WILDLIFE HEALTH
PROGRAM NEWSLETTER

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KENTUCKY DEPT. OF FISH & WILDLIFE RESOURCES

WILDLIFE HEALTH PROGRAM

HPAI in Kentucky Wildlife

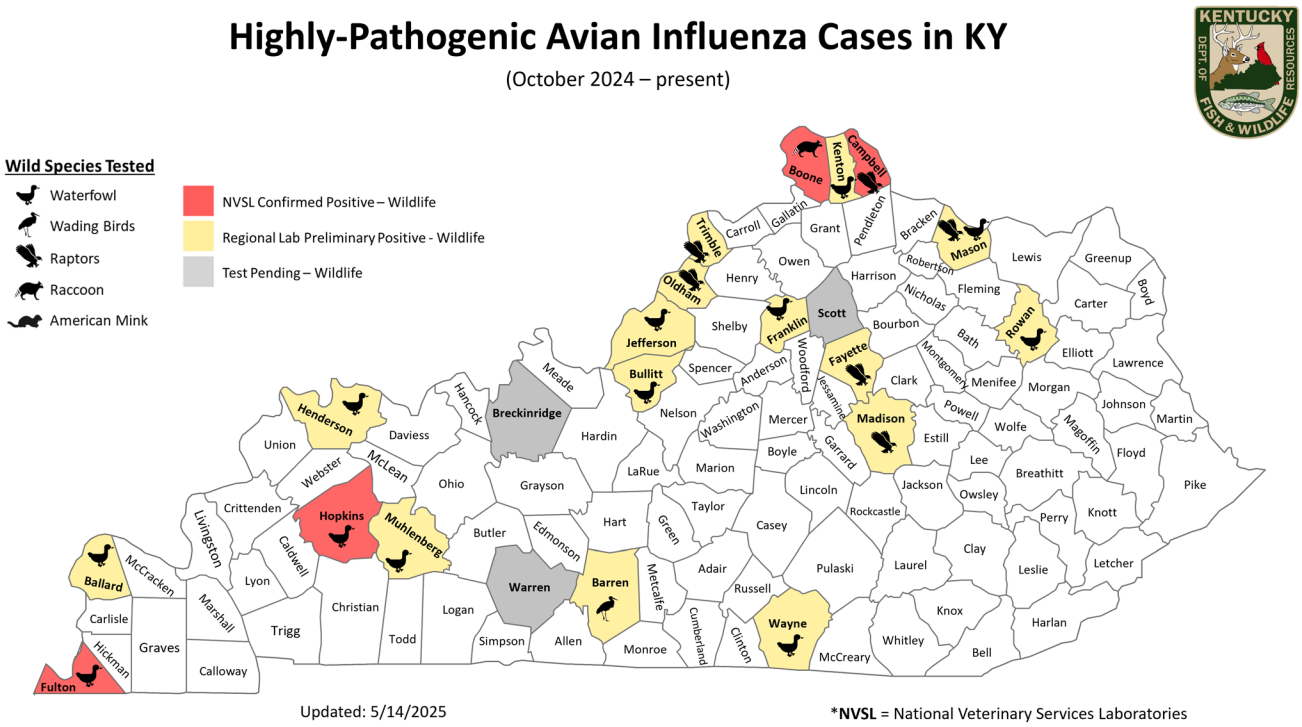
The Kentucky Department of Fish and Wildlife's Wildlife Health Program has reported that Highly Pathogenic Avian Influenza (HPAI) has been detected in wild birds across 15 counties in the state, affecting waterfowl, sandhill cranes, raptors, and even a raccoon. Avian flu outbreaks are commonly linked to migratory seasons, particularly during autumn and spring when birds travel along their flyways. As the migratory season winds down, there has been a decline in detected cases among wild birds in the state.

On March 19, 2025, the USGS National Wildlife Health Center provided the following national HPAI update:

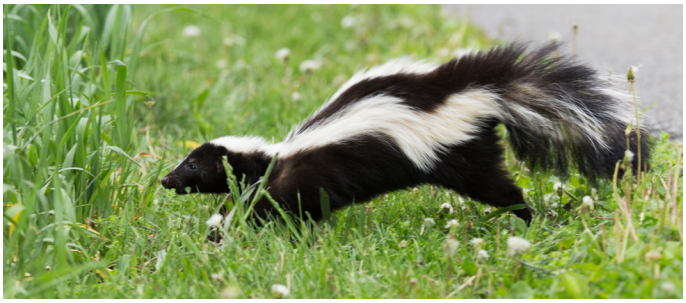
Summary

- The current HPAI outbreak in North America began in late 2021 and the virus has continued to circulate in North American wild birds (165 species affected) with sporadic spillover infections into North American wild mammals (27 species affected).
- The current outbreak has different transmission patterns than the 2014-2015 outbreak, notably, sustained transmission in wild birds and a broader host range including multiple previously uninfected species of wild birds, wild and domestic mammals, and humans.
- Waterfowl have emerged to be an important reservoir host in this outbreak; apparently healthy birds have regularly tested positive for HPAI virus during live-bird and hunter-harvest sampling.
- Since the current outbreak began in North America, HPAI has been detected in >1,600 poultry facilities in every state and Puerto Rico, nearly 1,000 dairy operations in 17 states, and 70 humans.
- The HPAI H5N1 virus remains avian-adapted, although sporadic mammalian mutations have been detected.

Suspected cases of HPAI can be reported to the Kentucky Department of Fish and Wildlife Resources by calling the Information Center at 1-800-858-1549 from 8 a.m. to 4:30 p.m. (Eastern) on weekdays or submitted online.



Reports of Neurologic Mammals



For 2024–2025, the Kentucky Public Health reported an increase in cases of the skunk variant of rabies in Central Kentucky. The Wildlife Health Program is closely monitoring this development, along with other diseases such as highly pathogenic avian influenza (HPAI) and canine distemper, which can cause similar neurologic symptoms in animals. Recently, the program has received a growing number of reports of mesomammals—including raccoons, skunks, and opossums—exhibiting signs such as incoordination, repetitive movements, head tilting, and/or a reduced fear of humans.

As a reminder, do not approach any wild mammal showing neurologic symptoms, as it could be infected with rabies. Rabies is fatal in people once symptoms occur.

Recommendations

- Do not approach or touch wildlife
- Do not feed wildlife
- Do not leave pet food outside
- Secure trash cans to avoid attracting wildlife
- Vaccinate pets against rabies
- Keep pets away from wildlife

Report Sick or Dead Wildlife

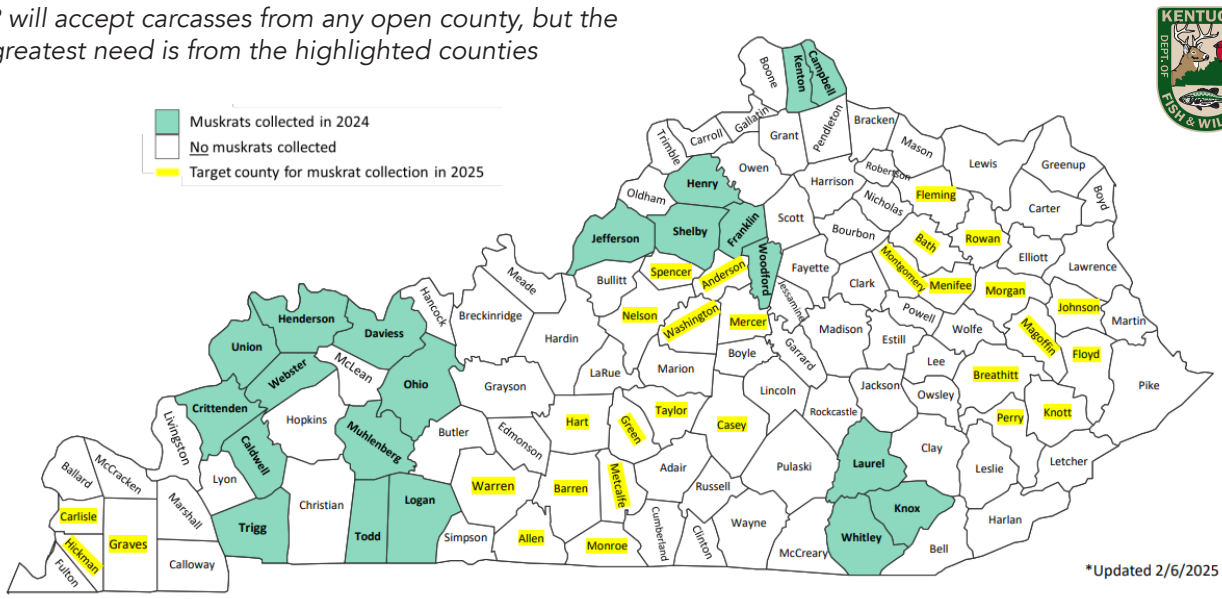
Submit observations online

Muskrat and Fox Carcass Collection for Regional Health Assessment

The Kentucky Department of Fish and Wildlife Resources is collecting muskrat and gray fox carcasses, along with red fox carcasses, as part of a study to monitor health and assess any pathogens or toxicants that may impact populations. If interested in participating, learn more.

Target Counties for Carcass Collection

KDFWR will accept carcasses from any open county, but the greatest need is from the highlighted counties

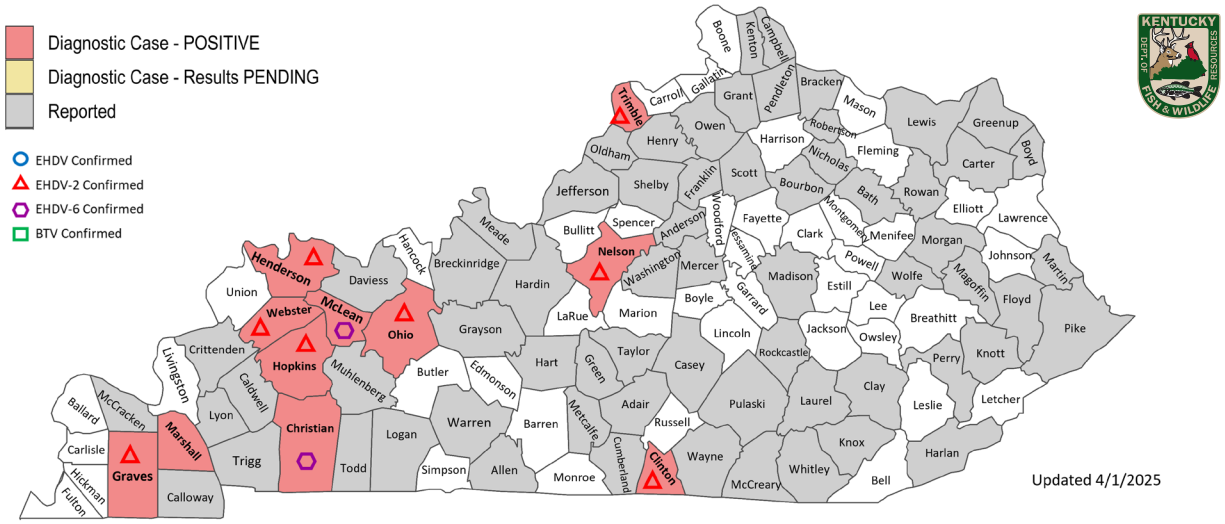


Deer Health Update

2024 HD Summary

In 2024, KDFWR received approximately 198 reports of suspicious hemorrhagic disease cases in deer through the agency's online Sick and Dead Deer reporting form and calls to regional staff. Of the 33 samples collected from white-tailed deer between July and December 2024 and submitted to SCWDS for diagnostics, 11 samples were positive from 11 different counties. Epizootic Hemorrhagic Disease Virus 2 (EHDV-2) and Epizootic Hemorrhagic Disease Virus 6 (EHDV-6) were identified on serotyping the positive samples. Online Reports of EHD suspects were received from across the state representing over 60% of the counties, however, the majority of confirmed cases detections were in western and central counties.

Hemorrhagic Disease in KY White-Tailed Deer: Jun. - Dec. 2024



CWD Sampling Update for 2024-2025 Deer Season

The Kentucky Department of Fish and Wildlife Resources has completed its Chronic Wasting Disease (CWD) surveillance and testing for the 2024–2025 deer season. A total of 9,204 samples were tested statewide, with no new detections of the disease in wild deer.

To date, CWD has been confirmed in Kentucky on two occasions: first, in a wild deer in Ballard County in November 2023, and more recently, in October 2024, in a captive deer at a permitted facility in Breckinridge County. In response to these detections, two multi-county CWD surveillance zones were established, and a significant portion of this season's samples—4,483—were collected from those areas. Hunters submitted samples through several methods, including CWD sample drop-off sites, mail-in kits, participating taxidermists and processors, and mandatory check stations operated by Kentucky Fish and Wildlife staff.

Diagnostic Case Highlight: Canine Distemper • Courtney Sexton

This article reviews a case from January 2023 involving a gray fox (Urocyon cinereoargenteus) that was dispatched in a residential backyard in Montgomery County. The animal was exhibiting neurological symptoms including circling behavior, chewing its hind limbs, and foaming at the mouth. Because gray foxes are known carriers of neurologic diseases like rabies, the top three suspected causes of the animal's symptoms were rabies, canine distemper virus, and highly pathogenic avian influenza (HPAI).

Following carcass collection, the Wildlife Health Program staff performed a necropsy, beginning with an external examination that revealed dried discharge from both eyes. Internal examination findings included a friable liver, cyst-like lesions in the spleen, minimal perirenal fat stores, and yellow discoloration on the urinary bladder's outer surface. Biological samples were submitted to the Southeastern Cooperative Wildlife Disease Study (SCWDS) for further testing.

Postmortem examination of brain tissue by SCWDS revealed hallmark signs of canine distemper virus (CDV), including an increased presence of glial cells—supportive cells that protect neurons—and abnormal accumulations of cellular material within neurons, indicative of brain inflammation. Some neurons were misshapen, consistent with neuronal necrosis, and there were pockets of white matter vacuolation, or small fluid-filled spaces between axons. These findings likely contributed to the neurologic symptoms observed prior to death.

To confirm the diagnosis, brain tissue samples were submitted to the Athens Veterinary Diagnostic Lab (AVDL) for an Immunofluorescence Assay (IFA) to test for rabies and canine distemper, as these viruses can cause similar symptoms. Rabies was not detected, but CDV was confirmed, consistent with the microscopic findings. Other notable microscopic findings included lymphoid necrosis and inflammation in the spleen and submandibular lymph nodes. The lungs showed some hemorrhage, likely related to being dispatched, as well as evidence of moderate pneumonia. The pneumonia was characterized by foamy macrophages—immune cells that contribute to inflammation and mucus production—suggesting an underlying viral infection.

Canine distemper (CDV) is a highly infectious paramyxovirus related to measles and rinderpest. While it affects a variety of mammals, it is most commonly diagnosed in wildlife species such as gray foxes, coyotes, raccoons, and skunks. Domestic dogs are also susceptible to CDV. The virus spreads through direct contact with infected bodily secretions (saliva, urine, feces) and respiratory droplets. Infected animals can shed the virus for months after infection.

CDV primarily targets epithelial cells in the respiratory and digestive tracts, causing damage to these linings and resulting in symptoms like coughing, sneezing, nasal and ocular discharge, vomiting, and diarrhea. The virus can also cause neurologic symptoms, including seizures, "chewing fits," incoordination, and tremors—symptoms that overlap with those seen in rabies infections. Due to this overlap, fluorescent antibody testing is essential for accurate diagnosis.

A liver sample from the fox was also submitted to the California Animal Health & Food Safety Laboratory for rodenticides and returned positive for Diphacinone, a first-generation anticoagulant rodenticide (FGAR) introduced in the 1950s for pest control. FGARs disrupt the clotting cascade by inhibiting vitamin K recycling, which can lead to excessive bleeding. Although no signs of internal bleeding were observed in this case, diphacinone exposure is still notable. Ingestion likely occurred either directly (via bait) or indirectly (through prey). Since gray foxes often hunt rodents — common FGAR targets — they are at elevated risk of secondary poisoning.

According to a 2024 study by Keating et al., detection of anticoagulant rodenticides in predators and scavengers is on the rise. While species-specific data on the long-term effects remain limited, these toxicants are believed to impair immune function. In this case, rodenticide exposure may have compromised the fox's immune system, making it more vulnerable to or less able to fight CDV infection.

References

Keating, M.P., Salado, E. A., Frair, J. L., Cunningham, S. A, Mateo, R., Jachowski, D. S. (2024). Global review of anticoagulant rodenticide exposure in wild mammalian carnivores. Zoological Society of London, 27(5), 585-599. doi.org.10.111/acv.12947

Research Highlights

Using a prion amplification assay, prions were identified in tissues from wild pigs (*Sus scrofa*) living in areas of the United States with variable chronic wasting disease (CWD) epidemiology. These findings indicate that scavenging swine could play a role in disseminating CWD and could therefore influence its epidemiology, geographic distribution, and interspecies spread.

Learn More: ***doi:10.3201/eid3101.240401***

Soto P, Bravo-Risi F, Benavente R, Stimming TH, Bodenchuk MJ, Whitley P, Turnage C, Spraker TR, Greenlee J, Telling G, Malmberg J, Gidlewski T, Nichols T, Brown VR, Morales R. 2025. Detection of prions in wild pigs (Sus scrofa) from areas with reported chronic wasting disease cases, United States. Emerging Infectious Diseases 31:1.

In May 2021, wildlife managers in Washington D.C., Maryland, Virginia, West Virginia, and Kentucky began receiving reports of sick, dying, and dead birds with eye swelling and crusty discharge, some of which also exhibited neurological behaviors. The public and licensed wildlife rehabilitators provided initial reports, while additional birds were received in Delaware, New Jersey, Pennsylvania, Ohio, Indiana, Tennessee, and Connecticut. The majority of reports involved fledgling common grackles (Quiscalus quiscula), blue jays (Cyanocitta cristata), European starlings (Sturnus vulgaris), and American robins (Turdus migratorius). Early in the event, the jurisdictions involved indicated a collective desire to work together in a regional response with consistent public messaging and collaboration among diagnostic laboratories. The U.S. Geological Survey National Wildlife Health Center (NWHC) facilitated conversations regarding event response among the affected jurisdictions and coordinated with other responding diagnostic laboratories. However, despite exhaustive collective efforts, no definitive cause(s) of illness or death have been determined, with some analyses still ongoing. This paper provides additional background on the event, outlines approaches taken by agencies to coordinate their response and communications with the public, and summarizes lessons learned that could be used to inform future preparedness and response plans.

Learn more: ***doi.org/10.3390/vetsci12010048***

Greening SS, Ellis JC, Lewis NL, Needle DB, Tato CM, Knowles S, Shearn-Bochsler V, Miller JL, Grear DA, Lorch JM, Blehert DS, Burrell C, Murphy LA, Miller EA, Ogbunugafor CB, Ayala AJ, Thomas WK, Sevigny JL, Gordon LM, Baillargeon T, Mwakibete L, Kirchgessner M, ***Casey CL****, Barton E, Yabsley MJ, Anis E, Gagne RB, Klein P, Driscoll C, Sykes CA, Poppenga RH, Nemeth NM. 2025. An enigmatic wild passerine mortality event in the eastern United States. Veterinary Sciences 12:48.*

The parasitic mite *Sarcoptes scabiei* causes mange in many mammal species, including Pennsylvania black bears (*Ursus americanus*). Since the 1990s, the incidence and spread of mange in these bears has increased. To assess how well black bears recover from mange, researchers fitted 61 bears with GPS collars between 2018 and 2020, including 43 with mange. Some were treated with ivermectin, while others were not. The bears were monitored for mange recovery through den visits and recaptures. Results showed that of the 36 scabietic bears with known recovery status, 81% fully recovered regardless of treatment, with 88% recovered with treatment and 74% recovered without treatment.. Bears with mild mange had a higher recovery rate, but even those with severe mite infestations had a significant recovery rate (42%). Despite some bears not fully recovering, mange-related death was rare, suggesting that wildlife management strategies for mange may need to be reconsidered.

Learn more: ***doi.org/10.7589/JWD-D-23-00134***

Tiffin HS, Brown JD, Ternent M, Snavely B, Carrollo E, Kibe E, Buderman FE, Mullinax JM, Machtinger ET. 2024. Resolution of clinical signs of sarcoptic mange in American black bears (Ursus americanus), in Ivermectin-treated and nontreated individuals. Journal of Wildlife Diseases 60:2.

WILDLIFE HEALTH PROGRAM

Through the Wildlife Health Program, Kentucky Fish and Wildlife is dedicated to safeguarding the health of Kentucky's wildlife and fostering resilient ecosystems that support the well-being of both wildlife and people for generations to come.