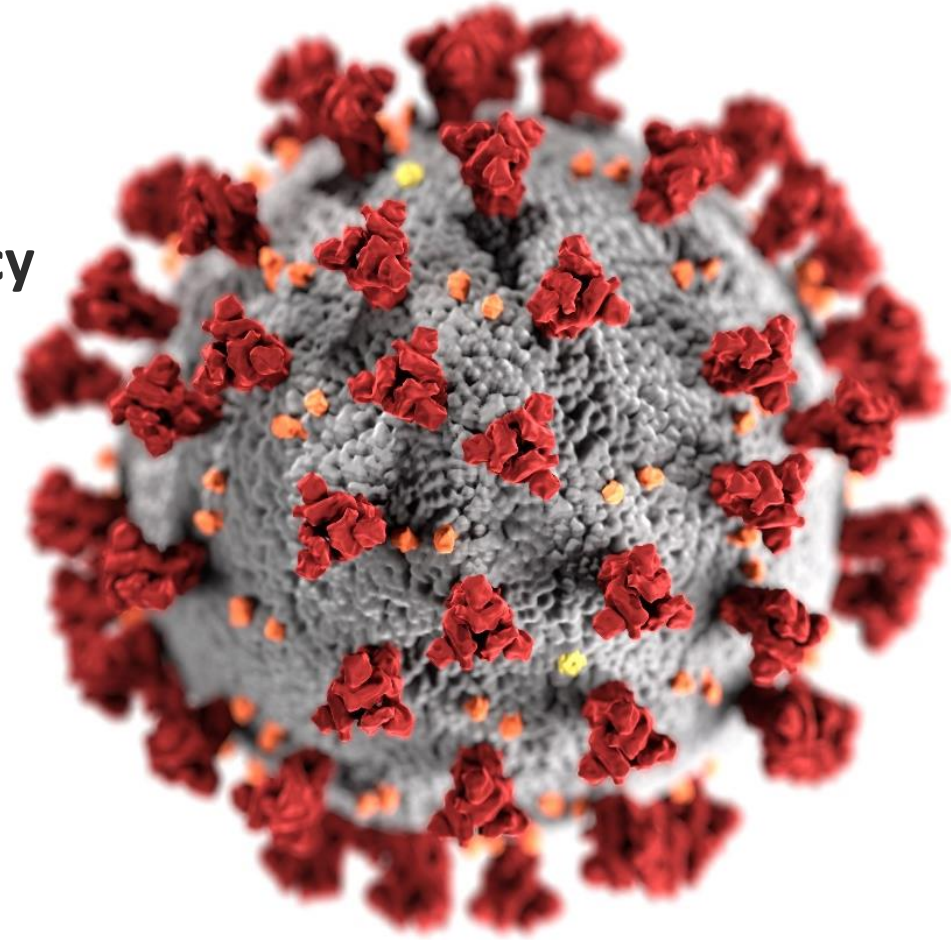
One Health Partners COVID-19 Webinar

Coordinated by the CDC One Health Office, in partnership with the One Health Federal Interagency COVID-19 Coordination (OH-FICC) Group



OneHealth@cdc.gov

December 7, 2021

cdc.gov/coronavirus

One Health Partners COVID-19 Webinar

Purpose:

- Share news, key updates, guidance, and resources on One Health aspects of COVID-19
- Summarize animal cases of SARS-CoV-2 in US & globally
- Provide updates on ongoing coordination around One Health aspects of COVID-19 in US

One Health and COVID-19 in the News

COVID Widespread Among Iowa Deer

Rare Snow Leopard with COVID-19 Symptoms Dies at South Dakota Zoo: 'A Deep Wound'

Baya, a 2 ½-year-old snow leopard, was "sweet and playful," the Great Plains Zoo said

By Janine Puhak | October 12, 2021 03:24 PM

FB Tweet More

White-tailed deer found to be huge reservoir of coronavirus infection

November 8, 2021 8.13am EST

Lung Disease & Respiratory Health > Coronavirus > News >

Report Shows Arizona Man Infected His Dog, Cat With COVID-19

Press release

Covid-19 confirmed in pet dog in the UK

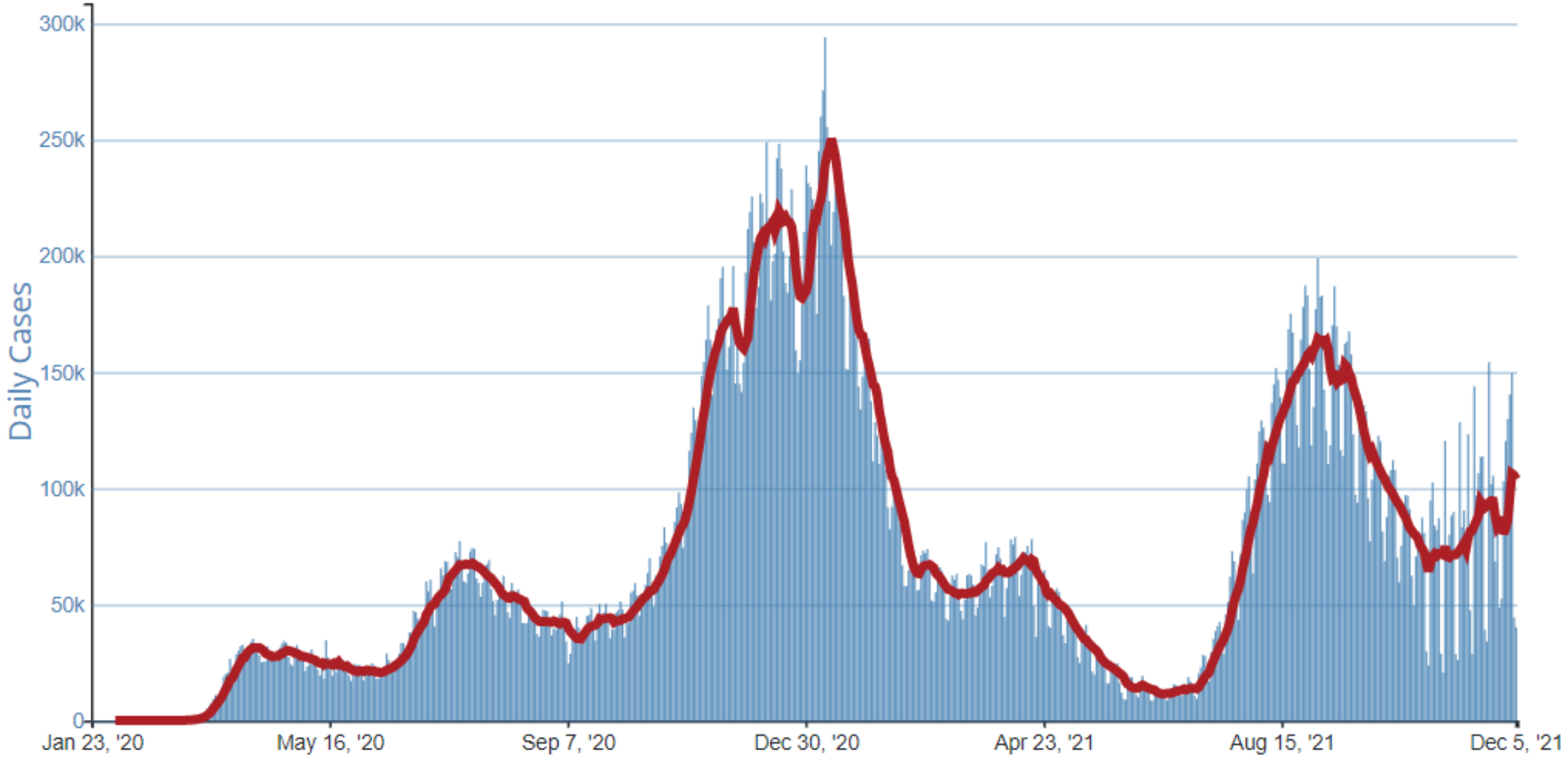
Hyenas at Denver zoo catch Covid in world first

Pair aged 22 and 23 expected to make full recovery, as 11 lions and two tigers at the zoo also test positive

Kibo, one of two hyenas that has tested positive for Covid at Denver zoo. Photograph: unknown/AP

Daily Trends: U.S. COVID-19 Cases Reported to CDC

as of December 5, 2021



CDC COVID Data Tracker

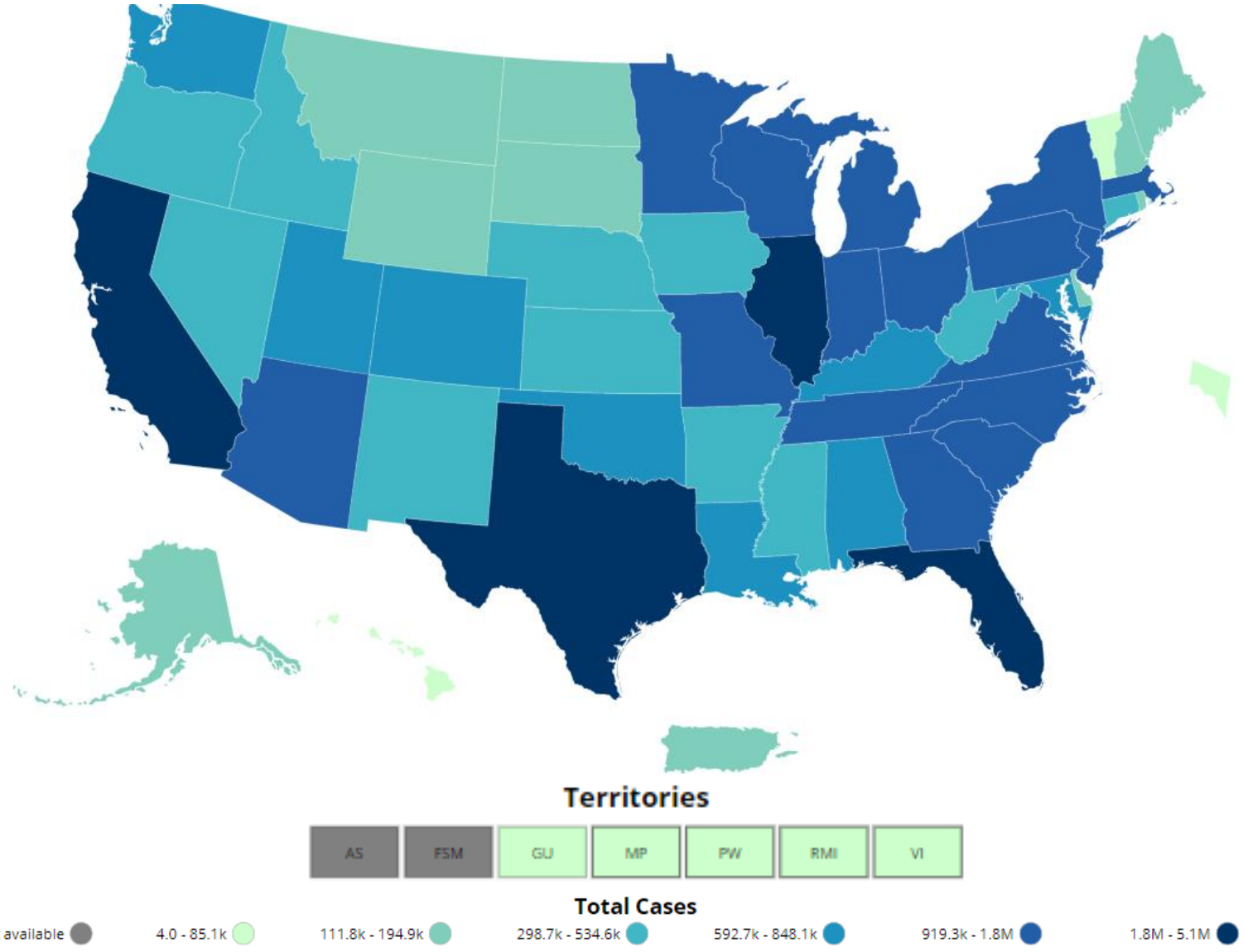
Total US COVID-19 Human Cases by State/Territory

as of December 6, 2021

TOTAL CASES
48,918,251
+149,222 New Cases

CASES IN THE LAST 7 DAYS
742,928

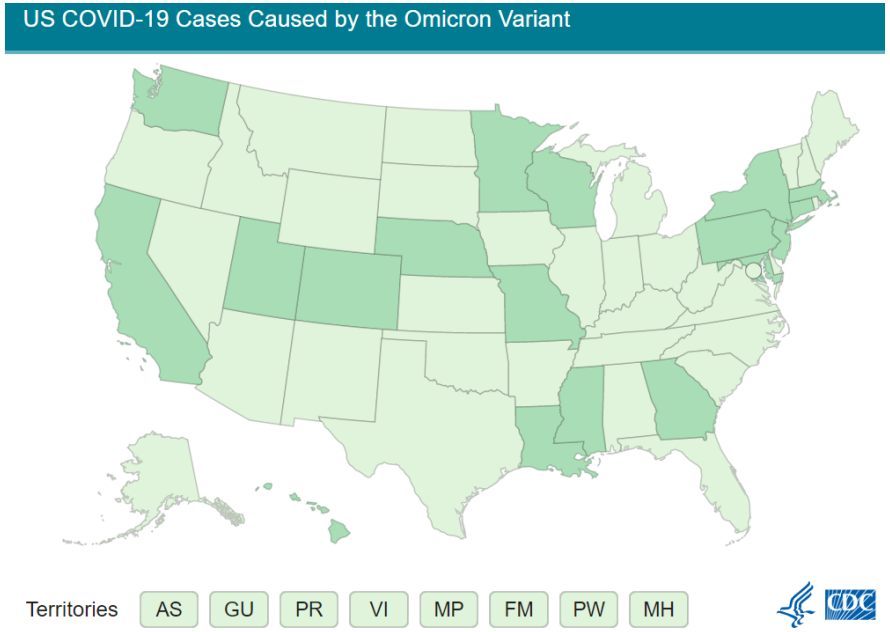
TOTAL DEATHS
784,893



CDC COVID Data Tracker

Omicron Variant of SARS-CoV-2

- A new variant of SARS-CoV-2, B.1.1.529, was reported to the World Health Organization (WHO). Classified as a Variant of Concern (VOC) by the WHO and US
- CDC is working with state and local public health officials to monitor the spread of Omicron
- We don't yet know how easily it spreads, the severity of illness it causes, or how well available vaccines and medications work against it
- Despite the increased attention of Omicron, Delta continues to be the main variant circulating in the United States



Data as of December 7, 2021

Omicron Variant: What You Need to Know | CDC| CDC COVID Data Tracker

Animal Species Experimentally Infected with SARS-CoV-2

- Cats*
- Dogs
- Ferrets*
- Mink*
- Hamsters*†
- Deer mice*
- Non-human primates‡
- Rabbits
- Tree shrews
- Raccoon dogs*
- Cattle
- Egyptian fruit bats*
- White-tailed deer*
- Striped skunks
- Raccoons
- Bushy-tailed woodrats
- Bank voles

* Transmission to other animals of the same species reported

†Hamster species include Chinese hamsters and golden Syrian hamsters

‡Non-human primate species include African green monkeys, baboons, common marmosets, cynomolgus macaques, pigtail macaques, rhesus macaques, and savanna monkeys

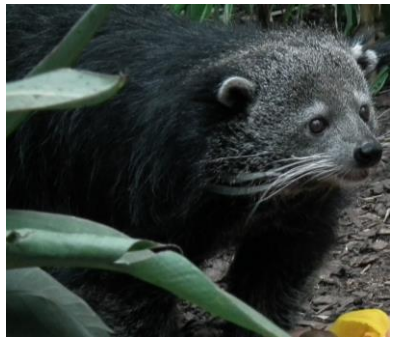
Data as of December 6, 2021: References included in CDC's One Health Scientific Publication Tracker- One Health and Animal Studies

Animal Species Naturally Infected with SARS-CoV-2 Globally

- Cats
- Dogs
- Farmed mink
- Wild caught mink
- Pet ferrets
- Tigers
- Lions
- Puma
- Snow leopards
- Gorillas
- Otters
- White-tailed deer
- Binturong
- Fishing cat
- Coatimundi
- Hyenas
- Lynx
- Hippopotamus











Data as of December 6, 2021: OIE: World Organization for Animal Health; USDA APHIS: Cases of SARS-CoV-2 in Animals in the United States

New Species Positive for SARS-CoV-2: Binturong, Fishing Cat, and Coatimundi

Confirmation of COVID-19 in a Coatimundi at an Illinois Zoo

Published: Oct 14, 2021

Print

Contact:
Marquita Bady
marquita.bady@usda.gov

Washington, D.C., October 14, 2021 -- The United States Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) today announced confirmation of SARS-CoV-2 (the virus that causes COVID-19) in a coatimundi at a zoo in Illinois. This is the first coatimundi confirmed with the SARS-CoV-2 virus in the United States.

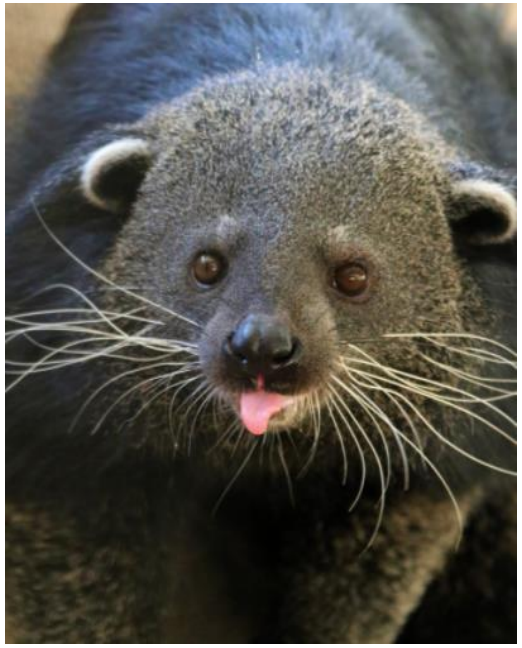
Samples from a variety of species at the zoo, including the coatimundi, were collected and tested after a tiger at the facility showed signs of the virus.

Confirmation of COVID-19 in a Binturong and a Fishing Cat at an Illinois Zoo

Published: Oct 6, 2021

Print

Washington, D.C., October 6, 2021 -- The United States Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) today announced confirmation of SARS-CoV-2 (the virus that causes COVID-19) in a binturong and a fishing cat at a zoo in Illinois. These are the first of either species confirmed with the SARS-CoV-2 virus in the United States.



USDA APHIS | Confirmation of COVID-19 in a Coatimundi at an Illinois Zoo; Confirmation of COVID-19 in a Binturong and a Fishing Cat at an Illinois Zoo

New Species Positive for SARS-CoV-2: Hyenas at Colorado Zoo

Confirmation of COVID-19 in Hyenas at a Colorado Zoo

Published: Nov 5, 2021

Print

Contact: APHISpress@usda.gov

Washington, D.C., November 5, 2021 -- The United States Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) today announced confirmation of SARS-CoV-2 (the virus that causes COVID-19) in two spotted hyenas at a zoo in Colorado. These are the first hyenas confirmed with the SARS-CoV-2 virus worldwide.

Samples from a variety of species at the zoo, including the hyenas, were collected and tested after lions at the facility showed signs of illness. In addition to the two hyenas, eleven lions and two tigers at the zoo also tested positive for the virus.

Samples from the hyenas tested presumptive positive at the Colorado State University Veterinary Diagnostic Laboratory and the cases were confirmed at NVSL. NVSL serves as an international reference laboratory and provides expertise and guidance on diagnostic techniques, as well as confirmatory testing for foreign and emerging animal diseases. Such testing is required for certain animal diseases in the United States in order to comply with national and international reporting procedures. The World Organisation for Animal Health (OIE) considers SARS-CoV-2 an emerging disease, and therefore USDA must report confirmed U.S. animal infections to the OIE.

USDA APHIS | Confirmation of COVID-19 in Hyenas at a Colorado Zoo

New Species Positive for SARS-CoV-2: Lynx, Hippos

- Lynx at a zoo in Croatia
  - Respiratory signs observed
- Two hippos at the Brussels Zoo in Belgium
  - Nasal discharge observed
  - *Not yet reported to OIE*

WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

OIE - WAHIS

Follow-up report 1

03/12/2021

The event is ongoing. Weekly follow-up reports will be submitted.

Sender	Country/territory	Report ID
Delegate of Croatia	Croatia	FUR_152691
Event status	Self-declaration	
On-going	No	

General information

Country or zone - Zone	Disease - SARS-CoV-2 in animals (Inf. with)	Started on - 23/11/2021
Animal type - Terrestrial	Confirmed on - 24/11/2021	Causal agent - SARS-CoV-2
Disease category - Emerging	Reported on - 01/12/2021	Reason - Emerging disease

Species	Type	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered	Vaccinated	Outbreak morbidity	Outbreak mortality
Lynx (Felis lynx):Felidae-Carnivora	New	-	1	0	0	0	0	-	-
Lynx (Felis lynx):Felidae-Carnivora	Total	-	1	0	0	0	0	-	-

OIE-WAHIS; Two hippos in Belgian zoo test positive for COVID-19 | Reuters

First Ferret with SARS-CoV-2 Reported in the US

- Clinical signs: coughing and sneezing
- Contact with a human COVID-19 case

Confirmation of COVID-19 in Ferret in Florida

Published: Sep 24, 2021

Print

Contact:
APHISpress@usda.gov

Washington, D.C., September 24, 2021 -- The United States Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) today announced confirmation of SARS-CoV-2 (the virus that causes COVID-19) in a ferret in Florida. This is the first ferret confirmed with the SARS-CoV-2 virus in the United States. A ferret was previously reported with the virus in Slovenia.

Samples from the ferret were taken after it showed clinical signs including sneezing and coughing. It is suspected that the ferret acquired the infection from a person with COVID-19.

USDA APHIS | Confirmation of COVID-19 in Ferret in Florida

Animals Positive for SARS-CoV-2: Globally by Species as of

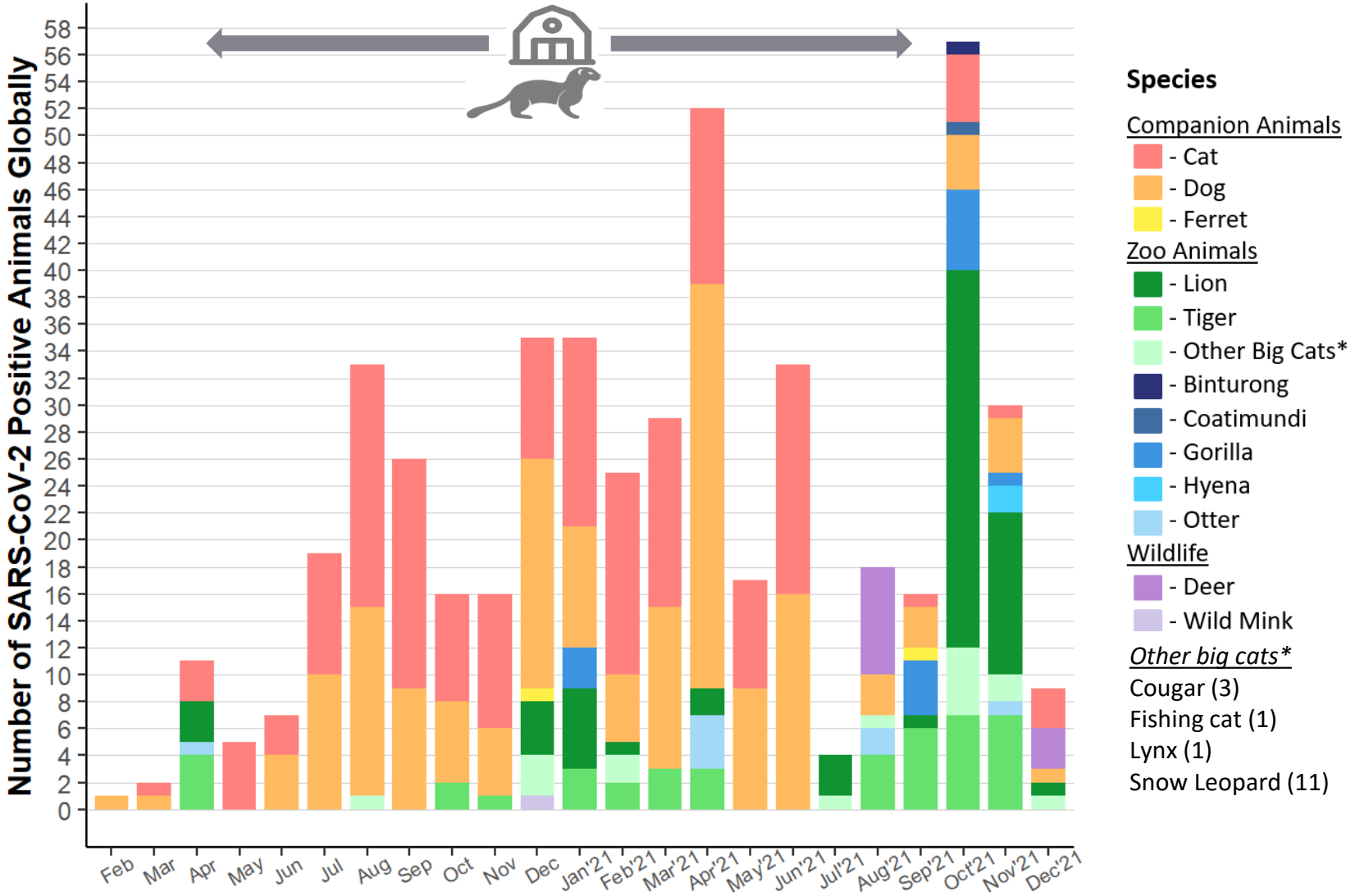
December 6, 2021

497 animals from 30 countries*

- **Cats: 175**
- **Dogs: 163**
- **Pet ferrets: 2**
- **Tigers: 61**
- **Lions: 42**
- **Snow leopards: 11**
- **Cougar: 3**
- **Lynx: 1**
- **Fishing Cat: 1**
- **Binturong: 1**
- **Coatimundi: 1**
- **Gorillas: 14**
- **Hyenas: 2**
- **Asian small-clawed otters: 8**
- **White-Tailed Deer: 11**
- **Wild caught mink: 1**

445 mink farms in 12 countries

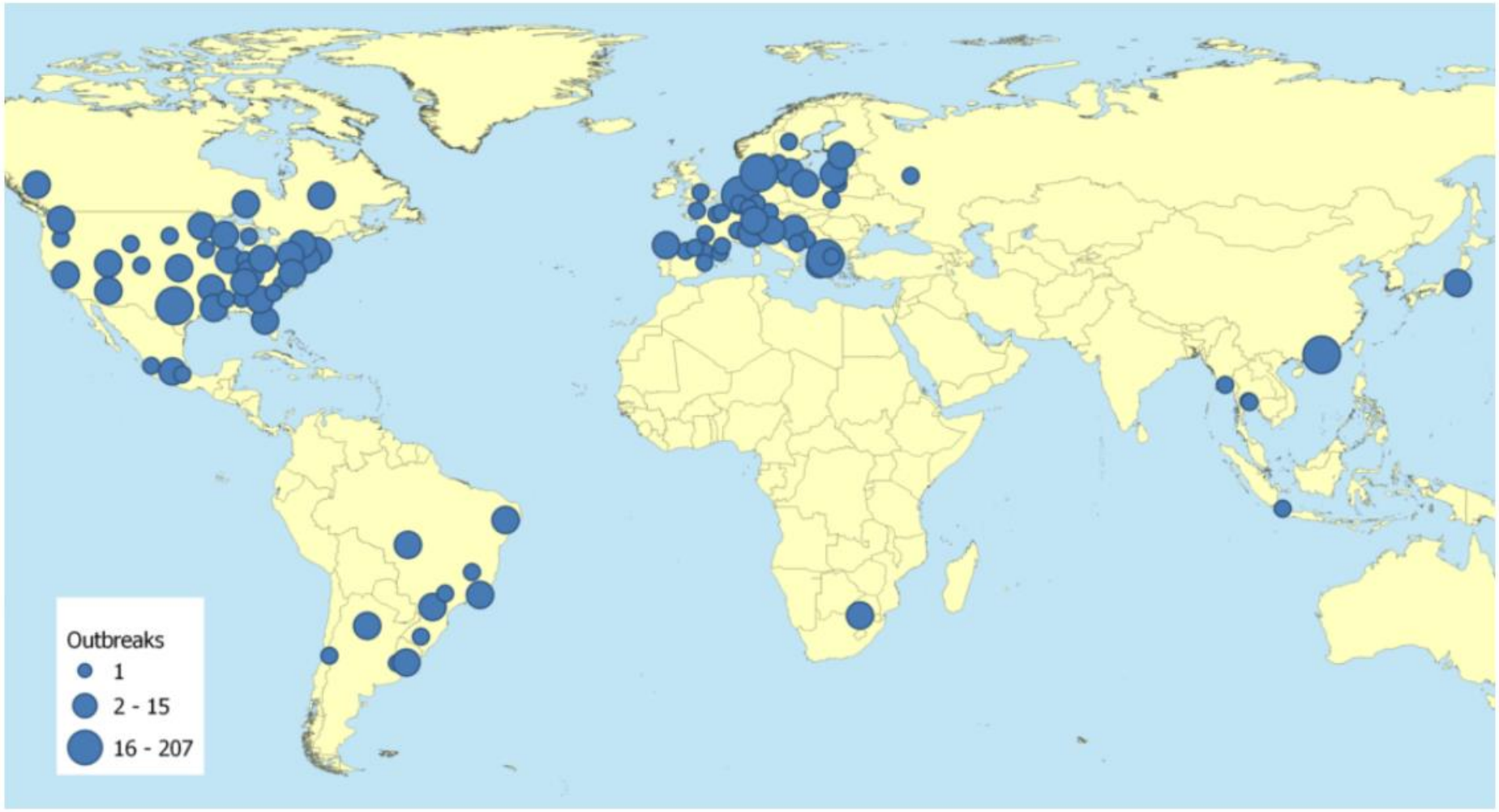
**Does not include individual numbers of positive farmed mink*



OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

SARS-CoV-2 Outbreaks in Animals Reported to the World Organisation for Animal Health (OIE)

as of November 16, 2021



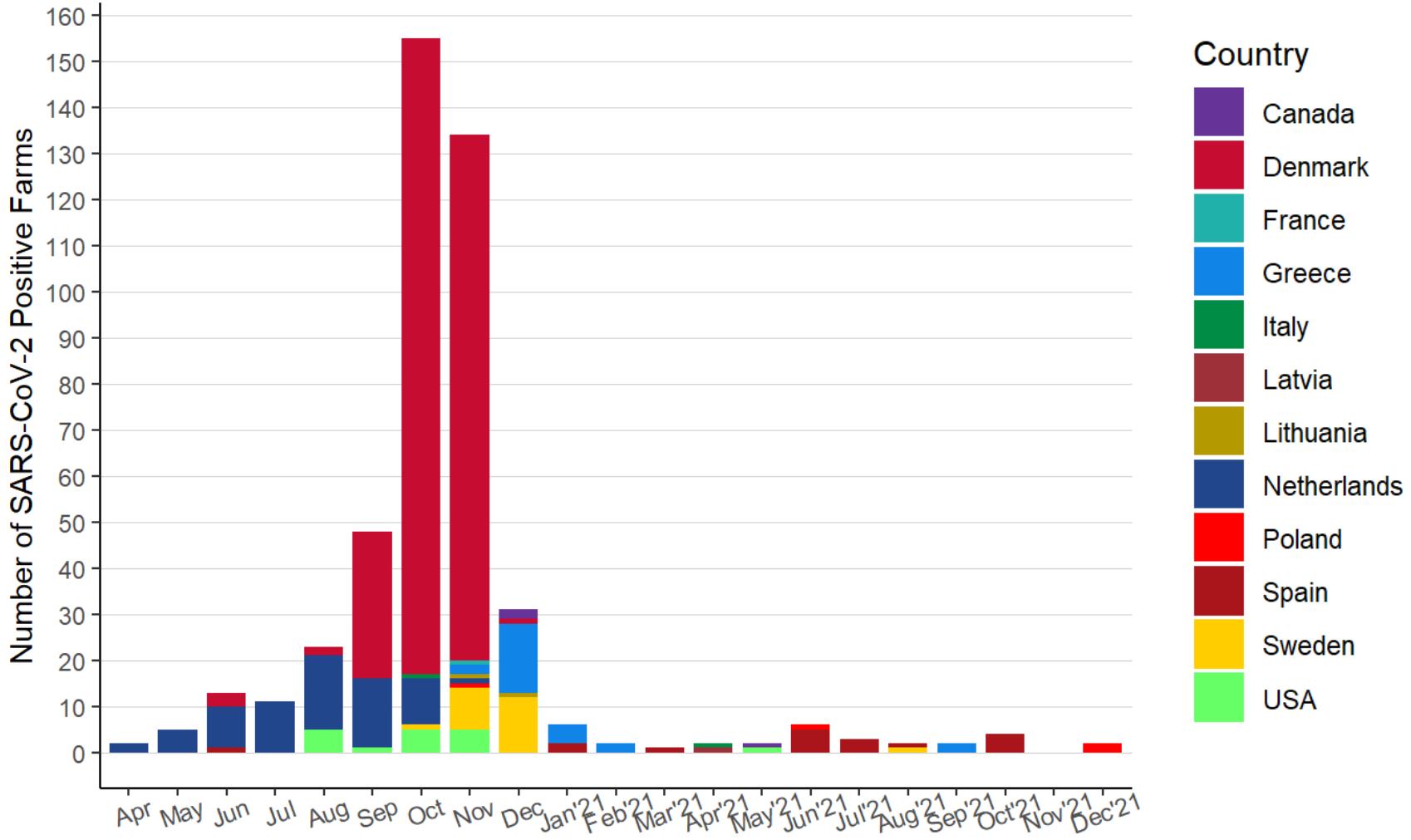
OIE-World Animal Health Information System (WAHIS)

Mink Farms Confirmed with SARS-CoV-2 Globally

as of December 6, 2021

445 mink farms in 12 countries

- Denmark: 290
- Netherlands: 69
- Greece: 25
- Spain: 17
- United States: 17
- Sweden: 14
- Canada: 3
- Italy: 2
- Lithuania: 2
- Poland: 4
- France: 1
- Latvia: 1



OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

Confirmed Cases of SARS-CoV-2 in Animals in US

Companion and Captive Animals

315

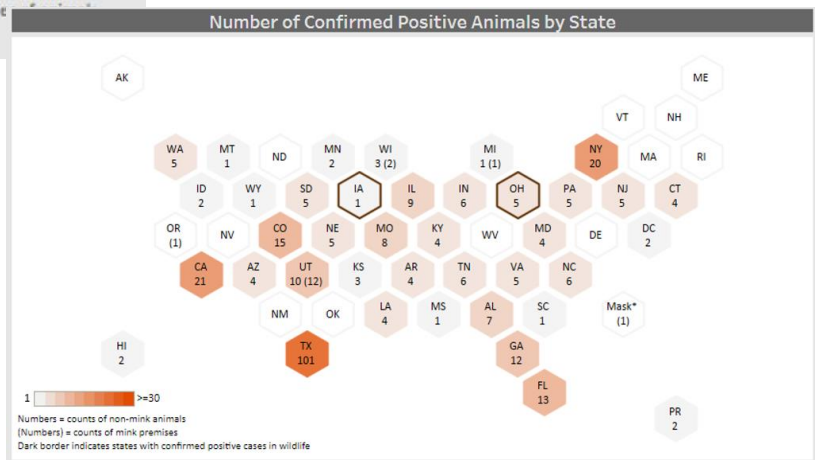
Mink Farms

17

Method of Initial Diagnosis

Companion and Captive Animals	PCR	Ab	Grand Total
Cat	53	51	104
Dog	31	59	90
Tiger	39	2	41
Lion	40		40
Gorilla	14		14
Snow leopard	11		11
Otter	8		8
Spotted Hyena	2		2
Binturong	1		1
Coati	1		1
Cougar	1		1
Ferret	1		1
Fishing Cat	1		1
Premises*			
Mink	16	1	17
Wildlife Detections**			
White Tailed Deer			

*Location of some farms is withheld to avoid disclosing data about individual operations.
**Wildlife data only indicate detection in that species and not the numbe
confirmed.



Last updated November 30, 2021

List of SARS-CoV-2 Cases

Most recently identified case locations are listed first. Unless otherwise specified, **the animal(s) had exposure to a probable or confirmed human with COVID-19**.

***Wildlife:** A location type of "Wildlife" denotes that one or more confirmed positive cases have been detected in that species and state. Only the first detection of that species in that state is recorded in the case list; subsequent detections in that species in that state will not be listed.

****PCR:** real-time reverse transcription polymerase chain reaction; **Ab**: virus neutralizing antibody

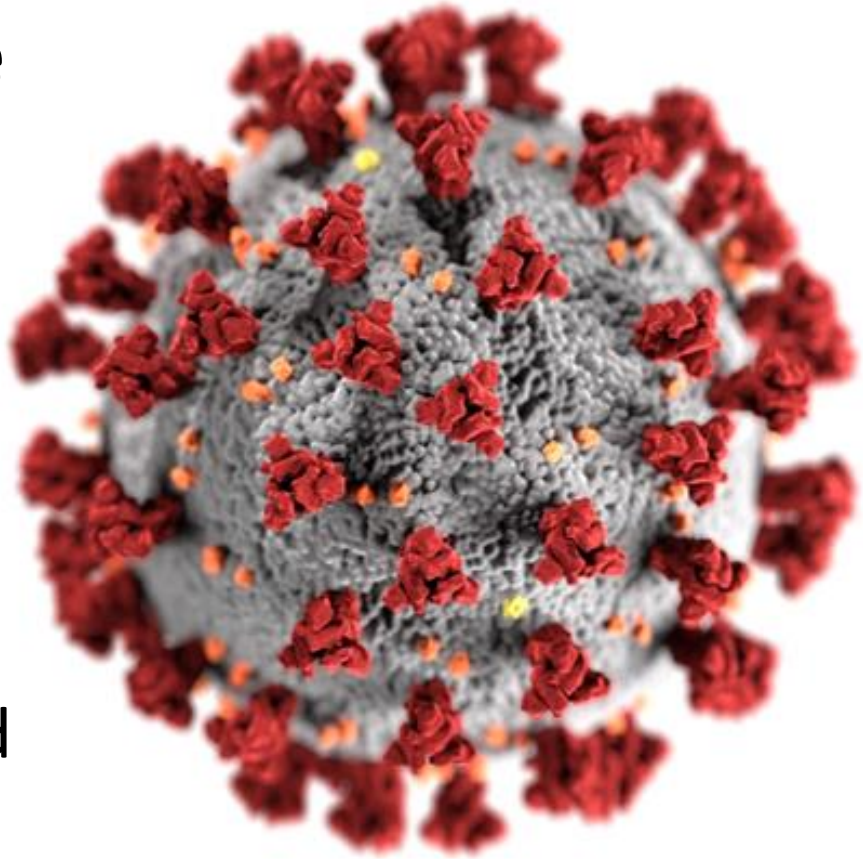
Footnote 1: Samples collected as part of planned and targeted active surveillance of a specific animal, with known or suspected exposures to a person with COVID-19 or other exposure to SARS-CoV-2, to better understand risk factors for SARS-CoV-2 transmission.

Footnote 2: The COVID-19 status of human(s) associated with the case is unknown and/or under investigation.

Location Id	Confirmed Date	Location Type - Animal*	State	Method of Initial Diagnosis**	Status	Footnote(s)
199	11/24/2021	Conservatory - Lion a	North Carolina	PCR	Confirmed	--
		Conservatory - Lion b	North Carolina	PCR	Confirmed	--
		Conservatory - Lion c	North Carolina	PCR	Confirmed	--
		Conservatory - Lion d	North Carolina	PCR	Confirmed	--
198	11/23/2021	Household - Cat	California	PCR	Confirmed	--
197	11/16/2021	Conservatory - Tiger a	Nebraska	PCR	Confirmed	--

United States Department of Agriculture

Animal and Plant Health Inspection Service



Dr. Tracey Dutcher: ARP Funding Strategic Framework Progress Update

Dr. John Korslund: Mink STAMP Plans

Dennis Kohler: White Tail Deer Surveillance Plans

Dennis Kohler: Wastewater-associated wildlife and rodent populations

Dr. Jessica Siegal-Willott: ZABRASS

APHIS' Strategic Framework for Advancing SARS-CoV-2 and Emerging Disease Surveillance

Funded through the American Rescue Plan (ARP) of 2021

Strategic Framework Focus & Timeline

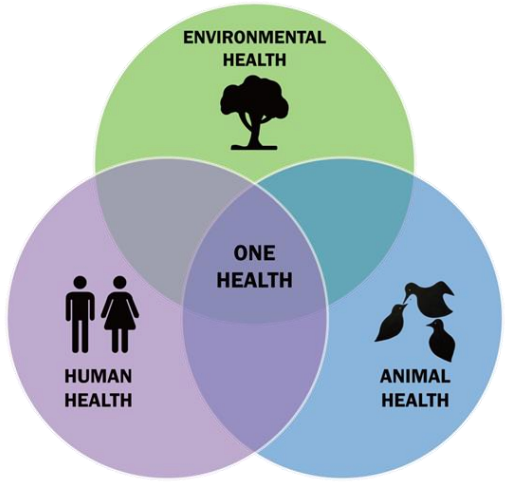
Year 1: Address immediate threat of SARS-CoV-2 by improving our understanding of susceptibility, transmission and disease processes to plan effective prevention, surveillance and response activities; by effective communication and outreach with partners and stakeholders.

March 2021:	APHIS receives $300 million in ARP funding
March – July 2021:	Planning
August 2021:	Strategic Framework published for comment, first ARP project funded
October 2021:	Strategic Framework public comment period ended Oct. 8
November 2021:	3 additional projects funded

Overview of Public Comments

57 Comments Received: 46 (81%) fully supportive, 7 indeterminant, and 2 against

- 34 were substantive – specific suggestions for how to meet Framework goals
- *Themes included*: data sharing/integration, NAHLN support, veterinary training, communication needs, collaboration opportunities (academia to wildlife rehabilitators), emphasis on need for companion animal surveillance



Mink **STAMP**

(**S**ARS-CoV-2 **T**ransmission **A**voidance & **M**onitoring **P**rogram)

Operating Principles:

- Focus on prevention
- One Health approach - ***people are the #1 biosecurity risk to mink!***
- SAHO/industry-led
- Voluntary -> producer trust critical
- Education-biosecurity-auditing-active surveillance
- Outbreaks-business continuity principles; recovery-release-monitor
- Monitor variants during outbreaks

Mink STAMP: What can we learn?

Actively monitor for SARS-CoV-2 on mink farms

- Assess prevention measures
- Effect(s) of human and mink vaccines

Genetically monitor virus when disease occurs

- Monitor for variants / specific variants of concern in public health
- Monitor effect of vaccines or prior infection on reinfection

Understand herd ecology of virus to improve infection management:

- How long does the virus remain infectious in the herd?
- Does vaccine speed herd clearance?

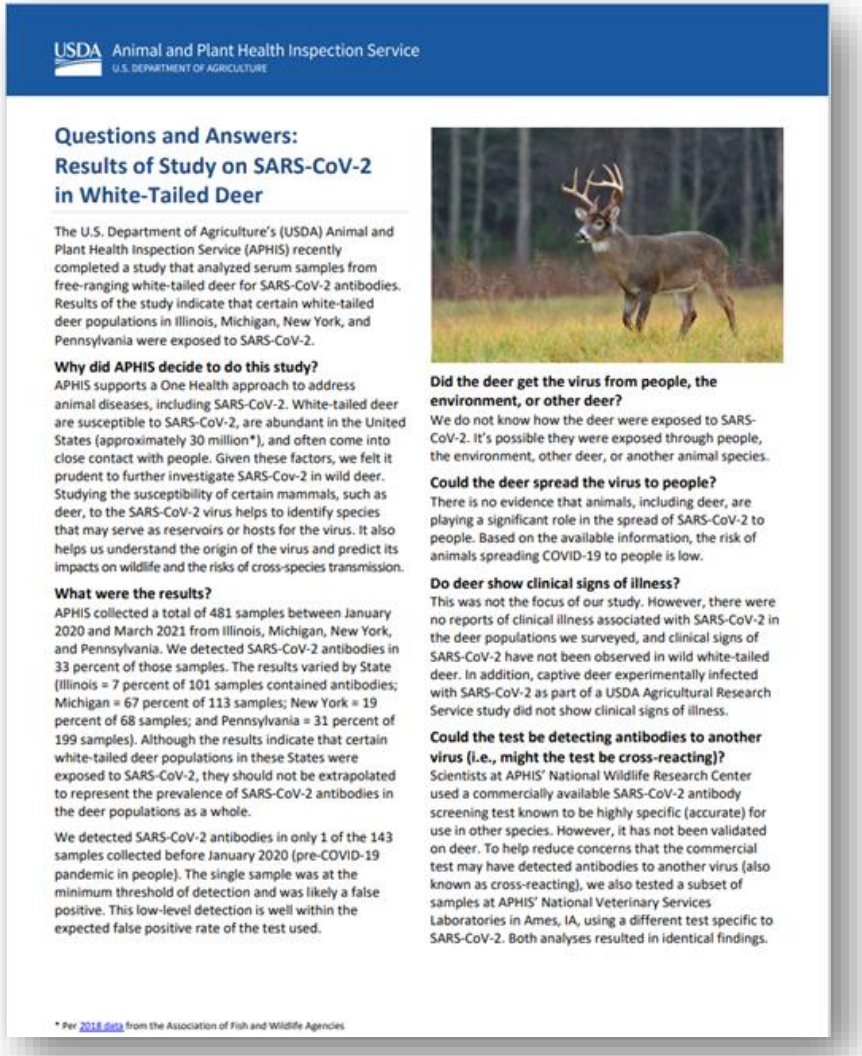
SARS-CoV-2 Surveillance in White-Tailed Deer (WTD)

Recent studies of SARS-CoV-2 in WTD have indicated the occurrence of both deer-to-deer and human-to-deer transmission

We are implementing an enhanced, multi-phased surveillance plan of SARS-CoV-2 in WTD in participating States across the US

Phase 1 goals:

- Is SARS-CoV-2 **persistent and circulating** in Free ranging WTD populations?
- Is there evidence of **significant State and regional differences** in circulation and prevalence of SARS-CoV-2 among sampled populations?



USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Questions and Answers: Results of Study on SARS-CoV-2 in White-Tailed Deer

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) recently completed a study that analyzed serum samples from free-ranging white-tailed deer for SARS-CoV-2 antibodies. Results of the study indicate that certain white-tailed deer populations in Illinois, Michigan, New York, and Pennsylvania were exposed to SARS-CoV-2.

Why did APHIS decide to do this study?
APHIS supports a One Health approach to address animal diseases, including SARS-CoV-2. White-tailed deer are susceptible to SARS-CoV-2, are abundant in the United States (approximately 30 million*), and often come into close contact with people. Given these factors, we felt it prudent to further investigate SARS-Cov-2 in wild deer. Studying the susceptibility of certain mammals, such as deer, to the SARS-CoV-2 virus helps to identify species that may serve as reservoirs or hosts for the virus. It also helps us understand the origin of the virus and predict its impacts on wildlife and the risks of cross-species transmission.

What were the results?
APHIS collected a total of 481 samples between January 2020 and March 2021 from Illinois, Michigan, New York, and Pennsylvania. We detected SARS-CoV-2 antibodies in 33 percent of those samples. The results varied by State (Illinois = 7 percent of 101 samples contained antibodies; Michigan = 67 percent of 113 samples; New York = 19 percent of 68 samples; and Pennsylvania = 31 percent of 199 samples). Although the results indicate that certain white-tailed deer populations in these States were exposed to SARS-CoV-2, they should not be extrapolated to represent the prevalence of SARS-CoV-2 antibodies in the deer populations as a whole.

We detected SARS-CoV-2 antibodies in only 1 of the 143 samples collected before January 2020 (pre-COVID-19 pandemic in people). The single sample was at the minimum threshold of detection and was likely a false positive. This low-level detection is well within the expected false positive rate of the test used.

Did the deer get the virus from people, the environment, or other deer?
We do not know how the deer were exposed to SARS-CoV-2. It's possible they were exposed through people, the environment, other deer, or another animal species.

Could the deer spread the virus to people?
There is no evidence that animals, including deer, are playing a significant role in the spread of SARS-CoV-2 to people. Based on the available information, the risk of animals spreading COVID-19 to people is low.

Do deer show clinical signs of illness?
This was not the focus of our study. However, there were no reports of clinical illness associated with SARS-CoV-2 in the deer populations we surveyed, and clinical signs of SARS-CoV-2 have not been observed in wild white-tailed deer. In addition, captive deer experimentally infected with SARS-CoV-2 as part of a USDA Agricultural Research Service study did not show clinical signs of illness.

Could the test be detecting antibodies to another virus (i.e., might the test be cross-reacting)?
Scientists at APHIS' National Wildlife Research Center used a commercially available SARS-CoV-2 antibody screening test known to be highly specific (accurate) for use in other species. However, it has not been validated on deer. To help reduce concerns that the commercial test may have detected antibodies to another virus (also known as cross-reacting), we also tested a subset of samples at APHIS' National Veterinary Services Laboratories in Ames, IA, using a different test specific to SARS-CoV-2. Both analyses resulted in identical findings.

* Per 2018 data from the Association of Fish and Wildlife Agencies

Phase 1: 41 States Targeted for SARS-CoV-2 WTD Sampling

Sample Source (Wild Deer):

- ✓**Hunter harvest**
- ✓Wildlife Services collected during wildlife damage management activities

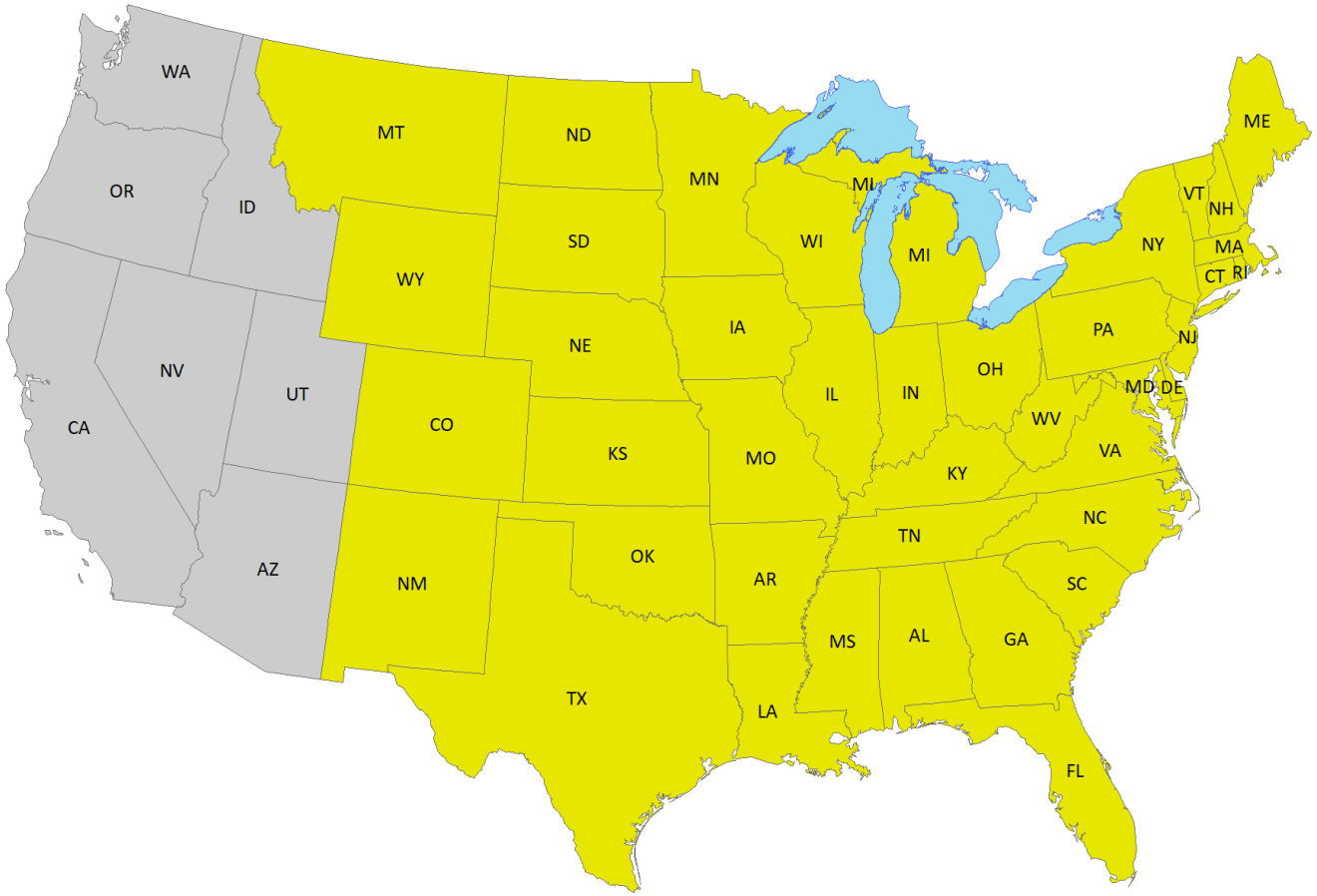
Paired samples

- ✓Nasal swabs
- ✓Blood samples (Nobuto strips)

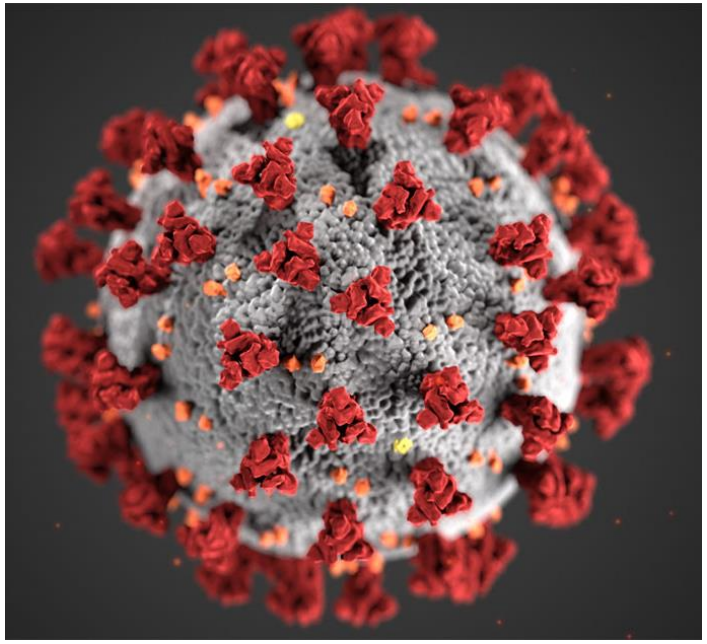
Sample size per state

- ✓500 - 1000 per state
- ✓Nov 2021-Feb 2022 (Phase 1)

Results expected: Spring 2022



Evaluation of Wastewater-associated Wildlife and Rodent Populations as Potential Source of Mutations of SARS-CoV-2



Activity Overview

- Investigate origin of unique SARS-CoV-2 viral sequences in wastewater systems
- Sample and test wildlife for viral antibodies
- Identify viral mutations to better understand spread and transmissibility

Evaluation of Wastewater-associated Wildlife and Rodent Populations as Potential Source of Mutations of SARS-CoV-2

Activity Logistics

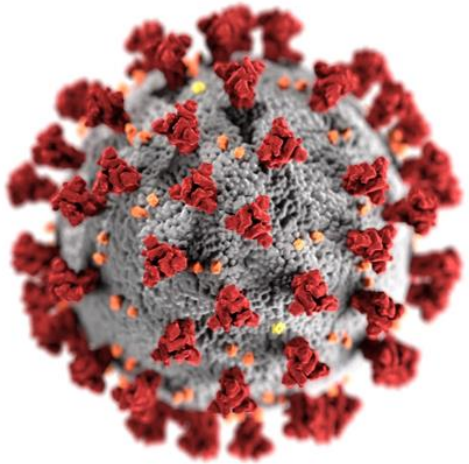
- Sample wastewater systems in NY and MO
- Rodents, raccoons, other wildlife
- Test at UM for SARS-CoV-2 virus antibodies
- Results expected in early 2022

ZABRASS

(**Z**oos and **A**quaria **B**iosecurity **R**isk **A**ssessment with **S**ARS-CoV-2 **S**erology)

Serology

- Pre- pandemic and current pandemic conditions
- ~2000 – 3000 Samples
- 30 – 50 Facilities



Biosecurity

- On-Site Evaluations
- Assess Practices using Standardized Tool
- Improve Protocols
- Peri-domestic wildlife testing

ZABRASS

- Species Exposure
- Biosecurity Best Practices
  - Physical / chemical biosecurity measures
  - Personnel management
- Role of Peri-domestic Wildlife
- Template for Future Infectious Disease Outbreaks




ZABRASS

Communications & Collaborations

- Designated Staff for Communications
- Results Reported to Individual Participating Institutions
- Collaborate with Facilities with Projects Underway
- Collaborate with Public Health

Establishing Partnerships

- States
- Zoos, Aquaria, Wildlife Facilities
- Zoo and Aquarium All Hazards Partnership
- Other Federal Agencies

Expected Results: Late 2022

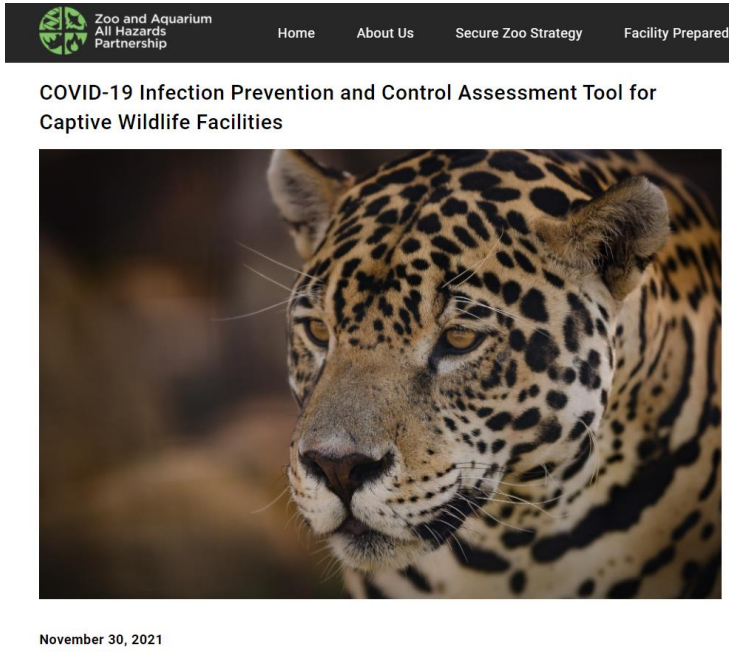
COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities

Dr. Kate Varela, CDC

COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities

Zoos, Sanctuaries, Aquaria, and Wild Animal Rehabilitation Centers

- Developed using a collaborative, One Health approach
  - Association of Zoos and Aquariums
  - Zoo & Wildlife Subgroup of the One Health Federal Interagency COVID-19 Coordination group (OH-FICC)
  - Additional partners
- Modeled on other infection control assessment tools and adapted to captive wildlife settings
- Informed by zoo investigation findings, SARS-CoV-2 and wildlife guidance, and biosecurity principles

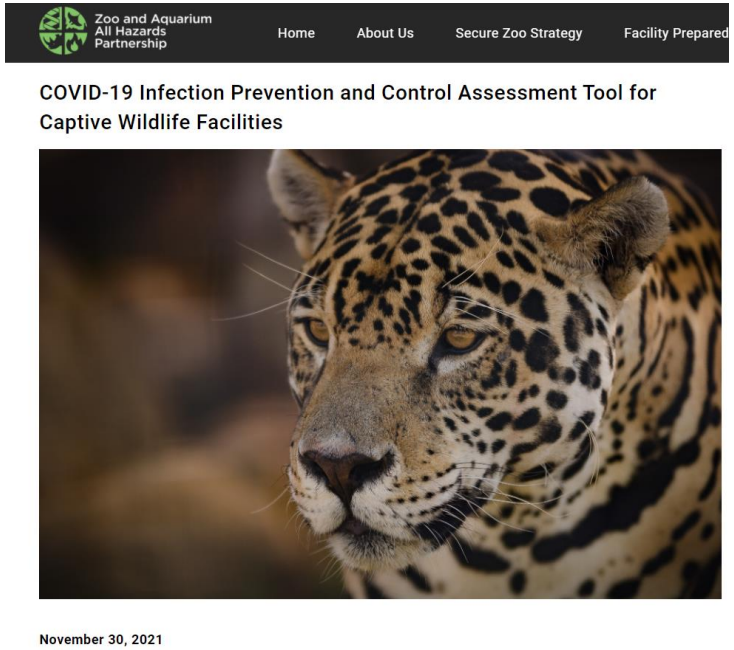


COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities - Zoo and Aquarium All Hazards Partnership (zahp.org)

COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities

Zoos, Sanctuaries, Aquaria, and Wild Animal Rehabilitation Centers

- **Tool Objectives**
  - User friendly
  - Check minimum components of a **biosecurity** plan to ensure baseline level of protection is in place
  - Identify gaps in control measures
  - Guide improvement activities
  - Address identified gaps in biosecurity

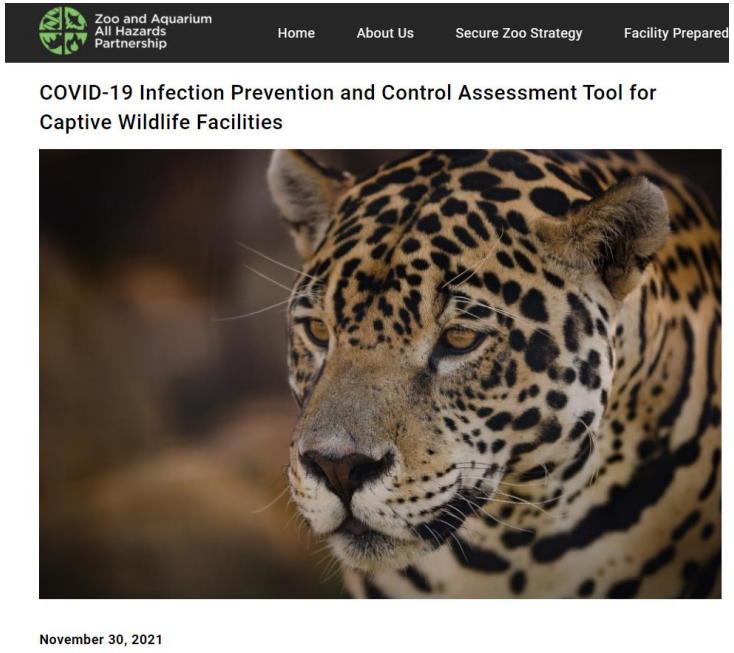


Goal: Help facilities develop layered approach using multiple strategies to prevent SARS-CoV-2 transmission

COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities

Zoos, Sanctuaries, Aquaria, and Wild Animal Rehabilitation Centers

- **Checklist:**
  - Section 1. General Infection Prevention and Control
  - Section 2. Hand Hygiene
  - Section 3. Environmental Cleaning
  - Section 4. SARS-CoV-2 Vaccination & Testing
  - Section 5. Staff and Visitor Education
  - Section 6. Personal Protective Equipment (PPE)
  - Section 7. Other Public Health Control Measures
- **Resources**



Facility Self-Assessment Checklist for Biosecurity Measures

COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities:

Zoos, Sanctuaries, Aquaria, and Wild Animal Rehabilitation Centers

This checklist provides a guide for baseline biosecurity measures and controls that should be in place to prevent transmission of SARS-CoV-2 between animals housed in captive wildlife facilities and people (including employees such as caretakers, maintenance staff and other employees, volunteers, and the public) who may have direct or indirect contact with animals or their environment

This assessment tool is meant to be used by the administrator(s) in charge of infection prevention and control at the facility, occupational health, respiratory protection, human resources, veterinary staff, or facilities and maintenance. It is not meant to be an exhaustive list of considerations for preventing SARS-CoV-2 transmission, but a quick check of the minimum components of a biosecurity plan to ensure a baseline level of protection is in place. A layered approach using multiple strategies, including social distancing, personal protective equipment, hand hygiene, vaccination, and other items described in this list is recommended to reduce the spread of disease between people (whether working or visiting) and animals housed at these facilities.

Instructions:

- While completing this assessment, consider all areas of the facility where susceptible animal species are housed and complete a separate assessment for each if policies and practices differ depending on the housing location.
- The preferred answer to most questions is yes, unless specified otherwise.
- Suggestions are provided to improve the biosecurity area in the case that it is not currently being implemented at the facility.
- A list of resources is available at the end of the checklist.

Facility self-assessment checklist for biosecurity measures in place to prevent COVID-19 transmission between people and animals at zoos, sanctuaries, aquaria, and wild animal rehabilitation centers.

Section 1. General Infection Prevention and Control

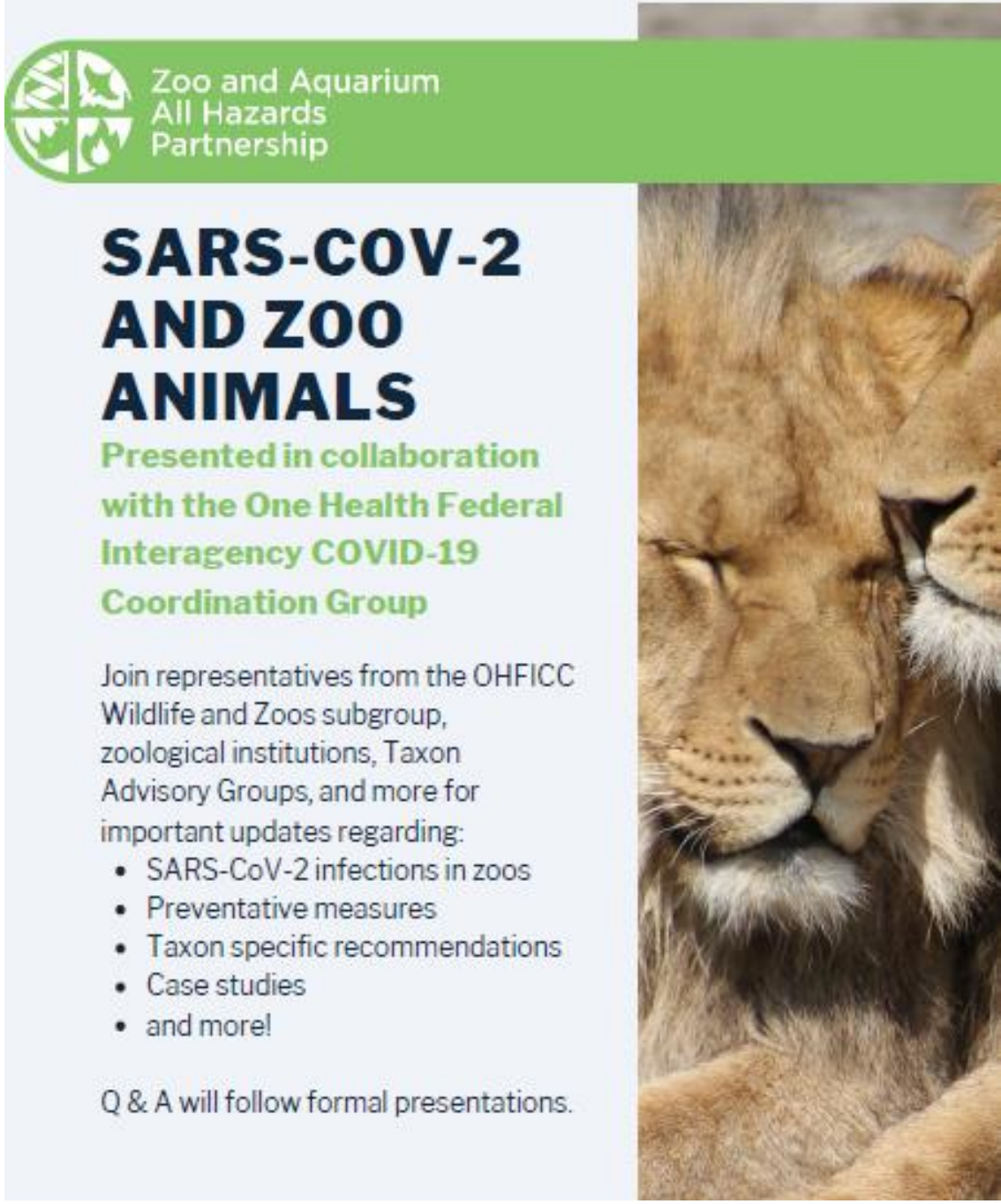
Question	Yes	No	Suggestions to improve this biosecurity area
GENERAL FACILITY MANAGEMENT			
1. Are COVID-19 symptom and temperature screening in place for:			A COVID-19 symptom and temperature screening system is recommended for anyone entering the facility. Anyone experiencing COVID-19 symptoms, is confirmed or suspected of having COVID-19, or exposure to someone else with COVID-19 should **not** enter the facility or interact with or around known or susceptible animal species. An example of a screening program can be found here: https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/Employervisitorscreeningguidance.pdf

What's next?

- **Distribute** Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities

  [COVID-19 Infection Prevention and Control Assessment Tool for Captive Wildlife Facilities - Zoo and Aquarium All Hazards Partnership (zahp.org)]

- **Zoo and Aquarium All Hazards Partnership Webinar,** December 8



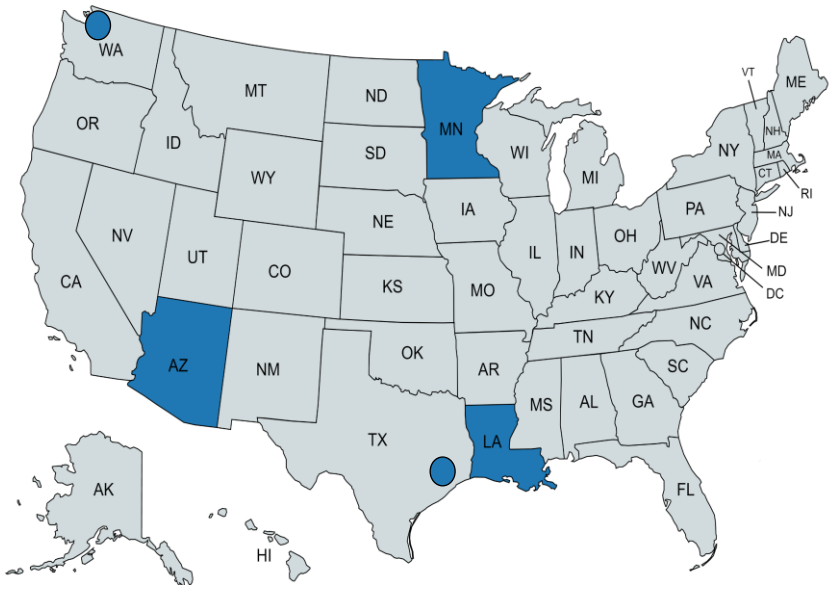
Council of State and Territorial Epidemiologists (CSTE) Pilot Site Surveillance Projects

Dr. Ria Ghai, CDC

CDC and Council of State and Territorial Epidemiologists (CSTE) Pilot Surveillance Projects

OBJECTIVES:

- Establish surveillance & investigation activities for SARS-CoV-2 in animals
- Establish One Health collaboration mechanism to ensure coordinated animal case detection, investigation, guidance development
- Understand animal SARS-CoV-2 transmission role in the United States
- Identify existing mechanisms & legislation related to emerging zoonotic diseases to support sustained surveillance efforts



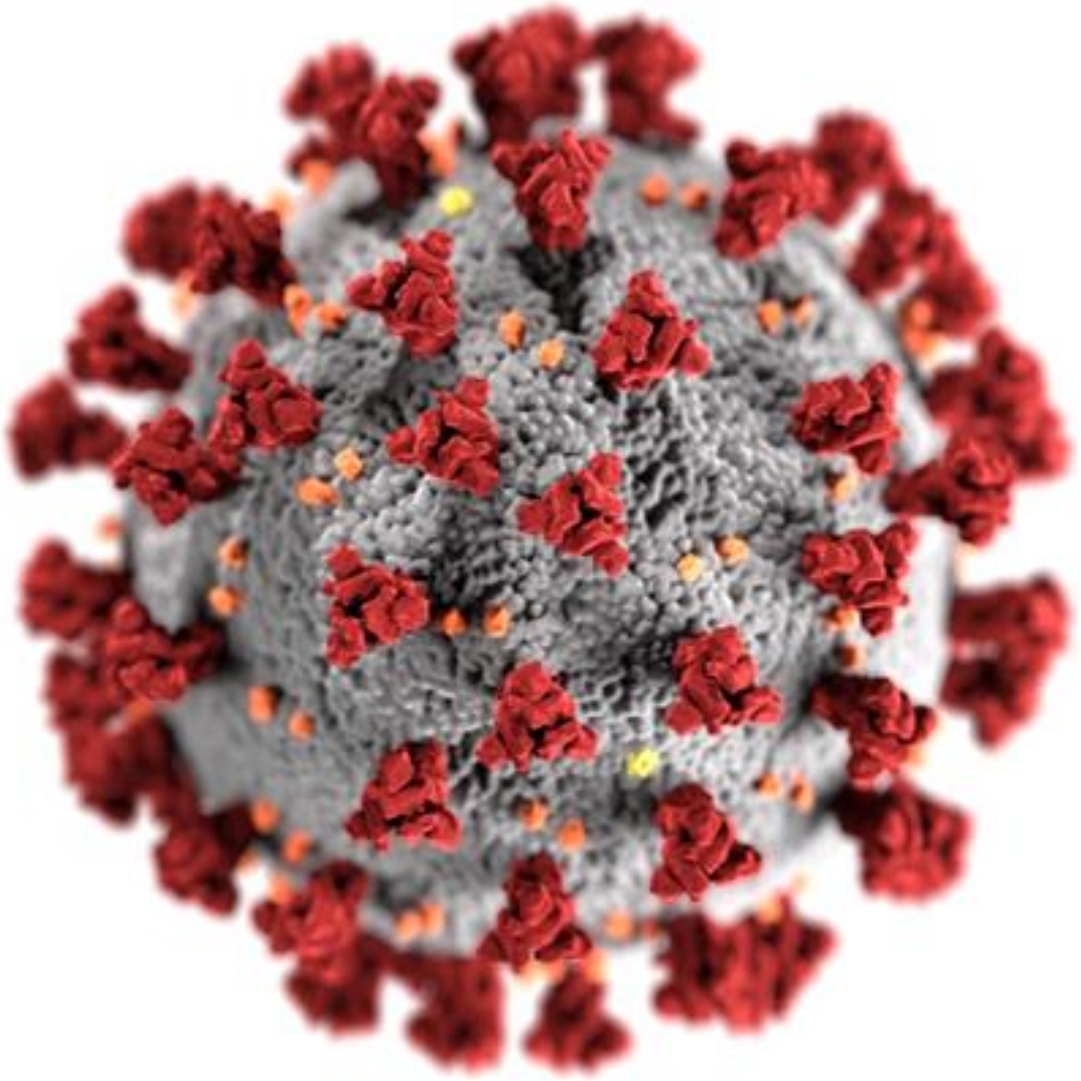
CDC and CSTE Pilot Surveillance Projects – Focus Areas

SITE	SURVEILLANCE MECHANISM	INTERFACE(S)	ANIMAL GROUPS
Arizona	Active Case-Based	-Households with COVID-19 -Assisted Living Facilities	Companion animals – cats, dogs
		-Shelters -Zoos	Ferrets Susceptible zoo species
Harris County, Texas	Active Case-Based; Event-based	-Households with COVID-19 -Spay/Neuter Clinics	Companion animals – cats, dogs
Louisiana	Passive/Active Public health reporting	-Veterinary clinic patients -Shelters	Companion animals – cats, dogs
Minnesota	Active Case-based	-Wildlife rehabilitation centers	Susceptible wildlife
		-Free-ranging wildlife -Zoos	Susceptible wildlife Susceptible zoo species
Seattle King County, Washington	Active Case-based	-Households with COVID-19	Companion animals – cats, dogs

CDC and CSTE Surveillance: Wrap-Up & the Second Generation

- Pilot Projects: End December 2021
- 2022: CSTE Funding Opportunity Announcement is live:
  - SARS-CoV-2 Surveillance and Capacity Building at the Human-Animal-Environment Interface
- Objectives:
  - Characterize SARS-CoV-2 transmission dynamics by species and interaction type;
  - Strain characterization and genomic surveillance at the human-animal interface;
  - Enhance the sustainability of existing zoonotic SARS-CoV-2 surveillance;
  - Develop mechanisms to improve sustainability of One Health coordination and zoonotic SARS-CoV-2 surveillance
  - One Health preparedness for emerging zoonotic diseases at the human-animal-environment interface.

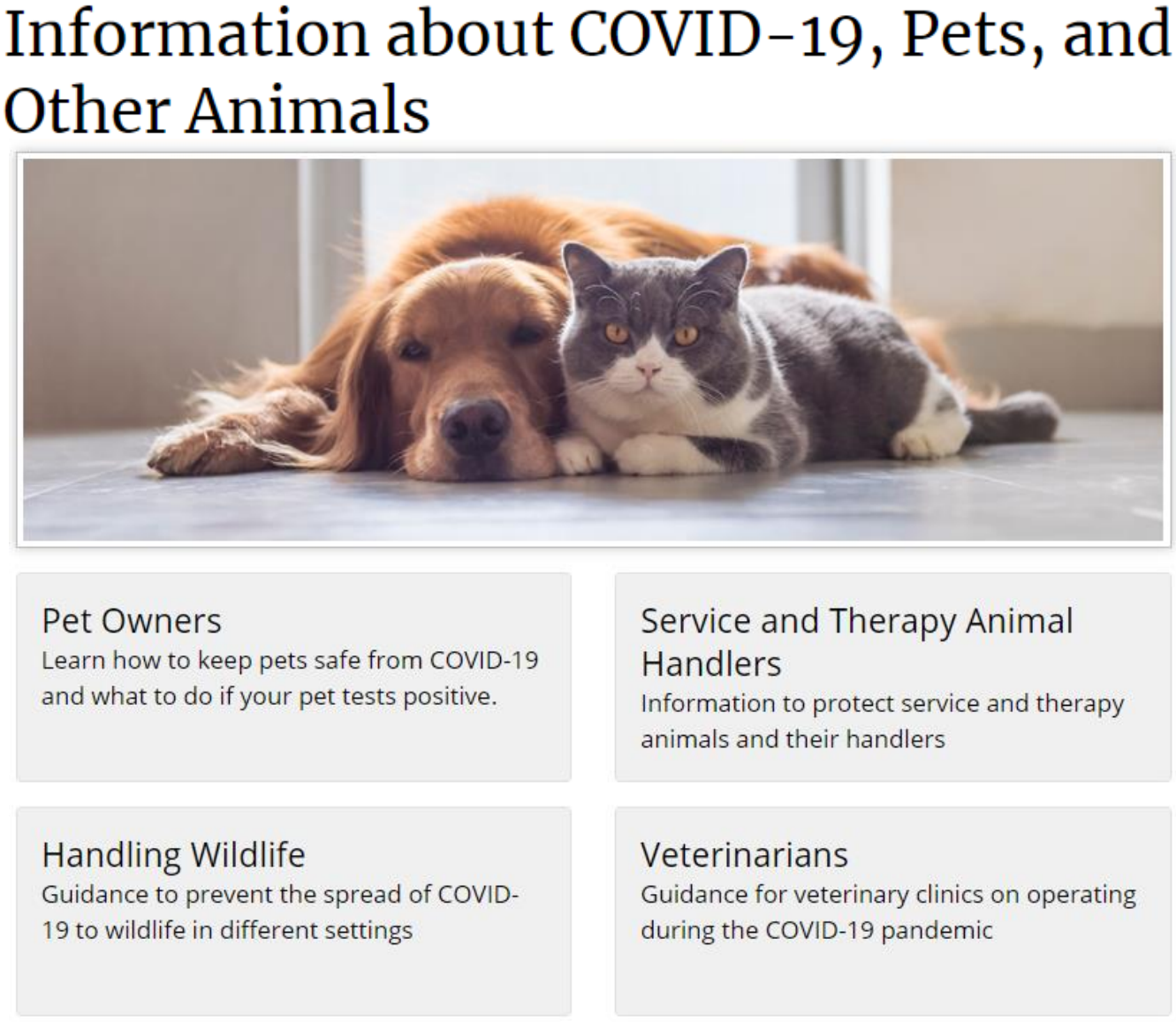
Guidance and Resources



CDC Guidance: Information about COVID-19, Pets, and Other Animals

Updated Guidance:

- Evaluation for SARS-CoV-2 Testing in Animals
- What You Should Know about COVID-19 and Pets
- Guidance to Reduce the Risk of SARS-CoV-2 Spreading between People and Wildlife



Pets and Other Animals | CDC

Updated: Evaluation for SARS-CoV-2 Testing in Animals

- Test animals with epidemiological link to SARS-CoV-2 regardless of clinical presentation
- New recommendations for farmed mink

Criteria	Epidemiological Risk		Clinical Features
A	Animal with history of exposure[3] to a person or animal suspected or confirmed to be infected with SARS-CoV-2.	AND	Animal is asymptomatic; OR Animal has clinical signs suspicious of SARS-CoV-2 infection.[3]
B	Animal with exposure to a known high-risk environment (i.e., where human cases or animal cases have occurred), such as a residence, facility, or vessel (e.g. nursing home, prison, cruise ship).		
C	Threatened, endangered or otherwise imperiled/rare animal[4] in a rehabilitation, sanctuary or zoological facility with possible exposure to SARS-CoV-2 through an infected person or animal.	AND	Animal is asymptomatic; OR Animal has clinical signs suspicious of SARS-CoV-2 infection[3].
D	Animals in a mass care or group setting (e.g., farm, animal feeding operation, animal shelter, boarding facility, zoo, or other animal holding) including companion animals, livestock, and other species, where their exposure history to people with COVID-19 is unknown.	AND	A cluster of animals show clinical signs suspicious of SARS-CoV-2 infection.[3]
E	Farmed mink (*Neovison vison*). Farmed mink refers to mink bred or raised in captivity for their fur and other by-products.	AND	Animals are asymptomatic; OR One or more animals have clinical signs suspicious of SARS-CoV-2 infection[3].

Evaluation for SARS-CoV-2 Testing in Animals | CDC

What You Should Know About COVID-19 and Pets

- Webpage streamlined
- No new recommendations

What you need to know

- The virus that causes COVID-19 can spread from people to animals during close contact.
- The risk of animals spreading COVID-19 to people is low.
- Pets can get serious illness from infection with the virus that causes COVID-19, but this is extremely rare.

On This Page

What You Should Know about COVID-19 and Pets | Healthy Pets, Healthy People | CDC

Key Messages on Animals and COVID-19

- No evidence animals are playing significant role in spread of COVID-19 to people
- Based on available information, risk of animals spreading COVID-19 to people is low
- The virus that causes COVID-19 can spread from people to animals, especially during close contact
- If sick with COVID-19 (suspected or confirmed), avoid contact with pets & other animals, as you would with people
- Talk to your veterinarian if a pet gets sick or you have concerns about your pet's health

Pets and Other Animals | CDC

Stay Up-to-Date with Trusted Resources

COVID-19 and Animals

- Pets and Other Animals
- FAQs: COVID-19 and Animals
- COVID-19 and Animals
- If You Have Pets
- What to Do if Your Pet Tests Positive for the Virus that Causes COVID-19
- Guidance for Handlers of Service and Therapy Animals
- Interim Infection Prevention and Control Guidance for Veterinary Clinics Treating Companion Animals During the COVID-19 Response
- Interim Guidance for Public Health Professionals Managing People With COVID-19 in Home Care and Isolation Who Have Pets or Other Animals
- Toolkit: One Health Approach to Address Companion Animals with SARS-CoV-2
- Interim Guidance for SARS-CoV-2 Testing in North American Wildlife
- Interim recommendations for intake of companion animals from households where humans with COVID-19 are present
- Recommendations for Disaster Sheltering of Household Pets, Service Animals, and Support Animals during the COVID-19 Pandemic

Federal COVID-19 Websites

- USA.gov
- Coronavirus.gov
- US Department of Agriculture
  - USDA Confirmed Cases of SARS-CoV-2 in Animals in the US
- US Food and Drug Administration
  - https://www.fda.gov/media/139430/download
- US Fish and Wildlife Service
- US Environmental Protection Agency

Partner COVID-19 Websites

- World Health Organization (WHO)
- Food and Agriculture Organization of the United Nations (FAO)
- World Organisation for Animal Health (OIE)
- American Veterinary Medical Association (AVMA)

One Health

- CDC One Health
- CDC Healthy Pets, Healthy People
- CDC Pet Emergency Preparedness
- CDC Pet Disaster Kit
- CDC Pets in Evacuation Centers
- Zoonoses and One Health Updates Call
- USDA One Health

One Health Federal Interagency COVID-19 Coordination Group (OH-FICC)

- **>20 Federal Agencies Representing Multiple Departments**
  - Chaired by CDC
  - Coordination with **>150** US Government partners

Purpose: Bring together representatives from key federal agencies representing multiple departments to collaborate to address One Health technical aspects of COVID-19

Five OH-FICC Subgroups and Agency Chairs

Companion Animals

CDC

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

DOI USGS

Production Animals

(previously Livestock)

USDA-APHIS

Environmental Health

ATSDR, CDC

CDC: Centers for Disease Control and Prevention
FDA-CVM: Food and Drug Administration Center for Veterinary Medicine
USDA-NVSL: United States Department of Agriculture National Veterinary Services Laboratories
DOI USGS: Department of the Interior, US Geological Survey
APHIS: Animal and Plant Health Inspection Service
ATSDR: Agency for Toxic Substances and Disease Registry

Companion Animals Subgroup

Companion Animals

CDC USDA FDA

ASPR ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

DOI USGS

Production Animals

(previously Livestock)

USDA-APHIS

Environmental Health

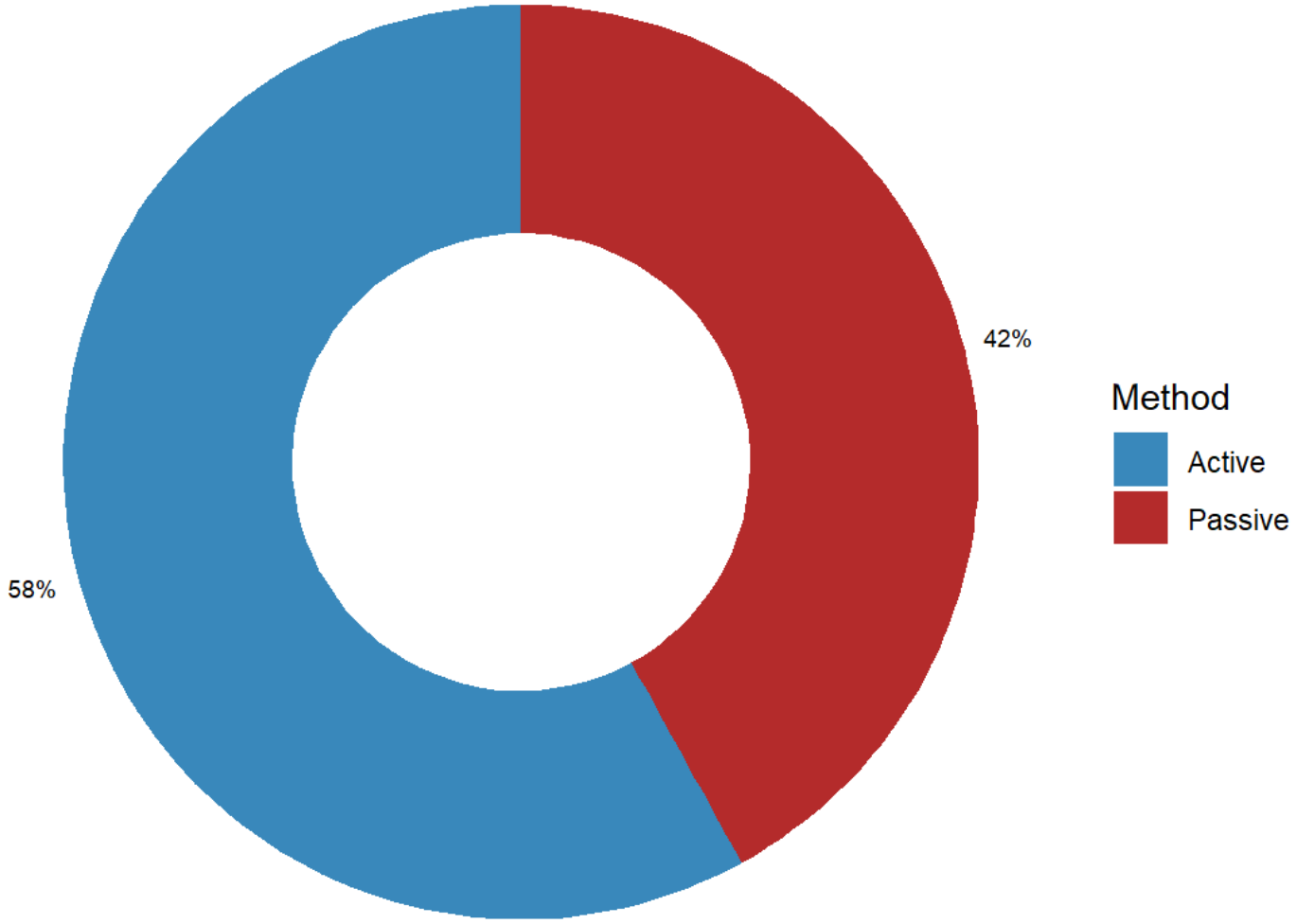
ATSDR, CDC

Companion Animals Subgroup: Focus Areas

- Working dogs
- Service & therapy animals
- Tracking information on vaccines for pets
- Monitoring clinical signs in companion animals
- Sequencing samples from positive companion animals

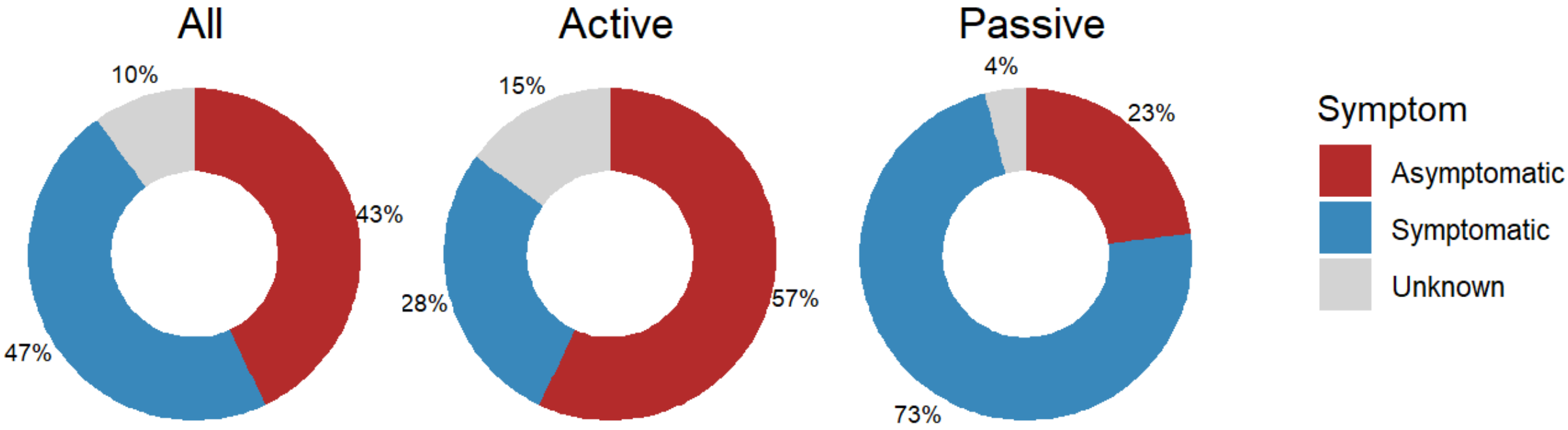
Detection of Companion Animal Cases of SARS-CoV-2 in the US

Active vs. Passive Surveillance



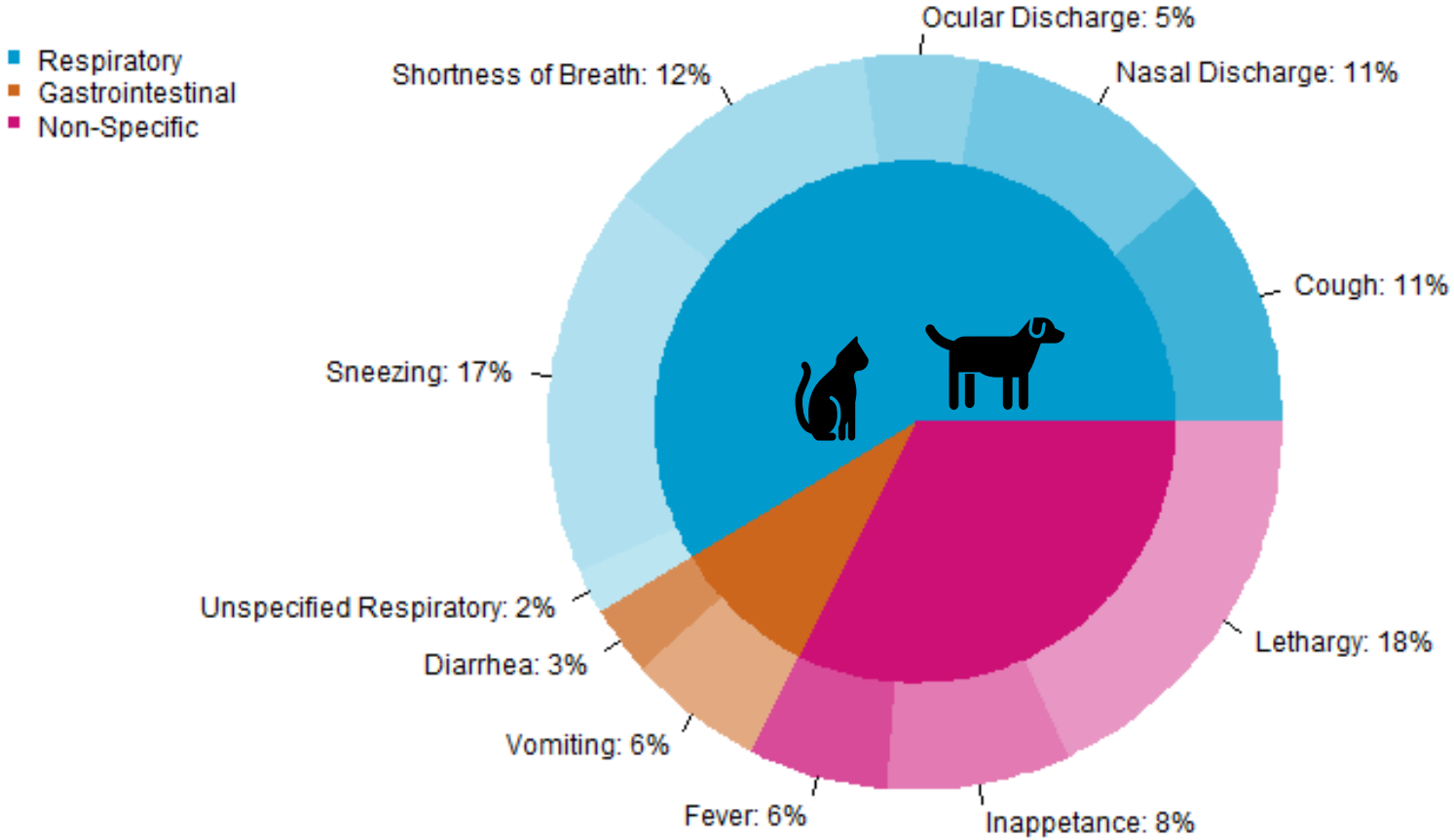
PRELIMINARY DATA AS OF December 3, 2021: SUBJECT TO CHANGE

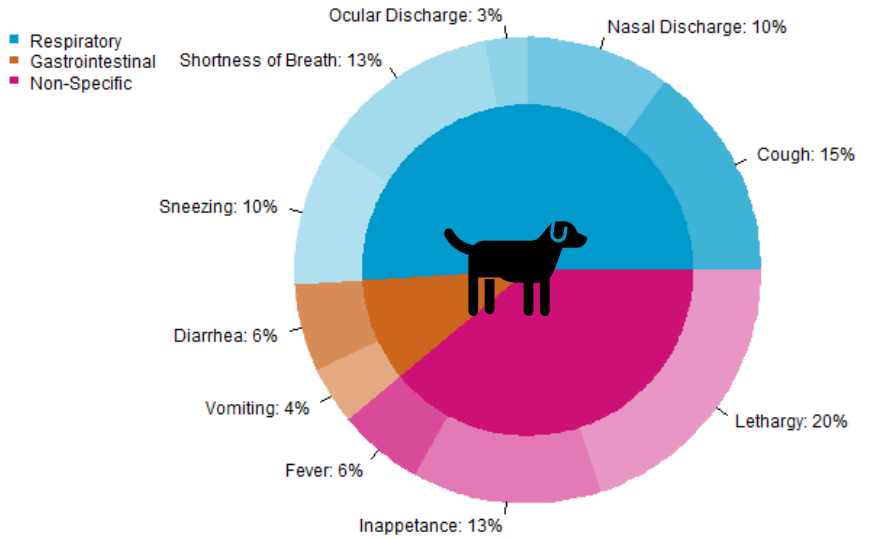
Clinical Sign Prevalence in Companion Animals with SARS-CoV-2 in United States

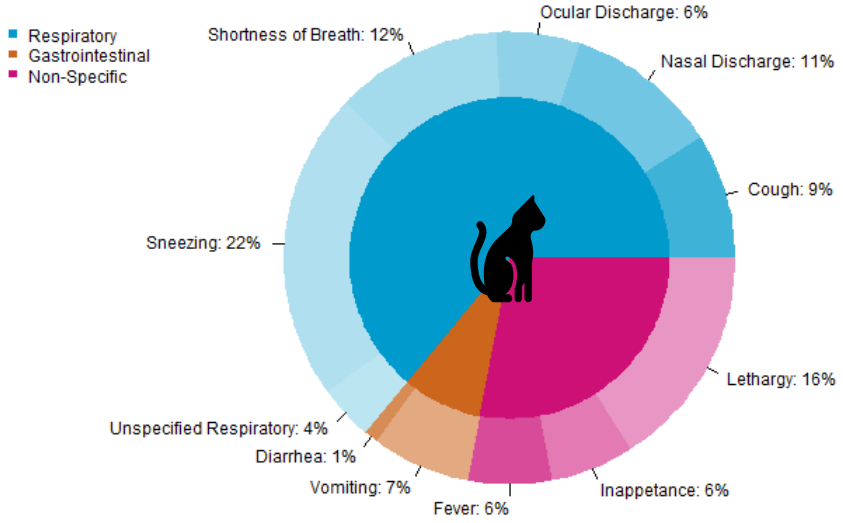


PRELIMINARY DATA AS OF December 3, 2021: SUBJECT TO CHANGE

Clinical Presentation of Companion Animals with SARS-CoV-2 in United States







PRELIMINARY DATA AS OF December 3, 2021: SUBJECT TO CHANGE

Wildlife and Zoo Animals Subgroup Updates

Companion Animals
(Mass Care, Working Animals)

CDC

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

USDA-APHIS

Production Animals
(previously Livestock)

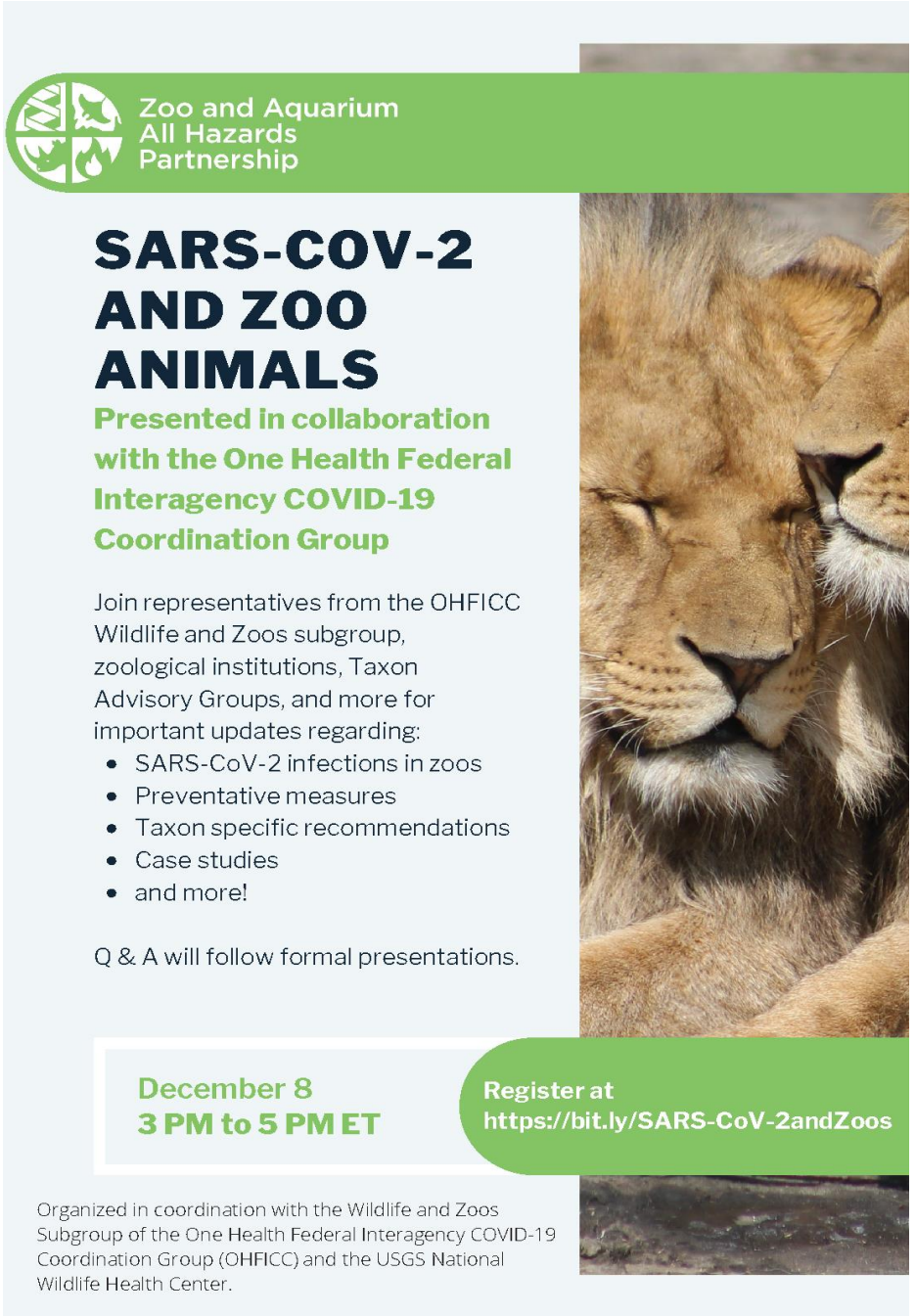
USDA-APHIS

Environmental Health

ATSDR, CDC

Captive Wildlife

- Developed a zoo and captive wildlife biosecurity self assessment check list
- Co-hosting a webinar on December 8, at 3 pm ET

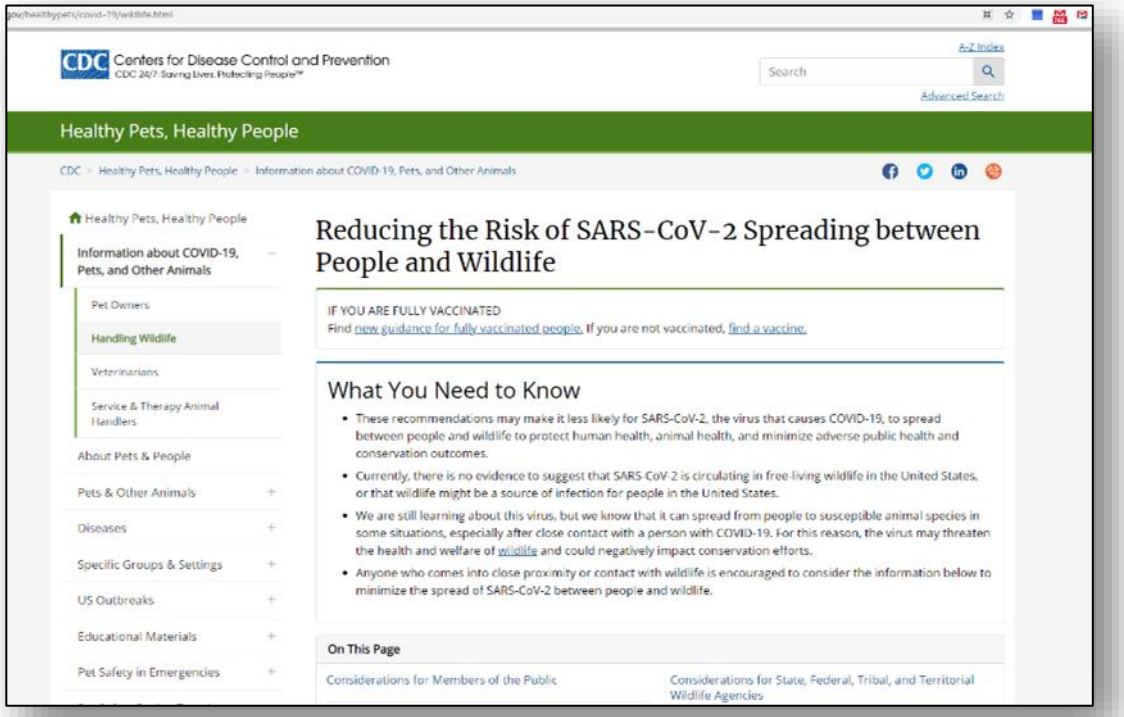


Free-living Wildlife

- Recent studies have indicated multiple human to deer SARS-CoV-2 transmission events and subsequent deer-to-deer transmission
- Risks need to be assessed
- Association of Fish and Wildlife Agencies has issued guidance:
  - https://www.fishwildlife.org/application/files/5516/3277/5426/GuidanceSARS-CoV2_White-tailed_Deer_SEP2021.pdf

Updated Wildlife Guidance on the CDC Website

The Zoo and Wildlife Subgroup of the One Health Federal Interagency COVID-19 Coordination Team has updated FAQs and management guidance based on international and domestic findings.



[Guidance to Reduce the Risk of SARS-CoV-2 Spreading between People and Wildlife (cdc.gov)]

Publishing vetted & synthesized Wildlife/SARS-CoV-2 information quickly allows wildlife management agencies to:

1. Access and utilize the most up to date research and surveillance information for decision making
2. Create step-down guidance for field work using the information as a reference (e.g. AFWA guidance on bats, mustelids, felids, canids, white-tailed deer)
3. Share the site to help inform stakeholders and the public about wildlife health and public health

Research and Science Updates

- Multiple spillovers and onward transmission of SARS-Cov-2 in free-living and captive White-tailed deer (*Odocoileus virginianus*) – Kuchipudi et al. 2021, *bioRxiv*
- First evidence of human-to-dog transmission of SARS-CoV-2 B.1.160 variant in France – Medkour et al. 2021, *Transboundary and Emerging Diseases*
- SARS-CoV-2-specific antibodies in domestic cats during first COVID-19 wave, Europe – Schulz et al. 2021, *Emerging Infectious Diseases*

Highlighted One Health Publications

Open Access Article

SARS-CoV-2 Infections and Viral Isolations among Serially Tested Cats and Dogs in Households with Infected Owners in Texas, USA

by Sarah A. Hamer [1,*], Alex Pauvolid-Corrêa [1,2], Italo B. Zecca [1],

viruses MDPI

Article

An Opportunistic Survey Reveals an Unexpected Coronavirus Diversity Hotspot in North America

Hon S. Ip [1,*], Kathryn M. Griffin [1], Jeffrey D. Messer [1], Megan E. Winzeler [1], Susan A. Shriner [2], Mary Lea Killian [3], Mia K. Torchetti [3], Thomas J. DeLiberto [2], Brian R. Amman [4], Caitlin M. Cossaboom [4], R. Reid Harvey [4], Natalie M. Wendling [4], Hannah Rettler [5], Dean Taylor [6], Jonathan S. Towner [4], Casey Barton Behravesh [4] and David S. Blehert [1]

Open Access Article

One Health Investigation of SARS-CoV-2 Infection and Seropositivity among Pets in Households with Confirmed Human COVID-19 Cases—Utah and Wisconsin, 2020

by Grace W. Goryoka [1,*], Caitlin M. Cossaboom [1], Radhika Gharpure [1], Patrick Dawson [1],

Journal of the American Veterinary Medical Association
November 1, 2021, Vol. 259, No. 9, Pages 1032-1039
https://doi.org/10.2460/javma.259.9.1032

Determining the role of natural SARS-CoV-2 infection in the death of domestic pets: 10 cases (2020–2021)

Ann Carpenter DVM, MPH[1]; Ria R. Ghai PhD[1]; Joy Gary DVM, PhD[1]; Jana M. Ritter DVM[1]; Francisco R. Carvallo DVM, DS

Transboundary and Emerging Diseases

SHORT COMMUNICATION | Open Access

SARS-CoV-2 B.1.1.7 variant of concern detected in a pet dog and cat after exposure to a person with COVID-19, USA

Sarah A. Hamer, Ria R. Ghai, Italo B. Zecca, Lisa D. Auckland, Christopher M. Roundy, Edward Davila,

Viruses | One Health Investigation of SARS-CoV-2 Infection and Seropositivity among Pets in Households with Confirmed Human COVID-19 Cases—Utah and Wisconsin, 2020
SARS-CoV-2 B.1.1.7 variant of concern detected in a pet dog and cat after exposure to a person with COVID-19, USA - Hamer - - Transboundary and Emerging Diseases - Wiley Online Library
Viruses | Free Full-Text | An Opportunistic Survey Reveals an Unexpected Coronavirus Diversity Hotspot in North America (mdpi.com)
Viruses | Free Full-Text | SARS-CoV-2 Infections and Viral Isolations among Serially Tested Cats and Dogs in Households with Infected Owners in Texas, USA (mdpi.com)
Determining the Role of Natural SARS-CoV-2 Infection in the Death of Ten Domestic Pets | Research Square

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Watch ZOHU recordings

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Contact us!

onehealth@cdc.gov

www.cdc.gov/onehealth

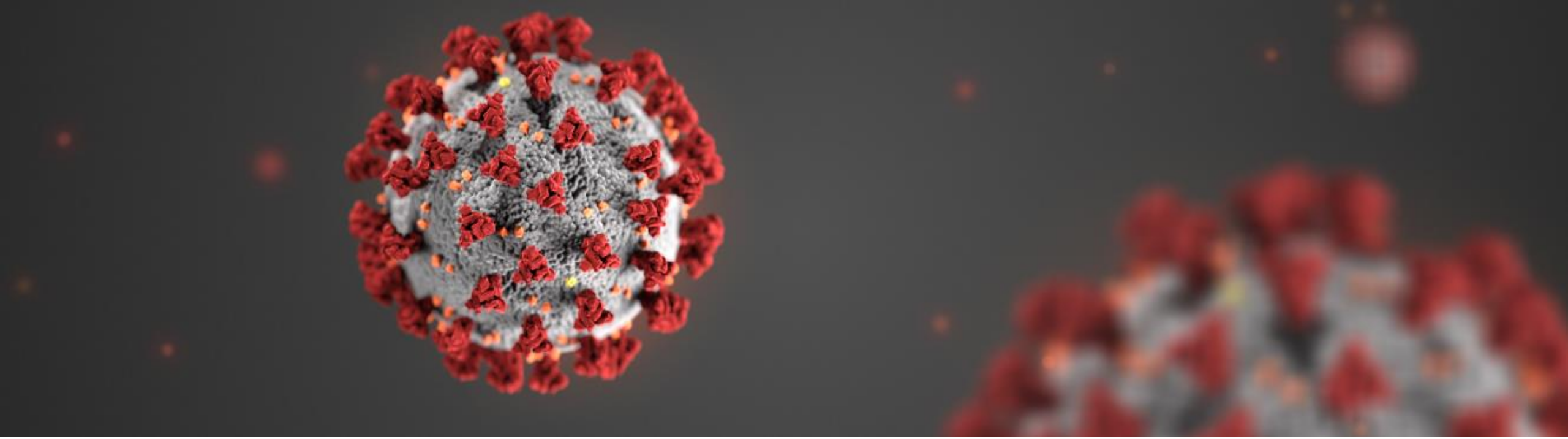
For ZOHU inquiries:

zohucall@cdc.gov

Future One Health Partners COVID-19 Webinars

- Stay tuned for the date of our next call!

  If others are interested in being invited to this recurring call, please direct them to onehealth@cdc.gov



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

OneHealth@cdc.gov