

# Secure Food Supply Business Continuity Plans: Operational Perspective

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# Secure Food Supply Plans A Review

- Federal, State, Industry, and Academic Partnerships
- Funded by USDA APHIS VS
- Implement during an FAD outbreak
- Goals include:
  - Detect, control, and contain FAD quickly;
  - Avoid interruptions in animal/animal product movement - no evidence of infection;
  - Provide a continuous supply of safe and wholesome food to consumers; and
  - **Maintain business continuity** for producers, transporters, and food processors through response planning.

- [www.cfsph.iastate.edu/Secure-Food-Supply/index.php](http://www.cfsph.iastate.edu/Secure-Food-Supply/index.php)



# Secure Food Supply Plans

## Highly Pathogenic Avian Influenza

- Secure Egg Supply
  - Voluntary preparedness
  - Response
- Secure Turkey Supply
  - Response
- Secure Broiler Supply
  - Response



# Common Components of Secure Food Supply Plans

- Voluntary pre-outbreak preparedness components - recommended or audited
- Biosecurity, surveillance, epidemiology questionnaires, movement permits
- Risk assessments (completed and in process)
- Plans must be based on current capabilities and will evolve with science, risk assessments and new capabilities
- **Guidelines only: Final decisions made by responsible officials during outbreak**
- Outreach and training pre and post outbreak

# Secure Egg Supply Plan

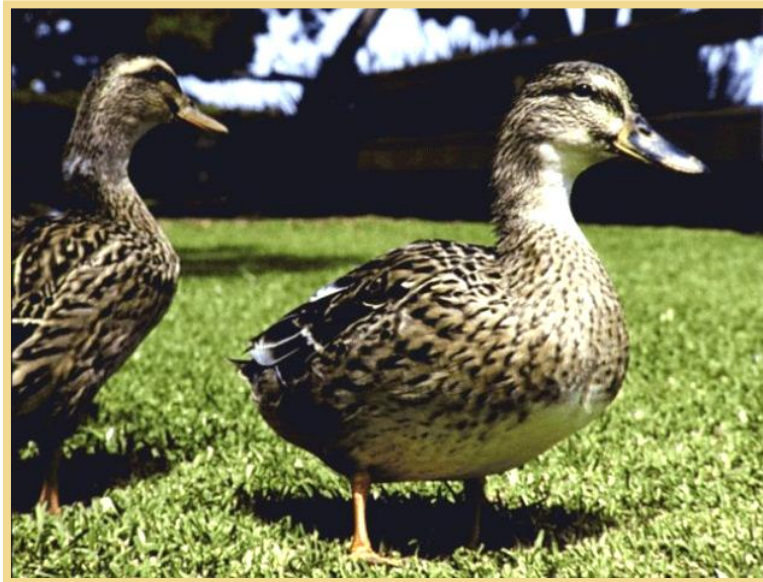
- Initiated in October 2007 in response to the 2004/2005 H5N1 avian influenza outbreak in Asia, Europe and Africa – Concern that it would spread to Western Hemisphere
- H5N1 carried by wild waterfowl and caused high morbidity and high mortality in poultry
- Rarely transmitted to people but with high mortality rate

# Emerging Influenza Viruses

- Zoonotic
  - Avian H5N1 – 2004 Asia, Europe, Africa
  - Pandemic H1N1 – 2009 “Swine flu”
  - Variant H3N2 – 2011 – 2012 U.S.
    - Swine and people
  - Avian H7N9 in China – 2013
- Not zoonotic (so far)
  - Avian H5N1, H5N2, H5N8 in Western US  
Dec 2014-Feb 2015

# Influenza A Reservoir

- Wild waterfowl and migrating birds are reservoir for all avian influenza viruses
- Typically are asymptomatic



# Avian Influenza H5N1 Concerns to Date

- HPAI H5N1 viruses enzootic in poultry in several countries
- Human infections still occurring, with case fatality rate (CFR)  $\sim 60\%$
- 1918 pandemic had CFR of 1-2%
- H5N1 viruses could hypothetically adapt to humans allowing sustained transmission

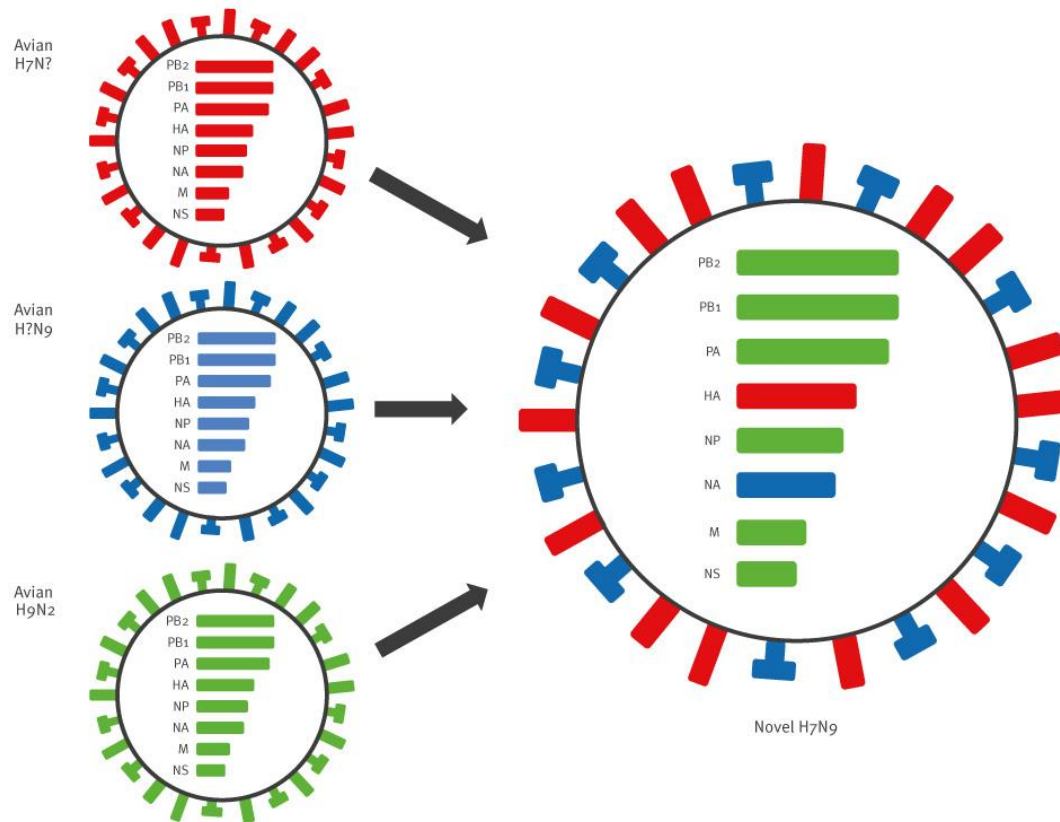


# Influenza A Viruses Mutate Frequently

## H7N9 HPAI Example

**FIGURE 3**

Schematic diagram of novel influenza A(H7N9) virus generation



HA: haemagglutinin; NA: neuraminidase.

The novel influenza A(H7N9) viruses are likely to have acquired their HA gene from an avian H7 virus of unknown NA subtype, their NA gene from an avian N9 virus of unknown HA subtype, and their remaining six viral segments from avian H9N2 viruses circulating in poultry.

# H5N1 Avian Influenza

- 2005: Concern that H5N1 would spread through migrating waterfowl from flyways in Europe/Asia to the Western hemisphere
- Extensive surveillance programs established
- No detections of this strain of H5N1 in Western hemisphere
- New strains of H5 avian influenza detected in Canada and US fall 2014

# H5 HPAI reports from East Asia

September 2014 through January 2015 (OIE)



## Eastern Asia

Reports of H5 HPAI subsided in the region during summer 2014. Then in September, outbreaks of **H5N1**, **H5N2**, **H5N6**, **H5N8** HPAI occurred in China.

Original **H5N8** outbreak occurred January-April, 2014, most intensely in S. Korea and Japan. After 5 months with no reported cases, H5N8 was detected again, 24 September, in S. Korean commercial poultry. It was detected again in Japan in November.

**W** H5N1 in wild birds  
**P** H5N1 in poultry

**W** H5N2 in wild birds  
**P** H5N2 in poultry

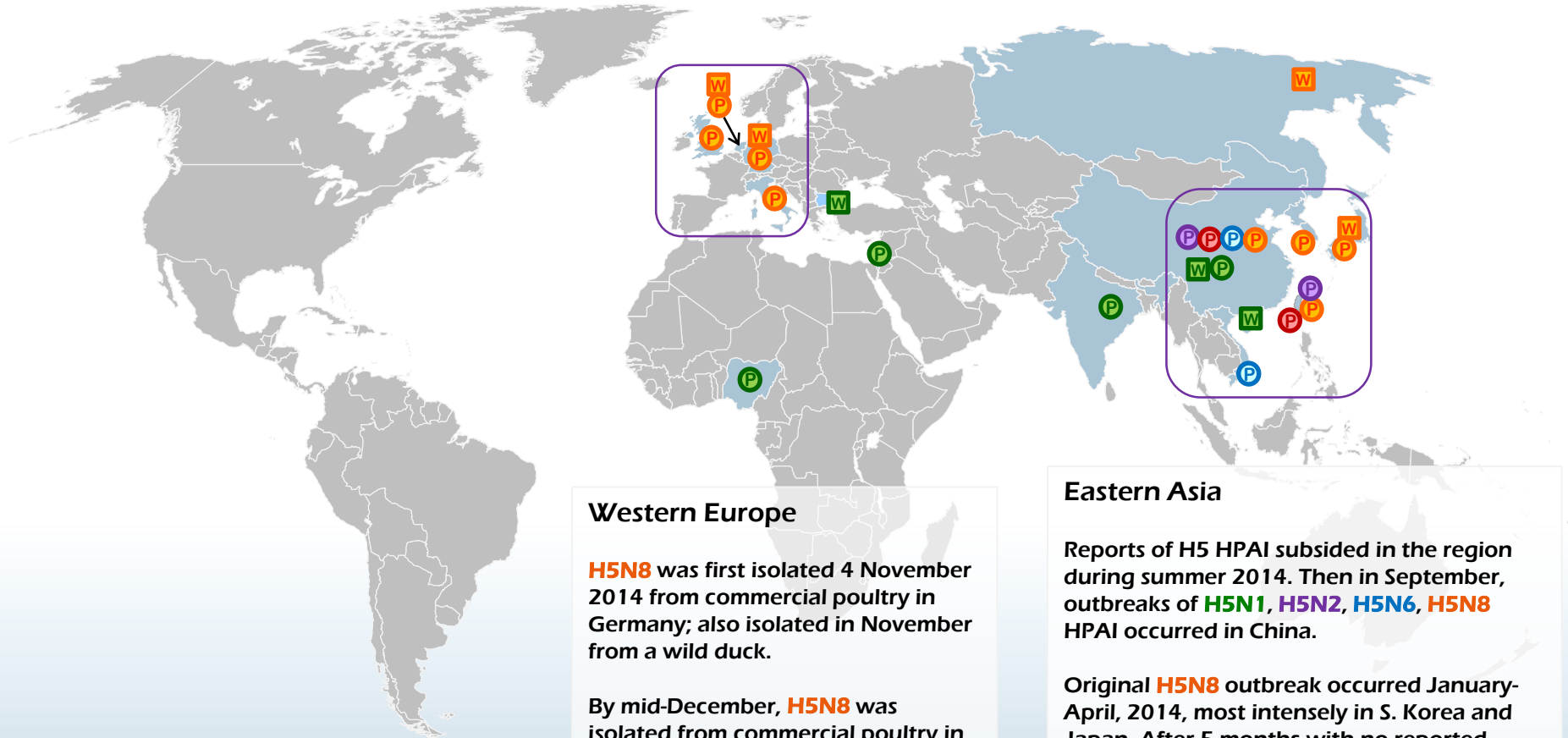
**W** H5N3 in wild birds  
**P** H5N3 in poultry

**W** H5N6 in wild birds  
**P** H5N6 in poultry

**W** H5N8 in wild birds  
**P** H5N8 in poultry

# H5 HPAI reports from Europe, Middle East, and Africa

## November 2014 through January 2015 (OIE)



### Western Europe

**H5N8** was first isolated 4 November 2014 from commercial poultry in Germany; also isolated in November from a wild duck.

By mid-December, **H5N8** was isolated from commercial poultry in The Netherlands, United Kingdom, and Italy.

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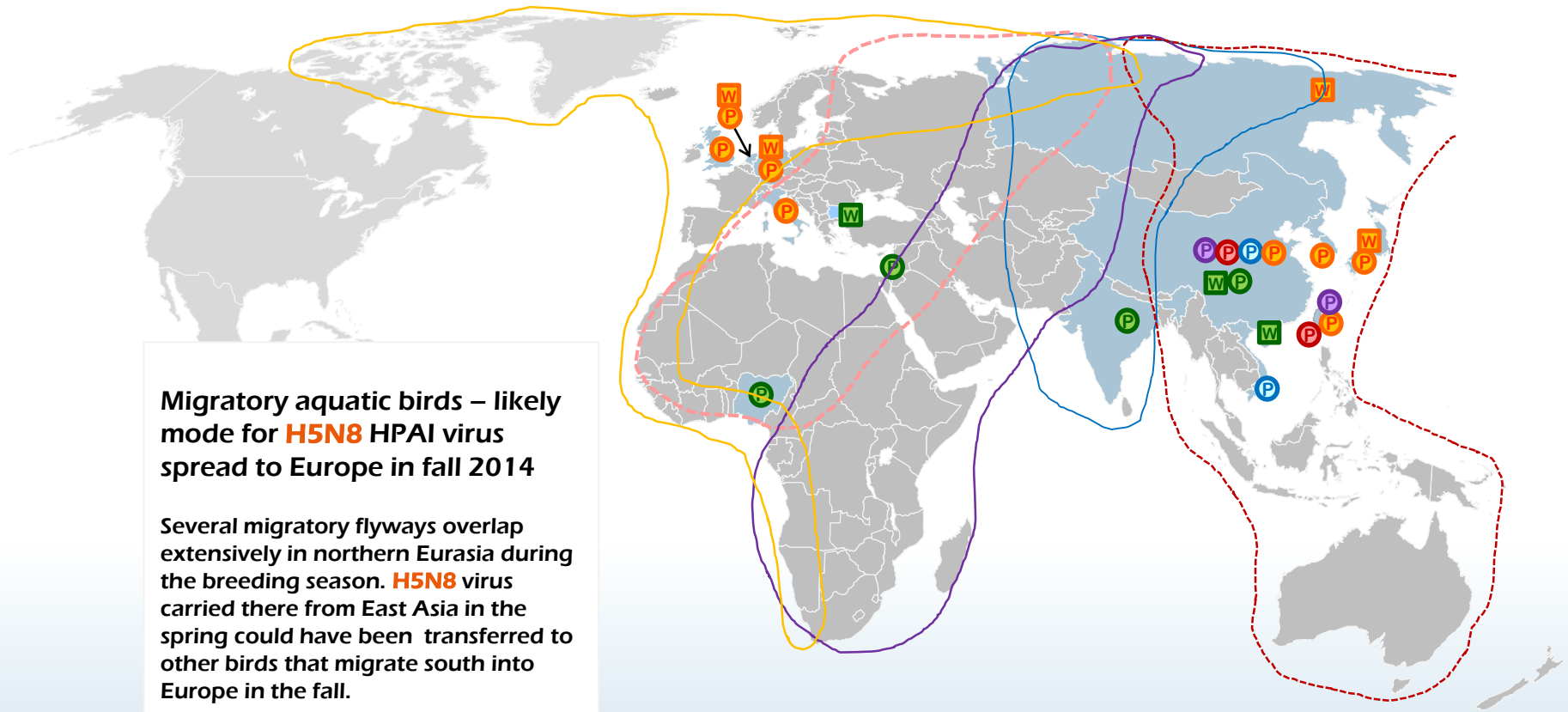
**W** H5N2 in wild birds  
**P** H5N2 in poultry

**W** H5N3 in wild birds  
**P** H5N3 in poultry

**W** H5N6 in wild birds  
**P** H5N6 in poultry

**W** H5N8 in wild birds  
**P** H5N8 in poultry

# H5 HPAI reports from Europe, Middle East, and Africa November 2014 through January 2015 (OIE)



**Migratory aquatic birds – likely mode for H5N8 HPAI virus spread to Europe in fall 2014**

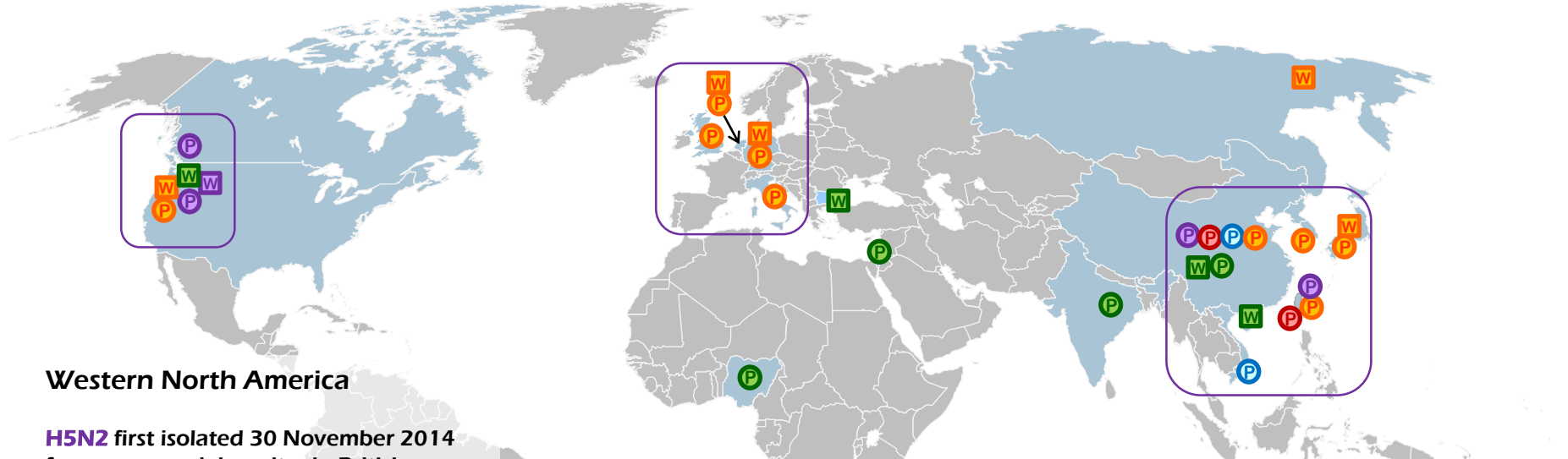
Several migratory flyways overlap extensively in northern Eurasia during the breeding season. H5N8 virus carried there from East Asia in the spring could have been transferred to other birds that migrate south into Europe in the fall.

**H5N8** may be better suited for long-distance dispersal than most strains of HPAI.

- W H5N1 in wild birds  
P H5N1 in poultry
- W H5N2 in wild birds  
P H5N2 in poultry
- W H5N3 in wild birds  
P H5N3 in poultry
- W H5N6 in wild birds  
P H5N6 in poultry
- W H5N8 in wild birds  
P H5N8 in poultry

# H5 HPAI reports from North America

## November 2014 through January 2015 (OIE)



### Western North America

**H5N2** first isolated 30 November 2014 from commercial poultry in British Columbia; outbreak continues into 2015.

**H5N8** first isolated 10 December 2014 from captive wild birds in Washington; later isolated from backyard poultry in Oregon. Similarly, **H5N2** identified in US wild birds and backyard poultry.

**H5N1** first isolated 29 December 2014 from wild duck in Washington.

**H5N8** isolated 19 January 2015 from commercial turkey farm in California.

### Western Europe

**H5N8** first isolated 4 November 2014 from commercial poultry in Germany; also isolated in November from a wild duck.

By mid-December, **H5N8** was isolated from commercial poultry in The Netherlands, United Kingdom, and Italy.

### Eastern Asia

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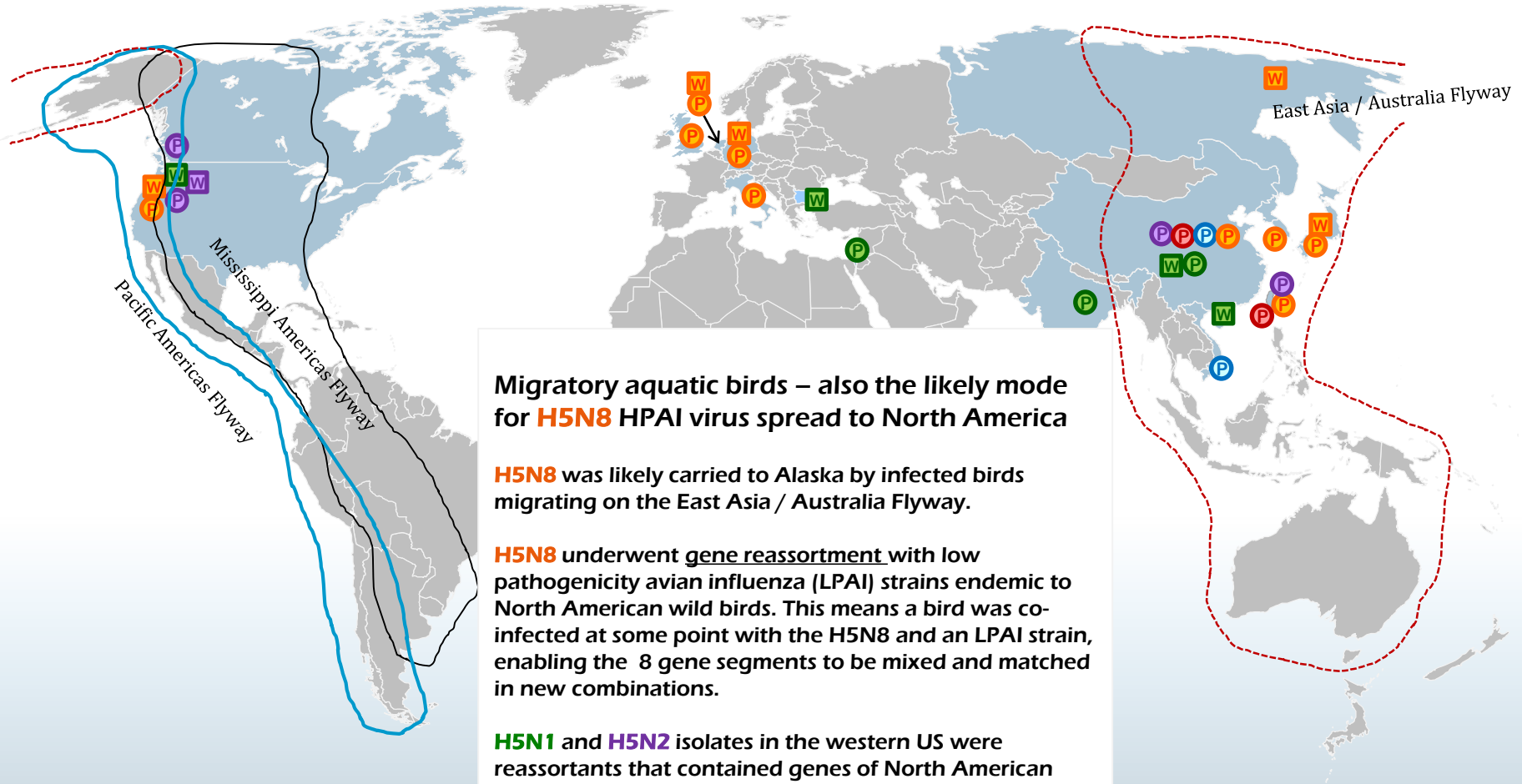
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**P** H5N6 in poultry

**W** H5N8 in wild birds  
**P** H5N8 in poultry

# H5 HPAI reports from North America

November 2014 through January 2015 (OIE)



## Migratory aquatic birds – also the likely mode for H5N8 HPAI virus spread to North America

**H5N8** was likely carried to Alaska by infected birds migrating on the East Asia / Australia Flyway.

**H5N8** underwent gene reassortment with low pathogenicity avian influenza (LPAI) strains endemic to North American wild birds. This means a bird was co-infected at some point with the H5N8 and an LPAI strain, enabling the 8 gene segments to be mixed and matched in new combinations.

**H5N1** and **H5N2** isolates in the western US were reassortants that contained genes of North American and Eurasian origin.

- |                    |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| H5N1 in wild birds | H5N2 in wild birds | H5N3 in wild birds | H5N6 in wild birds | H5N8 in wild birds |
| H5N1 in poultry    | H5N2 in poultry    | H5N3 in poultry    | H5N6 in poultry    | H5N8 in poultry    |

# H5N1, H5N2, H5N8 HPAI Detections December 10, 2014 to February 17, 2015

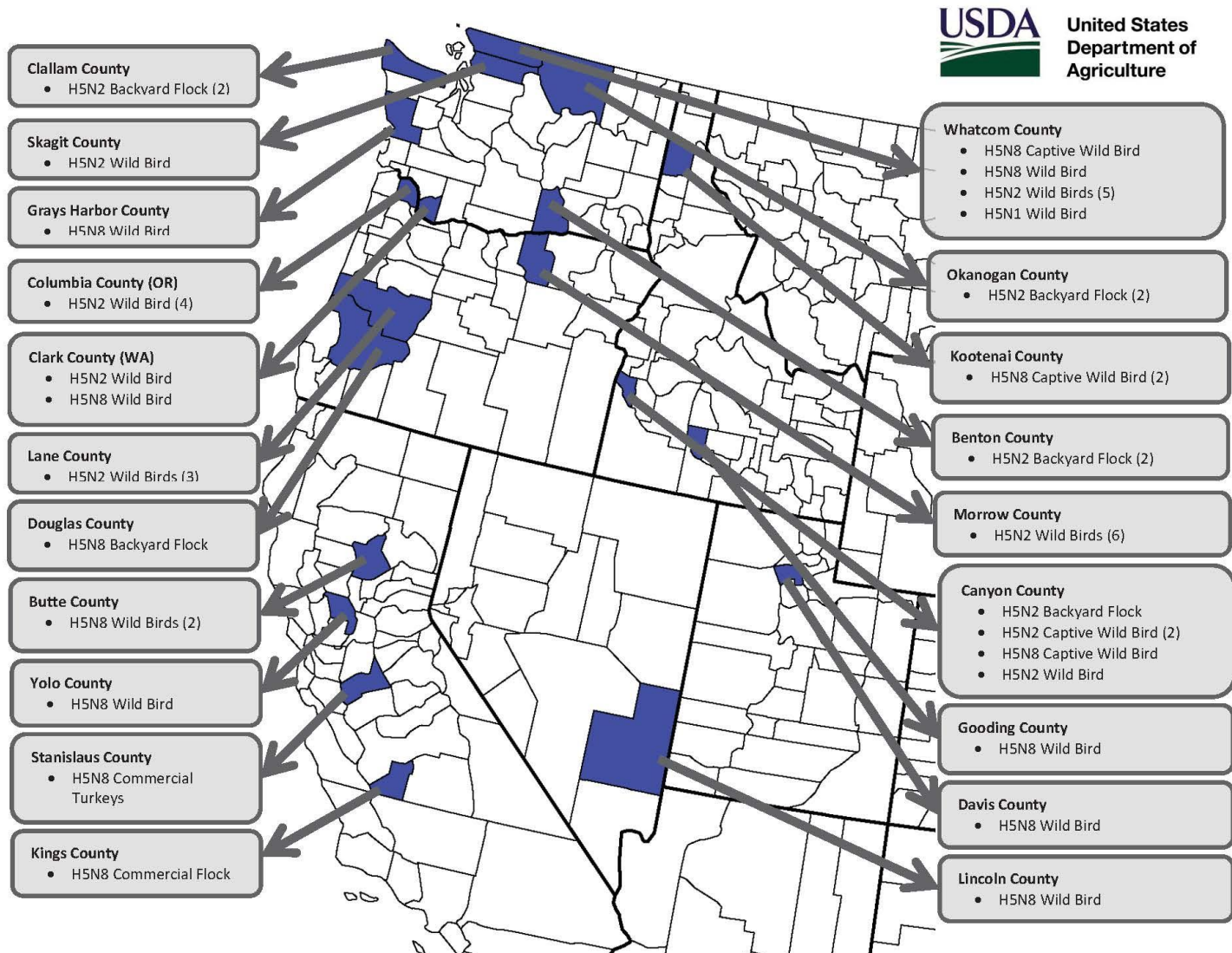


Figure 2. All HPAI Detections, with Details, As Of February 17, 2015



# Secure Egg Supply Plan (SES)

*Operational Components  
Preparedness*

*<http://secureeggsupply.com/>*

# Secure Egg Supply Plan

## **PUBLIC-PRIVATE-ACADEMIC-PARTNERSHIP**

The Egg Sector Working Group – a multidisciplinary team – prepared the SES plan. This team includes the following:

- University of Minnesota, Center for Animal Health and Food Safety
- Iowa State University, Center for Food Security and Public Health
- United Egg Producers
- Egg sector veterinarians and officials
- State officials
- United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA APHIS VS)



# Secure Egg Supply

<http://secureeggsupply.com/>



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[RISK ASSESSMENTS](#)

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## Summary of the Secure Egg Supply (SES) Plan

### Specific Product Movements

[Pasteurized Liquid Eggs](#)

[Non-Pasteurized Liquid Eggs](#)

[Washed & Sanitized Shell Eggs](#)

[Nest Run Shell Eggs](#)

[Layer Hatching Eggs](#)

[Layer Day-Old Chicks](#)

### The Summary of the Secure Egg Supply (SES) Plan ([Download the SES Plan Final Summary](#))

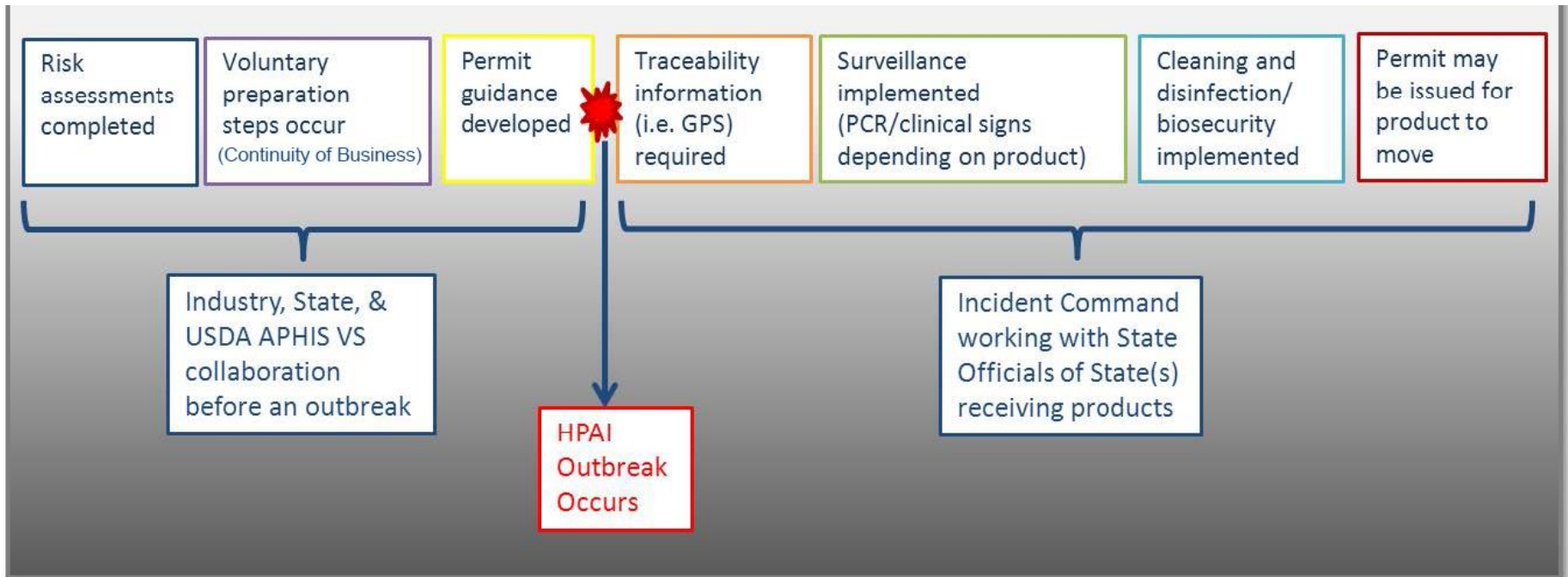
#### INTRODUCTION

The SES Plan promotes food security and animal health through continuity of market planning for a highly pathogenic avian influenza (HPAI) outbreak. This plan makes specific science- and risk- based recommendations that emergency decision makers (such as Incident Commanders) can use to rapidly decide whether to issue or deny permits for the movement of egg industry products during an HPAI outbreak.

Download the [full Secure Egg Supply \(SES\) Plan](#)



# How the SES Plan Works



# SES Voluntary Preparedness Components

## Supplement 6

## Voluntary Preparedness Components of the Secure Egg Supply Plan

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This supplement to the *Secure Egg Supply (SES) Plan* describes the Voluntary Preparedness Components of the *SES Plan*.

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| S6.3 LOCATION VERIFICATION OF PREMISES FOR THE VOLUNTARY PREPAREDNESS COMPONENTS OF THE SES PLAN USING GPS COORDINATES..... | S6-5 |
| S6.4 EPIDEMIOLOGY QUESTIONNAIRE AND FLOCK DATA .....  | S6-5 |
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## Secure Egg Supply Demonstration Videos

Refer to the Secure Egg Supply Plan for the most current details for pasteurized liquid eggs, non-pasteurized liquid eggs, nest run eggs, hatching eggs, day-old chicks, egg shell and inedible eggs.

In the videos, the Plan is presented as of March 2013. Please refer to the SES Plan for the most current recommendations and diagnostic protocols, which may change to reflect scientific advances.

### **SES Plan Video (37 min)**



# SES Preparedness - Iowa

- Implemented voluntary preparedness components
  - Over 100 egg production facilities
  - Training to complete response components
  - Audited biosecurity standards
  - SES Data Portal
- Iowa SAHO has MOUs with SAHOs in NE, CO, MN, WI

# SES & Data Portal Available to Other States

- H5 HPAI appeared in Pacific Flyway
- Egg industry and SAHOs interested in enhanced preparedness
- CFSPH is providing support for voluntary preparedness components
  - Guidance to SAHOs
    - Data Portal (state-specific)
  - Guidance to the egg industry



# Web Site for State Participation

Home > Secure Food Supply > English | Español | ภาษาไทย

**CFSPH Main Menu**

- Products >
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- Zoonotic Diseases >
- Infection Control >
- Emergency Response >
- Secure Food Supply >
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## Secure Egg Supply (SES) SAHO/ADD Getting Started

This page provides resources for State Animal Health Officials / USDA Assistant Area Directors to begin the process of implementing the SES Preparedness Components.

**General Information:**

- Review the [SES Plan \(pdf\)](#) and the [voluntary preparedness components \(pdf\)](#) of the plan.
  - SES Quick Start [Video \(6 min\)](#)
  - SES Demonstration [Video \(37 min\)](#)
- [Producer Signup Information](#) page. Producers will be directed here for general information. Use the "Getting Producers Started" template below to provide state specific information to your producers.

**Implementation Documents**

- SAHO Duties (coming)



**Quick Start**

- [SES Plan Video - Short Version \(6 min\)](#)


# SAHO/ADD Getting Started

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## Quick Start

 [SES Plan Video - Short Version \(6 min\)](#)

## Implementation Documents

- [SAHO Duties \(coming\)](#)
- [Getting Producers Started Template](#)
- [Diagnostic Lab checklist](#)
- [Auditor Information](#)
- [How to use the data portal \(video-coming\)](#)

Your data portal will be located at: <http://sesdp.cfsph.iastate.edu/XY> (you must replace "XY" with the two letter abbreviation for your state).

# **SES AUDITOR TRAINING PREPAREDNESS COMPONENT MOVING WHOLE SHELL EGGS**



10Feb2015

## **Introduction**

The Secure Egg Supply (SES) Plan outlines surveillance, biosecurity, and cleaning and disinfection practices for moving different types of eggs and egg industry products within, out of, and into a highly pathogenic avian influenza (HPAI) Control Area. This Plan includes a combination of Voluntary Preparedness Components and Response Components. Implemented in a disease outbreak, this Plan provides a high degree of confidence that eggs and egg industry products moved into market channels do not contain HPAI virus.

Specific criteria must be fulfilled to qualify for movement permits. Movement will be allowed by permit for products from flocks inside a Control Area that meet epidemiological and biosecurity standards and test negative for HPAI.

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[Data Entry Tutorial/Help Files](#)

User Name:

Password:

[Forgot password?](#) [Create New Account](#)

**Want to find out more about the FAST Eggs Plan?**

The FAST Eggs Plan is part of the [Secure Egg Supply Plan](#). Use the link to find out more about both.

[Data Entry tutorials and Help Files](#)



# Industry Steps for Participation

- Review the SES Plan and the voluntary preparedness components
- Request permission from SAHO to participate
- Receive instructions and training materials from SAHO/ADD
- Register on SES Data Port
- Implement biosecurity standards
- Stock supplies for oropharyngeal sampling

# SES Producer Signup Information

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## Secure Egg Supply (SES) Producer Signup Information

This page provides resources for egg producers to participate in the voluntary preparedness components of the SES Plan.

### Steps:

- Review the [SES Plan \(pdf\)](#) and the [voluntary preparedness components \(pdf\)](#) of the plan.
  - [SES Quick Start Video \(6 min\)](#)
  - [SES Demonstration Video \(37 min\)](#)
- Contact your [State Animal Health Official \(SAHO\)](#) to indicate your interest in participating in the voluntary preparedness components of SES.
- Review the [biosecurity standards \(pdf\)](#).
- Implement the required biosecurity on the premises with assistance of the company veterinarian.
- Create an account for each premises on the SES Data Portal for your state. The SAHO will provide the access instructions.
- Stock supplies needed for collection of oropharyngeal samples



### Quick Start

[SES Plan Video - Short Version \(6 min\)](#)

# Industry Steps for Participation

- Train employees
  - Collect oropharyngeal swabs
  - How-to video
- Confirm lab sample results reported to SAHO/ADD
- Enter production data on state's portal
- Request an audit
- Maintain compliance

# Oropharyngeal Sampling Video

## CFSPH Main Menu

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## Secure Egg Supply (SES) Oropharyngeal Sampling Supplies

### Supplies:

- **Appropriate Personal Protective Equipment**- In addition to wearing clean coveralls and boots, you should wear gloves and you may want a mask, goggles, and/or head cover.
- **Sealable Plastic Bags** - For holding items like BHI broth tubes and scissors.
- **Disposable Plastic Trash Bags** - Used to provide a clean working surface and also for collecting trash and discarded chickens after sampling.
- **Duct Tape**
- **Permanent Marker and Tape** - For labeling BHI broth tubes.
- **Scissors** - One clean pair per house.



### How do I learn to collect oropharyngeal swabs?

You will find training videos and handouts in English and Spanish once you create an account on your state's SES Data portal. Please work with your company veterinarian to become competent in this process.



# Secure Turkey Supply Plan (STS)

*Operational Components  
Response*

*<http://www.secureturkeysupply.com/>*

# Turkey Sector Working Group

- The Turkey Sector Working Group—the multidisciplinary team that prepared this STS Plan—includes representatives of the following organizations:
  - University of Minnesota Center for Animal Health and Food Safety (CAHFS)
  - Iowa State University, College of Veterinary Medicine
  - Association of Veterinarians in Turkey Production
  - The USDA Animal and Plant Health Inspection Service, Veterinary Services (USDA APHIS VS)
  - State Animal Health Officials

# STS Response

- Response components only
- Biosecurity recommendations
  - Needed prior to movement
  - High degree of confidence  
no undetected infection
  - Level 1 and Level 2
  - Standards specific for type of movement  
(hatching eggs and day-old poults)
  - Includes C&D protocols

# Secure Turkey Supply

<http://www.secureturkeysupply.com/>



**STS**  
SECURE  
TURKEY SUPPLY

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## Draft Summary of the Secure Turkey Supply Plan

### Product Movements

### Risk Assessments

Turkey Hatching Egg RA  
Day-Old Poult RA

## The Draft Summary of the Secure Turkey Supply (STS) Plan

### INTRODUCTION

The STS Plan promotes food security and animal health through continuity of market planning for a highly pathogenic avian influenza (HPAI) outbreak. This plan makes specific science- and risk- based recommendations that emergency decision makers (such as Incident Commanders) can use to rapidly decide whether to issue or deny permits for the movement of turkey industry products during an HPAI outbreak.

Download the [Draft Secure Turkey Supply \(STS\) Plan](#)

**PUBLIC-PRIVATE-ACADEMIC-PARTNERSHIP**



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# STS Response

- Active and passive surveillance
  - Laboratory testing RRT-PCR
  - Production parameters (mortality, eggs)
  - Clinical signs (feed/water/behavior)
- Data Portal
  - For use during an HPAI outbreak
  - For all turkey farms in Control Area

# Secure Broiler Supply Plan (SBS)

*Operational Components  
Response*

*<http://www.securebroilersupply.com/>*

# Secure Broiler Supply Plan

The Broiler Sector Working Group—the multidisciplinary team that prepared this SBS Plan—includes representatives of the following organizations:

- University of Minnesota Center for Animal Health and Food Safety (CAHFS)
- Association of Veterinarians in Broiler Production (AVBP)
- The USDA Animal and Plant Health Inspection Service, Veterinary Services (USDA APHIS VS)
- State Animal Health Officials



# Secure Broiler Supply



**SBS**  
**SECURE**  
**BROILER SUPPLY**

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EXERCISES

CONTACT

## The Secure Broiler Supply Plan

### Product Movements

Broiler Hatching Eggs

Broiler Day-Old Chicks

Broilers to Market

### The Draft Summary of the Secure Broiler Supply (SBS) Plan

#### INTRODUCTION

The SBS Plan promotes food security and animal health through continuity of market planning for a highly pathogenic avian influenza (HPAI) outbreak. This plan makes specific science- and risk- based recommendations that emergency decision makers (such as Incident Commanders) can use to rapidly decide whether to issue or deny permits for the





# Secure Broiler Supply Plan

- Preparedness:
  - Surveillance Guidelines
  - Risk Assessments (RAs) animal health proactive RAs and public health inter-agency RA
  - Biosecurity Measures in response to an outbreak
  - Permit Guidance



# Secure Food Supply Plans

Movement from Premises with No Evidence of Infection

- Secure Pork Supply
  - FMD, Classical Swine Fever, African Swine Fever, and Swine Vesicular Disease
  - Movement of animals
- Secure Milk Supply
  - Foot and Mouth Disease (FMD)
  - Movement of milk
- Secure Beef Supply
  - FMD
  - Movement of animals



# Secure Food Supply Gaps

- Time and resources for State and Federal authorities and industry to focus on preparedness
- Need for clear, simple implementation strategies and resources on day of outbreak
- Need for consistent and collaborative response among states

# Secure Food Supply Gaps

- State agreements to accept movement of animals and products
  - MOUs have been signed for some
- Widespread industry engagement and support
- Funding for states to implement
  - State Coordinator, auditor, lab costs
- Permitting system: data collection and management accessible to USDA EMRS

# Thank You!

- Comments and questions:
  - [jaroth@iastate.edu](mailto:jaroth@iastate.edu)
- Secure Poultry Supply Websites
  - <http://secureeggsupply.com/>
  - <http://www.securebroilersupply.com/>
  - <http://www.secureturkeysupply.com/>
- USDA FAD PReP Materials and References
  - [http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/emergencyresponse?1dmy&urile=wcm%3apath%3a%2Faphis\\_content\\_library%2Fsa\\_our\\_focus%2Fsa\\_animal\\_health%2Fsa\\_emergency\\_management%2Fct\\_fadprep](http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/emergencyresponse?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_animal_health%2Fsa_emergency_management%2Fct_fadprep)

