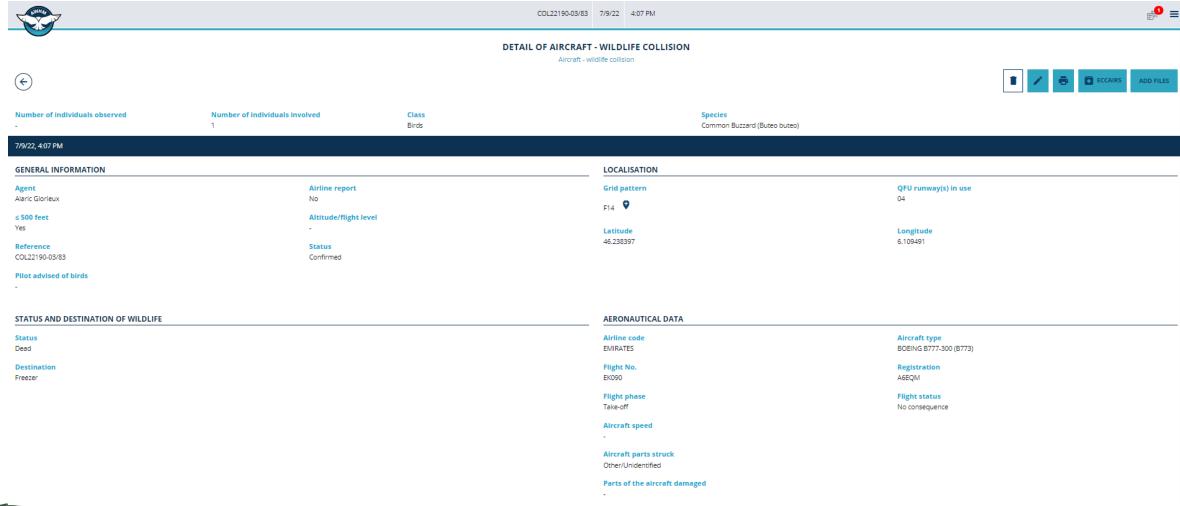


AWHM: Interventions (scaring and culling)





AWHM: Aircraft-Wildlife Collisions: Data Capture





AWHM: Daily events log

| | | | Events Log | | | |
|---|---|----------|---|--------|----------|---|
| Type of event Part of annual report Start time | | End time | Type of event Part of annual report | | | |
| -:- | 0 | : | Start time | | End time | |
| Event | | | 09:00 | 0 | 12:00 | 0 |
| Select | | | 05.00 | • | 12.00 | 0 |
| Description of event | | | Event | | | |
| | | | Select | | | |
| Main runway (3700 x 50) Concrete 24 06 Grass runway (850 x 35) 05 23 | | | Call from APRON Call from TWR/ATC Daily Patrol Fence inspection Nesting monitoring Remains Management Runway inspection Runway inspection foil Training session Visite SPRA | strike | | |

NEW EVENT



AWHM: Analysis / reports:

A gift for Wildlife Hazard Managers, CAA's, etc.







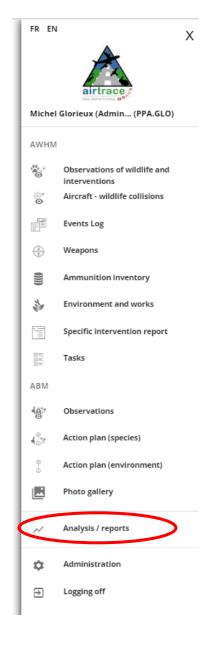






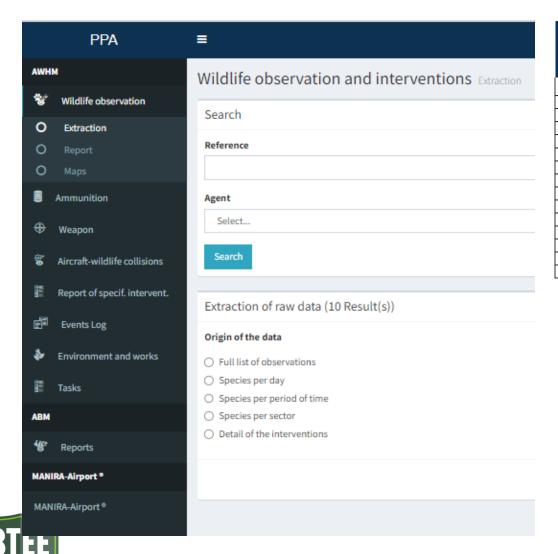






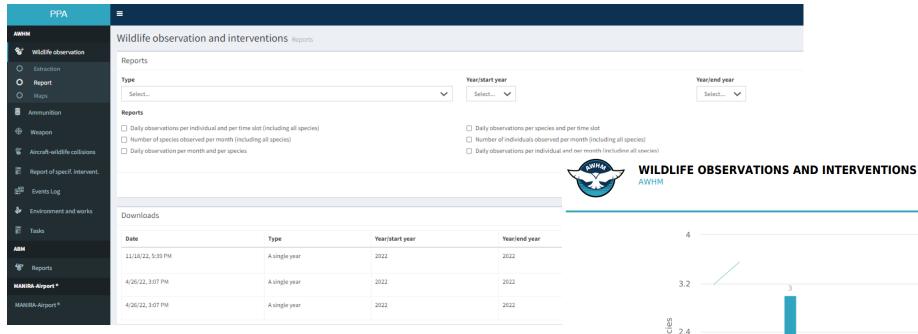


AWHM: Wildlife observation: Extraction, Report and Maps



| Species | Species (Latin) | Number | Date | Time | Weather (cloud cover) | Light | Grid Pattern |
|---------------------------|-------------------|--------|----------|---------|--------------------------|-------|--------------|
| Corvids (generic) | Corvus | 50 | 11/22/22 | 4:33 PM | Very cloudy | Day | G8 |
| Corvids (generic) | Corvus | 50 | 11/22/22 | 4:07 PM | Very cloudy | Day | G8 |
| Eurasian (Common) Kestrel | Falco tinnunculus | 1 | 11/22/22 | 4:01 PM | Very cloudy | Day | D13 |
| Common Buzzard | Buteo buteo | 1 | 11/22/22 | 4:00 PM | Very cloudy | Day | D13 |
| Common Buzzard | Buteo buteo | 1 | 11/22/22 | 3:57 PM | Very cloudy | Day | E26 |
| Corvids (generic) | Corvus | 15 | 11/22/22 | 3:54 PM | Mostly sunny, some | Day | G13 |
| Corvids (generic) | Corvus | 40 | 11/22/22 | 3:28 PM | Very cloudy | Day | F23 |
| Corvids (generic) | Corvus | 15 | 11/22/22 | 3:26 PM | Mostly sunny, some | Day | G12 |
| Eurasian (Common) Kestrel | Falco tinnunculus | 1 | 11/22/22 | 2:50 PM | Very cloudy | Day | G22 |
| Corvids (generic) | Corvus | 40 | 11/22/22 | 2:47 PM | Very cloudy | Day | F21 |
| Corvids (generic) | Corvus | 40 | 11/22/22 | 2:16 PM | Very cloudy | Day | G22 |
| Eurasian (Common) Kestrel | Falco tinnunculus | 1 | 11/22/22 | 2:01 PM | Very cloudy | Day | E15 |
| Eurasian (Common) Kestrel | Falco tinnunculus | 1 | 11/22/22 | 1:56 PM | Very cloudy | Day | G22 |
| Eurasian (Common) Kestrel | Falco tinnunculus | 1 | 11/22/22 | 1:51 PM | Very cloudy | Day | G9 |
| Common Wood Pigeon | Columba palumbus | 7 | 11/22/22 | 1:51 PM | Very cloudy | Day | G9 |

AWHM: Wildlife observation: Extraction, Reports and Maps:





Year/end year Select... 🗸

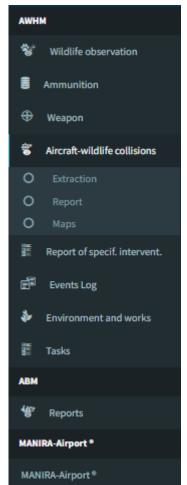


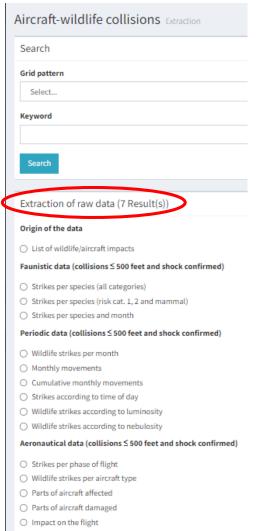
AWHM: Wildlife observation: Extraction, Reports and Maps

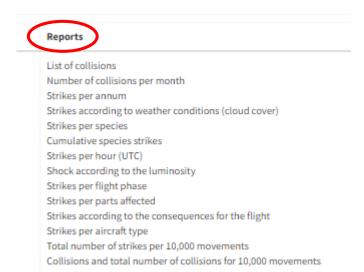


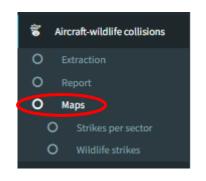


AWHM: Aircraft-wildlife collisions: Extraction, Reports and Maps:













AWHM: Aircraft-Wildlife Collisions: Reports







Collisions aéronef-faune COL18060-01/3

READY for ECCAIRS data transmission



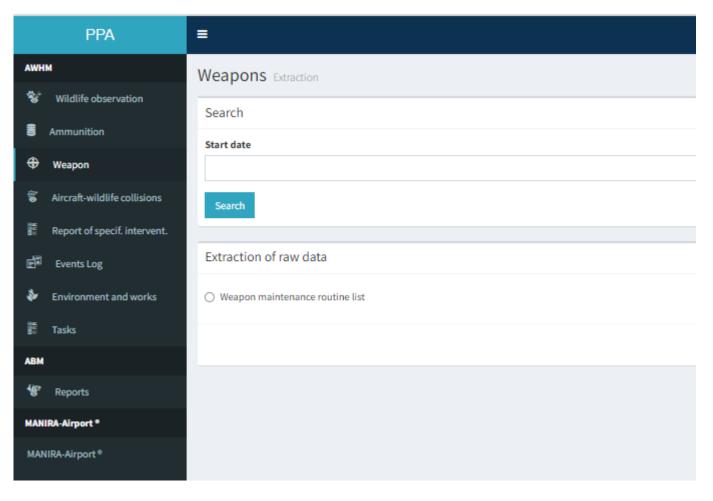
PAGE 3 / 3

AWHM: Extraction, Reports and Maps: Aircraft-wildlife collisions

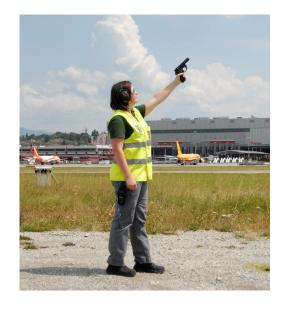




AWHM: Weapons Management

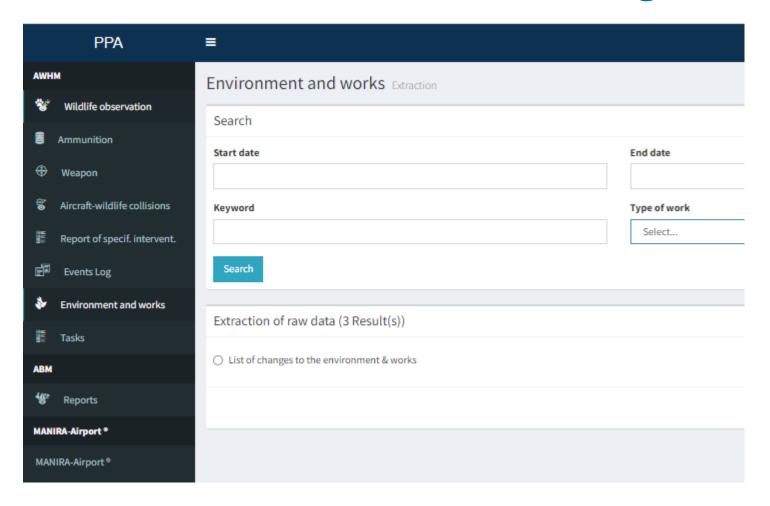


Realtime control of your ammunition stock





AWHM: Environment & Works Management

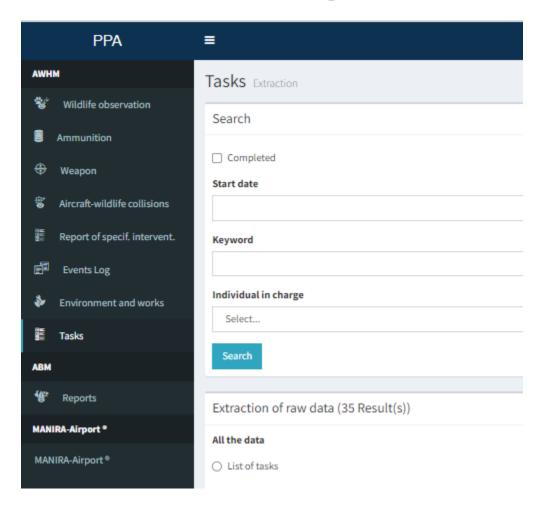








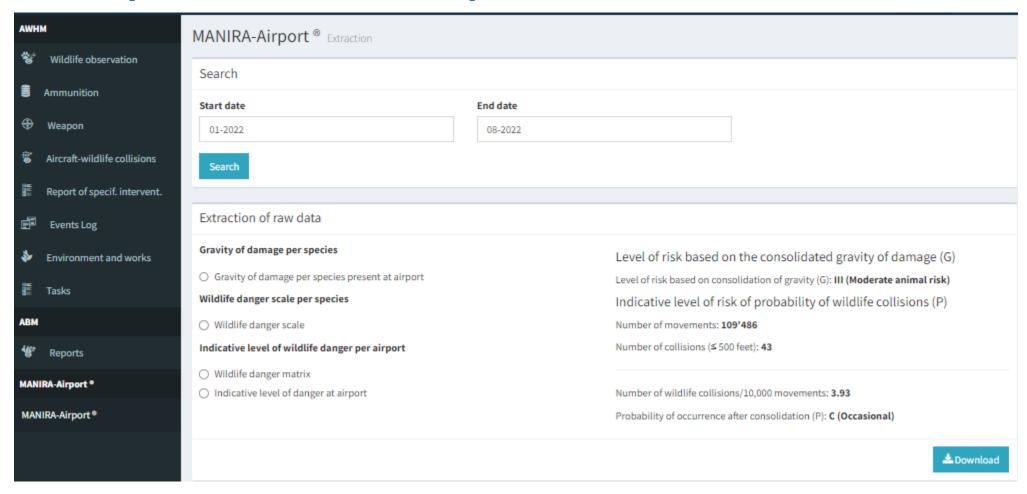
AWHM: Task Management







AWHM: Indicative wildlife strike <u>risk assessment methodology</u> for an airport: MANIRA ® - Airport





AWHM: Indicative wildlife strike risk assessment methodology for an airport: MANIRA ® - Airport

Gravity of damage per species present at airport

Time-Related Data 1/1/22 au 8/31/22

Reference for analysis

| | | | | | | Presence index | | Single Individua | al | | |
|----|--------------------|---------------------|--------------|------------------------|----------------------|----------------|---|---|-------|--|-----------------------------|
| ID | Name | Latin Name | Family | Average weight [kg] | Average wingspan [m] | | F1 [N] V1: 100 knots (185 km/h) Decision Speed | Fr [N] Vr: 135 knots (250 km/h) Rotation Speed | km/h) | Flocking birds [No. of individuals] | Gravity of damage (g) |
| 1 | Bat | Chiropterae | Mammalia | 0.004 | 0.2 | Uncommon | 53 | 96 | 120 | - | Very low |
| 2 | Eurasian Skylark | Alauda arvensis | Alaudidae | 0.039 | 0.35 | Very common | 294 | 537 | 669 | - | Very low |
| 3 | Eurasian Woodcock | Scolopax rusticola | Scolopacidae | 0.42 | 0.65 | Rare | 1707 | 3112 | 3881 | - | Medium |
| 4 | Grey Wagtail | Motacilla cinerea | Motacillidae | 0.022 | 0.29 | Rare | 200 | 365 | 456 | - | Very low |
| 5 | White Wagtail | Motacilla alba | Motacillidae | 0.023 | 0.31 | Very common | 196 | 357 | 446 | - | Very low |
| 6 | Motacilla flava | Motacilla flava | Motacillidae | 0.023 | 0.28 | Uncommon | 217 | 396 | 493 | 3 | Very low |
| 7 | Yellowhammer | Emberiza citrinella | Emberizidae | 0.021 | 0.26 | Rare | 213 | 389 | 485 | 3 | Very low |
| 8 | Corn Bunting | Emberiza calandra | Emberizidae | 0.0465 | 0.32 | Rare | 384 | 700 | 873 | - | Very low |
| 9 | Common Buzzard | Buteo buteo | Accipitridae | 1 | 1.13 | Very common | 2338 | 4262 | 5315 | - | Serious |
| 10 | Mallard | Anas platyrhynchos | Anatidae | 1.4 | 1 | Occasional | 3699 | 6743 | 8409 | 2 | Very serious |
| 11 | European Goldfinch | Carduelis carduelis | Fringillidae | 0.016 | 0.25 | Common | 169 | 308 | 384 | 3 | Very low |
| 12 | White Stork | Ciconia ciconia | Ciconiidae | 3.25 | 2.17 | Uncommon | 3957 | 7213 | 8996 | 34 | Very serious |
| 13 | Rook | Corvus frugilegus | Corvidae | 0.52 | 0.94 | Very common | 1462 | 2664 | 3323 | 9 | Very serious |



AWHM: Indicative wildlife strike risk assessment methodology for an airport: MANIRA ® - Airport

Wildlife danger scale

Time Related Data: 1/1/22 au 8/31/22

| ID | Name | Latin name | Average weight [kg] | Average wingspan [m] | Probability of occurrence (p) | Evaluation of danger per species (D) |
|------------|--------------------|---------------------|---------------------|----------------------|-------------------------------|--------------------------------------|
| 1 | Bat | Chiropterae | 0.004 | 0.2 | Uncommon | Minor |
| 2 | Eurasian Skylark | Alauda arvensis | 0.039 | 0.35 | Very common | Minor |
| 3 | Eurasian Woodcock | Scolopax rusticola | 0.42 | 0.65 | Rare | Medium |
| 4 | Grey Wagtail | Motacilla cinerea | 0.022 | 0.29 | Rare | Minor |
| 5 | White Wagtail | Motacilla alba | 0.023 | 0.31 | Very common | Minor |
| 6 | Motacilla flava | Motacilla flava | 0.023 | 0.28 | Uncommon | Minor |
| 7 | Yellowhammer | Emberiza citrinella | 0.021 | 0.26 | Rare | Minor |
| 8 | Corn Bunting | Emberiza calandra | 0.0465 | 0.32 | Rare | Minor |
| 9 | Common Buzzard | Buteo buteo | 1 | 1.13 | Very common | Major |
| 10 | Mallard | Anas platyrhynchos | 1.4 | 1 | Occasional | Major |
| 11 | European Goldfinch | Carduelis carduelis | 0.016 | 0.25 | Common | Minor |
| 12 | White Stork | Ciconia ciconia | 3.25 | 2.17 | Uncommon | Major |
| 13 | Rook | Corvus frugilegus | 0.52 | 0.94 | Very common | Major |
| 14 | Carrion Crow | Corvus corone | 0.525 | 1 | Very common | Major |
| 1 5 | Corvids (generic) | Corvus | 0.525 | 1 | Very common | Major |
| 16 | Western Barn Owl | Tyto alba | 0.57 | 0.95 | Uncommon | Medium |



AWHM: Indicative wildlife strike risk assessment methodology

for an airport: MANIRA ® - Airport Zones of danger

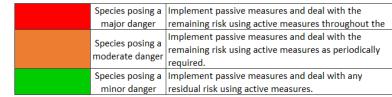
Airport Birdville Airport

Time-Related Data 1/1/22 8/31/22 Individual Responsible for Analysis GLO

Risk Matrix: Evaluation of danger per species (D)

| Probability of occurrence (p) | | | | | | |
|-------------------------------|---------------|-----------------------|------------|-------------------|----------------|--|
| E | Rare | 70 | 20, 26, 73 | 3 | 17, 27, 28, 30 | 4, 7, 8, 25, 35, 36, 44, 47, 59, 66, 67, 68, 75, |
| D | Infrequent | 12, 24, 46, 72, 74 | | 16, 42, 49 | 22, 45, 65 | 1, 6, 21, 32, 39, 48, 56, 57, 60 |
| С | Occasional | 10, 71 | | 53 | 34, 58 | 62 |
| В | Frequent | 69, 76 | 55 | 23, 29, 52 | 31, 38, 50 | 11, 37, 40, 63, 64 |
| А | Very frequent | 13, 15 | 9, 54 | 14, 18, 41 | 19 | 2, 5, 33, 43, 51, 61 |
| | | Very Serious | Serious | Moderate | Low | Very Low |
| | | | II | III | IV | V |
| | | | Seri | ousness of damage | e (g) | |

Remark: The number listed in the "ID" column of the table of species is reused in the matrix.



MANIRA-Airport® Indicative wildlife strike risk assessment methodology for an airport © by BTEE SA

| ID | Name | | | |
|----|--------------------|--|--|--|
| 1 | Bat | | | |
| 2 | Eurasian Skylark | | | |
| 3 | Eurasian Woodcock | | | |
| 4 | Grey Wagtail | | | |
| 5 | White Wagtail | | | |
| 6 | Motacilla flava | | | |
| 7 | Yellowhammer | | | |
| 8 | Corn Bunting | | | |
| 9 | Common Buzzard | | | |
| 10 | Mallard | | | |
| 11 | European Goldfinch | | | |
| 12 | White Stork | | | |
| 13 | Rook | | | |
| 14 | Carrion Crow | | | |



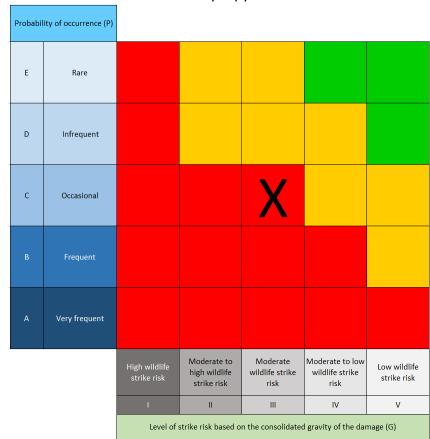
AWHM: Indicative wildlife strike risk assessment methodology for an airport: MANIRA ® - Airport

Time-Related Data Individual Responsible for Analysis

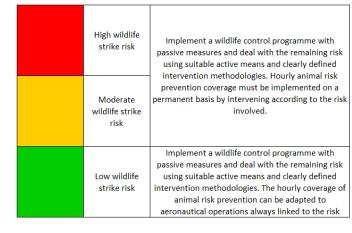
01/01/2022 31/08/2022

GLO

Indicative level of wildlife strike risk at airport (R)



risk category



MANIRA-Airport® Indicative wildlife strike risk assessment methodology for an airport © by BTEE SA



Administration: Local Application Manager

Local settings considered in AWHM







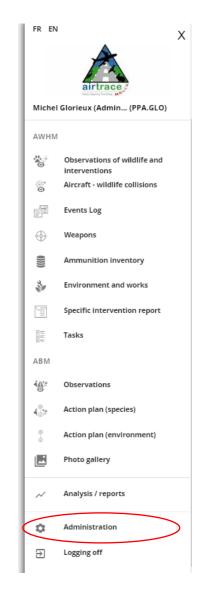














AWHM: THE AFFORDABLE RIGHT TOOL FOR YOU WHMP!

Compliant with ICAO SARPS & EASA guidelines



The AWHM software has been developed in order to implement, as part of the active prevention, the methodology of an ICAO and EASA compliant wildlife management concept in airports. This tool and the methodology beyond it have been developed thanks to the Geneva Airport Wildlife Hazard Management Unit field experience. The

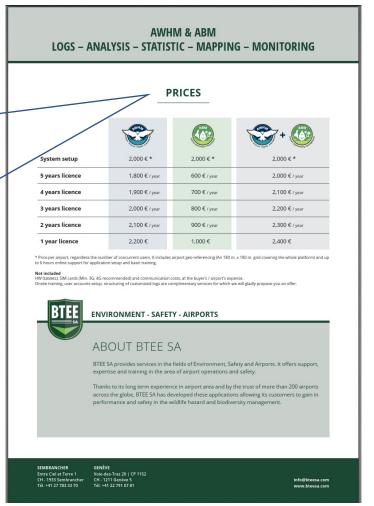
app is designed to ease the daily work of the field

officers and managers.

manager, the national authority or the EASA.

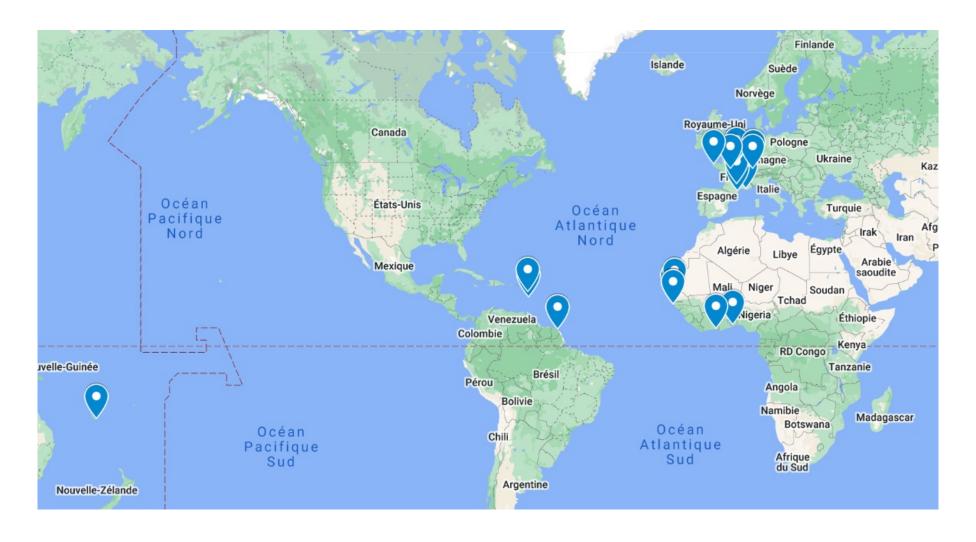
GENEVE

Can your
airport
afford less
than
5 € / day?
(Equivalent to
5.2 USD)





AWHM Customers : Around the globe, ready for your region





AWHM video summary







Made by
Wildlife Hazard Managers
For
Wildlife Hazard Agents &
Managers

Available today in English & French versions



☐ Get in touch:

michel.glorieux@bteesa.com



Thank you for your attention

ขอบคุณสำหรับความสนใจของคุณ

Merci de votre attention



✓ Get in touch:

michel.glorieux@bteesa.com

