Emergency Poultry Disease Response & Regionalization Symposium (EPDRR)

June 6, 2023 – June 13, 2023

Newark, Delaware, USA.

# WEBINAR PERKONGSIAN LATIHAN LUAR NEGARA SIRI 3/2023

Dr Rohaya Mohd Ali

1 April 2024

# 1.0 Pengenalan kursus

- 12th Annual Emergency Poultry Disease Response Certificate Symposium
- 20 participants around the world
- 6 days.
- Teori dan praktikal

# Matlamat kursus

- Pendedahan dan pemahaman peserta
- virus influenza, pengawasan, biosekuriti, tindak balas dan kawalan wabak, depopulasi, pelupusan, pengkomposan, dan penyahkotoran.

# Faedah kepada DVS

1. Memberi peluang kepada wakil jabatan mengikuti latihan serta mempelajari daripada experts mereka.

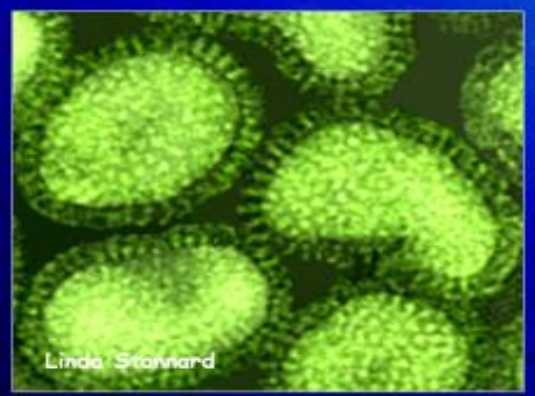
2. Membuka ruang untuk organisasi menggunapakai ilmu yang telah dipelajari melalui pendedahan mengenai tindakan negara US serta negara lain didunia menyelaras tindakan kawalan dan pencegahan penyakit avian influenza.

3. Membuka peluang kerjasama jabatan dalam dalam bidang teknikal dan kepakaran di masa akan datang.

4. Memberi pendedahan kepada pegawai lain dalam organisasi berkaitan dengan ilmu yang dipelajari melalui sesi perkongsian.

5. Membentuk jaringan hubungan dua hala dengan negara-negara lain.

# What is AI




RNA

Haemaglutinin (16)

Neuraminidase (9)

USGS
science for a changing world

NWHC-HFS

# What is AI

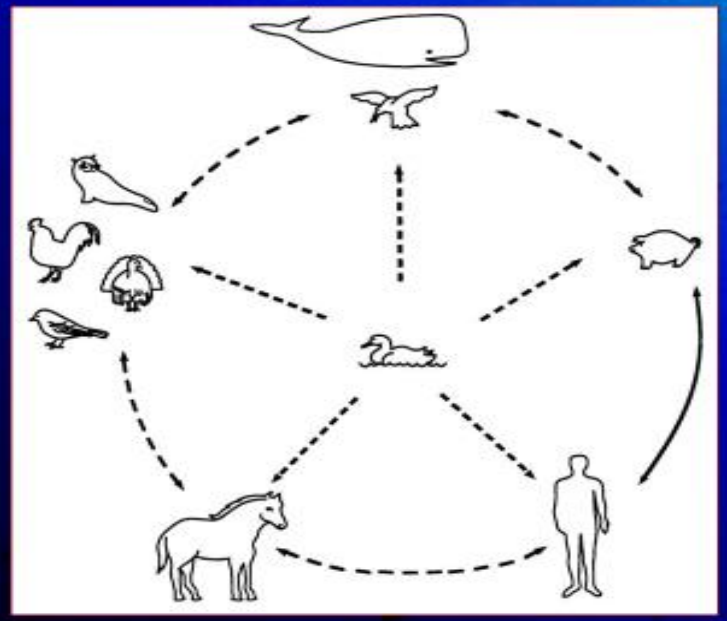
H-Highly
P-Pathogenic
A-Avian
I-Influenza

HPAI-H5N1

USGS
science for a changing world

NWHC-HFS

# Role of wild birds



- **Type A** - wild and domestic birds, humans, pigs, horses and marine mammals.

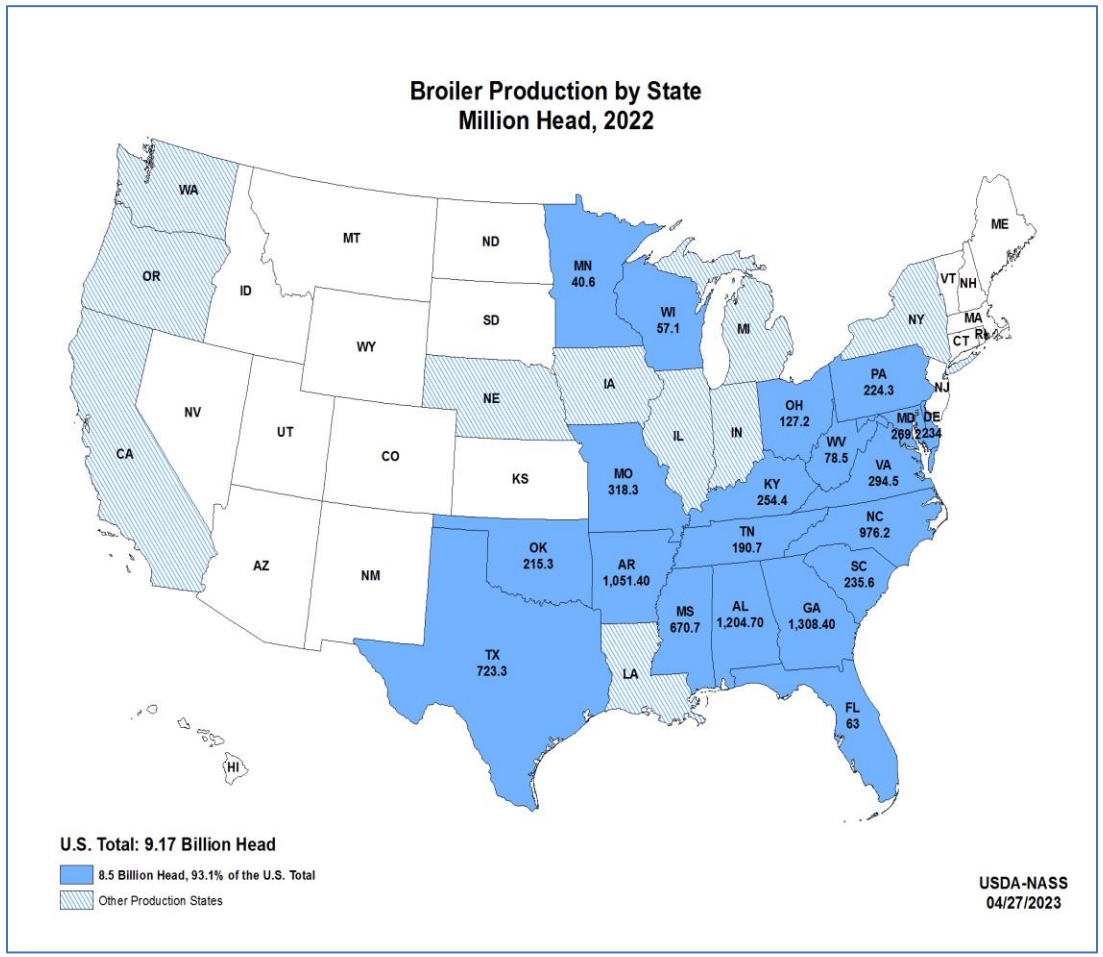
- **Types B & C** - humans, less severe disease

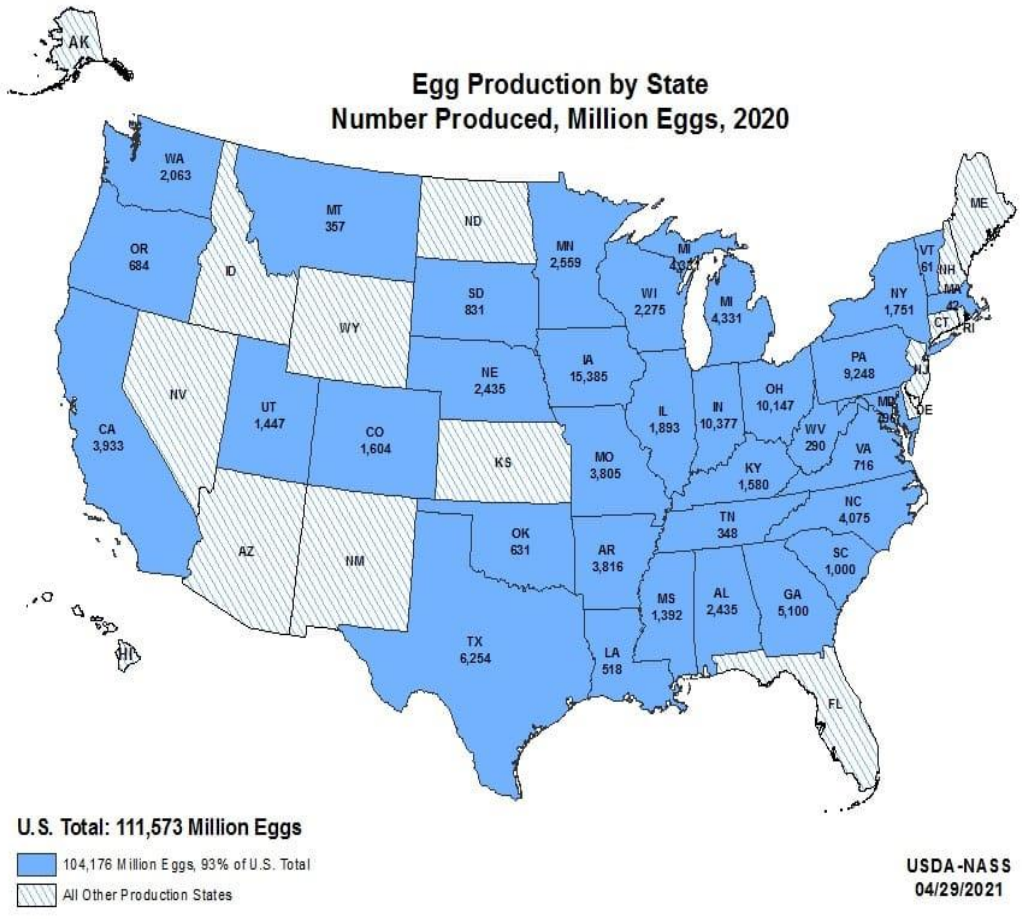
Waterbirds (ducks, gulls and shorebirds) are the natural reservoir

# U.S. poultry industry - overview

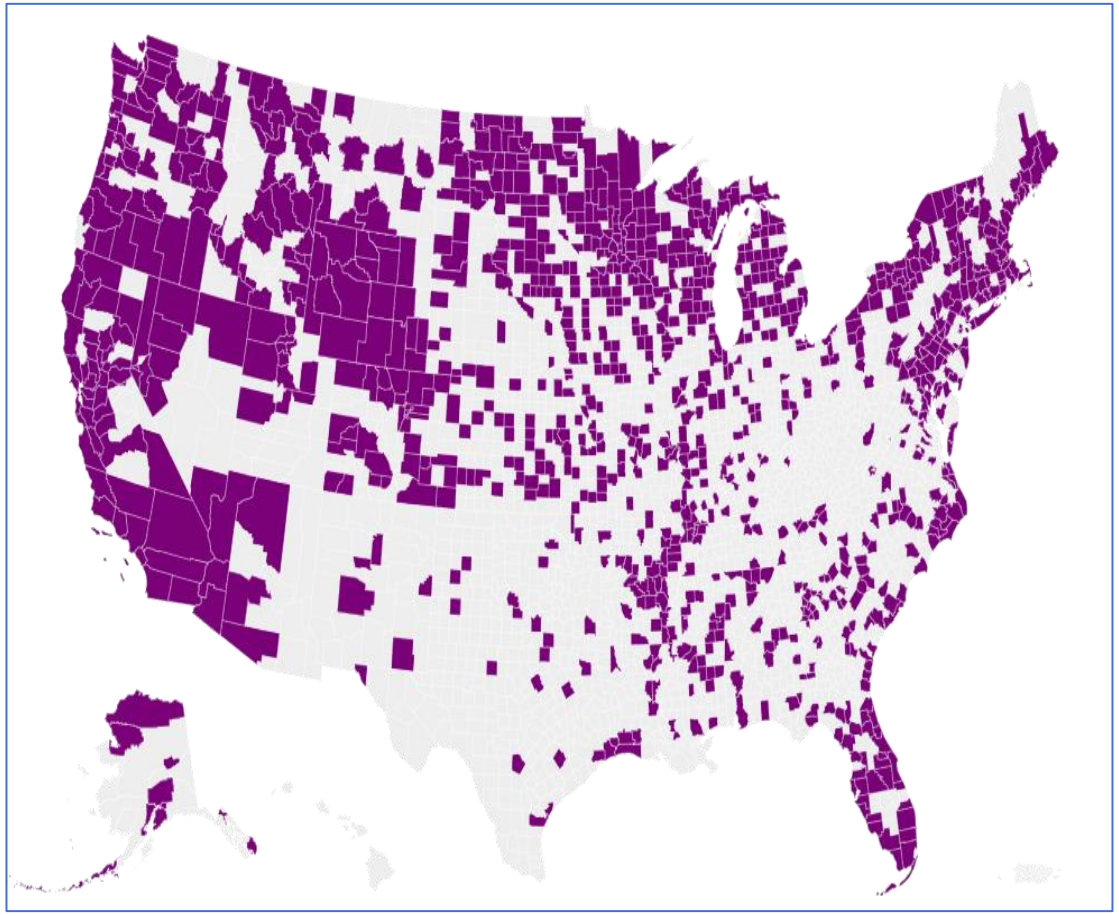
- More than 368.2 million egg-laying chickens
- More than 9.5 billion broiler chickens and
- 208 million turkeys.

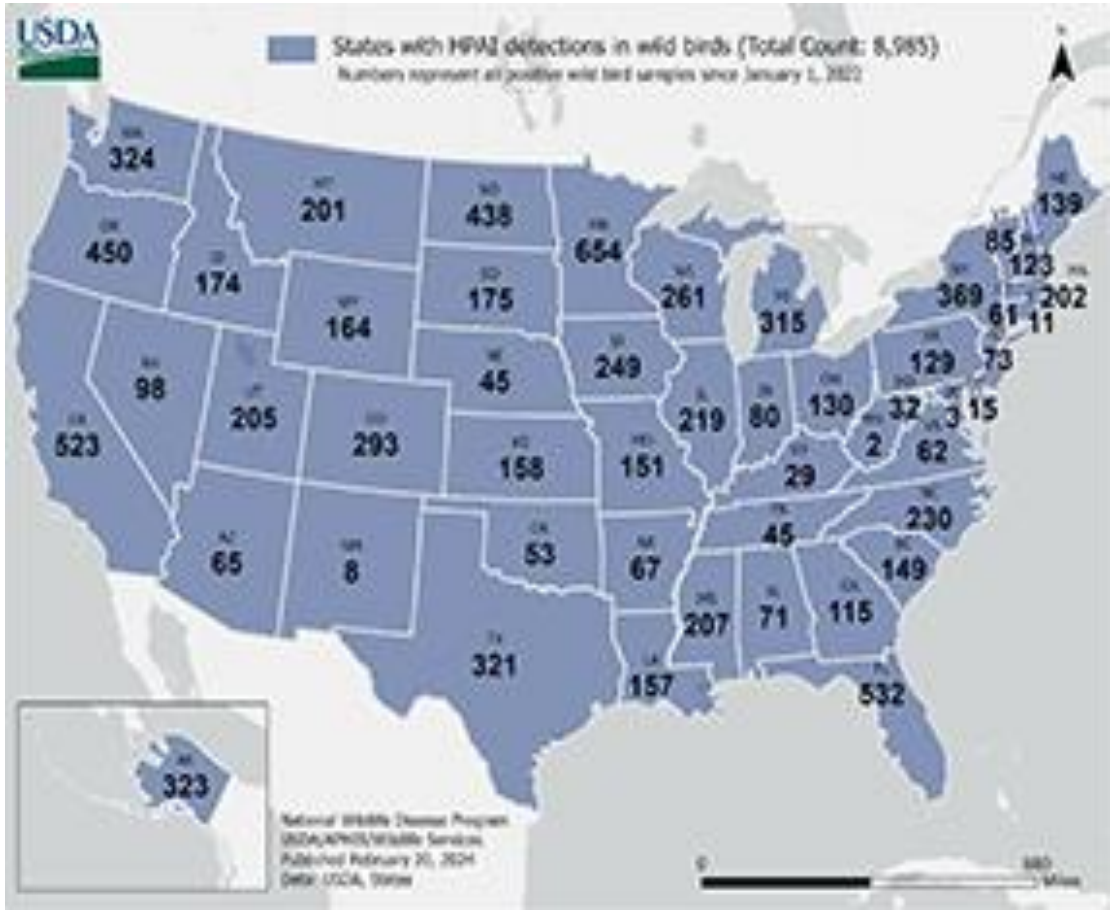
(Data from USDA National Agricultural Statistics Service.)


Broiler Production by State
Million Head, 2022
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
215.3
TX
723.3
MN
40.6
IA
MO
318.3
AR
1,051.40
LA
WI
57.1
IL
MI
IN
OH
127.2
KY
254.4
TN
190.7
MS
670.7
AL
1,204.70
GA
1,308.40
FL
63
SC
235.6
NC
976.2
WV
78.5
VA
294.5
PA
224.3
NY
MD
269
DE
234
NJ
ME
VT
NH
MA
CT
RI
HI
U.S. Total: 9.17 Billion Head
8.5 Billion Head, 93.1% of the U.S. Total
Other Production States
USDA-NASS
04/27/2023


AK
Egg Production by State
Number Produced, Million Eggs, 2020
WA
2,063
OR
684
CA
3,933
ID
NV
MT
357
WY
UT
1,447
AZ
CO
1,604
NM
ND
SD
831
NE
2,435
KS
OK
631
TX
6,254
MN
2,559
IA
15,385
MO
3,805
AR
3,816
LA
518
WI
2,275
IL
1,893
MS
1,392
MI
4,331
IN
10,377
KY
1,580
TN
348
AL
2,435
OH
10,147
WV
290
VA
716
NC
4,075
SC
1,000
GA
5,100
FL
PA
9,248
NY
1,751
MD
DE
NJ
VT
61
NH
MA
CT
RI
ME
HI
U.S. Total: 111,573 Million Eggs
104,176 Million Eggs, 93% of U.S. Total
All Other Production States
USDA-NASS
04/29/2021

# 2022-2024 Detections of Highly Pathogenic Avian Influenza in Wild Birds

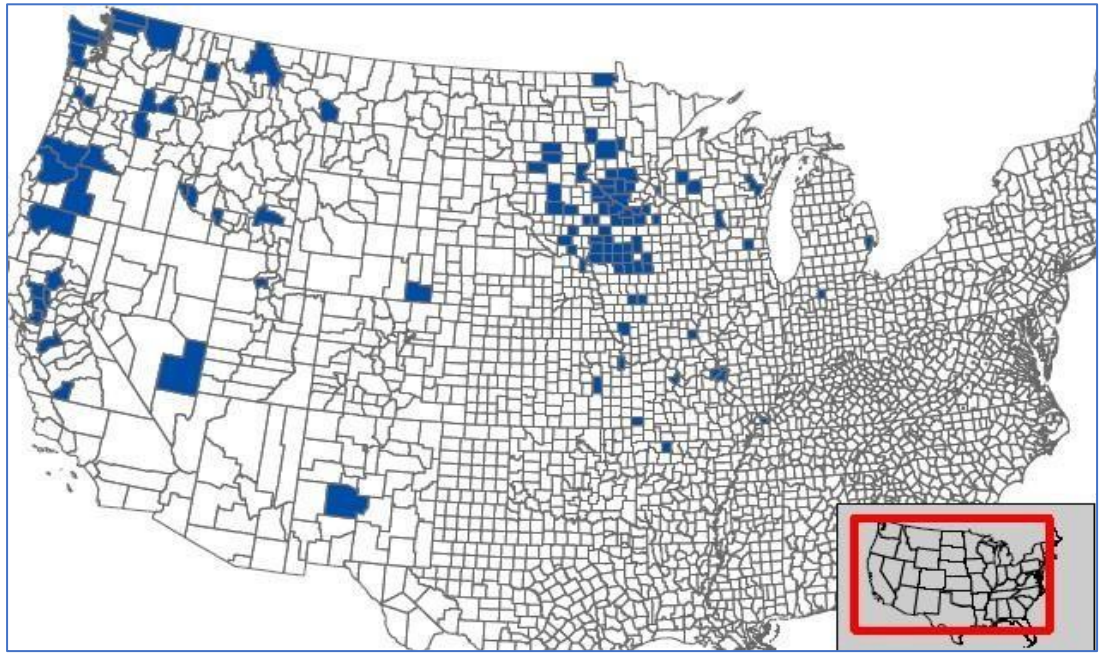




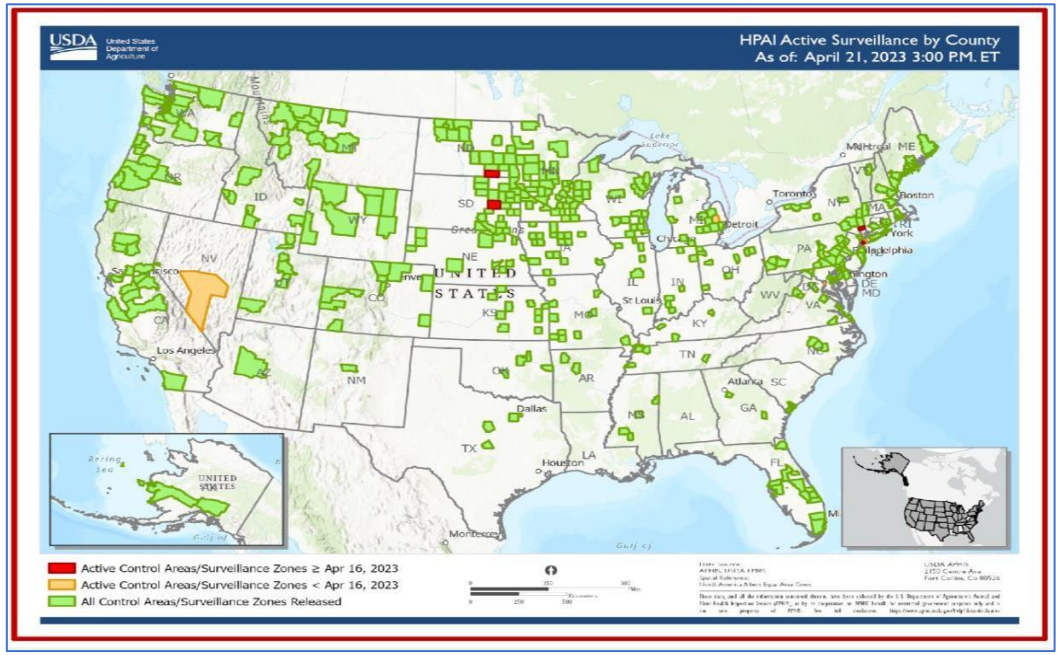

Wild bird - 8,985 detected

# U.S. 2014-2015 & 2022-2023 HPAI

2014-2015



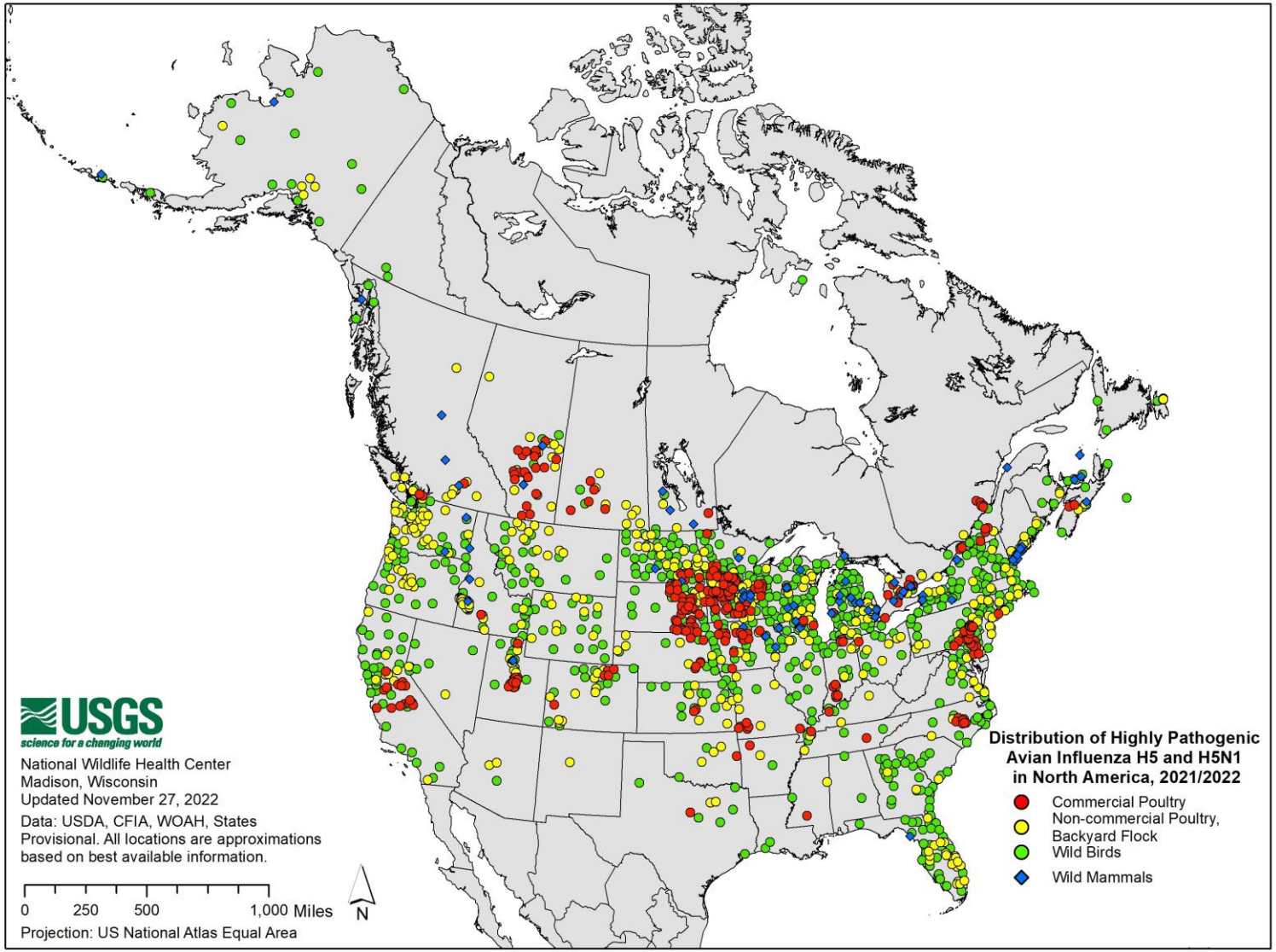
2022-2023



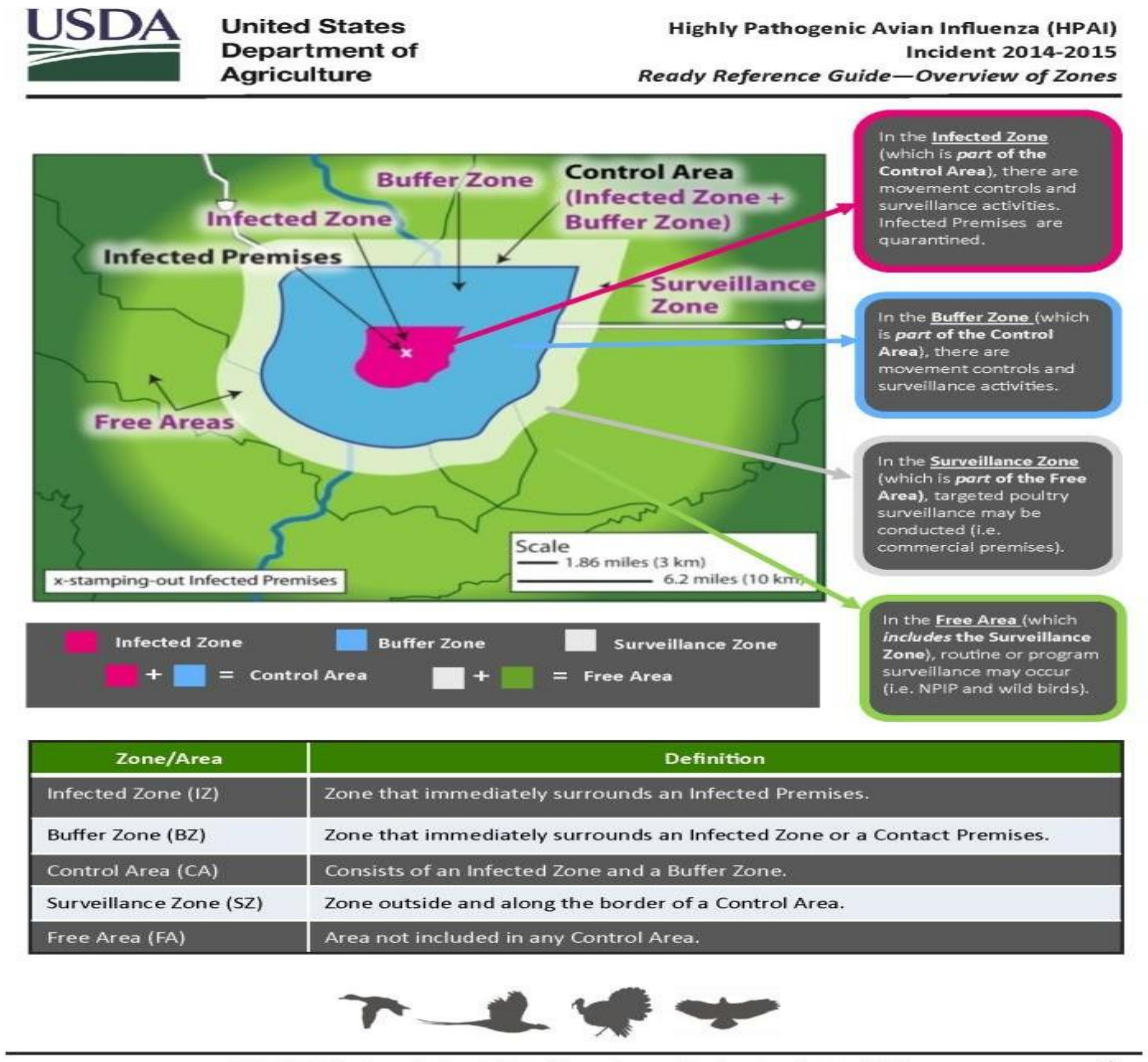

Extensive, but still did not affect the entire United States

# HPAI in U.S. and Canada 2021-23

- U.S. – Canada RCC FAD Zoning Initiative and AI Protocol
- Mutual recognition of AI zones
- Import restrictions on avian commodities originating from the affected zones
- Continuation of trade of avian commodities from free zones to minimize trade disruptions



# HPAI Control Measures in US




- **Infected Zone(IZ):**

The 3 km (~1.86 miles) radius of the infected premises will be considered the infected zone. Will depend on disease agent and epidemiological circumstances. This zone may be redefine as the outbreak continues

- **Buffer Zone (BZ):**

The area between 3 km and 10 km (7 km (~4.35 miles) of the infected premises will be considered the buffer zone. This zone may be redefine as the outbreak continue

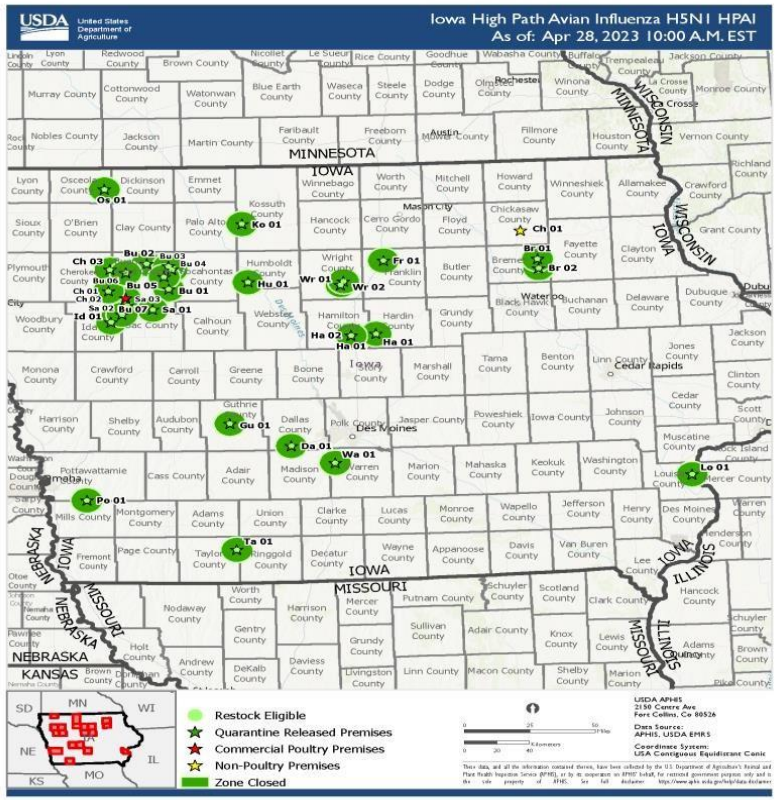
- **Control Area (CA):**

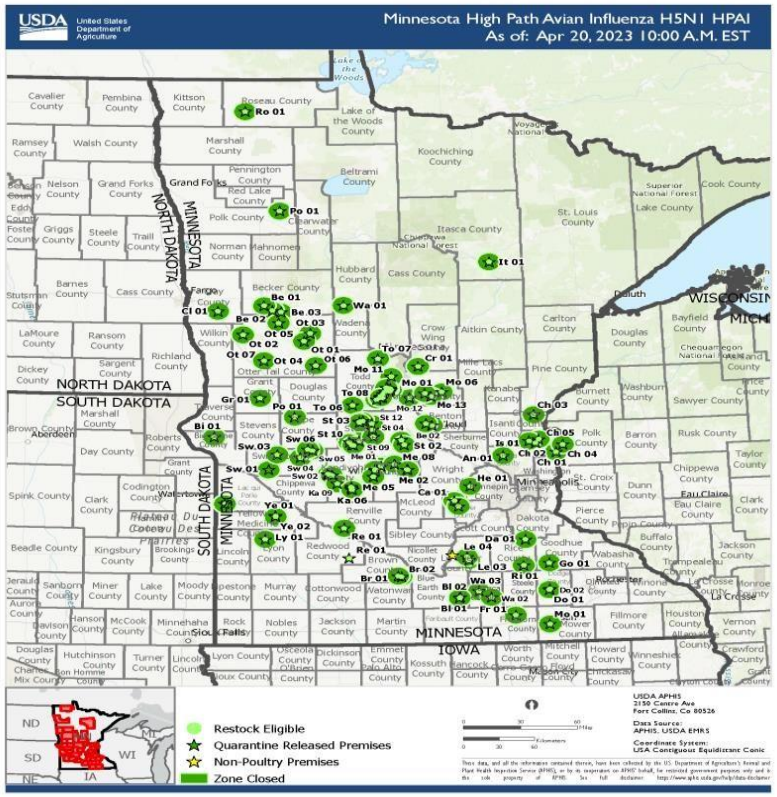
3 km infected zone +7 km buffer zone. This area may be redefine as the outbreak continues

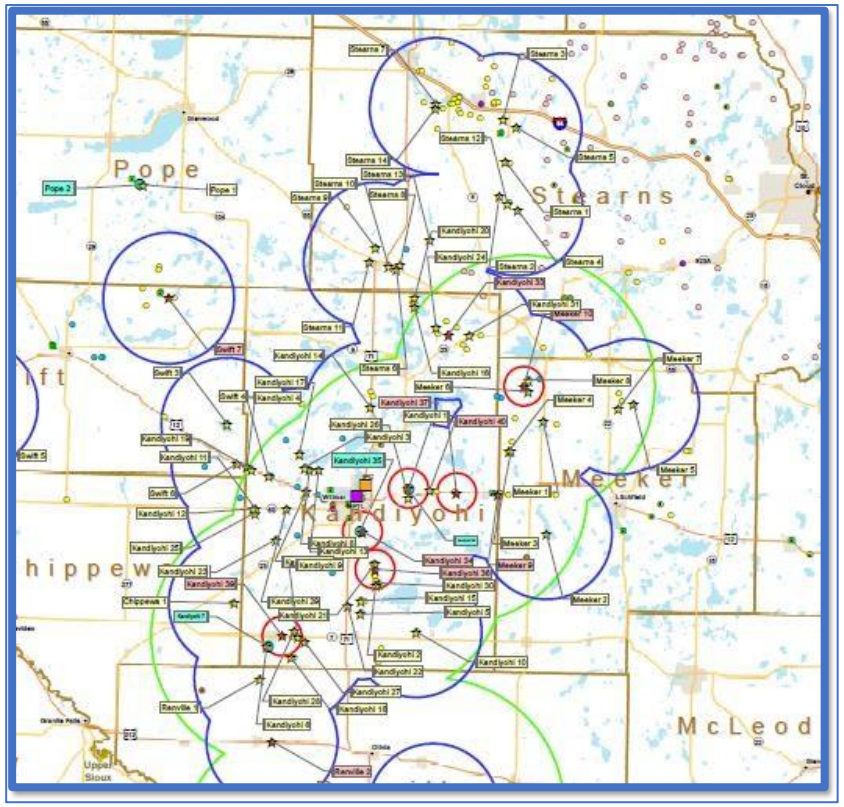
- **Surveillance Zone (SZ):**

The zone at least 10 km wide outside the border of the Control Area, extending 20 km (~12.42 miles) from IP.

***The quarantine is initiated based on non-negative/presumptive positive results from the National Animal Health Laboratory Network (NAHLN) labs**




- 2022 Iowa - 18/99 counties involved in HPAI outbreak includes WOAH Poultry & WOAH Non-Poultry counties.
- **But still did not affect the entire State**
- Greatest distance from north to south is
- **399 km** and **322 km** from east to west

- 2022 Minnesota – 38/87 counties involved in HPAI outbreak
- Includes WOAH Poultry & WOAH Non-Poultry counties.
- **But still did not affect the entire State**
- MN is about **653 km** from North to south and **576 km** from east to west

**Zone/Area Redefined as Outbreak continues**

# Implementation of Quarantine and Movement Control

- Quarantine and movement control (QMC) activities are fundamental to rapidly contain an HPAI outbreak.
- Movement control is accomplished through a permit system called Emergency Management Response System 2.0 (EMRS2)
- Allows / permitted movements without creating an unacceptable risk of disease spread.
- The EMRS2 is the system of record for permits and permitted movements made into, within, and out of the HPAI Control Area(s).

# Continuity of Business

- Continuity of business (COB) is the managed movement of non-infected premises and non-contaminated animal products during an outbreak; it is essential to mitigating the economic consequences of an HPAI outbreak.

- All movement is based on science- and risk-based approaches to allow normal business operations while minimizing the risk of animal and product movements.

# How Does Continuity of Business Work with Quarantine and Movement Control?

- QMC and COB have the same ultimate goal: to prevent the transmission of HPAI to non-infected premises, particularly those outside the Control Area.
- QMC is highly effective at limiting the spread of disease, but it impedes typical business operations—this is when COB plans enter response efforts to effectively manage movement.
- Quarantines and movement controls are applied to premises in a regulatory Control Area to ensure infected animals and contaminated fomites and products do not leave premises.
    - Quarantines apply to Infected Premises (IP), Contact Premises (CP), and Suspect Premises (SP).
    - Movement controls apply to At-Risk Premises (ARP) or Monitored Premises (MP).
    - Consideration will be given to critical movements (i.e., feed trucks)
- Continuity of business is intended to permit movement for non-infected premises (ARP and MP) in a Control Area.

- Requires active collaboration - public officials, private industry, and academia/extension to help to minimize unintended consequences on producers and consumers impacted by HPAI.

- Prior to an outbreak, these groups work together to develop the processes by which non-infected premises can move non-infected animals and non-contaminated animal products.

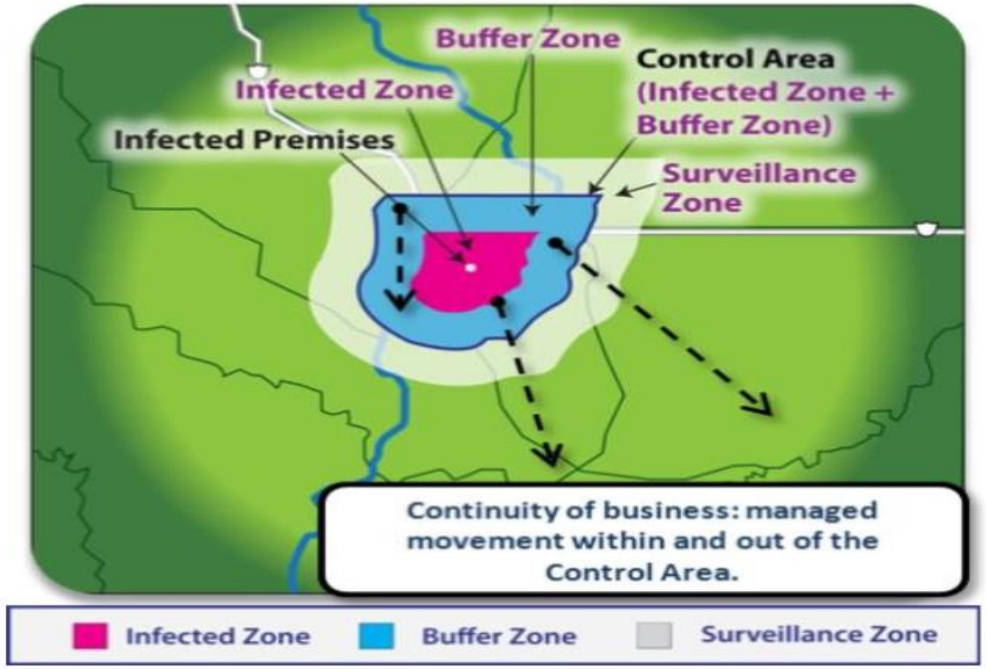
- Proactive risk assessments will be used to develop the requirements for movement of commodities out of a regulatory Control Area.

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business requirement.

**What Are Key Elements of Continuity of Business Plans for Managed Movement?**

Every COB plan will be unique. Commonalities include the following:

- ***Risk Assessments:*** Proactive risk assessments help determine the transmission risk of product movement, particularly from an infected but undetected premises or flock.
- ***Surveillance Requirements:*** How frequently samples will be collected, from what populations, and for how long.
- ***Biosecurity guidance:*** Appropriate precautions, personal protective equipment, and specific steps for various fomites and equipment.
- ***Cleaning and disinfection (virus elimination) procedures:*** Cleaning requirements for various fomites and equipment, including information on appropriate disinfectants.
- ***Epidemiological information:*** Information on movement to and from premises, as well as information on the number of animals, species, age, and geographic location of the premises.
- ***Permitting guidance:*** Transparent, explicit guidance for Incident Command regarding movement requirements for various commodities.
- ***Information Management:*** Effective, scalable, and flexible information systems that facilitate situational awareness and data sharing among all partners in a COB plan.



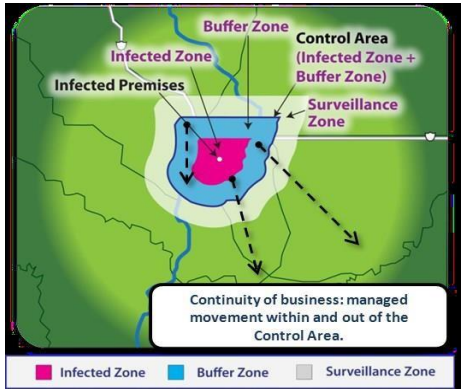
- **Secure Poultry Supply Plans**
- Three plans help prevent the spread of diseases
  - Secure Egg Supply
  - Secure Broiler Supply
  - Secure Turkey Supply
  - Secure Game bird

SBS SECURE BROILER SUPPLY

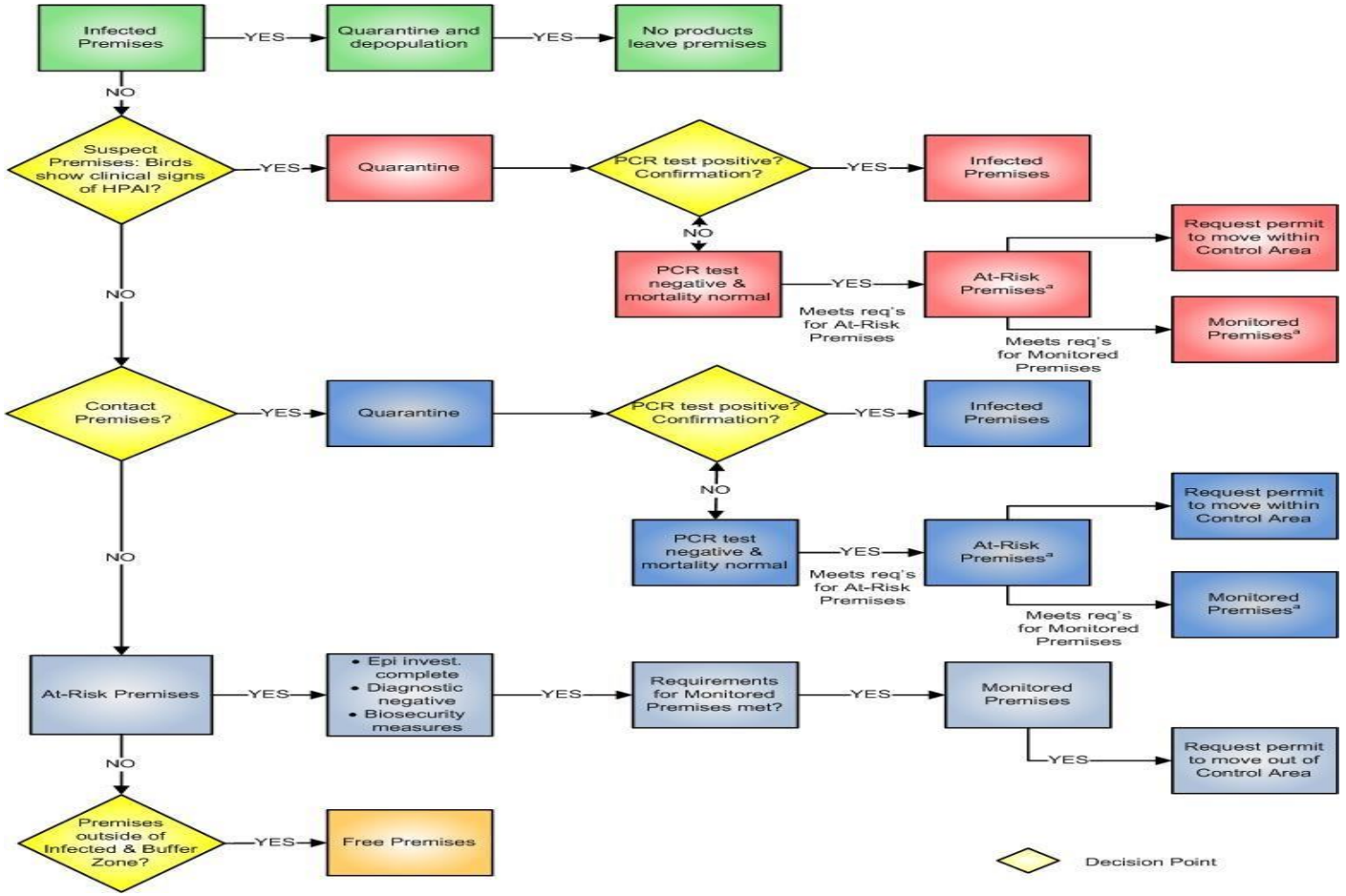
SES SEC

STS SECURE TURKEY SUPPLY

- Plans have strict requirements for moving ALL products including hatching eggs and chicks from non infected premises
  - **Epidemiology** - No clinical signs of illness can be present in the flock of origin
  - **Testing** - Multiple negative RRT-PCR tests
  - **Traceability** - Know where the hatching eggs or chicks or poults are going (premises ID, GPS coordinates, etc.)
  - **Biosecurity** - Strict biosecurity for truck and driver
  - **Permitting** - Permitting officials satisfied no risk exists
  - **Movement delay** - Minimum of two day hold after permit issued



# Quarantine, Movement Control and Continuity of Business Premises Designation in Relations to Permitting and Movement Control




**For movement of susceptible poultry and poultry products out of the CA to a Free Area, the permit process must consider national standards, any WOAH (World Organization for Animal Health) standards, and conditions for movement such as biosecurity procedures and risk assessment recommendations. In addition, commodity-specific proactive risk assessments, COB plans, movement and marketability plans, and compartmentalization plans will also be considered. This figure illustrates premises designations in relation to permitting and movement control**

# Sampling:

- A State or Federal regulatory official or an Incident Command (IC)-authorized person takes an “oropharyngeal” swab from each bird.
- Samples will be submitted as directed by IC to an authorized State veterinary diagnostic laboratory (VDL-NAHLN).
- These samples must be submitted on the day of sample collection by a State or Federal regulatory official or the IC-authorized person.
- The State VDL-NAHLN and IC establish the time of day by which samples must be submitted to an authorized VDL-NAHLN (for example, by 12:30 p.m.).
- VDL-NAHLN personnel perform RRT-PCR testing on these samples immediately upon receipt and electronically send test results to the IC by the end of each day. The IC reports the test result information to the farm manager as soon as it is available.

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business - Testing

- **Example- How many negative PCR tests prior to move**
  - **1 PCR test prior to move:**
    - Layers for products that move daily – Egg Plan
      - Non-pasteurized liquid eggs, dry eggshells, wet eggshells
    - Placing turkey poults in a brooder house within Control Area
  - **2 PCR tests prior to move:**
    - Egg, Broiler, Turkey breeders to move hatching eggs & turkey semen
    - Layers to move table eggs
    - Meat broilers and turkeys to slaughter
  - **No testing required to move:**
    - Pasteurized liquid eggs, inedible egg products to non-poultry facility (no threat of AIV to move product)

# Risk Assessment Commodities

- **Other Commodities:**
  - Pasteurized Liquid Egg – *Negligible risk*
  - Non-Pasteurized Liquid Egg - *Negligible risk*
  - Washed and Sanitized Shell Eggs – in a 100-200 ppm chlorine solution (to Premise without Poultry) - *Negligible risk*
  - Washed and Sanitized Shell Eggs - in a 100-200 ppm chlorine solution (to Premise with Poultry) – *Low risk*
  - Nest Run Eggs - *eggs that have been packed as they come from the production facilities without having been washed and sanitized - Low risk*
  - Inedible Egg Products from premises with poultry to pasteurization (dried, frozen, or liquid egg product that is unfit for human consumption) – *Low risk*
  - Layer Hatching Eggs - *Low risk*
  - Day-Old Chicks – *Negligible to Low risk*

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business

## HPAI Permitting and Movement

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business

## HPAI Permitting and Movement

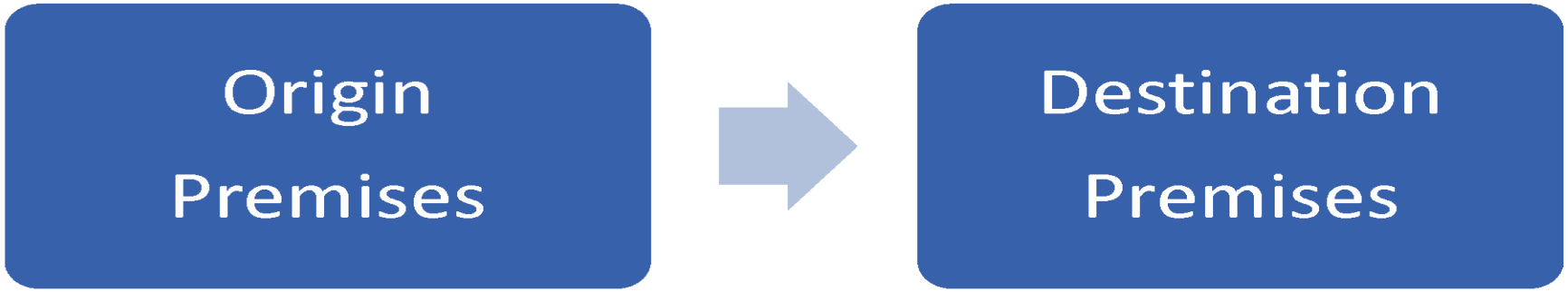
### EMRS 2.0

- **The Emergency Management Response System (EMRS) 2.0 is the system of record for disease incidents, including HPAI in the United States.**
- Data is entered into EMRS in a timely and accurate manner.
- **Using EMRS for Permitting and Movement**
  - When a Control Area (aka Control Zone) is established, the outbreak is managed in EMRS.
  - The request for permit and approval process is tracked in EMRS.
- Successful collaboration between States (both sending and receiving product), the Unified Incident Command, and APHIS.

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business

## HPAI Permitting and Movement

### What are Permits?




Intrastate

Interstate

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business

## HPAI Permitting and Movement

## Examples of Permitted Movement

**Out of Control Area:**

- Hatching eggs to hatchery or processor.
- Movement of Control Area birds.
- Movement of day old poults.
- Nest run eggs.
- Product moving out of Control Area.

**Into Control Area:**

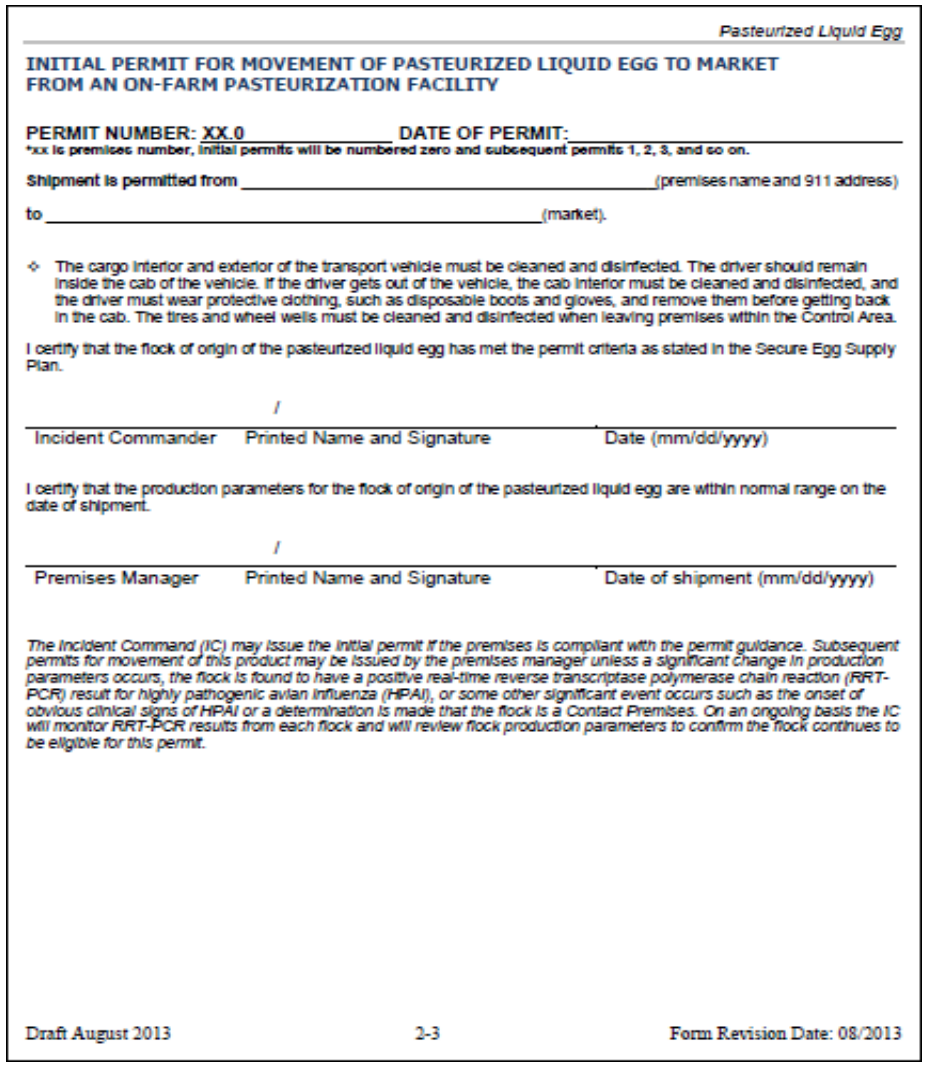
- Birds into Control Area for slaughter.
- Birds moved into Control Area.
- Feed into Control Area.
- Wood shavings into Control Area.
- Some movements require diagnostic testing prior to movement.

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business

## HPAI Permitting and Movement

### Four Simple Elements of Permitting

# Quarantine, Movement Controls Measures For Poultry and Poultry Products: Example - Permit



*Pasteurized Liquid Egg*

**INITIAL PERMIT FOR MOVEMENT OF PASTEURIZED LIQUID EGG TO MARKET FROM AN ON-FARM PASTEURIZATION FACILITY**

**PERMIT NUMBER: XX.0_____ DATE OF PERMIT:_____**
***xx is premises number, initial permits will be numbered zero and subsequent permits 1, 2, 3, and so on.**

**Shipment is permitted from** _____(premises name and 911 address)

to _____(market).

- The cargo interior and exterior of the transport vehicle must be cleaned and disinfected. The driver should remain inside the cab of the vehicle. If the driver gets out of the vehicle, the cab interior must be cleaned and disinfected, and the driver must wear protective clothing, such as disposable boots and gloves, and remove them before getting back in the cab. The tires and wheel wells must be cleaned and disinfected when leaving premises within the Control Area.

I certify that the flock of origin of the pasteurized liquid egg has met the permit criteria as stated in the Secure Egg Supply Plan.

| | | |
|---|---|---|
| Incident Commander | / Printed Name and Signature | Date (mm/dd/yyyy) |

I certify that the production parameters for the flock of origin of the pasteurized liquid egg are within normal range on the date of shipment.

| | | |
|---|---|---|
| Premises Manager | / Printed Name and Signature | Date of shipment (mm/dd/yyyy) |

*The Incident Command (IC) may issue the initial permit if the premises is compliant with the permit guidance. Subsequent permits for movement of this product may be issued by the premises manager unless a significant change in production parameters occurs, the flock is found to have a positive real-time reverse transcriptase polymerase chain reaction (RRT-PCR) result for highly pathogenic avian influenza (HPAI), or some other significant event occurs such as the onset of obvious clinical signs of HPAI or a determination is made that the flock is a Contact Premises. On an ongoing basis the IC will monitor RRT-PCR results from each flock and will review flock production parameters to confirm the flock continues to be eligible for this permit.*

Draft August 2013 2-3 Form Revision Date: 08/2013

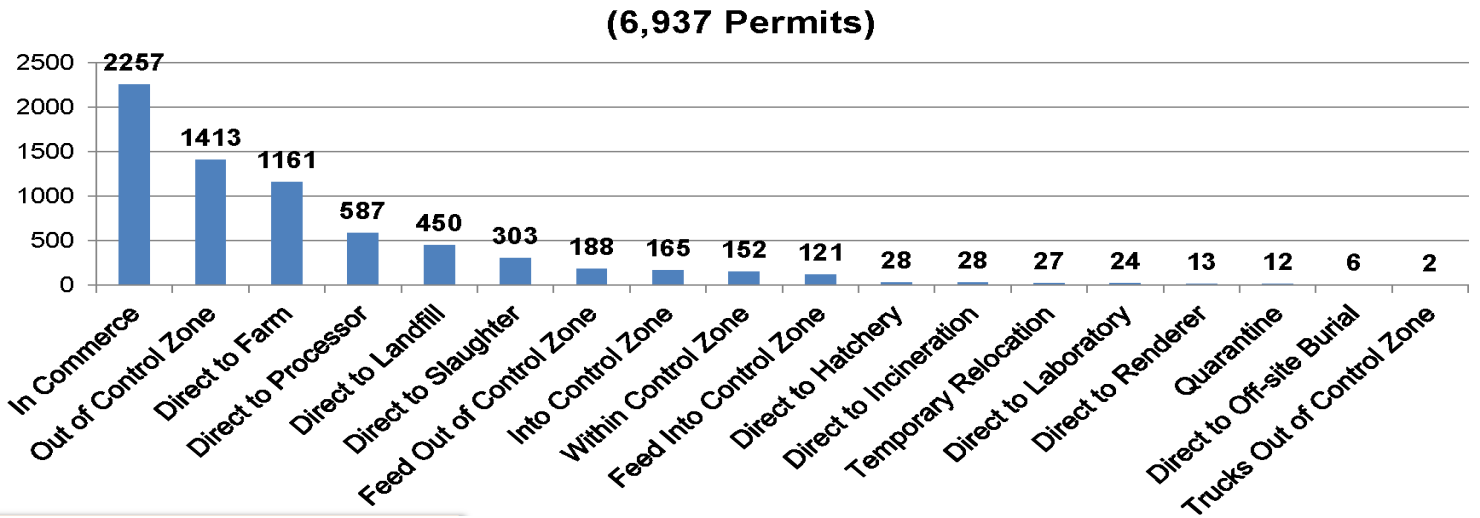
# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business

## HPAI Permitting and Movement

## Permitting Summary of 2015 HPAI Outbreak

### By Reason for Permit

- About 7,000 permits for movement were authorized, most from Minnesota (~2,740) and Iowa (~3,400).
- Successful National Permitting Unit established for rapid and accurate data entry in Ft. Collins.



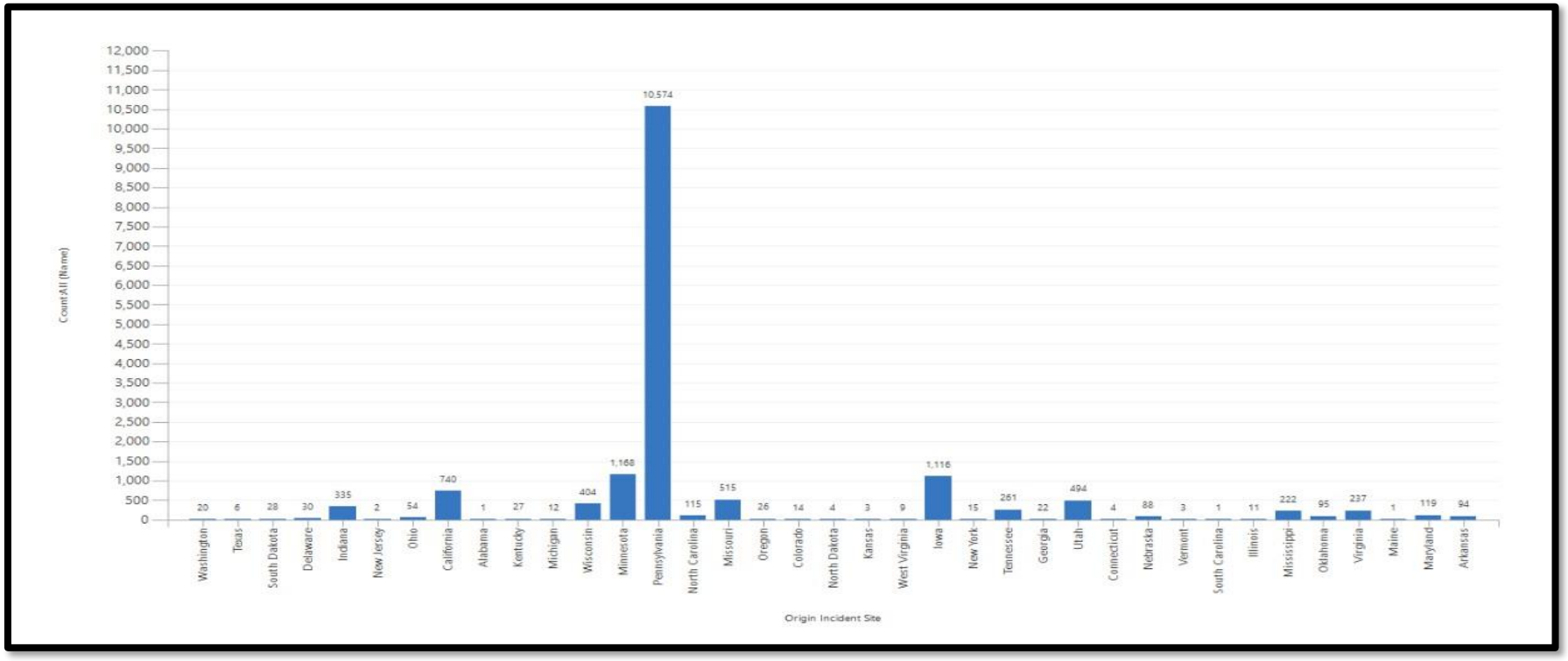
# Permitting Summary of 2022-2023 HPAI Outbreak

**38,284 Permitted Movements** have been entered under the 16,871 permits.
There have been **341,416,907 items** moved to date.
Of the **341,416,907** "items" moved:

-121,658,091 items identified as poultry or birds *(head/groups/dozs/cases)*
-154,797,695 items identified as eggs *(cases/dozs/head/load/#s)*
-277,285 items identified as Semen/Embryos *(lbs/other - bottles/flasks/etc)*
-56,756,179 items identified as feed or hay/forage *(load/tons/#s)*
-14,190 items identified as compost *(load/tons)*
-2,276,825 items identified as manure/litter *(tons/load)*
-5,636,642 items identified as Product/Other/Water/etc.


Courtesy: Drs. Brian Archer & Fred Bourgeois – USDA-APHIS-VS-S&P-NPIC

# Quarantine, Movement Controls Measures For Poultry and Poultry Products - Continuity of Business Permitting Summary of 2022-2023 HPAI Outbreak




**Courtesy: Drs. Brian Archer & Fred Bourgeois – USDA-APHIS-VS-S&P-NPIC**

# Conclusion

- HPAI preparedness and response planning is a dynamic process.
- Much work has been done by APHIS and all our stakeholders to be as prepared as possible should HPAI outbreaks reoccur in poultry in 2023 or beyond.
- APHIS will continue to examine our preparedness posture and to make constant improvements.
- We encourage all our stakeholders to continue to evaluate and improve their preparedness and response activities.

# Thank You For Your Attention!!

- Go to: www.aphis.usda.gov
- Click on Animal Health ➡ Animal Disease Information ➡ Avian Influenza

DEFEND THE FLOCK
Keeping Poultry Safe from Avian Influenza