Updated Outbreak Assessment #3

Highly pathogenic avian influenza (HPAI) in the UK, and Europe

22 November 2021 Ref: VITT/1200 HPAI in the UK and Europe

Disease Report

Since our last outbreak assessment on 10 November 2021, there continue to be reports of highly pathogenic avian influenza (HPAI) H5 both in Europe and in Great Britain (GB).

Since 1 October 2021, HPAI H5N1 events in wild birds have been reported at 35 different locations across GB. In addition, to 22 November, there have been 15 confirmed report cases of HPAI H5N1 in domestic poultry or captive birds made up of six confirmed cases in backyard premises, two cases in commercial (layer/broiler) chickens, four in finishing turkeys, and one case in breeding turkeys in GB. There have been two cases of HPAI H5N1 confirmed in captive birds in wildlife/rescue sanctuaries. Thirteen of the cases occurred in England and one each in Scotland and Wales.

In northern Europe, Germany, the Netherlands, Norway, and Poland have reported HPAI H5N1 in domestic poultry, while in southern Europe further outbreaks of HPAI H5/H5N1 have been reported on finishing turkey, broiler, and layer farms in Italy, now reported as far south as Rome. Wild bird H5N1 cases continue to be reported in north-west Germany, the coastal regions of the Netherlands, Belgium, north-east France, Estonia and Finland. The Republic of Ireland (RoI) have reported their second case of HPAI H5N1 this season in wild birds in Tarbert, and their first case in poultry; in a turkey fattening farm in Castleblayney.

Situation Assessment

United Kingdom

The first detection of HPAI H5N1 virus this season was in rescued swans and captive poultry at a swan sanctuary in Worcester (England) on 15 October. Since then, there have been 14 further confirmed cases of HPAIV H5N1, as set out in Table 1.

Table 1: Poultry and captive bird outbreaks for highly pathogenicity avian influenza (HPAI) H5N1 so far in Great Britain since 1 October 2021, as of 22 November.

Date HPAI H5N1 confirmed	Location, County	Description
27 October	Near Wychavon, Worcester	Rescued wild swans (adults and young), rescued and captive geese, ducks and chickens.
2 November	near Chirk, Cheshire	Backyard chickens
4 November	Near Arbroath, Angus	Mixed backyard flock of 16 chickens, 20 guinea fowl and 12 ducks.
8 November	Near Alcester, Bidford	Small flock of 31 turkeys and 19 chicken
11 November	Near Kirby Cross, Essex	Small flock of mixed geese, chickens, guinea fowl
12 November	Near Preston, Lancashire	Commercial turkey premises
13 November	Near Northallerton, North Yorkshire	Commercial free range laying hens
16 November	Near Preston, Lancashire	Backyard chickens
17 November	Near Willington, Derbyshire	Commercial turkey premises
19 November	Near Pokesdown, Bournemouth	Backyard ducks
19 November	Near Silecroft, Cumbria	Commercial free range laying hens
21 November	Near Mouldsworth, Chester	Commercial turkey premises

Date HPAI H5N1 confirmed	Location, County	Description
21 November	Near North Fambridge, Essex	Small flock of mixed geese, chickens, ducks
21 November	Near Holkham, Norfolk	Small flock of mixed chickens and turkeys
21 November	Near Thirsk, Yorkshire	Commercial turkey premises

Since our last outbreak assessment on 10 November, and to 22 November, HPAI H5N1 has been detected in a further 22 wild bird locations in GB, bringing the total to 36 separate wild bird positive locations, involving 15 separate bird species in 26 separate counties. The GB country and species are set out in Table 2. There have been five cases for which H5 has been confirmed but N has not. These cases are currently undergoing further processing to identify the Neuraminidase genotype strain.

Table 2: Wild birds in GB that have tested positive for HPAI H5 as of 22 November 2021

Region and species	Total number of birds testing positive
England	**128**
Canada Goose	10
Greylag Goose	6
Mute Swan	67
Peregrine Falcon	2
Pink Footed Goose	8
Swan	2
Unspecified Goose	4
Whooper Swan	13
Common Buzzard	2

Region and species	Total number of birds testing positive
Pheasant	5
Curlew	2
Gull	1
Great-crested Grebe	1
Barnacle Goose	3
Mallard Duck	2
Wales	**9**
Canada Goose	2
Herring Gull	1
Mute Swan	1
Pheasant	5
(blank)	
(blank)	
Scotland	**7**
Mute Swan	1
Whooper Swan	2
Common Buzzard	1
Gull	1
Barnacle Goose	1
Unspecified Duck	1
Grand Total	**144**

Europe

The total numbers of HPAI H5 outbreaks in poultry and wild bird cases in Europe are presented in Table 3. Please note that this is a rapidly changing picture, with new disease reports being made to the World Organisation for Animal Health (OIE) on a regular basis.

Table 3 Current outbreaks (to 22 November 2021) of HPAI H5 in domestic poultry and cases in wild birds since 1 October 2021 in Europe, excluding the UK, according to OIE reporting.

Country	H5 poultry	H5N1 wild birds	H5N1 poultry	H5N8 wild birds	H5N8 poultry	H5N2 wild birds	Total
Belgium		3					3
Bosnia and Herzegovina		1					1
Czech Republic		3	1				4
Denmark		20					20
Estonia		2		2	1		5
Finland		9		1			10
France		1					1
Germany		12	11				23
Hungary		1	6				7
Ireland		2	1				3
Italy		3	69				72

Country	H5 poultry	H5N1 wild birds	H5N1 poultry	H5N8 wild birds	H5N8 poultry	H5N2 wild birds	Total
Netherlands		26	7	1			34
Norway	1		1				2
Poland		1	7				8
Romania		1					1
Serbia and Montenegro		1		3		1	5
Sweden		7		1			8

Northern Europe

Since our last outbreak assessment on 10 November, HPAI has been recorded in 12 European countries.

The **Republic of Ireland** has reported its first outbreak in poultry, in a commercial turkey fattening farm in Castleblayney in the north of the country. RoI have also reported that a white-tailed eagle (*Haliaeetus albicilia)* found in Tarbert near the Shannon Estuary tested positive for HPAIV H5N1.

The **Netherlands** reported another H5N1 outbreak in a small broiler unit in Tzum, detected on 14 November. Two outbreaks of HPAI H5N1 in captive pheasants on small hobby farms have also been reported since our last assessment, with 14 and 18 birds. Thirteen further wild bird outbreaks have been reported since 10 November, four mute swans (*Cygnus olor*), five greylag geese (*Anser anser),* a Eurasian wigeon *(Anser penelope),* a peregrine falcon (*Falco peregrinus),* a black-headed gull (*Chroicocephalus ridibundus) and* one barnacle goose (*Branta leucopsis)*.

Belgium has reported its first wild bird events with three cases of H5N1 in wild birds since 10 November namely one barnacle goose (*Branta leucopsis),* one pink-footed goose (*Anser brachyrhynchus),* and one Ruddy turnstone (*Arenaria interpres).*

Germany has reported H5N1 in poultry on five further farms since our last report, all between 9 and 12 November. All of these reports are towards the north of the country, three very close to the border with the Netherlands. No further wild bird reports have been officially reported by OIE at this time, however significant numbers of wild bird reports have been submitted on to the IZSve platform, with 188 wild bird reports by Germany to date.

Norway has reported its first outbreak of HPAI H5N1 in poultry this season, a farm in Voll with 7,500 laying hens.

France has reported an HPAIV H5N1 event in wild birds in the Nonsard-Lamarche area affecting mute swans and greylag geese. Significant mortality has been reported with over 80 birds affected. **Denmark** have reported 3 HPAI events (no further information on strain available) as of 22 November. These cases include two events in poultry and one event in captive birds (IZSVE, 2021a).

Poland has reported one case of HPAI H5N1 in mute swans since our report on 10 November. No further poultry premises have been reported by OIE.

In addition to the wild bird cases reported to OIE, the **Czech Republic** has reported two HPAI events via IZSVE as of 22 November in poultry (IZSVE, 2021a). No further details are currently available for these cases.

Finland has reported HPAI H5N1 affecting three Northern goshawk (*Accipiter gentilis*) across two locations, north of Helskini in the Janakkala region.

Sweden has reported eight cases of HPAI in wild birds via IZSVE (IZSVE, 2021a), supporting the data reported by OIE in Table 3.

Estonia has reported H5N1 in a Northern goshawk detected on 2 November.

Southern Europe

Since our last outbreak assessment on 10 November, **Italy** has notably reported 40 HPAI H5N1 outbreaks in poultry. The majority of these are affecting commercial turkey fattening farms (28), the rest being a mixture of commercial poultry, duck fattening and backyard duck and quail farms. While the majority of the outbreaks have been clustered in the northern Verona region, Italy has reported one outbreak of H5N1 in a backyard farm in the south, near to Rome. The H5N1 strain reported in Italy is different from that currently affecting the UK and northern Europe, being of African origin (Prof Ian Brown, APHA, pers comm).

Hungary has reported six outbreaks of HPAI H5N1 since our last report, affecting breeding ducks, fattening ducks and foie gras geese.

Romania has submitted one report of HPAI H5N1 affecting wild Mute swans.

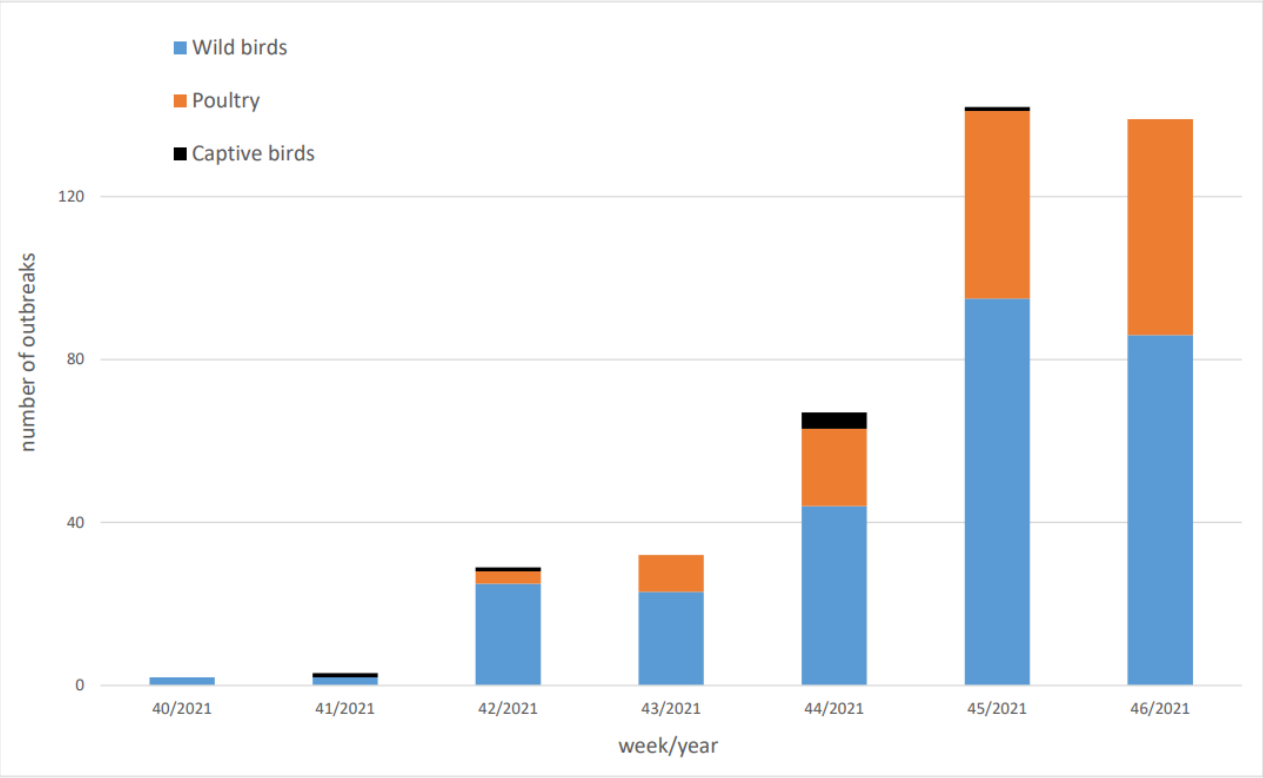
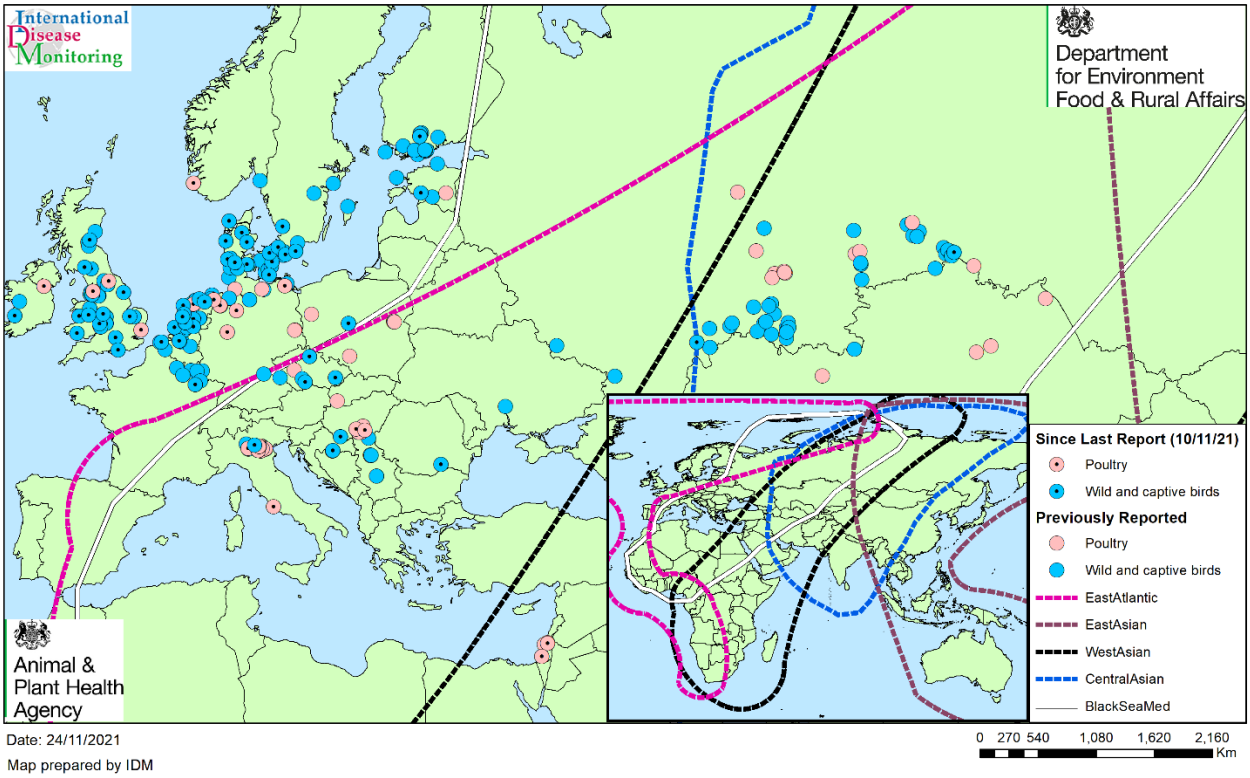


Figure 1- Number of HPAI events in Europe each week from October 2021 to 22 November 2021 (IZSVe, 2021a)

The increase in the number of poultry, wild bird and captive bird reports for each week according to the EU Reference Laboratory (IZSVe 2021a) is shown in Figure 1. Both wild bird cases and poultry outbreaks in Europe are increasing exponentially with approximately 140 in week 45 compared to 70 in week 44 and 35 in week 43. The total number of outbreaks (140) outbreaks in week 45 this year is similar to that in the same week last year (130) (IZSVE 2021c), though there is a greater proportion of poultry events reported this season (32%) when compared to the 2020/21 season (4%).

The map below shows the distribution of HPAI H5 events in poultry, captive birds and wild birds in Europe reported from September to 22 November to OIE. Those events reported since our last outbreak assessment on 10 November are distinguished with dots and show the recent westward spread into domestic poultry in north-west Europe.

Map 1: HPAI outbreaks (from OIE) in poultry, captive, and wild birds across Europe, September 2021 to 22 November 2021.



Highly pathogenic avian influenza in Poultry, Captive and Wild birds
September - November 2021
Overlay: migratory bird flyways

OIE Data Only

Implications for the UK

The westward spread of HPAI H5N1 in wild birds through north-west Europe and across Great Britain and the Republic of Ireland, is apparent from Map 1. The infection pressure on domestic poultry and captive birds has therefore inevitably increased, particularly where biosecurity is sub-optimal. Even where biosecurity is stringent, it will highlight any weaknesses that exist. Mixed poultry outbreaks are following the wild bird cases in Poland, Germany and the Netherlands.

Although further investigation is needed, early analyses indicate that the HPAI H5N1 viruses so far observed in the autumn/winter 2021 season appear to show high genetic similarity but are clearly distinguishable from the H5 HPAI viruses which circulated during the 2020/21 season, albeit with some antigenic similarity to the HPAI H5Nx (including N1/N8) reported last season. The antigenic similarity of the contemporary H5N1 HPAI viruses to previously circulating strains in wild birds, may result in attenuation of infection outcomes in some wild bird species due to some protective

effect from prior immunity in previously exposed and recovered birds. At population level, this could result in less extreme mass mortality events, but birds with prior H5 immunity can still become infected and shed virus into the environment with onward risk for transfer to susceptible domestic poultry and captive birds.

Conclusion

Cases of HPAI H5 in wild birds and poultry are rising rapidly in northern Europe, especially in Poland, Germany and the Netherlands. The number of wild bird cases confirmed as positive for HPAI H5N1 in England, Wales and Scotland has increased since our last outbreak assessment, when the risk of incursion of HPAI H5 in wild birds in GB was elevated to **HIGH** (event occurs often), though it should be noted that repeated dead bird findings at the same location were being collected on different days and tested.

Although total numbers of migrating wild water birds (ducks, geese and some swan species) may not peak until December/January in GB, there have already been multiple confirmed cases of HPAI H5 in wild birds (144 to 22 Nov 2021) across a range of wild bird species, including resident sedentary species such as raptors and mute swans. Furthermore, potential bridging species such as gulls and raptors have tested positive, indicating that they had been exposed to infection in GB.

Given the increased infection pressure and changes since our last assessment, the risk level of HPAI incursion through movements of wild birds into the region has now been increased to **VERY HIGH** as a country-wide assessment and that more cases will be detected in the next three months (low uncertainty). However, there will be regional variation, based on the proximity to aggregation sites for non-breeding wild waterfowl both migratory and residential such that the risk levels could be lower for Scotland and Wales, but because of the poor sensitivity of wild bird surveillance in all GB, the uncertainty is increased rather than the risk level decreased (**VERY HIGH**, with high uncertainty).

Given the large poultry population, the proportion of which are outdoor and, in regions close to the high aggregations of wild waterfowl, we consider the risk of exposure of poultry across the whole GB to be **MEDIUM** (with low uncertainty) where good biosecurity is applied, **to HIGH** (with low uncertainty) where there are substantial biosecurity breaches and poor biosecurity. This is considering that an Avian Influenza Protection Zone (AIPZ) is in place, therefore personnel should be taking additional biosecurity measures. However, if stringent biosecurity is in place the risk would be **LOW** for such premises.

We are continuing to closely monitor the situation.

It is particularly important that stringent adherence to good biosecurity practices is not only maintained but also reviewed for further improvement. Particular attention should by now have already been addressed to reviewing contingency plans, maintenance checks and repairs on roofs and fabric of buildings. Reinforcement of good biosecure behaviours and practices should now also be instilled into personnel to prevent disease being introduced to poultry and captive birds. Special consideration should be made when bringing in equipment and materials such as bedding and outer packages which may have become contaminated following environmental exposure.

If you keep poultry (including game birds or as pets), you should follow our biosecurity best practice advice, which can be found here: https://www.gov.uk/guidance/avian-influenza-bird-flu#biosecurity-advice .

Remain vigilant for any signs of disease in your flock and report any suspicious clinical signs of avian influenza to the Animal and Plant Health Agency. In England contact 03000 200 301. In Wales, contact 0300 303 8268. In Scotland, contact your local Field Services Office. Further information is available here: https://www.gov.uk/guidance/avian-influenza-bird-flu including updated biosecurity advice for poultry keepers for England; https://gov.wales/avian-influenza for Wales and; http://gov.scot/avianinfluenza for Scotland.

The OIE/FAO International Reference Laboratory/UK National Reference Laboratory at Weybridge has the necessary ongoing proven diagnostic capability for these strains of virus, whether low or high pathogenicity AI, and continually monitors changes in the virus on a wide scale whilst utilising global networks to gain early insights to epidemiological trends and potential emergence of new genotypes which might change the risk profile. We will continue to report on any updates on the situation in Europe and, in particular, any changes in disease distribution or wild bird movements which may increase the risk to the UK.

Any findings of dead wild birds of any species should be reported to the Wild bird Helpline (Tel: 03459 33 55 77 – please select option 7). It is advisable that you do not touch these birds.

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References

All outbreaks and cases were taken from the World Organisation for Animal Health (OIE). *Please note that changes in format and level of detail are due to the change of data source for this report, from EU's Animal Disease Notification System (ADNS) to World Organisation for Animal Health (OIE).*

FLI (2021) Avian influenza https://tsis.fli.de/Reports/Info_SO.aspx?ts=015&guid=16b724ca-a4ae-462a-8d67-269348391e04

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