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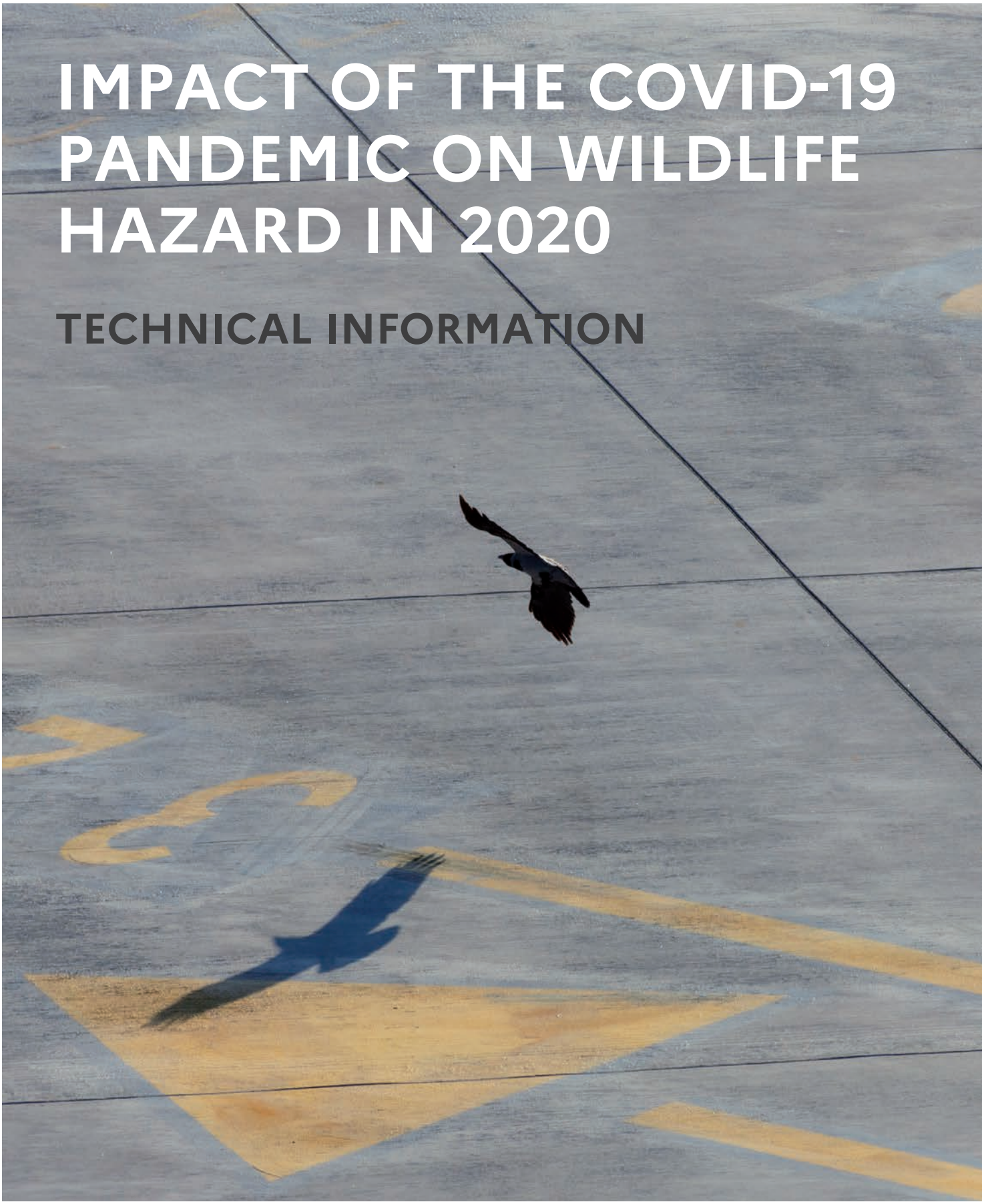
IMPACT OF THE COVID-19 PANDEMIC ON WILDLIFE HAZARD IN 2020

TECHNICAL INFORMATION



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TECHNICAL INFORMATION

Civil Aviation Technical Centre

Environment, Safety of Systems and Operations, Planning

AUTHOR

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SUMMARY

1. CONTEXT

The COVID-19 pandemic heavily affected the aviation industry. Airports experienced an extreme reduction in flight operations that began late March 2020. In May and June 2020, as travel restrictions were gradually eased, airlines and airports resumed their activities throughout Europe. France released all travel restrictions with EU countries on June 15th. EU external borders were gradually reopened from July 1st.

During the year 2020, airports worldwide recorded a decline of more than 60% in passenger traffic volume. The global traffic reduction peaked at 90% in March and April 2020. In France, the number of domestic flights dropped by 91% in April, with an average reduction of 52% over the year 2020.

Numerous aerodromes adapted their activities in response to the reduction in flight operations. In particular, wildlife hazard management actions were, in several cases, postponed or stopped. The reduction of environmental management measures and wildlife control actions, together with the reduced human presence and the availability of new nesting sites, such as parked aircrafts, allowed more wildlife to settle down on aerodromes. As a result, an increased wildlife presence during the air traffic shutdown period has been observed at several French and European aerodromes.

The civil aviation authorities, in conjunction with the international agencies, have developed a set of specific recommendations on the prevention and the management of the risk of wildlife strikes on aerodromes. These recommendations have been disseminated through information bulletins and technical guides to all relevant stakeholders.

2. REACTIONS TO WILDLIFE HAZARD ISSUES

Shortly after the beginning of the Covid-19 pandemic, several EU States alerted aerodrome operators on the importance of maintaining wildlife hazard management activities. In France, the civil aviation technical center (STAC) sent an email to all operators and inspectors of the national safety agency (DSAC) recommending to maintain wildlife control actions and to continue wildlife surveys on aerodromes. In particular, airports that experienced an extended period of closure were advised to reactivate all wildlife hazard management activities at least one week before the reopening. Similarly, the Spanish Civil Aviation Authority and the German Birdstrike Committee sent recommendations to continue wildlife management actions to their respective aerodrome operators.

At the same time, the European Aviation Safety Agency (EASA) launched a survey that identified several safety issues related to the reduction of air traffic. The increased presence of animals on aerodromes was identified as one of the most critical issues. As a result of this survey, a working group was set up to develop support tools for airport operators, airlines and civil aviation authorities. This working group, to which the STAC, mandated by the DSAC, actively collaborated, produced a technical guide entitled "Wildlife Hazard Management Guide to Support the Restart of Operations in the COVID-19 Pandemic" aimed to support operators and authorities during the air traffic recovery phase.

The document proposes a questionnaire to identify safety risks that may have occurred during the lockdown period, as well as risk mitigation actions that can be implemented to reduce these risks (Table 1).

EASA has also issued a Safety Information Bulletin (SIB 2020-07R1) to facilitate a safe and gradual return to regular operations. Several recommendations in the SIB relate to the monitoring of wildlife presence and the conditions of the aerodrome environment, as well as the need to carry out a wildlife risk assessment before air operations restart.

HAZARDS	CONTROL
Increased wildlife presence	Detailed visual inspection of the manoeuvring area
	Check if nests have been built in any aerodrome infrastructure or parked aircraft
	Regular surveys on aerodrome and 13 kilometers (km) radius area around aerodrome
	Check if new species are present at aerodrome
Changes in wildlife behaviour: reduced reaction to frightening actions	Wildlife prevention measures reinforced during the initial stages of the transition to normal operations
Reduction in Wildlife Hazard Management staff during lockdown	Maintain knowledgeable staff
	Recrute new staff when necessary
	Provide training on wildlife hazard management to new staff

Table 1. Extract from the checklist proposed by the EASA working group.

3. WILDLIFE PRESENCE AND WILDLIFE HAZARD MANAGEMENT AT FRENCH AERODROMES IN 2020

All figures in this section come from the national wildlife strikes database PICA (see box below). During the period of traffic reduction, airports became particularly attractive for wildlife and especially for birds. Due to the sanitary measures adopted to prevent the spread of the pandemic and the drastic drop in income caused by the reduction in air traffic, many regular activities such as vegetation management and wildlife dispersal interventions were suspended or reduced at the majority of airfields. Birds were able to take advantage of the reduced human presence and the new shelters and nesting sites (i.e. parked aircrafts, under-utilised airport infrastructures) and to further occupy aerodromes.

The lockdown period coincided with the breeding season for the majority of birds in temperate climate zone, such as France. Good availability of resources and low disturbance probably favoured a higher reproductive rate and a higher survival of juveniles for species breeding on aerodromes. When operations restarted, the airfields were occupied by populations of birds that were not used to the presence of aircrafts. However, species diversity on French aerodromes does not seem to have changed significantly during 2020. This can be observed through the different indicators presented below: the wildlife strikes breakdown by species, the number of wildlife strikes and the strike rate.

With regard to the distribution of wildlife strikes by animal family involved, the year 2020 does not show any significant difference compared to the previous years (Figure 1). Birds of prey are the group that is the most often involved in collisions, followed by gulls and passerines.

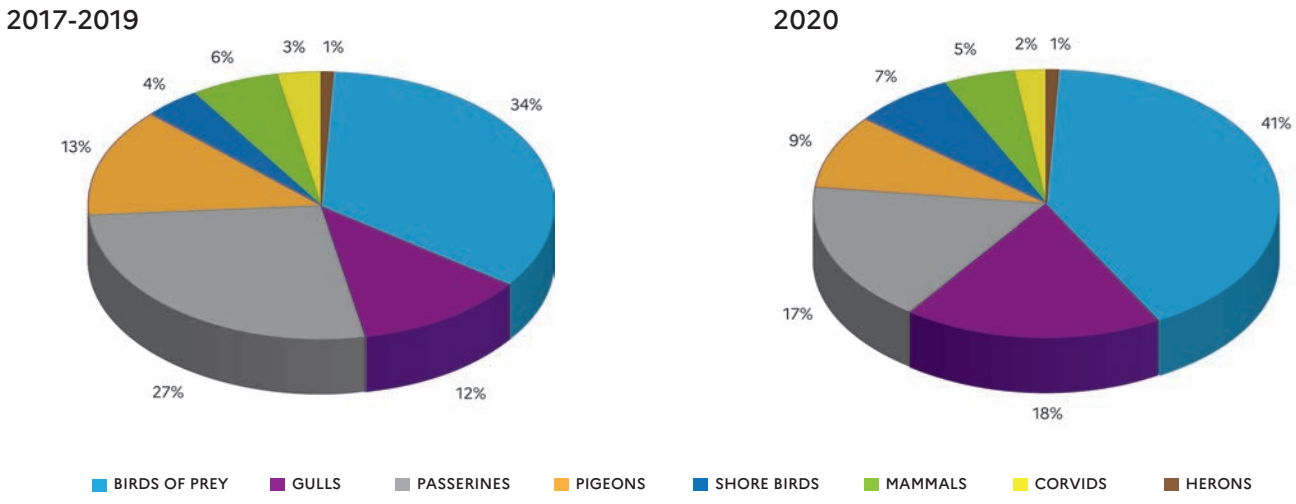

Figure 1. Wildlife strikes breakdown by species on aerodromes in mainland France.

The number of recorded wildlife strikes significantly decreased in 2020, as a direct consequence of the reduction in air traffic (Table 2). A decrease of about 80% in the number of strikes was observed in April and May, when the French population was locked down (Figure 2).

NUMBER OF STRIKES		
	Average 2017-2019	2020
BIRDS OF PREY	216	194
GULLS	77	83
PASSERINES	172	78
PIGEONS	86	43
SHORE BIRDS	26	35
MAMMALS	41	25
CORVIDS	16	11
HERONS	5	3
GEEESE, BUSTARDS	6	5
PHEASANTS, PARTRIDGES	3	1
DUCKS	3	0
UNKNOWN	213	135
TOTAL	865	613

Table 2. Number of wildlife strikes on aerodromes in mainland France.

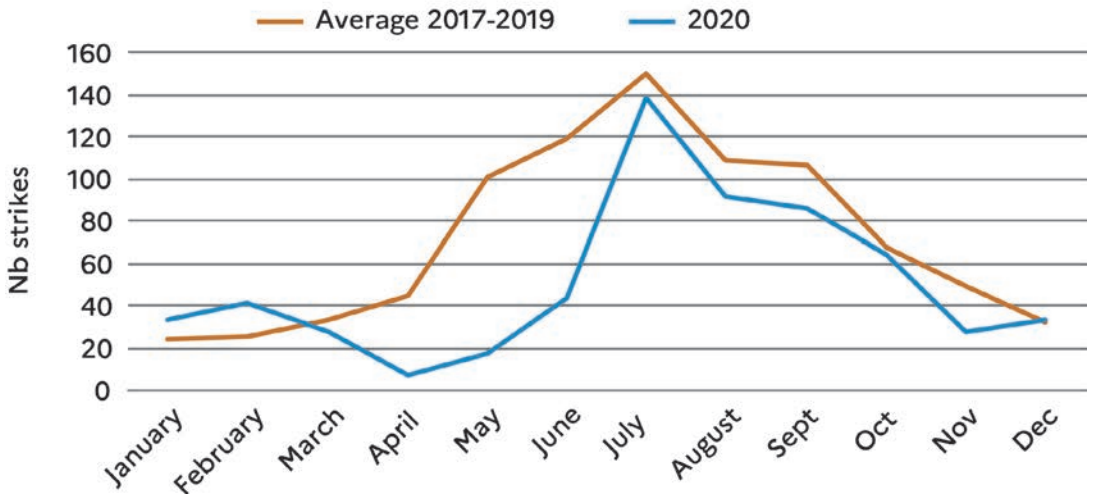

Figure 2. Monthly distribution of wildlife strikes on aerodromes in mainland France.

3. WILDLIFE PRESENCE AND...

However, certain species that are frequently found on French aerodromes, such as the European kestrel and the common buzzard, showed a significant increase in the number of strikes in June and July, when air traffic resumed (Figure 3 and 4). At this time, the majority of juveniles of these raptors fledges, and these inexperienced individuals are more prone to collisions than adults, who are more used to the airport environment.

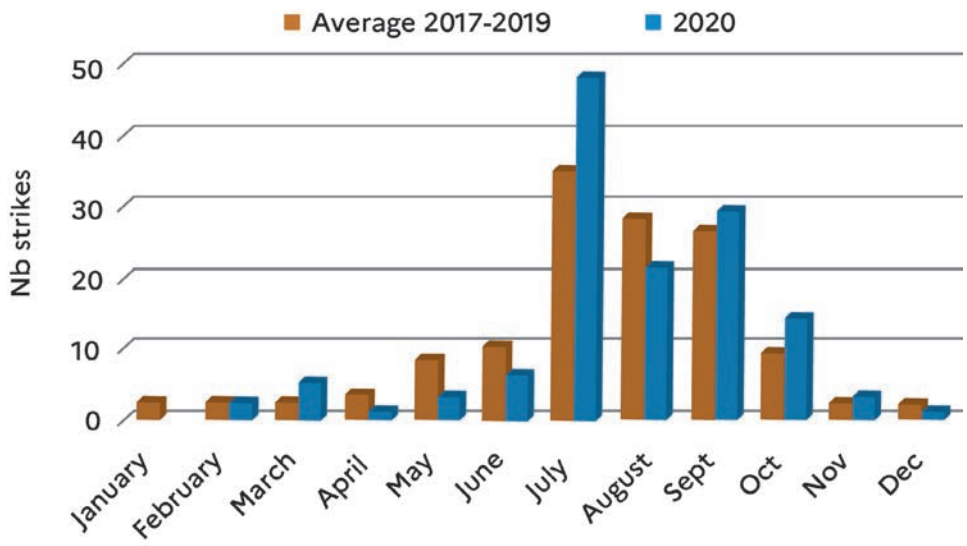

Figure 3. European kestrel strikes on aerodromes in mainland France.

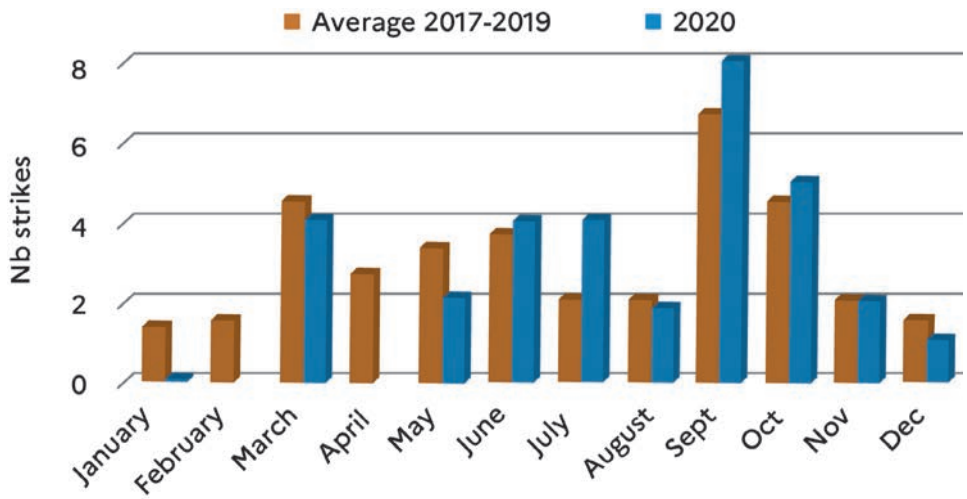

Figure 4. Common buzzard strikes on aerodromes in mainland France.

The strike rate, corresponding to the number of wildlife collisions per 10 000 commercial air movements, shows an increase over the whole year compared to the average level observed over the last three years. This increase is particularly significant in June and July (Figure 5), when air traffic restarted. This seems to be a direct consequence of the almost complete stop of air traffic in the previous months and the reduction of environment management actions on airfields during the lockdown period of French population (March-May 2020).

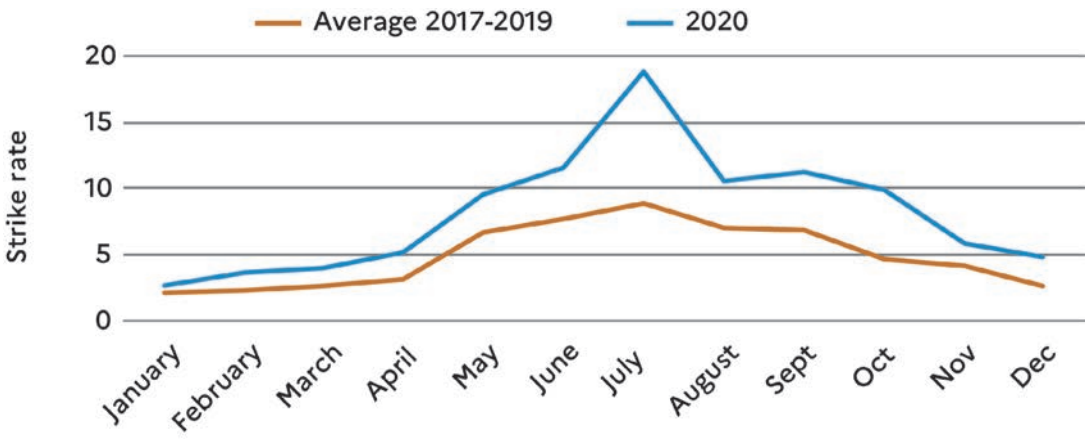

Figure 5. Wildlife strike rate in mainland France (number of collisions/10 000 movements).

The resumption of more regular environment and wildlife management activities at aerodromes, combined with a restart of airlines activity, led to a decrease in the strike rate from August onwards.

4. CONCLUSIONS AND OUTLOOK

The Covid-19 pandemic had a profound effect on civil aviation. A period of almost total shutdown of aviation activities, a weak recovery and a further reduction of air traffic were observed during the year 2020. The reduction of aircraft movements in 2020 had a significant impact on the presence of wildlife on aerodromes and, consequently, on the strike rate, which more than doubled in July compared to the average rate of the previous 3 years. According to the latest DSAC study on risks during periods of low activity, the wildlife hazard indicator is the one that has shown the greatest increase among the analysed indicators. The first quarter of 2021 is still characterised by a low level of operations and by new travel restrictions for French passengers. Winter months correspond to a period of low activity for the majority of birds and mammals seen on aerodromes, which translates into a significant drop in the number of wildlife collisions in mainland France. The return of spring will mark the restart of activity for a significant number of species, while the level of air traffic is expected to remain at low levels over this period. Therefore, the start of the breeding season and the subsequent fledging period of juveniles could lead to an increase in the number of wildlife strikes.

At the time this document is written, Covid-19 pandemic is far from over and the low air traffic activity is expected to last at least several more months. Therefore, an increased vigilance by aerodrome operators on the risks associated with the presence of wildlife is still recommended. As the 2020 data have shown, in order to limit the settlement of animals on aerodromes and reduce the risk of wildlife strikes, it is crucial to maintain environment management actions and wildlife risk prevention activities especially in periods of low activity.

PICA - Wildlife Strikes Information Program is the French database of wildlife collisions. It has been developed and maintained by the civil aviation technical center (STAC) since early 1980s. Since 2010, it is accessible online on the STAC website: https://www.stac.aviation-civile.gouv.fr/picaweb

PICA is not just an archive. Thanks to its search functionalities and predefined calculations, it can create statistics and reports. In addition, it allows the assessment of the wildlife risk on an aerodrome, thanks to the calculation of the Collision Risk Level and the Wildlife Risk Level. PICA also allows airport operators to enter animal observations directly in the database, enabling the calculation of the Wildlife Hazard Level.

PICA draw up some statistics at national level that are summarised in Monthly Information Bulletins (BMI) and shared with the DSAC (National Safety Agency). The BMIs are now available for mainland France and the overseas territories. The STAC also publishes annually a national statistical bulletin.

The tool is constantly evolving and has recently undergone a major graphical overhaul, with the addition of many new functionalities, particularly in terms of data analysis.

Thanks to an optimised user profile management, PICA is accessible to a wide range of stakeholders, with the list of accessible data being adapted according to the confidentiality constraints of the data recorded in the database.

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