Highly Pathogenic Avian Influenza: The Role of Wildlife

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Roadmap

- Introduction to Avian Influenza
- Spread of Eurasian HPAI H5
- Current Status in Wild Birds
- Managing Risks
Natural Reservoirs

Asymptomatic carriers
Intercontinental Spread

Poultry and Poultry Products

Pet and Wildlife Trade

Smuggling
Intercontinental Spread

Wild Migratory Birds
Global Spread of Eurasian H5
3 HPAI viruses detected
- Eurasian H5N8
- Mix origin H5N2 and H5N1

Primarily
- asymptomatic dabbling ducks (66)
- Confirmed HPAI deaths (6)
  - raptors (5)
  - Canada goose (1)

All three HPAI viruses
- Whatcom Co, WA

H5N8 & H5N2
- Washington, Idaho, Oregon

H5N8
- Throughout the flyway
Central and Mississippi Flyway March-June 2015

- Wild Birds
  - 20 sick/dead geese and raptors
  - 3 apparently healthy waterfowl
    - Caveat: Little apparently healthy duck surveillance
North American Flyways
Current Surveillance

- Identify distribution across U.S.
- Detect early spread into new flyways/regions
- Provide flexible surveillance framework that can monitor wild waterfowl populations for
  - re-assortments of influenzas
  - introductions of new viruses
  - estimate prevalence of important influenzas once detected in an area of concern
Current Surveillance

- **Sampling**
  - Passive (morbidity/mortality)
    - Year round
    - All Species
  - Active (apparently healthy birds)
    - Dabbling ducks
    - In post nesting season (summer)
    - Fall/Winter Migration Season
  - Environmental Fecal
    - Targeted year round
Current Status

Since 1 July 2015:

- 45,459 wild dabbling ducks sampled
  - Atlantic Flyway: 10,663
  - Mississippi Flyway: 13,747
  - Central Flyway: 9,202
  - Pacific Flyway: 11,823
  - American Oceania: 24

- Only 2 PCR positives
  - Mallards
    - Great Salt Lake, UT
    - Oregon
Current Status

- **Wildlife**
  - Dabbling Ducks are primary reservoir
    - Exhibit little to no signs
  - Unidentified number of raptors affected
  - Canada Geese
    - Primarily die from infection
    - Goslings acutely sensitive
    - Good morbidity/mortality sentinel
Current Status

- **Wildlife**
  - **Other wildlife**
    - First identified case in passerines in MN
      - PCR lung tissue positive, no virus isolated
    - No virus isolated from peridomestic species in IA
      - Including: Passerines and Small mammals
      - Exposure (antibody positive): 5 passerines
        - One PCR positive
Minimizing the Potential for Avian Influenza Transmission between Wildlife and Poultry
What are the risks?
Which is the greatest risks?
Recognizing Risks: Standing Water Use

Avian Influenza viruses can be transmitted through contaminated water.

Never use untreated surface water to:

* Water poultry
* Clean equipment
* Clean barns or facilities
Managing Risks

- Shooting wild native birds is **not recommended** to prevent infection

- Doesn’t prevent use and contamination
- Can provide false sense of security
- Focuses time and resources on the wrong risk
- Requires State and Federal Permits
Managing Risks

- More effective techniques
  - Remove vegetation from banks of man-made water structures
  - Fence to separate people and equipment from water and natural vegetation
  - Use deterrent devices
  - Manage risks beyond the farm: Farm workers
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