



COVID in Zoos

Jing Zhou
School of Planning, Design, and Construction
Michigan State University





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COVID cases in Zoos

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Research Design &
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04

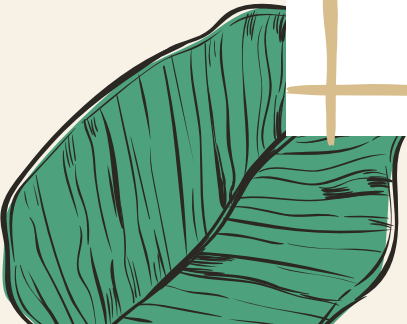
Conclusions

Possible outcomes &
Future studies



“Nature can win,
if we give her a chance.”

—Jane Goodall





01



Background



6.18 Million

- Deaths > Total population of Singapore.
- Unknown number of animal deaths in zoos, sanctuary, and wild.
- A Squirrel monkey with COVID died at Reid Park Zoo, AZ in July.
- Columbus Zoo Tiger and Tasmanian Devil died from COVID in June.
- A snow leopard at Miller Park Zoo, IL died from COVID-19 this January.



<https://www.nbcnews.com/news/animal-news/14-year-old-tiger-columbus-ohio-zoo-dies-contracting-covid-rcna36066>

396

This is the total confirmed animal cases from USDA

- Companion Animals
- Other animals under human care
- Doesn't include mink farms and wildlife reports

<https://myfox28columbus.com/news/local/columbus-zoo-and-aquarium-mourning-death-of-tasmanian-devil-sprout-powell-ohio>





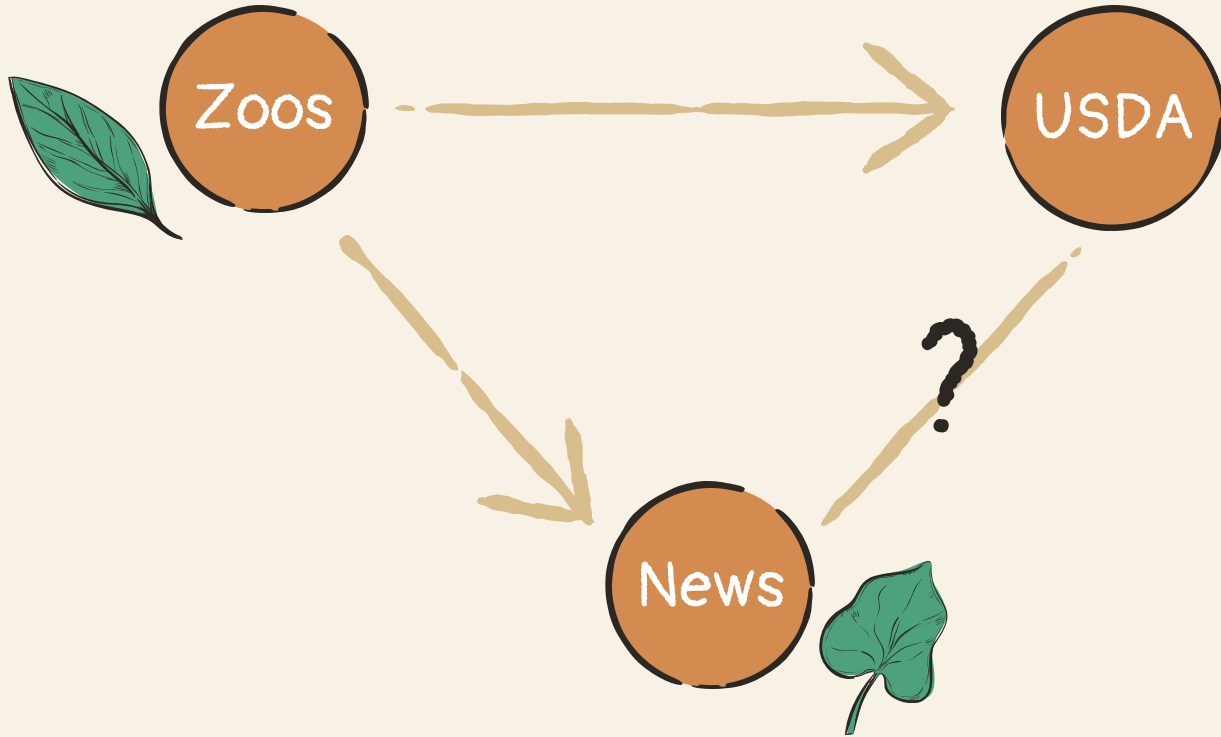
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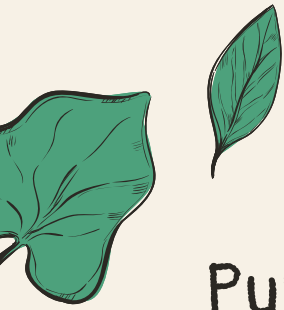


Statement of Problem



Who is reporting? Who is counting?





Purpose

To better monitor the disease transition and promote animal welfare, it is necessary to conduct a study that provides better data on Covid-19 cases in zoos, including the number of cases, methods of diagnosis, treatment, death rate, etc.





Methodology

03



Data Source

USDA APHIS

Animal and Plant Health Inspection Service maintains a list of all animals and mink farms in the US with Covid-19 infections confirmed by their National Veterinary Services Laboratories

News Media

Any newspaper (including online) posts about confirmed cases in the US zoos.



Confirmed Cases of SARS-CoV-2 in Animals in the United States

Last updated October 3, 2022

Filter data by footnote number
(See definitions on cases list tab)

All records

Method of Initial Diagnosis

Companion Animals and Other Animals in Human Care	PCR	Ab	Grand Total
Cat	61	57	118
Dog	40	71	111
Tiger	53	2	55
Lion	51	2	53
Gorilla	28		28
Snow Leopard	13		13
Otter	8		8
Spotted Hyena	2		2

Confirmed diagnosis of a single animal for species:	Binturong, Coati, Cougar, Ferret, Fishing Cat, Lynx, Mandrill, Squirrel Monkey,		
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Premises*			
Mink	16	2	18

Wildlife Detections**			
Mink	■		
Mule Deer	■		
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 number of animals confirmed.

Companion Animals and Other Animals in Human Care

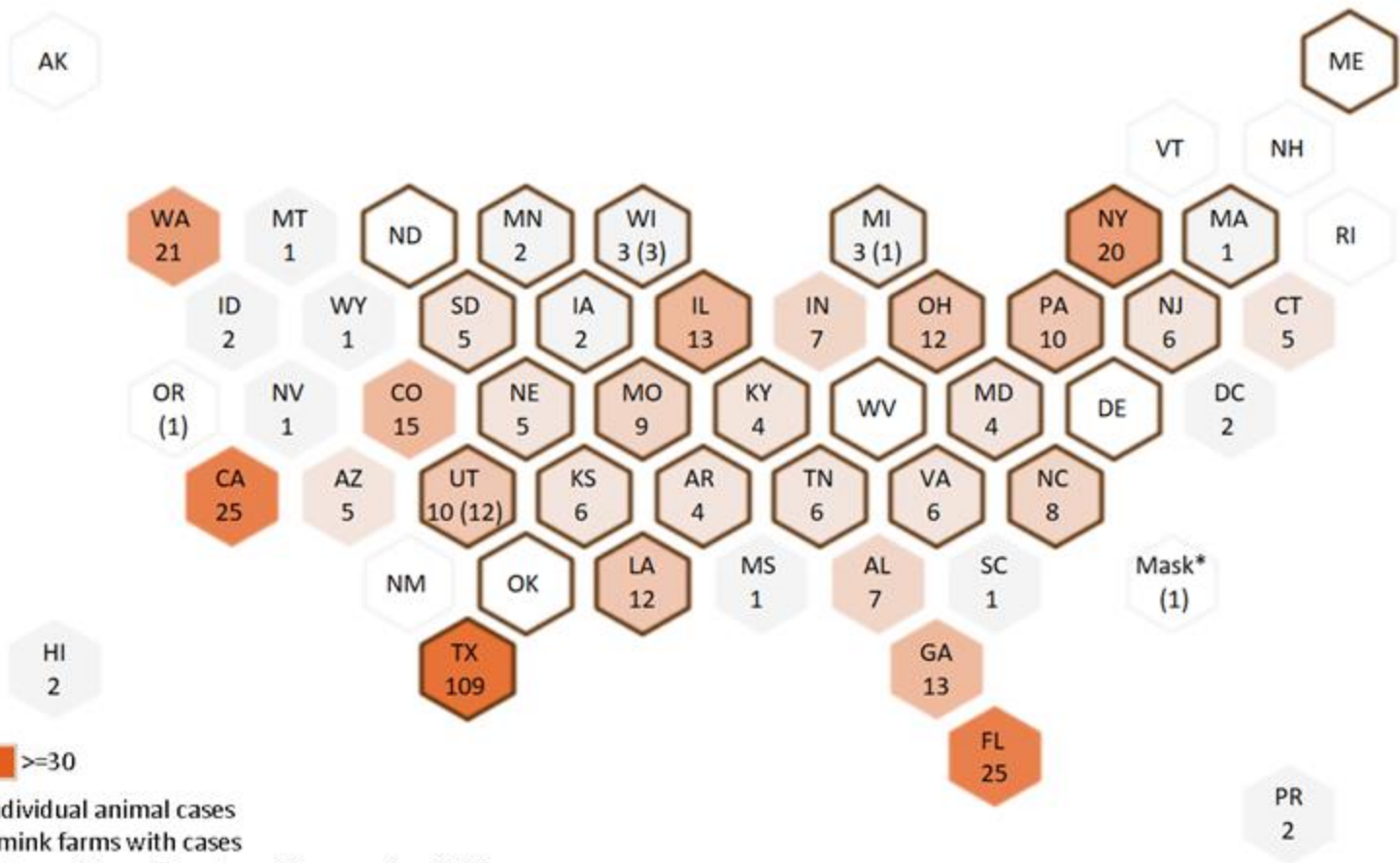
396

Mink Farms

18

States with Cases in Wildlife

28



Numbers = counts of individual animal cases
 (Numbers) = counts of mink farms with cases
 Dark border indicates states with confirmed positive cases in wildlife

zoo, covid X Headline ▾

AND ▾ 2020-2022 X ? Date(s) ▾

Search

+ - Clear All

Basic Search

North America x USA x Clear Filters

1,305 Results | Save Search | Create Alert

Sort by

- Best Match
- Newest
- Oldest

Date selector

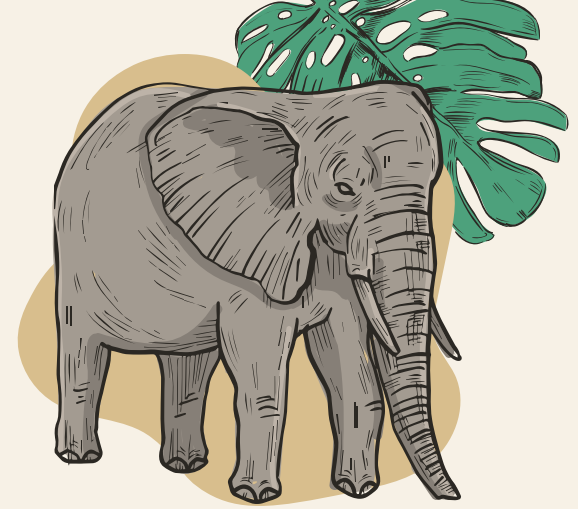
2020 - 2022 (Years)

- Select Articles 1 - 20
- Tulsa Zoo vaccinates their animals for COVID-19**
September 12, 2022 | Collegian, The: University of Tulsa (OK)
... has been developed for animals, the Tulsa Zoo is vaccinating their more at risk animals ... only are humans at risk for catching COVID-19, but animals are too. The Tulsa Zoo has begun ... COVID-19, but animals are too. The Tulsa Zoo has begun giving their animals vaccines in order ... Now that a vaccine has been developed for animals, the Tulsa Zoo is vaccinating their more at risk animals against the disease. Not only are humans at risk for catching COVID-19, but animals are too. The Tulsa Zoo
[Preview](#)
 - Forest Park zoo hosts COVID vaccine clinic Saturday**
... Health Network, in collaboration with The Zoo in Forest Park, will host a COVID-19 vaccination ... with The Zoo in Forest Park, will host a COVID-19 vaccination clinic on ... receive a vaccine will receive a free pack of zoo

Content Analysis

New database is created using Excel. The following information are extracted from newspaper posts:

1. Species Name
2. Number of Animals
3. Name of the Zoo
4. City/State
5. Diagnosis (PCR/RT)
6. Treatment
7. Result (Cured/Dead)
8. Infected by
9. Date of Sign of Sickness
10. Date of News Report
11. Name of Newspaper




Research Quality Standards



01

Transferability

Methodology was adapted from previous public event study. It is highly transferable from zoo setting to other settings such as aquariums and sanctuaries.



02

Credibility

After content and theme analysis being conducted by the researcher, the researcher will seek for additional review from other researchers to ensure credibility of findings.

03

Dependability

Original link of the newspaper posts will be kept during analysis. The researcher can track steps that lead to the final outcome for dependability test.



Conclusion



Application

- Better dataset for epidemiology and welfare studies
- Help zoos track and report animal disease
- Applicable and affordable research method for zoos, aquariums, and other animal institutions



Limitations

- Newspaper posts do not cover all cases as the reporting is voluntary for zoos
- Small zoos don't have enough media exposure



Future Research

- Global assessment needed
- Industry-wide protocols and procedures for zoos to respond to disease transmission
- Design and renovate animal enclosures to minimize the potential risks of zoonotic diseases

Do you have any
questions?

zhouji10@msu.edu

