

HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) IS STILL HERE!

Remember to follow Biosecurity Protocols for the sake of your avian patients and pets

FOR MORE INFORMATION, REFER TO THE FOLLOWING GUIDELINES:

- HPAI FAQs for Wild Bird Facilities
- When to Suspect Highly Pathogenic Avian Influenza (HPAI)
- General Biosecurity Recommendations
- State Agency Response to Highly Pathogenic Avian influenza (HPAI) Detection



These guidance documents were developed by the University of Pennsylvania's Wildlife Futures Program, with input from the Pennsylvania Game Commission, as a resource for wildlife rehabilitation and other wild bird facilities, particularly in the northeastern United States. They may be distributed or otherwise used by state agencies; however, the University of Pennsylvania holds no regulatory authority over any aspects of wildlife management.





HPAI FAQs FOR WILD BIRD FACILITIES

HPAI (Highly Pathogenic Avian Influenza)

1 WHAT ARE THE SIGNS OF AN AVIAN INFLUENZA INFECTION IN A LIVE BIRD?

Clinical signs of HPAI infection vary by species and are often non-specific. Many species of waterfowl and shorebirds can be sub-clinical carriers of the virus, spreading it without ever becoming ill. In other species, neurologic (e.g., swimming/walking in circles, holding the head/neck in an unnatural position, tremors, seizures, and difficulty flying) or gastrointestinal (e.g., diarrhea) dysfunction may be present. Ill wild birds often present as listless or lethargic, with or without neurologic or gastrointestinal signs.

If you work at a wild bird facility, gathering a clear cause of the illness either through the bird's history or an off-site examination may reduce the risk of HPAI getting into your facility. If birds exhibit clinical signs that do not suggest a specific cause, consider delaying intake of those animals to prevent introduction of HPAI to your facility — such birds could be tested for HPAI or euthanized. Also consider not admitting any bird species that are at particularly high risk of carrying or contracting HPAI, such as waterfowl, shorebirds, gulls, ravens, crows, turkeys, grouse, vultures, and raptors (particularly those

that scavenge). Pre-admission testing of birds is possible but would likely place significant burden on the resources of the USDA, state wildlife agencies, and/or diagnostic laboratories, so pre-admission HPAI screening is generally discouraged.

2 SHOULD WE BE CONCERNED FOR SONGBIRDS?

Any bird can become infected with HPAI. However, songbirds typically are not as heavily impacted by an HPAI outbreak compared to the other species mentioned above.

3 SHOULD WE BE CONCERNED ABOUT FOOD THAT WE PURCHASE FROM CHICKEN HATCHERIES?

It is recommended to confirm that your food supplier is practicing rigorous biosecurity. Meat can be contaminated with HPAI and the virus is not inactivated by refrigeration or freezing; HPAI can remain infectious even after being subjected to freezing temperatures for over 30 days.

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4 HOW DOES HPAI SPREAD? HOW LONG DOES IT REMAIN INFECTIOUS IN THE ENVIRONMENT?

The virus is shed in bodily excretions such as feces, saliva, and nasal discharge. These excretions readily contaminate feathers, feed, enclosures, implements, clothing, shoes, and vehicles. Transmission is via inhalation or ingestion of viral particles. Depending on the type of surface, ambient temperature, and other factors, the virus can remain infectious for days to months in the environment if cleaning and disinfection isn't performed.

5 WHAT IS THE INCUBATION PERIOD FOR HPAI?

The incubation period is generally 3-5 days post-exposure but can be up to two weeks.

6 WHAT SAMPLES ARE COLLECTED FOR HPAI TESTING?

While "screening" living wild birds is not recommended, there may be cases, such as incidents with multiple mortalities, where state or federal agencies may request the collection of samples for testing. Traditionally, cloacal and/or tracheal swabs are collected and added to tubes containing brain heart infusion (BHI) broth, the preferred viral transport media for HPAI. While tracheal swabs are generally preferred for gallinaceous birds (e.g., game birds) and cloacal swabs are preferred for waterfowl, both are often collected from wild birds and the two swabs can be combined in the same tube. Typically, swabs are initially screened for avian influenza at a National Animal Health Laboratory Network (NAHLN) laboratory using polymerase chain reaction (PCR), then any detections undergo further H5/H7 subtype PCR testing. Both H5 and H7 are hemagglutinin surface proteins that are most often associated with HPAI viruses. Any H5 or H7 detections are submitted for HPAI confirmation to the National Veterinary Services Laboratory (NVSL; USDA-APHIS) in Ames, IA where pathogenicity and lineage are determined. Only after this final round of testing will we know if the specimen is of the Eurasian lineage (2.3.4.4) responsible for the outbreak in the U.S. that began in early 2022.

7 HOW SHOULD WE CLEAN AND DISINFECT CLOTHING THAT MAY HAVE CONTACTED HPAI-INFECTED BIRDS?

Washing clothing using hot water, laundry detergent, and a disinfecting bleach (active ingredient: sodium hypochlorite) or hydrogen peroxide is considered sufficient to kill the virus. The active ingredient in color-safe bleach is hydrogen peroxide, so it is an effective HPAI disinfectant.

8 WHAT IS THE MORBIDITY/MORTALITY RATE?

Morbidity and mortality rates vary, but this virus typically impacts domestic poultry at much higher rates than most species of wild birds.

9 SHOULD WE CONSIDER UPGRADING OUR FACILITY'S AIR FILTRATION SYSTEM?

It is always good practice to have robust air filtration to prevent the spread of dust, dander, and airborne pathogens. Good air filtration and air handling could prevent or limit the impact of an HPAI outbreak at your facility.

10 IF HPAI-SUSPECT BIRDS ARE HOUSED IN A SEPARATE AREA, CAN WORKERS RETURN TO THE MAIN REHAB AREA AFTER DISCARDING THEIR PERSONAL PROTECTIVE EQUIPMENT (PPE)?

The virus can easily move from one area to another, so if you cannot have HPAI-suspect birds off site, it would be best to have dedicated personnel that only work with those suspects and have NO contact with other animals at your facility. If that isn't possible, always work with HPAI-suspect birds at the end of the day after you have finished working with other animals. Moving from clean to dirty is a good habit to always practice when caring for animals to mitigate the spread of disease. However, an HPAI detection anywhere on your property could lead to lockdown of your entire facility, not just a single room or building.

11 CAN CAGES AND DISHES BE WASHED OUTSIDE USING A HOSE?

In any setting, hosing off materials that are contaminated by waterfowl, or another infected species, risks aerosolizing the virus. Allowing contaminated water to run off into the ground can be problematic as it can be nearly impossible to adequately clean and disinfect soil and vegetation. If HPAI is detected at your facility, environmental samples are usually collected following cleaning and disinfection, which becomes more problematic with soil or plant material. The presence of HPAI in the environment could lead to, or prolong, a lockdown of the facility.

12 WHAT ARE PPE RECOMMENDATIONS FOR FACILITY PERSONNEL?

To protect yourself and other animals at your facility, it is appropriate to wear a mask, eye protection, disposable gloves, and clothes that can be changed and/or cleaned. Personnel should have dedicated footwear and clothing that they only wear at the facility and that always remains at the facility. Separate footwear for separate areas of the facility will provide even more protection. If separate footwear is not available, consider wearing shoe covers or disinfecting the soles between areas. Disinfectant wipes are preferable to use of a spray which, if high-powered, can aerosolize pathogens. However, a spray can be used if alternatives are not available. Areas where people can change clothes and footwear should be regularly cleaned and disinfected.

13 PPE RECOMMENDATIONS FOR CAPTURE AND TRANSPORT TEAMS?

Same as above. To avoid vehicles becoming contaminated, consider lining the back seat (or wherever the wild bird transport carriers will be placed) with plastic sheeting that can be wiped clean and disinfected between transports. Remember to remove gloves by turning them inside out and place them in a trash receptacle or in a plastic bag before putting them in the vehicle. Cleaning and disinfection of both the vehicle and the carriers must be done between each transport.

Limiting personnel access to the facility will help prevent contamination, so consider accepting wild birds from transport personnel outside of the building rather than inside. When doing field captures, use disposable shoe covers or field-dedicated footwear. These should be removed and bagged or placed in a plastic bin before getting into the vehicle to avoid contaminating the floorboard which could spread HPAI to other locations. Wipe down shoe soles with disinfectant if possible or use a disinfectant spray if wipes are not available. To further prevent spread of virus, the outside of the animal carrier and the receptacle containing the shoe covers/footwear should be wiped down with disinfectant before placing in the vehicle.

14 WHAT ABOUT PUBLIC DELIVERY OF WILD BIRDS TO FACILITY?

Consider asking the public to call before arriving at your facility and to follow the above recommendations. It is best to have any wild bird delivery occur outside your facility to decrease the risk of contamination. For example, a member of the public could walk into your facility with a bird that has HPAI, leading to a facility shut-down due to contamination. If you instead had met that person outside, you could have decided to redirect the bird to another facility for HPAI testing or decided to euthanize that bird, thereby safeguarding your facility.

15 SHOULD WE BE MORE VIGILANT ALONG MAJOR WATER BODIES GIVEN HPAI IS COMMON IN MIGRATING WATERFOWL?

It is everywhere so we need to be vigilant everywhere.

16 SHOULD WE HAVE DIFFERENT BIOSECURITY PLANS IN PLACE FOR NORMAL OPERATIONS VERSUS WHEN THE VIRUS IS DETECTED NEARBY?

Facilities should always practice good biosecurity. This virus can be ubiquitous and lack of detection does not mean lack of presence.

17 ANY ISSUES WITH FREEZING CARCASSES ON SITE?

Freezing carcasses is the preferred method of on-site storage to reduce the spread of disease. Triple bagging and decontaminating the surface of the outermost bag are good practices prior to freezing. Gloves and other disposable PPE that have been used while handling wild birds should be placed inside the third bag before sealing it. If there is an HPAI outbreak at your facility, additional disposal steps will likely need to be taken.

18 HOW CONCERNED SHOULD WE BE FOR OUR HEALTH?

The HPAI H5N1 strain that is responsible for the outbreak that first was detected in the U.S. in early 2022 does not appear to have a high affinity for infecting humans. However, HPAI H5N1 is considered a zoonotic disease. Human infections have been documented and the Centers for Disease Control and Prevention (CDC) advises caution, including use of personal protective equipment, when handling wild birds.

19 WHAT IS THE RECOMMENDED QUARANTINE PERIOD?

Typical quarantine times for this outbreak have been 21 days post-detection, but the length of quarantine will depend on the actions taken (e.g., culling, serial testing). Quarantine times can be significantly longer if there are subsequent detections or if the facility cannot be adequately cleaned and disinfected. Recommendations may vary by jurisdiction and will depend on the individual situation.

20 WILL CAPTIVE WILD BIRDS THAT SERVE AS AMBASSADORS OR EDUCATIONAL ANIMALS HAVE TO BE EUTHANIZED IF THERE IS AN HPAI DETECTION AT THE FACILITY?

Wild birds that are HPAI positive may need to be euthanized. As a protective measure, designate specific personnel to care for ambassador/education

birds and do not share personnel, food preparation areas, equipment or tools between ambassador/education birds and rehabilitation patients. If possible, consider moving ambassador/education birds to off-site housing. If ambassador/education birds are ill with clinical signs consistent with HPAI, consider testing them. If HPAI is detected, they may need to be euthanized as there is no specific medical treatment for HPAI, recovery of HPAI-infected animals with clinical disease is rare, and there is risk of disease transmission to other animals and humans at your facility. Depending on the situation, it may be possible to quarantine birds that appear healthy. Consider separating wild mammal intake and release activities from similar wild bird activities to further decrease the chance of HPAI spread.

21 RECOMMENDATIONS FOR CLEANING AND DISINFECTING TOOLS AND ENCLOSURES?

Anything that could aerosolize fecal matter, such as hoses or other high-pressure sprayers could increase the risk of disease transmission. It is best to keep transmission to a minimum by removing as much organic material as possible before cleaning with mild soap and water. A 10% bleach solution (1 part household bleach: 9 parts water) can then be used as a disinfectant after cleaning. If bleach is unavailable or undesirable, there are many other disinfectants that can be used (<https://www.epa.gov/pesticide-registration/list-m-registered-antimicrobial-products-label-claims-avian-influenza>). Ensure the disinfectant has an adequate contact time (generally 10 minutes) before rinsing with clean water rinse and allowing to air dry. Alternatively, the rinsing step can be skipped, and disinfected items can be allowed to air dry. However, instructions for disinfectant use can vary by product, so follow manufacturer recommendations.

22 WOULD A VET HOSPITAL BE QUARANTINED IF WE USED THEM FOR OFF-SITE HOLDING OF WILD BIRDS AND THEY DETECTED HPAI? WOULD IT MATTER IF THE VET HOSPITAL DOESN'T SEE DOMESTIC AVIAN PATIENTS?

State wildlife agencies typically have no authority over veterinary hospitals, but other state or federal partners may require a hospital enter a quarantine period following an HPAI detection.

23 SHOULD WE CONTINUE CAPTURING SICK OR HPAI-SUSPECT WILD BIRDS?

State agencies do not have the capacity to respond to all sick wild bird calls and appreciate the role of rehabilitators in helping to keep sick wild birds off the landscape. Unless directed otherwise by their supervising state agency, rehabilitators can continue to capture sick wild birds.

24 WHAT ABOUT BIRD FEEDERS AND BIRD BATHS?

There is very little evidence to indicate that wild birds that frequent bird feeders and baths play a significant role in avian influenza epidemiology. For general infectious disease control, it is recommended to clean and disinfect (with 10% bleach) bird baths and feeders every 1-2 weeks. Removing spilled seeds and keeping the area tidy will provide an added measure of disease protection to wild birds visiting the feeders.

25 WHAT ABOUT SAFEGUARDING DOMESTIC POULTRY?

Practicing proper biosecurity is key to keeping a backyard poultry flock healthy. If you have poultry or domestic waterfowl at home, participating in any activities that involve wild bird capture or handling can put your backyard flock at risk. If you must participate in such activities, have dedicated clothing and footwear that you only wear during work with wild birds. One aspect of a proper biosecurity plan is to not feed wild birds at the location where you have backyard poultry or near a commercial poultry operation. Any additional directives regarding domestic birds should come from state or federal agriculture departments.

26 WHAT CARCASS DISPOSAL GUIDANCE CAN BE PROVIDED TO THE GENERAL PUBLIC?

If a member of the public finds a dead bird in their yard, it is recommended that they triple bag it, disinfect the outermost layer, and then dispose of it in their residential trash. Larger-scale disposals may require additional coordination with state or federal agencies and may include environmental considerations.



GENERAL BIOSECURITY RECOMMENDATIONS

To Mitigate Introduction or Spread of Highly Pathogenic Avian Influenza (HPAI) at Wild Bird Facilities

- 1** Isolate or quarantine admitted wild birds that could have any infectious disease after ruling out the most common non-infectious conditions at intake. Carefully consider whether to transfer or admit HPAI-suspect wild birds from other facilities or sub-permittees without testing for HPAI, as this could pose a substantial risk to your entire facility.
- 2** You can protect your ambassador/education wild birds by housing them separately from rehabilitation patients, moving them completely off-site, and/or having select personnel assigned to work only with them and not with other patients. Each of these actions provides an additional layer of protection.
- 3** Wear proper personal protective equipment and clean/disinfect equipment/surfaces to avoid cross-contamination when moving between animals/enclosures or on/off facility grounds.
 - Require staff who have domestic birds at home to have clothing and footwear that is kept at your facility and only worn at your facility.
 - Suspend access to your facility for any personnel who have sick domestic birds at home.
- 4** Consider HPAI testing of wild birds with clinical signs consistent for HPAI, particularly those showing neurologic signs, those that are not responding to treatment, and those that die suddenly of an unknown cause.
- 5** Consider not admitting wild bird species, such as waterfowl, that are more likely to be HPAI carriers.

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POST-DETECTION RESPONSE

Any response following an HPAI detection will be coordinated between the wild bird facility and state-federal agencies. All strategies are evaluated on a case-by-case basis and may include:

- Culling of wild birds that had, or may have had, direct or indirect contact with the HPAI-positive bird or where cross-contamination may have occurred. HPAI is a zoonotic disease and medical treatment of sick birds in the face of a detection is not recommended.
- HPAI surveillance of ambassador/education wild birds and patients that did not have direct or indirect contact with the HPAI-positive wild bird.
- Culling or HPAI surveillance of mammals at your facility that were exposed to an HPAI-positive animal and that are species known to be susceptible to HPAI.

Any cases involving domestic birds should be reported to the state agriculture agency.

CARCASS DISPOSAL

To reduce further spread of HPAI following a detection, carcasses should be triple bagged and proper carcass disposal should be implemented: incineration or on-site burial (at least two feet deep). Larger-scale disposals may require additional coordination with state or federal agencies and may include environmental considerations.



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WHEN TO SUSPECT HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)

Clinical signs of HPAI infection vary by species and are often non-specific. Many species of waterfowl and shorebirds may be sub-clinical carriers of the virus, spreading it without ever becoming ill. In other species, neurologic or gastrointestinal dysfunction may be present. Affected wild birds often present as listless or lethargic.

THE FOLLOWING EVENTS MAY BE SUGGESTIVE OF AN HPAI EVENT:

- Multiple waterfowl or shorebirds found dead (typically ≥ 5)
- Raptors, turkey, or grouse found dead or exhibiting neurologic signs (any #) *
- Avian scavengers (vultures, crows, ravens, gulls) found dead or exhibiting neurologic signs (any #) *
- Large numbers of other wild bird species found dead in one location

HPAI is highly contagious among all birds, domestic and wild, and is shed through saliva, feces, and nasal discharge.

**Neurologic signs are not present in most HPAI infections, but when present, may include swimming/walking in circles, holding the head/neck in an unnatural position, the inability to smoothly rotate the head, tremors, seizures, and difficulty flying. It is also important to recognize that neurologic signs in birds can result from many other causes including trauma or exposure to toxins, as well as infection from bacteria, fungi, or viruses other than HPAI.*

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STATE AGENCY RESPONSE TO HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) DETECTIONS

WHAT TYPE OF HPAI TESTS ARE CONSIDERED OFFICIAL?

Only test results that are obtained from a National Animal Health Laboratory Network (NAHLN) laboratory can be considered official and should be used to prompt state agency action.

HPAI DETECTION IN A FREE-RANGING WILD BIRD

Test results and location information will be shared with state and federal partner agencies. A USDA-APHIS-certified foreign animal disease diagnostician (FADD) may pursue a formal epidemiological investigation, but often no further action will be taken.

HPAI DETECTION IN A CAPTIVE WILD BIRD

The facility may be locked down – no birds on and no birds off – and test results and location information will be shared with state and federal partner agencies. A FADD will be dispatched to conduct a formal epidemiological investigation. Examples of facilities where this could occur includes falconers, game farms, menageries, propagators, and rehabilitators. This news may be publicly available with personal identifying information retracted.

HPAI DETECTION IN A DOMESTIC BIRD

The facility will immediately be locked down – no birds on and no birds off – and test results and location information will be shared with state and federal partner agencies. A FADD will be dispatched to conduct a formal epidemiological investigation. Examples of facilities where this could occur include backyard flocks and commercial poultry operations. This news will be shared with the public with personal identifying information retracted.

RESPONSE STRATEGIES

State wildlife agencies may not be adequately outfitted or trained to respond to a FAD (foreign animal disease). State agencies may defer to USDA-APHIS to conduct depopulation, sampling, cleaning, disinfection, and disposal. Under certain circumstances, high-value birds (e.g., ambassador, education, rare, endangered) may be allowed to enter a quarantine period with potential follow-up AI testing. Facilities that undergo depopulations may be eligible for compensation in the form of indemnity payouts. Even if depopulations have been performed and subsequent sampling of the environment does not detect HPAI, a facility may remain in lockdown for multiple weeks. State agencies may provide ancillary support off-site, which could include conducting public outreach or additional AI surveillance of domestic or wild birds. Personal Protective Equipment may be provided through the National Veterinary Stockpile (NVS) managed by USDA-APHIS. Any NVS requests must come from the State Animal Health Official or USDA Area Veterinarian in Charge.

This content is based on publicly available information from the USDA. Visit <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/avian-influenza/2022-hpai> or scan the QR code for more information.

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