# AVIAN FLU in BC

*A briefing note prepared by Eleanor Boyle, PhD, on Sept. 5, 2024*

## 1. Mpox and avian flu

Both Mpox and avian flu (Highly Pathogenic Avian Influenza / HPAI) require government responses, but:

### Avian flu

- Has a high fatality rate among lab-confirmed cases in humans.[1] Although there has been only one recorded human death from bird flu (2014), virologists continue to warn us that the H5N1 virus clade that has caused the current outbreak could mutate into one that causes another deadly pandemic, and that we can act now to prevent this.[2]
- Isn't yet containable or treatable with an effective vaccine. There is no vaccine available for public use in Canada.[3]
- Globally, has spread to more than 500 species of birds and more than 60 non-bird species.[4]
- Threatens many animals raised for food, including chickens, turkeys, and more.
- Has led to deaths of more than 6 million poultry birds in BC since onset of most recent outbreak (2021/2022).[5]
- Has caused millions of dollars of economic damage to our food system, hurting BC farmers and consumers with higher prices after mass culls (or "depopulations").
- Is increasing among workers on US dairy and poultry farms and is thought to be vastly undercounted because farmers in states with avian flu are resistant to testing.[6]

### Mpox

- Shows relatively low case-fatality rates in current outbreak, except for a variant that is mostly in central Africa.[7]
- Has been shown to be containable through public health measures such as isolation and vaccination.[8]
- Is presently considered low risk to people in Canada[9] (and other countries with developed health infrastructure). Hospitalizations due to Mpox are rare here, and no deaths from Mpox have been reported in Canada to date.[10]
- Has not spread broadly among animals (it's thought to reside naturally in only a few species). [11]
- Has not been identified as a potential threat to our food system.

## 2. BC and Canadian governments' responses to avian flu have emphasized:

- Public statements blaming avian flu on wild birds[12]
- Mass bird slaughters, compensated federally by taxpayers, to temporarily limit avian flu outbreaks[13]
- Requests that industry increase biosecurity on poultry farms

## 3. Are we looking in the wrong directions?

- Migratory ducks and geese do spread viruses through droppings or infected carcasses, but historically, wild-bird viruses have been only low-pathogenic and innocuous. Like lightning that sparks fire in a dry

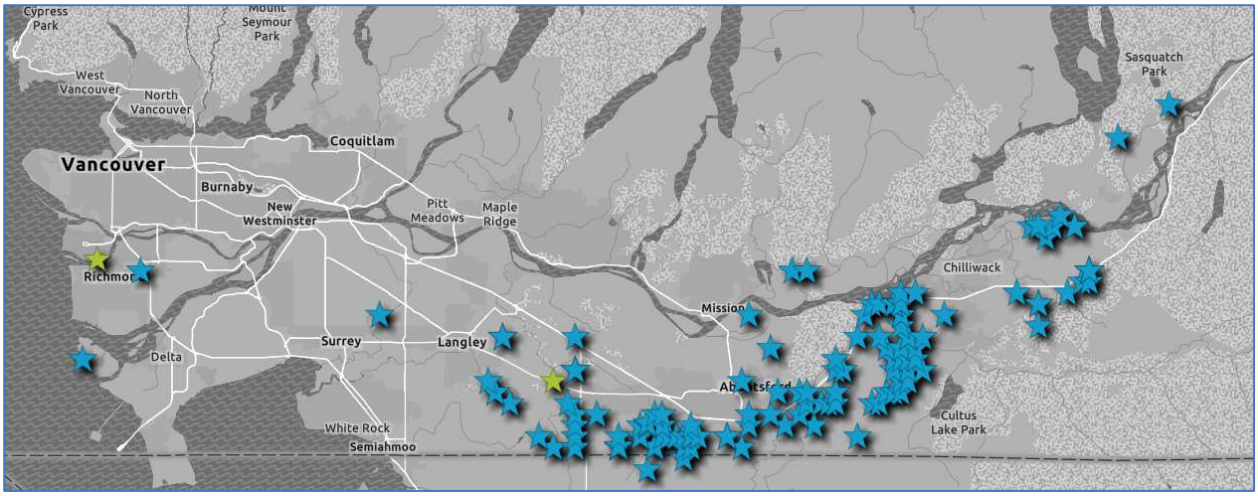
forest, that's the least controllable element in the ensuing spread. Migratory flyways haven't changed, and wild-bird habitat hasn't increased. What has changed over the past few decades are the human-created conditions on the ground, in the form of mass-density poultry barns. The USDA Animal and Plant Health Inspection Service says "**it is not currently believed that the disease is spread onto dairy or poultry premises by migratory waterfowl – this is supported by both genomic and epidemiological data analysis."**[14]

- It is well-documented that viruses (and diseases generally) spread more easily in crowded environments where individual hosts' immune systems are compromised by stress and where biodiversity is low.[15] This describes commercial poultry farming in BC:
    - Industrial poultry farming uses genetically similar birds bred for profitable characteristics (e.g. large breasts, fast growth).
    - About 80% of BC's poultry production is tightly concentrated in the Fraser Valley, unlike in other provinces where it is more dispersed.
    - The average industrial broiler chicken farm in BC raises flocks of 20,000-40,000 chickens (some have over 100,000 per flock), 5 to 7 times per year. Broiler chickens are stocked as densely as one square foot of living space per bird.[16] Fewer than 320 chicken farms in BC produce 263.49 million kilograms (live weight) of chicken produced annually.
    - A typical industrial egg-laying flock in BC is 20,000 to 50,000 chickens. Laying hens in conventional cages (which, despite trends toward cage-free systems, are still the norm in BC for egg-laying hens) get less floor space than the area of a typical 8.5 x 11" sheet of paper. Just 153 industrial egg farms produce more than 84 million dozen eggs annually.
- Massive poultry barns like these create conditions that promote mutation of avian flu from low -to high-pathogenic. Researchers identifying global mutations of bird flu, from innocuous to lethal over 55 years, found that **95% of these occurred in commercial poultry settings in developed countries**.[17]
- Regional spread of HPAI is due to these farms' "normal business operations": Based on its analysis of dairy cattle operations and evidence of spillover onto poultry farms, the USDA Animal and Plant Health Inspection Service says that "continued disease transmission regionally … is due to several factors. In addition to the **movement of livestock**, transmission between farms is likely related to **normal business operations such as numerous people, vehicles, and other farm equipment frequently moving on and off an affected premises** and on to other premises."[18]

## 4. BC's outsized role in Canada's HPAI panzootic[19]

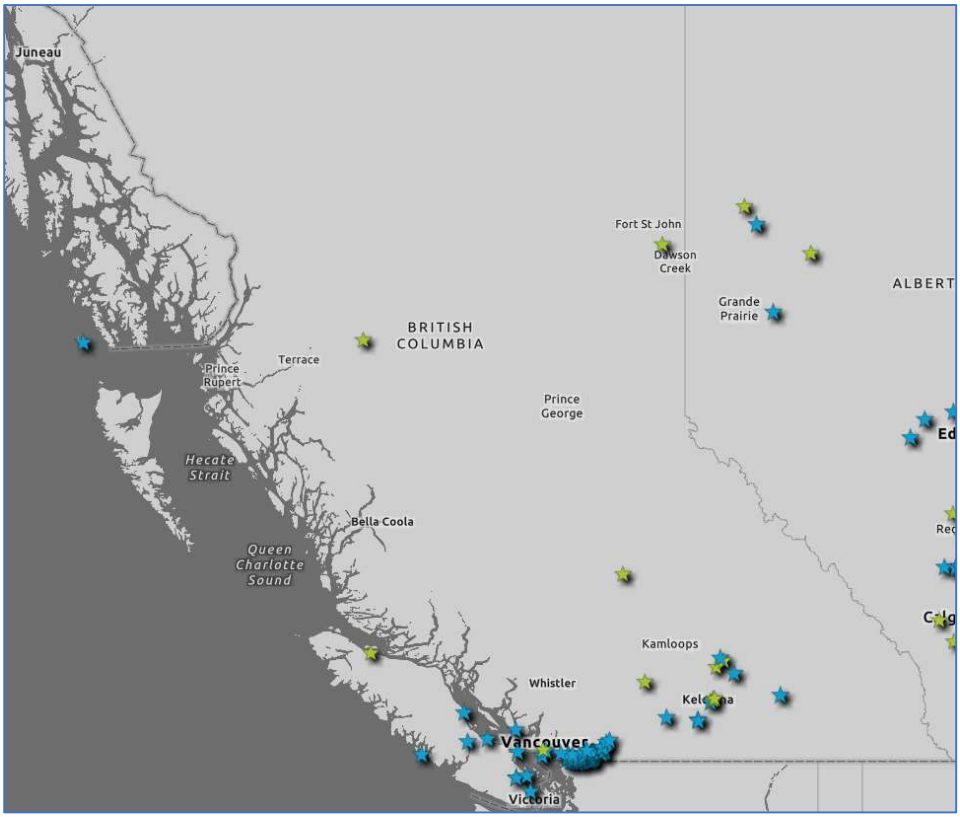
- BC produces only 12 to 15% of Canada's poultry but, in this latest outbreak, accounts for 55% of Canada's avian flu-related slaughters. Its closely situated, large-scale, and densely populated industrial poultry barns play a large role. Figure 1 below is a screenshot of the Canadian Food Inspection Agency's interactive High Pathogenicity Avian Flu Influenza in Wildlife dashboard shows blue stars representing locations of discovery of HPAI among poultry in BC.[20] This area closely overlaps the region in which 80% of BC's industrial poultry operations are found.

*Figure 1: Canadian Food Inspection Agency interactive graphic showing sites of HPAI infections during the current outbreak.*




A zoomed-out view of the same graphic (Figure 2, below) shows how this region compares to the number of HPAI infections outside of the region that hosts about the majority of BC's poultry and egg production:

*Figure 2: Zooming out on the interactive graphic above shows how concentrated these discoveries are in BC's Fraser Valley, which hosts about 80% of the province's poultry and egg production.*



## 5. Avian Flu Isn't Done With Us Yet

- Scientists note that "while bird flu was once a very rare disease among chickens, today we see outbreaks occurring every year … Transmission of these diseases from chickens to humans was almost nonexistent 25 years ago; now serious outbreaks are occurring regularly – more in the past 15 years than in the entire 20th century."[21]
- Bird migration is seasonal and will pick up in the fall. Biosecurity may be tighter, but it only takes one bird dropping to infect a flock of thousands of birds. Eliminating wild birds is obviously not a solution.
- Avian flu continues making unprecedented leaps and rapid spread into new species in the US, most notably cattle.[22] Many dairy cattle farmers in the US, where avian flu continues to spread, are resisting testing. Scientists fear that avian flu will make its way into pigs, where is even more likely to mutate into a variant that becomes easily transmissible to and among humans.[23]

## 6. What should BC be doing to avert a health and food security crisis?

The NDP should spearhead a cross-ministerial effort (including Health, Agriculture and Food, and Environment and Climate Change) to brainstorm with stakeholders and citizens on how we can **reduce the density and intensity of industrial poultry production**. We should be aiming to:

- Shift at least some demand, at home and abroad, for industrial poultry products (particularly for chicken, by far the most produced and consumed poultry) to plant-based protein alternatives.
- Reduce the geographic concentration of industrial poultry farms in BC, their overall size, and the number of poultry birds crammed into a given unit of space.

The Government of BC should convene an expert multidisciplinary avian-flu task force that is not dominated by industrial poultry or other livestock interests. Initial steps might include:

- Support a scientific literature review on what are optimal targets, for HPAI prevention, for density and intensity targets for the poultry industry.
- Identify and reduce government subsidies and incentives to the kind of poultry farming that is promoting this virus.
- Require farms to meaningfully demonstrate (e.g. through unscheduled, independent inspections of operations) their improved biosecurity practices and de-intensification strategies in return for government assistance to cover costs of HPAI culls that are mandatory and repeated.
- Offer industrial poultry farm buy-outs and establish caps on production (as in the Netherlands, which is offering this to farmers to encourage voluntary reduction of the country's cattle numbers and lower the country's emissions[24]).
- Reduce the BC government's purchases of poultry and eggs from industrial poultry farms, replacing it with plant-based alternatives wherever possible. This need not mean expensive, highly processed chicken and egg look-alikes but simple and often invisible alternatives (such as plant-based substitutes for eggs in baked goods).
- Step up and heavily promote and incentivize more plant-based eating through communications campaigns that emphasize health, environment, and climate; cost advantages; and how to do it.

## For more information

For more information, please contact Eleanor Boyle, PhD at eleanor@eleanorboyle.com or 1.604.230.2561 cell / text.

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## Endnotes

[1] https://www.canada.ca/en/public-health/services/diseases/avian-influenza-h5n1/health-professionals.html
[2] For example, see this June article by Canada Research Chair in Viral Pandemics Matthew S. Miller at https://theconversation.com/an-ounce-of-prevention-now-is-the-time-to-take-action-on-h5n1-avian-flu-because-the-stakes-are-enormous-232130
[3] https://www.canada.ca/en/public-health/services/diseases/avian-influenza-h5n1/health-professionals.html#a6
[4] https://www.fao.org/animal-health/situation-updates/global-aiv-with-zoonotic-potential/bird-species-affected-by-h5nx-hpai/en
[5] https://inspection.canada.ca/en/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/latest-bird-flu-situation/status-ongoing-avian-influenza-response
[6] See https://www.producer.com/news/u-s-farmers-testing-refusal-skews-bird-flu-count/
[7] https://www.who.int/news-room/fact-sheets/detail/monkeypox
[8] https://www.who.int/news-room/fact-sheets/detail/monkeypox
[9] https://www.canada.ca/en/public-health/services/diseases/mpox/outbreak-update.html
[10] https://www.canada.ca/en/public-health/services/diseases/mpox/outbreak-update.html
[11] https://www.who.int/news-room/fact-sheets/detail/monkeypox
[12] https://inspection.canada.ca/en/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/facts-about-avian-influenza#a7 and
[13] As of late March (personal communication with Canadian Food Inspection Agency, March 28, 2024, the CFIA has paid about $202 million in compensation to owners of animals culled due to avian flu since the beginning of our current outbreak (Dec. 2021.).
[14] Emphasis here is added by me. See https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/livestock, under heading *How does HPAI spread?*
[15] See Michael Greger, M.D., *Bird Flu: A Virus of Our Own Hatching*, Lantern Books, 2006.
[16] https://spca.bc.ca/wp-content/uploads/SPCA-Certified-Broiler-Chicken-Standard-2017-v.1.pdf
[17] https://www.frontiersin.org/journals/veterinary-science/articles/10.3389/fvets.2018.00084/full
[18] Emphasis here is added by me. See https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/livestock, under heading *How does HPAI spread?*
[19] A panzootic is the animal-world equivalent of a pandemic. We are currently in an avian flu panzootic (see https://www.nature.com/articles/s44298-024-00039-z)
[20] See https://www.arcgis.com/apps/dashboards/89c779e98cdf492c899df23e1c38fdbc
[21] https://karger.com/ned/article/54/4/283/226597/What-the-COVID-19-Crisis-Is-Telling-Humanity
[22] https://www.avma.org/resources-tools/animal-health-and-welfare/animal-health/avian-influenza/avian-influenza-virus-type-h5n1-us-dairy-cattle
[23] See https://newrepublic.com/article/181451/bird-flu-chickens-pigs-cows-humans-wild and https://www.nytimes.com/2024/04/22/health/birdflu-marine-mammals.html and https://www.statnews.com/2024/04/03/h5n1-bird-flu-in-cows-risk-to-humans/
[24] https://www.euronews.com/green/2023/11/30/dutch-farmers-could-be-paid-to-close-their-livestock-farms-under-new-scheme and https://www.agriland.ie/farming-news/e700m-dutch-scheme-approved-for-farmers-to-close-livestock-sites/