

Wildlife Health Bulletin 2022-02

National Wildlife Health Center
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Status and Response to Detections of Highly Pathogenic Avian Influenza H5N1 in North America

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Summary

- Highly pathogenic avian influenza (HPAI) H5N1 has been detected in Canada and three U.S. states in the Atlantic Flyway.
- A multi-agency active response to increase surveillance in wild birds is underway.
- Enhanced vigilance for wild bird morbidity/mortality, and outreach to stakeholder groups are encouraged.

On December 20, 2021, the [Canadian Food Inspection Agency](#) announced detection of highly pathogenic avian influenza (HPAI) H5N1 virus in a multi-species exhibition farm in the Avalon Peninsula of Newfoundland and Labrador. Subsequently, HPAI H5N1 virus was also confirmed in a small backyard flock and two great black-backed gulls (GBBG, *Larus marinus*) in the same vicinity (Table 1). The gulls exhibited neurological signs and were admitted to wildlife rehabilitators in November 2021. Phylogenetic analyses indicate that all eight segments of the viruses confirmed in Newfoundland and Labrador correspond to Eurasian H5N1 viruses circulating in wild birds and poultry in Europe early in 2021 ([Caliendo et al. 2022](#)). On February 1, 2022, the [Nova Scotia Department of Natural Resources and Renewables](#) announced the detection of avian influenza virus in a Canada goose (CAGO, *Branta canadensis*) in the Grand Desert area of Halifax Regional Municipality, Nova Scotia. While it is uncertain how the virus was introduced to Canada, movement by wild waterfowl is suggested ([OFFLU 2021](#)). Details of these events are being [reported to the World Organisation for Animal Health \(OIE\)](#).

Province	Event	Virus	Onset Date	Number Affected
Newfoundland and Labrador	Exhibition Farm	H5N1	12/9/2021	340
Newfoundland and Labrador	Backyard Flock	H5N1	12/31/2021	4
Newfoundland and Labrador	GBBG1	H5N1	11/26/2021	1
Newfoundland and Labrador	GBBG2	H5N1	11/4/2021	1
Nova Scotia	CAGO	AI	1/2022	1

Table 1. Detections of avian influenza (AI) viruses in Newfoundland and Labrador and Nova Scotia, Canada in winter 2021/2022, to-date.

On January 14, 2022, the U.S. Department of Agriculture - Animal and Plant Health Inspection Service (USDA-APHIS) [announced](#) detection of HPAI H5N1 virus in an American widgeon (*Mareca americana*) from Colleton County, South Carolina. The duck was taken by a hunter on December 30, 2021 and sampled by USDA-APHIS Wildlife Services (WS) as part of surveillance implemented by APHIS-National Wildlife Disease Program in coordination with the U.S. Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza

in Wild Birds - [Implementation Plan for Avian Influenza Surveillance in Waterfowl in the United States](#). Subsequent testing has detected multiple additional positive waterfowl in the states of [South Carolina](#), [North Carolina](#), and [Virginia](#) (Table 2). All cases are hunter-harvested waterfowl sampled by WS. Species include American widgeon, American green-winged teal (*Anas carolinensis*), blue-winged teal (*A. discors*), gadwall (*Mareca strepera*), mallard (*A. platyrhynchos*), northern pintail (*A. acuta*), and northern shoveler (*Spatula clypeata*). USDA-APHIS will post confirmed wild bird positive cases [here](#). To date, there have been no reports of HPAI virus affecting backyard flocks or poultry production facilities in the U.S.

State	Counties	Flyway
South Carolina	Colleton	Atlantic
North Carolina	Hyde, Pamlico/Beaufort, Bladen	Atlantic
Virginia	Henrico	Atlantic

Table 2. U.S. locations where HPAI viruses have been detected in waterfowl, winter 2021/22 to-date.

The U.S. Centers for Disease Control and Prevention (CDC) considers these recent infections to pose low risk to human health and have issued [appropriate guidance](#).

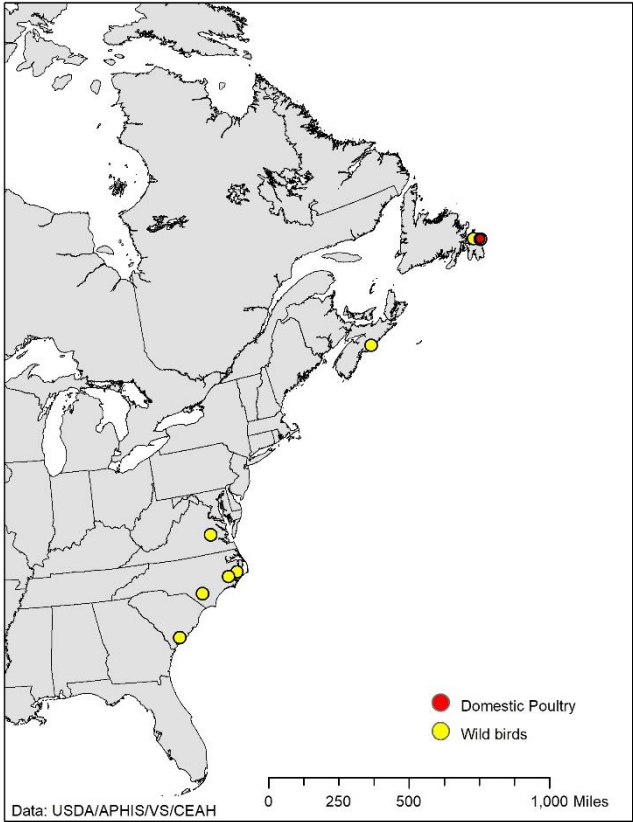


Figure 1. Detections of HPAI viruses in North America as of February 1, 2022.

Response Activities

A multi-faceted response to the detection of HPAI H5N1 viruses in the U.S. is being deployed. The U.S. Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza in Wild Birds is encouraging expanded surveillance and increased vigilance for morbidity/mortality in wild birds including waterfowl, raptors, and avian scavengers (e.g., ravens, crows, gulls). Specific activities include:

USDA-APHIS Wildlife Services

- Continue surveillance called for in the [current Implementation Plan](#): USDA-APHIS-WS National Wildlife Disease Program is conducting targeted surveillance in the Atlantic and Pacific Flyways. Winter sampling in the Atlantic Flyway will include approximately 4,500 samples.
- Implement additional surveillance: WS will coordinate with 24 states in 2 additional Flyways (Mississippi and Central) to determine sampling opportunities, hunting seasons, and presence of dabbling duck populations. WS will coordinate with state natural resource management agencies to identify additional sampling opportunities and will continue coordination and interagency prioritization with USDA-APHIS Veterinary Services.
- Continue to stress increased vigilance for morbidity/mortality events.

Southeastern Cooperative Wildlife Disease Study

- Initiated winter sampling of shorebirds (primarily ruddy turnstones, *Arenaria interpres*) in December in Georgia and South Carolina and will continue through the spring. Approximately 300 samples have been collected to date.
- Sampled approximately 500 hunter-harvested blue-winged teal in Texas and Louisiana in September 2021. Testing is pending.
- Continue sampling hunter-harvested ducks in Louisiana. Between 600 and 1,000 samples are anticipated.
- Stressing vigilance for morbidity and mortality with member states, and testing cases submitted for diagnostic evaluation.

U.S. Fish and Wildlife Service (FWS) Wildlife Health Office

- The Wildlife Health Office currently chairs the U.S. Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza in Wild Birds.
 - Drafted an informational memorandum for member agencies on the spread of HPAI to Newfoundland and Labrador and subsequently the eastern seaboard of the U.S.
 - Arranged technical meetings with scientists in Canada (Environment and Climate Change Canada, Canadian Wildlife Health Cooperative, Canadian Food Inspection Agency) and Israel (Israel Nature and Parks Authority) to enhance information sharing, preparedness, and collaboration.
- Preparing FWS law enforcement, emergency management, refuges, and other field stations to conduct morbidity and mortality investigations, increase carcass submissions for HPAI testing, and apply appropriate biosafety and biosecurity measures.
- Providing field and logistical support for partner agencies conducting HPAI surveillance activities.

USGS National Wildlife Health Center (NWHC)

- Issued [expanded submission criteria](#) for wild birds in fall 2021, which includes:
 - Mortality involving five 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 or avian scavengers (e.g., ravens, crows, gulls)
 - Morbidity involving raptors, waterfowl, or avian scavengers (e.g., ravens, crows, gulls) observed with clinical signs consistent with neurological impairment
 - Mortality events involving any species of birds that exceeds 500 animals
- Implemented enhanced testing of avian diagnostic submissions to NWHC.
- Continue information sharing with state, federal, and tribal natural resource management agencies via [Wildlife Health Bulletins](#).
- Encourage continued vigilance for morbidity/mortality events in wild birds. Information on morbidity/mortality events will be captured in [WHISPers](#).

Guidance for State, Federal, and Tribal Natural Resource Management Agencies

Recent detections of HPAI virus in Canada and the U.S. warrant additional surveillance and increased vigilance for HPAI viruses across the United States. In addition to promoting awareness among agency personnel, natural

resource management agencies might consider outreach to additional stakeholders, including:

- Wildlife rehabilitators: The infected great black-backed gulls from Newfoundland and Labrador exhibited neurological signs and were presented to Canadian wildlife rehabilitators. It follows that licensed rehabilitators may have some of the earliest indication of infections in birds, including raptors and avian scavengers (e.g., ravens, crows, gulls) that are presented for care.
- Falconers: In the 2014/2015 HPAI outbreak in Canada and the U.S., HPAI virus was detected in captive falcons that had hunted and fed on wild ducks. Encouraging vigilance and reporting sick and dead falcons may be appropriate.
- Landfill operators: Landfills and similar facilities often aggregate substantial populations of avian scavenger species, including gulls. These sites may provide an opportunity for observing birds exhibiting neurological impairment.
- Zoos and exhibition facilities: Aviaries may have increased risk for HPAI infection, especially if birds are allowed outdoor access. Increased vigilance might be appropriate at these facilities, and some may choose to either move all birds to an indoor environment, or [close aviaries](#) to visitors during this outbreak.

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

- Wear protective clothing including aprons, coveralls, rubber boots, gloves (rubber, latex, or nitrile), 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.
- 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. The primary goal of carcass disposal (e.g., incineration, composting, certified landfilling) is to prevent the spread of infectious agent.
- Your agency may also have policies regarding the use of particulate respirators (N-95) while handling sick and dead wildlife.

Disease Investigation Services

To request diagnostic services or report wildlife mortality, please contact the USGS National Wildlife Health Center at 608-270-2480, by email at NWHC-epi@usgs.gov, or through the Wildlife Health Information Sharing Partnership – event reporting system ([WHISPers](#)) interface 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 about our services can be found at <https://www.usgs.gov/centers/nwhc/science/disease-investigation-services>. To learn more about submitting samples and reporting events, go to <https://www.usgs.gov/centers/nwhc/science/report-mortality-events-and-submit-specimens>. The [WHISPers](#) system can also be used to enter event information, request diagnostic services, and to view and search summary information on wildlife morbidity/mortality events. If you have questions or concerns regarding the scientific and technical services we provide, please do not hesitate to contact NWHC Director Jonathan Sleeman at jsleeman@usgs.gov.

References:

- Caliendo V, Lewis NS, Pohlmann A, Baillie SR, Banyard AC, Beer M, Brown IH, Fouchier RAM, Hansen RDE, Lameris TK, Lang AS, Laurendeau S, Lung O, Robertson G, van der Jeugd H, Alkie TN, Thorup K, van Toor ML, Waldenström J, Yason C, Kuiken T, Berhane Y. 2022. Transatlantic spread of highly

pathogenic avian influenza H5N1 by wild birds from Europe to North America in 2021. bioRxiv 2022.01.13.476155. <https://doi.org/10.1101/2022.01.13.476155>

- OIE-FAO global network of expertise on animal influenzas. 2021. OFFLU statement on outbreak of H5N1 high pathogenicity avian influenza in Newfoundland, Canada. https://www.offlu.org/wp-content/uploads/2021/12/OFFLU-statement_Newfoundland_H5N1.pdf.
- U.S. Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza in Wild Birds. 2021. Implementation Plan for Avian Influenza Surveillance in Waterfowl in the United States: Summer FY 2021 – Winter FY 2022. https://www.aphis.usda.gov/animal_health/downloads/animal_diseases/ai/2021-22-wild-bird-ai-surveillance-implementation-plan.pdf.

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