Wild waterfowl return migration and surveillance for HPAI in Washington

Don Kraege, Waterfowl Section Manager, WDFW

Avian Influenza: Background

- Waterbirds are the natural reservoir of all Influenza "A" viruses
- "Evolutionary equilibrium" between AI viruses and waterbirds
- Influenza viruses seldom cause problems in wild birds

Northern Pintail
Breeding
Jun-Aug

Southward Migration
Sep-Oct

Northward Migration
Jan-May

~2,600,000 birds
North America

Nonbreeding
Aug-Apr

~750,000 birds
Eurasia

§ >60% of Alaska migratory birds oriented toward the Pacific Flyway

§ 150,000 swans

§ 1 million geese

§ 12 million ducks

§ Hundreds of thousands of autumn migrant shorebirds

>60% of Alaska migratory birds oriented toward the Pacific Flyway
Recoveries of mallards banded in Alaska

N. Puget Sound Migration Chronology

- Migration into WA typically peaks in November-December
- Large influx of birds during the past few weeks
- Will build throughout the month and into December

Avian Influenza: Past Surveillance Efforts

- National and Pacific Flyway Plans developed in March 2006
- Washington Plan developed in June 2006
  - Multi-agency sampling plan
  - WDFW, USDA-WS, USFWS, WSDA
  - Coordinated with WDFW regions, tribes, ODFW, IDFG, other flyway states
- Federal Funds allocated to flyway and state sampling efforts in 2006
  - USDA - $140,000
  - USFWS - $285,000

Hunter Harvest Sampling
Investigation of Morbidity and Mortality Events
- WDFW lead – Dr. Kristin Mansfield
- Enhanced WDFW statewide reporting network
  - 1-800-606-8768
- Additional outreach and communications

Swan Mortality Project
Collection of Sick and Dead Swans Affected by Lead Poisoning

Standard WDFW Dead Bird Submission Criteria

Three or more sick/dead birds in one place at one time, regardless of species, if cause of death is not obvious

Avian Influenza: Additional outreach
- News releases
- Information in past WDFW waterfowl pamphlets (150,000 copies)
- Information on WDFW web site: http://wdfw.wa.gov/factsheets/avian_flu.htm

Avian Influenza: Past Surveillance Results 2005-2011

<table>
<thead>
<tr>
<th>Years</th>
<th>Total Number Tested</th>
<th>Total AI positive</th>
<th>Percent AI positive</th>
<th>Total H5 positive</th>
<th>Percent H5 positive</th>
<th>Total H7 positive</th>
<th>Percent H7 positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2007</td>
<td>9,399</td>
<td>569</td>
<td>13%</td>
<td>79</td>
<td>2%</td>
<td>0</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>2007-2011</td>
<td>9,789</td>
<td>862</td>
<td>11%</td>
<td>78</td>
<td>1%</td>
<td>0</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Totals</td>
<td>19,188</td>
<td>1,431</td>
<td>12%</td>
<td>154</td>
<td>1%</td>
<td>5</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Early December 2014
Wiser Lake, Whatcom County

Unified Incident Command

2014-15 Surveillance

1,100 Waterfowl Sampled
USGS – NWHC, WDFW, USDA

Hunter Harvest
Sick and Dead Birds

NWHC Submissions by WDFW
(Dec-Jan months only)
### Avian Influenza: 2014-15 WA Sampling Results

<table>
<thead>
<tr>
<th>Case #</th>
<th>COLLECTED SPECIES</th>
<th>COUNTY</th>
<th>SUBTYPE</th>
<th>CONF</th>
<th>DATE</th>
<th>AGENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Mallard</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>12-08-2014</td>
<td>WDFW</td>
</tr>
<tr>
<td>3</td>
<td>American Wigeon</td>
<td>Whatcom</td>
<td>EA</td>
<td>H5N8</td>
<td>12-16-2014</td>
<td>WDFW</td>
</tr>
<tr>
<td>7</td>
<td>Northern Pintail</td>
<td>Clark</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>12-23-2014</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>8</td>
<td>Mallard</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>02-02-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>12</td>
<td>American Green-winged Teal</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N1</td>
<td>01-16-2015</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>13</td>
<td>Cooper's Hawk</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>01-26-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>14</td>
<td>Peregrine Falcon</td>
<td>Grays Harbor</td>
<td>EA</td>
<td>H5N8</td>
<td>02-02-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>15</td>
<td>American Wigeon</td>
<td>Whatcom</td>
<td>EA</td>
<td>H5N8</td>
<td>02-02-2015</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>16</td>
<td>Canada Goose</td>
<td>Jefferson</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>03-05-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>18</td>
<td>Red-tailed Hawk</td>
<td>Benton</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>02-12-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>19</td>
<td>Mallard</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>01-27-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>20</td>
<td>Northern Pintail</td>
<td>Whatcom</td>
<td>EA</td>
<td>H5N8</td>
<td>03-18-2015</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>22</td>
<td>American Wigeon</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N1</td>
<td>03-05-2015</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>23</td>
<td>American Wigeon</td>
<td>Whatcom</td>
<td>EA/AM</td>
<td>H5N1</td>
<td>03-05-2015</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>36</td>
<td>Red-tailed Hawk</td>
<td>Skagit</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>01-26-2015</td>
<td>WDFW</td>
</tr>
<tr>
<td>37</td>
<td>Mallard</td>
<td>Walla Walla</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>02-12-2015</td>
<td>USGS-NWHC</td>
</tr>
<tr>
<td>38</td>
<td>Mallard</td>
<td>Walla Walla</td>
<td>EA/AM</td>
<td>H5N2</td>
<td>03-18-2015</td>
<td>USGS-NWHC</td>
</tr>
</tbody>
</table>

17 Cases: 12 dabbling ducks, 1 goose, 4 raptors

### WDFW Dead Bird Submission Criteria 3.0

- Three or more sick/dead birds in one place at one time
- Reports of single dead raptors if cause of death is not obvious
- Any bird showing neurological or GI signs consistent with avian influenza

### Main Messages

- Disease background
- Clinical signs of HPAI in birds
- Personal protection
- Facility biosecurity
- Separation of wild waterfowl from raptors & game birds
- WDFW contact information for reporting suspect cases

### 2015-16 Surveillance

- Surveillance Plan for Highly Pathogenic Avian Influenza in Waterfowl in the United States
- U.S. Interagency Strategic Plan
Avian Influenza: 2015-16 Surveillance

Goal
✓ Provide information to improve management actions that are taken to address risks of HPAI, including risks to poultry, game farms, other captive birds, and wild birds

Objectives
✓ Identify distribution of AI viruses in high priority watersheds
✓ Detect spread to new areas
✓ Provide flexible surveillance framework to respond to new viruses and determine prevalence

Avian Influenza: 2015-16 Surveillance

✓ Surveillance for HPAI in Live Wild Birds
✓ Surveillance for HPAI in Hunter-killed Birds
✓ Investigation of Morbidity and Mortality Events in Wild Birds

Avian Influenza: 2015-16 Surveillance

✓ Highest priority: dabbling ducks
  ✓ Teal
  ✓ Mallard
  ✓ Pintail
  ✓ Wood duck
  ✓ Shoveler
  ✓ Gadwall
  ✓ American Wigeon
✓ Watershed approach
  ✓ Significant AI clusters
  ✓ High mixing of dabbling ducks
  ✓ Temperature

Avian Influenza: 2015-16 Surveillance

<table>
<thead>
<tr>
<th>Targeted Priority Watersheds</th>
<th>Sample Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pacific</td>
</tr>
<tr>
<td>Summer</td>
<td>62</td>
</tr>
<tr>
<td>Fall</td>
<td>52</td>
</tr>
<tr>
<td>Winter</td>
<td>50</td>
</tr>
<tr>
<td>All</td>
<td>58</td>
</tr>
</tbody>
</table>

- WDFW: 464 of 670 samples taken since August 1, all quotas met to date
- All Washington areas: 717 of 1,160 samples taken since August 1
Avian Influenza: 2015-16 Surveillance

From USDA National Wildlife Research Center:

- Across the country we have been seeing 10-15% matrix positive (AI+) which is within the range we have been seeing over the last 10 years.
- For H5 viruses we are seeing slightly higher amounts of these. H7 viruses trending about normal at this point.
- No HPAI since 31 July in UT but still early in migration.
- Poultry industry should not let their guard down.

Questions?