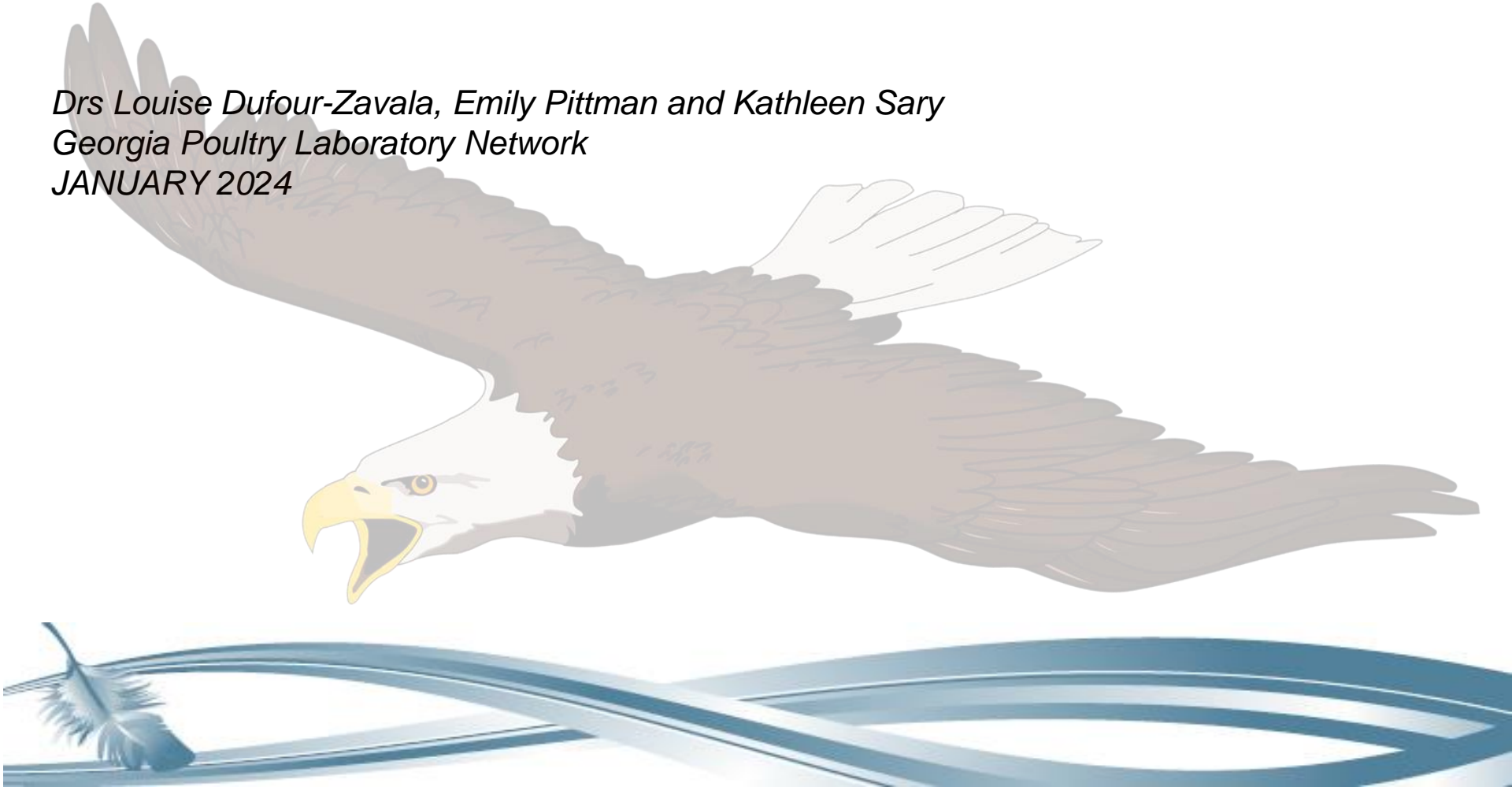
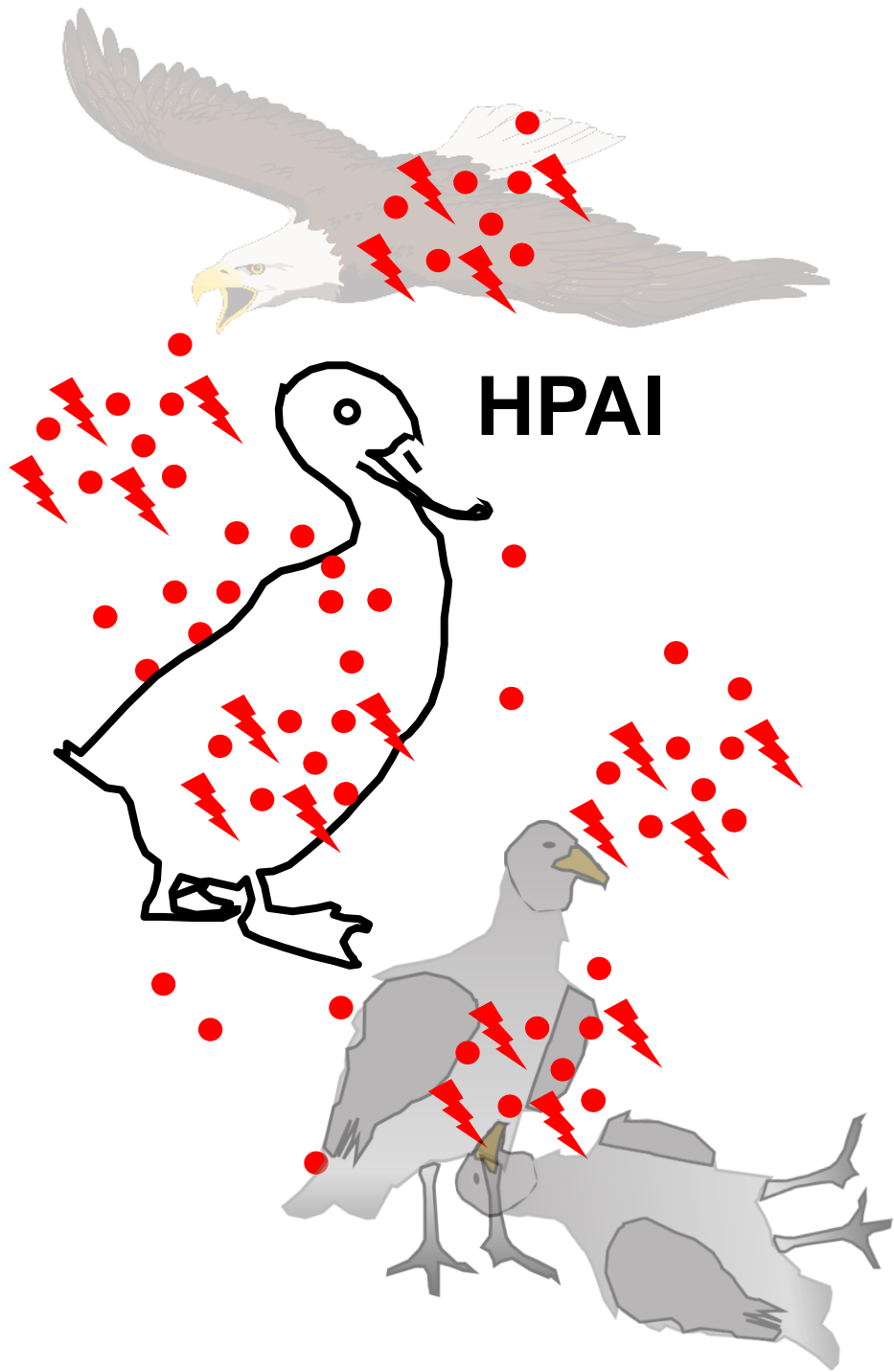


# Avian Influenza 2023: *Update on the HPAI Outbreak*

*Drs Louise Dufour-Zavala, Emily Pittman and Kathleen Sary*  
*Georgia Poultry Laboratory Network*  
*JANUARY 2024*

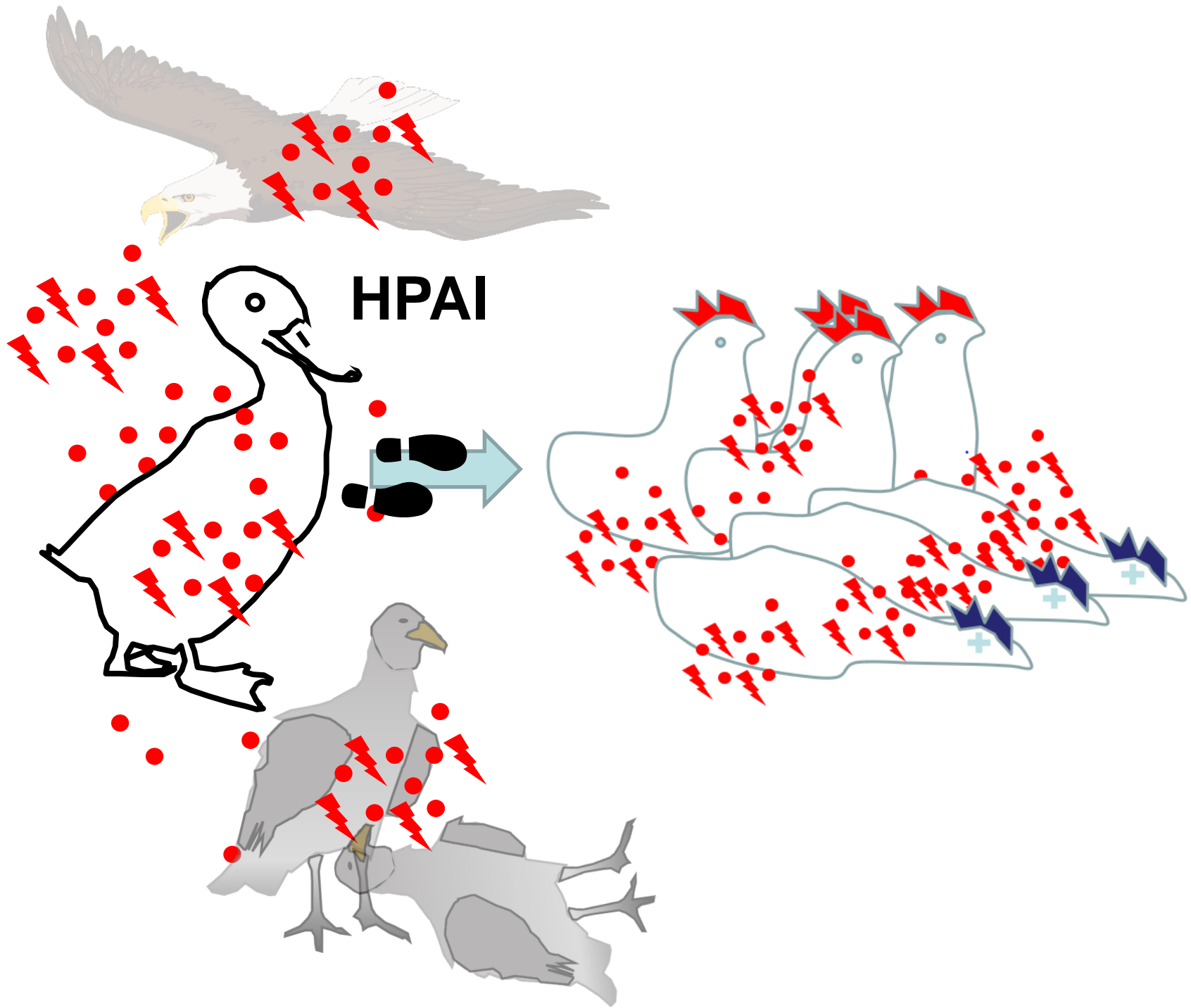


2022  
2023

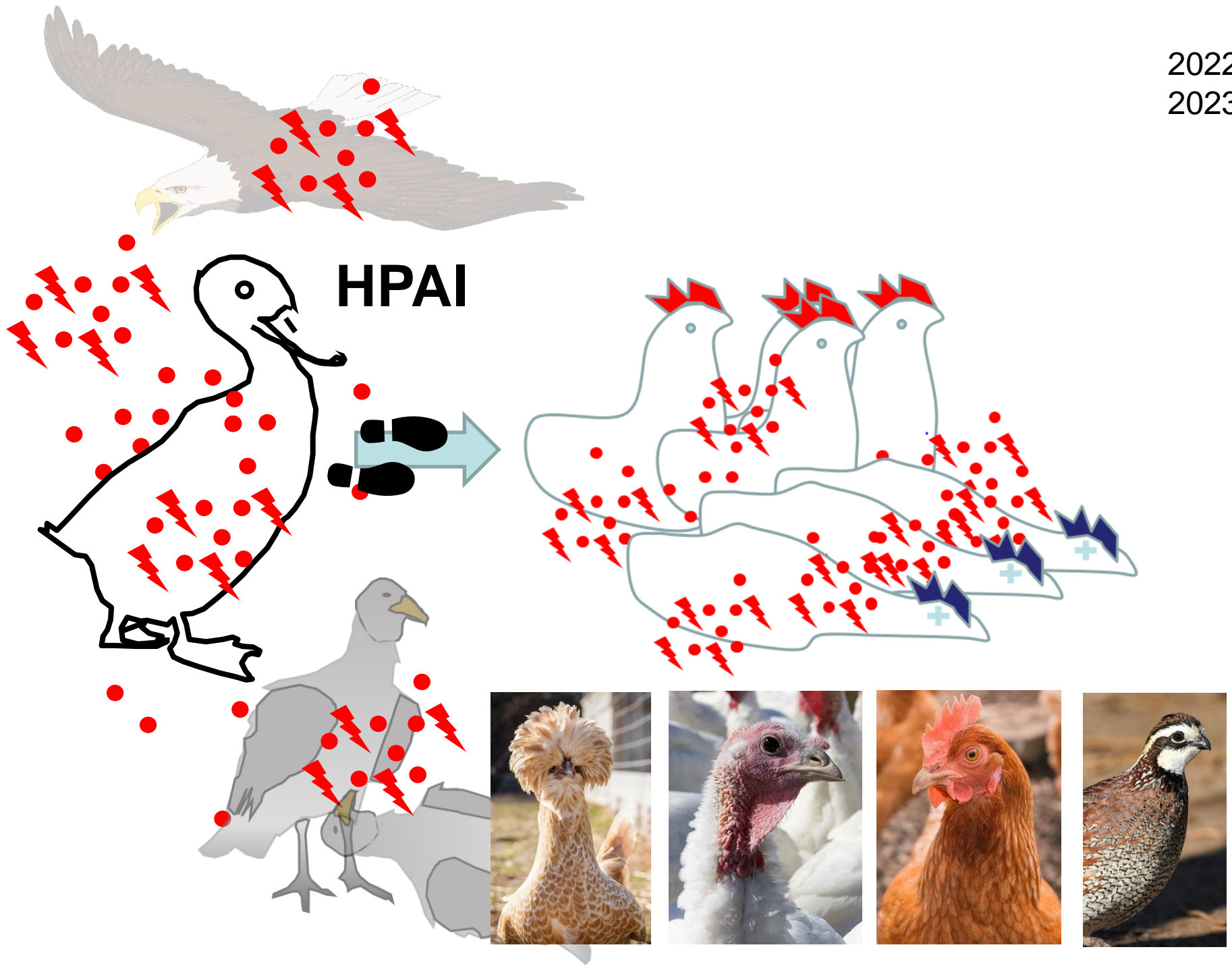


**HPAI**

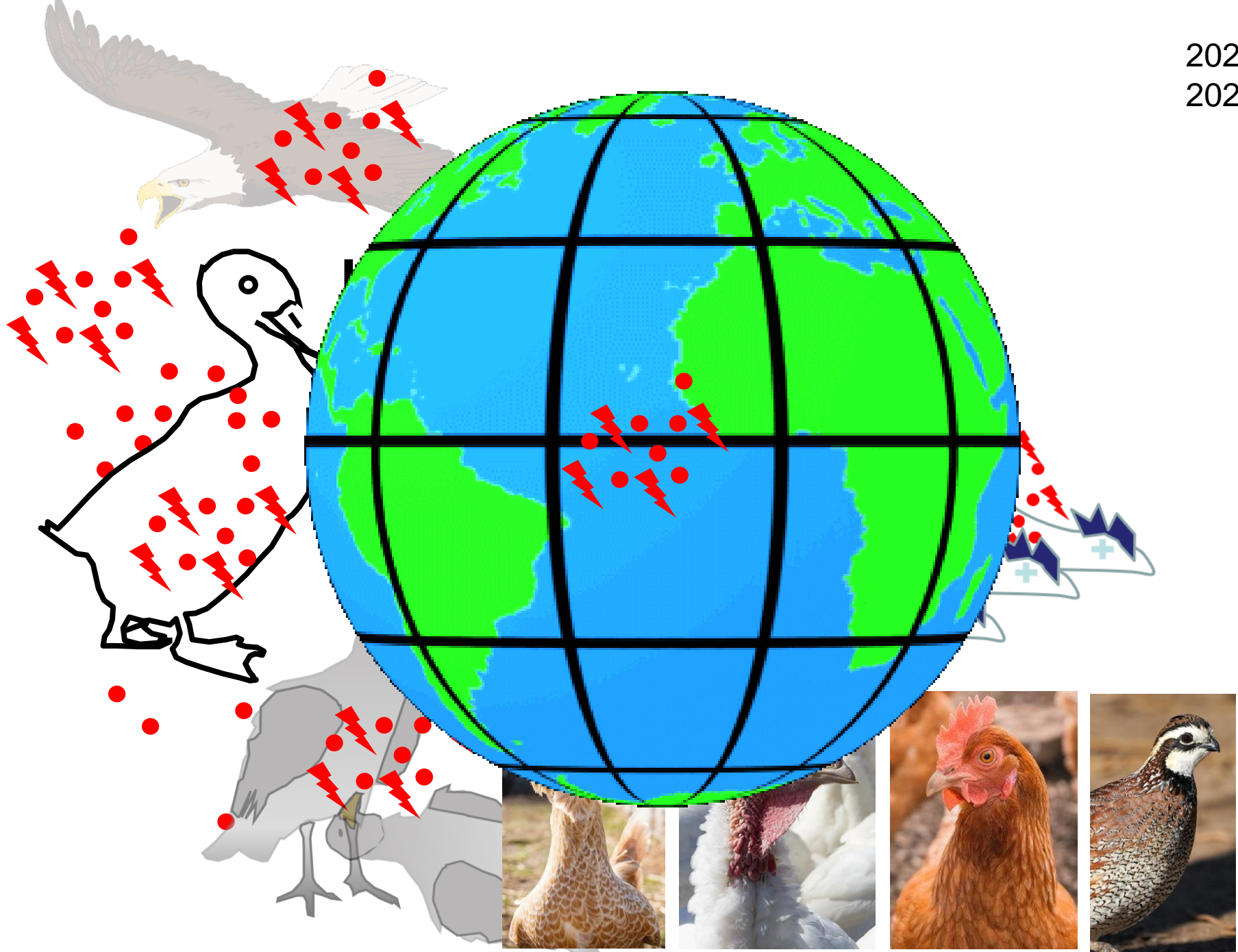
2022  
2023

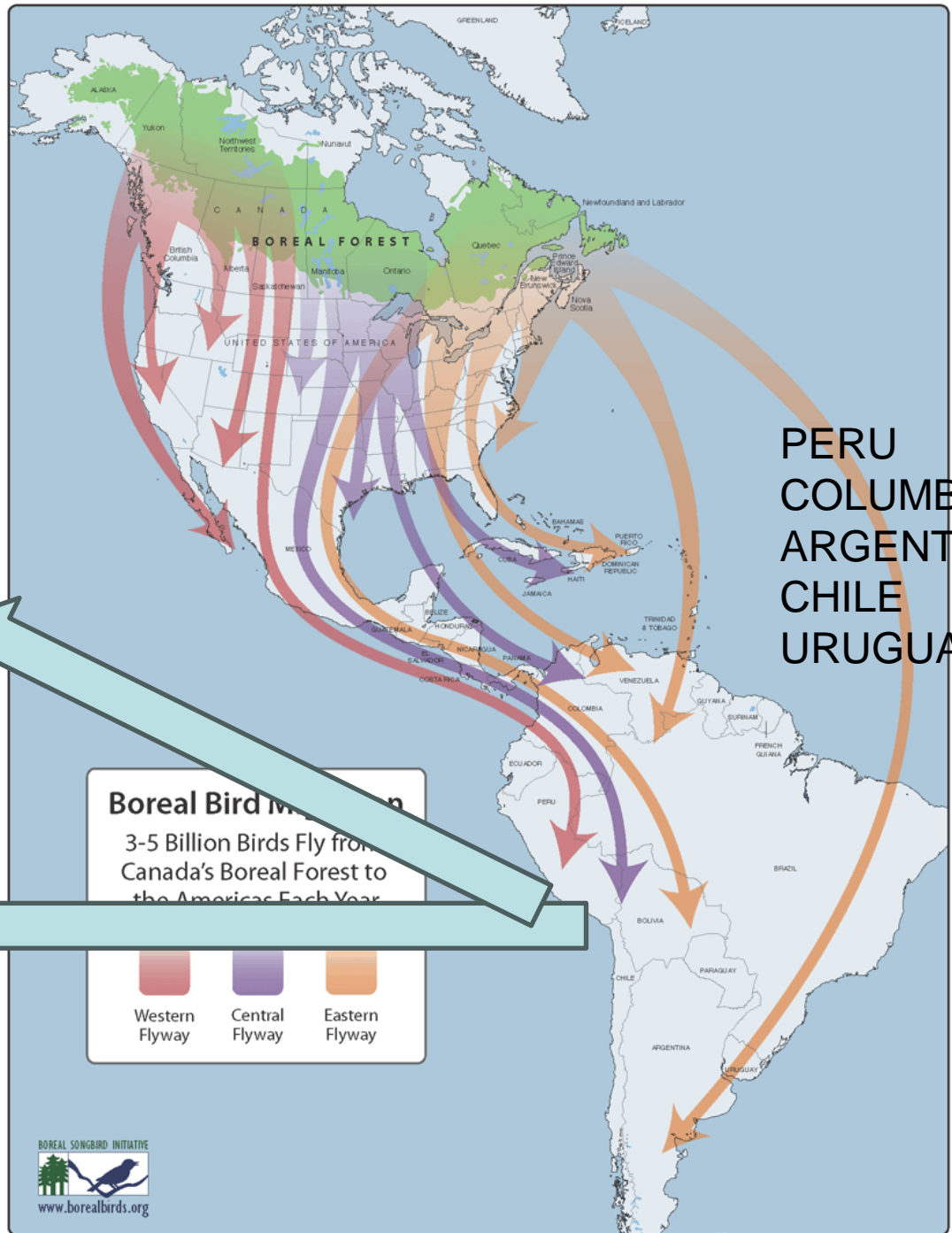
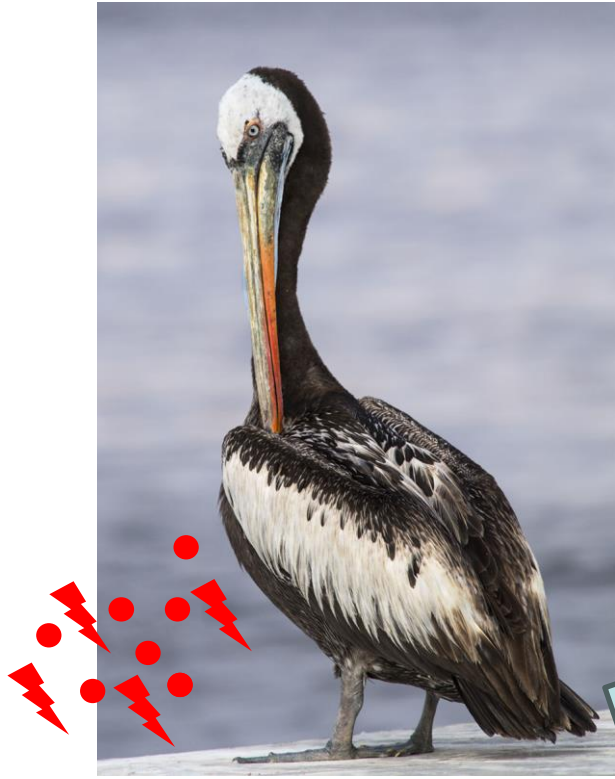


2022  
2023



2022  
2023





# First detection in Antarctica Oct 2023



First confirmed cases of Avian Influenza in the Antarctic region

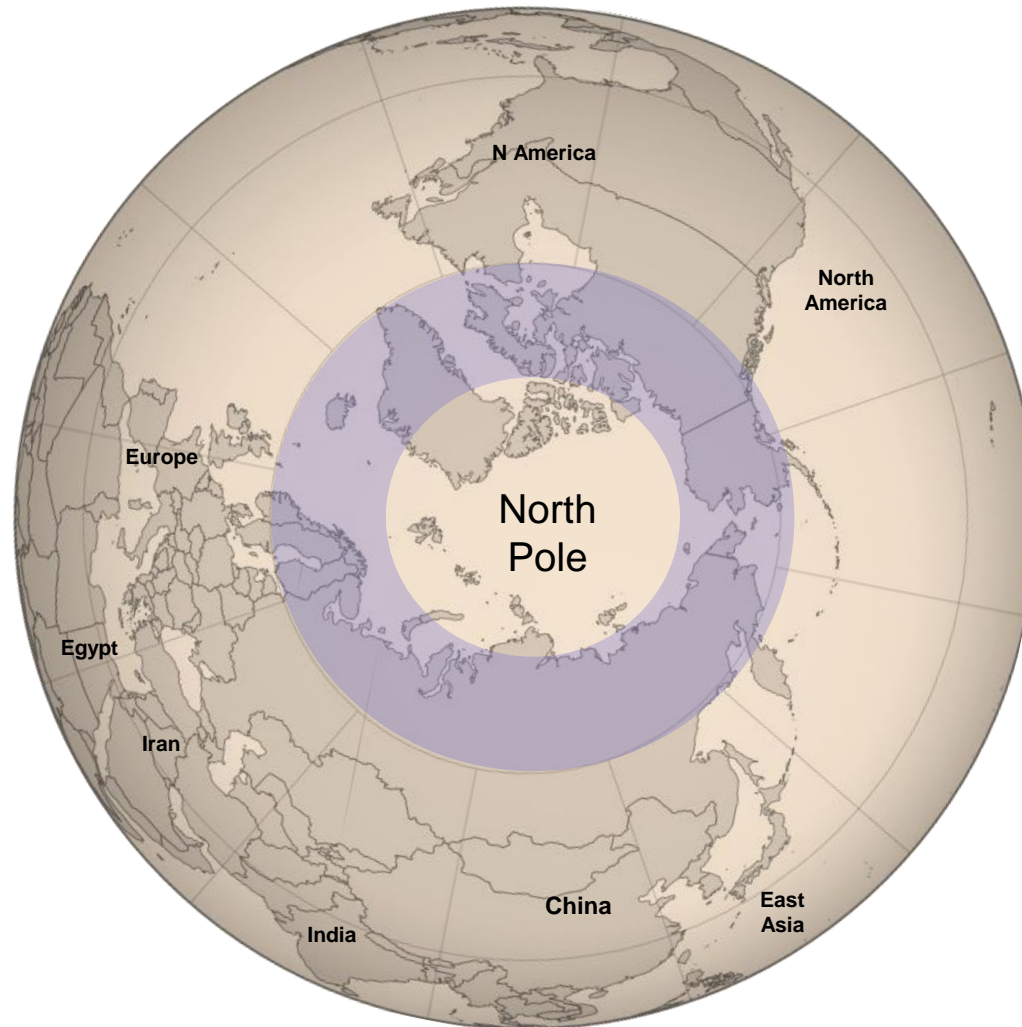


Brown skua



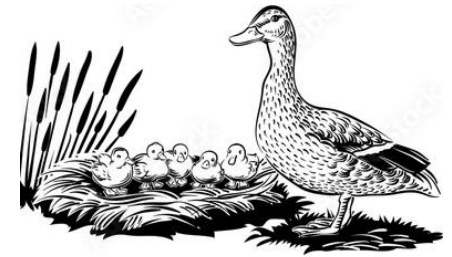
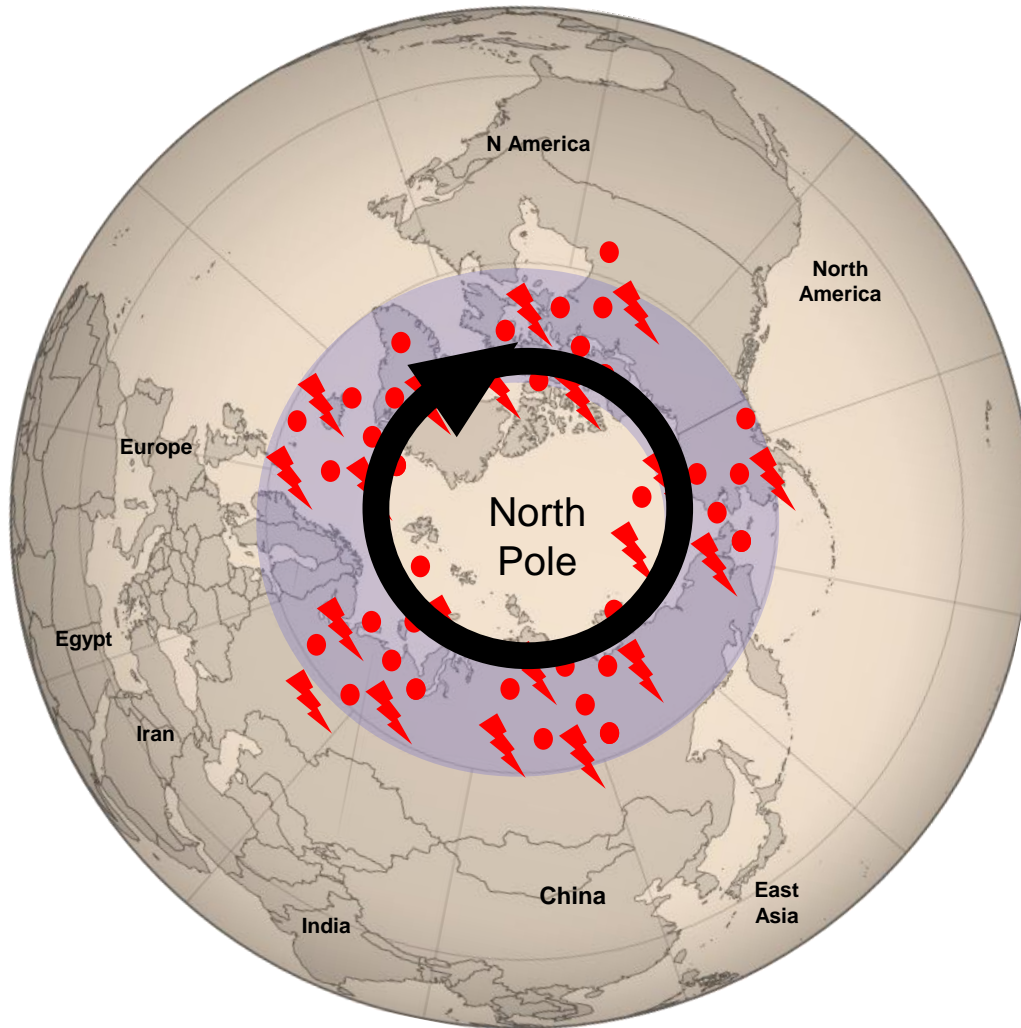


# Peripolar Ecology



Courtesy of David Swayne

# Peripolar Ecology



January

February

March

April

May

June

July

August

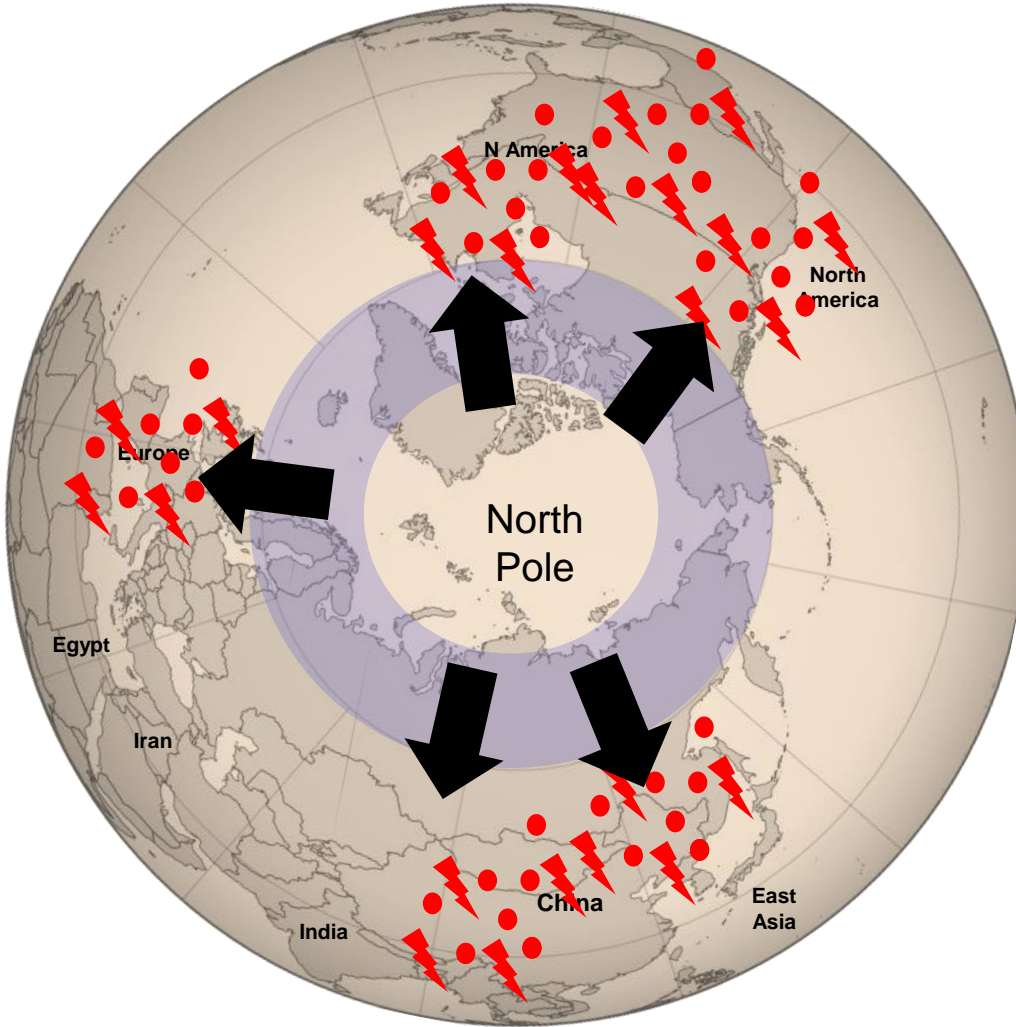
September

October

November

December

# Peripolar Ecology



January

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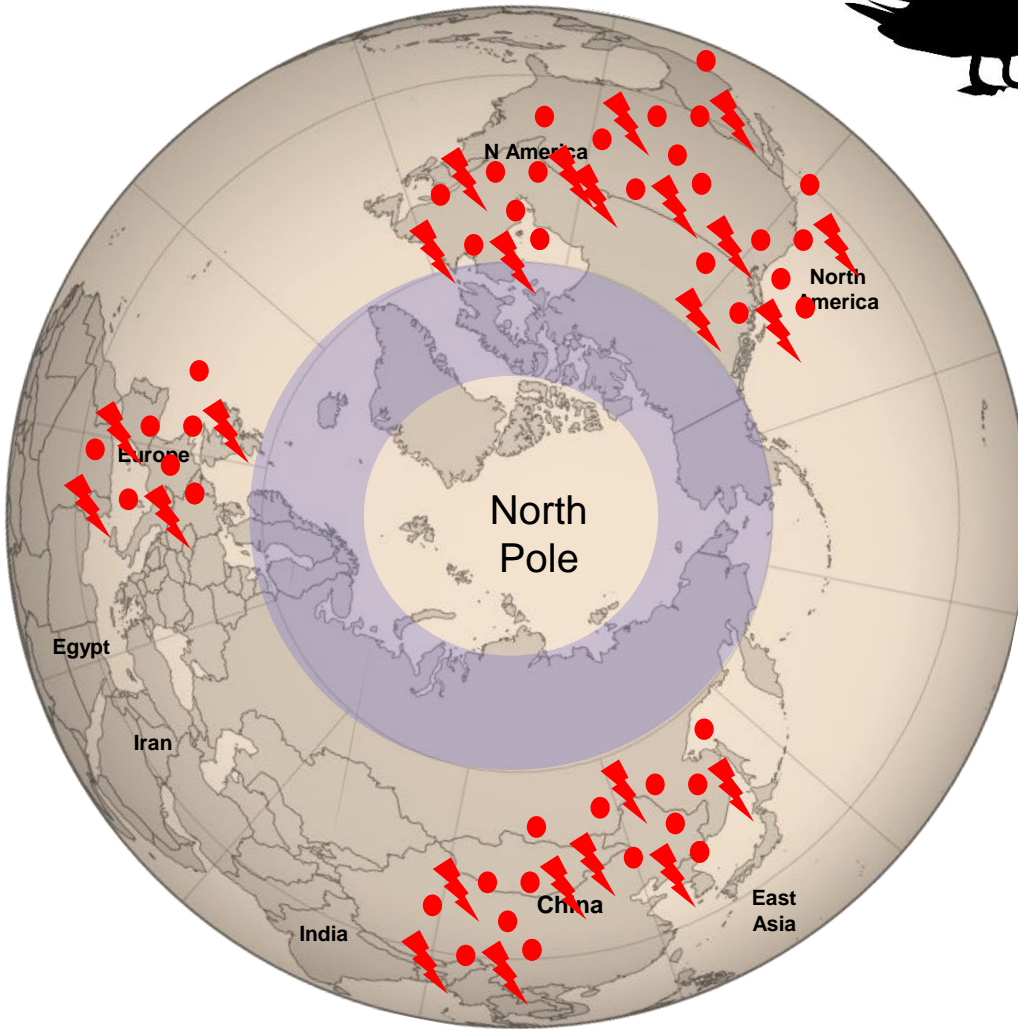
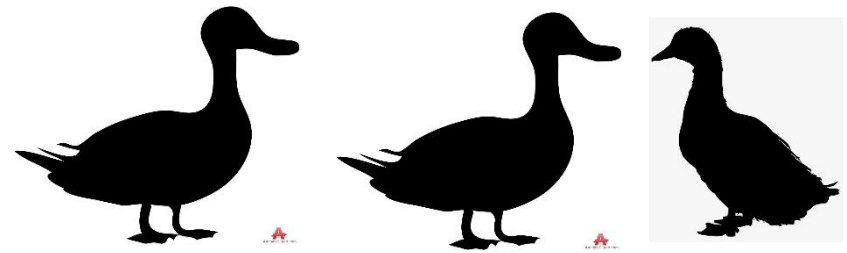
September

October

November

December

# Peripolar Ecology



January  
February  
March



April  
May  
June

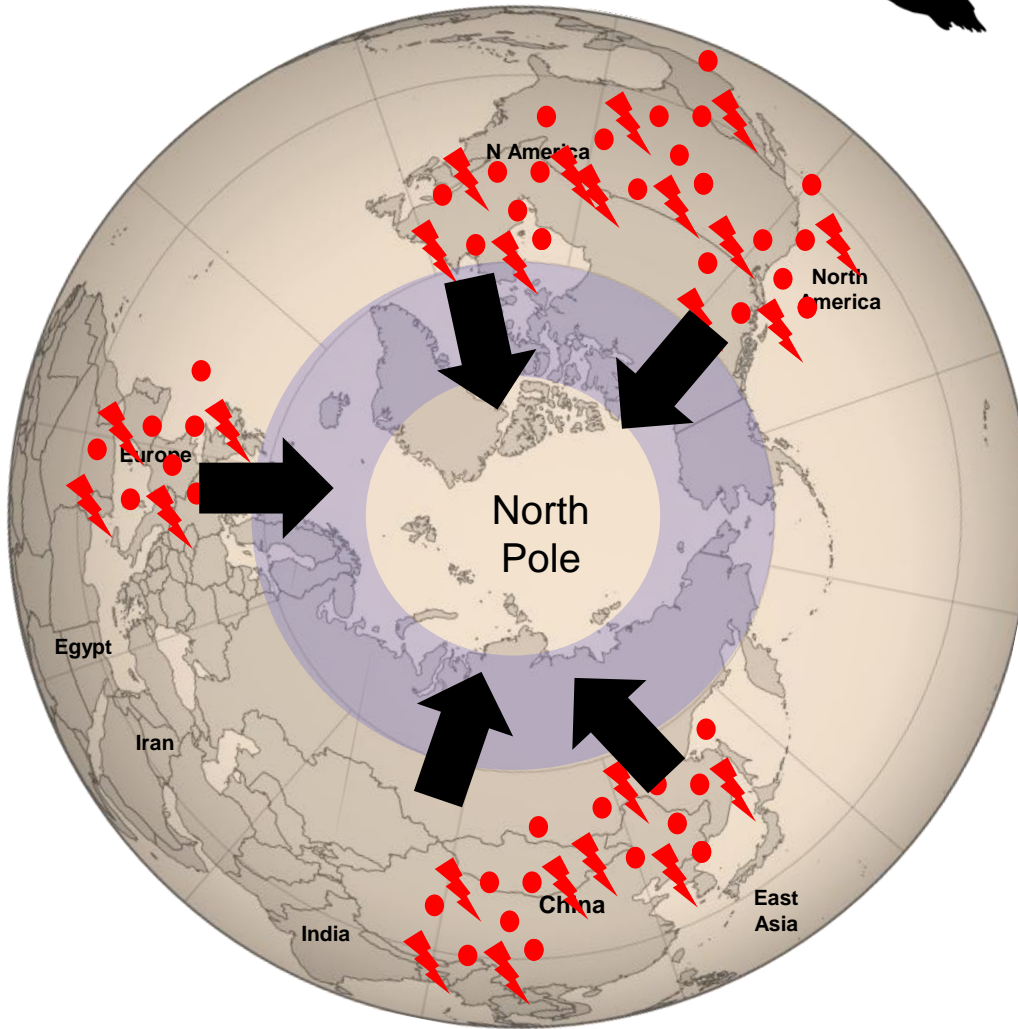


July  
August



September  
October  
November  
December

# Peripolar Ecology



January

February

March

April

May

June

July

August

September

October

November

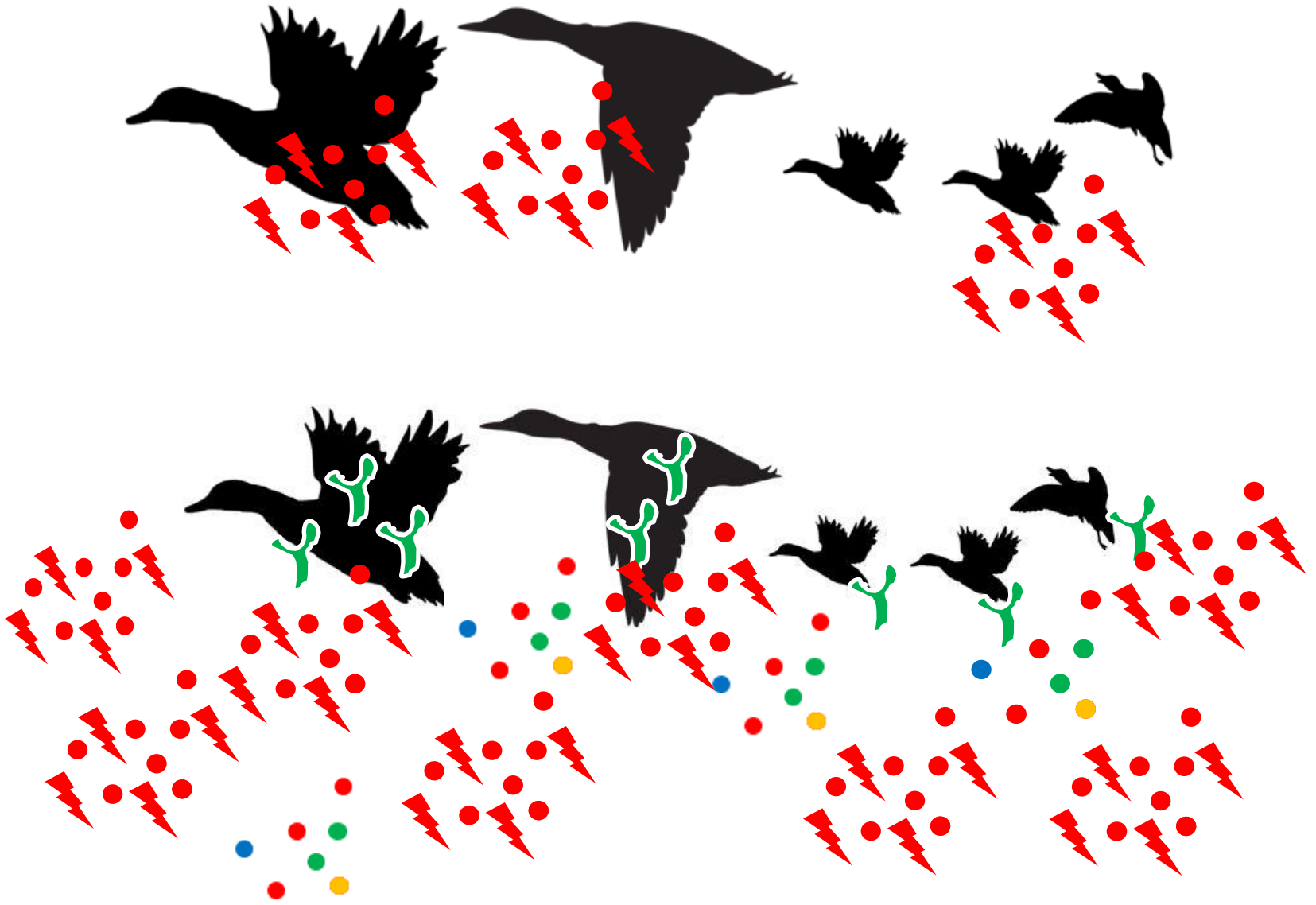
December

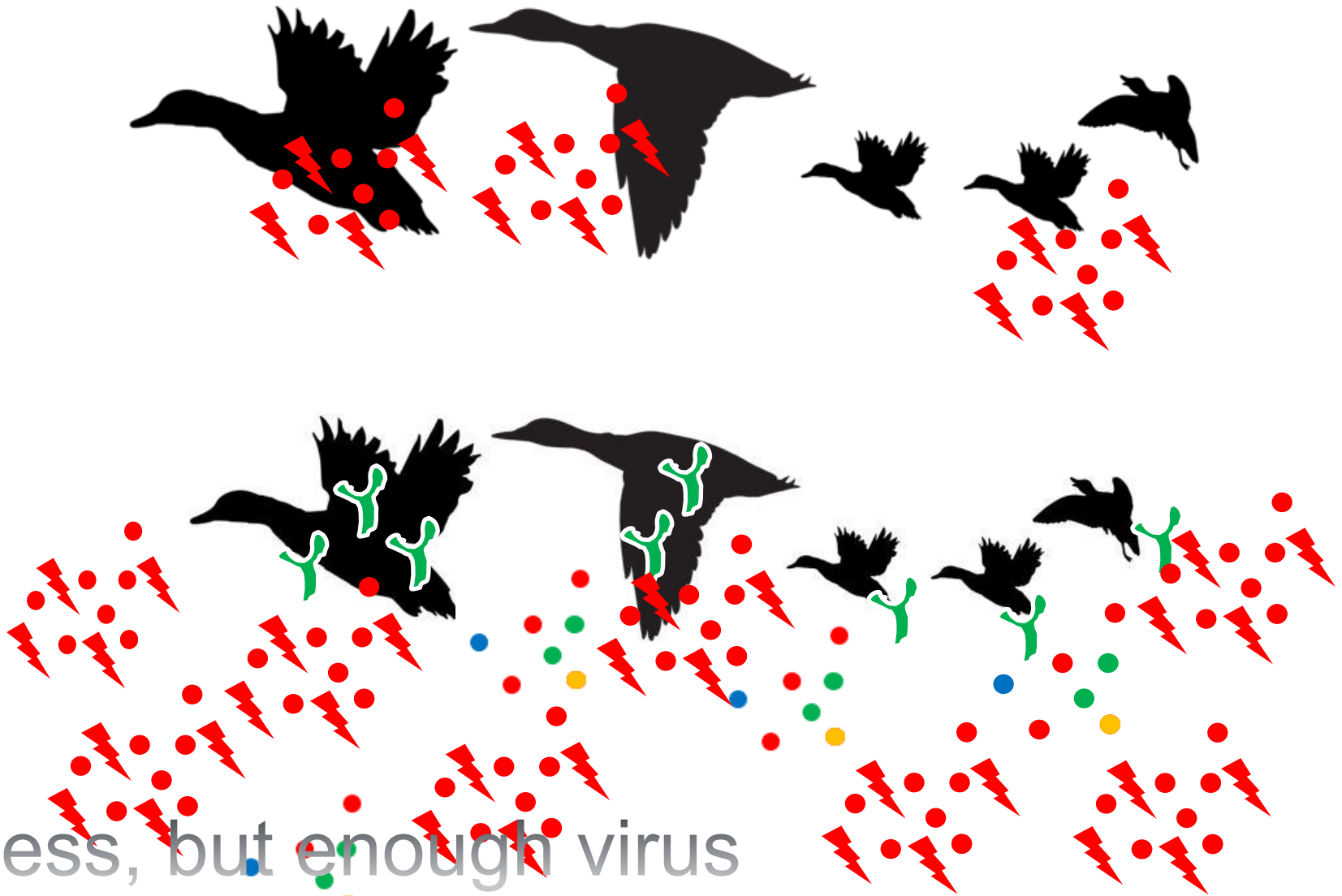
Courtesy of David Swayne









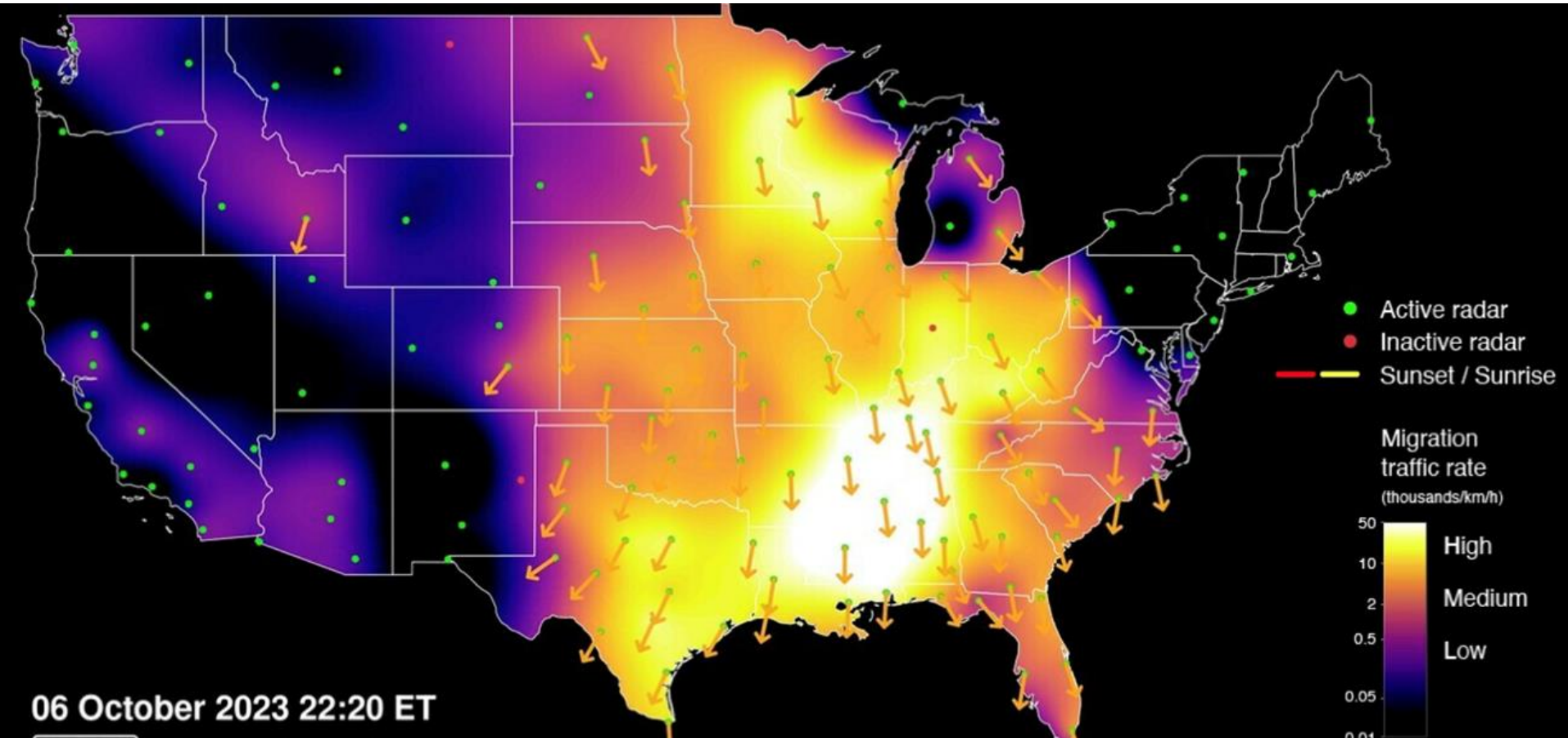


Less, but enough virus

Others, but the bad one is still here

Antibodies, but the virus shed still happens

# A billion birds in one night!



# Endemic in wild birds



“Endemic” means regularly occurring, typically present in a population

- *Clade is 2,3,4,4b*
- *Scientists identified changes in the virus...B1, B2, B3, B4*
- *In Europe, there was a recent reassortment with another virus...*





# Detections of Highly Pathogenic Avian Influenza in Mammals

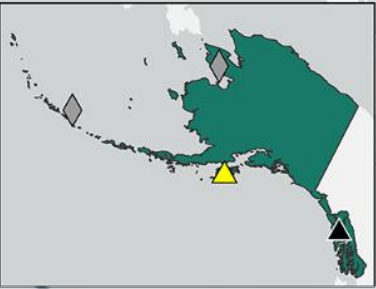
Points are approximations based on the county of detection and may represent multiple detections.



Species  
 ■ Big cat (captive)



National Wildlife Disease Program  
 USDA/APHIS/Wildlife Services  
 Published October 17, 2023  
 Data Source: State Agencies, USDA

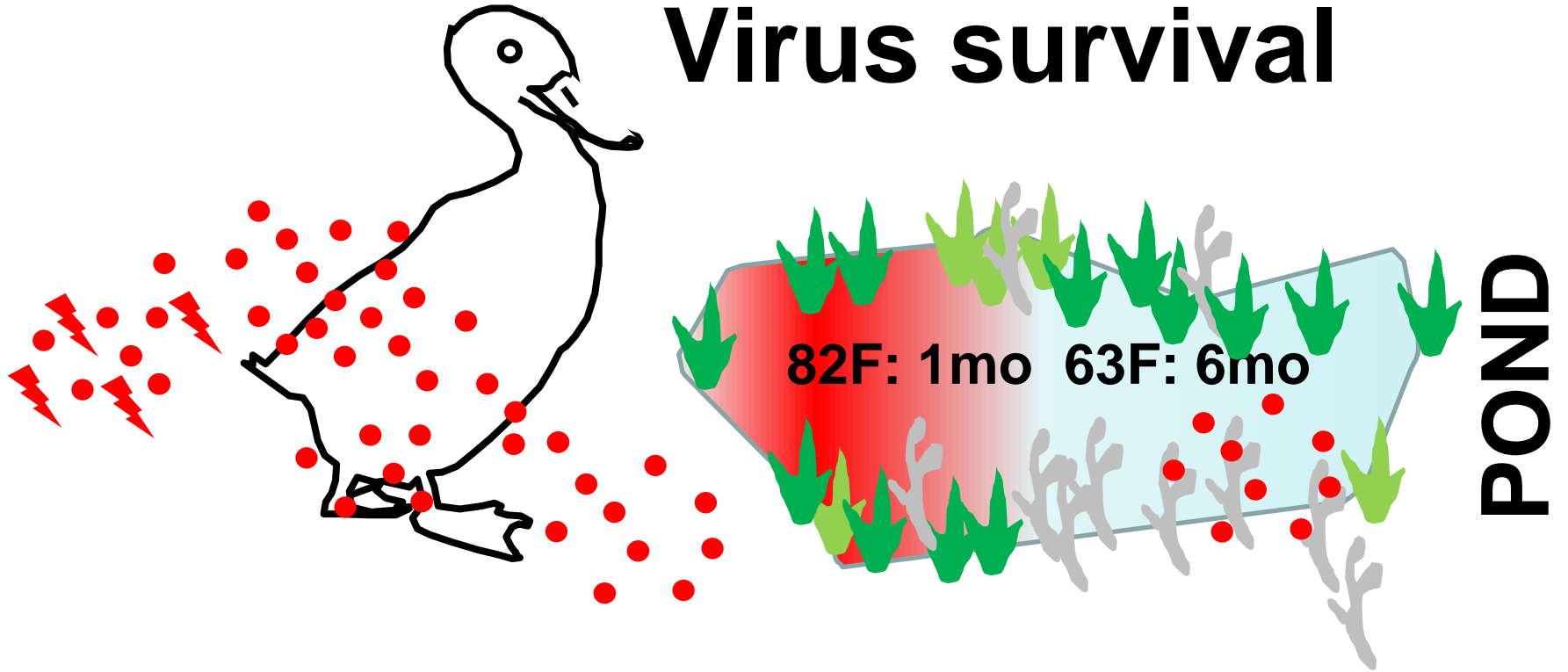


Flyway  
 ■ Atlantic  
 ■ Central  
 ■ Mississippi  
 ■ Pacific

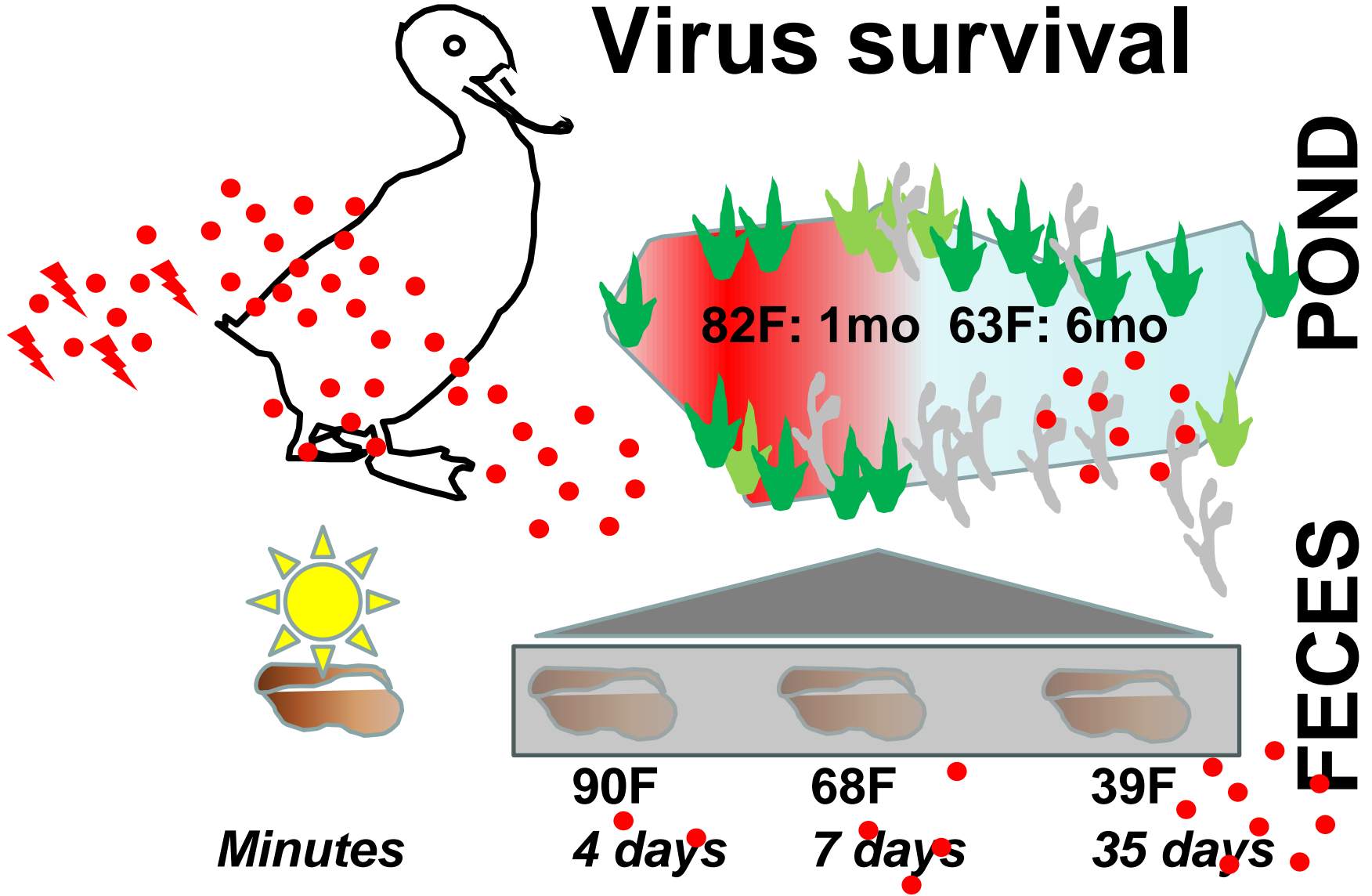
ter

miles

# Virus survival



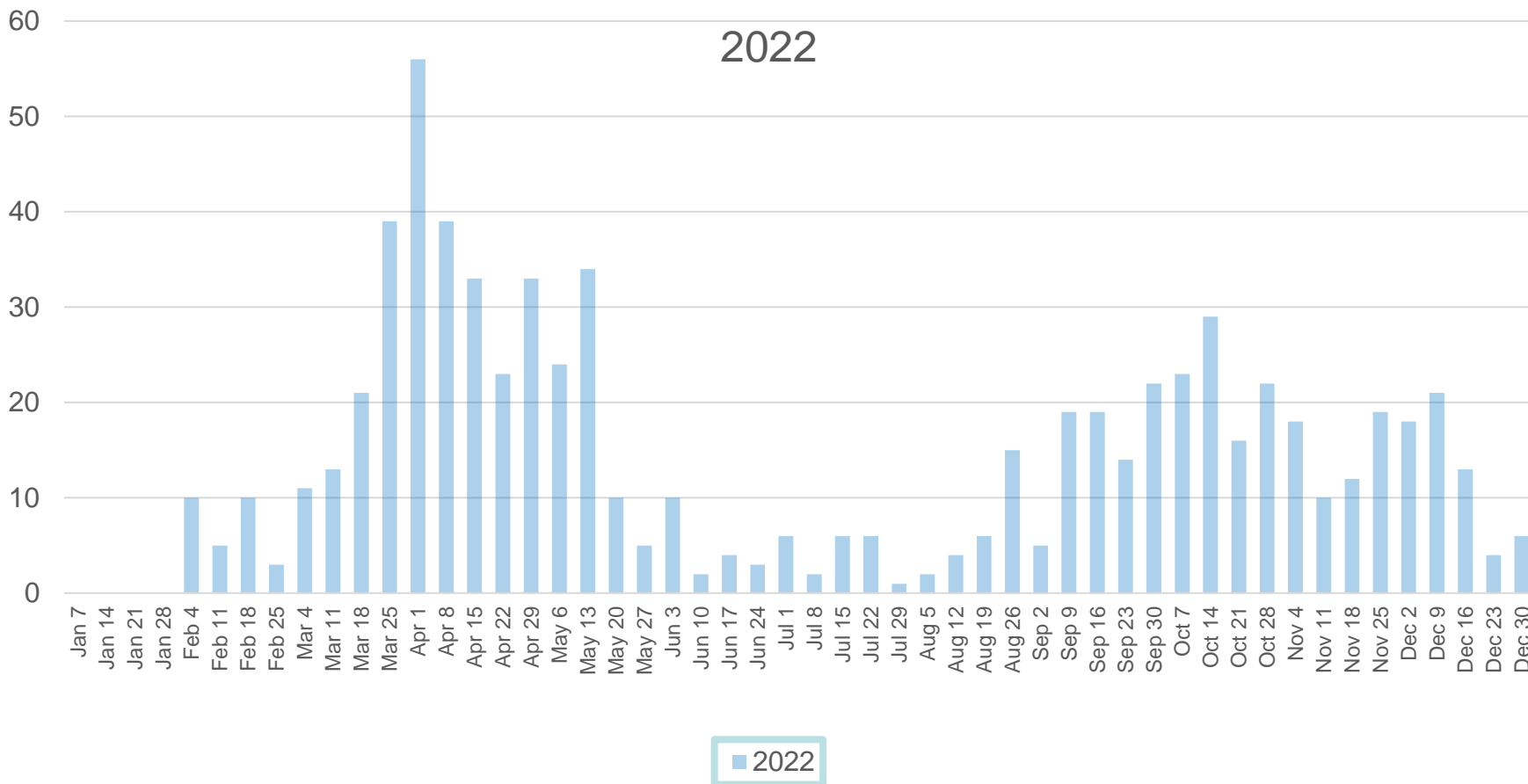
# Virus survival



# Comparing epi curves: HPAI 2022, 2023 and 2024

## Number of weekly in Commercial and Non-Commercial Poultry

Compiled by GPLN – Not an official USDA epi curve

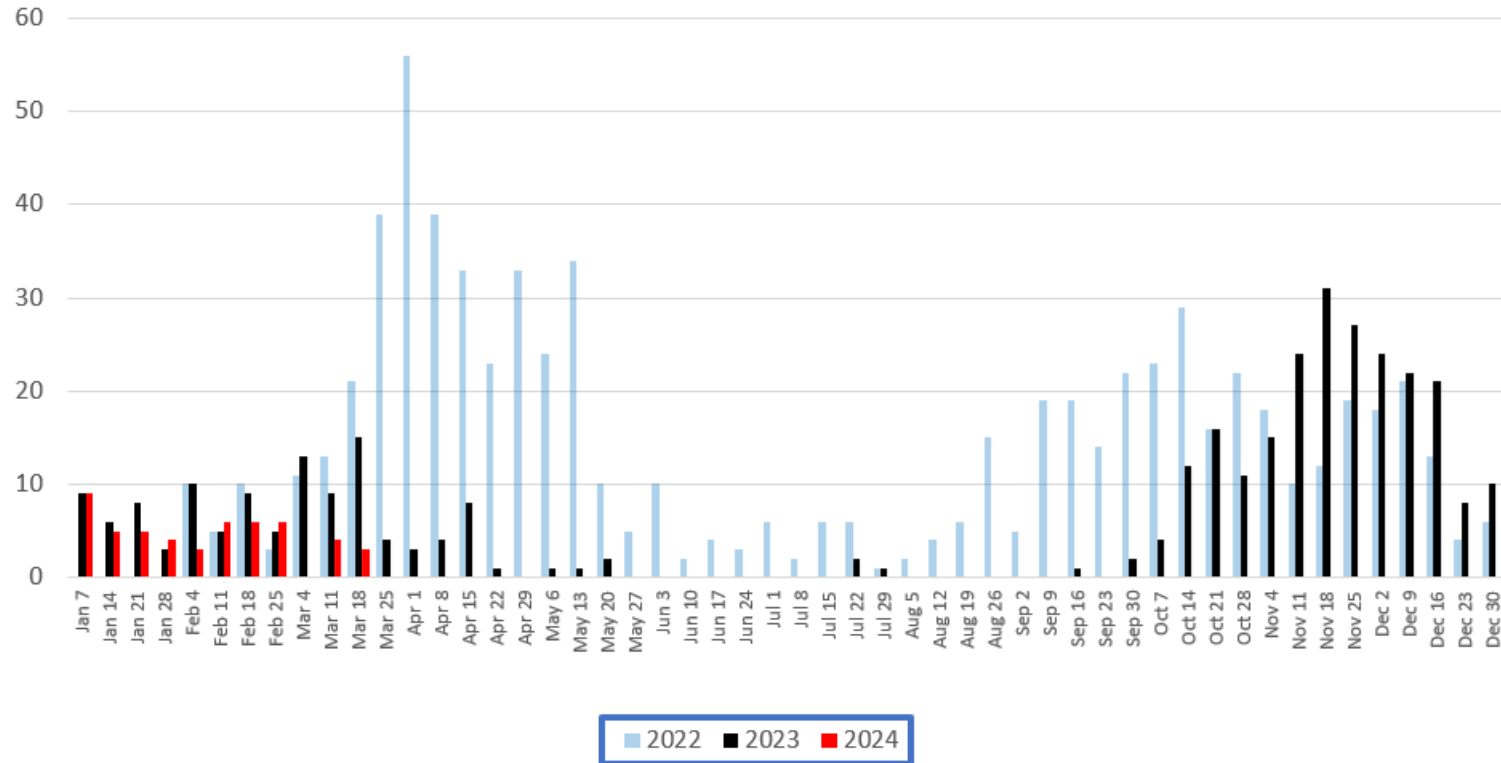


As of Jan 3, 2024

## Comparing epi curves: HPAI 2022, 2023 and 2024

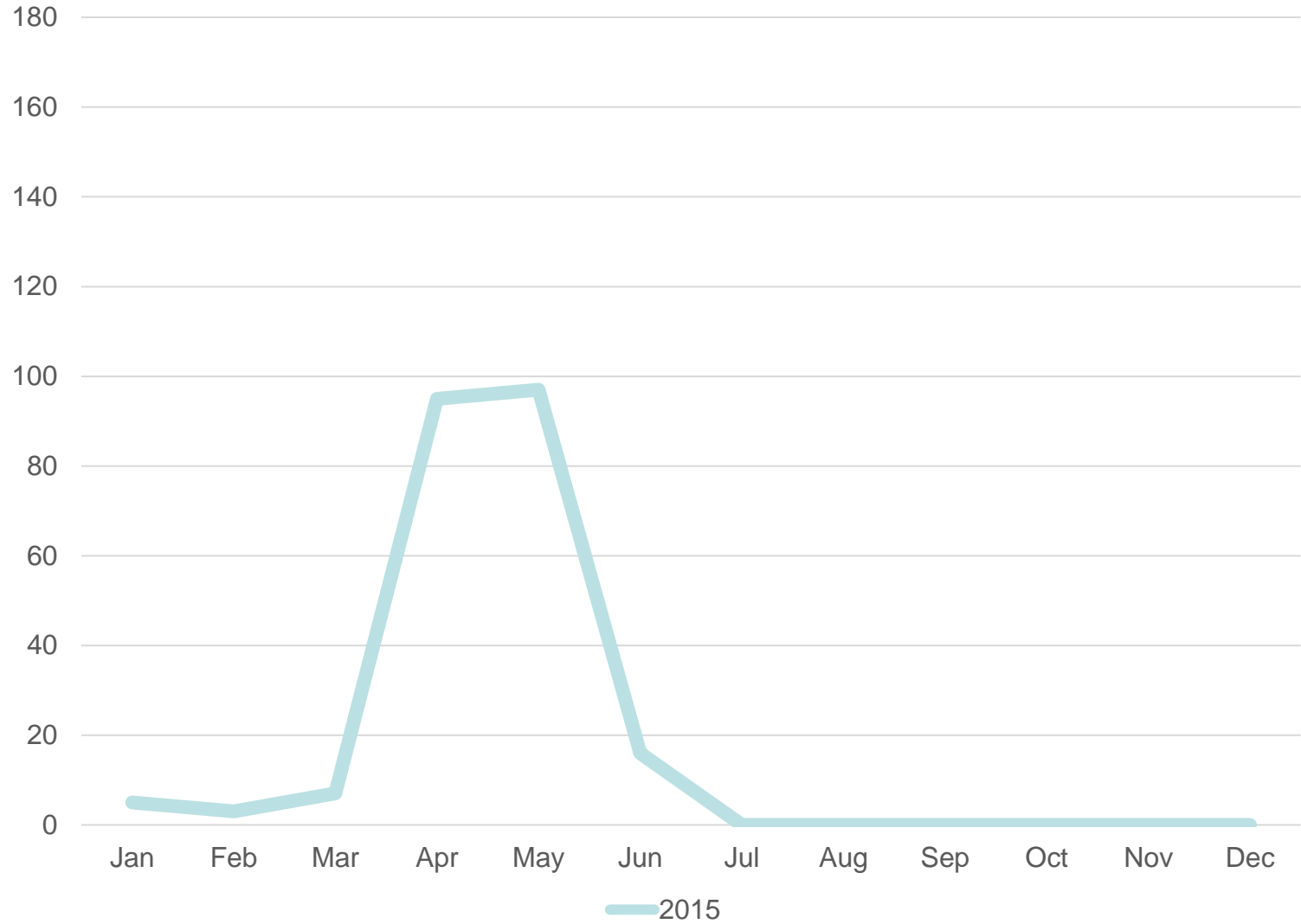
### Number of weekly in Commercial and Non-Commercial Poultry

*Compiled by GPLN – Not an official USDA epi curve*



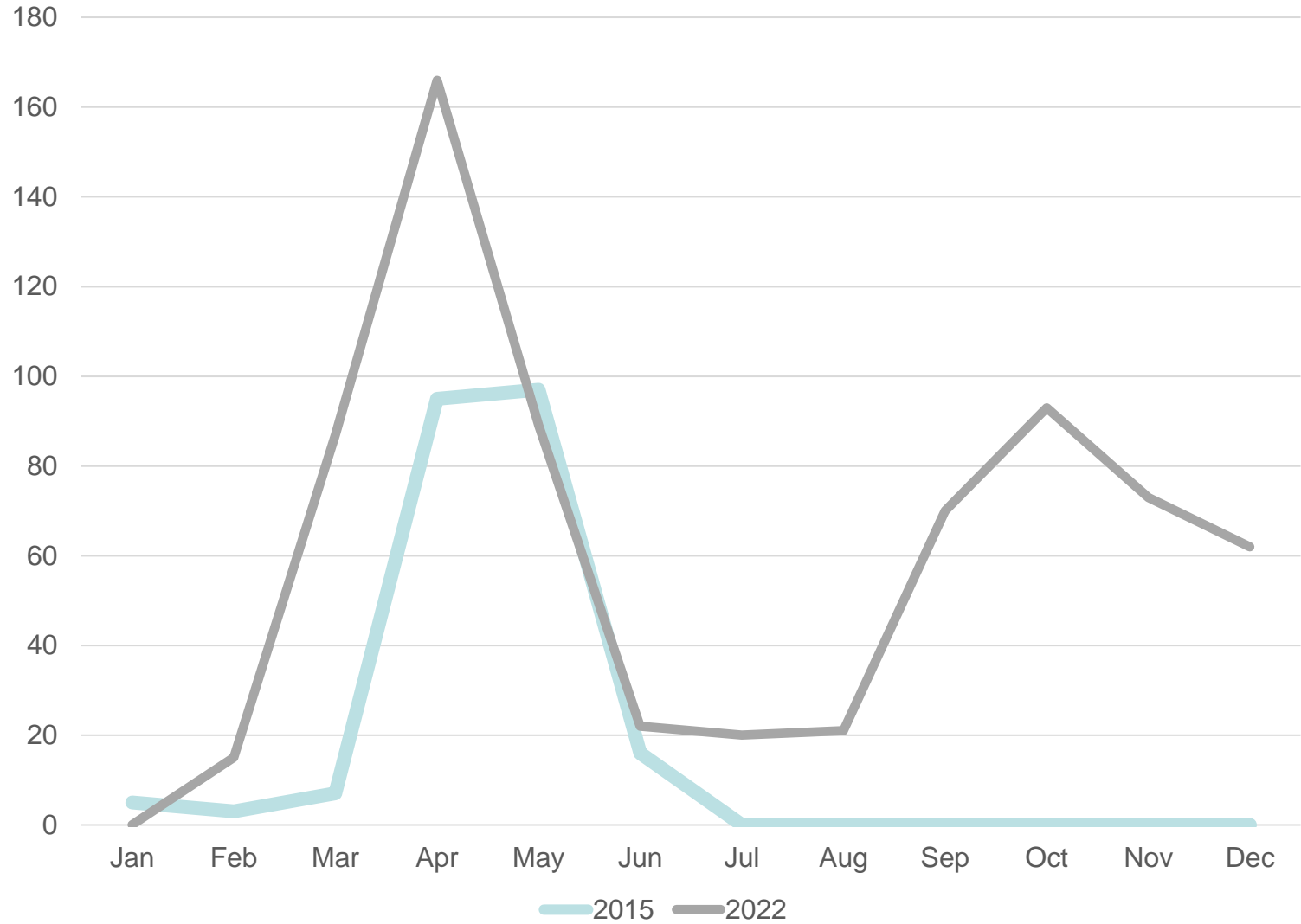
As of March 22, 2024

# 2015



# 2015

# 2022

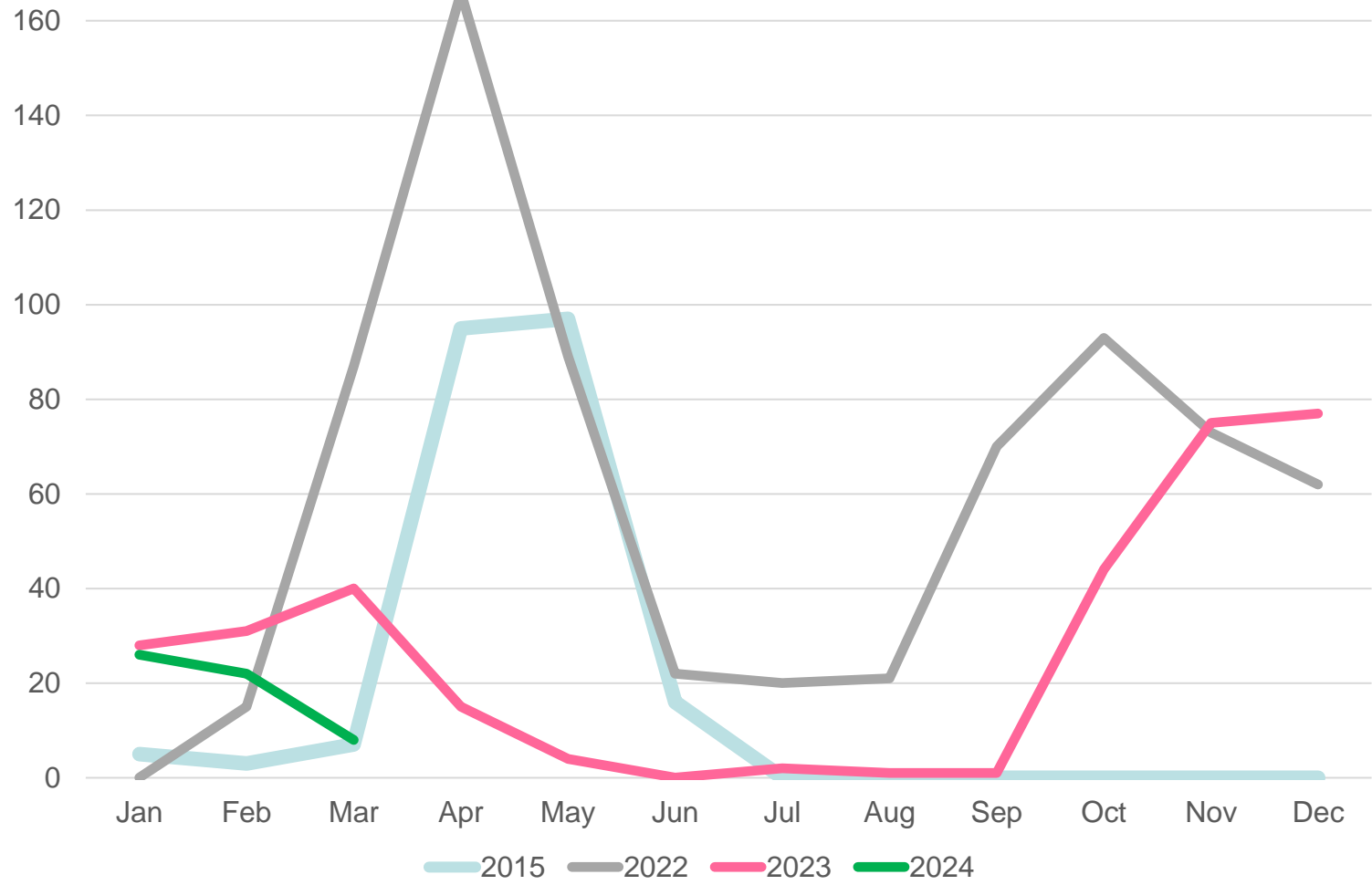


2015

2022

2023

2024



# Current count

May 2, 2024

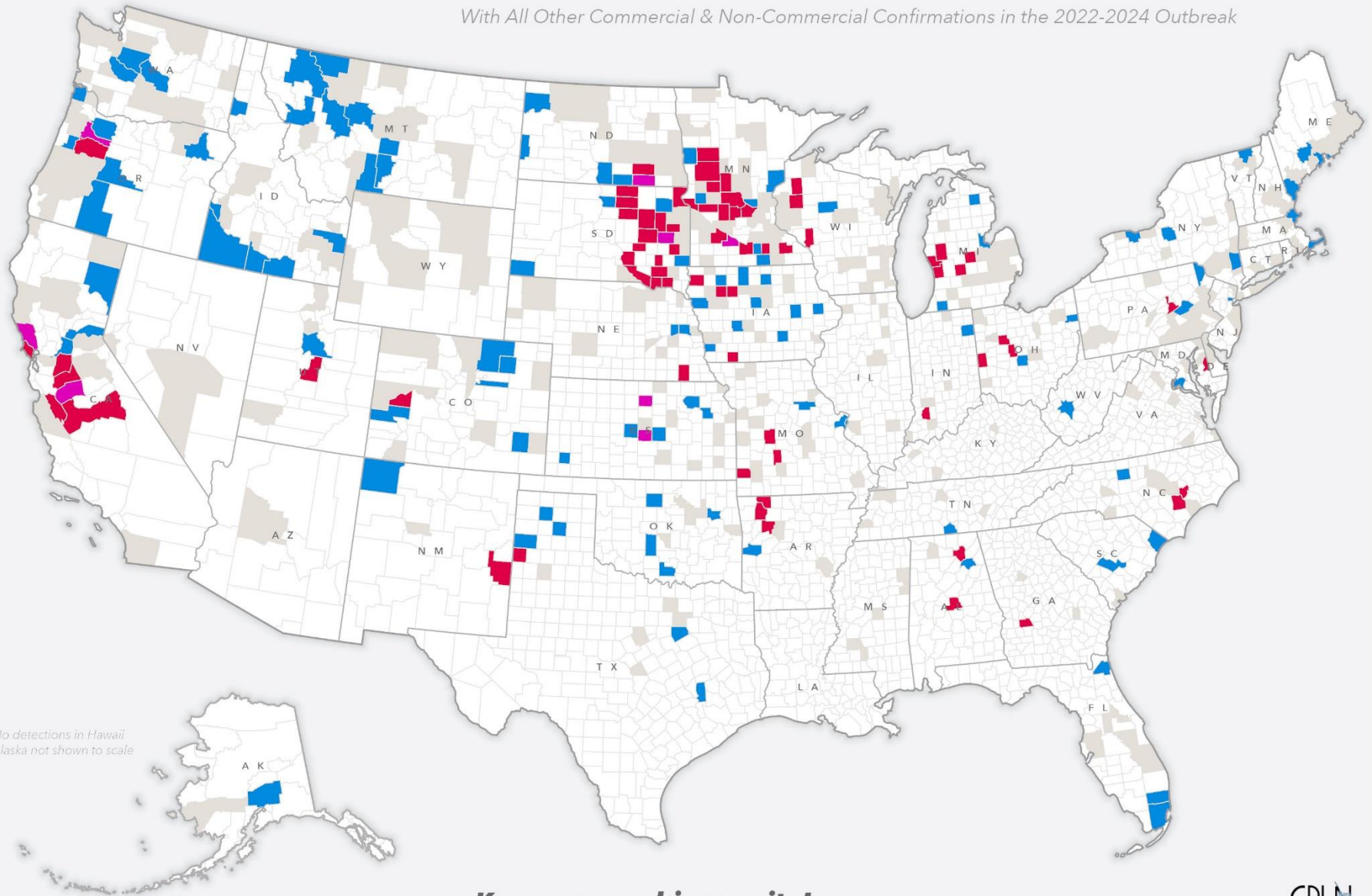
<b>1130</b> Confirmed flocks		<b>48</b> Affected states
Commercial flocks <b>484</b>	Backyard flocks <b>646</b>	Birds affected <b>90.86M</b>

*57.2% cases are backyard*



# HPAI Confirmations by County in Commercial Flocks, Non-Commercial Flocks, or Both September 1, 2023 - May 2, 2024

*With All Other Commercial & Non-Commercial Confirmations in the 2022-2024 Outbreak*



No detections in Hawaii  
Alaska not shown to scale

**Keep up your biosecurity!**

Sources | USDA/APHIS, US Census Bureau



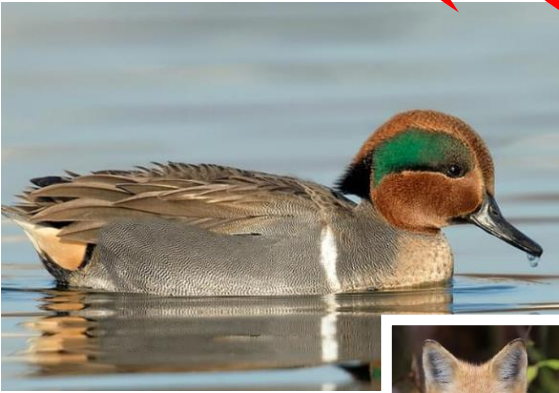
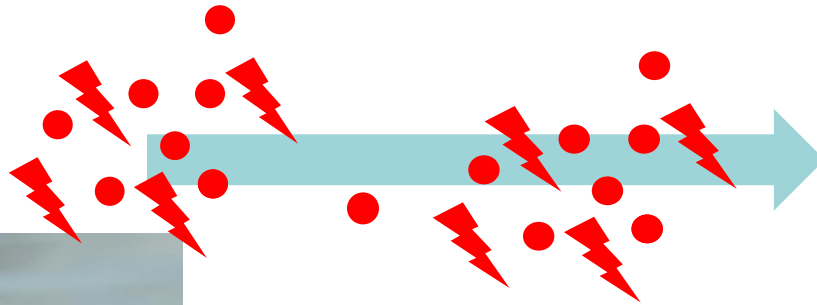
# Clinical Signs:



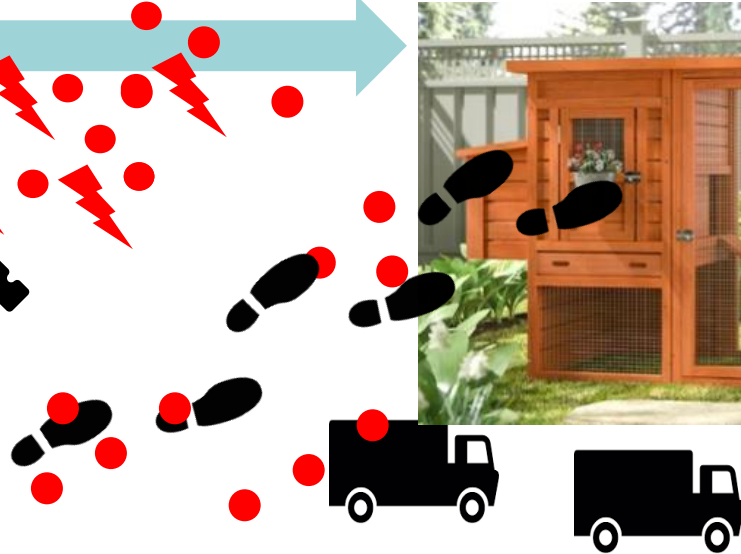
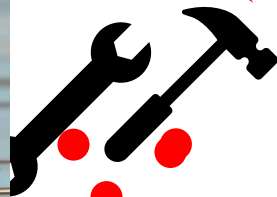
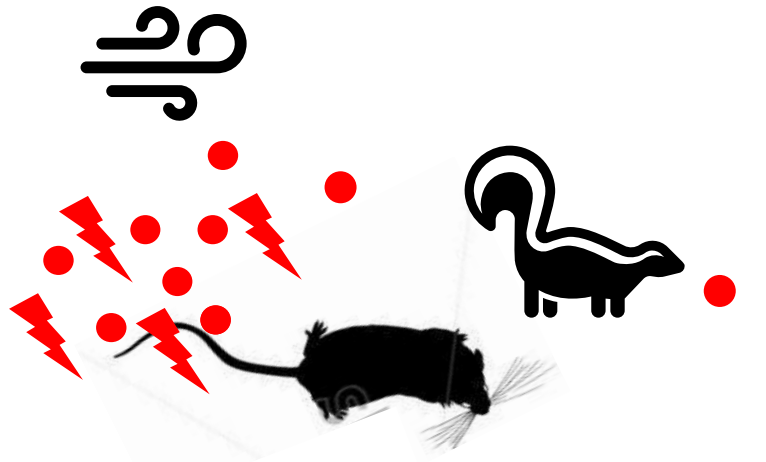
**↑ MORTALITY**  
**↓ PRODUCTION**  
**↓ WATER CONSUMPTION**  
**EERILY QUIET BIRDS**



# Disease Sources



# Disease Spread from Sources



# What happens to a positive flock? RESPONSE

- Meeting with officials about indemnity and flock plan
- Farm is quarantined and the flock is depopulated on site/Disposal/C&D ASAP
- A 10 km radius Zone is drawn around it
- All poultry are tested 3 times within 30 days to release the Zone
- A one farm event can last 2 months
- A multiple farm event can last several months
- The State is shut down



# How is HPAI controlled

## USDA Stamping out: 4 principles

- **BIOSECURITY**
- **SURVEILLANCE**
- **CULLING**
- **EDUCATION**



# What about vaccination?

- USDA's decision, then up to each state
- Europe started vaccinating 2023
- Vaccination:
  - *Increases resistance to infection*
  - *Reduces shed*
  - *Prevents disease and death*
  - *Is an additional tool in control*
- However:
  - *No vaccine stockpile*
  - *Need to match the field strain exactly, as it changes every year, has to be injected*
  - *Have to be able to differentiate vaccinated from infected poultry*
  - *Vaccination disturbs exports considerably*



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WHAT  
WOULD  
TIP THE  
SCALE?

1. **If cost of response became more than cost of vaccination**
2. **Bird flu pandemic**
3. **Food insecurity**





## Vaccine authorized for emergency use in California condors amid bird flu outbreak

BY ASSOCIATED PRESS | EAST LOS ANGELES  
PUBLISHED 7:56 PM ET MAY 16, 2023

LOS ANGELES (AP) — California condors will receive a vaccine for a deadly strain of avian influenza that threatens to wipe out the already critically endangered vulture species, federal officials said Tuesday.





1



2

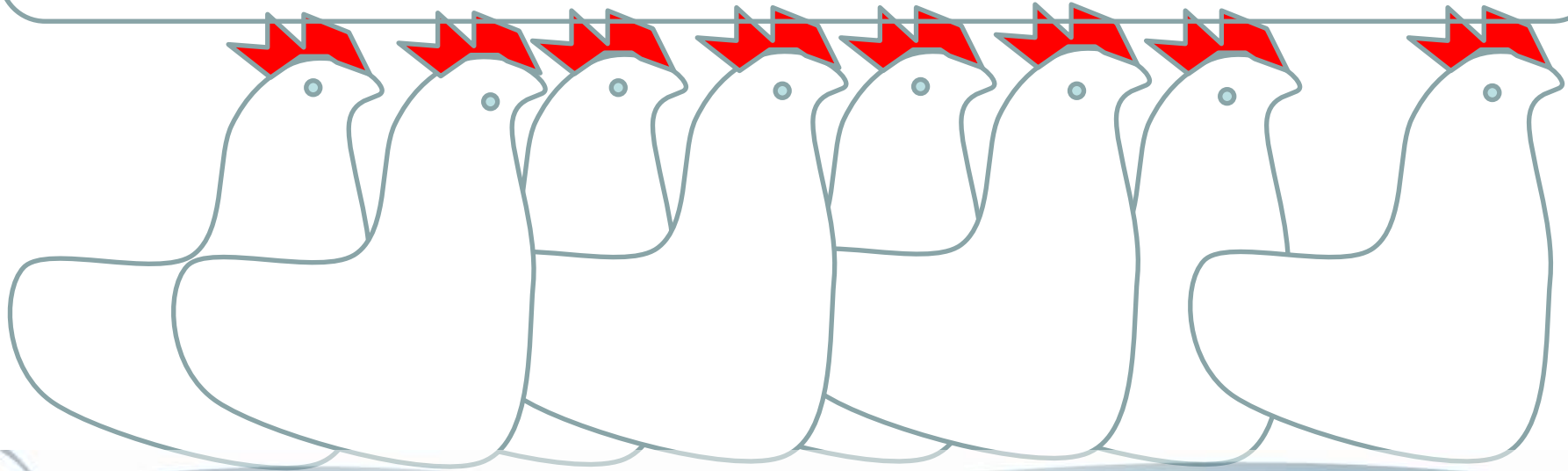
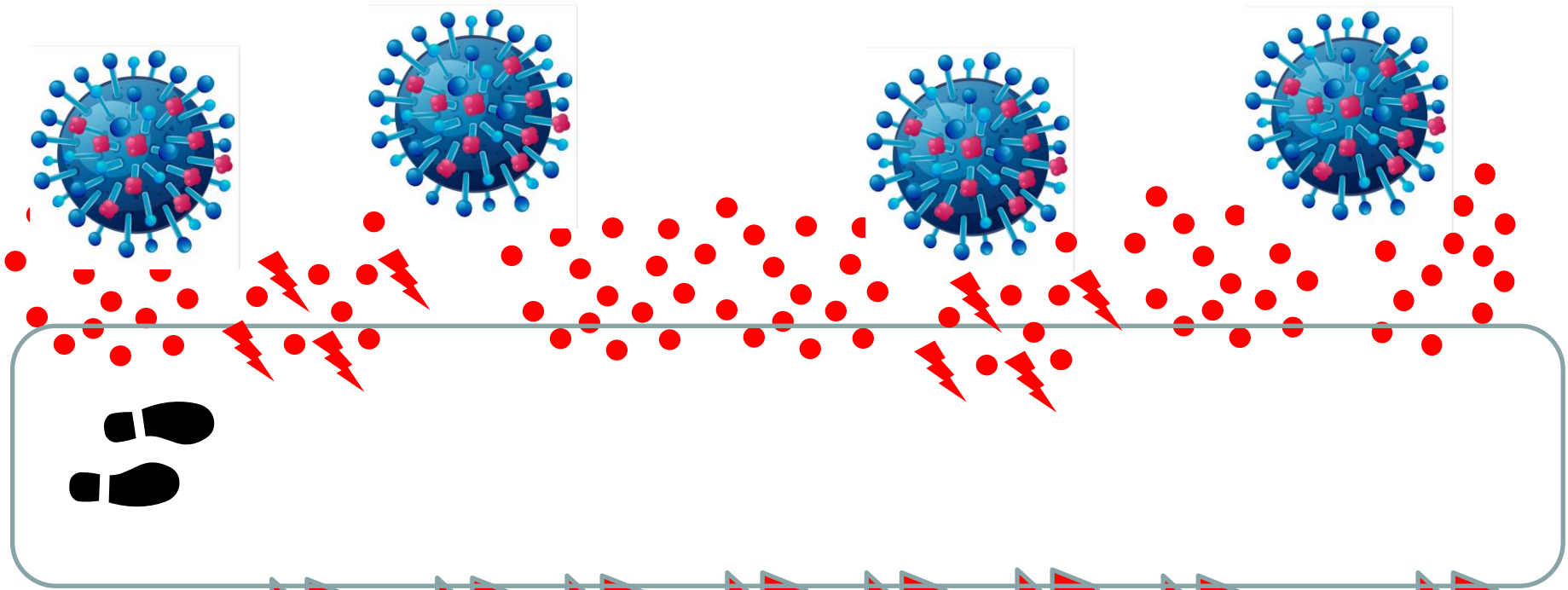


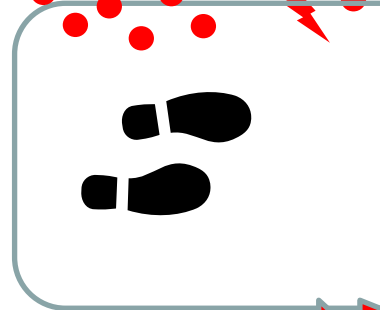
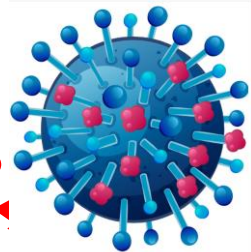
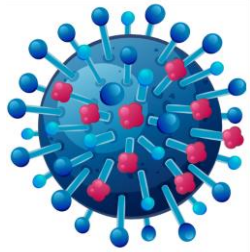
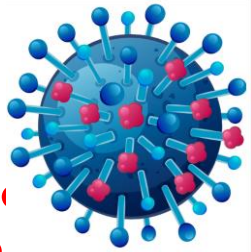
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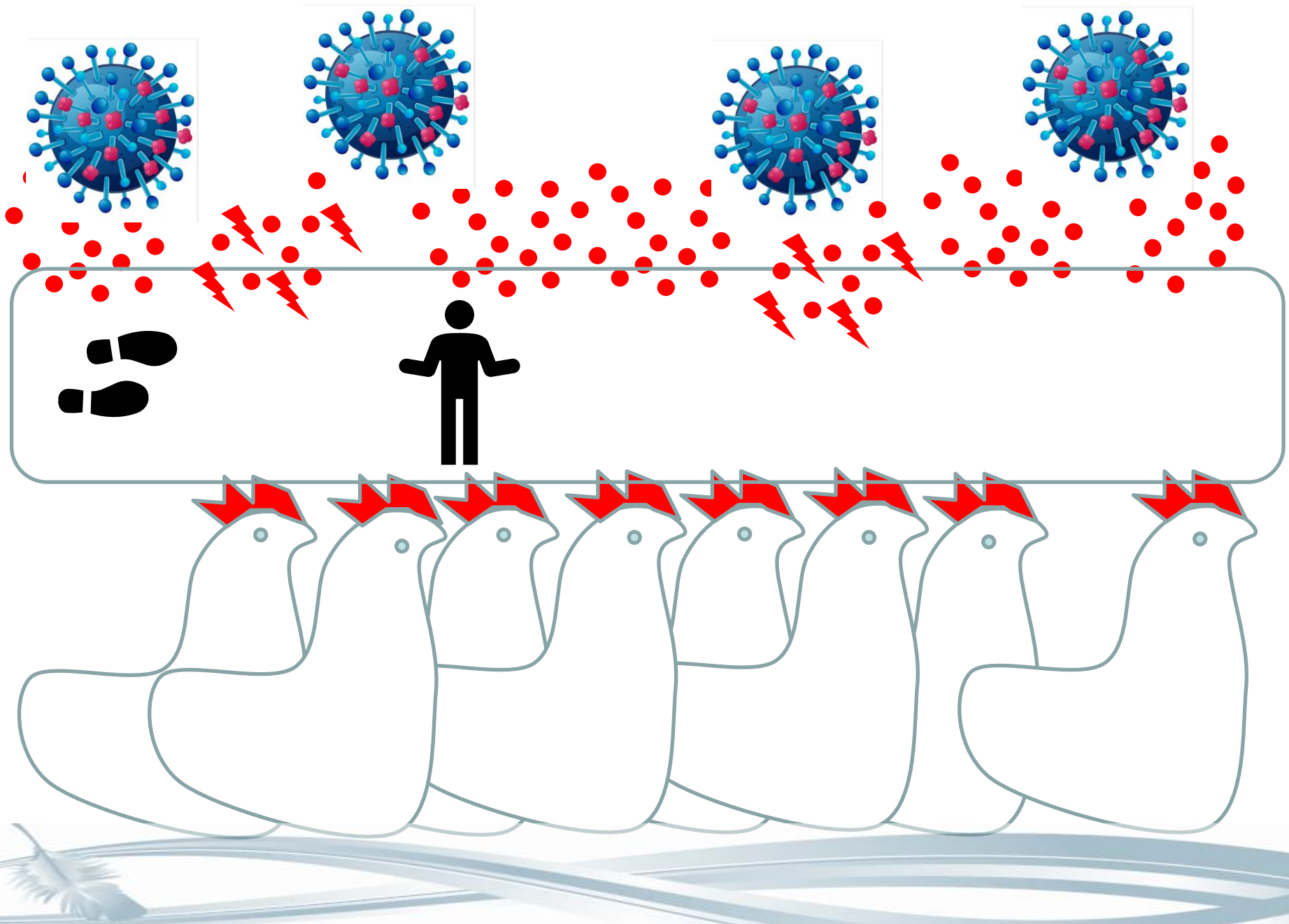


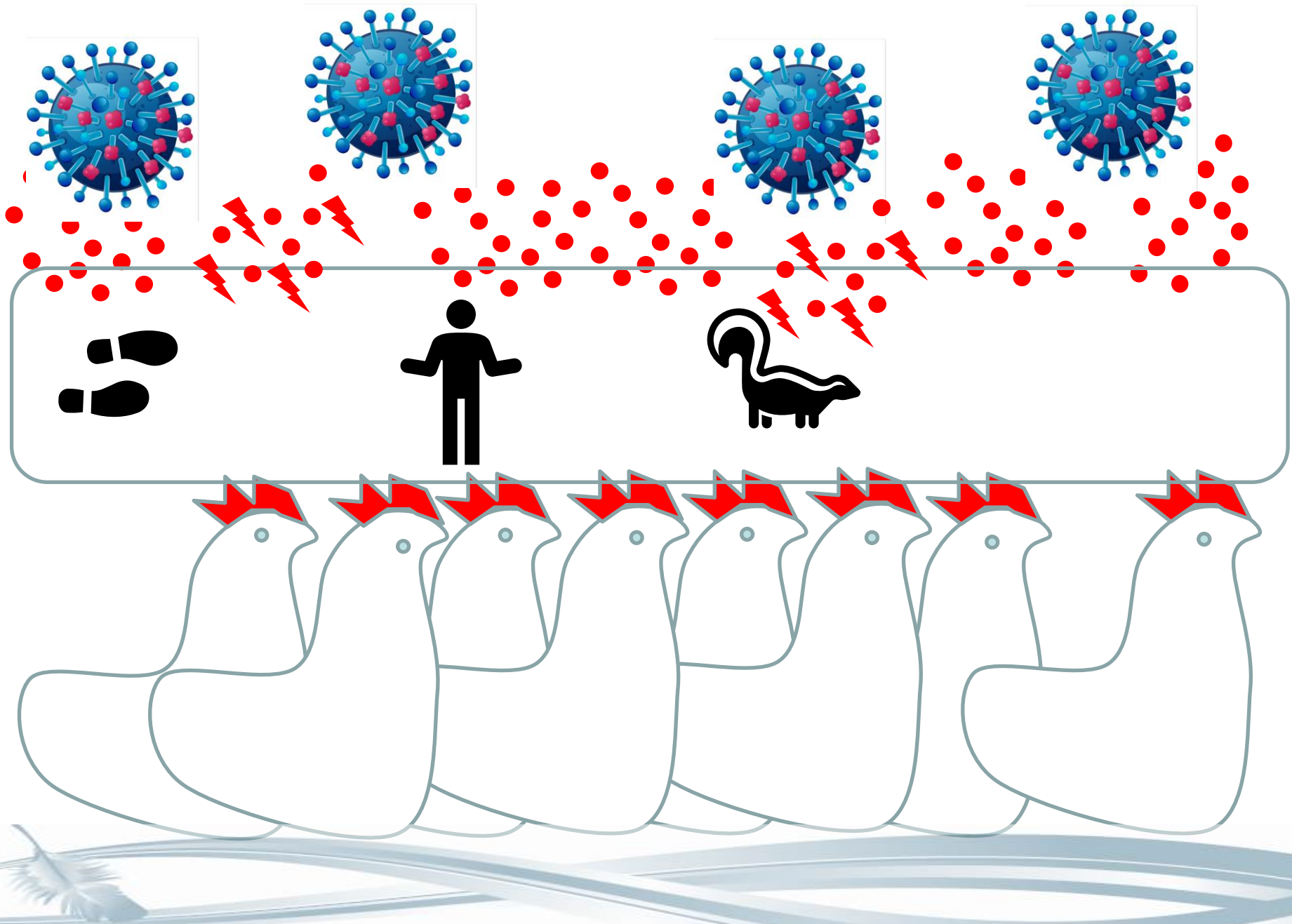
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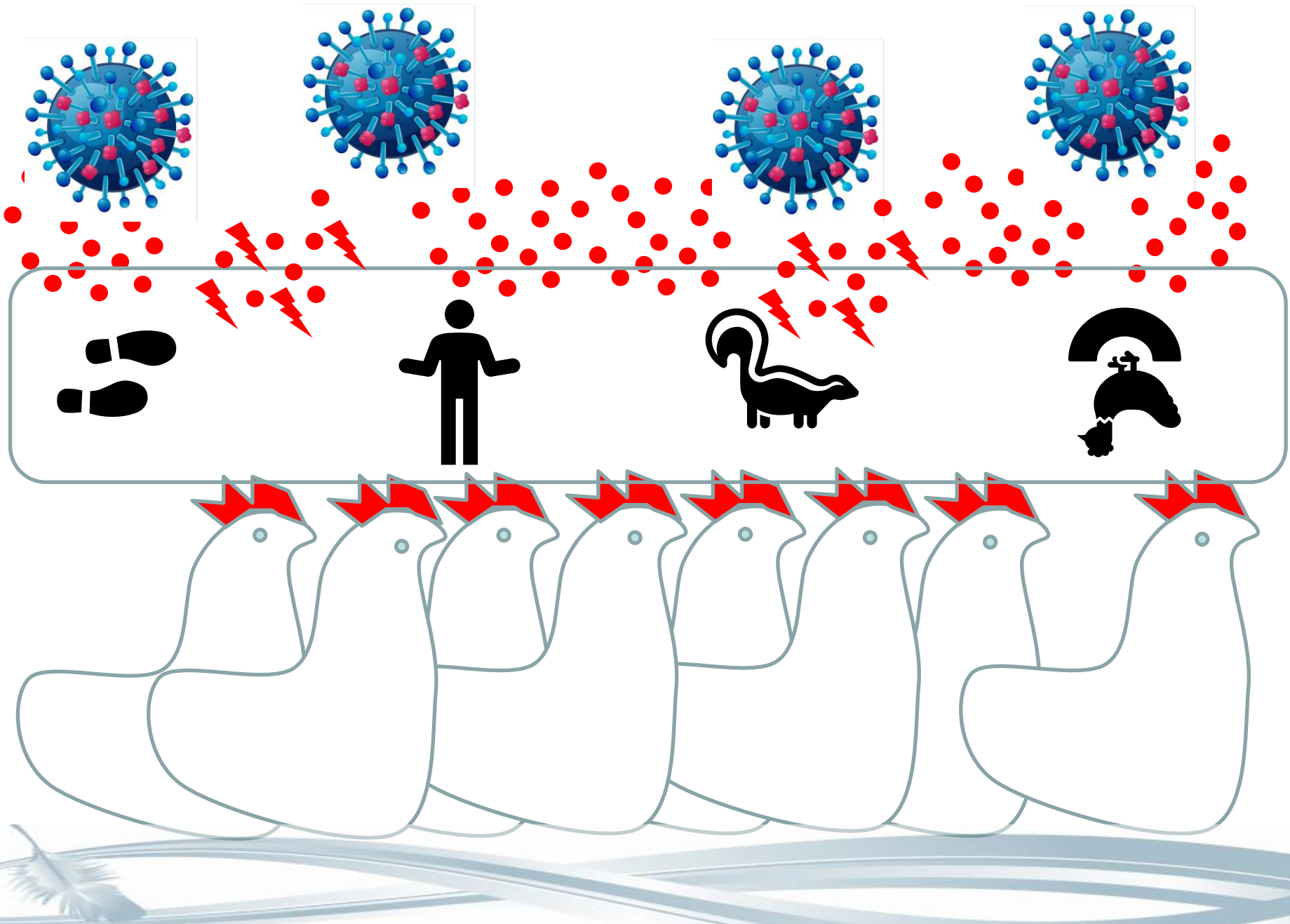





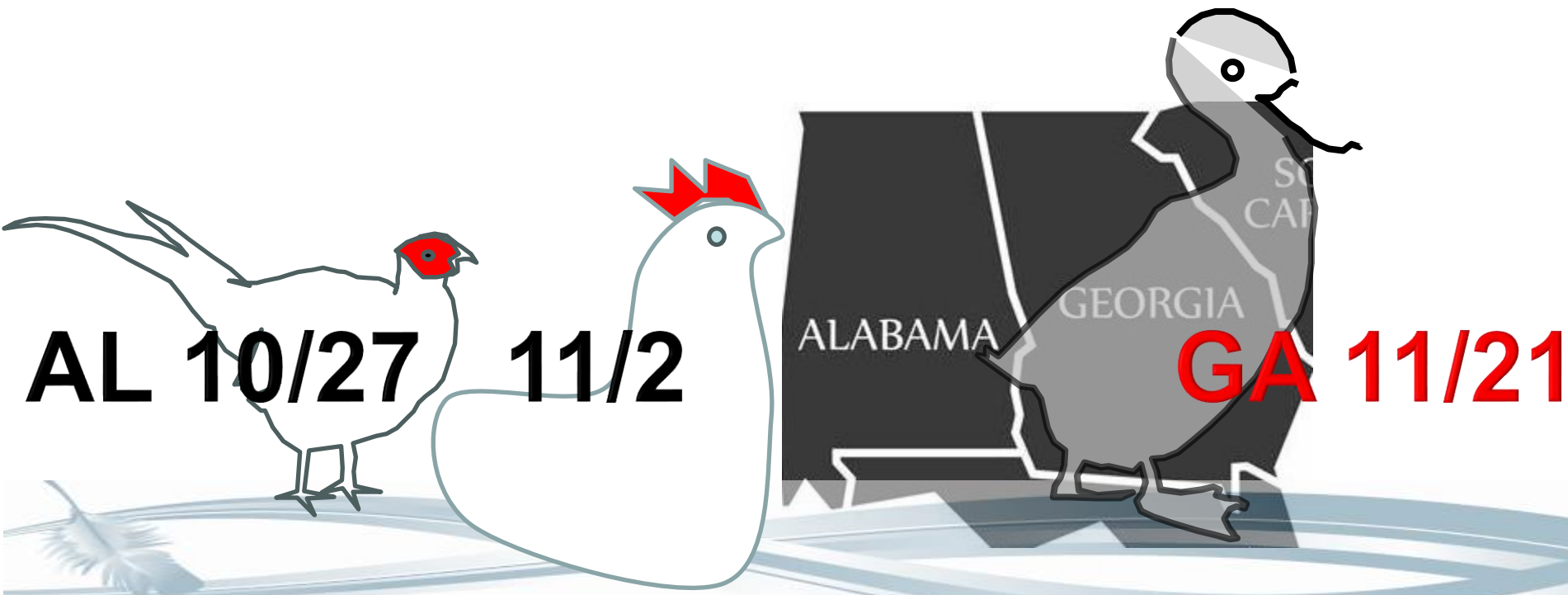
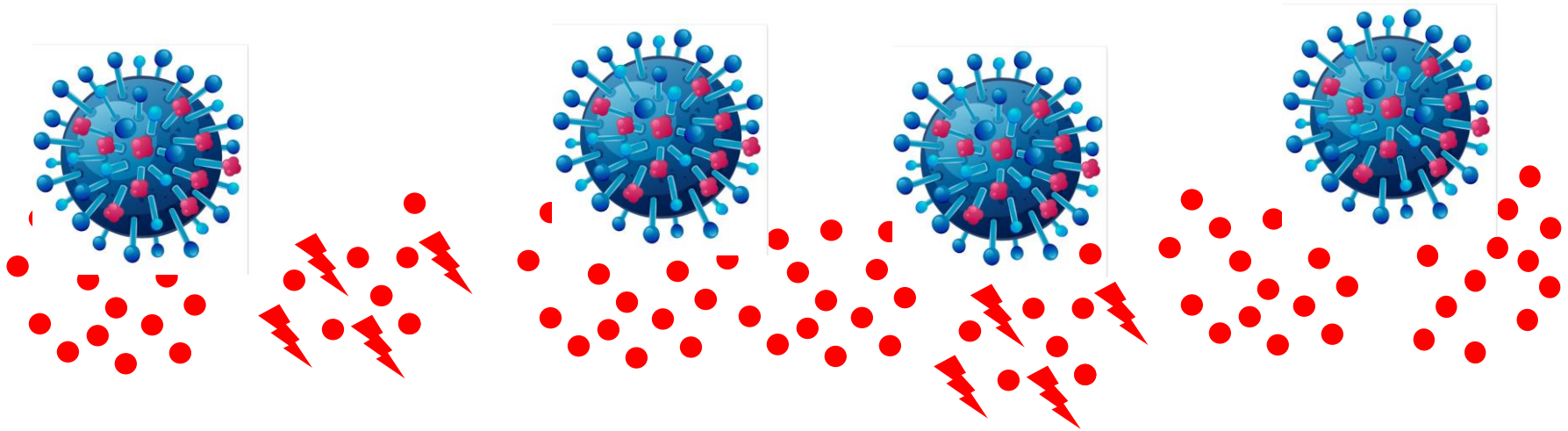








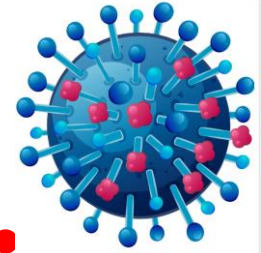
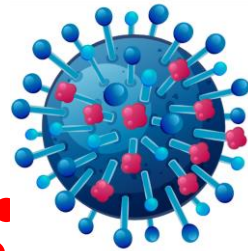
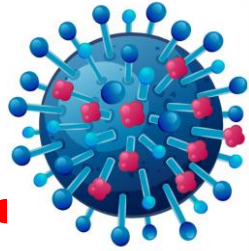
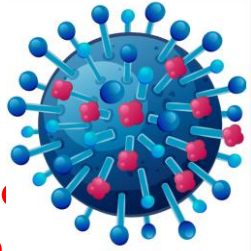
Confirm.. 	State	County Name	Production	Control Area Released	Birds Affected
08-Feb-24	Colorado	Delta	Commercial Broiler Breeder	05-Mar-24	66,500
06-Nov-23	Missouri	Benton	Commercial Broiler Breeder	14-Dec-23	16,600
02-Nov-23	Alabama	Marshall	Commercial Broiler Breeder Pullets	05-Dec-23	47,900
31-Oct-23	Arkansas	Madison	Commercial Broiler Breeder Pullets	24-Nov-23	31,600
28-Dec-22	Tennessee	Weakley	Commercial Broiler Breeder	01-Feb-23	43,600
			Commercial Broiler Breeder	01-Feb-23	19,000
15-Nov-22	Tennessee	Bledsoe	Commercial Broiler Breeder	07-Dec-22	20,900
04-Nov-22	Mississippi	Lawrence	Commercial Broiler Breeder	01-Dec-22	34,400
07-Oct-22	Arkansas	Madison	Commercial Broiler Breeder Pullets	04-Nov-22	56,000
15-Sep-22	California	Fresno	Commercial Broiler Breeder	15-Oct-22	15,900
09-Sep-22	California	Fresno	Commercial Broiler Breeder	14-Oct-22	23,900
01-Sep-22	California	Fresno	Commercial Broiler Breeder	14-Oct-22	22,900



**AL 10/27**

**11/2**

**GA 11/21**



Please be careful!

