

Proposal: Enhanced surveillance of Minnesota avian and mammalian wildlife for High Path Avian Influenza virus (HPAIV)

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Driven to DiscoverSM



Highly path avian influenza

- Recurrent epidemics loosely tied to bird migration seasons – fall and spring of each year
- Broad host range with rare human infections
- Waterfowl harbors most avian influenza viruses; usually low pathogenic variants

HPAI in Minnesota

March 2022 – ongoing in Nov. 2024

Wildlife

- Birds
- Mammals

Pets

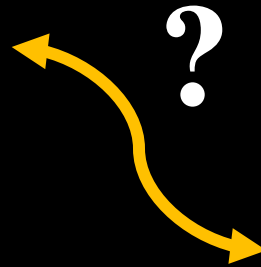
- Domestic cats (on dairy farm; June 18, 2024)

Human

- no detections in MN as of Nov. 07, 2024
- (26 cases in farm workers in US)

Livestock/poultry

- Dairy (9 cattle farms and 1 goat farm since March 2024)
- Poultry (172 premises since 2022; 22 new premises in 2024; last in September 2024)



HPAI in Minnesota Wildlife

Birds (678 confirmed; estimated 10s of thousands dead)

- Water fowl – first case in MN was a wood duck on March 24, 2022; geese, trumpeter swans, others)
 - Raptors – bald eagles, hawks, owls
 - Loons
 - Pelicans
 - Passeriformes (crows, blue-eyed junco)

Mammals

- Red foxes
- Black bear
- (skunks)

HPAI in Minnesota Wildlife cont.

Available federal and state funding for surveillance in 2022 → frequent testing of animals e.g. at the Wildlife Rehabilitation Center of Minnesota (over 600 animals tested)

Decreasing wildlife funding in 2023 and 2024

Grant proposal

2 year project

Testing of 9000 free-ranging birds and mammals for HPAI virus via PCR (oropharyngeal swabs and cloacal/anal)

Goals: 1a) Identifying susceptible species

1b) Estimation of scope of the problem in wildlife

2) Characterization of viruses to detect important mutations

→ Results can be used in multiple ways

Grant proposal

Partners: Establishment of a "*Minnesota Wildlife Health Network*" consisting of:

- 1) Wildlife Rehabilitation Center of Minnesota and other wildlife rehab organizations across the state
- 2) Department of Natural Resources
- 3) Wildlife biology departments of tribal nations
- 4) MN zoo and Como zoo
- 5) National Wildlife refuges/Voyageur National Park
- 6) Humane Society (wildlife unit)
- 7) Others (e.g. exterminators?)

Preparation of instructional material:

- 1) How to use swab kits
- 2) How to submit samples with necessary metadata

Grant proposal

Providing test kits to biologists and veterinarians at partner organizations (including shipping fees)

Initial testing at MN VDL (PCR)

Specialized testing of positive samples at Veterinary Isolation Laboratory of the University of Minnesota (Dr. Declan Schroeder)

Dissemination of results via weekly updates e.g. in the form of maps posted online (and in the form of podcasts and publications)

Grant proposal

Labs:

1. Minnesota Veterinary
Diagnostic Laboratory

2. Veterinary Isolation
Facility/Declan Schroeder's lab,
U of MN

