



Energizing Livestock Biosecurity: the Role of Rural Energy Providers and H5 Influenza Insights

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What's Ahead

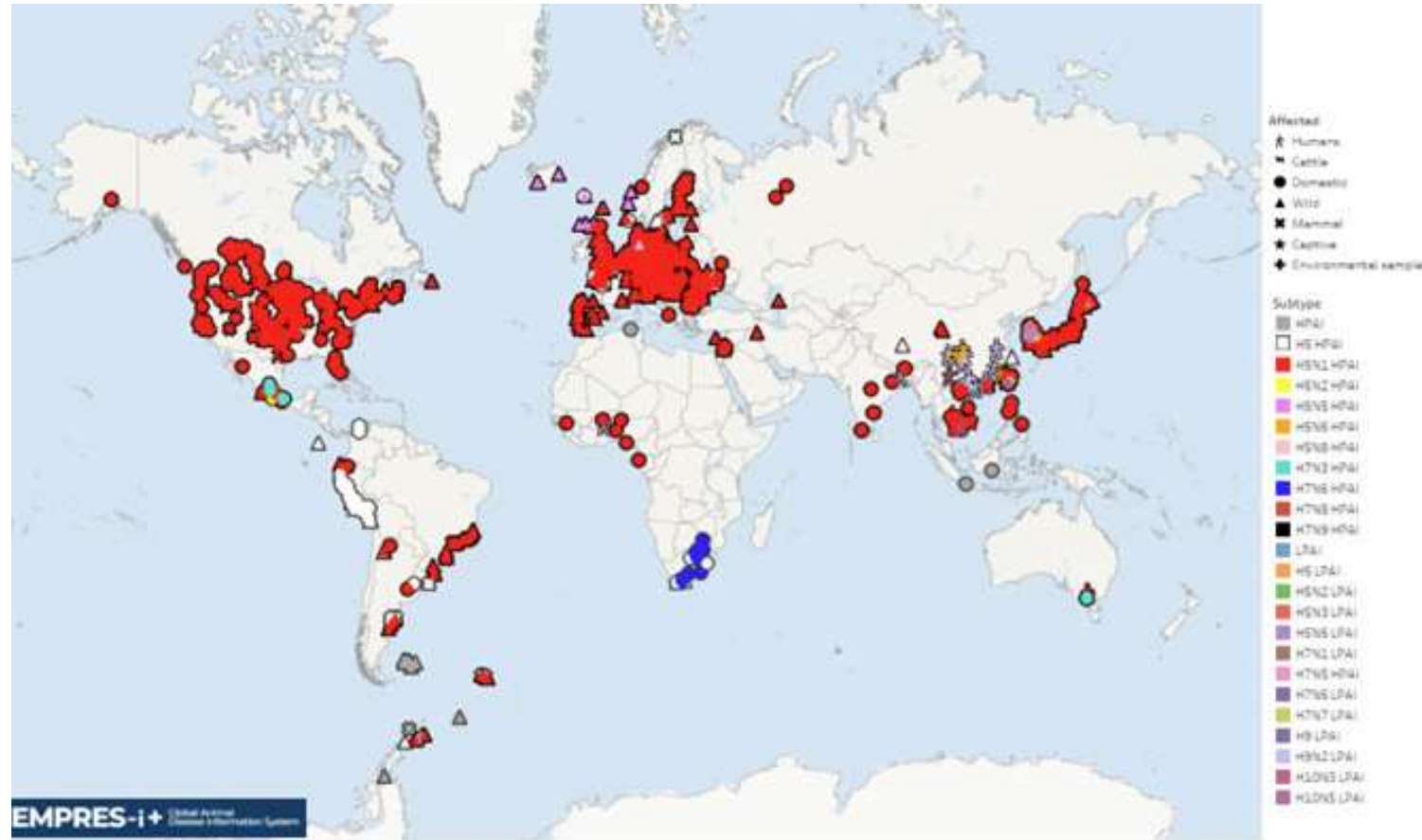
- Background of HPAI and H5 Influenza
- How the virus is affecting the U.S., MN & WI
- Biosecurity
- What is your responsibility
- What is your role on and around livestock farms?



Why Learn About Influenza?

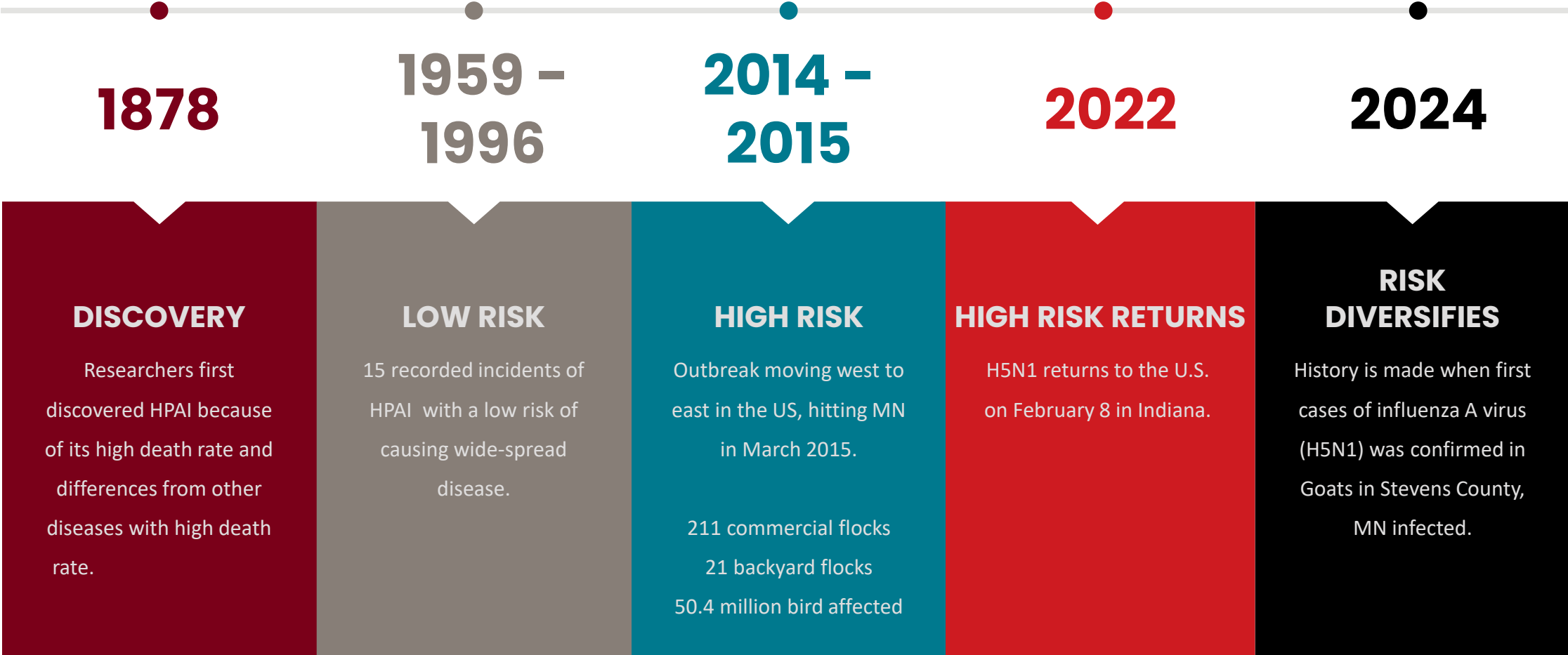
- **H5N1 Avian Influenza A virus** is a foreign animal disease (**FAD**).
- An FAD is an important **transmissible disease** historically absent from the U.S. that has **potential for significant health or economic impact**.
- H5N1 is **zoonotic**, meaning it can be **transmitted between animals and people**.

Where in the world is Avian Influenza?



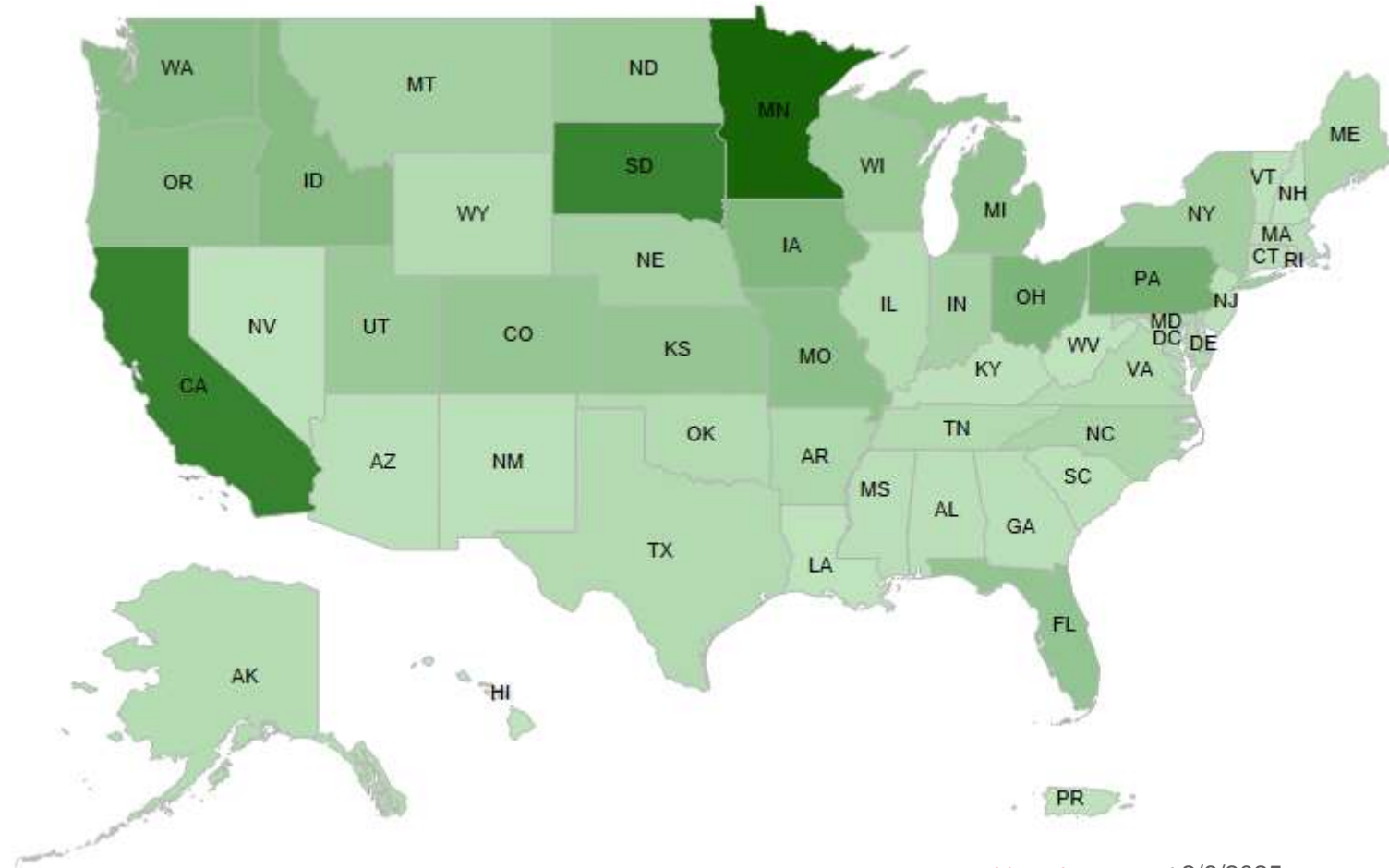
<https://www.fao.org/animal-health/situation-updates/global-aiv-with-zoonotic-potential>

AVIAN INFLUENZA IN THE UNITED STATES



Avian Influenza in Poultry Flocks

- All 50 states
- Over 121 million birds
- 630+ commercial
- 760+ backyard
- MN Flocks = 187
 - 9.1 million birds
- WI Flocks = 39
 - 3.6 millions birds



www.aphis.usda.gov as of 2/6/2025

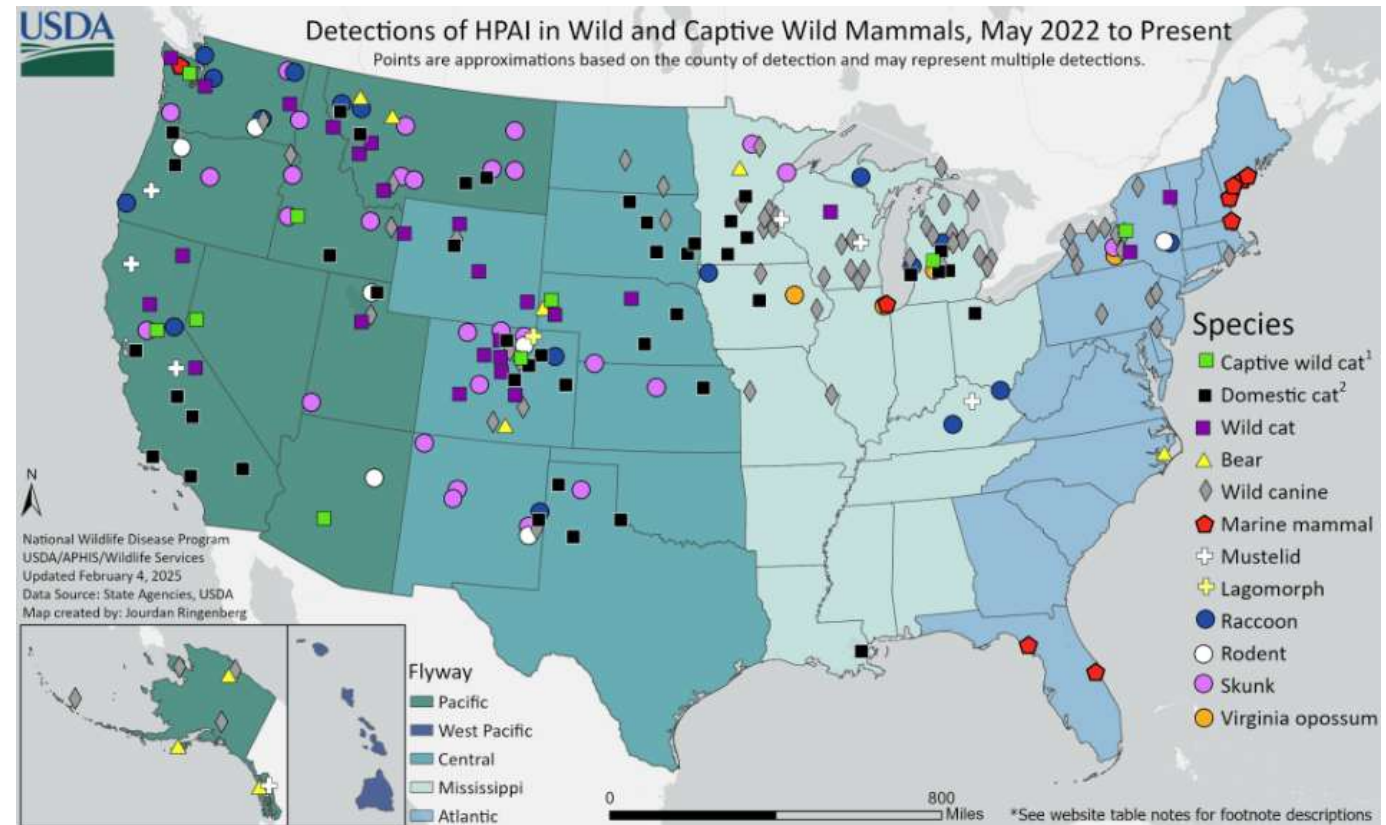
Avian Influenza in Wild Birds

As of 2/6/2025

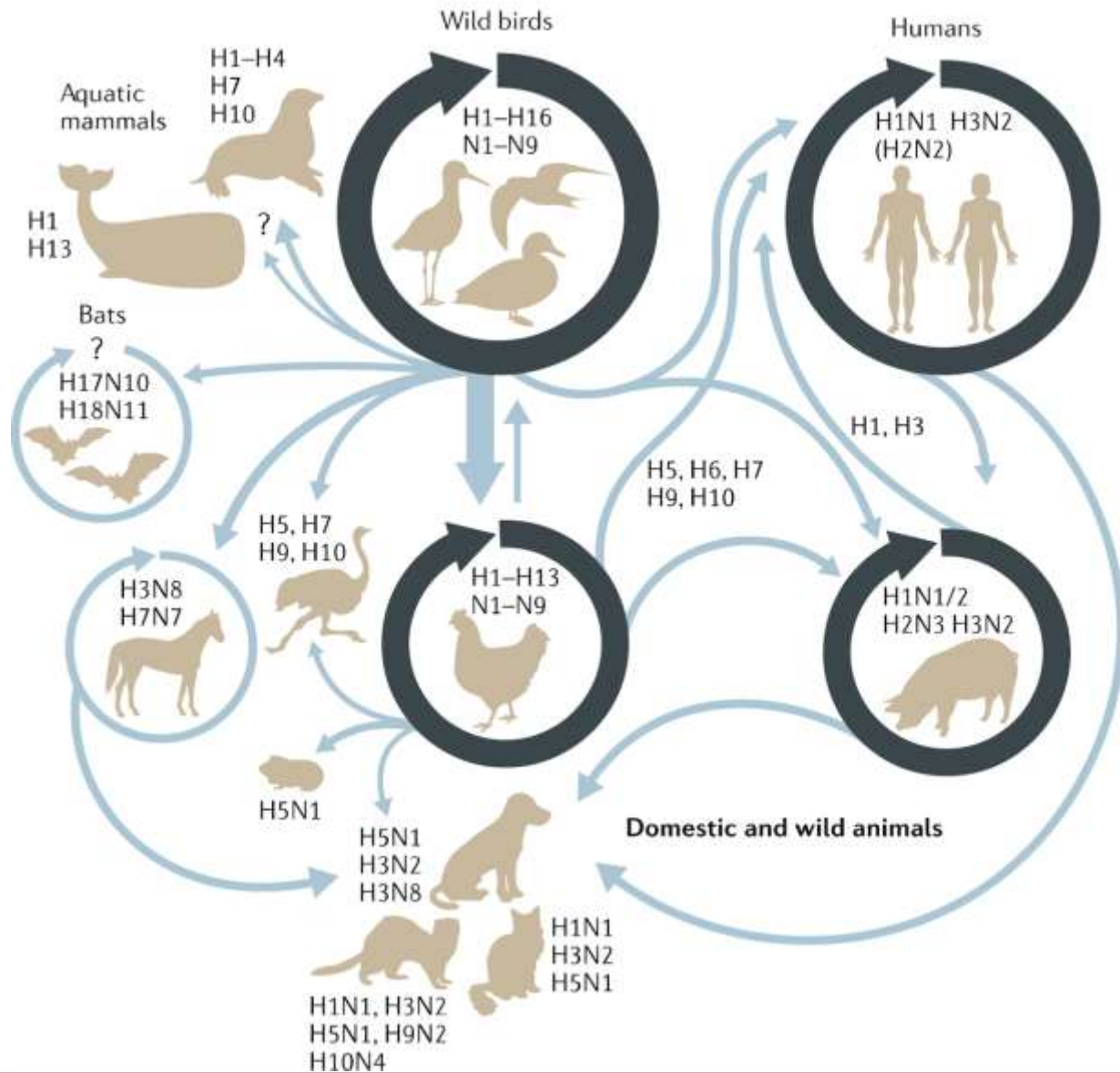
- All 50 states
- 11,627 documented cases
 - Gulls, grackle, finch
 - Owl, eagle, hawk
 - Wigeon, mallard, ruddy duck, teal, pintail
 - Goose

H5 Influenza in Mammals

- As of 2/4/2025
 - 490 documented cases in the U.S.
 - MN - 17 cases
 - Red fox, domestic cat, skunk, black bear
 - WI - 20 cases
 - Red fox, otter, skunk, fisher, bobcat



Influenza A virus



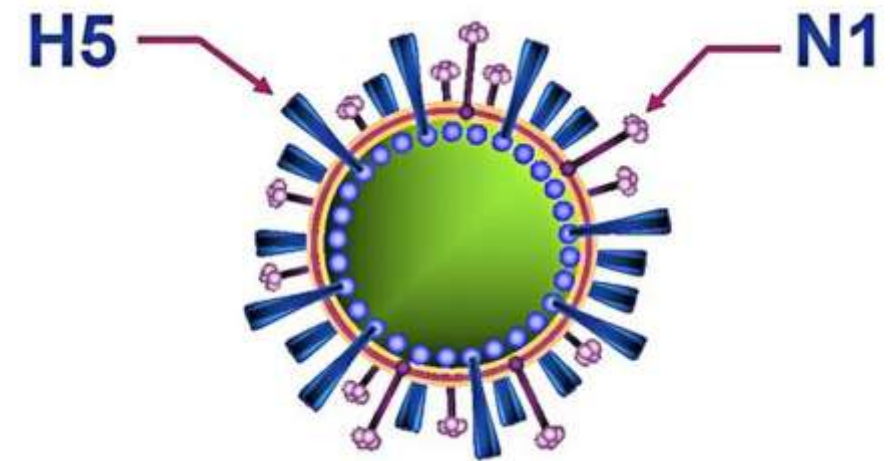
Influenza is a Shared Virus

There are approximately **2,000 avian species** in North America and about **1,000 mammalian species**.

There is no complete picture of Influenza A hosts, and there never will be.

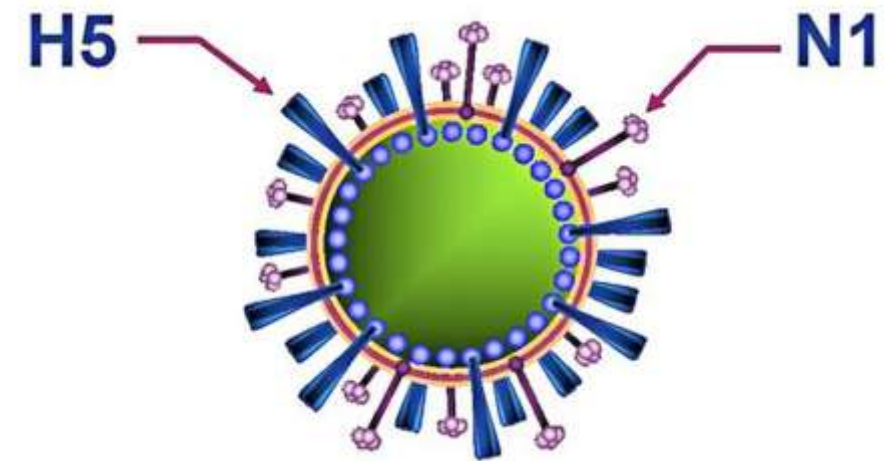
Avian influenza: the cause

- Avian influenza is a disease caused by a virus
 - Viruses need a host to live
 - Different hosts react differently to the same virus
- Avian influenza is never stable, it changes.
 - Ability to spread from bird to bird
 - Ability to cause disease



What happens when Flu viruses change?

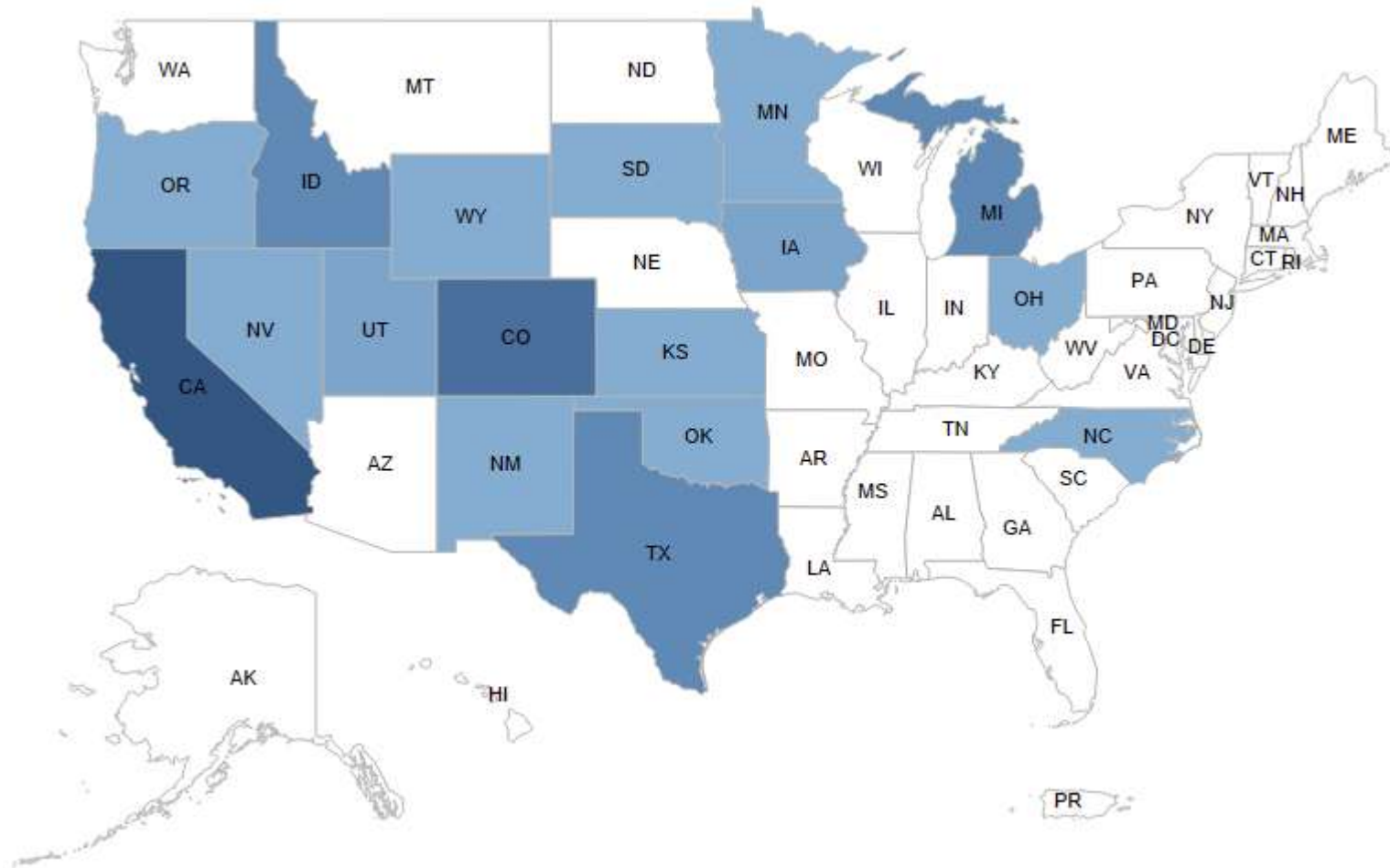
- Become more virulent (stronger)
- Reduced infectious dose (it takes less to infect a host)
- **Spread to new species**



H5 Influenza in Dairy

As of 2/6/2025

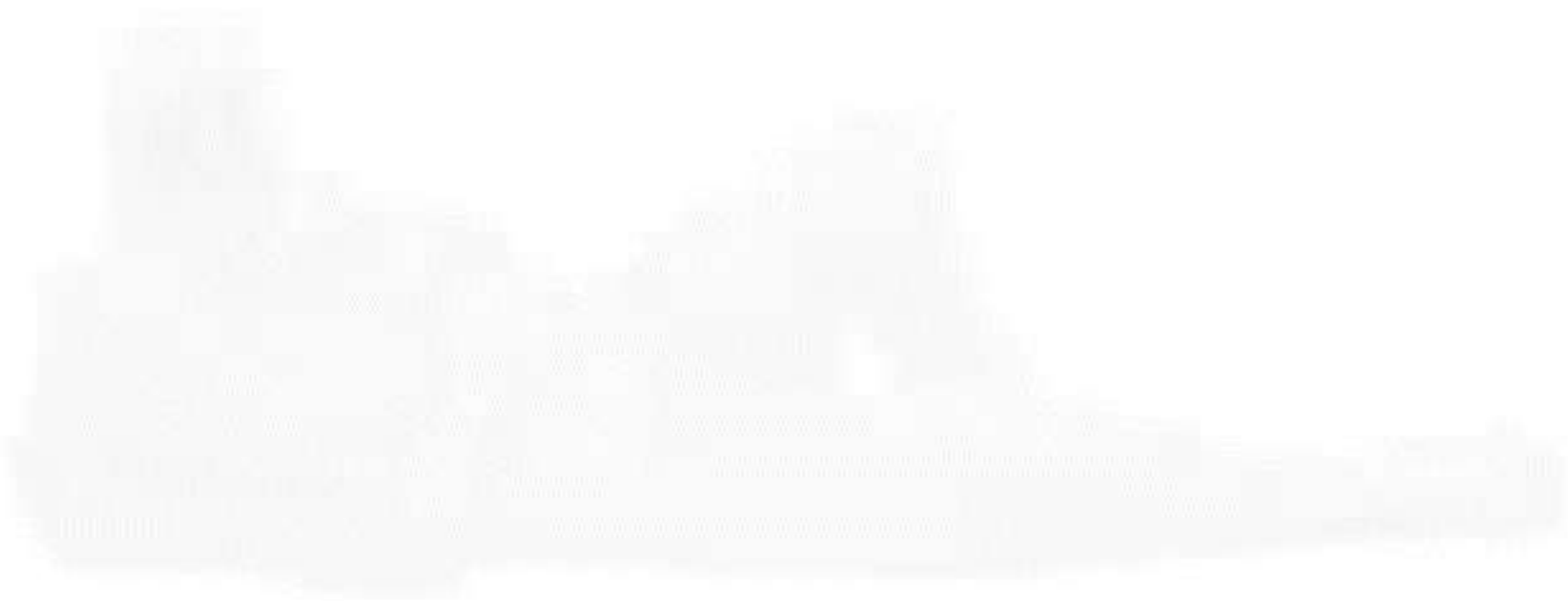
- 17 states
- 961 confirmed cases
 - 9 in Minnesota



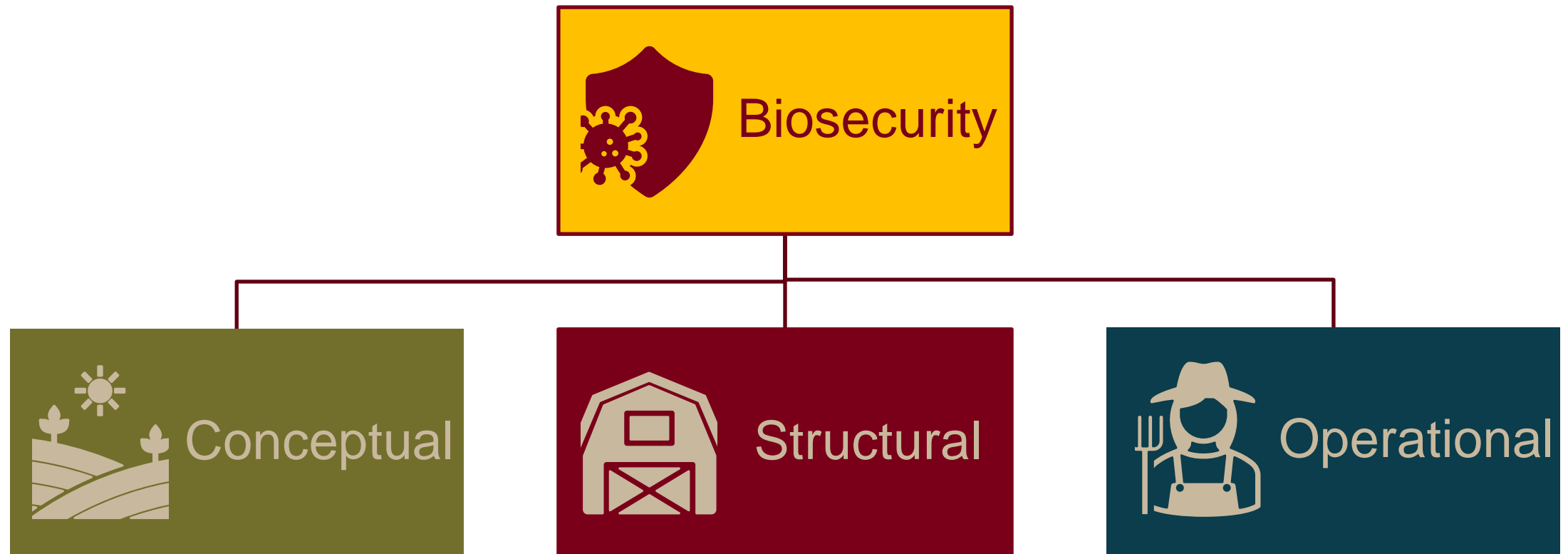
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BIOSECURITY



Tiers of Biosecurity



Conceptual Biosecurity

Environment and what's around your property

- Co-mingling species
- Environment of farm-site



Structural Biosecurity



Operational Biosecurity

- Communication
- Our actions
 - Biosecurity steps
 - Diligence



Where to start?

“Biosecurity is building a culture in which how we work is important.”

~ Drs. Jim Lowe and Ben Blair

A Practical Guide to Designing and Implementing Biosecurity Systems for Swine Production, University of Illinois, 2019

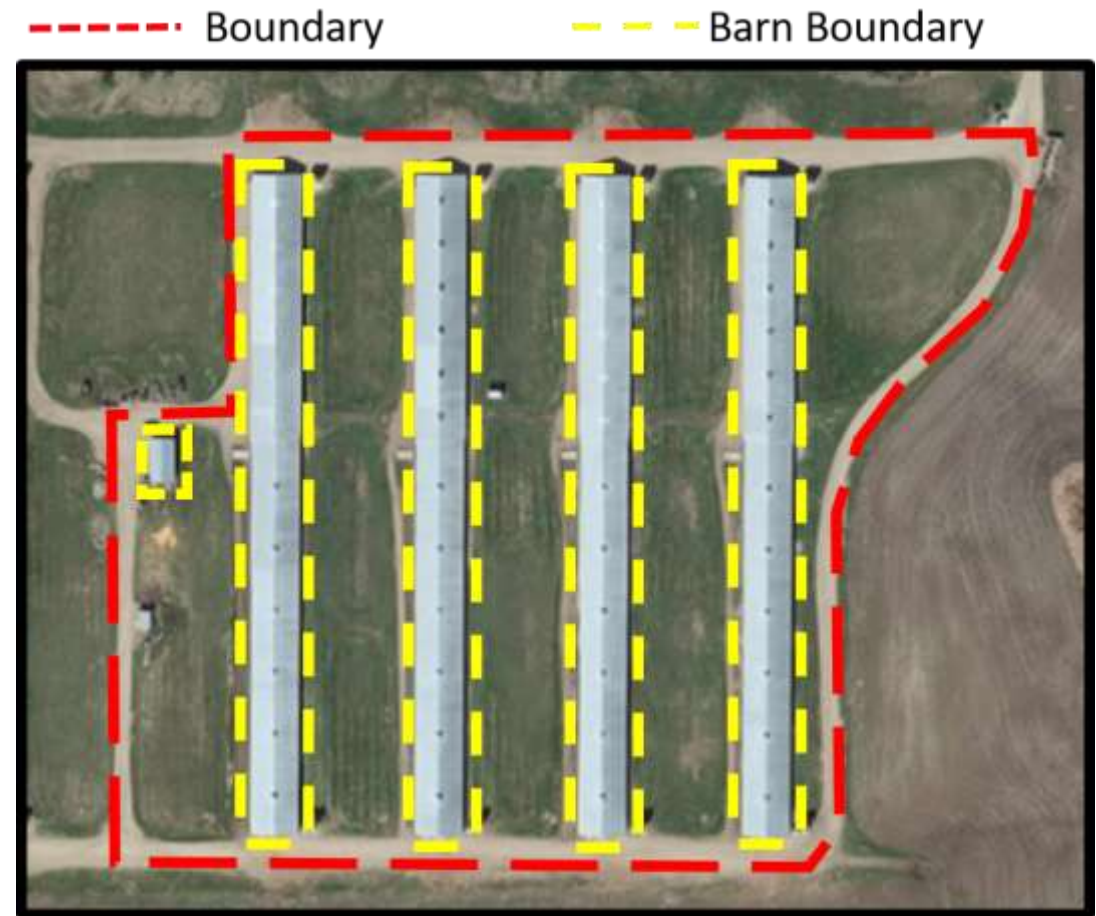
Perimeter Buffer Area & Line of Separation

PBA

- Separates barns & animals from non-production related areas









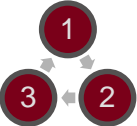





LOS:

- Usually, multiple LOS on-site
- Separates animals from outside exposure



Entry & Exit Errors

Variables assessed

- Teaching method   
- Visit 1 & visit 2  
- 3 different Protocols   
- Starting protocol 
- Experience     

Response Variables

- Errors
- Entry
- Exit



Results



1.4 times more entry errors on 2nd visit ($P \leq 0.02$)



1.5 times more errors with 6 steps ($P \leq 0.02$)



2 times more errors with 7 steps ($P \leq 0.001$)



Don't assume you know the protocol. **Ask. Learn.**

What is your role in biosecurity?

Awareness

- Contact owner/manager of premises ahead of arrival
- Unique protocols at each site
- May require days of downtime between visits

What you can control:

- People
- Vehicles
- Equipment used

What You Can Do

Wash your hands



What You Can Do

Clean service vehicles

- Specifically, during muddy seasons and when previously on another farm
- Tire wash on-site, may include undercarriage



What You Can Do

Wear *clean* or “barn specific” clothing and footwear

- Includes hats, gloves, hi-viz etc.



What You Can Do

Know what employees are exposed to livestock at home

- Minimize risk of disease spread
- Consider protocols that need to be adjusted at work and at home



What You Can Do

Employees that like to hunt

- **ALWAYS** shower after hunting and returning to work
- Wash vehicles, all equipment and footwear



In Summary...

- We cannot avoid Influenza and its presence in our communities
- Biosecurity is everyday prevention
- It is an investment – financial and effort
- Be flexible and adaptable

Take home tips

- Biosecurity is everyday prevention
- It is an investment – financial and effort
- Know your management style & needs
- Be flexible and adaptable





Thank you!

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