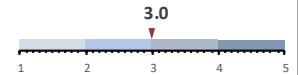


SUMMARY: RELEVANT SIGNALS (includes all signals rated ≥3.0)

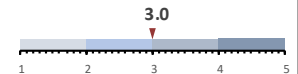
Highly Pathogenic Avian Influenza

- ◆ Pre-priint: Emergence and interstate spread of highly pathogenic avian influenza A(H5N1) in dairy cattle
 - Genome sequencing suggests that there was a reassortment event in late 2023 between the current HPAI 2.3.4.4b clade in wild birds and an LPAI wild bird strain, which produced the B3.13 genotype now circulating in dairy cows
 - Analysis suggests there were ~five B3.13 introductions from cattle to poultry, one to a raccoon, two to domestic cats, and three to wild birds
 - The movement of asymptomatic cattle has likely played a role in the spread of HPAI within the US dairy herd
- ◆ Pre-priint: Influenza A virus receptors sialic acid SA-α2,3 (avian type) and SA-α2,6 (Human type) are widely expressed in the bovine mammary gland
 - Duck and human type IAV receptors were widely expressed in the bovine mammary gland, whereas the chicken type receptor occurred in the respiratory tract, providing a mechanistic rationale for the high levels of H5N1 virus reported in infected bovine milk
- ◆ HPAI has been reported in a dead walrus for the first time, found on **Hopen Island in Svalbard, Norway**; the walrus was sampled in 2023, however the sample was too small to determine the viral strain

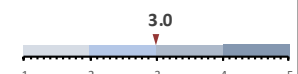
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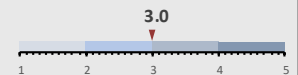
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Avian metapneumovirus (Turkey viral rhinotracheitis)

- ◆ On April 17, 2024, aMPV subtype B was detected in two turkey flocks in **Ontario**, with one flock experiencing high mortality; this is the first confirmation of aMPV-B in poultry flocks in **Ontario**

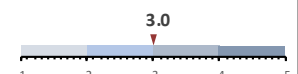
[Read More](#)



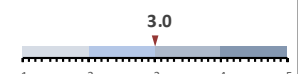
West Nile Virus

- ◆ In early April 2024, dead birds tested positive for WNV across several counties in **California**; it is early in the season for the first detections of WNV
- ◆ **Illinois** has also reported its first bird to test positive for WNV for 2024 in **Douglas County**; the specimen was collected on April 2, 2024, again, very early in the season

[Read More](#)



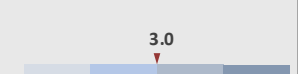
[Read More](#)



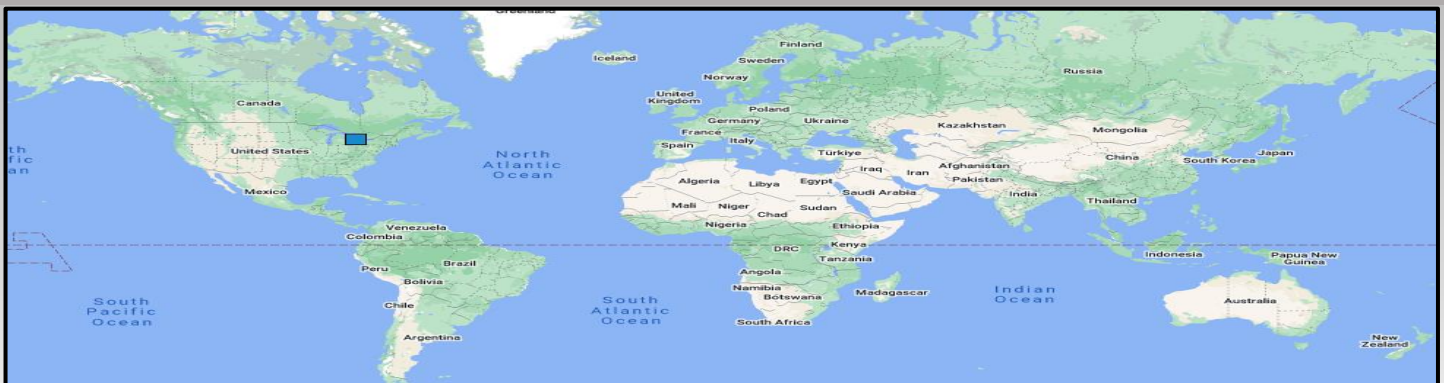
Asian Longhorned Tick

- ◆ The ALHT has been detected in **Morgan County, Illinois**, making it the 20th state to discover the tick

[Read More](#)



NEW EVENTS: (events rated > 2)



Avian metapneumovirus in Ontario

Pathogen: virus; **Transmission:** direct contact, fomite; **Species affected in event:** turkey

① On April 17, 2024, aMPV subtype B was detected in two turkey flocks in Ontario, with one flock experiencing high mortality. This is the first confirmation of the aMPV subtype B in poultry flocks in the province. In recent months, multiple states throughout the USA have documented increased cases of aMPV subtypes A and B with significant economic losses, affecting broilers, broiler breeders, layers, cage free organic birds and turkeys. Currently, the Animal Health Laboratory is working on updating their PCR testing to include detection of multiple subtypes of aMPV (currently detects type C). The Ontario Animal Health Network is conducting a study to determine the prevalence of aMPV in turkeys by serologically testing flocks processed in Ontario. [Read More](#)

Avg. Rating	3.0
No. of Signal	1
No. of Ratings	2

CONTINUED EVENTS: (events rated ≥ 2.4)

West Nile Virus in the USA

No. of Signals: 02

No. of weeks in report: 02

Avg. Rating: 3.0

- In early April 2024, dead birds tested positive for WNV across several counties in [California](#); it is early in the season for the first detections of WNV
- [Illinois](#) has also reported its first bird to test positive for WNV for 2024 in Douglas County; the specimen was collected on April 2, 2024, again, very early in the season

Highly Pathogenic Avian Influenza in North America

No. of Signals: 21

No. of weeks in report: 114

Avg. Rating: 2.0 - 3.0

- [Canada](#) has not reported any outbreaks of HPAI in domestic poultry over the last week
- [Canada](#) will be conducting enhanced testing of milk at the retail level to look for viral fragments of HPAI
- Over the last week, the [USA](#) has reported outbreaks of HPAI in commercial poultry in: Michigan(1) and Minnesota(1); and in WOA Non-poultry in: Florida(1)
- In the [USA](#), a total of 36 dairy herds have reported cases of influenza A H5N1 across 9 states: Colorado(1), North Carolina(1), Ohio(1), South Dakota(1), Idaho(2), Kansas(4), Michigan(6), New Mexico(8), and Texas(12)
- The [USDA](#) has announced that all ground beef samples (30) from retail outlets in states with influenza A detections in dairy cattle have tested negative for H5N1, reaffirming that the meat supply is safe
- The [FDA](#) has reported that new preliminary results of egg inoculation tests on a second set of 201 qPCR-positive retail dairy samples, including cottage cheese and sour cream, in addition to fluid milk, show that pasteurization is effective in inactivating HPAI
- [Michigan and Colorado](#) have announced emergency measures aimed at controlling the spread of Influenza A in dairy cattle; [California](#) has issued new restrictions, requiring all dairy cattle entering from infected states to be inspected by a veterinarian within seven days of shipment
- [Dairy goat operations](#) should also be an alert for HPAI H5N1 as the virus has a strong ability to multiply within mammary tissue
- The [USA](#) has reported additional detections of HPAI H5N1 in wild mammals (most recently in red foxes, opossums, and a bobcat) bringing the total number of mammal detections to 228

Highly Pathogenic Avian Influenza in Europe

No. of Signals: 04

No. of weeks in report: 176

Avg. Rating: 1.8 - 3.0

- HPAI has been reported in a dead walrus for the first time, found on Hopen Island in Svalbard, [Norway](#); the walrus was sampled in 2023, however the sample was too small to determine the viral strain
- [Germany](#) has reported HPAI H5N1 in wild birds
- A summary of the overall HPAI situation in Europe is available [here](#)

Highly Pathogenic Avian Influenza in Asia

No. of Signals: 01

No. of weeks in report: 139

Avg. Rating: 2.0

- [India](#) has reported HPAI H5N1 in poultry in Kerala

SCIENTIFIC FINDINGS, REPORTS, AND GUIDANCE:

Coronavirus

- ◆ SARS-CoV-2 Reverse Zoonosis Among Cats in China: A One Health Investigation [Read More](#)
- ◆ Pre-print: Virological characteristics of the SARS-CoV-2 KP.2 variant [Read More](#)

Influenza

- ◆ Pre-print: Emergence and interstate spread of highly pathogenic avian influenza A(H5N1) in dairy cattle [Read More](#)
- ◆ Pre-print: The avian and human influenza A virus receptors sialic acid (SA)- α 2,3 and SA- α 2,6 are widely expressed in the bovine mammary gland [Read More](#)
- ◆ Preliminary report on genomic epidemiology of the 2024 H5N1 influenza A virus outbreak in U.S. cattle (Part 1 of 2) [Read More](#)
- ◆ Preliminary report on genomic epidemiology of the 2024 H5N1 influenza A virus outbreak in U.S. cattle (Part 2 of 2) [Read More](#)
- ◆ CDC - Technical Report: Highly Pathogenic Avian Influenza A(H5N1) Viruses [Read More](#)
- ◆ Concurrent Infection with Clade 2.3.4.4b Highly Pathogenic Avian Influenza H5N6 and H5N1 Viruses, South Korea, 2023 [Read More](#)
- ◆ EFSA - Update of the target list of wild bird species for passive surveillance of H5 HPAI viruses in the EU [Read More](#)
- ◆ Evolutionary dynamics and comparative pathogenicity of clade 2.3.4.4b H5 subtype avian influenza viruses, China, 2021–2022 [Read More](#)
- ◆ High pathogenic avian influenza A(H5) viruses of clade 2.3.4.4b in Europe -Why trends of virus evolution are more difficult to predict [Read More](#)
- ◆ A multi-species, multi-pathogen avian viral disease outbreak event: Investigating potential for virus transmission at the wild bird - poultry interface [Read More](#)
- ◆ Modelling the transmission dynamics of H9N2 avian influenza viruses in a live bird market [Read More](#)
- ◆ Interactions between avian viruses and skin in farm birds [Read More](#)
- ◆ Abundant Intra-Subtype Reassortment Revealed in H13N8 Influenza Viruses [Read More](#)
- ◆ Cross-species spill-over potential of the H9N2 bat influenza A virus [Read More](#)

Mpox

- ◆ WHO - Multi-country outbreak of mpox, External situation report#32- 30 April 2024 [Read More](#)
- ◆ Epidemiological summary report: 2022-23 mpox outbreak in Canada [Read More](#)

Vectors and Vector-borne Diseases

- ◆ Asian Longhorned Tick Discovered in Illinois [Read More](#)
- ◆ A Scoping Review on the Epidemiology of Orthobunyaviruses of Canadian Public and Animal Health Relevance in the Context of Vector Species [Read More](#)

Other

- ◆ Porcine Deltacoronavirus Occurrence in the United States Breeding Herds since Its Emergence in 2014 [Read More](#)
- ◆ The airborne transmission of viruses causes tight transmission bottlenecks [Read More](#)
- ◆ Identification and characterization of recent retrovirus in *Rhinolophus ferrumequinum* bats [Read More](#)
- ◆ France - Weekly Bulletin for International Animal Health Surveillance 07/05/2024 [Read More](#)
- ◆ ECDC - Communicable disease threats report, 28 April - 4 May 2024, week 18 [Read More](#)

Disclaimer

This intelligence report is intended to provide information to risk managers about emerging and zoonotic disease events that could pose a threat to Canada. It is based on information signals acquired and selected from twenty-one distinct disease surveillance sources via the Knowledge Integration using Web-based Intelligence (KIWI) tool hosted on the Canadian Network for Public Health Intelligence (CNPHI) informatics platform. The report is based on the activities of the CEZD Community of Practice and subject to change based on evolving user needs.