



National Wildlife Health Center
Wildlife Health Bulletin 2016-07

Detection of EA/AM H5N2 Highly Pathogenic Avian Influenza in a Mallard from Alaska

To: Natural Resource/Conservation Managers
From: Dr. Jonathan Sleeman, Center Director, USGS National Wildlife Health Center
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On August 26, 2016, the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA) confirmed the detection of Highly Pathogenic Avian Influenza (HPAI) H5N2 in a mallard duck (*Anas platyrhynchos*) from Alaska. Samples were collected as part of the national surveillance for HPAI in wild birds by the Alaska Department of Fish and Game during live bird banding at a waterfowl refuge in Fairbanks North Star Borough, Alaska. Genome sequencing analysis shows that the Alaska isolate is a strain of Eurasian/American (EA/AM) H5N2 HPAI with over 99 percent similarity to the virus isolated from a northern pintail duck (*Anas acuta*) in Washington State in December 2014. Enhanced sampling of wild birds in proximity to this detection in Alaska is planned to determine if additional HPAI viruses can be detected in this region. Avian influenza virus has not been identified in domestic birds in Alaska to date.

Since the detection of HPAI viruses in wild birds and poultry in the United States and Canada in December 2014, the USGS National Wildlife Health Center (NWHC) has continued to work closely with the USDA APHIS Wildlife Services, the U.S. Fish and Wildlife Service, and state wildlife agencies to implement enhanced mortality investigations and national surveillance in wild birds for HPAI viruses. This is the first detection of HPAI in a wild bird since November 2015 when it was detected in a hunter-harvested mallard in Oregon (although that case remains unconfirmed as full characterization by virus isolation and genetic sequencing was unsuccessful because no virus was isolated from this bird).

For an up-to-date summary of positive results from combined federal and state agency HPAI national surveillance in wild birds for the 2016-2017 surveillance year please view this table: [Wild Bird HPAI Cases in the U.S.](#)

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 participating agency partners in the Mississippi and Atlantic Flyways. See this link for a copy of the national surveillance plan: [Interagency Strategic Plan for Early Detection and Monitoring for Avian Influenzas of Significance in Wild Birds.](#)

The NWHC is also a leading partner in wildlife morbidity and mortality investigation as part of the Interagency Strategic Plan and continues to monitor for HPAI viruses nationwide by testing dead birds submitted for diagnostic evaluation. Mortality-based investigations serve to enhance capability for early detection of HPAI in wild birds and 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 in [WHISPers, a wildlife health information sharing website](#), to increase situational awareness.

Expanded submission criteria for HPAI diagnostics:

- Mortality involving wild bird species where estimated number of dead exceeds 500 birds.
- Mortality involving wild birds of any species in close proximity to facilities housing domestic birds in which HPAI has been detected.
- Mortality involving gallinaceous birds such as wild turkeys, quail, and sage grouse.
- Mortality involving 5 or more 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). Neurological signs associated with HPAI infection are not well characterized; thus, 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 aerosolization 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 HPAI viruses 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 CDC states that while the health risk posed to the general public by domestic HPAI outbreaks is low, it is possible that human infections with these viruses could occur.](#) Consult the CDC and your local agency policies for updated personal biosafety recommendations related to human health.

Additional information:

- [OIE: Questions and Answers on Avian Influenza, May 2015](#)
- [NWHC Avian Influenza Information](#)
- [USDA Avian Influenza Information](#)
- [USDA Biosecurity for Birds](#)
- [2016 Surveillance Plan for Highly Pathogenic Avian Influenza in Wild Migratory Birds in the United States](#)
- [EPA Fact Sheet: Antimicrobial Products Registered for Disinfection Use against Avian Influenza on Poultry Farms and Other Facilities](#)
- [Department of Interior Employee Health and Safety Guidance for Avian Influenza Surveillance and Control Activities in Wild Bird Populations](#)
- [Highly Pathogenic Avian Influenza and North American Wild Birds: Frequently Asked Questions](#)

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/>. See also the [Wildlife Mortality Reporting and Diagnostic Services Request Worksheet](#).

If you have any questions or concerns regarding the scientific and technical services we provide, 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.