USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

HPAI in the United States

USDA APHIS VS D&B National Veterinary Services Laboratories, NCAH, Ames, IA
Mia Torchetti - NVSL.DVL.Heads@usda.gov

H5 clade 2.3.4.4b Genotypes

GenoFLU is a tool designed to classify HPAI H5 goose/Guangdong clade 2.3.4.4b viruses in North America

- Considers all 8 gene segments
- Uses a blast match and reference database to classify sequences
- GitHub - USDA-VS/GenoFLU: Influenza data pipeline to automate genotyping assignment

Classifies viruses reassorted with North American IAV

- Rare reassortments are consecutively numbered with a minor classification
- Reassortments that are more successful are named

Over 150 genotypes have been classified to date

- Genotypes are added as new introductions and reassortments are detected

H5 clade 2.3.4.4b GenoFlu Nomenclature

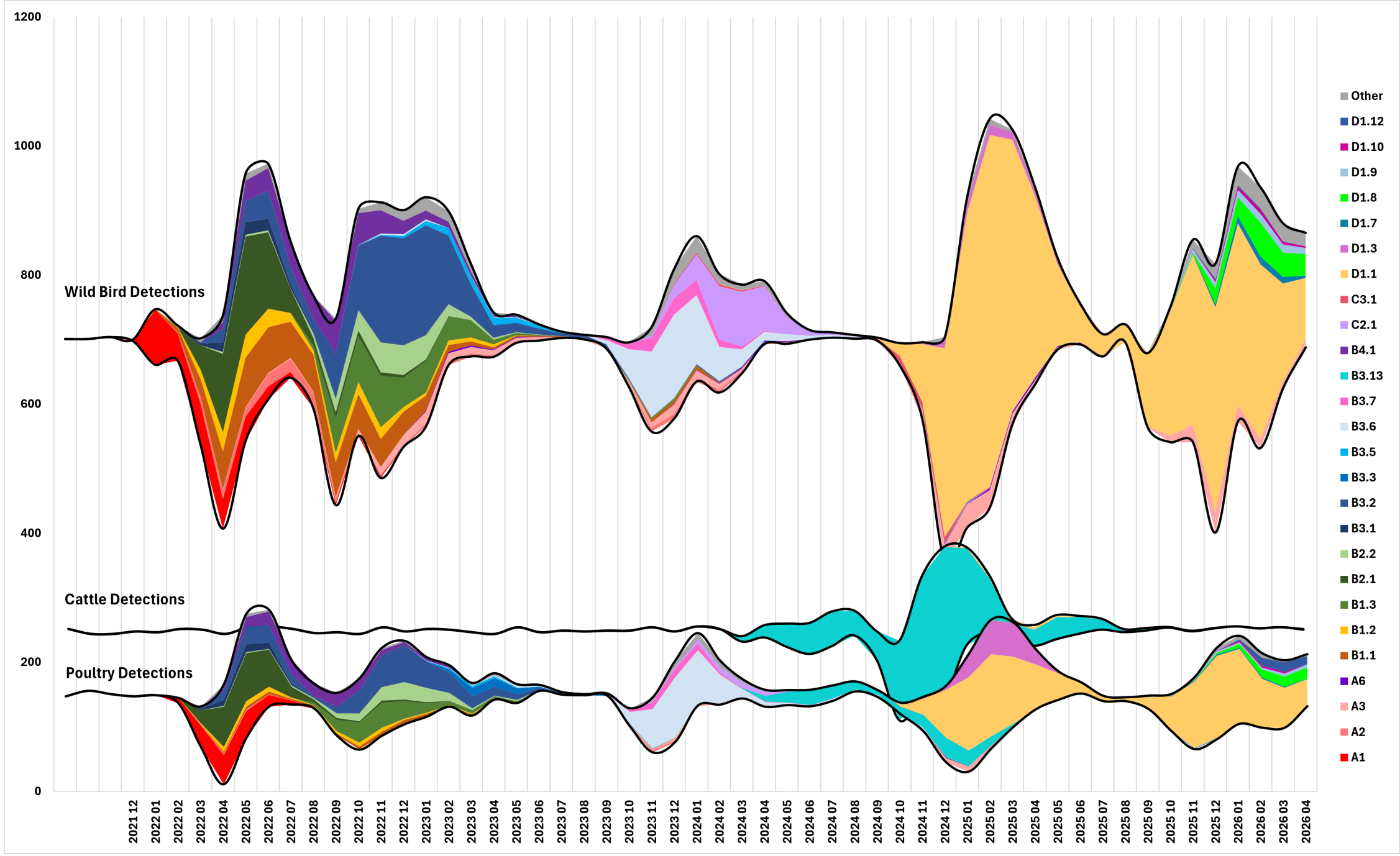
"A" genotypes are unreassorted fully Eurasian virus introductions	• Six introductions to date: A1 through A6 • A1, A2, and A3 have been most successful
"B" genotypes are reassortants of the A1 virus	• Further subdivided with consecutive numbering and divisions representing unique reassortment events
"C" genotypes are reassortants of the A2 virus	• First detected in October 2023 in the Mississippi flyway
"D" genotypes are reassortants of the A3 virus	• First detected in September 2024 in the Pacific flyway; D1.1 predominated with new reassortants emerging fall 2025

HPAI H5 clade 2.3.4.4b in the U.S. by GenoFlu Genotype

Dec 2021-Apr 2026

A1, A2, and A3 are consistent with EU genotype EA-2020-C

[GitHub - USDA-VS/GenoFLU: Influenza data pipeline to automate genotyping assignment]



High resolution analysis for clade 2.3.4.4b HPAI

- Hemagglutinin (HA) – cleavage site determines HPAI vs LPAI
  - This is the determining segment for inclusion in analysis
- Utilizes the full genome for comparison, with the ability of fine resolution comparison of more closely related sequences
- Sequence sources:
  - Wild bird surveillance and mortality events
  - Poultry detections
  - Mammalian detections
  - Livestock detections

Hicks *et al. BMC Genomics* (2024) 25:545
https://doi.org/10.1186/s12864-024-10437-5

BMC Genomics

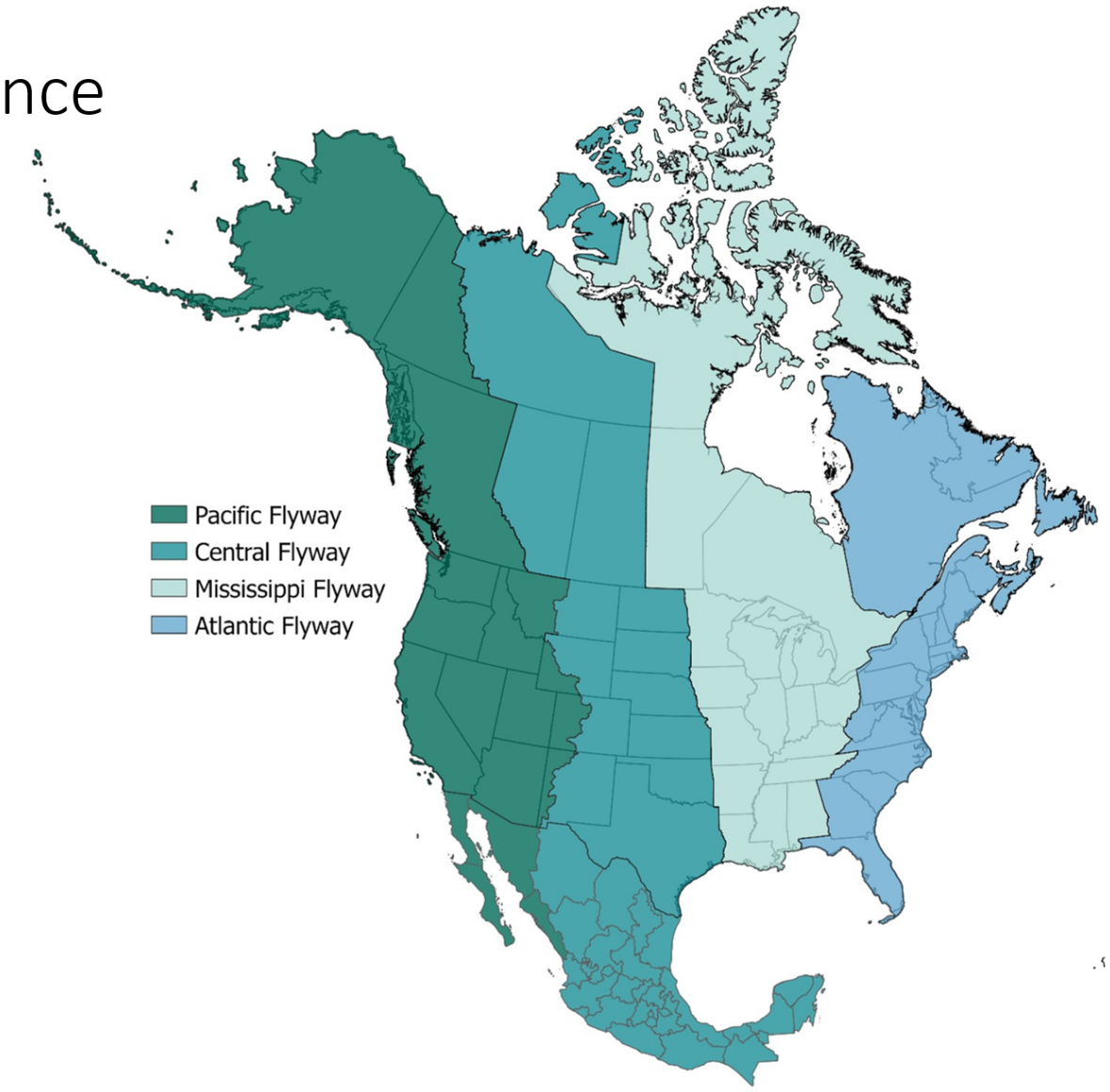
SOFTWARE Open Access

vSNP: a SNP pipeline for the generation of transparent SNP matrices and phylogenetic trees from whole genome sequencing data sets

Jessica Hicks[1], Tod Stuber[1*], Kristina Lantz[1], Mia Torchetti[1] and Suelee Robbe-Austerman[1]

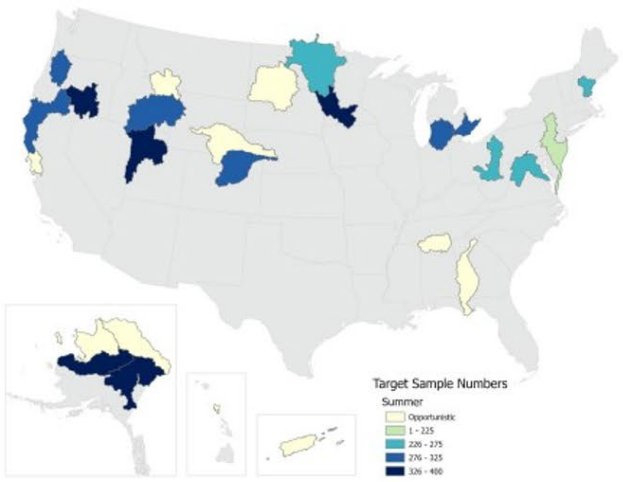
Routine Targeted Wild Bird Surveillance

- Seasonal sampling
  - Summer: May – August
  - Fall: September – December
  - Winter/Spring: January – April
- 33,085 sample target (2025-2026)
  - Four flyways
  - 49 states with targets
  - Opportunistic sampling in HI, PR, USVI
- Annual target numbers by state and watershed
  - Uses surveillance and HPAI detection data from previous years



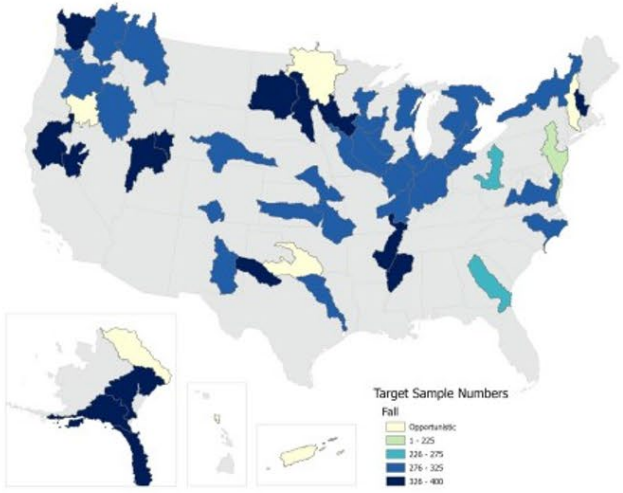
2025 – 2026 Seasonal Targets

Summer



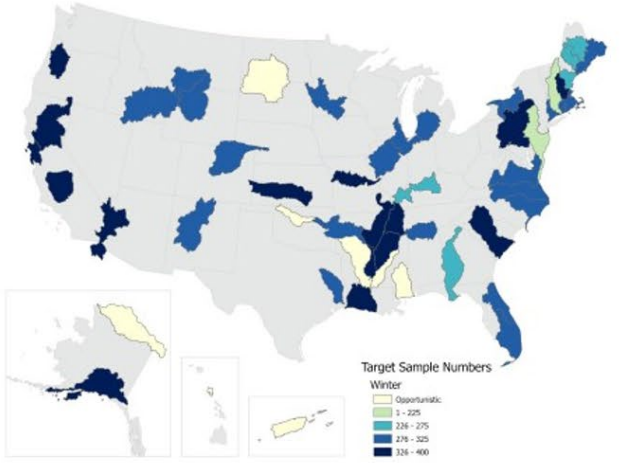
Target: 4,380

Fall

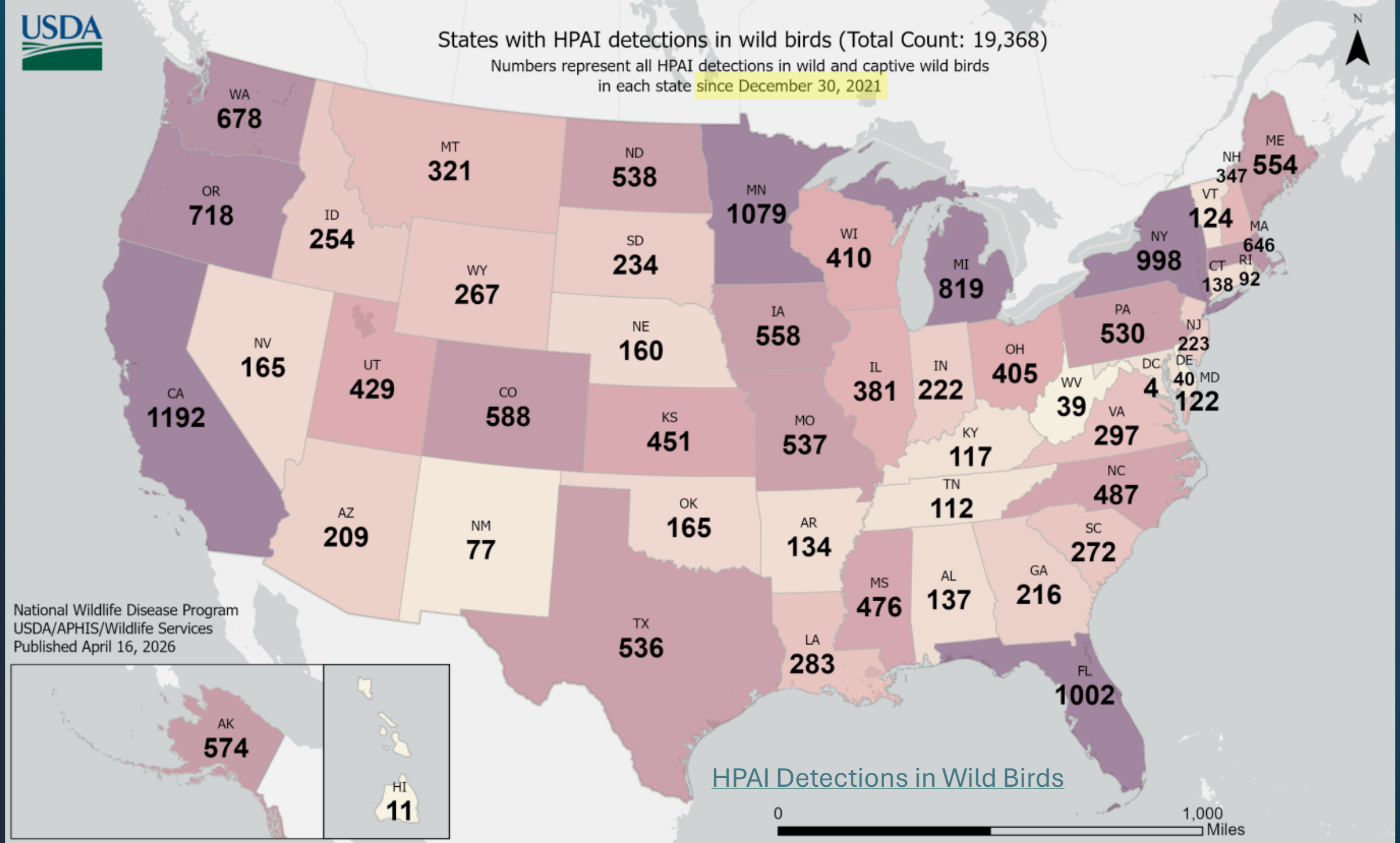


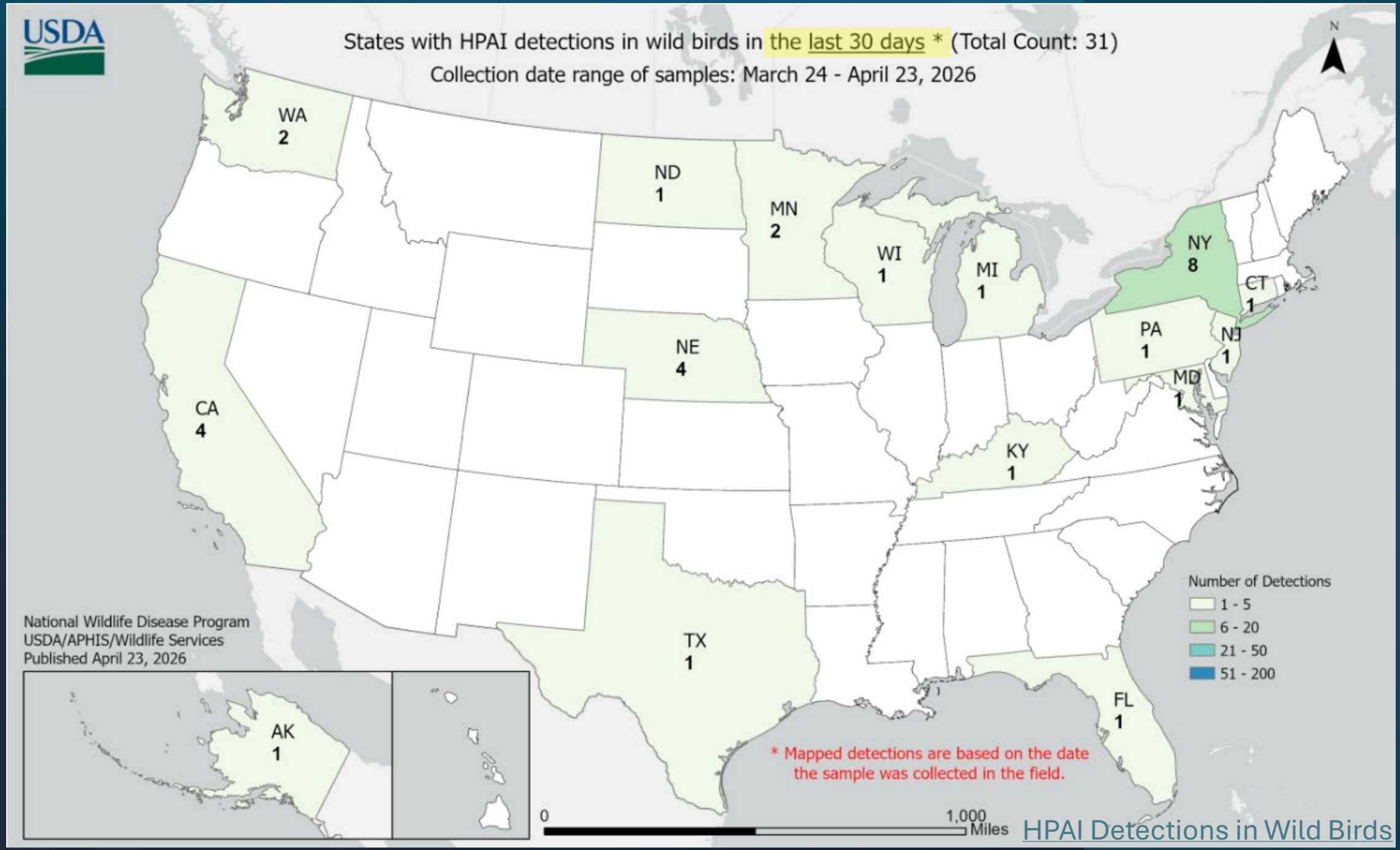
Target: 15,050

Winter/Spring



Target: 13,655


USDA
States with HPAI detections in wild birds (Total Count: 19,368)
Numbers represent all HPAI detections in wild and captive wild birds in each state since December 30, 2021
N
WA 678
OR 718
CA 1192
ID 254
NV 165
MT 321
WY 267
UT 429
AZ 209
CO 588
NM 77
ND 538
SD 234
NE 160
KS 451
OK 165
TX 536
MN 1079
IA 558
MO 537
AR 134
LA 283
WI 410
IL 381
MS 476
MI 819
IN 222
KY 117
TN 112
AL 137
OH 405
WV 39
GA 216
FL 1002
SC 272
NC 487
VA 297
PA 530
NY 998
DC 4
MD 122
DE 40
NJ 223
CT 138
RI 92
MA 646
VT 124
NH 347
ME 554
AK 574
HI 11
National Wildlife Disease Program
USDA/APHIS/Wildlife Services
Published April 16, 2026
HPAI Detections in Wild Birds
0
1,000
Miles



HPAI Detections in Wild Birds

HPAI Confirmed Detections in Commercial and Backyard Flocks

as of June 5, 2026 Last reported detection Wednesday, June 3, 2026

Data updated weekdays by 12 PM (ET)

Download Data

Outbreak Situation Last 30 Days

23 Confirmed Flocks

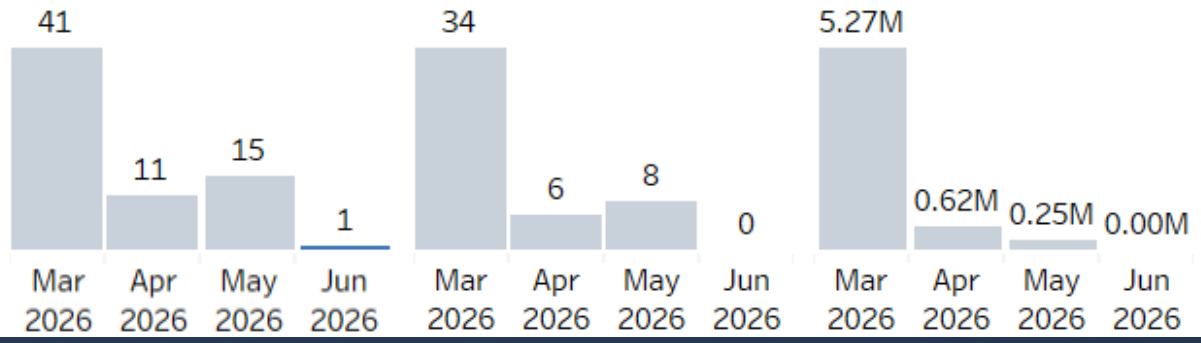
Flocks tested and confirmed having HPAI

Commercial Flocks	Backyard Flocks	Birds Affected*
16	7	0.25M

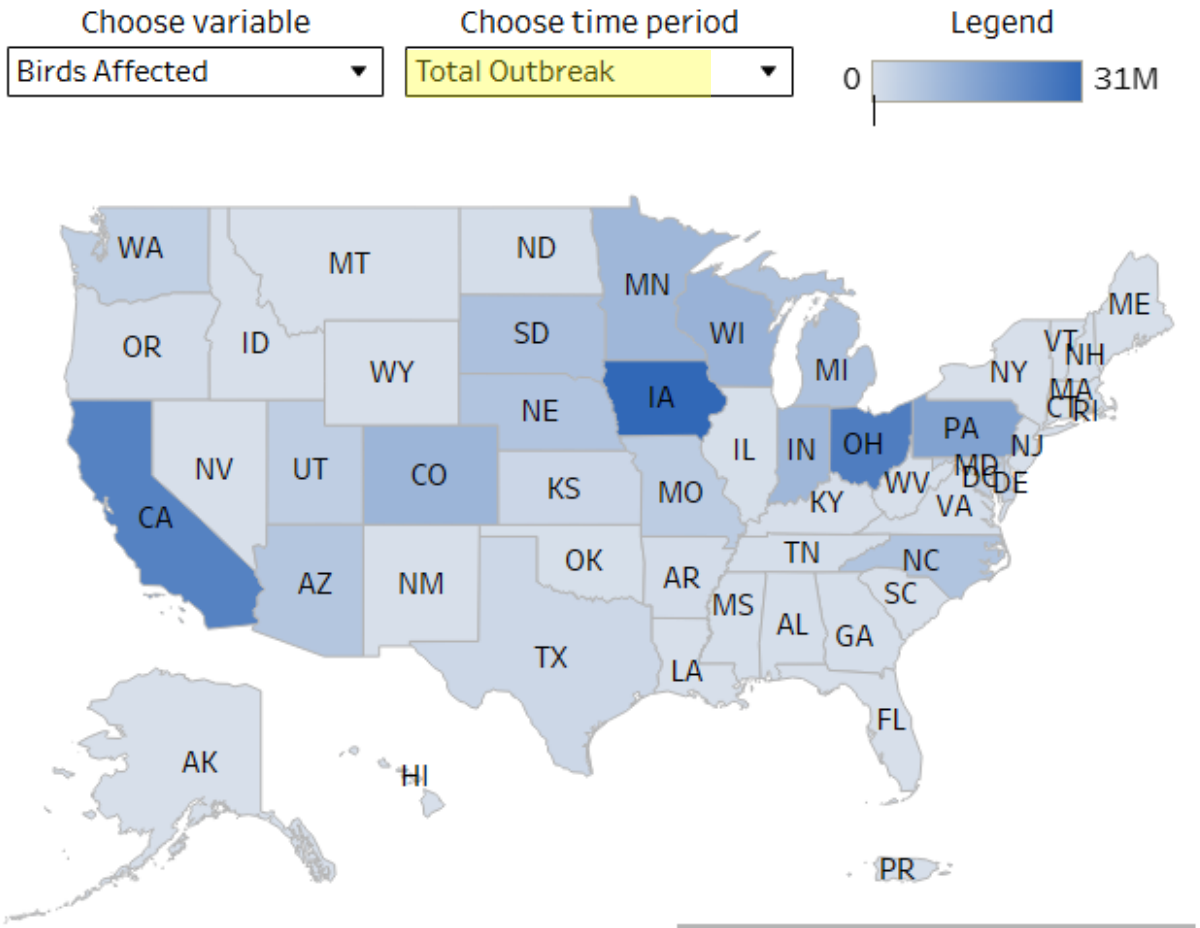
*Number of birds on confirmed infected premises.

Detections by Month-Year

Bars reflect most recent 4 months.



Birds Affected by State



Click For International Exports

Confirmed Pathogenic Avian Flu in Commercial & Backyard Flocks | APHIS

HPAI Confirmed Detections in Commercial and Backyard Flocks

as of June 5, 2026 Last reported detection Wednesday, June 3, 2026

Data updated weekdays by 12 PM (ET)

Download Data

Outbreak Situation Last 30 Days

23 Confirmed Flocks

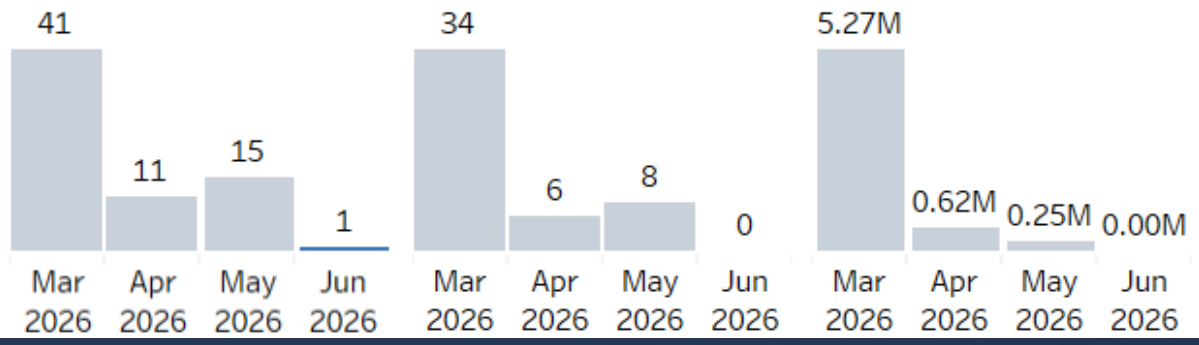
Flocks tested and confirmed having HPAI

Commercial Flocks	Backyard Flocks	Birds Affected*
16	7	0.25M

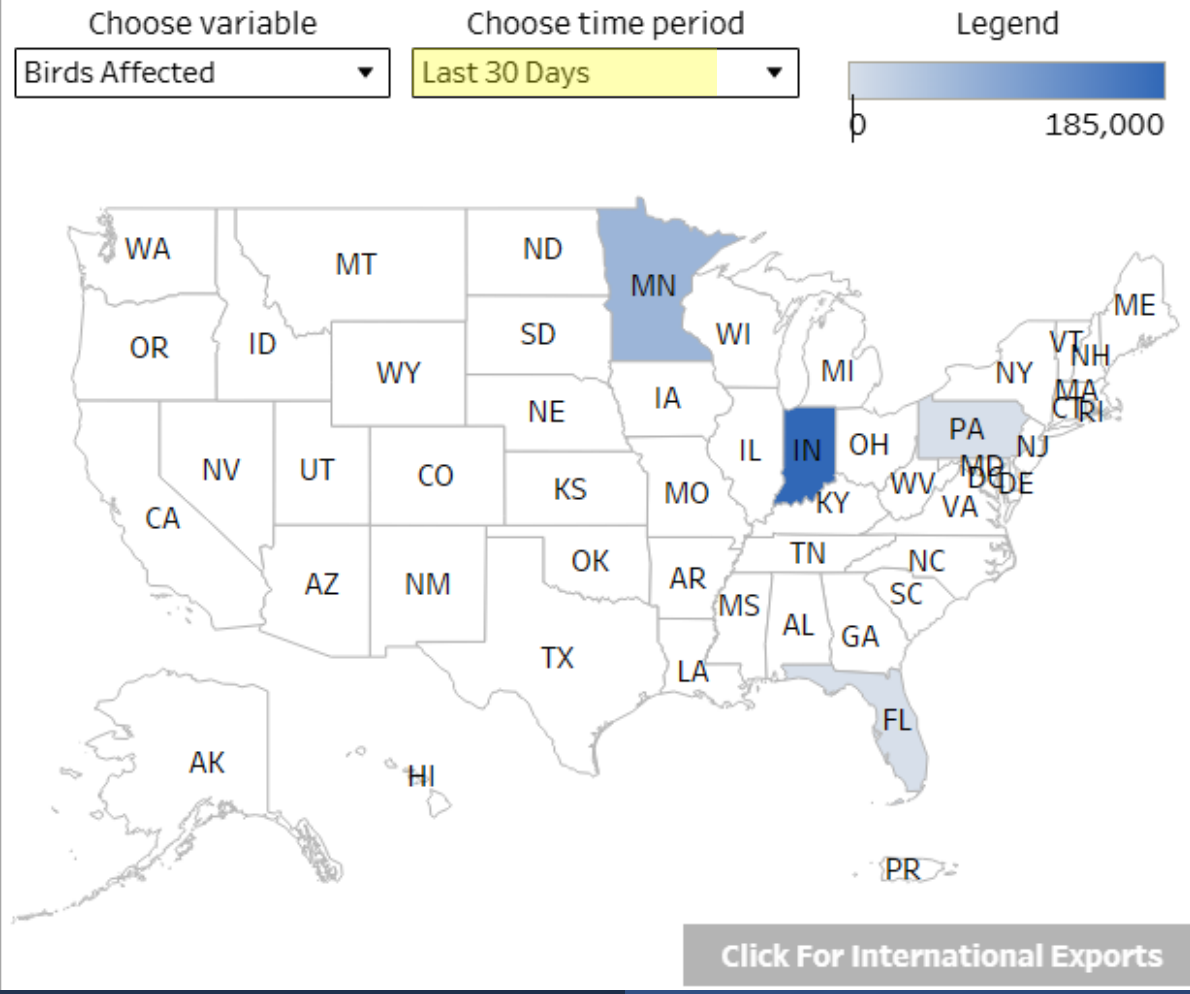
*Number of birds on confirmed infected premises.

Detections by Month-Year

Bars reflect most recent 4 months.



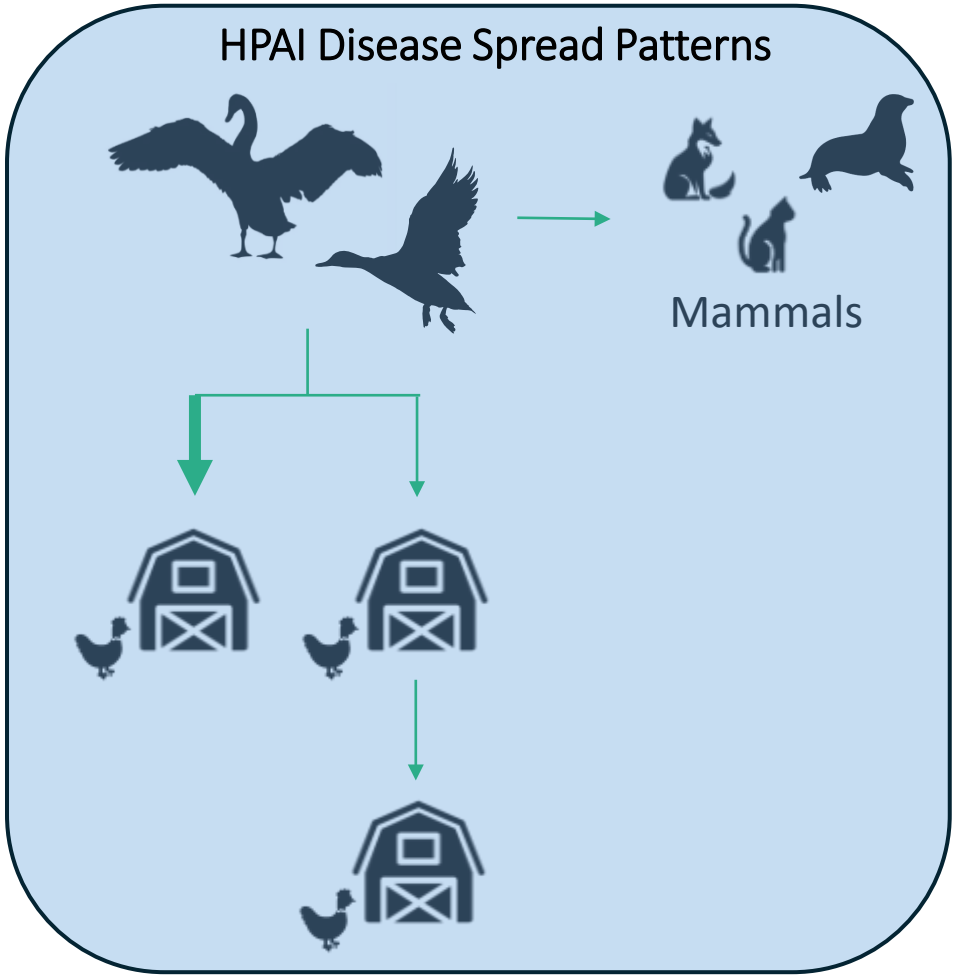
Birds Affected by State



Confirmed Pathogenic Avian Flu in Commercial & Backyard Flocks | APHIS

Key Messages for Poultry

- Primary transmission route is independent wild bird introduction
- Improvements in biosecurity, biosecurity messaging, early reporting/detection, and rapid depopulation have been successful in minimizing lateral (farm-to-farm) spread
- Disease detections between states mostly due to migratory waterfowl transmission routes



HPAI Confirmed Cases in Livestock Herds

as of June 5, 2026, last reported new confirmed case Wednesday, June 3, 2026

Data updated weekdays by 12pm Eastern

Download Data

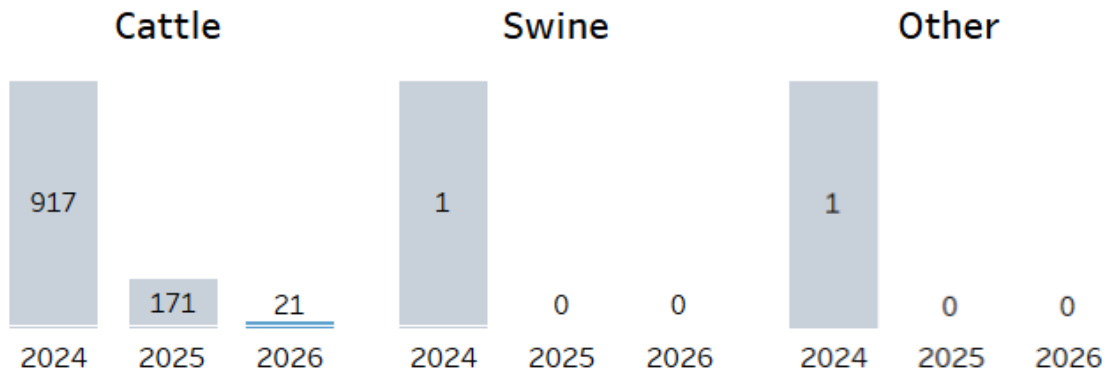
Choose time period: Total Outbreak

1,111 Domestic Animal Cases

in 20 States

Cattle	Swine	Other
1,109	1	1

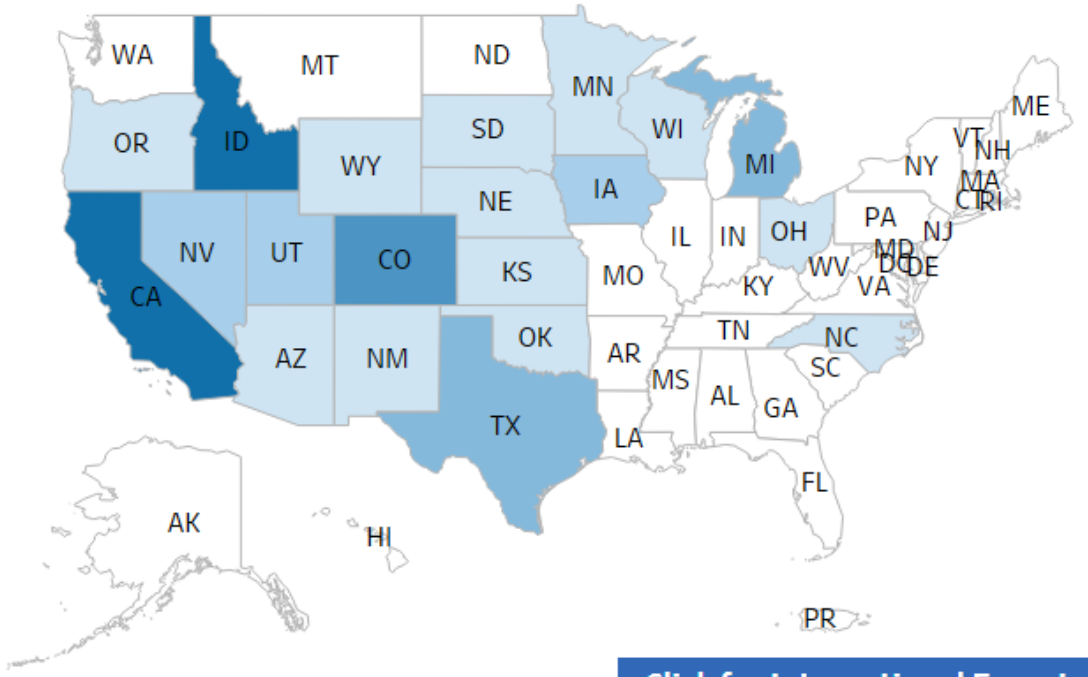
Cases by Year



Domestic Confirmed Cases by State Total Outbreak

Choose species: Livestock (all)

0 | 1 to 10 | 11 to 25 | 26 to 50 | 51 to 75 | 75+



Click for International Exports

HPAI Confirmed Cases in Livestock | APHIS

HPAI Confirmed Cases in Livestock Herds

as of June 5, 2026, last reported new confirmed case Wednesday, June 3, 2026

Data updated weekdays by 12pm Eastern

Download Data

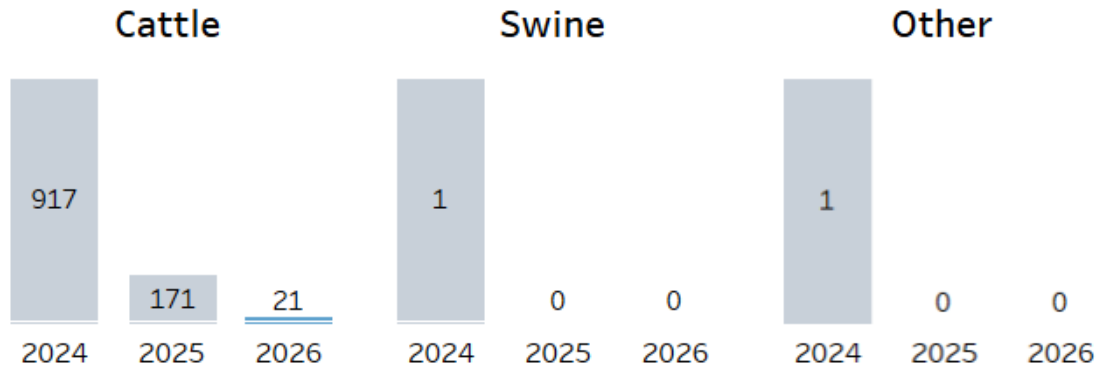
Choose time period: Last 30 Days

16 Domestic Animal Cases

in 3 States

Cattle	Swine	Other
16	0	0

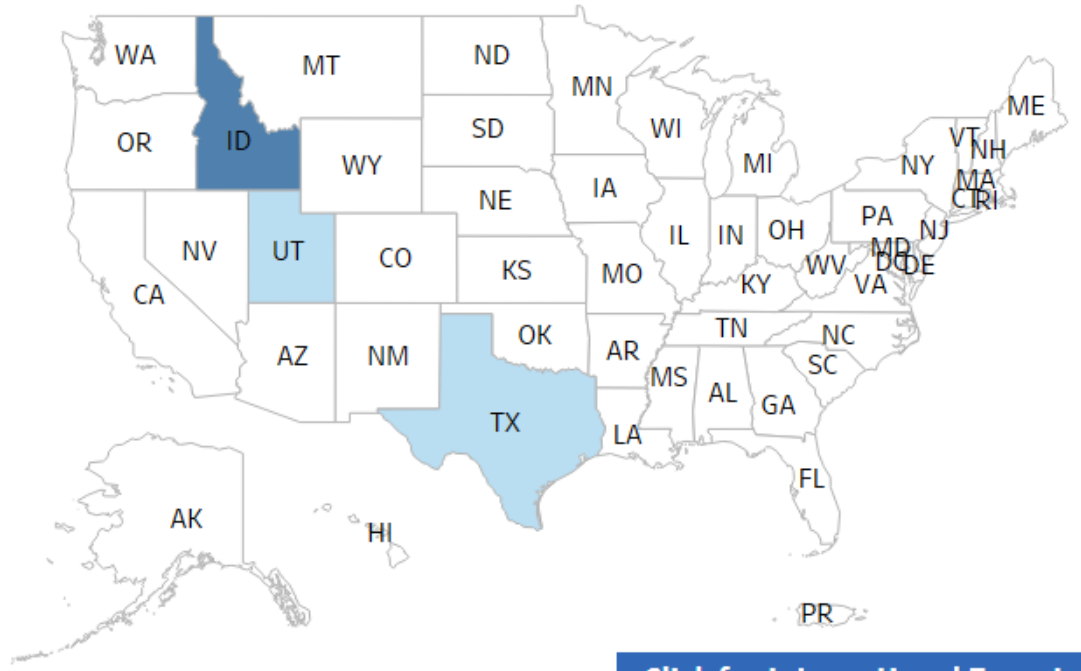
Cases by Year



Domestic Confirmed Cases by State Last 30 Days

Choose species: Livestock (all)

0 | 1 to 5 | 21 to 30



Click for International Exports

HPAI Confirmed Cases in Livestock | APHIS

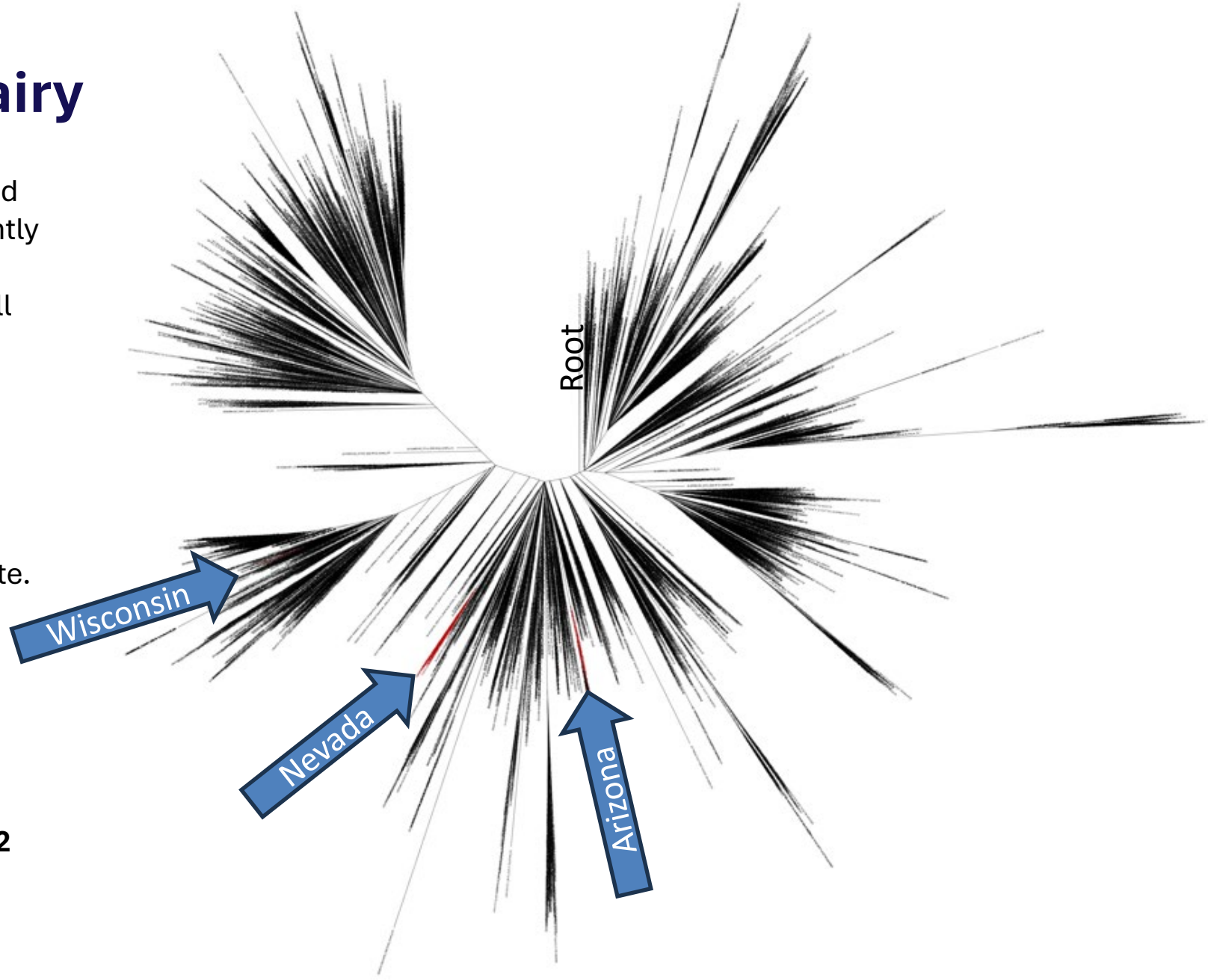
Genotype D1.1 in Dairy

The virus from each spillover event found to be related to other D1.1 viruses recently detected in migratory wild birds across multiple North American Flyways and all fall in Group 2. All detected via [National Milk Testing Strategy | Animal and Plant Health Inspection Service]

Nevada Jan 2025 marked by change at **D701N in the PB2 gene** present in all herds with limited spread within the state.

Arizona Feb 2025 separate event from Nevada with limited spread within the state and no change at **PB2 701.**

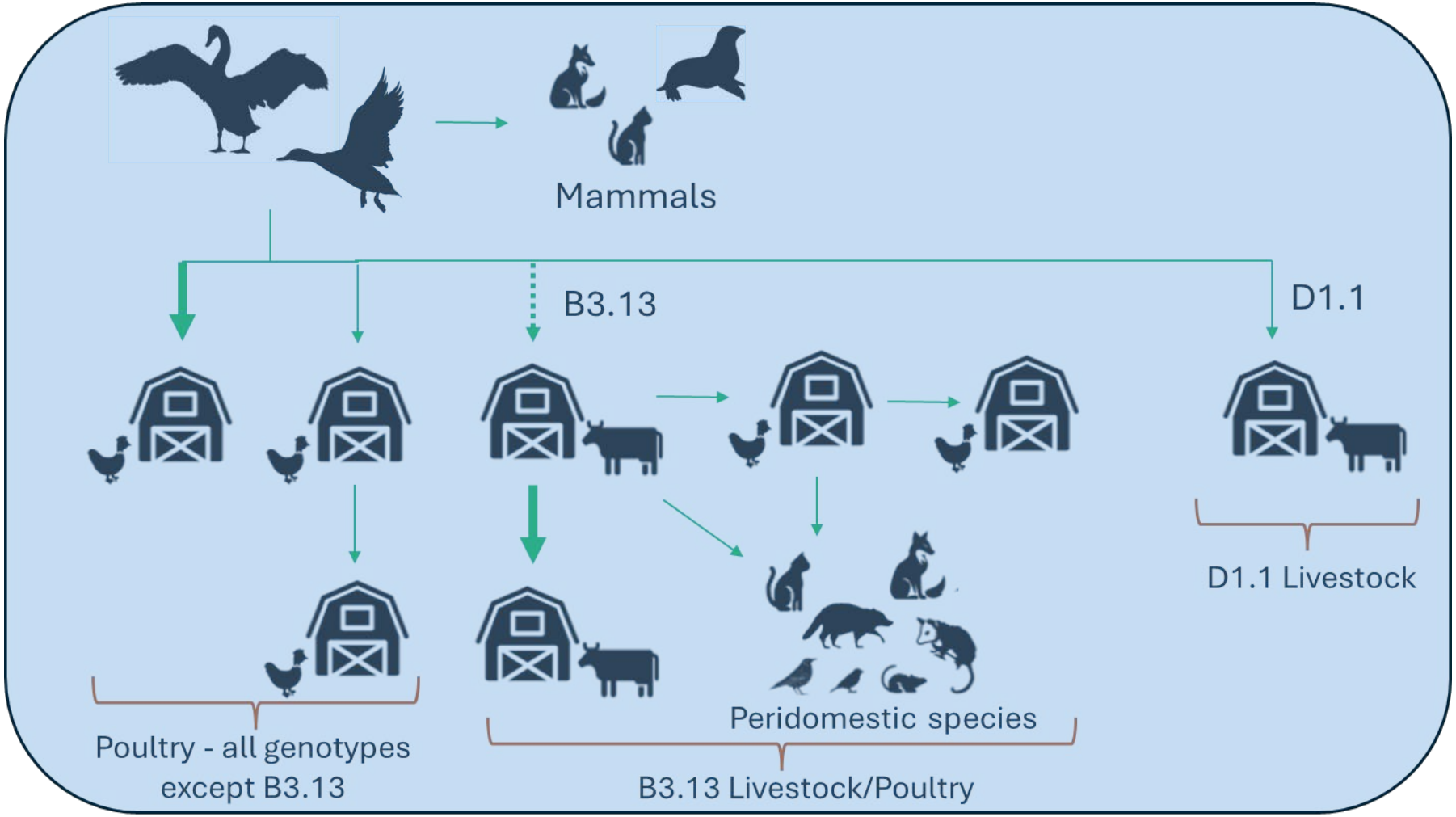
Wisconsin Dec 2025 affecting only a single dairy; change at **E627K in the PB2 gene.**



H5 in Dairy Cattle Represents a Risk to Poultry

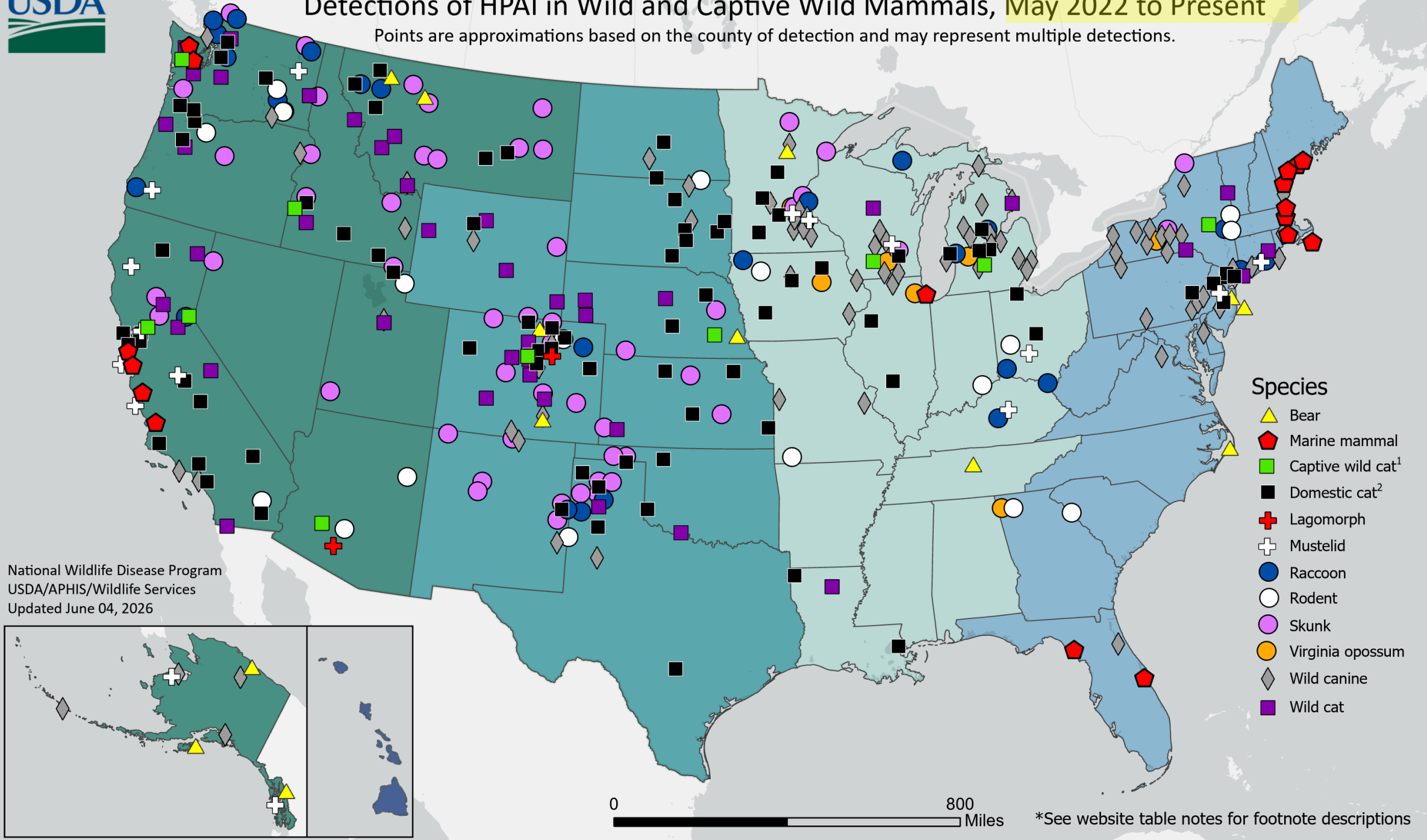
Ongoing transmission events

Single transmission event



Detections of HPAI in Wild and Captive Wild Mammals, May 2022 to Present

Points are approximations based on the county of detection and may represent multiple detections.



National Wildlife Disease Program
USDA/APHIS/Wildlife Services
Updated June 04, 2026

*See website table notes for footnote descriptions

Swine tested in OR, ID, IL - matches affected poultry on premises where sequence obtained

- OR poultry genotype D1.2 partial sequence from single pig sample (Cts all >35) matches sequence from the affected poultry from the premises; Federal and State Veterinary Agencies Share Update on HPAI Detections in Oregon Backyard Farm, Including First H5N1 Detections in Swine | Animal and Plant Health Inspection Service
- ID poultry genotype D1.1; swine serology tested negative for H5; **results support environmental contamination**
- IL poultry genotype D1.1; testing of sow that died acutely; single detection in tonsil only – no sequence obtained, serology and PCR in remaining two animals tested negative; **results support environmental contamination**

Other Spillovers

- In March 2024, several newly kidded farmed goats developed acute neurological signs prior to death. The goat herd shared the pasture and water source with a flock of chickens and ducks, which had been recently depopulated due to HPAI.
  - Genotype 3.6 (related to B3.13)
  - Nannies, milk, and aborted fetuses tested negative
  - *Coxiella burnetii* also diagnosed in HPAI positive neonates
- In May 2024, HPAI stillbirths and abortions were reported among alpacas on an Idaho farm. The alpacas on the farm shared the same pasture and water source with infected chickens and ducks, which were depopulated.
  - Genotype B3.13
  - Adults, milk, and fetuses tested positive for HPAI
  - Investigation of comorbidities has not identified other agents

Genotype A3 Outbreak in California Northern Elephant Seals - E627K present

HOME FIND A PARK RESERVATIONS WHAT'S NEW JOBS PROGRAMS EXPLORE

First Cases of Highly Pathogenic Avian Influenza in Northern Elephant Seals Confirmed in California

First Cases of Highly Pathogenic Avian Influenza in Northern Elephant Seals Confirmed in California

Año Nuevo SP

Cases at Año Nuevo State Park Mark State's First Detection of the Disease in a Marine Mammal

An adult male northern elephant seal attempts to mate with an adult female near the end of the breeding season.

Acknowledgments

- We are grateful for the dedicated people and institutions working hard to combat this virus including the DVL team!
- Many thanks to our NAHLN and state partners as well as other academic institutions and states that continue to contribute to surveillance in wildlife.
- This analysis is possible thanks to our collaboration with Wildlife Services, ARS Southeast Poultry Research Laboratory, and our colleagues at the Center for Epidemiology and Animal Health.

USGS science for a changing world · Agricultural Research Service · USDA Wildlife Services · APHIS · Veterinary Services · NAHLN National Animal Health Laboratory Network · NPIP · FAO · World Organisation for Animal Health Founded as OIE · offlu