



**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, *Anas 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.