

Avian Influenza: Agricultural Perspectives & Interventions



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Topics Covered

1. Avian Influenza Overview
2. USDA's AI Interventions
 - Targeted surveillance
 - Trade restrictions
 - Border protection
 - Outreach & education
 - Preparedness & response



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Avian Influenza Overview

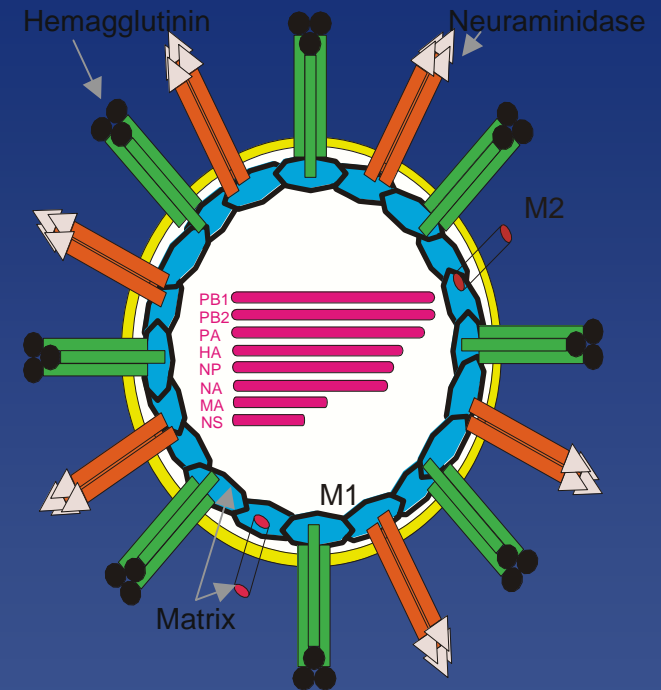
- Avian influenza (AI) - identified in the early 1900s
- High pathogenic avian influenza (HPAI) – causes contagious illness, death in birds; Low pathogenic (LPAI) causes mild to no illness
- Vast majority of AI viruses found in birds do not represent a public health concern



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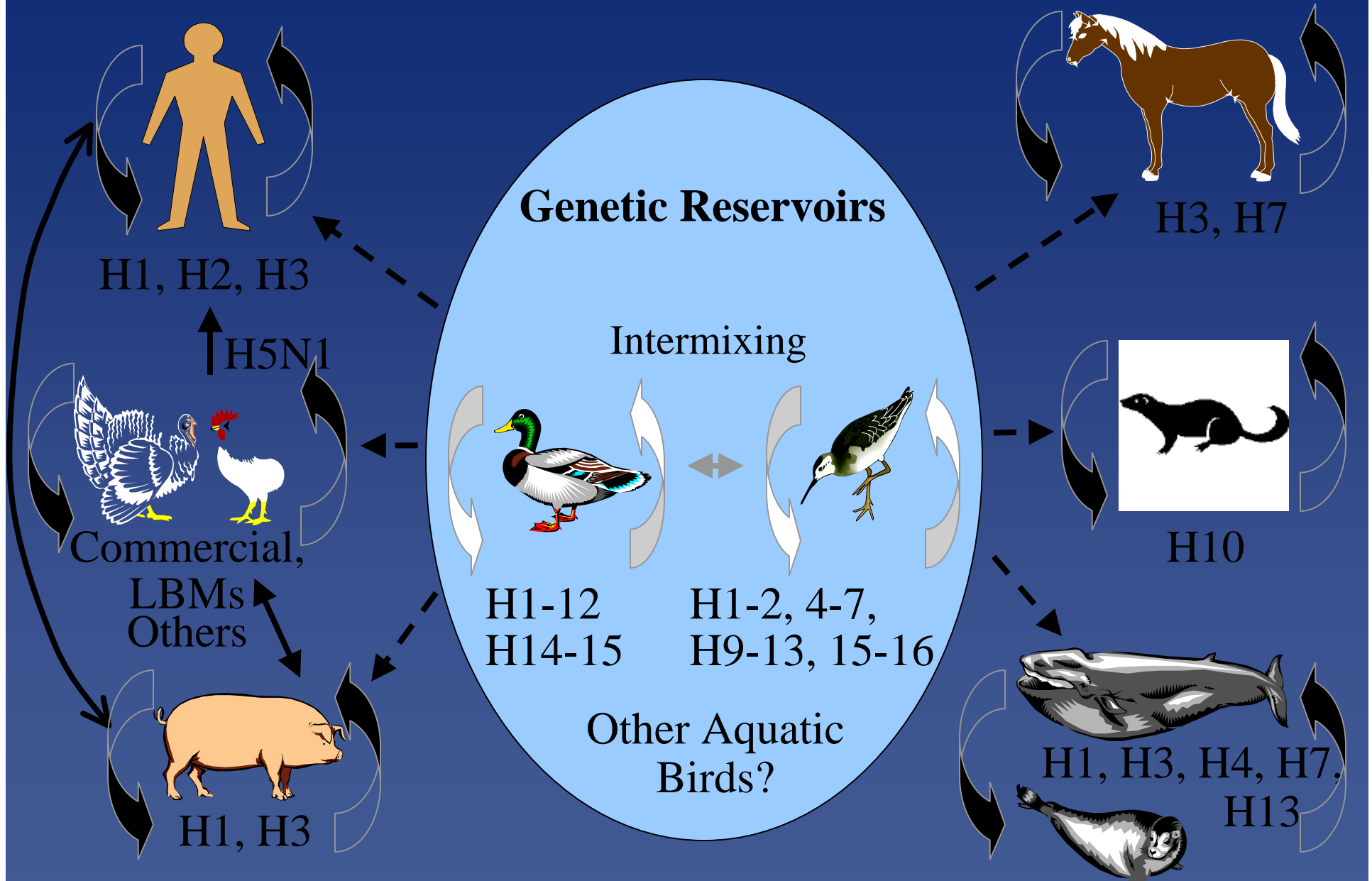
Avian Influenza Overview (cont.)

- Virus is characterized by H and N type (surface proteins).
- 144 different characterizations of the virus, based on 16 H types and 9 N types
- AI viruses mutate easily; only H5 and H7 viruses have the potential to mutate from an LPAI to an HPAI form.
- AI viruses vary widely in pathogenicity from strain to strain. Therefore not all H5N1 viruses are infectious for people or pathogenic to poultry.



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Species Affected



How is the virus spread among birds?

- Direct contact between healthy and infected birds
- Infected fecal matter
- Can be found on surface of unwashed egg shells from infected birds



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Three HPAI Findings in U.S.

- 1924 – “Fowl Plague” affected live bird markets in the Northeastern U.S.
- 1983 – destruction of 17 million birds in PA
- 2004 – quickly contained and eradicated in TX



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USDA's AI Interventions

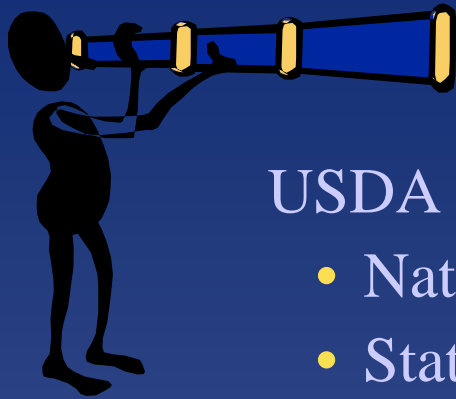
USDA's safeguarding system encompasses:

- Targeted surveillance/Cooperative efforts with States and Industry
- Trade restrictions
- International assistance to prevent introduction in the U.S.
- Border protection
- Outreach and education



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Targeted Surveillance/Cooperative Efforts



USDA and States conduct surveillance through:

- National Poultry Improvement Plan (NPIP)
- State and University laboratories: Evaluation of birds with clinical signs of disease
- Testing at slaughter to meet export requirements
- State programs and movement requirements
- AI testing, surveillance and sanitation standards for live bird markets



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Targeted Surveillance/Cooperative Efforts (cont.)

- Migratory bird surveillance and testing in Alaska and Atlantic flyways (expansion underway)
- USDA scientists have improved AI tests, developed bird vaccines, and provided insight into transmissibility through genetic research
- International assistance to HPAI-affected countries to educate, prevent, and eradicate the virus



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Trade Restrictions

- USDA maintains trade restrictions on countries affected by H5N1:
 - Cambodia, China, Croatia, Indonesia, Japan, Kazakhstan, Laos, Malaysia, Romania, Russia, South Korea, Thailand, Turkey, and Vietnam
- Poultry and poultry products from those countries are strictly prohibited.
- USDA works with trading partners and the World Organization for Animal Health (OIE) to maintain safe trade.



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World Organization for Animal Health (OIE) – Reporting and Guidelines

OIE guidelines state that:

- HPAI and all H5/7 LPAI must be reported to the OIE.
- Poultry meat and table eggs do not transmit LPAI
 - Trade in poultry and poultry products can continue despite a finding of LPAI
- Recommends certain health measures for the trade in poultry and poultry products based on risk and AI status
- Compartmentalization allows countries to document separation based on biosecurity



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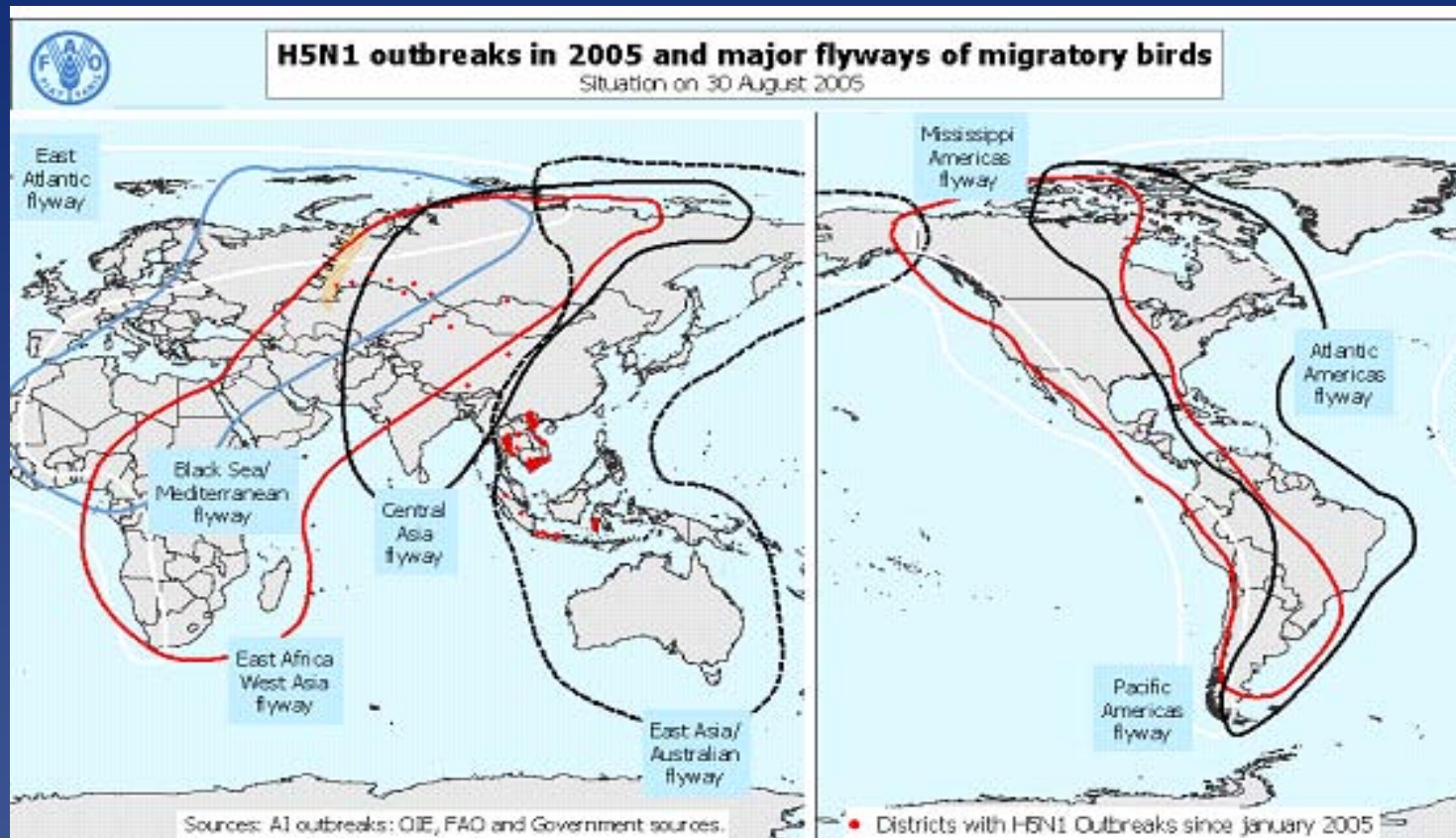
Border Protection & Risk of Introduction of Asian Strain of H5N1

- USDA works closely with DHS to prevent smuggling of illegal poultry and poultry products.
- USDA's Smuggling Interdiction and Trade Compliance unit and DHS' Customs and Border Patrol actively monitor U.S. ports.
- Legally imported birds from other countries are tested for AI.



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Border Protection & Risk of Introduction of H5N1 Asian Strain of H5N1



Migratory Birds –
Overlap of summer breeding grounds in Alaska, Northeast Canada

- Genetic separation of H5 AI viruses between New & Old World
- Asian birds rarely get off course and go to N. America
- Risk from wild birds is low

Outreach & Education

USDA's Biosecurity for the Birds Campaign is an extensive and far-reaching outreach initiative designed to:

- Educate non-commercial poultry owners about the signs of AI & other poultry diseases
- Promote the importance of practicing biosecurity
- Encourage rapid reporting of clinical signs of disease and/or unexpected deaths



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USDA AI Web Site

www.usda.gov/birdflu

- Information about “Biosecurity for the Birds” program
- Links to other Federal entities working on AI
- Fact Sheets and other information resources
- Q&A on AI
- News Releases
- Technical Briefings



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Preparedness in the Event of an Outbreak

- Key is early detection and rapid response
- USDA maintains a comprehensive emergency response structure:
 - Partnerships with local, State, and Federal organizations
 - Integration with the National Response Plan
 - Continual collaboration with HHS, DHS and other Federal entities
 - Diagnostic capabilities



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