# PROTECTING WILD BIRDS FROM AVIAN INFLUENZA

*Position paper adopted by the Nature and Climate Task Force in Europe and Central Asia on 8 September 2023*


## Summary

**Highly pathogenic avian influenza is causing mass mortality in wild birds in many parts of the world. The current epidemic is the worst in history. The disease is caused by a virus that evolved in poultry farming. The virus spreads via bird droppings, water and direct contact. The current virus has adapted to many bird species. Waterbirds and seabirds have been particularly badly hit, but the virus is also impacting also birds of prey and scavengers.**

**Urgent actions are needed to prevent and halt outbreaks. The responsible authorities need to intervene: they should quickly remove dead birds from colonies to prevent further spread, when deemed appropriate. The authorities should also put an end to the breeding and release of game birds and the use of live decoys. They should prohibit supplementary feeding of susceptible species, unless this is essential for their conservation. A feasibility study is needed to assess the potential for vaccinating wild birds of conservation concern and establishing facilities to treat infected birds of these species.**

**Monitoring and research are essential. In order to understand the impact of the epidemic on nature better, more frequent and widespread testing of birds and mammals is needed, outbreaks should be properly reported, and background mortality in susceptible species should be monitored. Scientists should study events of spread from poultry to wild birds, the development of immunity in wild birds and test practical measures to prevent outbreaks or to reduce their impact on populations. Our understanding of the evolution of the virus needs to improve.**

**The risk to humans is currently estimated to be low for the general public, but higher in people frequently in contact with susceptible wild birds. Bird ringers should wear protective equipment. Hunting of susceptible species should be suspended. The European Union should ensure that Member States implement and enforce animal health regulations, and make more funding available for this through its Single Market Programme.**

**In the long-term, the poultry industry should be reformed, starting by reducing poultry density near wetlands. The poultry industry should improve its biosecurity and disease surveillance. Governments need to take action to ensure that wild bird populations recover, by safeguarding intact habitats, restoring degraded habitats, and taking measures to increase resilience of impacted populations, including through addressing other threats to them.**

## Introduction

1. Avian influenza has caused mass mortality in wild birds. Around the world, populations of waterbirds, seabirds and birds of prey have been badly hit. In some colonies, large proportions of breeding adults have died, and entire breeding seasons have been lost[1]. Species with small populations and range-restricted species are especially at risk as such large losses can accelerate the route to extinction. Many populations already had low breeding success or low survival rates before avian influenza, and might take years or decades to recover.

2. Avian influenza is a disease caused by a virus. There are two broad classes of variants: low-pathogenic avian influenza, usually causing mild illness, and highly pathogenic avian influenza, causing up to 100% mortality. Infected birds can spread the virus for about one week. Birds that do not die can develop immunity to the virus[2].

3. Highly pathogenic avian influenza evolved in poultry farming, and poultry farming is responsible for its spread into the wild. While low-pathogenic avian influenza is commonly found in wild birds, highly pathogenic avian influenza is an anthropogenic problem. Between 1959 and 2015 low pathogenic avian influenza viruses have mutated into highly pathogenic variants on at least 39 separate occasions[3]. Out of these 39 known conversions, 12 occurred on commercial farms in Europe. A notorious example is the emergence of H7N7 highly pathogenic avian influenza in the Netherlands in 2003, which lead to a human death and the culling of 30 million poultry[4].

4. Highly pathogenic avian influenza jumped to wild bird populations on several occasions. While the first events of avian influenza spreading from poultry to wild birds occurred in Asia back in 2005, there have now been strong indications of spread from poultry to wild birds occurring in the USA and Europe[5].

5. Since 2016, a group of highly pathogenic avian influenza viruses called clade 2.3.4.4b have become adapted to wild birds, while still able to infect poultry and spread from farm to farm. This group consists of H5 viruses such as H5N1, H5N6 and H5N8. The viruses of this group are able to spread along the flyways of migratory birds. Previously the viruses disappeared from Europe during the summer months, but in 2022, a H5N1 virus was present year-round for the first time. It is possible that avian influenza will be permanently present in Europe from 2022 onwards.

6. Bird droppings are the main route of infection. Waterbirds can get infected via water with bird droppings in it. Scavengers and birds of prey can get infected by eating sick or dead birds. Birds can also get infected by direct contact with other birds.

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[1] More than 40% of the South Eastern European Dalmatian Pelican population has died, and only 90 young were raised in 2022 in the breeding colony of Prespa (the largest breeding colony of the species) – see Alexandrou et al. 2022 https://doi.org/10.1017/S0030605322001041. For local impacts of the outbreak in colonies of Sandwich Terns (*Thalasseus sandvicensis*) in the Netherlands see Rijks et al. 2022 https://doi.org/10.3201/eid2812.221292.

[2] Immunity has been documented in ducks (see Caliendo et al. 2022 https://journals.asm.org/doi/10.1128/jvi.01233-22), in Griffon Vultures (*Gyps fulvus*, unpublished data) and in Mute Swans (*Cygnus olor,* Hill et al. 2016 http://dx.doi.org/10.1098/rspb.2016.2159).

[3] See Dhingra et al. 2017 https://doi.org/10.3389/fvets.2018.00084

[4] See Stegeman et al. 2004 https://doi.org/10.1086/425583

[5] See King et al. 2022 https://doi.org/10.1093/ve/veac035, Lee et al. (2018) http://dx.doi.org/10.3201/eid2410.171891 and Lycett et al. 2020 https://doi.org/10.1073/pnas.200181311.

7. There have been only a few infections in humans of clade 2.3.4.4b. The risk to the general public is currently estimated to be low[6]. There is a higher risk for people who are more frequently exposed to infected birds, such as poultry workers, hunters, bird ringers, wildlife rescue centre workers and people involved in the removal of dead wild birds or culled poultry. Mammals can also get infected, and there are indications of limited spread between mammals[7].

8. Temperature is the most important factor for persistence in the environment. The avian influenza virus can possibly survive for more than one year in lakes and other water bodies at low temperatures[8]. The virus can also possibly survive for a long time in feathers at low temperatures[9].

9. It is therefore deemed impossible to eradicate the virus from wild birds. Given the presence of the virus along extensive areas of the world, its resistance year round in water bodies, and on feathers, there is no use in culling wild birds or destroying wetlands in attempts to eradicate the virus at local levels. Under no circumstances should birds be poisoned, killed or otherwise harmed, and should wetlands or other habitats be destroyed. Instead we need to ensure resilient populations and ecosystems. This together with acquired immunity to the virus can lead to long-term survival of impacted populations.

## Monitoring

10. Appropriate monitoring of the virus in birds and the environment is crucial to address the epidemic effectively. Current monitoring is largely focussed on detection of the virus to assess the risk of it spreading to poultry farms. This type of monitoring is not suited for the purpose of protection of wild bird populations. We need to understand which species are affected, and how the virus impacts their conservation prospects. We also need to get a better understanding of how the virus spreads and evolves, from poultry farms to wild birds, and within wild bird populations. Testing birds that are found dead or are brought to wildlife rescue centres is important to understand the effects of the virus on their population and reproduction, but also to rule out other causes of mass mortality such as botulism, or storms at sea. Finally, monitoring and understanding of virus spread and evolution is essential for a One Health approach to tackling avian influenza.

11. The authorities responsible for animal health should ensure testing for highly pathogenic avian influenza of all individuals of susceptible[10] species of conservation concern with small populations that are found dead or are brought to wildlife rescue centres[11], after agreement with wildlife conservation organisations and site managers[12]. They should ensure testing of a

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[6] See the WHO Rapid Risk Assessment- Assessment of risk associated with recent influenza A(H5N1) clade 2.3.4.4b viruses https://cdn.who.int/media/docs/default-source/influenza/avian-and-other-zoonotic-influenza/h5-risk-assessment-dec-2022.pdf.

[7] Following large mortality events, South American Sea Lions (*Otaria flavescens*) have tested positive for highly pathogenic avian influenza see https://birdlife-hatch.org/topics/30587/topic_feed_posts/1341133.

[8] Ramey et al. 2022 https://doi.org/10.1016/j.scitotenv.2021.150078

[9] Yamamoto et al. 2017 https://doi.org/10.1128/AEM.00604-17

[10] A susceptible species is a species that can get infected by highly pathogenic avian influenza. This includes for example all ducks and geese, all birds of prey and scavengers, and all gulls and terns.

[11] For wildlife recovery centres rapid test kits should be provided by the authorities to prevent outbreaks in the centres.

[12] Collection of dead birds for testing should only be carried out when this is practically feasible and does not disturb breeding colonies. For removing of dead birds to prevent further spread see 'Protecting wild birds from avian influenza'.

representative sample of all other susceptible species. The authorities should also report the numbers of any rings via the appropriate platform.

12. In case of unusual mortality in any other bird species, including small songbirds, the relevant authorities should also ensure testing of a representative sample.

13. The authorities responsible for animal health should ensure testing for highly pathogenic avian influenza in all seals, dolphins and porpoises, large carnivores and carnivores of species of conservation concern that are found dead or brought into wildlife recovery centres.

14. The database on highly pathogenic avian influenza by the European Food Safety Authority (EFSA) and the World Organisation on Animal Health (WOAH) needs to be improved. While the estimates for poultry are adequate, for wild birds WOAH's reporting system severely underestimates the mortality[13]. WOAH needs to develop a sound case[14] definition. EFSA and WOAH need to improve species identification and carry out a standard check against a national checklist of wild bird species for cases in wild birds.

15. The authorities responsible for animal health need to start reporting on major outbreaks, in addition to reporting individual cases. For this, a universal template for reporting outbreaks needs to be urgently developed by WOAH.

16. The authorities responsible for animal health should put an early-warning system in place. During the breeding seasons, they should ensure weekly monitoring of all large colonies of susceptible bird species for unusual mortality, if this is possible without disturbing the colonies, to be assessed on a case-by-case basis. Similarly, after migratory waterbirds arrive to their breeding grounds, Important Bird and Biodiversity Areas (IBAs) identified for these species should be monitored weekly, if this is possible without disturbing the birds.

17. In addition to the above, the authorities should also ensure monitoring a representative sample of stagnant water bodies in IBAs identified for seabirds or waterbirds ahead of the seasonal arrivals of these species, to better understand the conservation impact the disease is having on those species.

18. Governments should ensure background monitoring of mortality in susceptible species and all species of birds of prey and vultures. Monitoring background mortality is an essential tool to detect outbreaks swiftly. Early warning is essential to prepare for carcass removal. and provides an estimate of additional mortality. For example, Beached Bird Surveys have detected outbreaks in seabirds before they arrived at the breeding colonies.

19. BirdLife Partners will promote the use of birding portals for monitoring avian influenza and background mortality. Birders, ringers and wildlife rescue centre workers are the eyes and ears in the field and can detect outbreaks and unusual mortality early.

20. The authorities should ensure yearly monitoring of all breeding and wintering populations that have been impacted by major outbreaks to ensure their recovery and take further measures if needed. For breeding populations, productivity should also be monitored yearly.

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[13] Klaassen and Wille 2023 https://doi.org/10.1101/2023.05.02.539182.

[14] A case is defined as a bird with typical symptoms of highly pathogenic avian influenza during an outbreak. There are currently multiple case definitions in use – some countries require a positive test for avian influenza, other also accept visual symptoms (e.g. uncoordinated behaviour) or suspicious mortality.

## Research

21. Research on preventing and halting avian influenza outbreaks in wild birds is urgently needed. The permanent presence of highly pathogenic avian influenza in Europe means that we need to get a deeper understanding of its spread, the development of immunity and virus evolution. Research on highly pathogenic avian influenza should become a priority for research funding.

22. We need to be able to reliably detect new types as they emerge, and to reliably detect spread from poultry to wild birds ('spillback'). To reliably detect cases of spillback, more sampling and sequencing of virus genomes is needed. Possible routes for spillback, such as waterbodies on poultry farms and wastewater and other effluents from poultry farms, should be investigated. The capacity of national reference laboratories for sequencing virus genomes needs to be increased.

23. Further research is needed on the mechanisms by which the virus spreads between wild birds. The survival of the clade 2.3.4.4b viruses in waterbodies under natural conditions needs to be studied. The mechanisms of spread within and between colonies need to be studied in-depth. During outbreaks in colonies, multiple samples should be collected and sequenced over the course of the outbreak, in order to understand possible entry routes. Research is also needed to investigate cases for which the mechanism of spread is not evident, such as cases in Eurasian Sparrowhawk (*Accipiter nisus*) and several owl species.

24. More insight is needed into the development of immunity in susceptible long-lived bird species, using serological testing for antibodies. Immunity is an important factor for the long-term survival of these species. In addition to dedicated research projects, the use of blood samples from existing surveillance programmes should be explored, such as investigations of raptors found dead or surveillance for the West Nile virus. Sampling of birds brought to wildlife rescue centres should also be explored. Understanding the development of immunity helps us understand extinction risk in the long-term and can guide further measures, such as vaccinating wild birds (see below).

25. Under no circumstances should healthy birds be culled to assess their immunity status.

26. Applied research on practical measures to detect, halt and prevent outbreaks is also needed. The sensitivity of the tests for highly pathogenic avian influenza needs to be improved. The design of breeding rafts, the possible division of breeding colonies, and the effectiveness of removal of dead birds during an outbreak needs to be studied. The potential to eradicate the virus from waterbodies should also be explored.

27. Further research is needed on human cases of avian influenza. A large-scale research project is needed to trace previous infections in poultry workers, hunters, bird ringers and scientists working directly with wild birds.

28. To address the gaps in research and monitoring, large projects with international coordination and the necessary resources are needed. These projects should be coordinated by EFSA and WOAH.

29. It is possible that highly pathogenic avian influenza will be permanently present in Europe from 2022 onwards. This means that populations of species of conservation concern may need to survive several outbreaks. The feasibility of vaccinating wild birds and establishing facilities for

curing wild birds of species of conservation concern with antiviral medication should therefore be studied.

## Protecting wild birds from avian influenza

30. Removal of dead birds can protect other birds nearby, birds of prey and scavengers. Removal of dead birds is the only successful measure thus far to halt ongoing outbreaks in colonies[15]. The following aspects need to be considered before dead birds can be removed:

    - Disturbance of breeding birds may be worse than carcass removal, or difficult terrain may prevent effective carcass removal. There are also often mixed colonies in which species of conservation concern breed together with other species. The decision to remove birds should therefore only be taken after agreement with wildlife conservation organisations and site managers.
    - In some populations, the majority of birds may already have developed immunity against avian influenza. In such populations, there is no need to remove birds that have incidentally died from avian influenza.

31. Considering the above, the authorities responsible for animal health should ensure the frequent removal of dead birds from colonies or sites with concentrations of migratory waterbirds, at least every two days when this is feasible and the prevention of further spread outweighs the disturbance (see above). They need to ensure on-demand availability of sufficient trained staff with personal protective equipment. It is essential that the removal and disposal of dead birds is carried out with a high level of biosecurity to protect the people removing the birds, and to prevent the virus from spreading further. For remote locations, the authorities should also ensure on-demand availability of mobile incinerators with the required permits.

32. Any unnatural concentration of susceptible wild birds, not essential for conservation, is an unnecessary risk. Avian influenza and other diseases can accumulate in water bodies. Supplementary feeding keeps the birds in the same areas for longer time and increases the contact rate between birds[16]. Governments should suspend baiting, supplementary feeding and other activities that concentrate susceptible bird species in the country or region for at least 30 days after the first case in these species. This suspension should be extended until there have been 30 days without any cases. Bird feeding that is essential for conservation, such as vulture-feeding stations, should continue.

33. Live bird markets for poultry and susceptible captive birds should also be suspended in the relevant country or region for at least 30 days after the first case of highly pathogenic avian influenza in poultry. This suspension should be extended until there have been 30 days without any cases.

34. Those responsible for tackling avian influenza should ensure strict protocols are used for activities in areas where there are concentrations of susceptible bird species and in (potentially) infected areas. The protocols should be made available in all EU languages and should include all measures to take in case of an outbreak. These measures should include disinfection of footwear and tires of vehicles before and after entering wetlands. They should also restrict access to

[15] See https://birdlife-hatch.org/topics/30587/topic_feed_posts/1398993
[16] See Murray et al. 2016 http://dx.doi.org/10.1016/j.biocon.2016.10.034

wetlands and waterbird and seabird colonies after an outbreak has occurred to limit disturbance and the risk of spreading the disease.

## Protecting ourselves

35. Governments and BirdLife Partners should inform the general public what to do if they come across a dead, sick or injured bird of a species that is susceptible to avian influenza.

36. Governments should ensure that people who are frequently exposed to birds of susceptible species are offered personal protective equipment and vaccination against seasonal human influenza. Bird ringers and other wildlife professionals have tested positive for (past) infections with avian influenza, and are at a higher risk than the general public.

37. Governments should suspend hunting of susceptible species for 30 days after the first case in those species is found on their territory. Hunters also have tested positive for past infections with avian influenza.

38. Governments should put an end to the breeding and release of game birds and the use of live decoys. The outbreaks in farmed and released pheasants in Finland has shown that this practice puts bird of prey and carnivores at risk[17].

## Reforming the poultry industry

39. In the short-term, governments should reduce the density of commercial poultry farms in areas close to wetlands. They should also reorganize poultry production systems highly susceptible to avian influenza exposure, for example by reducing the number of animals kept in one establishment.

40. Strict biosecurity measures should be put in place to prevent farm-to-farm spread and 'spillback' to wild birds. This includes permanent surveillance in poultry farms, more sampling and sequencing of virus genomes, investigation of events of farm-to-farm spread and spread via trade, and immediate culling when necessary.

41. Even with the most strict measures in place the intensive poultry production will remain a risk for the emergence and spread of highly pathogenic influenza viruses. National governments, the EU and intergovernmental organisations should promote a shift to a plant-based diet[18]. The overall number of livestock should be reduced. The role of intensive poultry production in the emergence and spread of highly pathogenic influenza viruses, and the risk of reassortments with swine influenza on pig farms is just one extra reason to put this unsustainable practise to an end. Intensive livestock production is extremely environmentally polluting. Intensive livestock production relies heavily on imported soy, which is causing large scale deforestation in South America. The water footprint of chicken farming is much higher than the footprint of growing beans, soy and other pulses. Intensive livestock production systems rely heavily on antibiotics use, which can contribute to antibiotic resistance in bacteria. Livestock production as a whole is responsible for a major share of global greenhouse gas emissions from farming.

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[17] See Tammiranta et al. 2023 https://doi.org/10.1016/j.meegid.2023.105423. Similar outbreaks have occurred in Belgium and the United Kingdom.

[18] For our full position see BirdLife Europe Position Paper: Feeding the world whilst saving biodiversity – policy asks on diet, bioenergy and food waste. Adopted by the EU Agriculture Task Force on 10 May 2019.

## Long-term resilience against avian influenza

42. Governments should put measures in place to ensure impacted bird populations recover after these develop immunity. Management of breeding habitat for former colonies should continue to ensure that these sites remain suitable for recolonisation by affected species. Similarly, provision of breeding rafts for relevant species and other measures to increase breeding success should remain in place and be enhanced where appropriate.

43. The survival of adult birds is essential to build long-lasting immunity in many species. The authorities responsible for nature conservation should ensure that a reassessment of ongoing pressures on impacted populations is carried out, and governments should put measures in place to increase adult survival or reproductive success. For example, for seabirds, measures to eliminate fisheries bycatch and improve food shortages should be put in place, and any existing fisheries permits and procedures should be reviewed in the light of the changes in conservation status.

44. Governments and site managers need to increase the resilience of susceptible colonially breeding species by encouraging the establishment of new colonies where appropriate, through nature restoration. If a large proportion of the global population is concentrated in one colony, a single outbreak of avian influenza can result in global extinction. The avian influenza epidemic underlines the urgency to restore wetlands and marine ecosystems to increase their resilience and the health of the bird populations that depend on them.

## The European Union

45. The EU Animal Health Law[19] and the Delegated Regulation on the prevention and control of certain listed diseases[20] oblige EU Member States to investigate suspected cases of highly-pathogenic avian influenza, to immediately require poultry farmers, food processors and other relevant actors to take control measures. The Delegated Regulation obliges EU Member States to ensure the safe removal and disposal of any wild birds that were killed or found dead and are suspected to be infected with highly pathogenic avian influenza.

46. The relevant provisions of the EU Birds Directive and Habitats Directive need to be implemented following an outbreak. In particular, EU Member States have an obligation to take the necessary measures to restore the bird species to favourable conservation status and to maintain their habitats.

47. Farm-to-farm spread of highly pathogenic avian influenza is still common. Between December 2021 and December 2022 there have been more than 1 000 cases of farm-to-farm spread in EU Member States[21], in particular in France and Hungary. EU Member States should effectively and fully enforce the EU Animal Health Law and the Delegated Regulation on the prevention and control of certain listed diseases. In particular, the authorities responsible for avian influenza must effectively inspect and enforce the application of biosecurity measures by all poultry farms and other bird keepers. They should also investigate compliance with biosecurity measures at farms where an outbreak has occurred.

48. The European Commission needs to investigate implementation of the EU Animal Health Law and the Delegated Regulation in all EU Member States where there is frequent farm-to-farm transmission. Farm-to-farm transmission is preventable and non-compliance with biosecurity measures is putting human health and wild birds at risk, as well as poultry stocks.

49. The EU is providing funding for emergency measures on animal and plant pests, including avian influenza, as part as its Single Market Programme. The European Commission should make this funding available for protected wild birds and other animals impacted by animal diseases. In particular, the Commission should amend Implementing Decision C(2022) 724 to earmark 7.5% of the emergency measures for biodiversity[22] at risk from listed diseases, double the budget for emergency measures to 38 million EUR and retain the co-financing rate of 50-75%.

[19] Regulation (EU) 2016/429 https://eur-lex.europa.eu/eli/reg/2016/429/oj
[20] Commission Delegated Regulation (EU) 2020/687 https://eur-lex.europa.eu/eli/reg_del/2020/687/oj
[21] See the EFSA reports here https://www.efsa.europa.eu/en/topics/topic/avian-influenza.
[22] The EU Biodiversity Strategy requires spending 7.5% of the 2021-2027 Multiannual Financial Framework on biodiversity objectives by 2024, but in 2021 the Single Market Programme spent 0% on biodiversity.