Department
for Environment,
Food & Rural Affairs

Risk assessment on the likelihood of spread of highly pathogenic avian influenza H5Nx associated with bird fairs, shows, markets, sales and other gatherings

Qualitative Risk Assessment

November 2025

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Executive summary

The hazard is high pathogenicity avian influenza (HPAI) virus H5Nx. Here, a rapid risk assessment (RRA) is undertaken to reassess the risk of HPAI H5Nx introduction from poultry and captive birds taken to bird fairs, shows, markets, sales and other gatherings (henceforth referred to as “gatherings”). The risk of other birds subsequently becoming infected at a gathering should an infected bird be introduced into that gathering and then spreading through dispersing to different establishments has been assessed in previous versions of this RRA as medium and this risk assessment uses the same methodology as previous iterations. Critical to this RRA therefore is the likelihood that captive birds are infected prior to their transport to a gathering, together with the likelihood that any infected birds are not detected (and hence removed) before reaching the gathering.

The main route of exposure of captive birds prior to transport is through contact with wild birds (either direct or indirect contact). At the present time (12 November 2025) the wild bird risk for HPAI H5Nx is at **very high** in Great Britain. Since the beginning of the 25/26 season (1 October 2025) wild bird cases have been reported across all of England, most of Wales and part of Scotland with many cases inland. Resident waterbird species, namely mute swans and Canada and greylag geese are badly affected. This together with the increase in IPs across England and Wales warranted increasing the risk level for poultry with suboptimal biosecurity to **very high** with low uncertainty.

In terms of the bird species considered in this RRA, those poultry and bird species that are most likely to be taken to gatherings include seven bird orders, namely Psittaciformes (parrots), Columbiformes (doves and fancy pigeons excluding racing pigeons), birds of prey (Accipitriformes and Falconiformes), Passeriformes (finches), Galliformes (poultry and game birds), Anseriformes (ducks and geese) and Ratites (ostriches, emus and rheas). The baseline risk of those birds being infected prior to the gathering for this RRA is based on that of poultry with sub-optimal biosecurity. As with the previous gatherings RRA, that risk for each of the seven bird orders is then refined based on specific differences in access to the environment where residual infectivity from wild birds may be present. Captive ducks and geese kept outside or in un-netted ponds are likely to have contact with wild duck, geese and swan species both at inland and coastal captive bird premises. The risk of infection of captive Anseriformes at coastal sites prior to attending the gathering or show is therefore also **very high** (with low uncertainty) due to the ongoing detections in waterfowl which could visit coastal water bodies utilised by or frequented by captive Anseriformes. The risk of infection for captive Galliformes across Great Britain prior to attending the gathering is assessed to be **very high** (with low uncertainty) in line with the risk for poultry with suboptimal biosecurity. The risk of infection prior to the gathering for parrots, pigeons and passerines is assumed to be the same as that for poultry with stringent biosecurity. However, birds of prey (if used for hunting) and ratites (being kept outside and not housed) are allocated a **high** risk of infection prior to the gathering.

The results of the risk assessment are set out in the table below.

Summary table: Qualitative risk assessment for entry and subsequent spread of HPAI H5Nx at bird gatherings according to bird group (for November 2025)

Captive bird group taken to gathering	Risk of entry and subsequent spread	Uncertainty
Psittaciformes	Low	Medium
Columbiformes	Medium	Medium
Birds of Prey	Low	Medium
Passerines	Medium	Medium
Galliformes	Medium	Medium
Anseriformes	High	Medium
Ratites	Low	Medium

For most captive bird groups, the risk of entry and subsequent spread of HPAI H5 at a gathering is **low** or **medium**. However, the risk from Anseriformes is now assessed to be **high** due to the likely exposure to water birds at water bodies where the captive birds may be kept. This in effect reflects the direct exposure of captive Anseriformes across Great Britain to potentially infected wild waterbirds (both resident species and migratory species). The risk of entry and subsequent spread of HPAI H5 at a gathering through Galliformes is still assessed to be **medium** (despite the very high risk level for poultry with suboptimal biosecurity) because most infected Galliformes would be detected prior to being taken to the gathering. Similarly the risk of entry and spread from Psittaciformes, ratites and birds of prey is **low** because infected birds would be detected prior to being taken to the gathering.

The uncertainty in the risk levels is medium reflecting the uncertainty for the likelihood of infected birds not being detected in each group. In effect, **detection of infected birds by the owner prior to the gathering is now the main protective barrier for gatherings**. This reflects the very high wild bird infection pressure currently across Great Britain.

Given this range of risks, there are options around the licensing of gatherings which include:-

- to ban for the period of the AI prevention zone
- to allow but only for certain species of birds
- to allow but with improved requirements for biosecurity or
- Captive birds could be housed for seven days prior to moving to the gathering.

If the available biosecurity measures are considered to be insufficient to mitigate the risks identified, or if there is insufficient assurance that they will be complied with, then a ban on some or all categories of gathering would be justified.

Background

Here, a rapid risk assessment (RRA) is undertaken to reassess the risk of high pathogenicity avian influenza (HPAI) H5N1 introduction and spread from poultry and captive birds taken to bird fairs, shows, markets, sales and other gatherings (henceforth referred to as "gatherings"). Gatherings of birds involve the coming together and subsequent dissemination of live kept birds (as well as people, vehicles and equipment) and for this reason can facilitate the introduction and spread of avian notifiable disease including HPAI to different locations across Great Britain. The magnitude of this risk is influenced by the number of different groups of birds brought together and the likelihood of their being already infected at their point of origin. Movements out of an SZ or PZ around a confirmed infected premises are not permitted but other than this, traceability of poultry is lightly regulated so most moves outside a restriction zone are of uncertain origin and status.

Previous Defra risk assessments (Defra, 2016) were used as a basis for the general licence allowing bird gatherings to take place while minimising the risk of introduction of avian notifiable diseases to these events and mitigating the likelihood and impact of any subsequent spread. Here the risk assessment is updated to accommodate the risk levels for HPAI H5N1 in wild birds and poultry in November 2025.

Trends and risk levels in the current epizootic

Please see our updated outbreak assessment for details (Avian influenza (bird flu) in Europe, Russia and the UK - GOV.UK). Briefly there have been 133 wild bird cases (based on test date) in Great Britain and 24 Infected Premises (IPs) since our previous outbreak assessment on the 28 October 2025. It is interesting to note (Table 1) from the point of view of gatherings that Anseriformes (ducks, geese and swans) account for a high proportion of the wild bird cases in terms of wild bird group with migratory whooper swan cases increasing through November. Mute swans represent the most frequently detected species (Table 1). At this time of the year, some 80% to 90% of the migratory duck, geese and swans have arrived in Great Britain from Europe. The trajectory is likely to increase over the short term at least. However, a cold snap in Europe could bring more birds over to Great Britain. The number of gamebird cases in Great Britain (Table 1) is also increasing in terms of the percentage in November compared to October and could be a link to captive Galliformes. Also of note is the detection of three cases in feral pigeons in October in Great Britain and a woodpigeon case in Belgium suggesting that the high wild bird infection pressure is even impacting on less susceptible species present in high abundance.

Table 1: Numbers (and percentages) of wild bird cases of HPAI H5N1 and H5Nx according to bird group in Great Britain collected from 1 October 2025 to 11 November 2025. These are based on collection date (not test date) to give information on monthly trends in wild bird cases.

Month	Wild bird group	Number of positive cases	Percentage of positive cases for the month
November	Gamebird	3	10.3%
November	Gull	2	6.9%
November	Migrant Goose/Ducks	1	3.4%
November	Migrant Swan	8	27.6%
November	Mute Swan	10	34.5%
November	Raptor	1	3.4%
November	Resident Goose/Ducks	4	13.8%
November	**Total**	**29**	**N/A**
October	Gamebird	3	1.9%
October	Gull	7	4.4%
October	Heron	1	0.6%
October	Migrant Goose/Ducks	16	10.0%
October	Migrant Swan	8	5.0%
October	Mute Swan	63	39.4%
October	Pigeon	3	1.9%
October	Raptor	9	5.6%
October	Resident Goose/Ducks	49	30.6%

October	Seabird	1	0.6%
October	**Total**	**160**	**N/A**

Captive bird orders glossary

The bird orders of captive birds considered are set out in Table .

Table 2 Glossary of captive bird orders considered here with examples.

Order	Examples
Psittaciformes	Parrots
Columbiformes	Pigeons and doves
Birds of Prey (Accipitriformes and Falconiformes)	Hawks and falcons
Passeriformes	Perching birds (Finches and canaries)
Galliformes	Turkeys, pheasants, chickens, guineafowl.
Anseriformes	Ducks and geese
Ratites	Ostriches, emus and rheas.

Hazard identification

The hazard identified is highly pathogenic avian influenza virus, (HPAI) H5Nx.

Risk Question

1) What is the risk of the introduction of highly pathogenic avian influenza H5Nx onto bird fairs, shows, markets, sales and other gatherings?

2) What, if any, management options are available to reduce the likelihood and the impact of introduction and subsequent spread of avian notifiable disease through the abovementioned gatherings?

Scope

This qualitative risk assessment covers the risk of introduction and subsequent spread of avian notifiable disease to and from bird gatherings organised in Great Britain that were legally moved to the event from within the UK.

This risk assessment does not assess the risk related to illegal movements, negligence to report clinical disease, false certification, breaches in biosecurity etc. Any risks potentially presented by (or to) wild birds are also not assessed here.

Terminology related to the assessed level of risk

For the purpose of the risk assessment, the following terminology will apply (OIE, 2004):

- **Negligible**: So rare that it does not merit to be considered
- **Very low**: Very rare but cannot be excluded
- **Low**: Rare but does occur
- **Medium**: Occurs regularly
- **High**: Occurs very often
- **Very high**: Event occurs almost certainly

It should be noted, however, that the risk terminologies here do not represent how often an event will occur but more indicate the probability of the event occurring.

Entry assessment

The Defra (2016) assessments concluded that the overall risk of the introduction of avian notifiable diseases including HPAI to a bird gathering is related to the ongoing disease situation in Great Britain, both in domestic poultry and in wild birds.

As adopted in previous RRAs for gatherings, the risk of those birds which may attend gatherings being infected with HPAIV H5Nx is based on the official risk of poultry with suboptimal biosecurity in Great Britain being infected through background environmental contamination from infected wild birds (see Table 3). **This risk is currently very high (with low uncertainty)** where biosecurity is sub-optimal and **medium (with high uncertainty)** where biosecurity is stringent**.** The Avian Influenza Prevention Zone (AIPZ) is still in place (12 November 2025). A mandatory housing order was put in place across the whole of England on 6 November 2025 (National Housing Order declared to protect poultry from Avian Influenza - GOV.UK).

It is assumed that keepers of any birds participating at a gathering are doing so in full compliance with the legal requirements for movements of live birds, and that birds are not coming from areas under disease control restrictions.

Likelihood of captive bird being infected prior to being taken to gathering

Captive birds, such as those held in collections, zoos or approved bodies are already semi-housed and should be kept separate from wild waterfowl. For some, it will be difficult to prevent access to their water environment (ducks, geese, swans, penguins, pelicans, flamingos etc) and it is unlikely that it will be possible to house indoors, so every effort should be made to prevent wild waterfowl access.

Due to the varying level of biosecurity (and considered lower than stringent), those birds being taken to gatherings and shows will be of more uncertain infection status than commercial poultry with stringent biosecurity. Also monitoring and data for commercial production mean that commercial birds can be tracked more easily than for those birds at gatherings and shows. Birds from non-commercial settings carry greater uncertainty. The baseline risk of infection assumed for those birds that could be taken to gatherings is based on the current (12 November 2025) risk to poultry with sub-optimal biosecurity, that is **very high with low uncertainty**. The risks for the seven bird orders considered here (Table) are refined in Table 3 based on specific differences in access to the environment where residual infectivity from wild birds may be present. It has already been noted above that the risk levels exist as bands, though those at the higher end are much narrower than the lower risk levels.

Psittaciformes and Passeriformes

Psittaciformes and passerines are kept in aviaries. Given the fact that HPAI H5Nx is still circulating in wild birds and there are still occasional reports in poultry, the risk to birds even with stringent biosecurity being exposed to HPAIV H5Nx is considered to be low and cannot be reduced to very low because even with being kept in indoors or in aviaries, exposure could occur given residual contamination in the environment, though there is less likelihood of direct wild bird contact. Thus, for Psittaciformes and passerines the risk of infection prior to being taken to the gathering is now considered **medium**. The uncertainty is medium due to the variation in how these birds are kept, i.e ranging from a single bird kept indoors to outdoor aviaries with large collections.

Columbiformes

For the purpose of this document, racing pigeons are not included as they are considered a distinct husbandry system and are the subject of an independent risk assessment. Nevertheless, related Columbiformes may be taken to bird gatherings for other species or breeds. There have been relatively few reports of cases in wild Columbiformes on WOAH

over the last few years of the epizootic. Experimental research has provided further evidence for the low level of susceptibility of these birds to H5N1 (Di Genova et al. 2025). Overall considering the abundance of Columbiformes both in Great Britain and globally, there have been relatively few HPAI H5N1 cases in pigeons and doves reported. Although Columbiformes may be kept outside, direct contact with waterbirds is likely to be low. However, in October there have been three cases in feral pigeons in England and also a case in a woodpigeon in Belgium. This may reflect the very high wild bird infection pressure together with the abundance of pigeons The likelihood of Columbiformes being infected prior to being taken to the gathering is therefore assumed to be **medium** with medium uncertainty.

Birds of prey (Accipitriformes and Falconiformes)

There are many reports of wild raptors being infected both in Great Britain and globally with HPAI H5N1 and also with HPAI H5N5, perhaps because they are exposed to very high viral doses when scavenging infected birds. Most captive birds of prey will be fed on commercial feed considered to be low risk for infection (such as day-old chicks, reared small rodents) but some are fed shot game, including wild duck, which increases risk of infection through feeding. Given the very high risk level in wild birds, including cases in ducks which captive falcons may be used to hunt, the overall risk of captive birds of prey having disease prior to being taken to a gathering is now assumed to be **high**. The risk would be lower to falcons not contacting wild birds including waterfowl hence the medium uncertainty.

Ratites

Given the small number of ratites (compared to other poultry species) in Great Britain, it was previously considered here that the likelihood of an infected bird being taken to a gathering was **low**. Ratites are always kept outside and it may not be possible to house them given their large size. So far in 2025 there have been three reported cases of HPAI H5N1 in ratites including a captive emu in Brazil, a captive ostrich in Mexico and most recently in a captive rhea species in Portugal according to WOAH. With the current very high wild bird infection pressure, the likelihood that a ratite is infected prior to a gathering is now elevated to **high** (with high uncertainty).

Galliformes

There have been 33 poultry IPs in Great Britain since the 1 October 2025. The likelihood of captive Galliformes being infected prior to being taken to the gathering is assumed to be the same as that current for poultry with suboptimal biosecurity namely **very high** with low uncertainty. The low uncertainty reflects the fact that the captive Galliformes' risk level could be the same as that currently for wild birds, namely very high, if they are allowed to mix with wild birds on ranges.

Anseriformes

A key change since our previous RRA in August (QRA_Gatherings_for_Licensing_Aug_25.pdf), is that through September and October, not only have resident waterbirds formed aggregations at their wintering sites so increasing bird to bird contacts, but also all the migratory waterfowl have arrived in Great Britan from Europe to overwinter. Since September 2025 the number of cases of HPAI H5N1 in wild resident Anseriforme species (including mute swans, greylag geese, Canada geese and mallard ducks) has increased markedly across Great Britain through October, with increasing numbers of cases in migratory swans (whooper swans) into November (see Table 1). Captive ducks and geese kept outside or in un-netted ponds are likely to have contact with wild duck, geese and swan species both at inland and coastal captive bird premises. The risk level for captive Anseriformes (ducks and geese) prior to being taken to gatherings is therefore assessed to be **very high** with low uncertainty across Great Britain (Table 3) reflecting the current (November 2025) risk level and its associated uncertainty for poultry with suboptimal biosecurity.

It is important to note that the wild bird surveillance figures for Great Britain are based on passive surveillance of found dead birds reported to Defra by the general public and as such, may be affected by several factors including frequency of visitors accessing areas with bird populations, the potential for immunity in the wild bird population (which may result in fewer birds developing clinical disease and or dying with HPAI), variable surveillance system sensitivity, as well as the size, location and accessibility of carcasses. Thus this wild bird surveillance does not necessarily capture all of the cases that occur, although the current number of cases reported (see Table 1) fully supports the very high risk level for wild birds.

Table 3 Likelihood of HPAI H5Nx infection in each group of captive birds prior to attending the gathering

Order	Examples	Likelihood of being infected currently (12 November 2025) prior to going to gathering	Uncertainty
Psittaciformes	Parrots	Medium – kept in aviaries or indoors. Risk may be lower if keep indoors, although risk for poultry with stringent biosecurity is now at medium.	Medium
Columbiformes	Pigeons and doves	Medium – generally kept outside. Although susceptibility to H5N8 is low compared to other species (Kwon et al, 2017) infection does occur with three cases this season in feral pigeons in Great Britain and a woodpigeon in Belgium.	Medium
Birds of Prey	Hawks and falcons	High – particularly if allowed to catch wild waterfowl at the current time (November 2025)	Medium
Passerines	Finches and canaries	Medium - kept in aviaries or indoors.	Medium

Order	Examples	Likelihood of being infected currently (12 November 2025) prior to going to gathering	Uncertainty
		Risk may be lower if keep indoors, although risk for poultry with stringent biosecurity is now at medium.	
Galliformes	Turkeys, pheasants, chickens, guineafowl.	[a]Very high- based on current risk to poultry with poor biosecurity. Captive Galliformes likely to be outdoors with greater opportunity of exposure to wild birds hence suboptimal biosecurity.	[b]Low
Anseriformes	Ducks and geese	[a]Very high – same as that for wild birds assuming that captive ducks and geese have greater contact than other captive bird groups with wild birds including resident ducks, geese, swans and gulls. Captive ducks and geese likely to be outdoors with access to ponds where HPAI H5N1 could be introduced if present in local wild resident ducks, geese and swans particularly at current time of year when wild waterfowl aggregate.	[b]Low

Order	Examples	Likelihood of being infected currently (12 November 2025) prior to going to gathering	Uncertainty
Ratities	Ostriches, emus and rheas.	High – kept outdoors with access to wild birds	High

[a]Based on the current risk level (12 November 2025) to poultry with suboptimal biosecurity.

[b]In the case of some captive Galliformes and many Anseriformes the risk level will be the same as that currently for wild birds, namely very high, if they are allowed to mix with wild birds on ranges and ponds respectively, hence low uncertainty.

Likelihood of HPAIV H5Nx not being detected prior to gathering

The level of awareness of avian notifiable diseases in Great Britain is thought to be generally high and suspicions of clinical disease in poultry and other captive birds would be reported reasonably quickly, generally within a few days, particularly with the current awareness in the sector of HPAI H5N1 in wild birds. Movement restrictions for disease control purposes would be uniformly implemented based on domestic and retained EU Community legislation. The length of the virus incubation period as well as the possibility of virus shedding during this time is an important factor to be considered while assessing these risks. However, no official incubation period for avian influenzas is established for bird species other than poultry and the actual length of the incubation period is affected by numerous factors including the disease, the virus load, the actual virus strain, the species, immune status etc.

Psittaciformes

Cases of HPAI H5N1 infection in wild parrots have been reported on WOAH mainly in South America in recent seasons. A range of species have been reported, including blue-and-yellow macaw, budgerigar, burrowing parrot, Mealy parrot, red-and-green macaw, scarlet macaw, slender-billed parakeet, white-winged parakeet, and yellow-headed Amazon parrot. There has been a case where budgerigars were infected at a premises in Norfolk in mid-December 2024. The likelihood of HPAI infection being undetected for Psittaciformes is unknown, but given the multiple detections in wild parrots in South America and the cases in zoos, including the captive bird establishment in Great Britain, is assumed to be **low** with medium uncertainty.

Columbiformes

A study in which 18 pigeons were inoculated intranasally HPAI H5N8 (clade 2.3.4.4 subgroup B) from South Africa reported viral shedding in medium and high-dose pigeons for up to eight days. Infected pigeons successfully transmitted virus to contact pigeons. There were no clinical signs observed in any of the birds involved and seroconversion was observed in two of the high-dose group chickens (Abolnik et al, 2018). Another study of domestic pigeons, inoculated oculo-nasally with HPAI H5N8 (Clade 2.3.4.4 sub-group icA3) of Korean origin, showed no clinical signs or mortality even though, relatively high levels of shedding were observed in half of the pigeons. The study concluded that, though they have lower susceptibility than some other species, pigeons can be infected with HPAI H5N8 when exposed to high doses and could excrete the virus in sufficiently high doses to infect other species of birds (Kwon et al, 2017). Pigeons could also be fomite transmitters of the virus. Pigeons do not show clinical signs when infected with H5N8 (Abolnik et al, 2018, Kwon et al, 2017) and it is assumed here that there is a **high** likelihood (medium uncertainty) of not detecting Columbiformes infected with HPAI H5.

Birds of prey

The likelihood of disease not being detected prior to the gathering is **low** for birds of prey. This is because birds of prey seem particularly susceptible to morbidity and mortality from HPAI H5Nx with many affected in the wild in both Great Britain and globally. It is known that birds of prey show overt clinical signs if infected with the H5N8 HPAI virus, and HPAI H5N1 positive found-dead birds of prey have been a feature in Great Britain in recent weeks and previous seasons (along with captive birds of prey in previous seasons). The infected birds of prey would show clinical signs within 2-3 days of feeding and are likely to be detected prior to taking to a gathering, hence the low risk. However, this may not be the case of all birds of prey, for example white-tailed eagle and the uncertainty is medium.

Passerines

Passerines, including canaries and finches, are known to be susceptible to low pathogenicity avian influenza (LPAI) H5 and that they can shed large amounts of viral RNA through the respiratory route (Marché et al 2018). While they do not show clinical signs or mortality with LPAI, if infected with HPAI H5 then a proportion would be expected to show mortality and there have been reports of mortality of wild passerines both globally and in Great Britain from HPAI H5N1 strains Since 01 October 2022, HPAI H5N1 cases include chaffinch, tree sparrow, goldfinch, house sparrow and several corvids in Europe with cases in zebra finch in the Americas. However, for the 2023 to 2024 and 2024 to 2025 season, there have been no detections of HPAI H5Nx in found dead wild passerines, in comparison to the 2022 to 2023 season in Great Britain there were four cases in passerines, namely a reed warbler and three carrion crows. Though this could be due to any of the issues with passive surveillance issues and unknown immunity status as discussed elsewhere. While there have been reports in previous years, there have been no reports in kept passerines in the 2024 to 2025. The likelihood of infected passerines not being detected is therefore assumed to be **medium** with medium uncertainty.

Galliformes

Galliformes show high mortality in the poultry outbreaks. Similarly, pheasants are susceptible to H5 HPAI infection and rapidly show clinical signs although those birds infected recently would still be in the incubation period. Therefore, the likelihood of infected pheasants or chickens not being detected prior to taking to a gathering would be **low**. However, partridges may not show clinical signs and could be missed (Seekings et al. 2024). Furthermore, although Galliformes show high mortality it is considered that detection or reporting could be low in backyard poultry. Therefore, for the purpose of this risk assessment it is assumed the likelihood of disease not being detected or reported in Galliformes on backyard premises which could be taken to gatherings is **medium** with medium uncertainty.

Anseriformes

While there have been many dead Anseriformes-positive wild bird cases reported both in Great Britain and globally, many wild ducks and geese have survived, and given the level of exposure and virus circulation in recent years there is a possibility of immunity though this is unknown. Furthermore, some ducks may not show clinical signs suggesting that the likelihood of infected ducks and geese not being detected prior to the gathering event is **high**. The uncertainty is medium.

Ratites

Elsayed et al. (2022) reported mortality rates of 90% in ostrich flocks in South Africa infected with HPAI H5N8. The birds suffered loss of appetite, dropped production, and oculonasal discharges with bleeding from natural orifices. The uncertainty of not being detected is therefore **low**, with medium uncertainty.

Exposure assessment

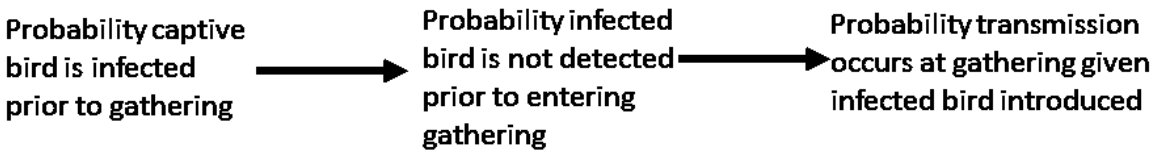
This section deals with the risk that an infected bird entering a gathering will spread disease to other birds at that gathering. If infection were to be introduced to a bird gathering, the likelihood of its spread depends on a number of factors such as the pathogenicity and transmissibility of the virus, the amount of virus being shed by the infected bird, the nature and layout of the gathering such as the housing and proximity of the participating birds, whether the birds are mixing, access to common water sources and whether they are in direct contact with visitors.

Spread of disease within the gathering

Spread through a gathering is based on the aggregated risk from multiple contacts between the infected bird introduced to the gathering and the other birds from different origins and hence going to different destinations after mixing at the gathering. From an epidemiological point of view, the probability of one or more birds actually being exposed to infection at the gathering is defined as "$1-(1-p)^n$", where p is the probability that an infected bird introduced to the gathering infects another bird given a contact, and n is the number of such contacts. There are no data on p and n at gatherings. However, even if p were low then just ten contacts with the infected bird at the gathering would be sufficient to give an aggregated probability of medium that at least one exposed bird at the gathering would be infected. If p were medium, then just one contact would be sufficient to give a medium aggregated probability that at least one bird would be exposed. Therefore, the risk of disease spread, if introduced to a gathering would be at least medium. This is increased to high in the case of Anseriformes and Galliformes because more individual birds of these two groups may be taken to gatherings.

Qualitative risk assessment

For the purpose of this RRA a simplified risk pathway is used as set out below.



The three qualitative risks in the pathway for each bird order are combined using the matrix of Gale et al. (2009) to the give the overall risk of spread of HPAIV H5Nx from bird gatherings in Great Britain currently.

Incursions at gatherings from wild birds and in particular gatherings at coastal sites are not considered here.

The risk assessment for the current situation (22 November 2025) is set out in Table 4.

Table 4 Qualitative risk assessment for entry and subsequent spread of HPAI H5Nx at bird gathering according to bird group based on risk levels for 22 November 2025. Uncertainty in parentheses.

	Psittaciformes	Columbiformes	Birds of Prey	Passerines	Galliformes	Anseriformes	Ratites
Risk of infection prior to gathering (11 Nov 2025) see Table 3	Medium (Medium)	Medium (Medium)	High (Medium)	Medium (Medium)	Very high (Low)	Very high (Low)	High (High)
Likelihood of infected bird not being detected prior to gathering	Low (Medium)	High (Medium)	Low (Medium)	Medium (Medium)	Medium (Medium)	High (Medium)	Low (Medium)
Risk of spread of disease at gathering	Medium	Medium	Medium	Medium	High	High	Medium
[a]Overall risk	Low (Medium)	Medium (Medium)	Low (Medium)	Medium (Medium)	Medium ([b]Medium)	High ([b]Medium)	Low ([b]Medium)

[a]Overall risk of spread of HPAIV H5Nx at bird gathering calculated as lowest probability in the column according to matrix of Gale et al. (2010).

[b]The medium uncertainty reflects the medium uncertainty in the probability of detection of an infected bird prior to the gathering.

Consequence assessment

Spread of disease from the gathering

If undisclosed avian notifiable disease were to be introduced to a bird gathering by live birds, there is a possibility that unless disease is confirmed during the event, it would remain undisclosed until after the gathering – and therefore there is a potential for further spread. The likelihood of this depends on the length of the event as with longer events the possibility that birds show signs of disease becomes greater, although it may also increase the number of potential contacts between birds at the gathering.

The extent of onward geographical spread depends on the extent of contact and spread between birds at the gathering itself and also where the birds are transported to following the event. The most effective way of preventing such spread would be to detect suspicion of disease at the time of the gathering, while the birds are still together. However, if the source of infection is a (group of) birds with subclinical infection, this increases the risk of onward spread. The size of the gathering, levels of biosecurity and length of the gathering would directly affect the number of potential contacts between infected and susceptible birds.

The consequence of avian influenza being detected in birds either at or having attended a gathering during the risk period is a serious matter for not only industry but also for the competent authorities. This could lead to a multi-focal outbreak in birds which have moved to different parts of the country, which are difficult to trace.

Any outbreak of notifiable avian disease has a significant impact on the UK poultry industry, through the trade and economic impacts on the producer. This is the same for any notifiable avian influenza virus. Average costs to government may be between £2 million and £4 million per outbreak, depending on the number of birds involved and complexity of the investigation.

If disease is detected at a gathering before it concludes and before the birds are dispersed, Government would face a complex challenge relating to disease control at the gathering, including dealing with a large number of owners who may be resistant to the need to cull their birds.

Whilst spread from a gathering may not lead to widespread disease into the commercial sector and may be restricted to small producers, the case in 2007 in the UK involving a

market showed that there is a potential scenario for this occurrence. While for the majority of shows and gatherings involve birds classified as not destined for the food chain (as breeders or producers) it is important to note that even one outbreak in backyard premises would still lead to implementing disease control measures, as specified in the current regulations.

The risk assessment presented here addresses the risk of transmission at gatherings and does not consider how many other establishments could be infected, which would depend on the size of the gathering and individual bird keepers who attend them. In the 2020 to 2021 epizootic of HPAIV H5Nx in Europe, there was evidence that many captive bird/poultry outbreaks could be traced to a single dealer in southern Germany emphasizing the potential consequence that gatherings could have.

A reasonable worst-case outcome for multiple outbreaks to occur would be for an infected but apparently healthy bird to be taken to a gathering where it infects some, but not all, of the other birds present, but disease is not detected. The birds at the gathering are then taken to widely distributed premises. One or more of the infected birds is then detected through passive surveillance leading to at least one outbreak being confirmed with consequent disease control zones, impacts on industry and a costly tracing exercise. There has been one comparable case in recent years but this involved LPAI so the consequences were limited and again, for certain species of birds this is less likely.

Mitigation measures

Measures to mitigate the risk of disease entering a gathering and the potential impact include disease vigilance and prompt reporting of any suspicion, high levels of biosecurity and accurate record keeping to assist in any possible tracing exercise following the event. A table has been provided in previous versions of the document (ANNEX1). The risk of further (cross) contamination and onward spread occurring at and beyond the gathering could be mitigated by maintaining high levels of biosecurity, including reducing the number of potential contacts between infected and susceptible birds and informing livestock keepers about the need for vigilance for clinical signs of avian notifiable disease. However, there is a significant infection pressure currently, with HPAI widely circulating in wild bird populations and poultry premises with varying levels of biosecurity implemented. A quarantine or standstill period on holdings prior to attendance at gatherings and also after return of birds from gatherings could also be considered, although may be impractical, particularly for backyard premises and against the backdrop of the current infection pressure and anticipated trajectory which is expected to continue until after aggregations disperse and environmental conditions are less suitable for survivability.

Conclusions

Currently (12 November 2025) the risk from gatherings is predicted to be **low** for Psittaciformes, captive birds of prey and Ratties and **medium** for Galliformes,, Columbiformes, and passerines. The risk is **high** for captive Anseriformes (ducks and geese).

The risk for captive Anseriformes is **high** because kept ducks and geese, if they have access to the outdoors, would have greater contact with water bodies could attract infected resident waterbirds such as Canada geese, mute swans and mallards. The **medium** risk from captive Galliformes is dependent on most infected Galliformes showing clinical signs and being detected prior to being taken to the gathering. The same applies to birds of prey and ratites.

The uncertainty in the risk levels is medium reflecting that for the likelihood of infected birds not being detected in each group. In effect, **detection of infected birds by the owner prior to the gathering is now the main protective barrier for gatherings**. This reflects the very high wild bird infection pressure currently across Great Britain.

Therefore in response to the risk questions:

1) What is the risk of the introduction of HPAI H5Nx into bird fairs, shows, markets, sales and other gatherings? **The risk currently (at 12 November 2025) is low for Psittaciformes, kept birds of prey and ratites, medium for Columbiformes, passerines, and Galliformes but high for Anseriformes (ducks and geese).**

2) What, if any, management options are available to reduce the likelihood and the impact of introduction and subsequent spread of avian notifiable disease through the above mentioned gatherings? **Options are to ban, allow only certain species, where the risk is considered to be lower, or allow everything with stricter controls and this is in order of increasing risk. Given the disperse locations of cases in found dead wild birds and confirmed IPs, regionalisation is not recommended to be considered. When effective biosecurity measures are in place, housing is a barrier between poultry and pathogen. However there is a significant infection pressure currently and this may be difficult to achieve.**

Uncertainties

The very high risk level for poultry with suboptimal biosecurity is unprecedented for Great Britain. The low uncertainty in this risk level translates through to the very high risks assessed for Galliformes and Anseriformes being infected prior to the attending a gathering. The risks for the other captive bird orders are also elevated compared to previous risk assessments when the wild bird infection pressure was considerably lower. The consequence of having such increased risks for infection of captive birds prior to their attending the gathering is that the main barrier is now no longer the likelihood that captive birds are infected prior to the gathering, but instead it is the likelihood that keepers actually detect any infected birds before they take them to the gathering. Indeed (with the exception of Columbiformes), the overall risk of entry and spread of HPAI H5 at a gathering now represents the likelihood of infected birds not being detected prior to the gathering. This is a major concern for those four groups (namely birds of prey, ratites, Galliformes and Anseriformes) for which the probability of infection prior to attending the gathering is either high or very high. **For all seven groups of captive birds the overall uncertainty in the predicted risk of entry and spread at a gathering is medium, reflecting the medium uncertainty in the probability that a keeper actually detects infected birds and does not take them to the gathering**.

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Annex 1

Table 3. Comparison of measures available to regulate poultry gatherings and those applied in the current General Licence

Measure	In force
General licence permitting gatherings	Yes
Specific licences	No
Withdraw licence (ie ban)	No
Notify APHA >7 days in advance including: Date the gathering will take place. b) Location of the gathering. c) Details of the licensee (including full name, contact address and telephone number). d) Anticipated numbers and type(s) of birds.	Yes
No sales allowed unless additional conditions are met (see below)	No
The licensee must make a record of all people who bring poultry or other captive birds to a gathering or take such birds from a gathering and keep the record for at least 3 months following the end of the gathering. The record must include at least the following information: a) Full name. b) Home address. c) Telephone number. d) Number and type(s) of birds exhibited, raced, bought or sold.	Yes
The licensee must not allow any cage, crate, basket or other container onto a gathering which is contaminated with bird droppings, bedding or other material of bird origin other than that from, or provided for, the birds brought to the gathering and must make this requirement known to all those bringing birds to the gathering in advertising, on entry forms or by any other means	Yes
The licensee must ensure that any cages, crates, baskets or other containers not removed from the premises by those attending the gathering are cleansed	Yes

and disinfected as soon as reasonably practicable after the end of the gathering and in any case before they are used again.	
i) ensure that any feed to which poultry or other captive birds had access, and all bedding, droppings, other material of bird origin and other contaminants derived from birds at the gathering and which are left on the premises when the gathering has ended are - a) destroyed; b) treated so as to remove the risk of transmission of disease; c) disposed of so that birds do not have access to them; or d) disposed of as Category 2 products under the Animal By-Products Regulations 2005. ii) where practicable, cleanse and disinfect those parts of the premises contaminated by such materials.	Yes
14 days notice to APHA	No
A named veterinary surgeon must be available on site during the whole time of the event for advice in case of suspect disease or a welfare problem. The veterinary surgeon should be responsible to ensuring that only clinically healthy birds in clean cages are entering the event.	No
Biosecurity advice must be distributed at the event.	No
Written contingencies, held by the nominated responsible person, must be available in the event of a disease incident at the event or nearby the event.	No
All cages used in the show must be cleansed and disinfected prior to and after the show.	Implicitly yes
• For sales: A record of all sales taking place at the event should be kept for at least 3 months, this should include: the name, address and telephone number of both the vendor and buyer and any identifying features or individual identification of the purchased bird(s).	No
• For sales: Buyers must isolate the purchased bird(s) from any other birds (except those purchased at the same event) for at least 1 week. • Any signs of ill health observed in the purchased bird(s) during this period must be reported to a veterinary surgeon and such birds must not be mixed with any other birds until the presence of an avian notifiable disease has been ruled out	No
• Restrict to birds of certain species – columbiformes, passerines and psittaciformes	No
• Restrict to regions only	No