

COVID-19, caused by infection with SARS-CoV-2, is a human disease which most likely emerged from an animal source and through widespread human-to-human transmission became a pandemic. As of **31 October 2021**, around **250 million** confirmed human cases have been reported worldwide, with more than **5 million** human deaths¹. The nature of this new zoonotic virus, together with its widespread distribution and the susceptibility of some animal species to infection, manifests in animal infections arising from close contact between people and animals. Conversely, there is also evidence that, for some animal species, close contact with infected animals can represent a potential source of infection in humans². This report is a monthly update of the global situation of the report of SARS-CoV-2 in animals, with a special focus on the new reports submitted to the OIE in the last month.

Global situation since the beginning of the pandemic

The worldwide geographical distribution of SARS-CoV-2 outbreaks in animals reported to the OIE is shown in Figure 1. The first case of SARS-CoV-2 in animals was officially reported to the OIE by Hong-Kong (SARC) on 29 February 2021 in a dog.

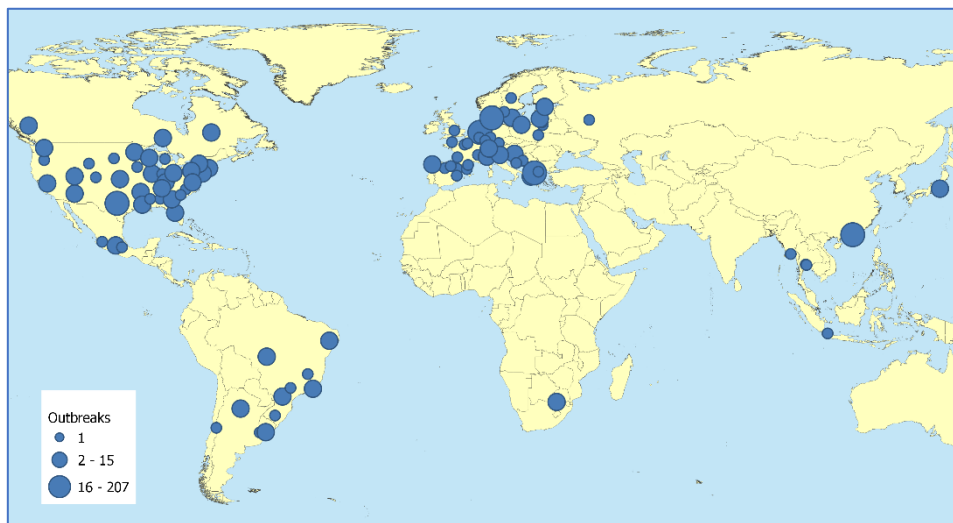


Figure 1. Worldwide distribution of SARS-CoV-2 outbreaks in twelve animal species reported to the OIE (as of 31 October 2021). Note that dot size on the map is proportional to the number of outbreaks reported.

Table 1 shows the global distribution of animal infections with SARS-CoV-2. Thirty countries in the Americas, Africa, Asia, and Europe have reported the occurrence of the disease, in fourteen different animal species (cats, dogs, mink, otter, pet ferrets, lions, tigers, pumas, snow leopards, gorillas, white-tailed deer, fishing cat, Binturong, South American coati).

Table 1. Number of outbreaks (n=598) reported worldwide, by species and region (as of 31 October 2021).

Region \ Species	Species													
	Cat	Dog	Mink	Otter	Pet ferret	Lion	Tiger	Puma	Snow leopard	Gorilla	White-tailed deer	Fishing cat	Binturong	Coatimundi
Africa						Yes		Yes						
Americas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Asia	Yes	Yes					Yes							
Europe	Yes	Yes	Yes		Yes	Yes	Yes							

¹ <https://coronavirus.jhu.edu/map.html>

² https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.23.2001005#html_fulltext

Update during last month (01/10/2021 - 31/10/2021)

During the last month **16 outbreaks** have been reported or updated by **6 countries (Canada, Japan, Myanmar, Spain, Sweden and United States)** in **10 animal species** (binturong, cat, dog, fishing cat, gorilla, lion, mink, snow leopard, tiger, South American coati). The recent distribution of outbreaks is reported in Figure 2.



Figure 2. Worldwide recent distribution of SARS-CoV-2 outbreaks reported to the OIE (01/10/2021 - 31/10/2021).

EPIDEMIOLOGICAL COMMENTS

Summary of the global situation and recommendations

While the main driver of community and international spread in the current pandemic is human to human transmission, animal cases of infection with SARS-CoV-2, though still only occasional occurrences, continue to rise. Currently, **598 outbreaks** in animals have been reported globally, affecting **14 species** in **30 countries**. Some countries have experienced a high prevalence of outbreaks in mink farms, and variant strains have now been identified in mustelids. As infection with SARS-CoV-2 is an emerging disease, the OIE strongly encourages Members to report through WAHIS the occurrence of any cases in animals that comply with the case definition provided in the OIE guidelines³.

Relevant changes in disease situation during the period:

- SARS-CoV-2 was reported through **2** Follow-up report by **Japan** in **dogs**
- SARS-CoV-2 was reported through **1** Immediate notification by **Myanmar** in **dogs**
- SARS-CoV-2 was reported through **2** Immediate notification by **Spain** in **minks**
- SARS-CoV-2 was reported through **2** Follow-up report by **United States of America** in **binturongs, cats, gorillas, coatimundi, lions, tigers, snow leopards** and **fishing cats**.

Relevant epidemiological comments from countries:

- **Japan (dogs affected):** "On 1st September, the 2 dogs were entrusted to the private company by its owners who were to be hospitalized due to covid-19. Nasal and throat swabs were taken from the dogs at the quarantine facility owned by the private company. Samples from 1 dog tested positive for sars-cov2 by the tests conducted by the national laboratory. The dogs were returned to the owners after negative results have been confirmed. The dogs were placed under quarantine until negative results were confirmed".
- **Myanmar (dogs affected):** "Possible close contact with COVID-19 suspected human".

³ https://www.oie.int/fileadmin/Home/MM/A_Sampling_Testing_and_Reporting_of_SARS-CoV-2_in_animals_3_July_2020.pdf

- **Spain (mink farm affected):** *“Outbreak detected by the active surveillance planned in the Programme for the prevention, surveillance, and control of SARS-CoV-2 in American mink farms, developed by the Ministry of Agriculture, Fisheries and Food in collaboration with the Ministry of Health (CCAES)”.*
- **United States of America (binturongs, cats, gorillas, coatimundi, lions, tigers, snow leopards and fishing cats affected):** *“Update 20 October 2021 Illinois (IL): A Binturong, Fishing cat and Coatimundi at a zoo were confirmed positive for SARS-CoV-2 at the National Veterinary Services Laboratories (NVSL) based upon molecular testing (PCR and sequencing). The Binturong and Coatimundi did not show clinical signs. The Fishing cat was lethargic and had nonspecific gastrointestinal signs. A second Binturong from the zoo tested negative at NVSL. The buildings where affected animals are housed have been closed to public. This report represents three new species with detection of a positive SARS-CoV-2 for the U.S., but not a new state. Additional animals at the zoo confirmed positive for SARS-CoV-2 include a lion, tiger, and two snow leopards. For more details about SARS-CoV-2 testing of animals in the United States, see: <https://www.aphis.usda.gov/aphis/dashboards/tableau/sars-dashboard>.”*

Other relevant information during the period (OIE documents, relevant news, upcoming webinar or conferences)

- OIE Ad hoc Group on COVID-19 at the Animal-Human Interface - https://old.oie.int/fileadmin/Home/MM/14th_call_AHG_COVID-19.pdf
- Vaccination in zoo animals (USA) - <https://rg.ru/2021/10/20/v-zooparke-cincinnati-privivki-ot-covid-19-sdelali-80-zhivotnym.html>
- Vaccination in zoo animals (Estonia) - [Tallinn Zoo chimps awaiting second coronavirus dose | News | ERR](#)
- Research survey in pets - [Study of SARS-CoV-2 antibody seroprevalence among domestic cats \(news-medical.net\)](#)