



alert



FAO ALERT FOR **THE AMERICAS**: H5 HIGHLY PATHOGENIC AVIAN INFLUENZA – RISK FOR INTRODUCTION AND SPREAD

3 March 2022

Key facts:

1. Avian influenza (AI) is a highly contagious viral disease with zoonotic potential that has severe impacts on animal health, livelihoods, economy, and human health.
2. Wild waterfowls are considered the natural reservoir for AI viruses. Wild migratory bird movements are one of the main drivers for the long-distance and intercontinental spread of highly pathogenic (HP)AI viruses.
3. Trade with live poultry and poultry products is a major driver for HPAI spread within countries and across borders.
4. In its highly pathogenic form, AI affects most severely gallinaceous birds (e.g. chickens, turkeys, quails, or guinea fowls), resulting in severe and acute systemic infection and high mortality. Domestic ducks have shown more resilience to HPAI virus infections; however, fatal outcomes may be reported even in these species.
5. HPAI has caused significant mortalities in some wild bird populations in recent epidemics, including endangered species under conservation efforts.
6. H5N1 HPAI emerged in 1996 in Asia, and since then significantly diversified into [subtypes and numerous clades](#).
7. H5 HPAI viruses belonging to clade 2.3.4.4b are responsible of the transcontinental waves of HPAI outbreaks observed in Eurasia and Africa since 2016.

FAO recommends countries and territories in the Americas to be on high alert for wild bird mortalities and poultry outbreaks due to H5 highly pathogenic avian influenza (HPAI). Given recent reports of H5 HPAI events in wild and domestic birds in Canada and the United States of America, particularly along the Atlantic and Mississippi flyways, the risk of HPAI introduction in currently unaffected areas located along those wild bird migratory corridors is regarded as high. Importantly, countries and territories in North and Central America should have in place enhanced measures for early detection, diagnosis and outbreak response, in both wild birds and poultry.

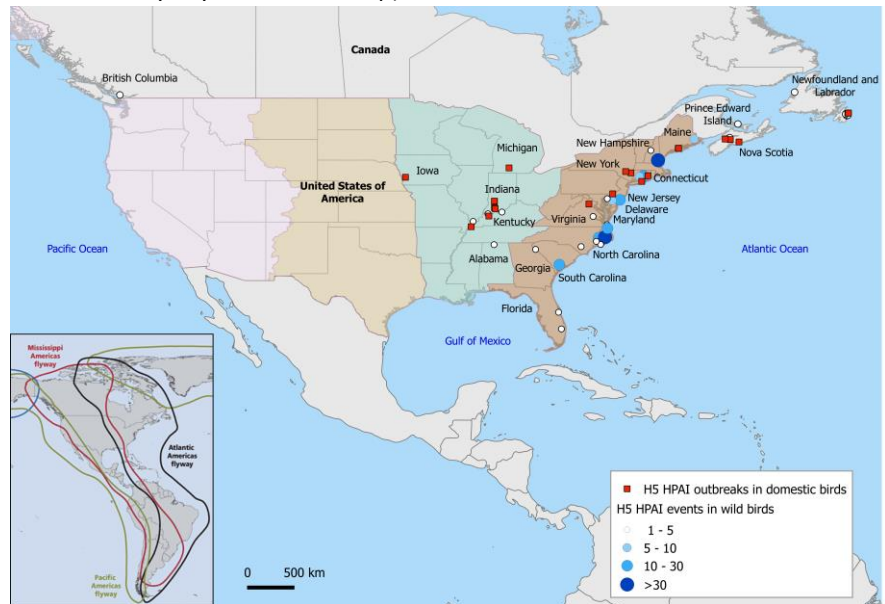
On 22 December 2021, Canada reported its first H5N1 HPAI poultry outbreak on an exhibition farm in the Eastern Province of Newfoundland and Labrador. This was the **first report of the H5N1 HPAI virus in the Americas since June 2015**. Following the outbreak, additional HPAI events were reported in the Province including six wild bird detections and four H5N1 HPAI outbreaks in poultry. Since then, the disease spread further South to Nova Scotia where four outbreaks in poultry farms and several cases in wild birds were reported. [\[CFIA, 2022\]](#) On 3 March 2022, British Columbia and Prince Edward Island both reported a single detection of H5 HPAI virus in a wild Bald Eagle (*Haliaeetus leucocephalus*).

The United States of America reported their first H5 HPAI detection on 13 January 2022. The virus was detected in samples collected on 30 December 2021 from an American Wigeon (*Mareca Americana*) in South Carolina. Throughout the months of January and February in 2022, **296 additional H5 HPAI detections were reported in wild birds across 13 States** along the Atlantic and Mississippi flyways including Alabama, Connecticut, Delaware, Florida, Georgia, Kentucky, Maine, Maryland, New Hampshire, New Jersey, North Carolina, South Carolina, and Virginia [\[USDA APHIS, 2022a\]](#). On 7 February 2022, the first H5N1 HPAI poultry outbreak was observed in a commercial turkey farm located in Indiana State. Sixteen additional HPAI outbreaks in domestic birds were then reported in Connecticut (1), Delaware (1), Indiana (4), Iowa (1), Kentucky (2), New York (3), Maine (2), Michigan (1), and Virginia (1) states during February, affecting turkeys, broiler chickens, egg layers, backyard birds including non-poultry species [\[USDA APHIS, 2022b\]](#).

Useful Links

- ▶ [Global Avian Influenza Virus with Zoonotic Potential situation update](#) – (available through e-mail distribution; if interested please contact: EMPRES-Livestock@fao.org)
- ▶ [USDA APHIS - 2022 Detections of Highly Pathogenic Avian Influenza](#)
- ▶ [Canadian Food Inspection Agency \(CFIA\) - Detection of high pathogenic avian influenza in Canada](#)
- ▶ [FAO Focus on: Highly pathogenic H5 avian influenza in 2016 and 2017 – observations and future perspectives](#)
- ▶ [Preparing for Highly Pathogenic Avian Influenza \(FAO Manual No.3 - 2006\) - English, Spanish, and multiple other languages](#)
- ▶ [Wild Bird Highly Pathogenic Avian Influenza Surveillance \(FAO Manual No. 4 - 2006\) - English, French and multiple other languages.](#)
- ▶ [Wild Birds and Avian Influenza \(FAO Animal Health Manual No. 5 - 2007\) - English, French and multiple other languages.](#)
- ▶ [Good Emergency Management Practice: The Essentials \(FAO Manual No. 25 – 2021\) – English and Spanish](#)
- ▶ [Biosecurity for Highly Pathogenic Avian Influenza \(FAO Manual No.165 – 2008\) – in English and French](#)
- ▶ [FAO's avian influenza webpage](#)
- ▶ [OFFLU website](#)
- ▶ [OIE avian influenza page](#)
- ▶ [WHO avian influenza page](#)
- ▶ [WHO Vaccine Composition Meeting Report – September 2021](#)

Figure 1. Confirmed H5 HPAI events in wild and domestic birds in North America and associated migratory flyways (from West to East: Pacific, Central/Mississippi, and Atlantic flyways - see inset map).



Source: FAO, 2022 with data from APHIS, USDA & EMPRES-i databases; inset map from Wetlands International.

Disclaimer: The boundaries and names shown and the designations used on these map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

The rapid and extensive geographic distribution of H5 HPAI virus detections in North America indicate introduction and spread through wild migratory birds. Once introduced, onward spread between farms is highly likely due to the movement of infected poultry, contaminated boots, clothing, vehicles, and farm equipment, and via poultry faeces/litter.

Retrospective disease event data indicate that the first HPAI detection in Canada was in a wild Great Black-backed Gull (*Larus marinus*) in Newfoundland on 4 November 2021. Information shared via the Animal and Plant Health Inspection Service (APHIS) within the United States Department of Agriculture (USDA) and the OIE/FAO global network of expertise on animal influenzas (OFFLU) indicates that the H5 viruses currently circulating mostly fall within H5 Clade 2.3.4.4b and are closely related to viruses circulating in Europe [[USDA APHIS, 2022a](#); [OFFLU, 2021](#)]. This strongly indicates that the introduction of H5N1 HPAI virus in the Americas was driven by wild migratory birds. It is not yet well understood which factors favoured the H5N1 HPAI virus to cross the Atlantic Ocean. In the past, H5 HPAI virus introductions into the Americas driven by wild bird migrations were reported, although was considered rare and mostly occurred through the Bering Strait. Importantly, the origins of H5 HPAI virus introduction in British Columbia, Canada are not yet clear. Further genetic analyses are warranted to confirm whether it is a separate introduction.

Multiple wild bird species – majorly waterfowls of the *Anatidae* family – were identified in the recent H5 HPAI virus detections in the Americas Region including American Black Duck (*Anas rubripes*), American Green-winged Teal (*Anas carolinensis*), American Wigeon (*Mareca Americana*), Black Vulture (*Coragyps atratus*) Blue-winged Teal (*Anas discors*), Gadwall

(*Mareca strepera*), Lesser Scaup (*Aythya affinis*), Mallard (*Anas platyrhynchos*), Northern Pintail (*Anas acuta*), Northern Shoveler (*Spatula clypeata*), Red Head Duck (*Aythya americana*), Snow Goose (*Anser caerulescens*), and Wood Duck (*Aix sponsa*) in the United States of America, and Mallard (*Anas platyrhynchos*), American Black Duck (*Anas rubripes*), Northern Saw-whet Owl (*Aegolius acadicus*), Red-tailed Hawk (*Buteo jamaicensis*), Blue Jay (*Cyanocitta cristata*), Bald Eagle (*Haliaeetus leucocephalus*), Great Black-backed Gull (*Larus marinus*), Herring Gull (*Larus argentatus*) in Canada.

We are currently approaching the spring migration period (end February – April) when migratory wild birds start their journey back from wintering areas (southern latitudes) to breeding grounds (northern latitudes). This may result in further spread of H5 HPAI in the region. HPAI outbreaks in poultry have been reported in Indiana, Iowa, and Kentucky states already indicating a spread of HPAI virus from the Atlantic flyway towards the Mississippi flyway, putting at higher risk domestic and wild bird populations in these areas. With recent H5 HPAI virus detections in wild birds in Florida, countries and territories located along the Gulf of Mexico are also considered at-risk for HPAI introduction. H5 HPAI virus spread from migratory waterfowls to other resident wild bird populations may also occur (e.g. H5 HPAI detections in Black Vultures in Florida) which might result in erratic spread of the virus in such areas. Furthermore, it is not given that H5 HPAI viruses will stop circulating and disappear from wild bird populations in North America after a single season. This has not been the case in Europe with these viruses. Therefore, if AI activity remains through June-August 2022 in the region, countries and territories of more Southern latitudes should stand ready for any potential incursions along migratory flyways.

Given the zoonotic potential already demonstrated by these viruses in the past, precautions should be taken to reduce human exposure. FAO reminds countries and territories about the importance to share full genome sequences and virus isolates with the scientific community early for further analysis and research to establish epidemiological links between outbreaks, monitor virus evolution and assess the zoonotic potential of emerging viruses. This information is also used to match the appropriate vaccines to currently circulating strains, and novel viruses.

FAO ADVISES COUNTRIES AND TERRITORIES AT RISK TO:

- Increase surveillance efforts in areas identified to be at higher risk of HPAI introduction through wild birds by immediately testing sick or dead poultry as well as dead/hunted wild birds for the presence of HPAI viruses;
- Limit direct and indirect contact between domestic poultry, including ducks, and wild birds (e.g. keep poultry indoors, use fences or nets to reduce contact between domestic poultry and wild birds); pay particular attention to sources of poultry drinking water to ensure it cannot be contaminated or it is treated appropriately before use;
- Raise awareness among poultry keepers, the general population, traders, marketers, hunters, and any other relevant stakeholder about HPAI, precautionary and personal protection measures as well as reporting and collection mechanisms for sick or dead birds;

- Ensure laboratories have capabilities for diagnosis of the circulating H5 HPAI viruses;
- Provide mechanisms for reporting sick or dead birds (hotlines, collection points) and raise awareness about the importance of reporting;
- Ensure implementation of biosecurity measures along the poultry value chain, including farms, especially those in close proximity to wild bird habitats, to limit further spread of the disease;
- On infected farms, conduct appropriate cleaning and disinfection and take action on carcasses, slurry and faecal waste to ensure they do not pose a risk for further transmission and spread of virus;
- Upon detection of outbreaks, timely alert neighbouring countries as well as international organizations, including the World Organisation for Animal Health (OIE);
- Share full genome sequences, studies on antigenic characterization and virus isolates with the scientific community for further analysis and research; or send specimen for full genome sequencing to an international Reference Laboratory - for the benefit of all countries at risk;
- Initiate/reactivate a compensation policy and allocate financial resources; ensure compensation for poultry culled as part of control measures during an HPAI outbreak is provided in a timely manner, see Good Emergency Management Practice pp. 18-19: <http://www.fao.org/3/a-ba0137e.pdf>;
- If vaccines are being used to prevent avian influenza, assess antigenic characteristics of any new viruses detected using antisera from vaccinated birds; ensure antigenic assessments are done on any H5 HPAI viruses detected in well vaccinated, clinically affected flocks and, where necessary, update vaccine virus. It is important to recognize the possibility of breakthrough infections in vaccinated flocks from these strains, especially those in which immunity is not uniform or levels of antibody are low;
- Action against wild birds, particularly indiscriminate hunting or destruction of habitat, should not be undertaken.

WHAT FAO IS DOING:

- Monitor and assess the evolving disease situation. To share updates on your country situation, please do not hesitate to contact FAO at FAO-GLEWS@fao.org
- Liaise with FAO/OIE Reference Laboratories and partner organizations to assess virus characteristics and provide laboratory protocols for detection
- Raise awareness about important epidemiological and virological findings and their implications
- Provide recommendations for affected countries/territories and those at risk addressing preparedness, prevention and disease control
- Provide support for risk assessment and mapping to identify hot spots for risk mitigation and the implementation of risk-based surveillance
- Offer support in provision of diagnostic reagents and personal protective equipment, provided certain conditions are met (contact: EMPRES-Lab-Unit@fao.org)

Contacts

Keith Sumption

Chief Veterinary Officer
Animal Production and Health Division (NSAH)
FAO Headquarters
Rome, Italy
CVO@fao.org

Madhur Dhingra

Head of EMPRES
Animal Production and Health Division (NSAH)
FAO Headquarters
Rome, Italy
Madhur.Dhingra@fao.org

Sophie von Dobschuetz

Global Surveillance Coordinator
Animal Production and Health Division (NSAH)
FAO Headquarters
Rome, Italy
Sophie.vondobschuetz@fao.org

- Offer assistance to national authorities for shipment of samples as well as virus sub-typing and sequencing, provided certain conditions are met (contact: EMPRES-Shipping-Service@fao.org)

To contact FAO for further information or support please write to Keith Sumption, FAO Chief Veterinary Officer at CVO@FAO.ORG.