



Canadian Food
Inspection Agency

Agence canadienne
d'inspection des aliments

Update on highly pathogenic avian influenza in Canada

Anthony V. Signore

National Centre for Foreign Animal Disease

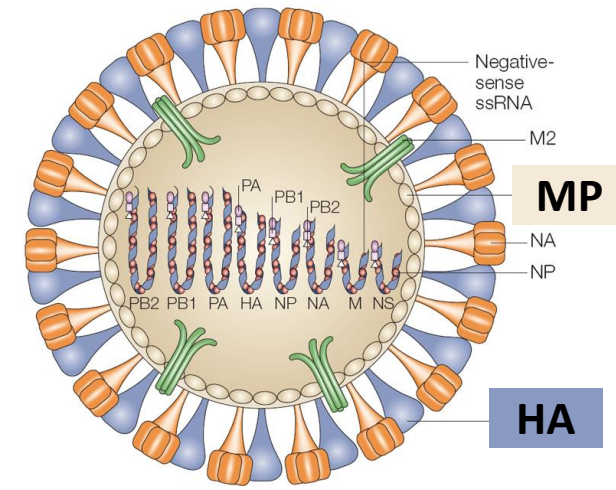


Initial testing - Provincial and other partner laboratories



RT-PCR:

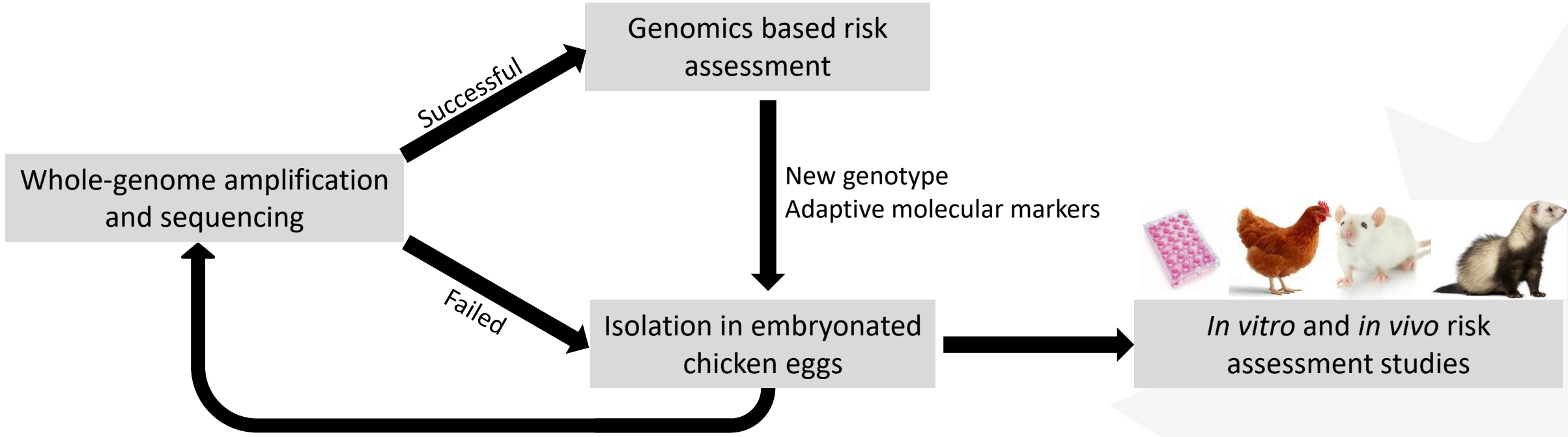
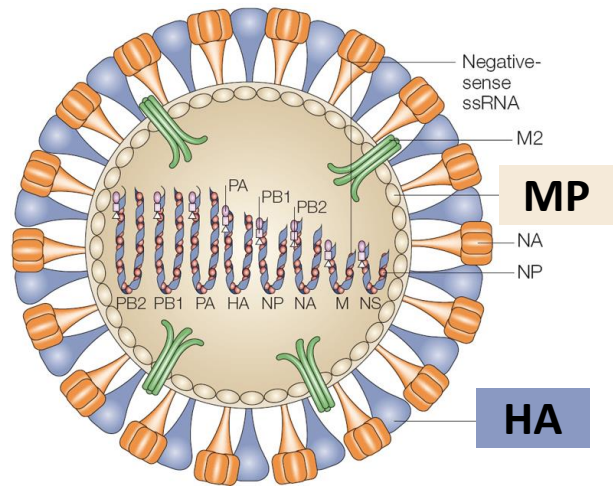
1. Influenza A matrix
2. Influenza A hemagglutinin H5
3. Influenza A hemagglutinin H7



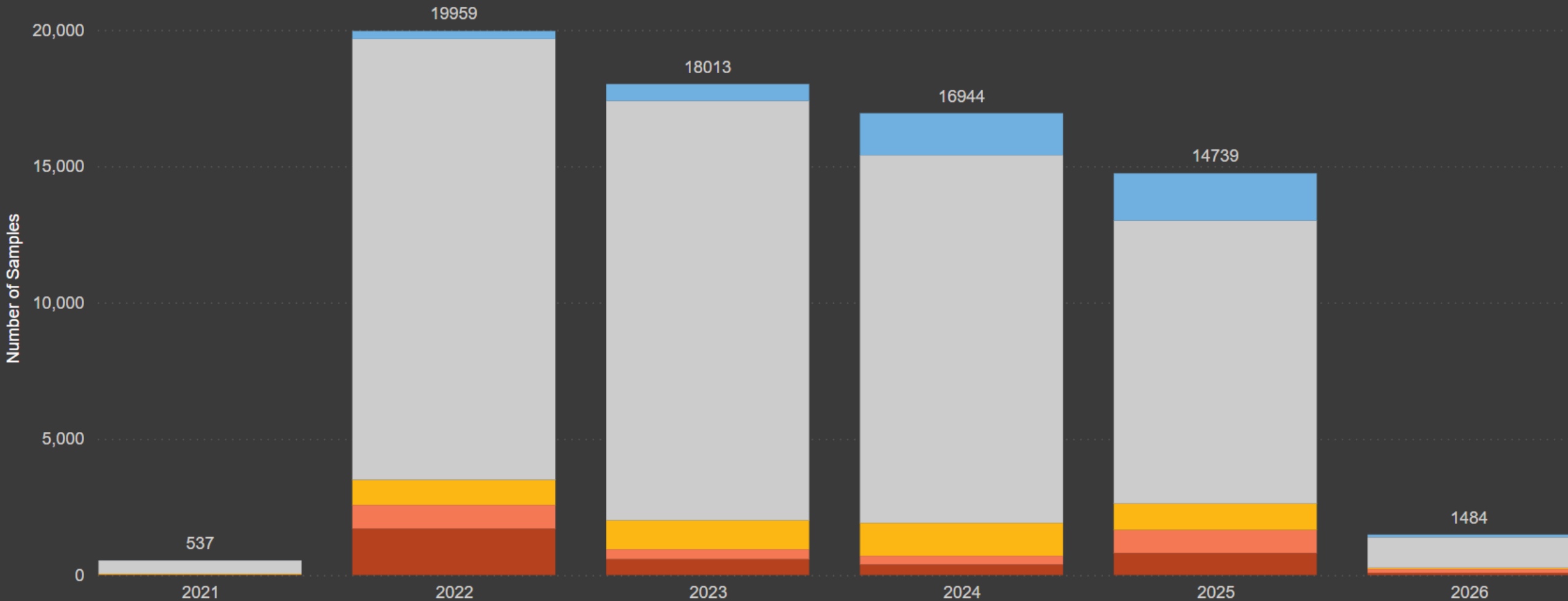
Confirmatory testing – National Centre for Foreign Animal Disease



- RT-PCR:
1. Influenza A matrix
 2. Influenza A hemagglutinin H5
 3. Influenza A hemagglutinin H7
 4. **Influenza A hemagglutinin H5 Clade 2.3.4.4b**

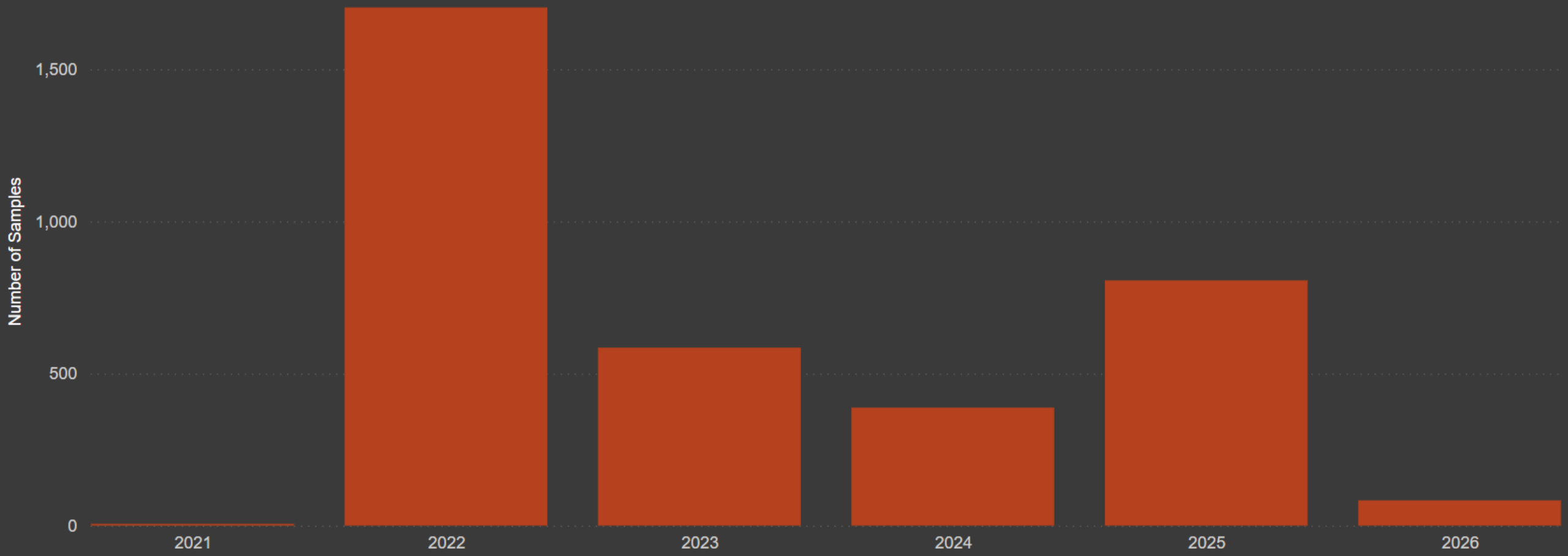


AIV Result ● HPAI Positive - NCFAD ● H5 Positive ● Non-H5 Positive ● AIV Negative ● Result Not Available



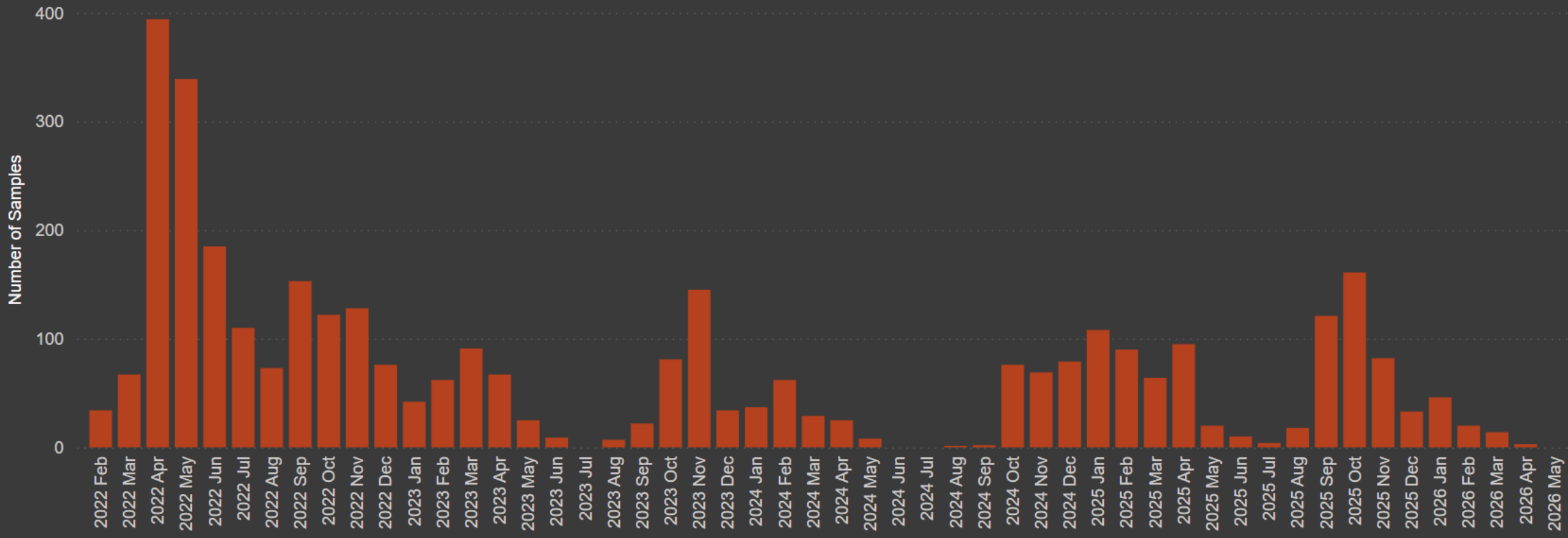
HPAI wildlife surveillance

AIV Result ● HPAI Positive - NCFAD



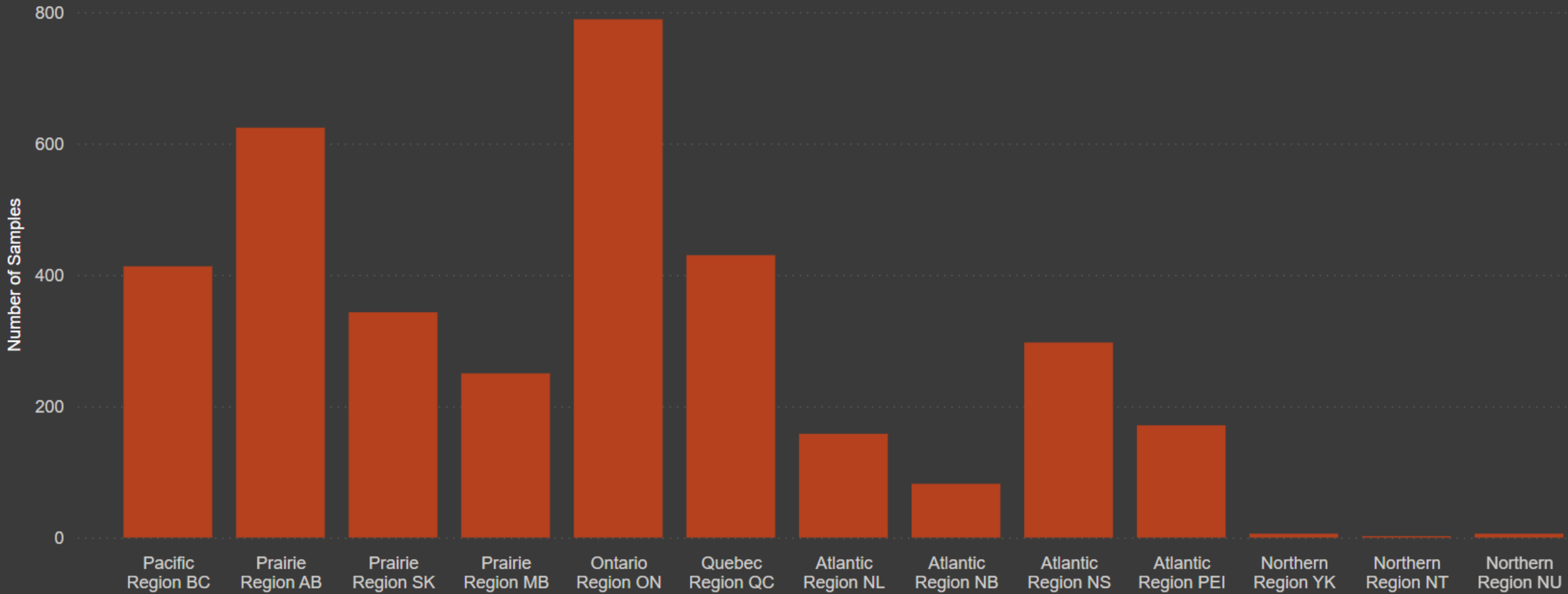
HPAI wildlife surveillance

AIV Result ● HPAI Positive - NCFAD

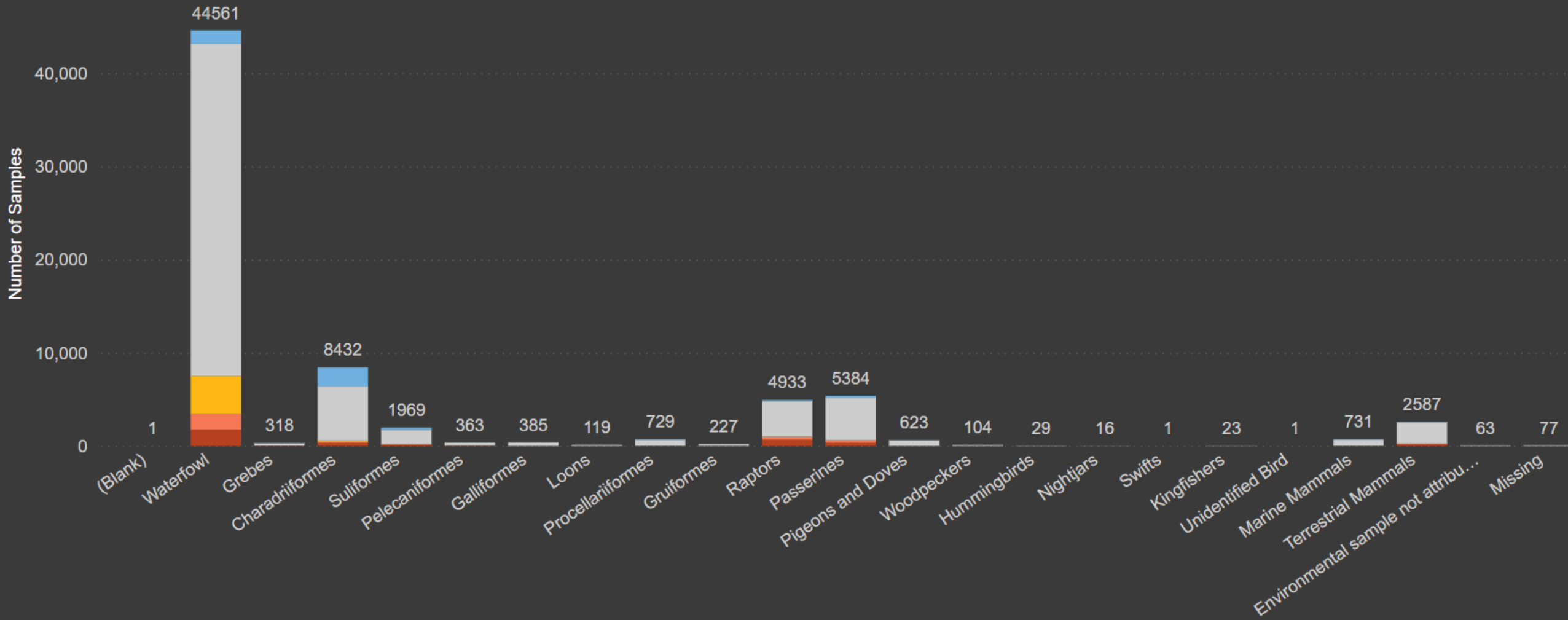


HPAI wildlife surveillance

AIV Result ● HPAI Positive - NCFAD

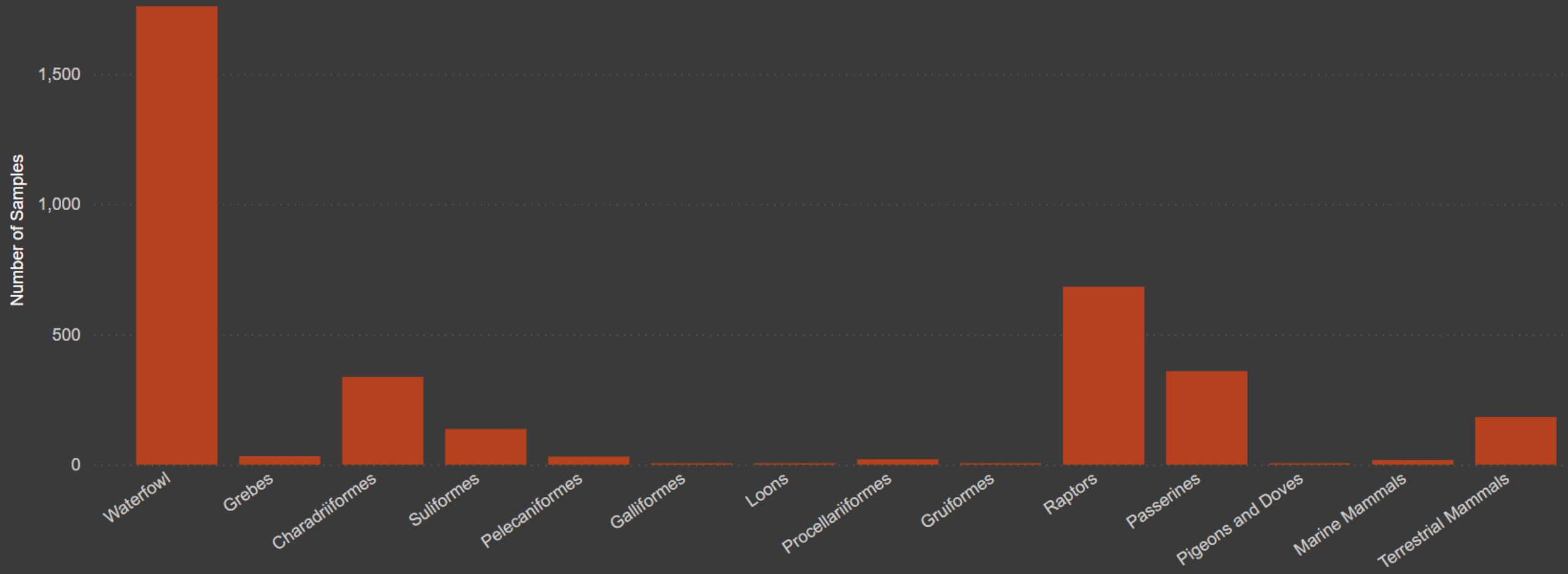


HPAI wildlife surveillance



HPAI wildlife surveillance

AIV Result ● HPAI Positive - NCFAD



HPAI wildlife surveillance

646 Infected Premises

2 in the past 30 days

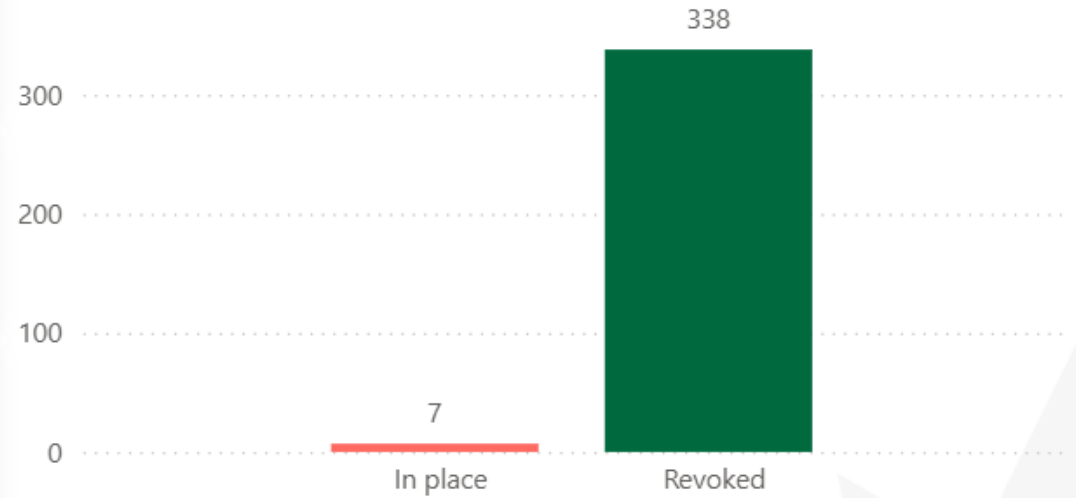
17,461,966 Impacted Birds

926 impacted birds in the past 30 days

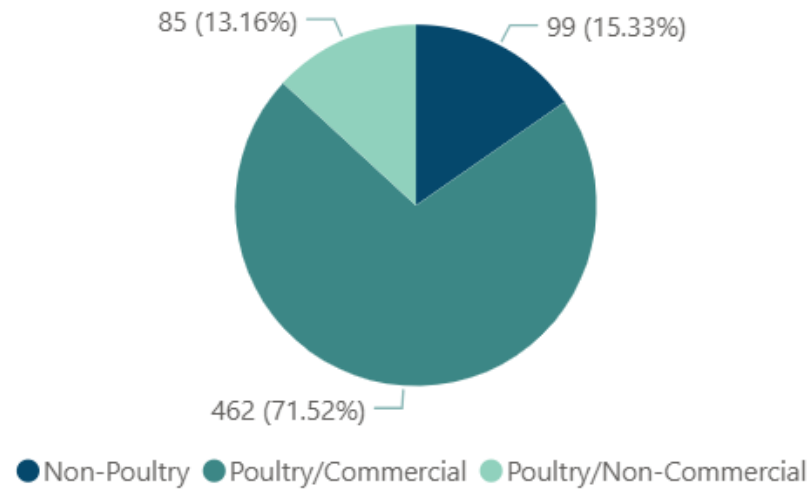
345 Established Control Zones

2 established in the past 30 days

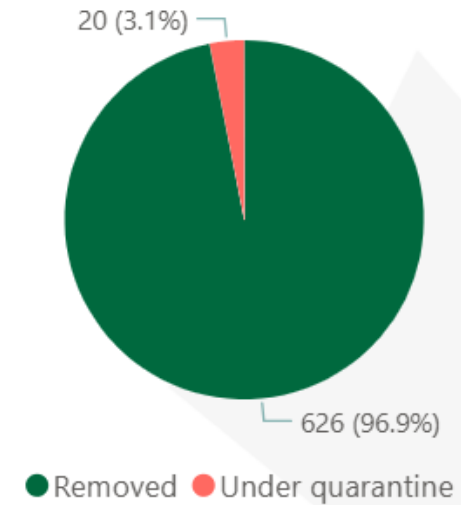
Total Number of Control Zones



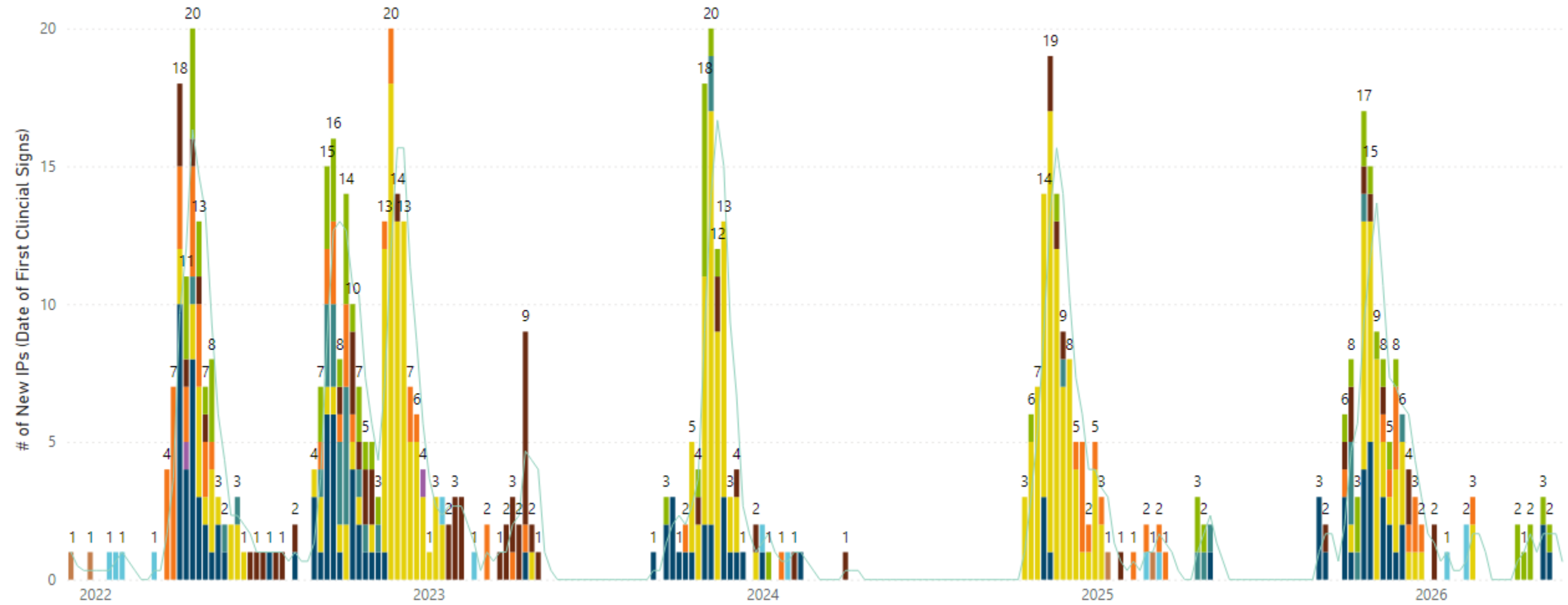
Category of Infected Premises



Restrictions on Infected Premises

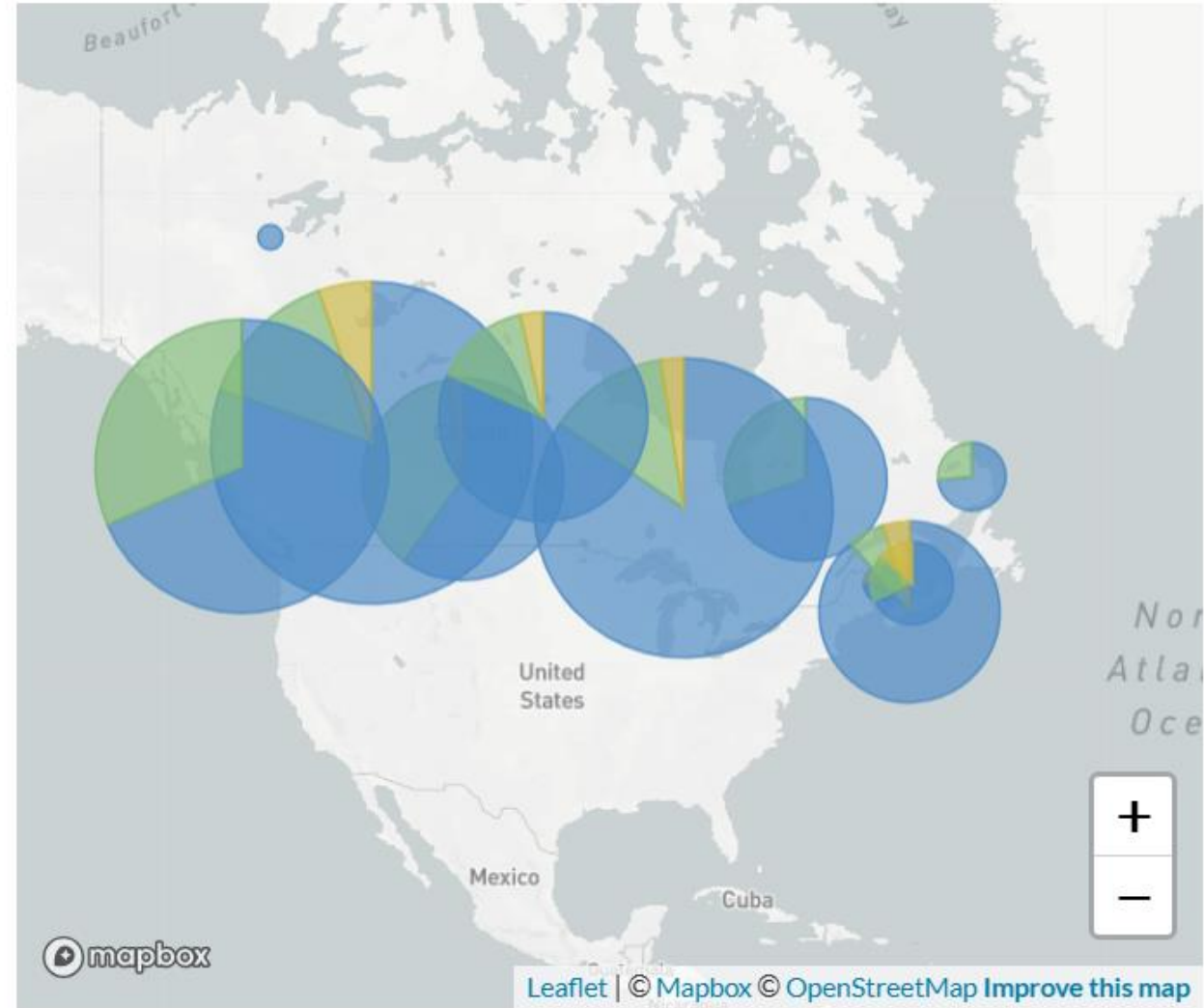
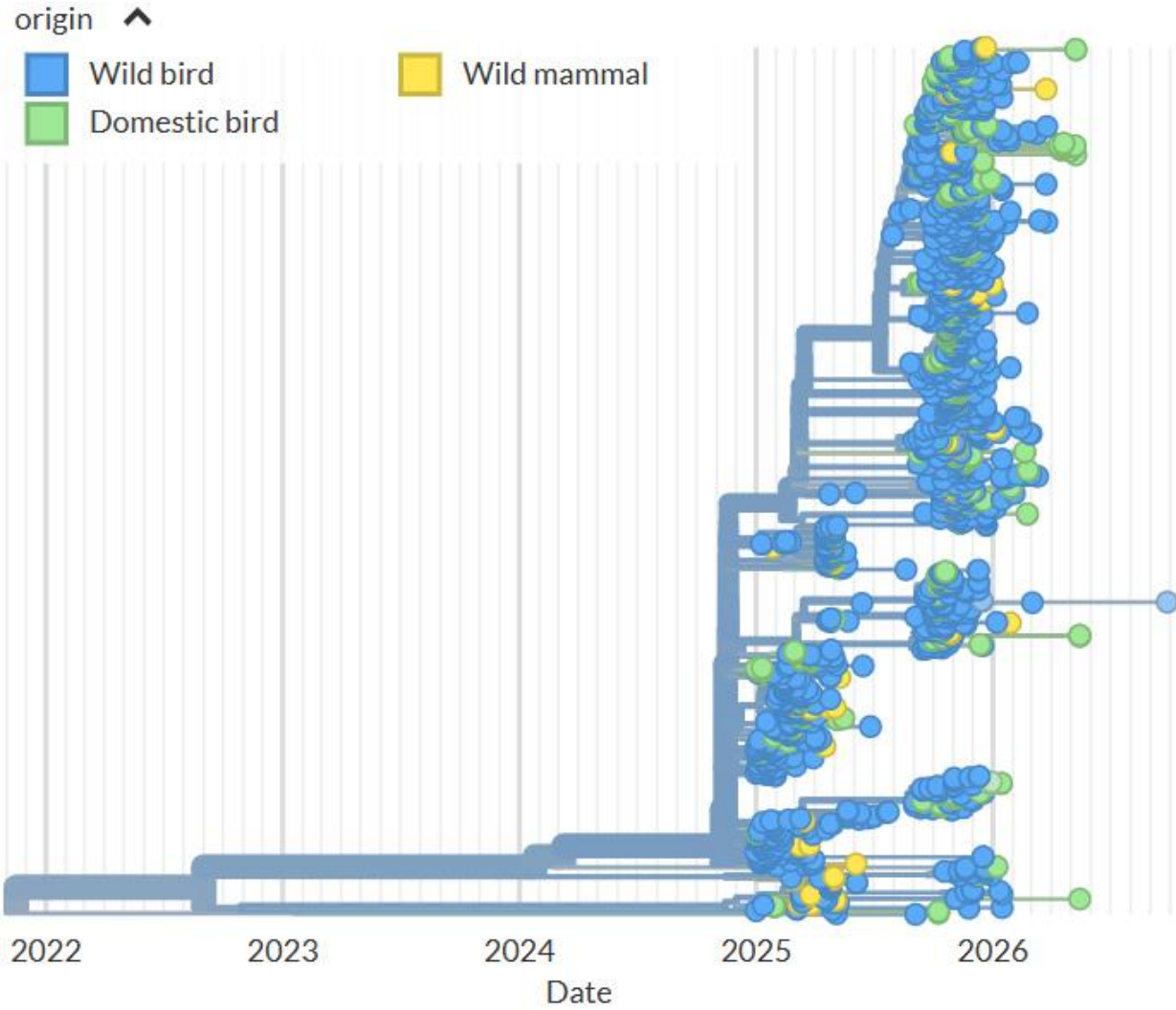


Province ● AB ● BC ● MB ● NB ● NL ● NS ● ON ● PE ● QC ● SK ● 3-week Moving Average



655 infected premises

HPAI in domestic birds



HPAI in domestic birds

Area	Samples tested	HPAI results
Atlantic provinces	622	All negative
Ontario	3,160	All negative
Quebec	3,568	All negative
Western provinces	2,460	All negative

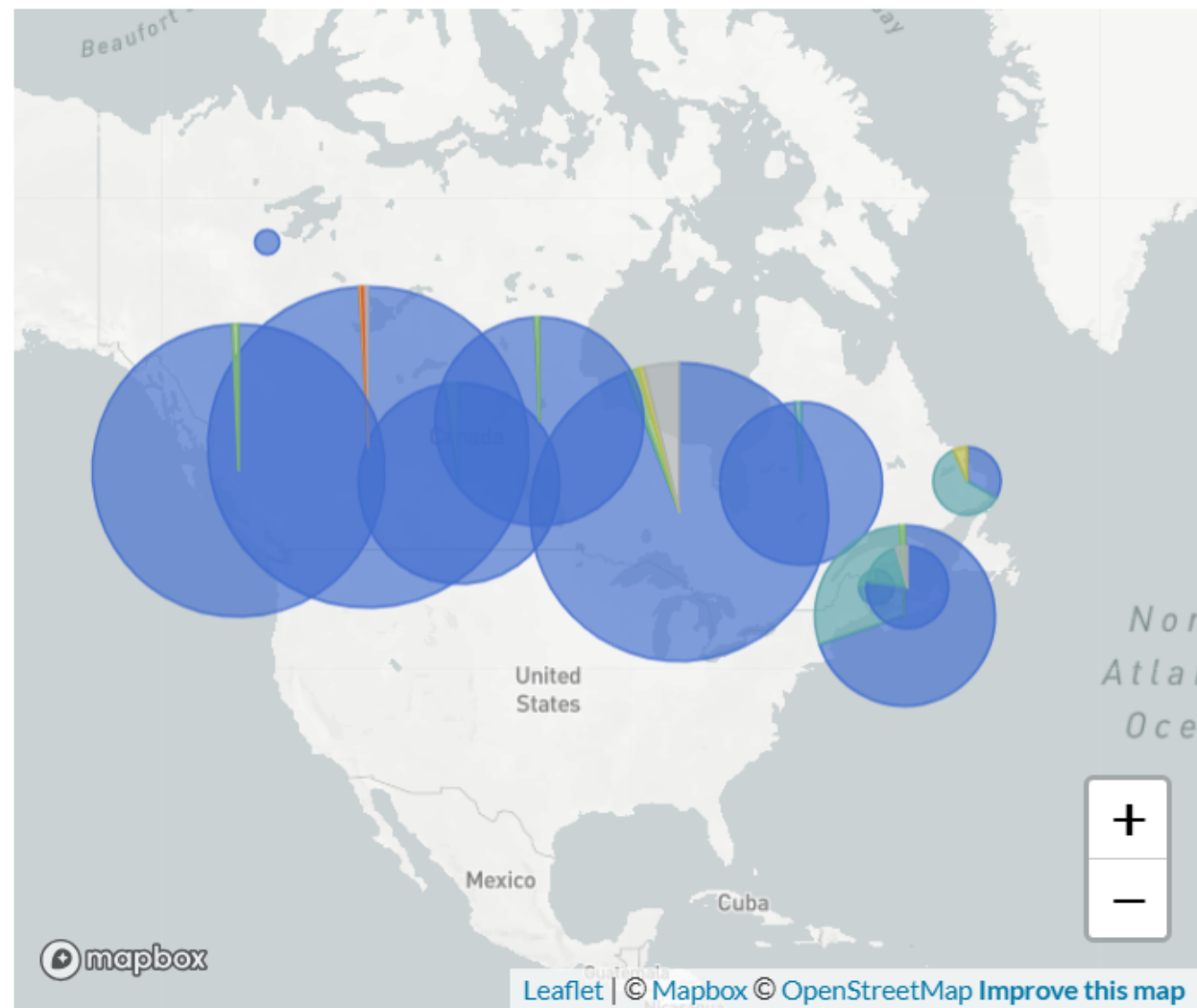
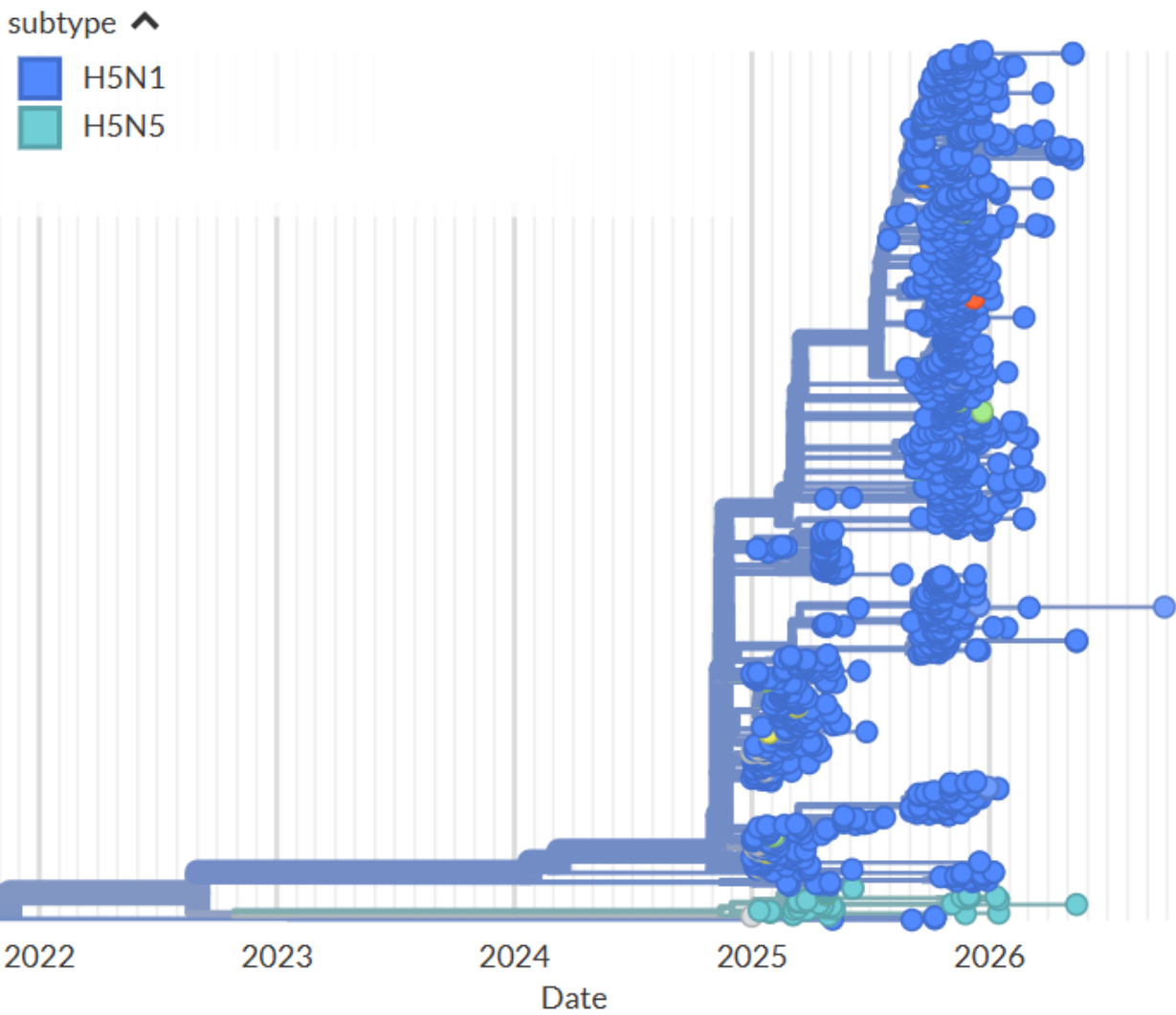
1,211 retail milk samples from across Canada were tested for HPAI – **all negative**

B3.13 H5N1 genotype has **not** been detected in Canada

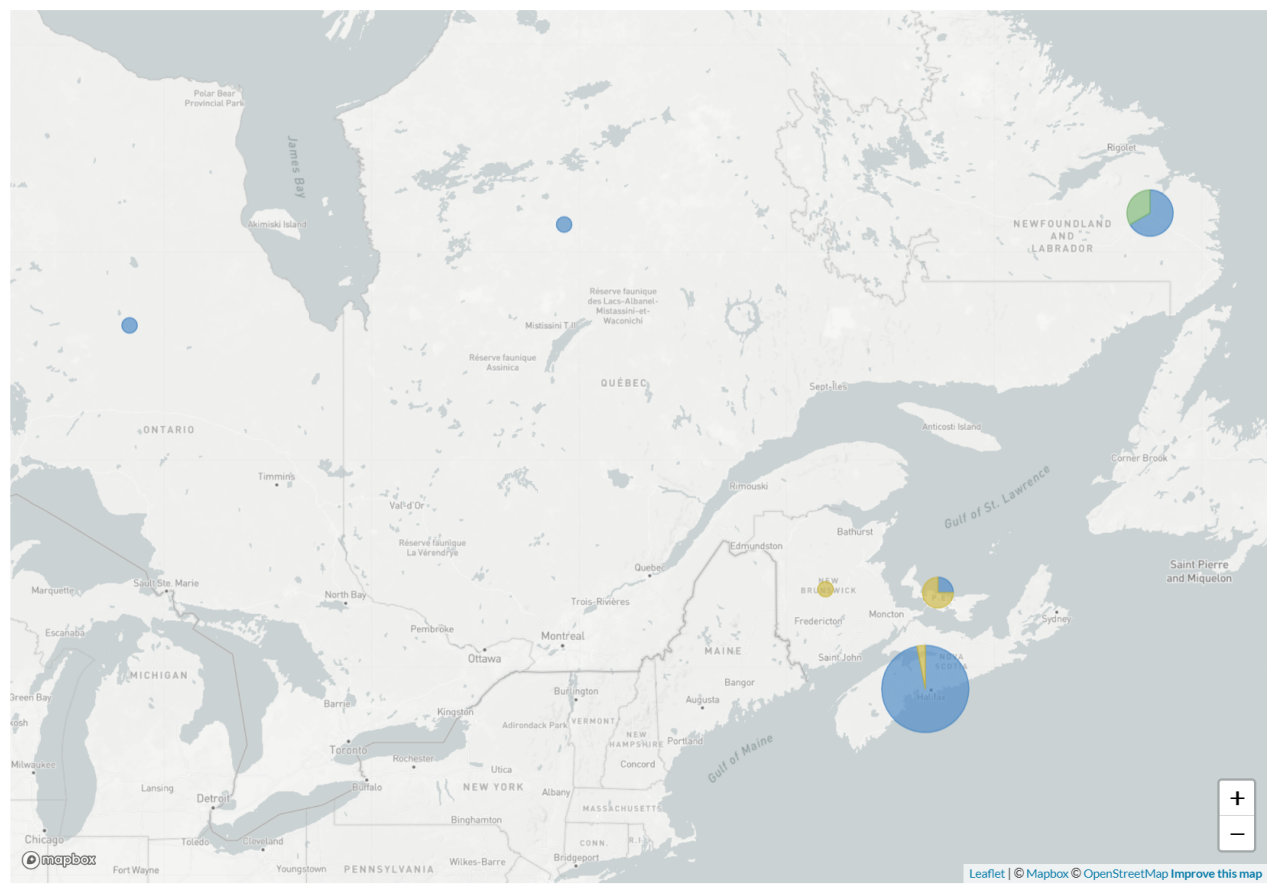
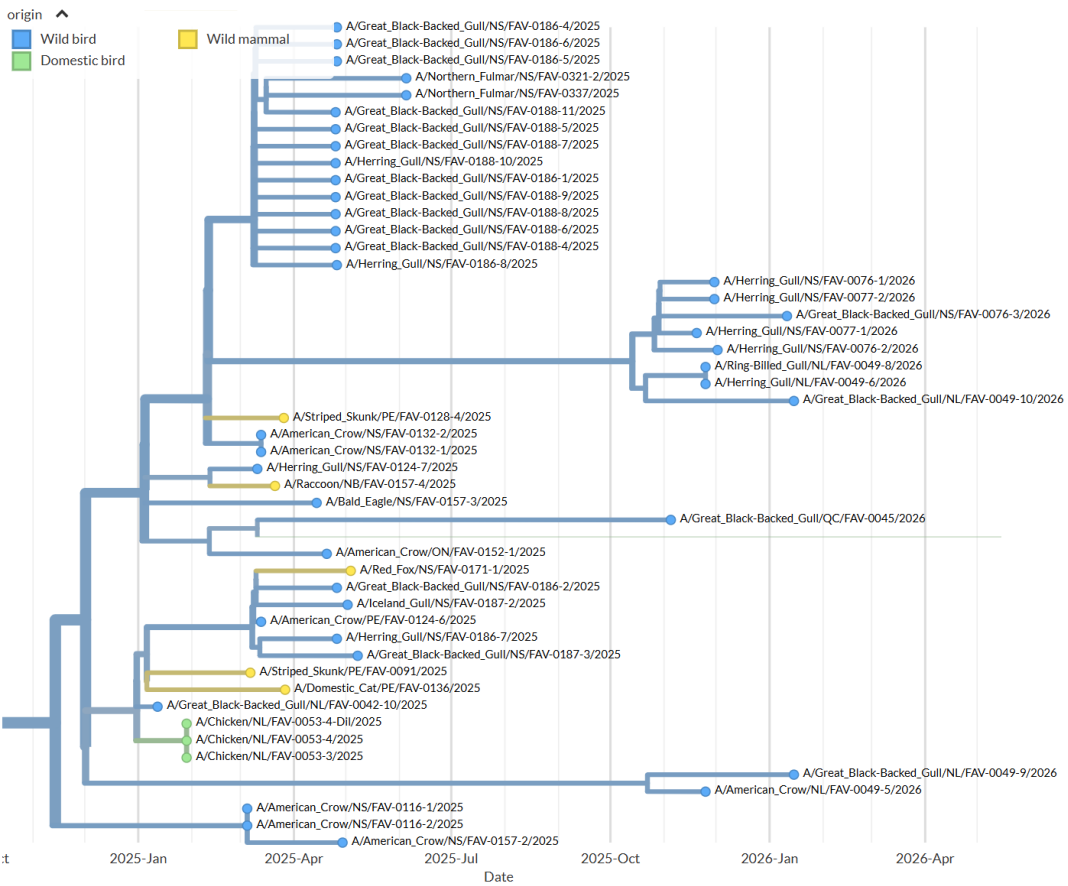




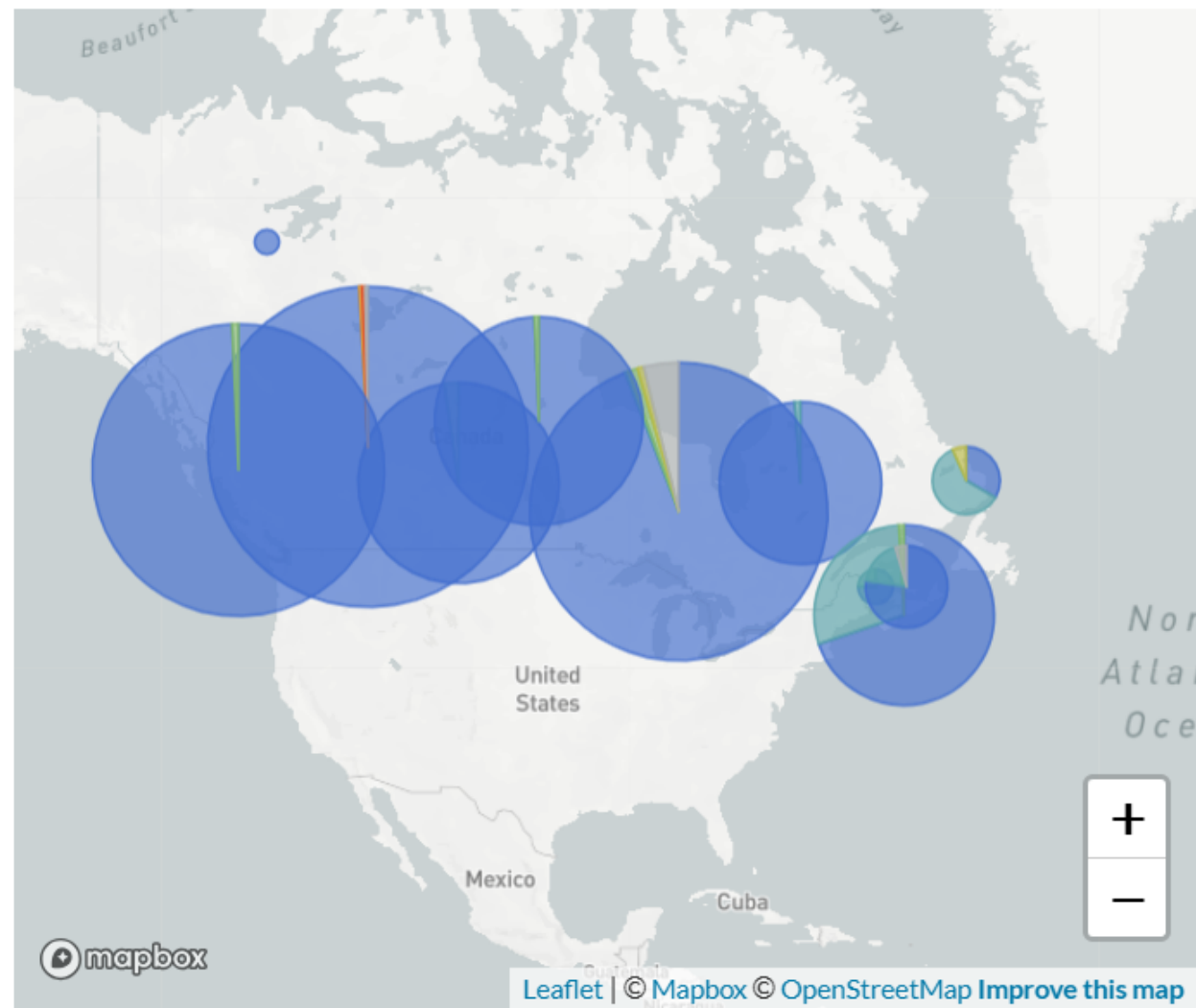
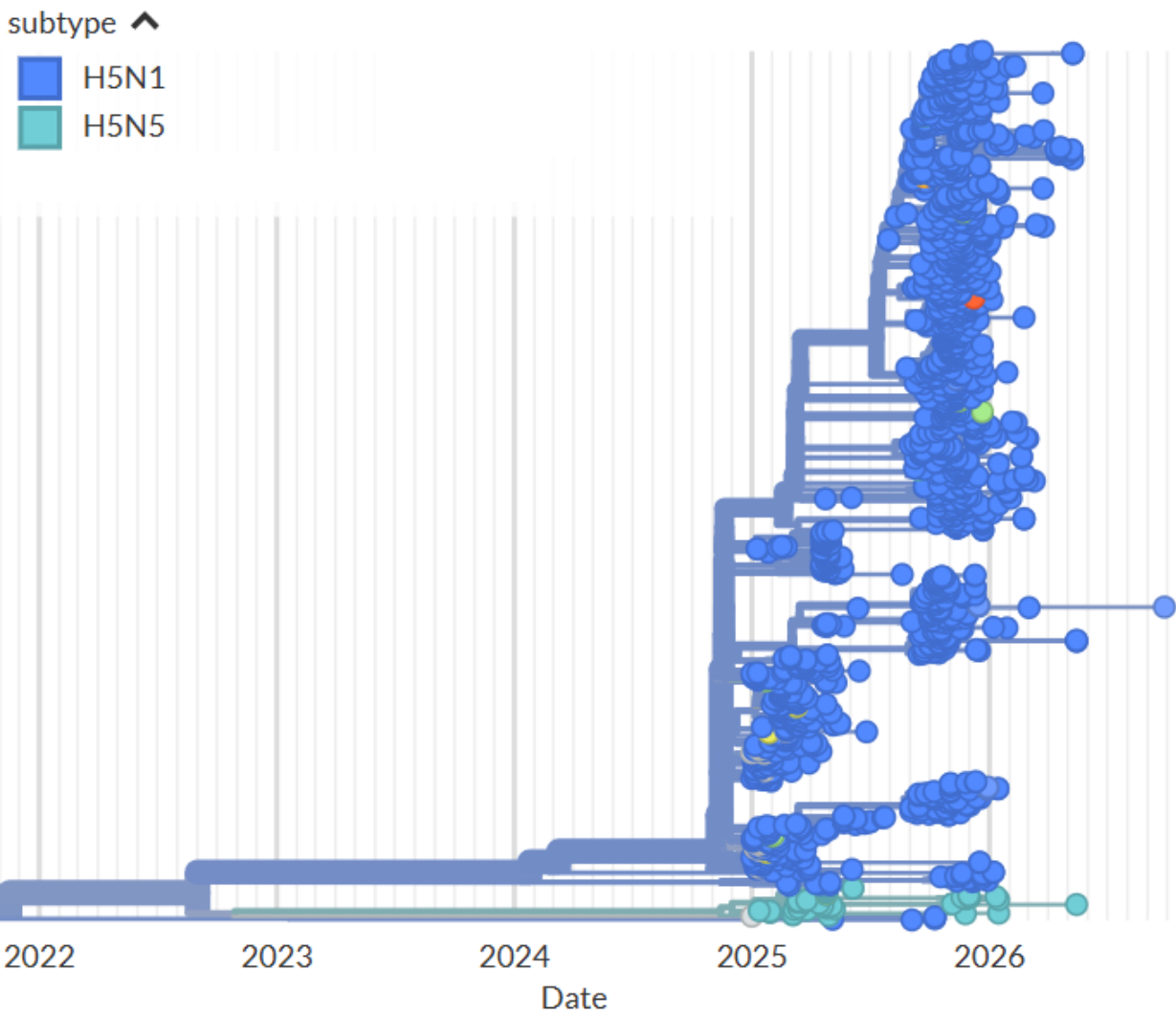
Genomic surveillance



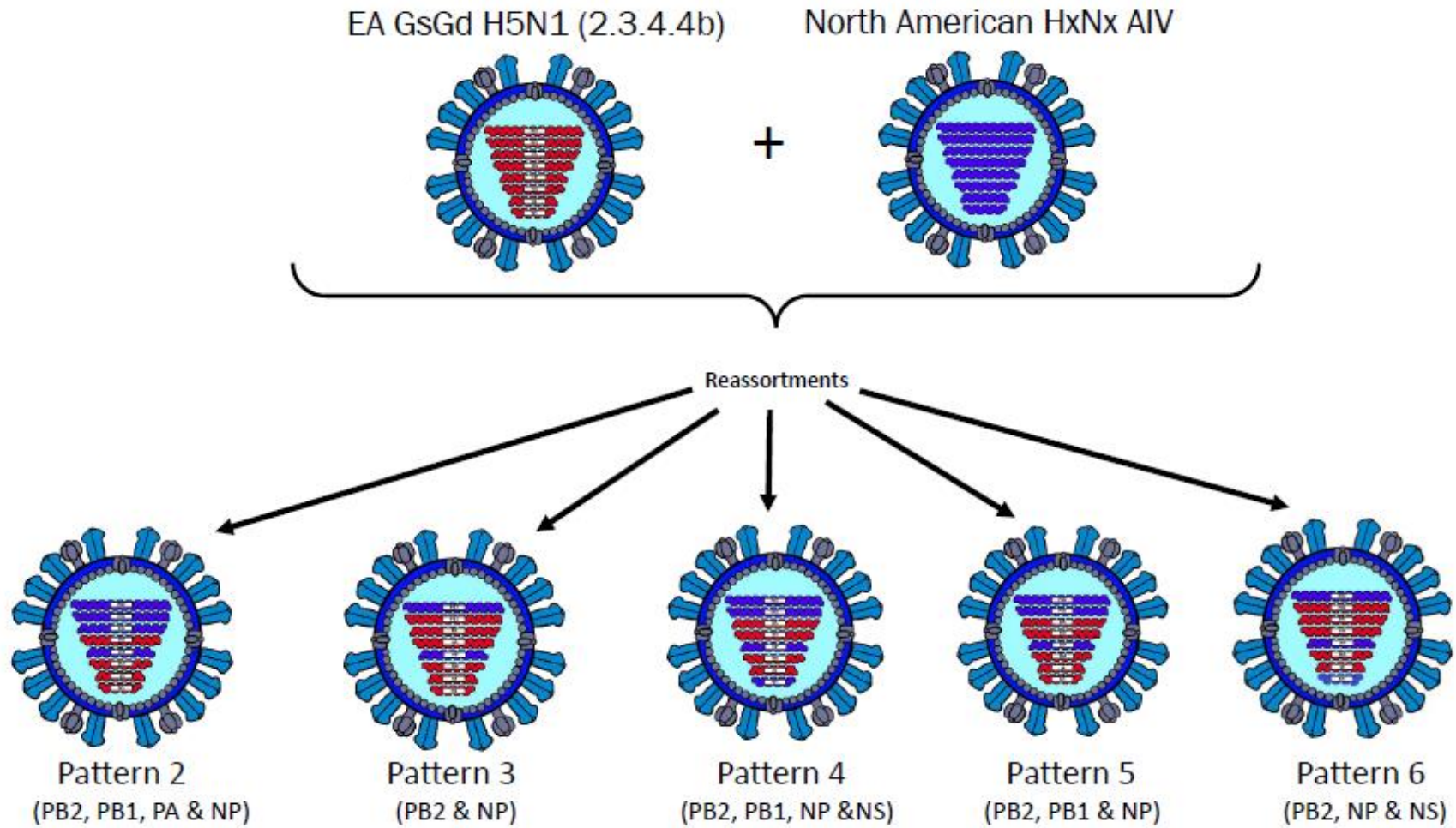
Genomic surveillance

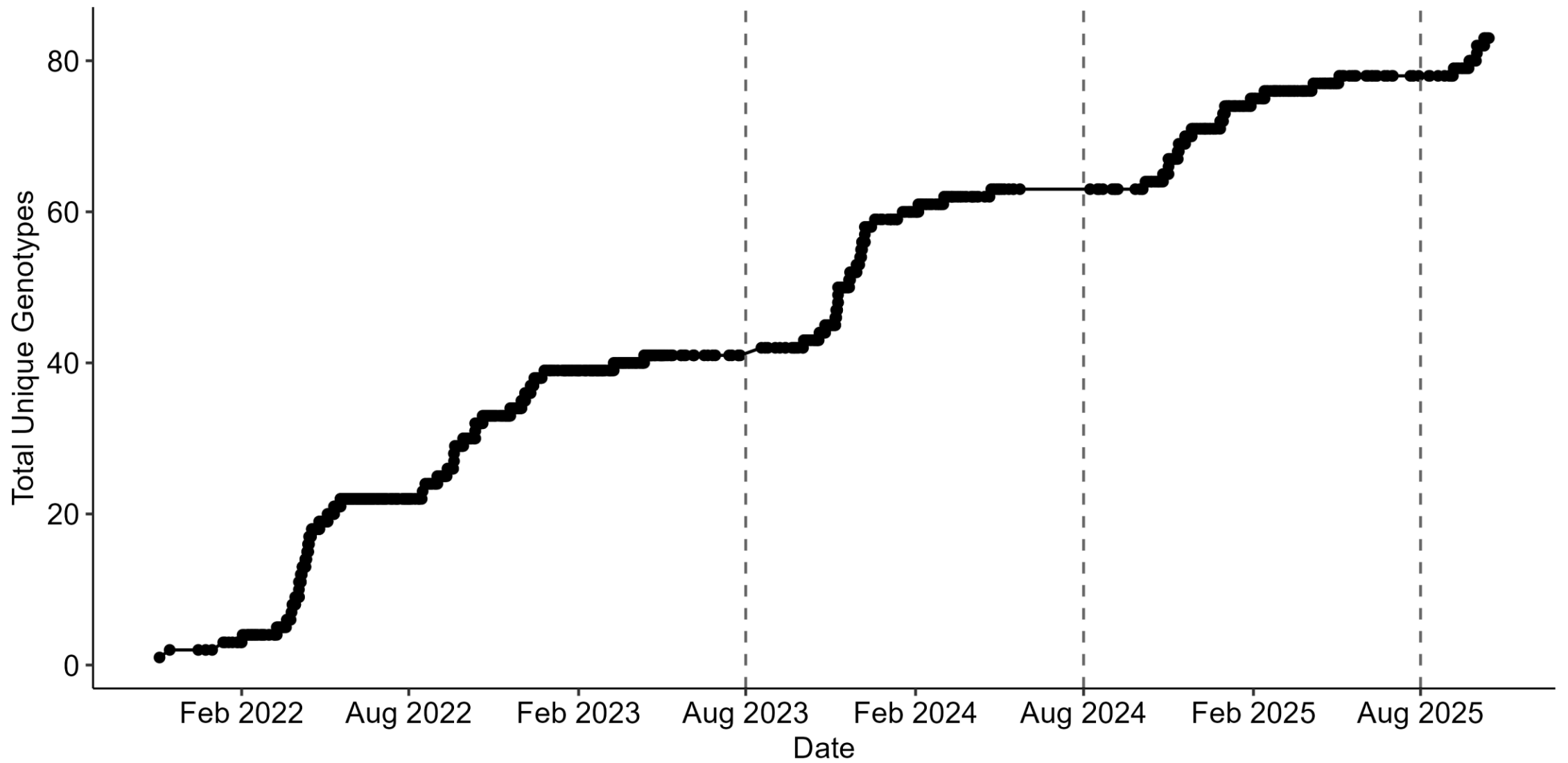


Genomic surveillance

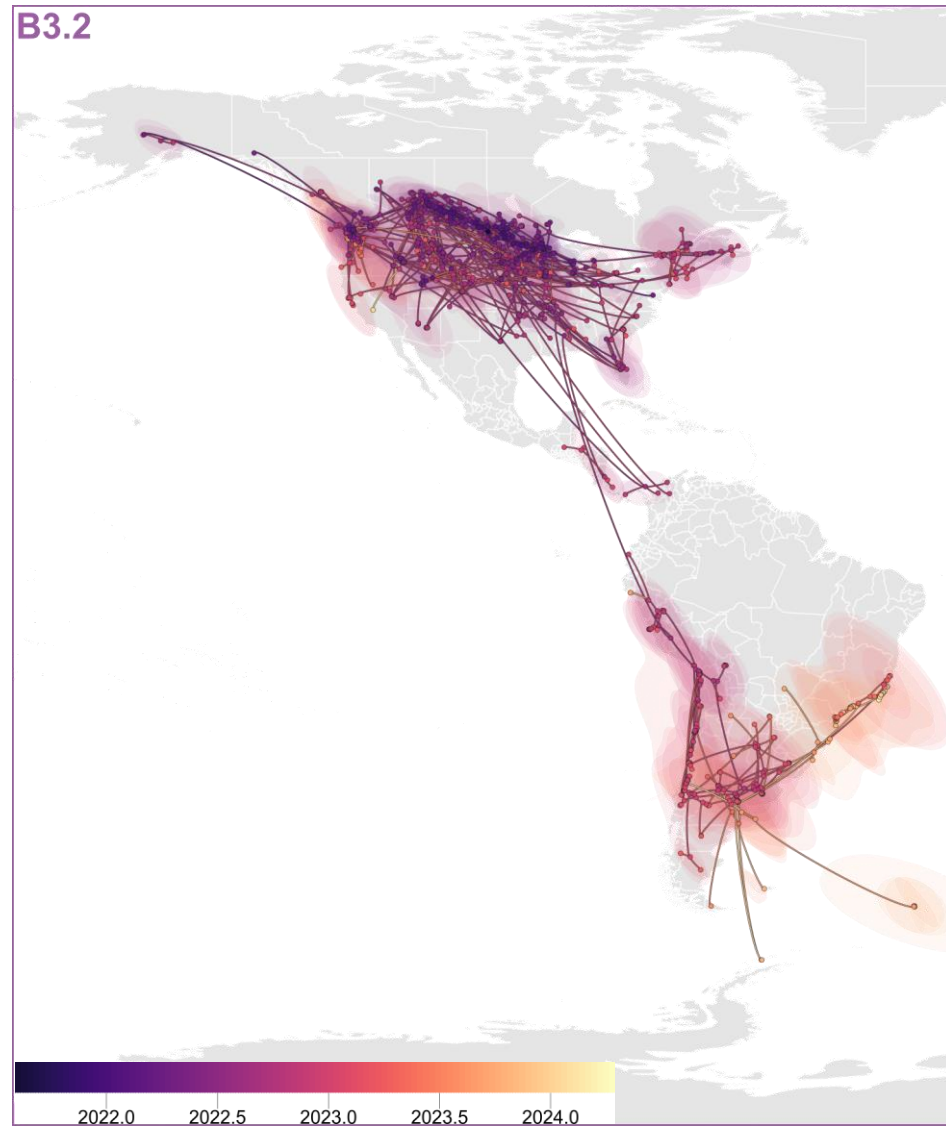
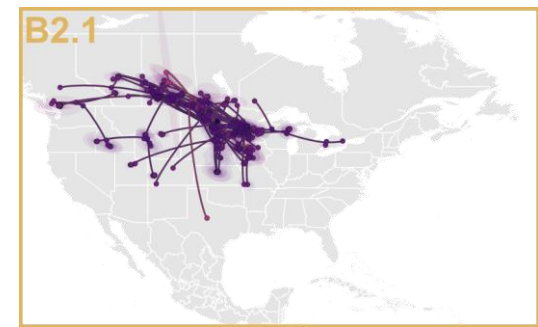
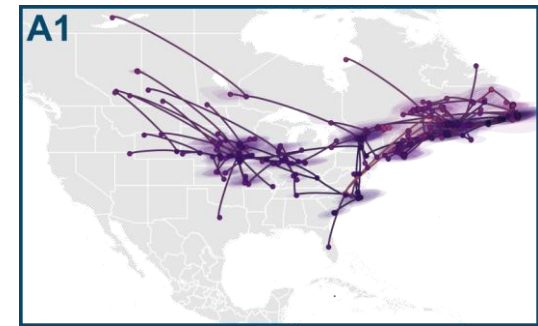


Genomic surveillance

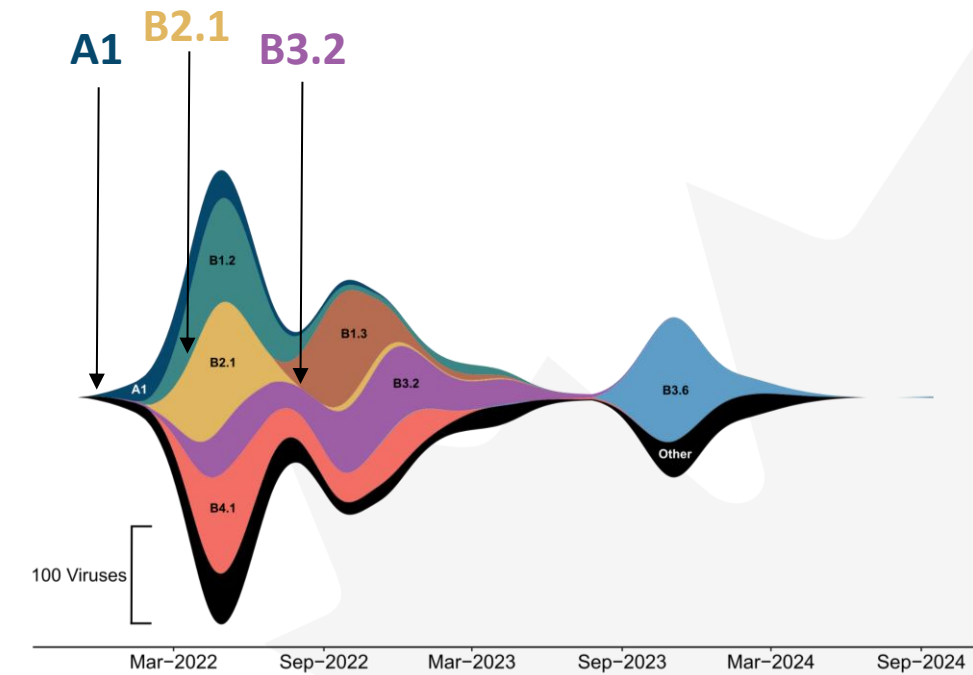




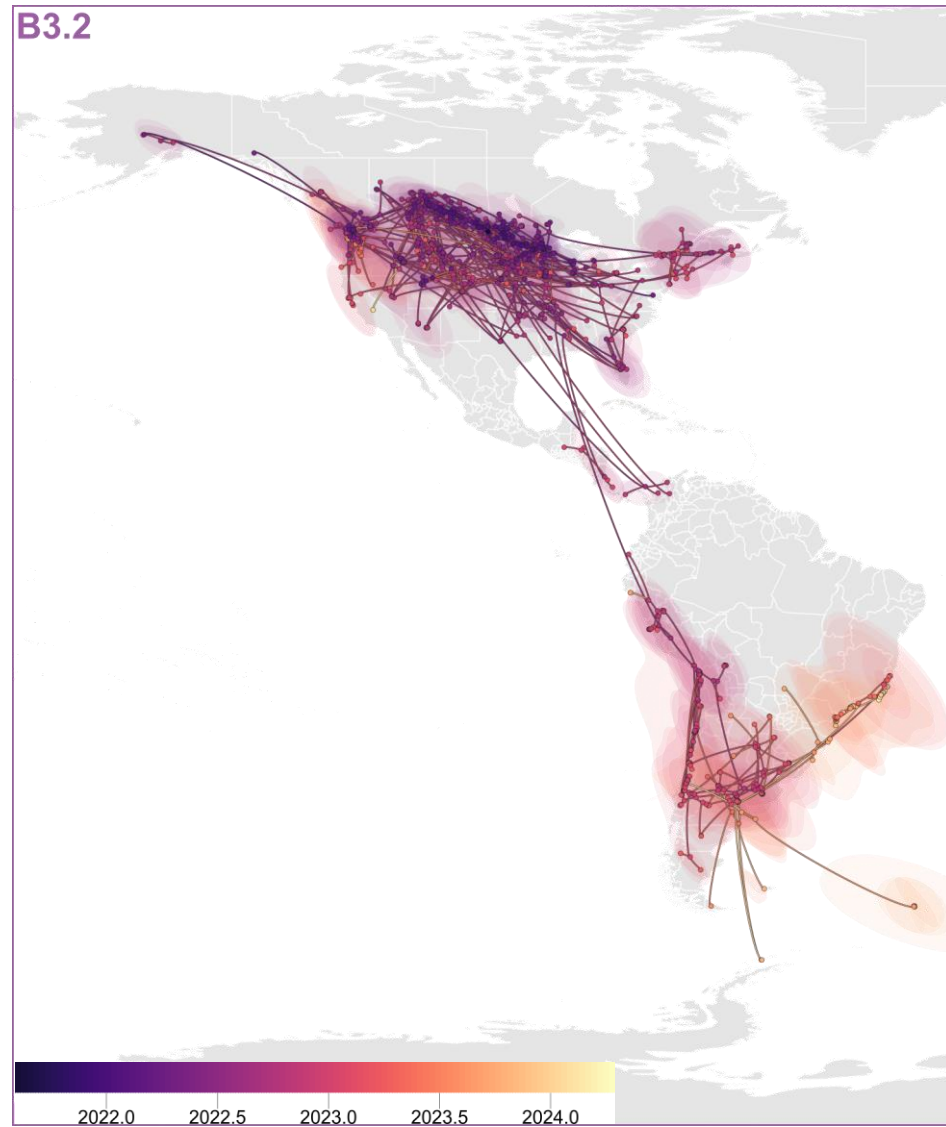
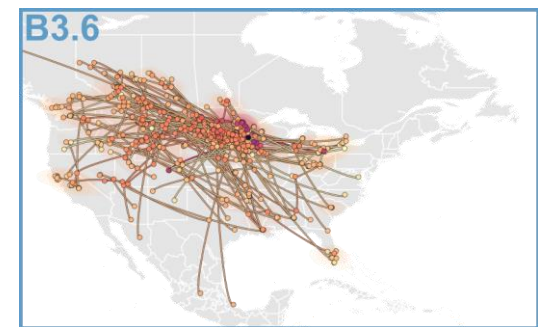
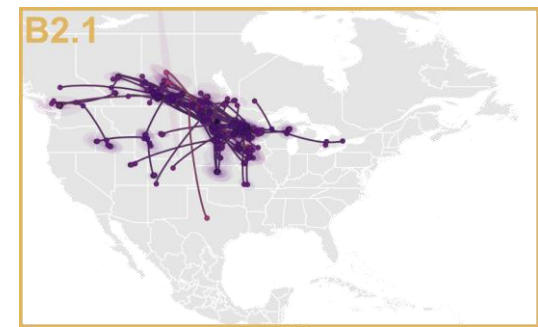
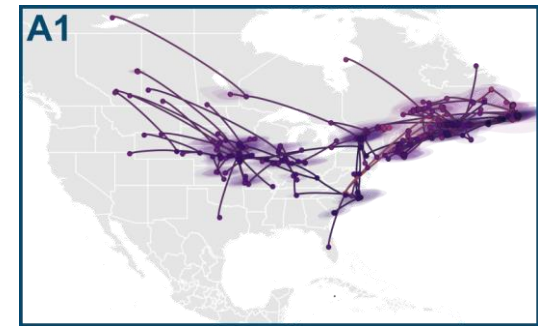
Lineage replacement



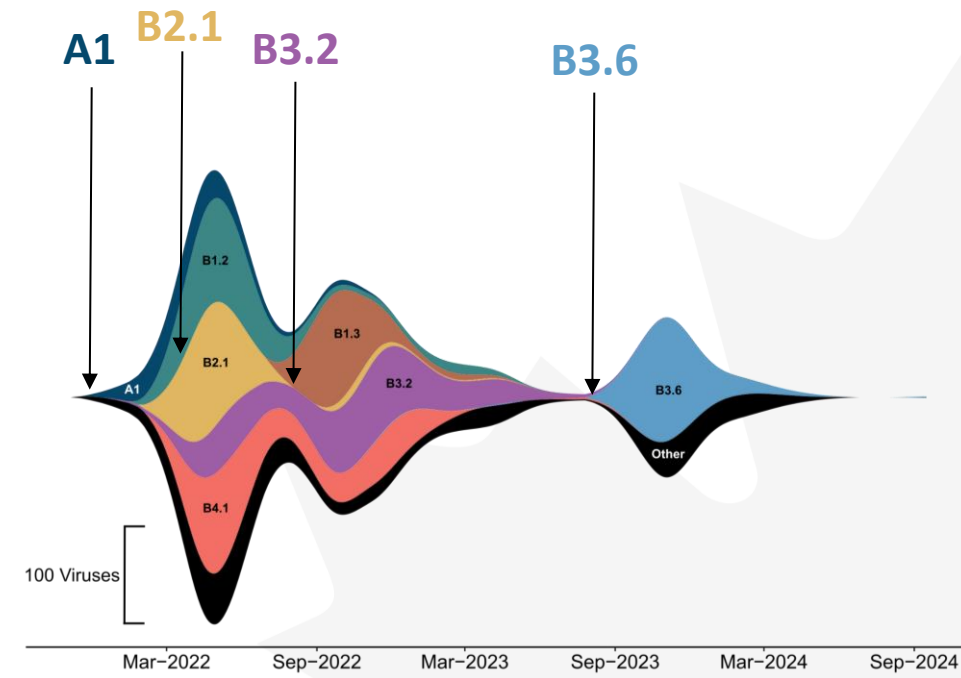
A(H5N1) reassortment with LPAI viruses has resulted in the detection of >100 genotypes in Canada and the USA



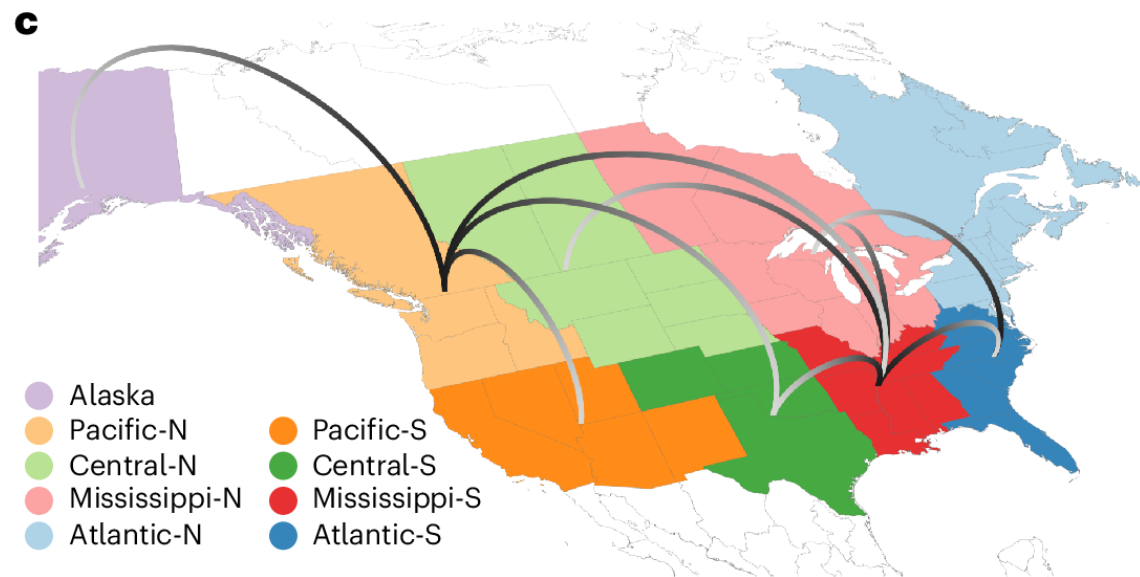
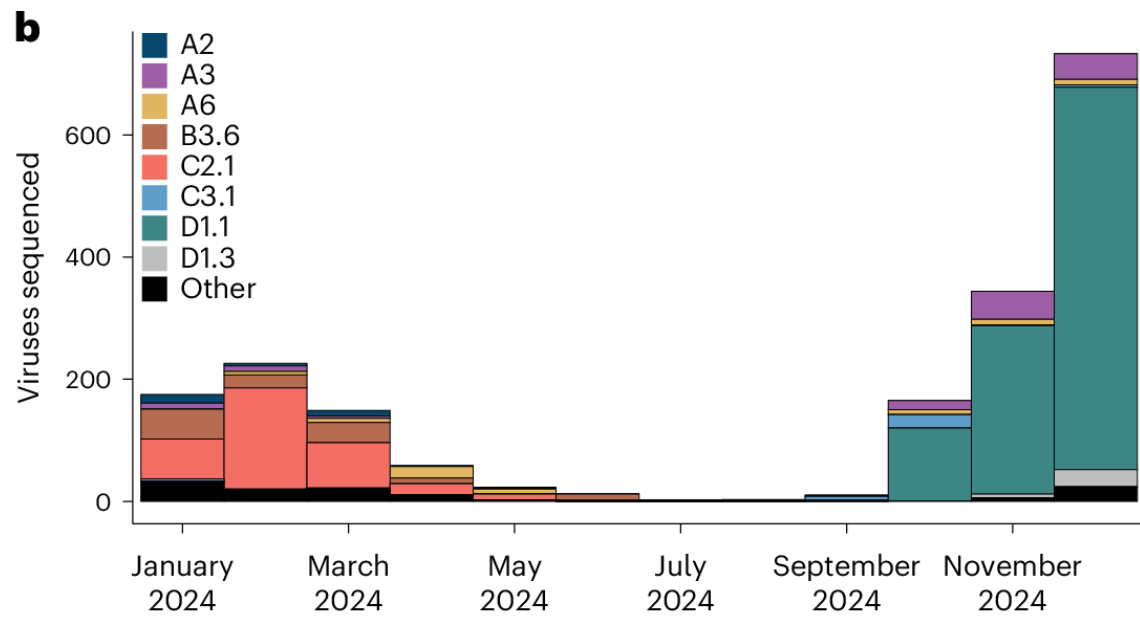
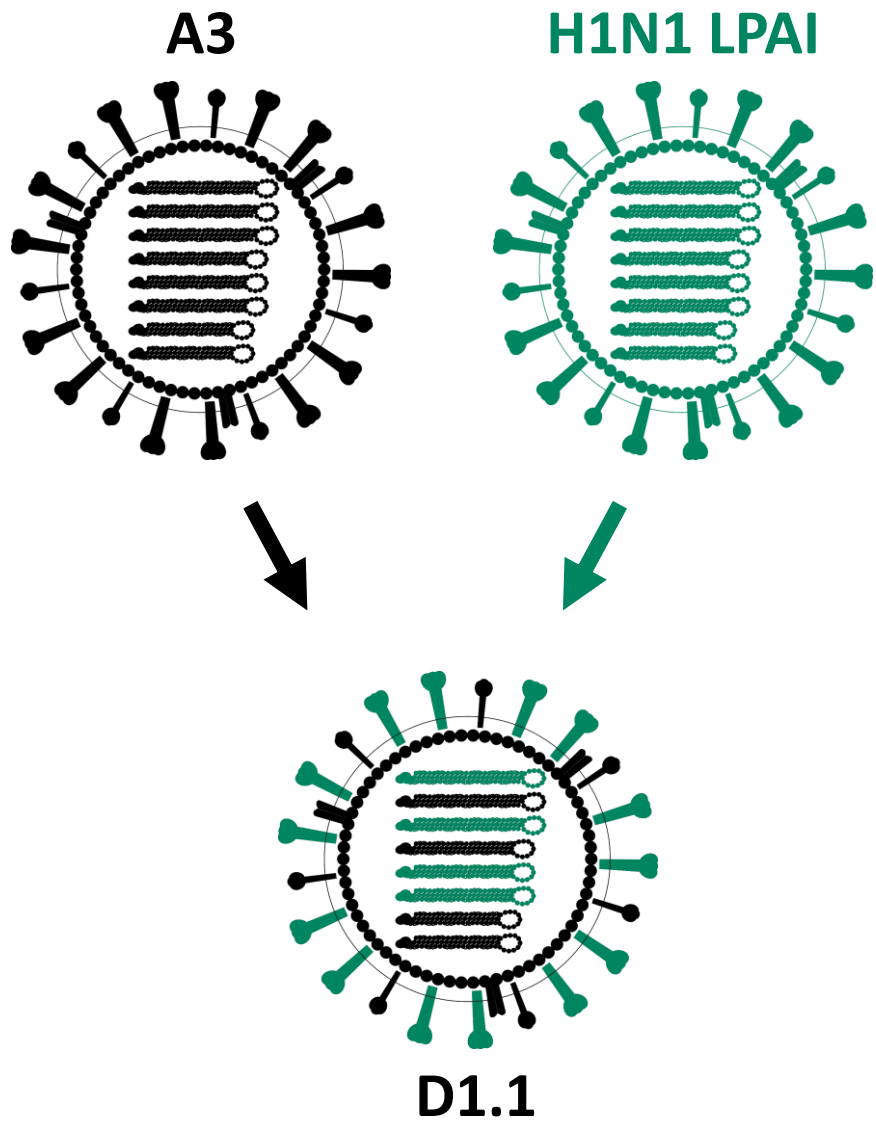
Lineage replacement



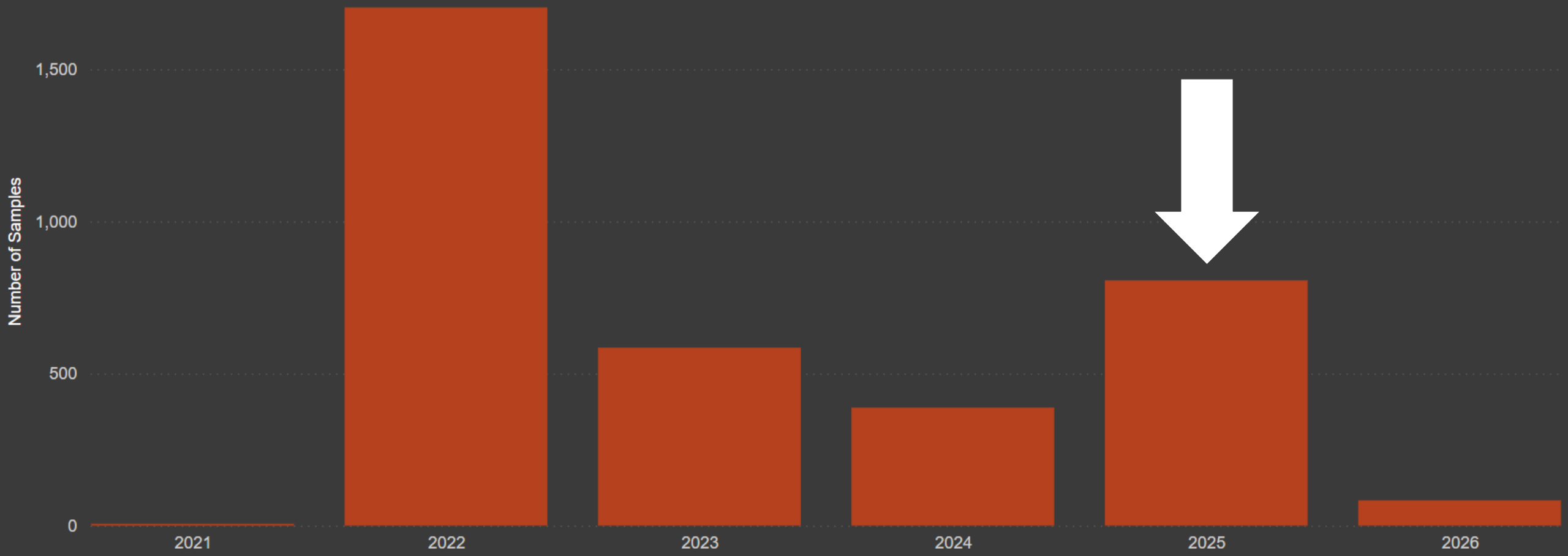
A(H5N1) reassortment with LPAI viruses has resulted in the detection of >100 genotypes in Canada and the USA



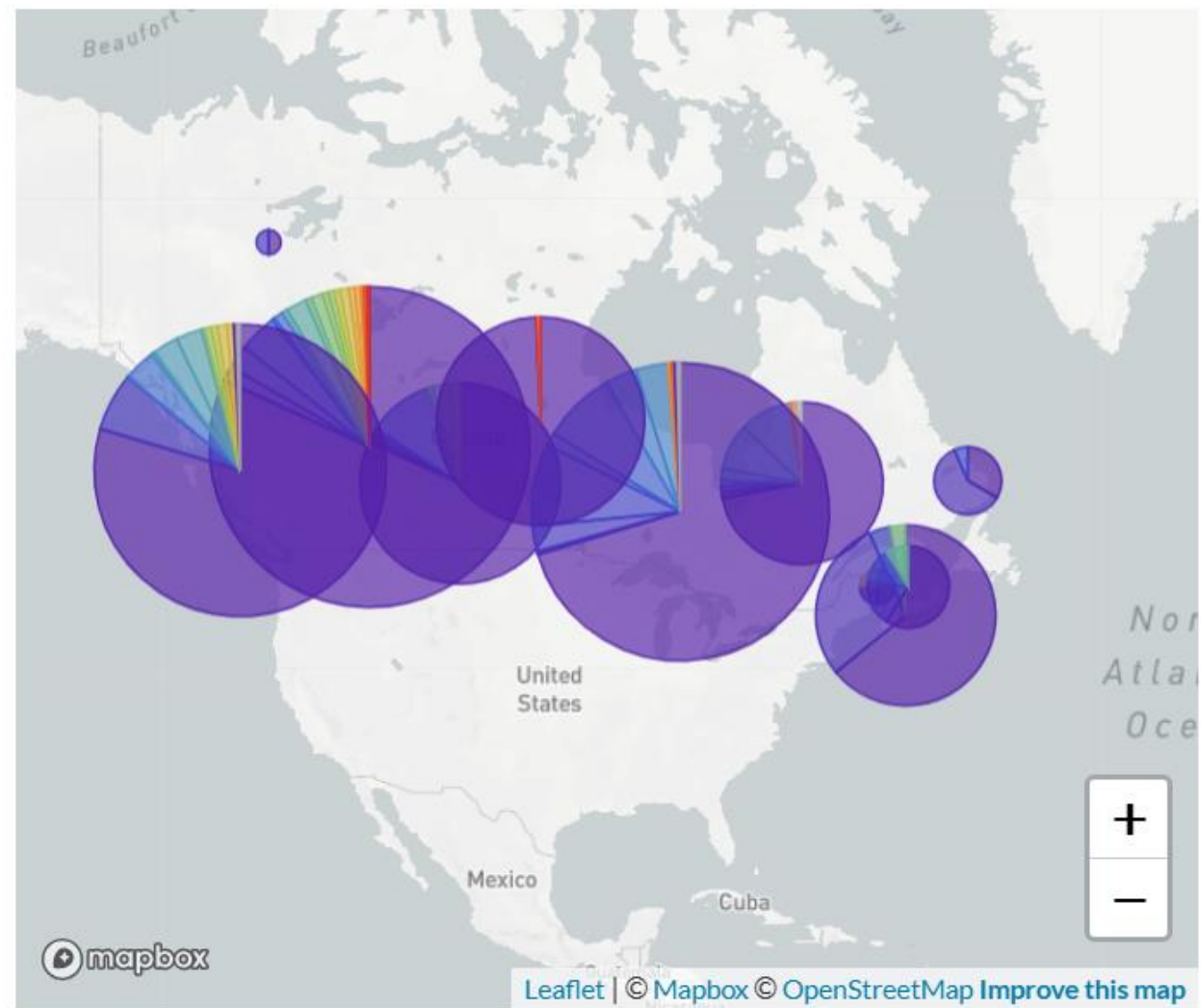
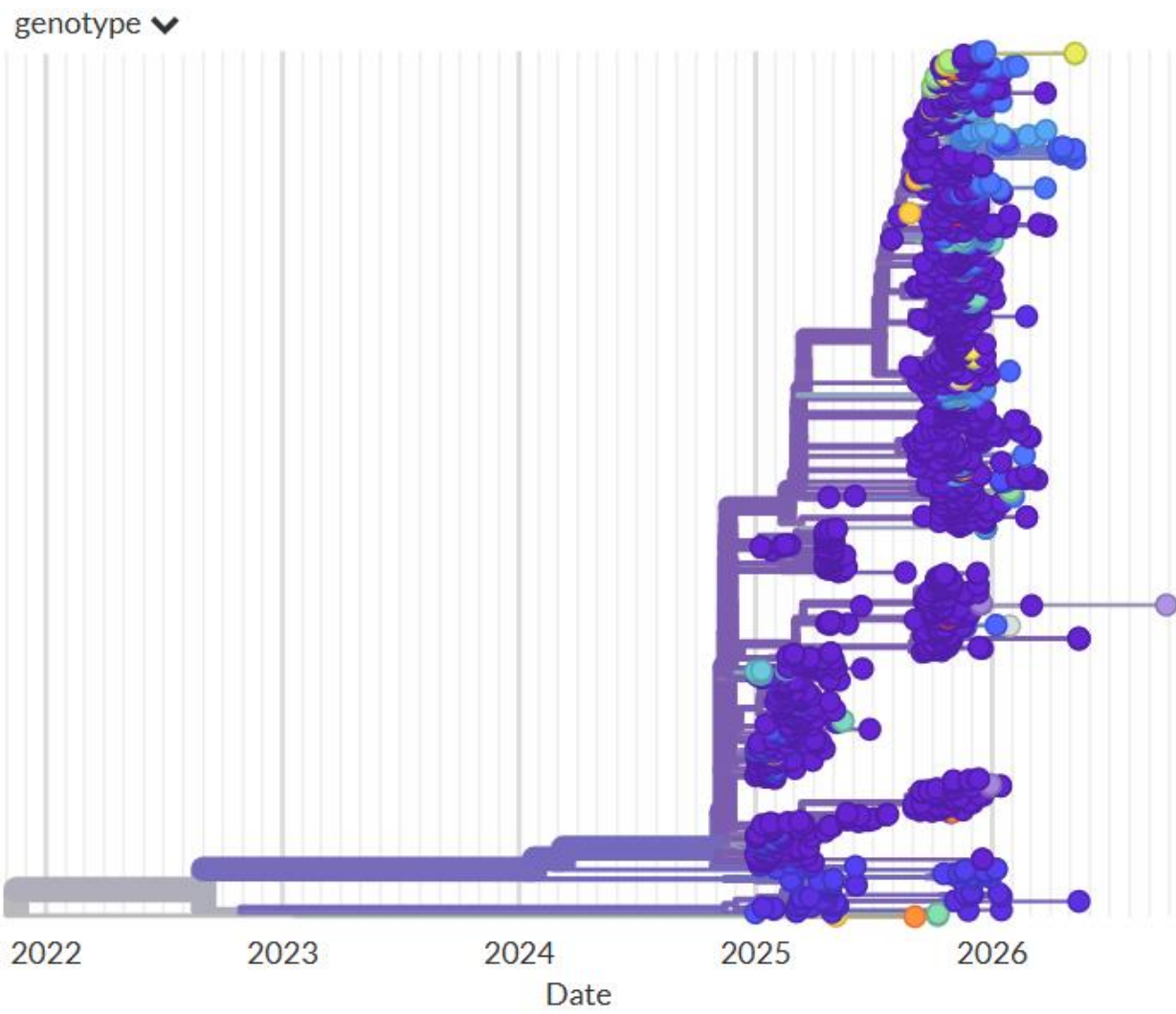
Genomic surveillance



AIV Result ● HPAI Positive - NCFAD



HPAI wildlife surveillance



HPAI wildlife surveillance

NCFAD Avian diseases unit

NCFAD Genomics

Environment and Climate Change Canada
Jolene Giacinti

CFIA National Emergency Operations Centre for HPAI
Manon Racicot
Bianca Morel

ONE HEALTH PARTNERS

Canada's Interagency Surveillance Program for Avian Influenza Viruses in Wildlife

Federal Partners

- Environment & Climate Change Canada
- Canadian Food Inspection Agency
- Public Health Agency of Canada
- Indigenous Services Canada & Polar Knowledge Canada
- Parks Canada
- Department of Fisheries & Oceans

US Partners



Provincial / Territorial / Indigenous Partners



Partners in Academia



Also: Hunters, wildlife rehabilitators, bird banders, naturalists, landowners, and members of the public

Acknowledgements