

ZOONOTIC AND OTHER ANIMAL DISEASES OF CONCERN IN MARYLAND

Table 1. New or Ongoing Morbidity or Mortality Animal or Zoonotic Disease Events

Estimated first onset	Estimated end date	Jurisdiction affected	Species affected	Diagnosis	Estimated # of cases to date	Lead agency	Comment
December 2014	June 17, 2015	Upper Midwest and Pacific Northwest states	poultry	HPAI	219	MDA	See below

For questions regarding specific disease events, please contact the lead agency noted. This contact information is for use by Maryland veterinarians and health professionals:

MDA - Maryland Department of Agriculture: ahops.mda@maryland.gov, 410-841-5810

DHMH - Maryland Department of Health and Mental Hygiene, Center for Zoonotic and Vector-borne Diseases: dhmh.czvbd@maryland.gov, 410-767-5649

DNR - Maryland Department of Natural Resources, Fish & Wildlife Health Program, FWHP.DNR@maryland.gov 410-226-5193

Highly Pathogenic Avian Influenza in the United States (MDA Update)

An updated status of Highly Pathogenic Avian Influenza (HPAI) in the United States, initially reported in the March 11, 2015 Maryland One Health Bulletin, is provided here to encourage Maryland veterinarians, public health and wildlife professionals to assist with HPAI detection and response efforts.

Since December 2014, the United States Department of Agriculture (USDA) has confirmed 219 poultry flock cases with HPAI H5N2 or H5N8 strains in the Pacific, Central, and Mississippi flyways (or migratory bird paths). HPAI is a foreign animal disease in the United States; therefore the USDA continues its plan to eradicate these strains in the U.S. to protect agriculture. Eradication efforts resulted in the depopulation or disease-caused death of 7.5 million turkeys and 42.1 million egg-layer and pullet chickens, with devastating effects on these businesses and a cost to federal taxpayers of over \$950 million. The last detected virus was reported on June 17, 2015. The disease has been found in wild birds, as well as in commercial poultry and in a few backyard flocks. The Centers for Disease Control and Prevention (CDC) considers the risk to people from these HPAI H5 infections to be low. No human cases of these HPAI H5 viruses have been detected in the United States, Canada, or internationally.

The HPAI H5 virus is anticipated to reemerge in the United States in the fall, winter or spring of this coming year with the movement and mixing of migratory birds from common breeding grounds between flyways. To prevent and

To report cases of disease in:	Contact:
Domestic animals	MDA Animal Health Program Office 410-841-5810 http://mda.maryland.gov/animalHealth/Pages/Diseases.aspx
Wild animals	MD DNR / USDA Wildlife Service Call Center 1-877-463-6497 http://www.wher.org
Humans	DHMH Center for Zoonotic and Vector-borne Diseases 410-767-5649 http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/SitePages/Home.aspx

ZOONOTIC AND OTHER ANIMAL DISEASES OF CONCERN IN MARYLAND

Highly Pathogenic Avian Influenza in the United States (MDA Update), continued

control the spread of disease, federal and Maryland State agencies have prepared by increasing surveillance statewide for Avian Influenza, promoting enhanced biosecurity on commercial and backyard farms, prohibiting poultry exhibitions through June 2016, increasing, training and drilling response personnel, and stockpiling response equipment and supplies. In the event of an outbreak, USDA and State plans currently in place include plans for surveillance, reporting, biosecurity, movement control, vaccination if indicated and depopulation to “stamp out” the disease.

Maryland veterinarians and wildlife officials can assist by promoting biosecurity on farms and reporting flocks exhibiting respiratory disease, other unusual disease or high mortality. Veterinarians can test for avian influenza in birds at no cost by following standard procedures and submitting samples to the Maryland Department of Agriculture laboratories. Testing protocols and media are available by calling either laboratory below, and sampling protocols are also provided as an attachment to this Bulletin:

Salisbury Animal Health Diagnostic Laboratory	410-543-6011
Frederick Animal Health Diagnostic Laboratory	301-600-1548

A Biosecurity Checklist that can be shared with poultry growers is attached and can also be found at:

https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/ai/HPAIChecklist.pdf

The Maryland Department of Agriculture has added several resources to its website to help keep everyone informed about HPAI.

- The main portal with complete background information about HPAI and Biosecurity resources can be found at: www.mda.maryland.gov/avianflu.
- In the event of an actual outbreak, updates will be posted on a newly launched Bird Flu Blog (<http://news.maryland.gov/mda/bird-flu-blog/>). We will post updates here as frequently as necessary.
- In addition, we have set up a dedicated twitter feed @MdBirdFlu to help reinforce all information in our press releases, blog posts, etc.

The Maryland Department of Agriculture’s Communications Office is also preparing an online press kit for reporters who cover outbreaks and is planning a briefing with selected media representatives in the coming weeks.

Questions regarding HPAI preparedness and response can be directed to the Maryland Department of Agriculture Animal Health Program at 410-841-5810 or animalhealth.mda@maryland.gov.

Highly Pathogenic Avian Influenza in Wild Birds (DNR update)

If you receive reports of increased wild bird mortality, please call the Maryland Department of Natural Resources (DNR):

MD DNR-USDA Wildlife Services Call Center: [1-877-463-6497](tel:1-877-463-6497)

MD DNR Wildlife & Heritage Service main office: [410-260-8540](tel:410-260-8540)

Fish & Wildlife Health Program: [410-226-5193](tel:410-226-5193)

Included in this Bulletin is the most recent Wildlife Health Bulletin from the National Wildlife Health Center (NWHC) dated July 2015. Visit: http://www.nwhc.usgs.gov/disease_information/avian_influenza/ for information/updates from the NWHC.

Also included is the DNR Avian Influenza Fact Sheet.

MARYLAND ANIMAL RABIES CASES, 2015

Table 2. New (confirmed since the previous Bulletin) and Cumulative Rabies Cases, Week Ending December 12, 2015

Jurisdiction	Bat Total (New)	Cat (New)	Total	Cow Total (New)	Dog Total (New)	Fox Total (New)	Groundhog Total (New)	Raccoon Total (New)	Skunk Total (New)	Other Total (New)	Total (New)
Allegany	1					1		2	1		5
Anne Arundel	24	1				1		9			35
Baltimore	11	3(1)				2		6			22(1)
Baltimore City	19					2	1	14(1)			36(1)
Calvert	1	1						1			3
Caroline					1			1(1)			2(1)
Carroll	2	2				3		9(3)			16(3)
Cecil								2	2		4
Charles		1				2		1	1		5
Dorchester								5	2		7
Frederick	9	3				1		21(1)	1		35(1)
Garrett	1							9	4(1)		14(1)
Harford	4	1				1		13			19
Howard	3	1				2		4			10
Kent	1							3		1	5
Montgomery	20					1		16(1)	2	1	40(1)
Prince George's	15(1)							5			20(1)
Queen Anne's						1		8(1)			9(1)
Saint Mary's		2						3			5
Somerset		1						4(1)			5(1)
Talbot	2	1				1		3			7
Washington	3	1						5(1)	1		10(1)
Wicomico	2	2				1		6(2)			11(2)
Worcester								11(1)			11(1)
Total (New)	118(1)	20(1)			1	19	1	161(13)	14(1)	2	336(16)

Other (1): Horse (1); Deer (1)

For complete animal rabies data:

<http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/SitePages/Home.aspx>

To view previous issues of the Maryland One Health Bulletin (MOHB):

<http://mda.maryland.gov/animalHealth/Pages/md-one-health.aspx>

Maryland Department of Health and Mental Hygiene Weekly Public Health and Emergency Preparedness Bulletin:

<http://preparedness.dhmh.maryland.gov/SitePages/Public%20Health%20And%20Emergency%20Preparedness%20Bulletins.aspx>

National Wildlife Health Center New and Ongoing Wildlife Mortality Events Nationwide:

http://www.nwhc.usgs.gov/mortality_events?ongoing.jsp

U.S. Livestock and Poultry Disease Events and Trends:

http://www.aphis.usda.gov/wps/portal/banner/help?1dmy&uril=wcm%3apath%3a%2FAPHIS_Content_Library%2FSA_Our_Focus%2FSA_Animal_Health

Maryland Department of Health and Mental Hygiene Weekly Influenza Report:

<http://phpa.dhmh.maryland.gov/influenza/fluwatch/SitePages/Home.aspx0>



Maryland Department of Agriculture

Agriculture | Maryland's Leading Industry

Office of Marketing
Animal Industries and Consumer Services

Larry Hogan, Governor

Boyd K. Rutherford, Lt. Governor

Joseph Bartenfelder, Secretary

James P. Eichhorst, Deputy Secretary

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Animal Health Program

December 17, 2015

Veterinarian Guidance: Collection of Avian Influenza Samples in Backyard Flocks or Clinics

Overview

- *Highly pathogenic avian influenza (HPAI) virus strains are extremely infectious, often fatal to domestic poultry, and can spread rapidly from flock to flock.*
 - *Low pathogenic avian influenza (LPAI) virus strains occur naturally in wild migratory waterfowl and shorebirds without causing illness. However, LPAI viruses are capable of evolving into HPAI viruses in poultry.*
 - *Poultry diseases can be easily spread between flocks by people, clothes, vehicles, and equipment. Care should be taken by collector to prevent spread of infectious disease. It is recommended that you visit only one operation per day.*
 - *Veterinarians providing Health Certification for Interstate Movement must be a Category 2 Accredited Veterinarian in the State of issuance.*
 - *If you have any questions about Avian Influenza testing procedures, call the MDA Laboratories when you are submitting samples to confirm procedures.*
 - *Maryland Department of Agriculture Laboratories are:*
 - Salisbury Animal Health Diagnostic Laboratory 410-543-6610**
 - Frederick Animal Health Diagnostic Laboratory 301-600-1548**
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General Sampling Guidelines

- Schedule sample collection for Monday, Tuesday or Wednesday if at all possible, and notify lab when to expect samples to ensure samples are processed without delay.
 - Contact the MDA laboratory for specific schedules around the holidays
 - Wash and clean vehicle thoroughly, inside and out, each time you visit poultry.
 - Prior to entering the facilities to collect samples, ask the owner how many birds of each species are on the premises as well as how birds are housed (pens, coops, free range etc.) to determine the number and type of samples to be collected.
 - Always wear clean coveralls, rubber boots, hairnet and gloves at each testing site.
 - Brain heart infusion broth (BHI) is the recommended Viral Transport Media (VTM) for collecting specimens for viral diagnostic testing. Dry swabs are not acceptable and samples will be refused by the laboratory for testing. As a result, samples will have to be collected and resubmitted for testing.
 - Keep BHI cool at all times.
 - Samples are taken from live birds and dead birds.
 - Tracheal/oropharyngeal (TR/OP) swabs are preferred for gallinaceous poultry.
 - Cloacal (CL) swabs are preferred for domestic waterfowl and wild birds
 - **Disease Sampling Guidelines:**
 - A minimum of 5 samples per species is recommended for testing. If there are less than five (5) birds on a premise, collect samples from all species of birds.
 - A minimum of 10 samples (2 tubes) and a maximum of 30 samples (6 tubes) should be collected from each site.
 - Pool five (5) samples per species in a tube containing 3 ml BHI; do not pool samples from different species. Higher sample levels may be requested for traceback investigations at the direction of the Maryland Department of Agriculture.
 - **Exhibition or Interstate Movement Testing:** Check with each State Department of Agriculture for latest requirements.
 - **Monitored Flock Testing:** A minimum of 30 birds (6 tubes) per flock must be tested every 90 days to maintain Maryland Avian Influenza Monitored Flock status
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Biosecurity Considerations

BEFORE ENTERING A PREMISE

- Equipment must always be carefully cleaned and disinfected prior to use on a premises
- Park at least 100 feet from the place where birds are housed and/or as far away from the poultry house as possible.
- Avoid parking on an area where litter has been spread.
- Put on disposable plastic booties before you get out of the car or step onto the ground.
- Once you exit vehicle, put on clean coveralls
- Put on rubber boots which have been cleaned and disinfected
- Put on disposable hair cap
- Put on disposable gloves
- Draw bucketful of water from outside faucet (or bring water)
- Add approved disinfectant at recommended rate.
- Completely wash boots – use brush
- Face shields, disposable face mask, or respirators are optional
- Take only essential equipment and supplies with you.

BEFORE LEAVING A POULTRY PREMISES

- Take care not to touch eyes or mouth until removing gloves and washing hands.
- Thoroughly disinfect any equipment taken into poultry house before placing in vehicle.
- Remove boots and completely wash boots in disinfectant inside and out – use brush
- Do not keep dirty boots in your vehicle
- Do not enter your vehicle until you have removed your dirty outerwear
- Remove and bag all items worn on the premises before leaving the premises
- Place all non-disposable clothing, such as cloth coveralls and raincoats, etc. worn on the premises in a clean garbage bag and wash the clothing in hot water before wearing it again
- Dispose of gloves, swabs, and other sampling trash at home waste receptacle
- Dump water with disinfectant and clean interior and exterior bucket with a brush
- Unused tubes and swabs should be considered contaminated and disposed of properly
- Disinfect the outside of sample bags and other non-disposable equipment and supplies with a spray disinfectant (Lysol)
- Keep samples, dirty clothing, and use equipment in an area separate from clean items in your vehicle to avoid contamination
- Clean interior and exterior of bucket with a brush and dump water.
- Wash hands with alcohol solution, including fingernails.
- Sit in seat of vehicle and spray sides of shoes and floorboard of vehicle with disinfectant (Lysol) before placing shoes on floorboard.

IF YOU PARKED ON THE PREMISE:

- Hose the wheel wells and undercarriage of the vehicle to remove organic material
- Scrub vehicle tires with a brush to remove organic material and spray the tires with disinfectant before entering in another operation

Sampling procedures

SELECTION OF SAMPLE TYPE

- **Gallinaceous birds (chickens, quail, pheasants, turkeys) and psitticines:** Tracheal or Oropharyngeal swabs are the specimen of choice.
- **Domestic ducks and other domestic waterfowl:** Cloacal swabs are the specimen of choice.
- **Wild bird species, such as ducks, geese and swans:** Require both one cloacal swab and one oropharyngeal swab from a single bird in one 3 ml BHI tube. Do not pool samples from different wild birds in one tube. Each tube only contains swabs from a single bird.

TRACHEAL/OROPHARYNGEAL (TR/OP) SWAB SAMPLING PROCEDURES:

- Hold bird head up in a nearly vertical position with wings and feet contained.
- Open and remove swab from package.
- Open beak of bird, locate the oropharynx.
- Swab oropharynx. The oropharynx of live birds is swabbed by inserting a swab into the oropharyngeal area and gently swabbing the choanal cleft.
- Place sample swab directly into liquid transport media (BHI broth).
- Swirl swab in media and then "wring out" by gently compressing swab against sides of tube to remove as much liquid as possible and discard swab. Do not leave swab(s) inside BHI tube.
- Make sure tube caps are tightened to avoid leaking.
- Keep samples on ice packs or refrigerate until shipped to diagnostic laboratory.

CLOACAL SAMPLING PROCEDURES:

- To collect cloacal swab samples, hold bird head down in a nearly vertical position with wings and feet contained. The bird ventrum should face the person swabbing.
- Locate and grasp tail feathers at base and reflect away from you to locate the cloaca.
- Remove swab from package, and insert tip into cloacal orifice (1 cm). Rotate swab tip against cloacal lining two to three times.
- Remove swab, shake off excess fecal material, and place directly into liquid transport media, brain heart infusion broth (BHI).
- Swirl swab in media and then "wring out" by gently compressing swab against sides of tube to remove as much liquid as possible and discard swab. Do not leave swab inside BHI tube.
- Make sure tube caps are tightened to avoid leaking.
- Keep samples on ice packs or refrigerate until shipped to diagnostic laboratory.

POOLING OF SWABS:

- For pooling samples from one (1) to five (5) birds per species, swabs are placed in tube containing 3 ml of BHI broth. After inoculation of tube, swabs must be discarded and not left in tube.

- If swabs are left in tubes, the testing laboratory will reject the samples. As a result, samples will have to be collected and resubmitted to the laboratory for testing.
- No less than 2 ml of inoculated BHI will be permitted or accepted at submission. Therefore, it is important to express the liquid from the swab on the side of the tube prior to discarding it.
- *BHI inoculated samples under 2ml will be discarded and resubmission of samples requested.*
- Repeat this procedure for up to five (5) swabs from the same owner per tube.
- Dispose of swab properly (do not leave in tube).
- Label tube and submission form pages.
- Up to five samples of the same species, same premises, and same sampling route may be mixed in the same tube. ***Do not mix samples from different species in the same tube.***
- If the facility has multiple buildings/pens, sample up to five birds from each.

BLOOD SAMPLING PROCEDURES:

- Serum used for testing should be obtained from the bird using a small syringe fitted with a 20 or 21 gauge needle.
- Withdraw 3 ml of blood and place in labeled 5-6 ml tube.
- Fill out all information asked for on the submission form.
- After collecting the blood, the tube(s) should be placed in a slanted position on their sides allowing an air space to form between the blood and the side of tube until a clot forms. After the clot forms you can place the tubes upright. As the clot shrinks, serum will be expressed into the tube.
- Collect the serum aseptically and place in a clean 1.5 ml snap-cap micro-centrifuge tube.
- Place tubes in zip-loc bag.
- Place submission form in separate bag and place both bags in another bag.
- Place samples and submission form in shipping container with adequate ice packs to maintain refrigerated temperatures and ship overnight to diagnostic laboratory for testing.

SAMPLE TUBE HANDLING:

- Label (BHI) tube and submit with completed submission forms. Tube should have owner name, species name and tube # at minimum *clearly* written on label with a black permanent marker (Sharpie). If you can wrap Scotch Tape around the tube and write on the tape it will not smudge or rub off.
- Reminder: up to five (5) samples from the same species and owner may be mixed (pooled) in the same tube. Do not mix samples from different owners or different species.

SAMPLE PRESERVATION:

- Samples must be kept refrigerated and delivered or shipped to laboratory within 48 hours of sampling. Keep samples on cold packs or refrigerate until shipped.
- If samples cannot be shipped or delivered to the testing laboratory on the same day they are collected, the sample tubes must be kept at refrigerated temperature (2-8°C) for a maximum of 48 hours after collection.

- After 48 hours, samples must be frozen at (-20°C) or the samples may be rejected by the testing laboratory.
- **NOTE:** *Freezing inoculated BHI broth at -20°C can cause formation of ice crystals because the samples freeze too slowly. Ice crystal formation can disrupt the virus, leading to false negative results.*

Packaging and Shipping Procedures Samples

- Place seal-tight tubes in whirl pack or zip lock bags with an absorbent sheet and seal. (Wrap tube caps with tape to prevent leakage)
- Place bag of samples along with two (2) cold packs into Styrofoam shipping container. Close Styrofoam container and place copy of lab submission form in a separate zip lock bag on top.
- Place Styrofoam container into outer cardboard box.
- If not placing in outer cardboard box (delivering in person - not shipping), place the completed and signed copy of the Laboratory Submission Form *inside* the styrofoam shipping container in a separate zip lock bag.
- Close and seal the outer shipping container.
- Apply proper shipping label, "**Biological Substance, Category B**" + UN 3373 diamond label to side of box (see label sample attached).
- Apply postage paid mailing label available from laboratory.
- **Do NOT mail samples on Friday or Saturday!!!**



HPAI Biosecurity Checklist

If we hope to control the spread and eventually eradicate this HPAI virus, all segments of the industry will need to follow comprehensive and stringent biosecurity practices on an ongoing basis. The steps listed below are a sound start.

Premises

- A comprehensive biosecurity plan has been implemented and shared with all employees.
- Signs warning people not to enter the farm or any of its buildings because of disease control (No Admittance—Biosecurity Zone) are posted at all entrances.
- External entrances to poultry houses are kept locked during nonbusiness hours.
- Houses are bird-proofed against wild or free-flying birds.
- Procedures are in place to prevent the accidental entrance of wildlife and to remove them from poultry houses and other areas should they gain entrance.
- Backyard poultry are prohibited from the premises.
- Dogs and cats are not allowed in chicken houses and egg processing areas.
- Feed bins are secured to prevent contamination by wild birds or rodents, and spilled feed is cleaned up promptly to prevent attracting wild birds and rodents.
- Water is drawn from secure sources that can not be accessed by free-flying birds or rodents.

Equipment

- Footwear disinfection stations, site-provided footwear, or site-provided foot covers are available outside all external entrances. If footbaths are used, they must be changed at least daily or

more often if the footbath collects dirt, egg contents, or manure.

- Hand washing or hand-sanitizing stations are available at entrances.
- Equipment and tools brought to the farm are thoroughly cleaned and disinfected prior to use.
- Chicken transport equipment (carts, loaders, ramps) is cleaned and disinfected prior to use.
- For egg-laying facilities, only clean, sanitized, and disinfected plastic egg flats or new disposable egg flats are allowed on the premises.
- Cleaned and disinfected equipment is held under conditions that prevent exposure to wild birds.

Personnel

- Everyone is required to clean and disinfect their footwear or wear site-provided footwear or footwear covers prior to entering chicken houses, processing areas, and office areas.
- Everyone is required to wash/sanitize their hands before entering and after leaving poultry houses and processing areas.
- Employees receive biosecurity training when hired, and annually after that. Records of biosecurity training should be kept up to date.
- Farm policy requires that employees do not own other birds—including pet birds, domestic chickens, fighting chickens, ducks, geese, waterfowl, exotic birds, quail, partridge, or pheasants.



- ❑ Employees sign a document when hired and during annual biosecurity training sessions stating that they will avoid contact with other birds not owned by the business. Employees should not be shared between operations.
- ❑ In the event that contact is made with other birds, employees agree that they will comply with a 2-day waiting period prior to any entry into any portion of the farm to include the barns, processing plant, and office.
- ❑ Farm policy prohibits exposure to equipment from other farms that has not been washed and disinfected.
- ❑ Farm policy requires personnel who have visited a rendering plant to shower and change clothes before entering the farm or any of its buildings.
- ❑ Spent hen removal crews are prohibited from entering other chicken houses or egg processing areas.

Visitors

- ❑ Visitors do not enter chicken houses unless absolutely necessary.
- ❑ Visitors Logbook records the (a) visitor's name, (b) company, (c) time of entry, (d) statement confirming no contact with premises containing birds or rendering activities during the preceding 2 days, (e) time of leaving, and (f) a contact telephone number.
- ❑ Visitors and contractors who have had contact with birds during the preceding 2 days are prohibited from entering chicken houses or egg processing areas.
- ❑ Clean coveralls (or disposable suits), disinfected boots (or shoe covers), and hairnets are available and required for visitors and contractors to wear before entering barns, egg processing areas, or other work areas.

Vehicles

- ❑ All vehicles that have traveled to a location where other birds are present—even the feed store—are cleaned and disinfected before entering the premises.
- ❑ If drivers are required to make multiple stops at more than one individual farm in any given day, they are prohibited from entering chicken houses or egg processing areas.
- ❑ Farm policy requires cleaning and disinfection of vehicles and containers from a rendering plant before they enter an egg layer premises.
- ❑ Manure trucks never go from one poultry farm to another on the same day. However, if required, the manure trucks must be washed with detergent and disinfected prior to arrival at the next farm.



Avian Influenza

What Hunters, Falconers, Wildlife Rehabilitators, Captive Bird Facility Owners, and the Public Should Know about Avian Influenza

Quick Facts About Avian Influenza

- Avian influenza (AI) Type A is an infectious disease of birds. Aquatic birds (including waterfowl) are considered the natural reservoir of this virus. Low pathogenic forms (LPAI) are common in wild bird populations. Highly pathogenic avian influenza (HPAI) is circulating in commercial turkey and chicken farms in the Pacific Coast and Mid-West U.S. regions.
- Avian influenza virus usually does not cause illness in waterfowl or shorebirds.
- The highly pathogenic form of this disease is causing significant mortality in domestic chickens, turkeys, and in very small numbers of waterfowl and birds of prey in the U.S.
- Increasing reports of HPAI in commercial birds spreading to new regions in the U.S. have created concerns that the HPAI virus could be carried throughout North America by migratory birds. At this time, it is unclear what role wild birds play in the spread of this virus.

Frequently Asked Questions

Q: How is AI or HPAI different from the flu that people contract?

A: The avian influenza virus that affected birds and people beginning in the late 1990s is a different strain than the currently circulating HPAI virus in U.S. poultry/ turkeys in 2015:

- Avian influenza (what the media called "bird flu") began affecting poultry and some wild birds in Asia over ten years ago (people were affected when in contact with poultry).

- Human influenza ("the flu") kills >30,000 people each year.

- Millions of commercial chickens and turkeys (and some backyard flocks of mixed birds) have been culled due to HPAI in 2015 in North America (> 49 million depopulated as of Oct. 1, 2015).

- The currently circulating HPAI has not affected people.

Q: How did the current HPAI viruses enter North America?

A: The virus most likely entered through the movement of infected poultry, illegally imported birds or bird products, or migratory waterfowl and shorebirds.

Q: How are Avian Influenza viruses transmitted in birds?

A: AI is passed between birds through fecal material and direct contact with body fluids such as saliva, nasal secretions, and aerosol droplets. It can also be transported by mechanical means - such as people, trucks, and equipment moving between

poultry farms. Chickens, turkeys and backyard birds may spread HPAI to raptors by consumption of affected waterfowl, or through contact with domestic animals raised outdoors.

Q: Can Avian Influenza be transmitted to other animals?

A: While AI viruses may be transmissible to other animals they do not move readily between species.

Q: Can humans contract AI or HPAI from wild birds?

A: Avian influenza type A viruses usually do not infect humans, however, rare cases of human infection with these viruses have been reported. Most human infections with avian influenza A viruses have occurred following close contact with infected poultry.

Q: Are hunting dogs at risk of getting HPAI?

A: Dogs used in wild game bird hunting are not considered at risk of acquiring avian influenza, since there have been no documented cases of the current virus infecting dogs in North America. Nevertheless, prudent dog owners should prevent their dogs from having contact with game birds that are obviously sick or found dead in the field. Hunters should not feed their dogs raw meat from game birds. These are routine safety precautions that hunting dog owners should already be following. Owners of hunting dogs should keep well informed on this issue and should consult their veterinarian for more information about influenza in pets. "Canine influenza" is different from the HPAI virus circulating in commercial poultry, turkeys, and backyard birds.

Q: Should the public, bird hunters, falconers, rehabilitators or captive bird facility owners be concerned about avian influenza and HPAI?

A: No one should be overly concerned at this time, but they are encouraged stay informed and educated on this issue. Follow common sense hygiene precautions while handling captive birds, or hunting, cleaning and cooking harvested game birds (see websites below for more information on cooking and human health).

Q: How can I protect myself from potential bird diseases?

A: The following suggestions are common sense precautions that all should follow:

- Do not handle birds that are obviously sick or birds found dead.
- Keep your harvested game birds cool, clean, and dry.
- Do not eat, drink, or smoke while processing your birds for consumption.
- Use rubber gloves when cleaning facilities or game birds.
- Wash your hands with soap and water or alcohol wipes after handling or dressing birds.
- Clean all tools and surfaces immediately afterward; use hot soapy water, then disinfect with a 10% chlorine bleach solution.
- Cook game meat thoroughly (165°F – well done) to kill disease organisms.
- Dispose of gloves and other wastes properly.
- Contact Maryland Department of Natural Resources (DNR) or Maryland Department of Agriculture (USDA) if you observe bird mortalities
- Contact your local MD Health Department or your family physician for human health issues and illnesses.

Q: What is being done to detect HPAI in wild birds?

A: The USDA Wildlife Services and Maryland DNR have been conducting surveillance for Avian Influenza in wild birds since 2005 and will continue monitoring efforts. The Maryland DNR will focus its HPAI virus sampling on species such as dabbling

ducks. This surveillance will assist in the national effort to provide early detection of the current HPAI virus in wild bird populations and will assist the USDA and poultry industry with domestic bird monitoring. Bird mortalities are also being monitored.

Q: How can the public help?

A: You can help Maryland DNR monitor the health of wild bird populations by reporting die-offs of large numbers of birds (5 or more) in your area to USDA Wildlife Services 1-877-463-6497 – Toll-free (M-F 8-4:30). During hunting seasons, biologists may ask hunters for permission to collect samples from harvested waterfowl and other birds.

Thank you for your cooperation with this important wildlife health issue.

For More Information about Avian Influenza & HPAI

USGS/ National Wildlife Health Center:

www.nwhc.usgs.gov

USDA:

http://www.usda.gov/avian_influenza.html

Maryland Department of Agriculture:

<http://mda.maryland.gov/AnimalHealth/Pages/poultry.aspx>

Maryland Department of Health & Mental Hygiene:

<http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/SitePages/Home.aspx>

MD List of County Health Departments:

<http://msa.maryland.gov/msa/mdmanual/01glance/html/healoc.html>

Maryland Agency Numbers:

Maryland DNR - Wildlife & Heritage Service (M-F, 8-4:30): 410-260-8540

Maryland DNR Fish & Wildlife Health Program (M-F, 8-4:30): 410-226-5193

Maryland Department of Agriculture (M-F, 8-4:30): 410-841-5810

Maryland Department of Health & Mental Hygiene: (M-F, 8-4:30) 410-767-5649



**National Wildlife Health Center
Wildlife Health Bulletin 2015-05**

**Highly Pathogenic Avian Influenza Update:
National Surveillance and Recent Wild Bird Detections**

To: Natural Resource/Conservation Managers
From: Dr. Jonathan Sleeman, Center Director, USGS National Wildlife Health Center
Date: July 17, 2015

Since the December 2014 detection of highly pathogenic avian influenza (HPAI) viruses in wild birds and poultry in the United States and Canada, the USGS National Wildlife Health Center (NWHC) has continued to work closely with the USDA-Animal Plant Health Inspection Service-Wildlife Services, the U.S. Fish and Wildlife Service, and state wildlife agencies to implement enhanced mortality investigations and surveillance in wild birds. For background, see NWHC bulletins on [Detection of Highly Pathogenic Avian Influenza Viruses H5N2 and H5N8 in Wild Birds of the United States](#), [Detection of Novel Highly Pathogenic Avian Influenza Viruses in Wild Birds](#), and [Highly Pathogenic Avian Influenza Virus Found in the Central United States](#).

For an up-to-date summary of positive results from combined federal and state agency HPAI surveillance in wild birds please view this table: [Wild Bird HPAI Cases in the U.S.](#) For positive surveillance results of HPAI in poultry and captive wild birds in the United States please see the resources provided by the USDA: [Avian Influenza Disease](#).

Recent HPAI Detections in Wild Birds

The Michigan Department of Natural Resources (MI DNR) recently announced detections of HPAI H5 and H5N2 in Canada geese (*Branta canadensis*) in suburban Detroit, Michigan. HPAI was detected in 12 geese (10 juveniles, one yearling, and one adult) that were found sick (clinical signs included head tremors, persistent head tilt to the side or back, and seizures) or dead from late-May through mid-June 2015. Pathological examinations conducted by the MI DNR and the Michigan State University College of Veterinary Medicine's Diagnostic Center for Population and Animal Health strongly suggested that HPAI was the cause of, or contributed to, sickness and death in these birds. Concurrently, 186 apparently healthy Canada geese from the same area were tested for avian influenza viruses during goose population control activities and no HPAI was identified. Blood was collected from these geese to test for evidence of exposure to HPAI and results are pending.

The Minnesota Department of Natural Resources recently reported detection of HPAI H5 in a black-capped chickadee (*Poecile atricapilus*) in Ramsey County, Minnesota. The bird was displaying signs of neurological impairment and was taken to a wildlife rehabilitation center on June 10, 2015 where it was immediately euthanized. The bird was necropsied at the University of Minnesota and HPAI was confirmed at the USDA National Veterinary Services Laboratories. Additional chickadees displaying signs of neurological impairment have also been submitted to this rehabilitation facility and no other birds have tested positive for HPAI at this time.

Field Observations to Date

The recent HPAI detections demonstrate that HPAI is present in resident wild birds during the summer. Transmission of avian influenza viruses, including HPAI, will likely begin to occur more frequently in the late summer and early autumn due to recruitment of naïve young-of-the-year wild waterfowl into populations, decreasing temperatures in the north, and increasing waterfowl densities at staging areas and during early migration. Consequently, it is important that wildlife managers continue to be alert for morbidity and mortality in wild birds and immediately report observations to state or federal wildlife health professionals. Continued

surveillance for HPAI in wild birds will facilitate early detection, situational awareness, and appropriate response to these viruses.

HPAI in wild birds was initially detected in wild ducks (northern pintail, *Anus acuta*; mallards, *A. platyrhynchos*; and American wigeon, *A. americana*) from a waterfowl mortality event at Wiser Lake, Whatcom County, Washington attributed to aspergillosis that the NWHC investigated in collaboration with the Washington Department of Fish and Wildlife. It is not clear whether HPAI infection can result in significant disease in wild ducks. However, the detection of HPAI in apparently healthy hunter-harvested wild ducks indicates that they can be actively infected without exhibiting obvious signs of illness. Active infection of HPAI has been confirmed in multiple Canada geese, including the recent detections in Southeastern Michigan, and has been associated with neurologic impairment (swimming in circles, twisted necks, tremors) prior to euthanasia or death.

Some raptor species appear to be highly vulnerable to HPAI virus infection. Several captive falcons that were reportedly fed meat from HPAI-infected waterfowl became ill and died rapidly. Raptor species from which HPAI has been detected thus far include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), captive gyrfalcons (*Falco rusticolus*), peregrine falcon (*F. peregrinus*), captive great-horned owl (*Bubo virginianus*), snowy owl (*B. scandiacus*), and bald eagle (*Haliaeetus leucocephalus*). Testing of various tissues from these raptors identified HPAI infection as causing or contributing to their deaths. However, it is not yet clear whether HPAI infected raptors have a high disease mortality rate (i.e., number of infected raptors that die from HPAI compared to number of raptors at risk).

State and federal authorities with regulatory oversight of wildlife rehabilitation, wildlife exhibition, and falconry may wish to consider contacting permit holders to caution them against feeding wild game, especially wild waterfowl, to raptors and other captive birds. Authorities should also encourage implementation of biosecurity practices to eliminate contact between captive and wild birds and maintain vigilance for raptors and other avian species showing neurologic signs of disease, as this may indicate potential infection with HPAI. Wildlife management agencies that regulate waterfowl propagation for release may want to consider HPAI screening of birds prior to release. Birds showing neurological signs or acute changes in behavior should be immediately isolated from other birds. In addition, wildlife biologists and agency staff should exercise careful field hygiene (e.g., hand washing and disinfection of equipment and clothing) after visiting wetlands or when handling waterfowl or their tissues (see below for details).

National Surveillance for HPAI in Wild Birds

The NWHC is a member of the Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza in Wild Birds and, in this role, is accepting swab samples from live birds and hunter-harvested birds that are collected by agency partners in the Mississippi and Atlantic Flyways participating in this surveillance. See this link for a copy of the plan: [Interagency Strategic Plan for Early Detection and Monitoring for Avian Influenzas of Significance in Wild Birds](#).

The NWHC also continues to monitor for HPAI viruses by testing dead birds submitted for diagnostic evaluation (nationwide) and is a leading partner in mortality and morbidity investigation and diagnostics within the Interagency Strategic Plan. Mortality investigation will maximize early detection of HPAI in wild birds and will increase understanding of the spatial extent and species involvement. Wildlife managers should remain vigilant for wild bird morbidity and mortality events and continue to contact NWHC to discuss submission and testing of carcasses from events that meet the expanded criteria described below. Note that the following is not an all-inclusive list of cases accepted by the NWHC (see standard [NWHC Submission Guidelines](#)). Wildlife management agencies that investigate morbidity and mortality events independently or in collaboration with other diagnostic laboratories are strongly encouraged to report these events to the NWHC using our [reporting form](#) so that information can be captured on a national scale and displayed on [WHISPers, a wildlife health information sharing website](#), to increase situational awareness.

Expanded submission criteria for HPAI diagnostics:

- Any mortality involving wild bird species where estimated dead exceeds 500 birds.
- Mortality involving wild birds of any species in close proximity to facilities harboring domestic birds in which HPAI has been detected.
- Mortality involving gallinaceous birds such as wild turkeys, quail, and sage grouse.

- Mortality involving 5+ waterfowl (ducks, geese, or swans) or other water birds (loons, grebes, coots, shorebirds, or wading birds such as egrets, herons, or cranes).
- Mortality involving any number of raptors, waterfowl, or avian scavengers (ravens, crows, or gulls) observed in the same or adjacent counties to confirmed HPAI in poultry or wild birds.
- Mortality involving any number of raptors or avian scavengers (ravens, crows or gulls) near locations with on-going waterfowl mortality.
- Mortality involving raptors, waterfowl, or avian scavengers (ravens, crows, or gulls) observed with clinical signs consistent with neurological impairment, which may include swimming or walking in circles, moving the head in a “jerky” motion, and holding the neck and head in an unusual position (more drastic than simply drooping). The neurological signs associated with HPAI infection are not well characterized, please collect detailed descriptions of the observed signs, and call the NWHC with questions. Video and photos are strongly encouraged.
- Wild raptors with neurologic/respiratory signs that die or are euthanized within 72 hours of admission to a rehabilitation facility. Please also provide treatment records.
- Raptors held in captivity (i.e., falconer birds, rehabilitation facility) with sudden, unexplained morbidity/mortality after exposure to wild waterfowl or a known/suspect case of HPAI H5.

***NOTE:** If your agency receives a report that falls outside of these criteria but you suspect there is elevated potential for HPAI infection please do not hesitate to contact the NWHC. Unless otherwise instructed, the NWHC may only screen carcasses for HPAI if this is the primary reason for submission.*

General safety guidelines for hunters and biologists handling wildlife and their tissues:

- Do not handle or eat sick game.
- Field dress and prepare game outdoors or in a well-ventilated area.
- Wear rubber or disposable latex gloves while handling and cleaning game.
- When done handling game, wash hands thoroughly with soap or disinfectant and clean knives, equipment, and surfaces that came in contact with game.
- Do not eat, drink, or smoke while handling animals.
- All game should be thoroughly cooked to an internal temperature of 165 degrees F.
- Additional guidance for hunters: [Guidance for Hunters – Protect Yourself and Your Birds from Avian Influenza](#)

Field biologists should follow these minimum precautions when handling sick or dead birds associated with a mortality event:

- Wear protective clothing including aprons, coveralls, rubber boots, rubber or latex gloves, eye protection, and face shields that can be disinfected or discarded to prevent skin and mucous membrane contact with biological materials and movement of biological materials among sites.
- Work in well-ventilated areas or upwind of animals to decrease the risk of inhaling airborne particulate matter such as dust, feathers, or dander.
- A particulate respirator (NIOSH N95 respirator/mask or better) is recommended when working in confined spaces or conditions that promote aerolization of debris. Check with your agency policies for specific respirator guidance while handling sick and dead wildlife.
- Wash hands often and thoroughly for at least 30 seconds with soap or alcohol-based hand sanitizer.
- Do not eat, drink, or smoke while handling animals.
- Decontaminate work areas and properly dispose of potentially infectious material including carcasses.

Additional minimum precautions for field biologists working with wild birds in areas where H5 HPAs have been detected:

- Follow recommendations for handling sick or dead birds associated with a mortality event.
- Remove dirty protective clothing and equipment, store in a tied bag for washing or disposal upon leaving a site, and change into clean protective clothing and equipment before handling birds at a new site.
- Disinfect work surfaces and equipment between sites with 10% bleach solution or other product registered as [effective at killing influenza A viruses](#). Allow disinfected surfaces and equipment to air dry between sites.

- If possible, avoid bringing vehicles into contact with avian fecal materials. If vehicles (trucks, ATVs, boats) are in contact with potentially infectious materials (feces, feathers, tissues) remove all debris from tires, wheel wells, vehicle bodies, and watercraft and wash down with a water sprayer on site, if possible. Potential vehicle cleaning mechanisms include a hand pump water sprayer or gas powered sprayer. If the vehicle undercarriage or side panels are heavily soiled, a commercial carwash is an option to remove debris. Once clean, disinfect tires, wheel wells, and watercraft surfaces with a 10% bleach solution or other product rated effective at killing influenza A viruses before moving to a new site.
- Check with your state environmental quality agency for local guidelines on using and disposing of disinfectants in the field.
- Monitor personnel health* for fever and respiratory symptoms for one week following exposure to live or dead wild birds. If symptoms develop, contact your health care provider.

*[The Centers for Disease Control and Prevention recognizes the human health threat of the current highly pathogenic H5 avian influenzas to be low](#). Consult the CDC and your local agency policies for updated personal biosafety recommendations related to human health.

Acknowledgements

Details on the Canada goose mortality event and testing in Michigan were provided to the NWHC by Dr. Steve Schmitt, MI DNR.

Additional Information:

Disease Investigation Services:

To request diagnostic services or report wildlife mortality, please contact the NWHC at **608-270-2480** or by email at NWHC-epi@usgs.gov, and a field epidemiologist will be available to discuss the case. To report wildlife mortality events in Hawaii or Pacific Island territories, please contact the Honolulu Field Station at 808-792-9520 or email Thierry Work at thierry_work@usgs.gov. Further information can be found at <http://www.nwhc.usgs.gov/services/>.

NWHC Wildlife Mortality Reporting and Diagnostic Submission Request Form

- [OIE: Questions and Answers on Avian Influenza, May 2015](#)
- [NWHC Avian Influenza Information](#)
- [USDA Avian Influenza Information](#)
- [USDA Biosecurity for Birds](#)
- [2015 Surveillance Plan for Highly Pathogenic Avian Influenza in Waterfowl in the United States](#)
- [EPA Fact Sheet: Antimicrobial Products Registered for Disinfection Use against Avian Influenza on Poultry Farms and Other Facilities](#)
- [Michigan Department of Natural Resources Avian Influenza in Wild Birds Information](#)
- [Minnesota Department of Natural Resources Avian Influenza in Wild Birds Information](#)
- [Washington Department of Fish and Wildlife Avian Influenza in Wild Birds Information](#)
- [Department of Interior Employee Health and Safety Guidance for Avian Influenza Surveillance and Control Activities in Wild Bird Populations](#)

If you have any questions or concerns regarding the scientific and technical services the NWHC provides, please do not hesitate to contact NWHC Director Jonathan Sleeman at 608-270-2401, jsleeman@usgs.gov.

To see past Wildlife Health Bulletins, click [here](#). WILDLIFE HEALTH BULLETINS are distributed to natural resource/conservation agencies to provide and promote information exchange about significant wildlife health threats. If you would like to be added to or removed from the mailing list for these bulletins, please contact Gail Moede Rogall at 608-270-2438 or e-mail: nwhc-outreach@usgs.gov.