



National Wildlife Health Center  
Wildlife Health Bulletin 2020-07

Winter 2020 Update on Highly Pathogenic Avian Influenza Viruses Circulating Globally in Wild Birds

To: Natural Resource and Conservation Managers  
From: Dr. Jonathan Sleeman, Center Director, USGS National Wildlife Health Center  
Date: December 9, 2020

Since January 2020, multiple strains of highly pathogenic avian influenza viruses (H5 [untyped], H5N1, H5N2, H5N5, H5N6, H5N8, H7N3 and H7N7) have been detected globally in wild birds and poultry (Table 1). Based on reporting to the World Organisation for Animal Health (OIE), an apparent increase in virus activity was noted during the fall migration period which warrants increased vigilance by North American wildlife health professionals. Countries where HPAI has been detected during 2020 include Australia, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, France, Germany, Hungary, India, Iran, Iraq, Ireland, Israel, Italy, Japan, Kazakhstan, Laos, Netherlands, Norway, Philippines, Poland, Republic of Korea, Romania, Russia, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Sweden, Taiwan, Ukraine, United Kingdom, and Vietnam (Figure 1). Affected wildlife species include swans: mute (*Cygnus olor*) and black (*C. atratus*); ducks: common teal (*Anas crecca*), mallard (*A. platyrhynchos*), northern shoveler (*A. clypeata*), garganey (*A. querquedula*), spot-billed (*A. poecilorhyncha*), Eurasian wigeon (*Mareca penelope*), gadwall (*M. strepera*), common pochard (*Aythya ferina*), and mandarin (*Aix galericulata*); geese: Canada (*Branta canadensis*), barnacle (*B. leucopsis*), bean (*Anser fabalis*), greater white-fronted (*A. albifrons*), greylag (*A. anser*), pink-footed (*A. brachyrhynchus*), and Egyptian (*Alopochen aegyptiaca*); grebes: great crested (*Podiceps cristatus*); shorebirds: black-headed gull (*Chroicocephalus ridibundus*) and Eurasian curlew (*Numenius arquata*); raptors: Bonelli's eagle (*Aquila fasciata*) and peregrine falcon (*Falco peregrinus*); owls: Eurasian eagle-owl (*Bubo bubo*) and short-eared owl (*Asio flammeus*); Eurasian buzzard (*Buteo buteo*), great white pelican (*Pelecanus onocrotalus*), common wood pigeon (*Columba palumbus*), and Eurasian crane (*Grus grus*).

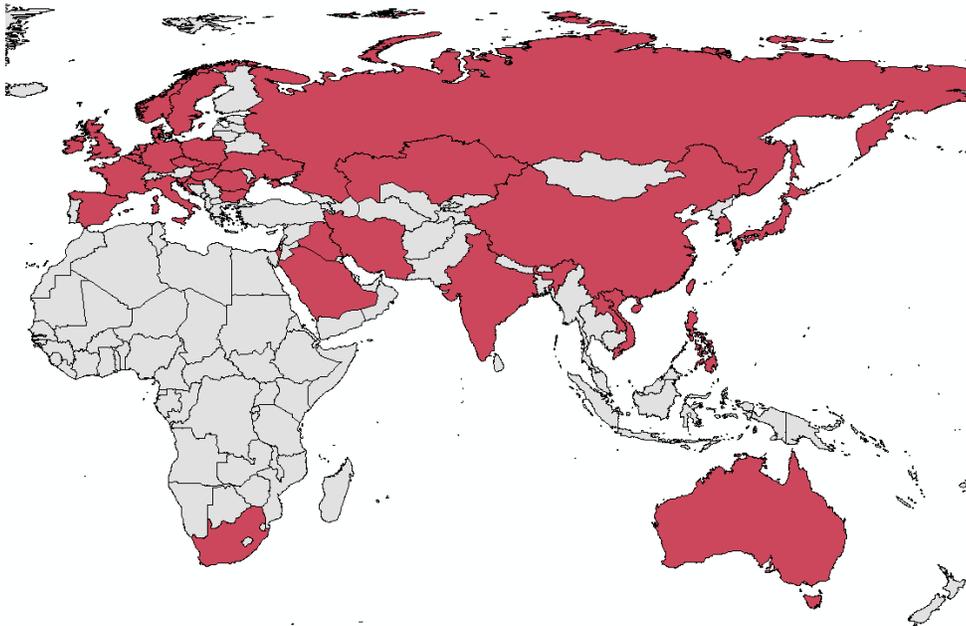


Figure 1: Countries reporting highly pathogenic avian influenza from January through early December 2020 to the World Organisation for Animal Health.

The global level of HPAI virus detections in wild birds as we begin winter 2020/2021 is similar to the winter of 2014/2015, when HPAI was detected in North American wild birds and heavily impacted domestic fowl. Elevated vigilance for morbidity or mortality events in wild birds is therefore recommended, as investigating wild bird mortality events enhances the opportunity for early detection of HPAI, improves situational awareness, and enables a more effective management response, should an outbreak occur. In addition to investigating mortality events involving waterfowl (Lee et al. 2015), we also strongly encourage reporting of raptors (Shearn-Bochsler et al. 2019) and other avian scavengers (Tanimura et al. 2006) exhibiting neurological impairment or found dead, especially near facilities housing domestic birds. Wildlife managers can contact the USGS National Wildlife Health Center (NWHC) to report wildlife mortality events and to discuss submitting carcasses for diagnostic evaluation. For agencies that investigate morbidity and mortality events independently or in collaboration with other diagnostic laboratories, we strongly encourage you to promote situational awareness of wildlife disease events occurring on the national landscape by reporting these events to [WHISPers](#), the Wildlife Health Information Sharing Partnership - event reporting system.

### **General safety guidelines for hunters and biologists handling wildlife and their tissues.**

- Do not handle or eat sick game.
- Field dress and prepare game outdoors or in a well-ventilated area.
- Wear rubber or disposable latex gloves while handling and cleaning game.
- When done handling game, wash hands thoroughly with soap or disinfectant, and clean knives, equipment, and surfaces that came in contact with game.
- Do not eat, drink, or smoke while handling animals.
- All game should be thoroughly cooked to an internal temperature of 165 degrees F.
- Additional guidance for hunters: [Guidance for Hunters – Protect Yourself and Your Birds from Avian Influenza](#)

### **The NWHC provides the following guidance to field biologists for selecting appropriate personal protective equipment (PPE) when investigating wildlife mortality events or when handling wildlife:**

- Wear protective clothing including aprons, coveralls, rubber boots, rubber or latex gloves, eye protection, and face shields that can be disinfected or discarded to prevent skin and mucous membrane contact with biological materials and movement of biological materials amongsites.
- Work in well-ventilated areas or upwind of animals to decrease the risk of inhaling airborne particulate matter such as dust, feathers, or dander.
- A particulate respirator (NIOSH N95 respirator/mask or better) is recommended when working in confined spaces or conditions that promote production of aerosols. Review your agency’s policies for specific guidance for respirator use while handling sick and dead wildlife.
- Wash hands often and thoroughly for at least 30 seconds with soap or alcohol-based handsanitizer.
- Do not eat, drink, or smoke while handling animals.
- Decontaminate work areas and properly dispose of potentially infectious material including carcasses and take appropriate measures to prevent inadvertent movement of infectious material to other locations.

Final decisions by your agency on PPE use may be based on an assessment of potential risks presented by both known and unknown pathogens relevant to your proposed work. The [CDC states](#) that “*while the health risk posed to the general public by domestic HPAI outbreaks is low, it is possible that human infections with these viruses could occur.*” Therefore, consult the CDC and your employer’s policies for updated biosafety recommendations related to human health, and seek medical assistance if needed.

### **Disease Investigation Services**

To request diagnostic services or report wildlife mortality, please contact the NWHC at **608-270-2480** or by email at [NWHC-epi@usgs.gov](mailto:NWHC-epi@usgs.gov), and a field epidemiologist will be available to discuss the case. To report

wildlife mortality events in Hawaii or Pacific Island territories, please contact the Honolulu Field Station at 808-792-9520 or email Thierry Work at [thierry\\_work@usgs.gov](mailto:thierry_work@usgs.gov). Further information regarding [reporting mortality events](#) can be found on the [NWHC website](#). See also the [Wildlife Mortality Reporting and Diagnostic Services Request Worksheet](#) and [WHISPers](#).

If you have any questions or concerns regarding the scientific and technical services we provide, please do not hesitate to contact NWHC Director Jonathan Sleeman at 608-270-2401, [jsleeman@usgs.gov](mailto:jsleeman@usgs.gov).

To see past Wildlife Health Bulletins, click [here](#). WILDLIFE HEALTH BULLETINS are distributed to natural resource and conservation agencies to promote information exchange about significant wildlife health or disease threats. If you would like to be added to or removed from the mailing list for these bulletins, please email: [nwhcoutreachdb@usgs.gov](mailto:nwhcoutreachdb@usgs.gov).

Table 1. List of countries reporting highly pathogenic avian influenza in domestic or wild birds (domestic poultry = P, wild birds = W) based on reports to the World Organisation for Animal Health from January through early December 2020.

Country	H5	H5N1	H5N2	H5N5	H5N6	H5N8	H7N3	H7N7
Australia								P
Belgium				P		P, W		
Bulgaria						P		
China		P			P, W	W		
Croatia						P		
Czech Republic						P		
Denmark				W		P, W		
France	W					P		
Germany				W		P, W		
Hungary						P		
India		P, W						
Iran						W		
Iraq						P		
Ireland						W		
Israel						P, W		
Italy	W					W		
Japan						P, W		
Kazakhstan	P, W							
Laos		P						
Netherlands		W		W		P, W		
Norway						W		
Philippines					P			
Poland						P		
Republic of Korea						P, W		
Romania						P		
Russia	P, W					P, W		
Saudi Arabia						P		
Slovakia					W	P		
Slovenia						W		
South Africa						P		
Spain						W		
Sweden						P, W		
Taiwan			P	P				

Ukraine	P							
United Kingdom						P, W		
United States							P	
Vietnam		P			P			

## References

- Lee DH, Torchetti MK, Winker K, Ip HS, Song CS, Swayne DE. 2015. Intercontinental Spread of Asian-Origin H5N8 to North America through Beringia by Migratory Birds. *Journal of Virology* 89: 6521-6524; [doi:10.1128/JVI.00728-15](https://doi.org/10.1128/JVI.00728-15).
- Shearn-Bochsler VI, Knowles S, Ip H. Lethal Infection of Wild Raptors with Highly Pathogenic Avian Influenza H5N8 and H5N2 Viruses in the USA, 2014-15. 2019. *Journal of Wildlife Disease* 55:164-168. [doi:10.7589/2017-11-289](https://doi.org/10.7589/2017-11-289).
- Tanimura N, Tsukamoto K, Okamatsu M, Mase M, Imada T, Nakamura K, Kubo M, Yamaguchi S, Irishio W, Hayashi M, Nakai T, Yamauchi A, Nishimura M, Imai K. Pathology of Fatal Highly Pathogenic H5N1 Avian Influenza Virus Infection in Large-billed Crows (*Corvus macrorhynchos*) during the 2004 Outbreak in Japan. 2006. *Veterinary Pathology*. 43:500-509. [doi:10.1354/vp.43-4-500](https://doi.org/10.1354/vp.43-4-500).