

Updated Outbreak Assessment #10

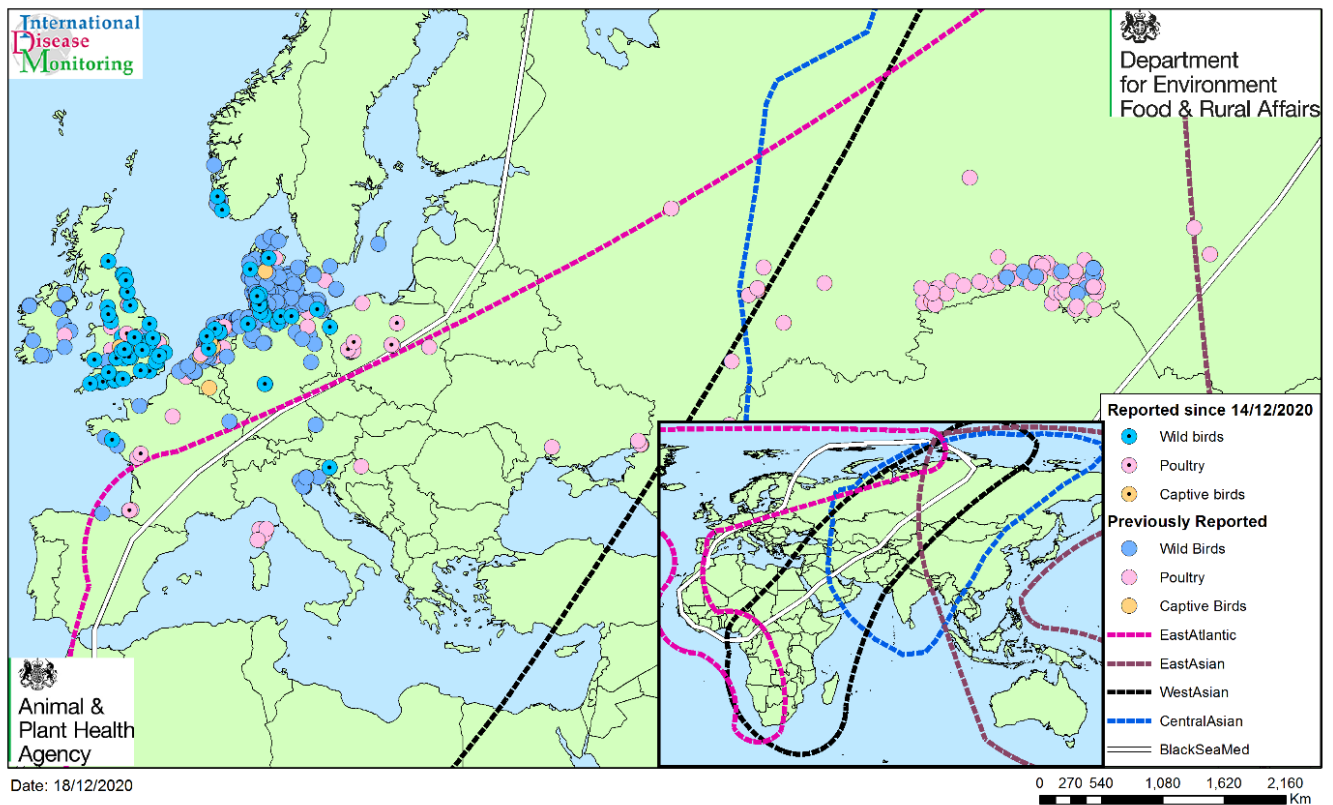
Highly pathogenic avian influenza (HPAI) in the UK, and Europe

21 December 2020

Ref: VITT/1200 HPAI in the UK and Europe

Disease Report

Since our last report (15 December) in the **United Kingdom**; there have been three further outbreaks of highly pathogenic avian influenza (HPAI) H5N8 in poultry, including the first in Scotland, and an outbreak of HPAI H5N1 in poultry. There have also been many cases of HPAI H5N8 in wild birds; and smaller numbers of cases of HPAI H5N1 (2 reports) and HPAI H5N5 (6 reports) also in wild birds. Elsewhere in Europe, HPAI H5N8 has been reported in poultry in France and Poland. HPAI H5N8 in wild birds has been reported in Denmark, Germany, Italy, Norway, Poland and Slovenia with HPAI H5N1 also in wild birds in Italy. HPAI H5Nx (N untyped) has been reported in poultry in the Netherlands, and in wild birds in the Netherlands and in France.



Highly pathogenic avian influenza in Poultry, Captive and Wild birds
August - December 2020
Overlay: migratory bird flyways

Situation Assessment

Table 1: Summary of confirmed outbreaks of HPAI H5N8 in poultry and captive birds in the UK to 20 December 2020.:

Date HPAI H5N8 confirmed	Location, County	Description
3 November	near Frodsham, Cheshire	Broiler breeder rearer chickens
10 November	near Leominster, Herefordshire	Broiler breeder chickens
20 November	near Stroud, Gloucestershire	Captive birds
23 November	near Melton Mowbray, Leicestershire	Poultry and captive birds
29 November	near Northallerton, Hambleton, North Yorkshire	Rearing turkeys
01 December	near Northallerton, Hambleton, North Yorkshire	Rearing turkeys
04 December	near Attleborough, Breckland, Norfolk	Rearing turkeys
05 December	near King's Lynn, Norfolk	Rearing turkeys
13 December	near Droitwich Spa, Worcestershire	Captive birds
15 December	near Willington, Derbyshire	Captive birds and poultry
19 December	Island of Sanday, Orkney Islands	Small commercial free range laying flock
19 December	Near Gillingham, North Dorset	Backyard poultry
20 December	Near Attleborough, Breckland, Norfolk	Commercial duck premises

To 21 December 2020, there have been ten outbreaks of HPAI H5N8 in poultry confirmed on premises in England, and one outbreak confirmed on a premises in Scotland. There have also been two cases of HPAI H5N8 in captive birds in England (Table 1).

Since our last report on 15 December, HPAI H5N8 has been confirmed in a commercial duck breeding premises near Attleborough, Norfolk (on 20 December 2020), and in two backyard poultry premises; the first on the Island of Sanday, Orkney Islands, and the second near Gillingham, North Dorset; both confirmed as HPAI H5N8 on 19 December 2020.

In addition, avian influenza H5N1 was confirmed in a backyard flock of chickens near Hawes, North Yorkshire on 17 December 2020 (Table 2). On the 18 December 2020 further testing confirmed this to be a highly pathogenic strain (HPAI H5N1). Further detailed genetic characterisation revealed this virus to be a novel genotype containing two genes from H5N8 HPAI and six genes from contemporary LPAI viruses from Eurasian wild birds. This genotype is consistent with that reported in wild birds in UK, NL and IT and can be clearly differentiated from historical H5N1 viruses reported in Europe between 2005 and 2012 (which were of Asian origin and had potential increased public health risk).

The total number of HPAI outbreaks in poultry and/or captive birds in the United Kingdom to 20 December is 14.

Table 2: Summary of confirmed outbreaks of HPAI H5N1 in poultry and captive birds in the UK to 20 December 2020.

Date HPAI H5N1 confirmed	Location, County	Description
18 December	*Near Hawes, Richmondshire, North Yorkshire	Backyard chickens

The above map shows the concentration of wild bird cases in north-western Europe, with relatively few in southern or central Europe. To 20 December, a total of 241 HPAI cases have been reported in wild birds in the United Kingdom (see Table 3 below), with most in England, and only a few in Scotland and Wales. Since our last report on 15 December, there have been no new reports of HPAI H5N8 in wild birds in Northern Ireland. For further details, please see the report (updated weekly) on findings of HPAI in wild birds in Great Britain at: <https://www.gov.uk/government/publications/avian-influenza-in-wild-birds>.

Table 3: Wild bird cases in England, Wales, and Scotland that have tested positive for HPAI H5N1, H5N5, H5N8 and H5Nx to 20 December 2020. Pathogenicity testing has not been completed for all samples yet.

Country/County	H5N1	H5N5	H5N8	H5Nx	Total
England	2	1	221	6	230
Black Swan			11		11
Devon			10		10
Gloucestershire			1		1
Brent Goose			6		6
Lincolnshire			3		3
Northumberland			3		3
Buzzard			2	1	3
Cornwall				1	1
Lancashire			1		1
Warwickshire			1		1
Canada Goose	1		20		21
Devon	1				1
Dorset			6		6
Essex			1		1
Gloucestershire			9		9
Greater Manchester			1		1
Lincolnshire			1		1
Northumberland			1		1
Oxfordshire			1		1
Great White Egret				1	1
North Yorkshire				1	1
Grey Heron			1		1
Warwickshire			1		1
Greylag goose			7	2	9
Gloucestershire			3		3
Lancashire			1	2	3
Lincolnshire			2		2
Surrey			1		1
Herring Gull			2		2
Dorset			2		2
Kestrel			1		1
Warwickshire			1		1
Lesser Black Backed Gull			1		1
Oxfordshire			1		1
Lesser Black headed Gull			1		1
Cambridgeshire			1		1
Mixed Avian			1		1
Dorset			1		1
Mute Swan	1	1	135		137
Bedfordshire			1		1

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Cambridgeshire			8		8
Cumbria			6		6
Devon			1		1
Dorset			79		79
Essex	1	1	3		5
Gloucestershire			4		4
Hampshire			3		3
Isle of Wight			1		1
Lancashire			6		6
Leicestershire			1		1
Lincolnshire			1		1
Norfolk			5		5
Staffordshire			1		1
Suffolk			1		1
Warwickshire			2		2
Worcestershire			12		12
Peregrine Falcon			1		1
Kent			1		1
Pink footed goose			1		1
Lancashire			1		1
Shelduck			1		1
Lincolnshire			1		1
Sparrow Hawk			1		1
Devon			1		1
Swan			1		1
Dorset			1		1
Unspecified			1		1
Dorset			1		1
Unspecified Goose			1		1
Northumberland			1		1
Unspecified Swan			10		10
County Durham			5		5
Dorset			3		3
Gloucestershire			1		1
Tyne and Wear			1		1
Whooper Swan			15	2	17
Cambridgeshire			4	2	6
Lincolnshire			1		1
Norfolk			10		10
Wigeon			1		1
Lincolnshire			1		1
Wales		5	1		6
Little Grebe			1		1
Carmarthenshire			1		1
Mute Swan		5			5

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Gwent		3			3
Monmouthshire		2			2
Scotland			5		5
Greylag goose			1		1
Highlands			1		1
Unspecified Swan			1		1
Fife			1		1
Whooper Swan			3		3
Aberdeenshire			3		3
Total	2	6	227	6	241

HPAI in Europe since 14 December 2020

Table 4: Reported outbreaks of HPAI H5N8, H5N1, H5N5 and H5Nx in domestic poultry and captive birds, and cases in wild birds (since September and as of 7 am on 18 December 2020). Please note that this is a rapidly changing picture, with new disease reports being made to EU's Animal Disease Notification System (ADNS) on a daily basis.

Country	Untyped	H5			H5N1	H5N5		H5N8			Total
	Wild Birds	Captive Birds	Poultry	Wild Birds	Wild Birds	Poultry	Wild Birds	Captive Birds	Poultry	Wild Birds	
Belgium		1		4		1				9	15
Croatia									1		1
Denmark				5			2	1	1	68	77
France			6	2					7	3	18
Germany	1			11		1	12		11	364	400
Ireland									1	10	11
Italy				2	2		1			4	9
Netherlands			2	4	4		1	9	7	39	66
Norway		1								7	8
Poland									13	2	15
Slovenia										5	5
Spain										1	1
Sweden							1		1	4	6
Ukraine			2								2
Total	1	2	10	28	6	2	17	10	42	516	634

Since 14 December, **Denmark** has reported HPAI H5N8 in wild birds in the municipalities of Ringkøbing-Skjern (in the west coast of the Jutland peninsula), Haderslev and in Viborg (in central Jutland). These were, respectively, a Pink-footed Goose (*Anser brachyrhynchus*), a Common buzzard (*Buteo buteo*) and a Barnacle Goose (*Branta leucopsis*). All three birds were found dead.

France has reported three outbreaks of HPAI H5N8 in poultry since our last report. In the department of Landes in south-west France, another outbreak was reported from a poultry farm of approximately 3,600 birds, containing (according to ADNS) various galliforme species and ducks. This premises is in wetland and is considered to be of particular risk from overflying migratory birds. In the department of Vendée in west-central France, an outbreak was reported on a premises of 7,000 ducks; with clinical signs and increased mortality. The third outbreak was in the department of Deux-Sèvres, on a premises containing breeding Muscovy ducks (approximately 3,700 birds), that reported clinical signs and increased mortality in two separate buildings. Elsewhere HPAI H5Nx (N untyped) was reported in wild bird species (Brent goose (*Branta bernicla*)) found dead and submitted as part of a surveillance programme in the department of Morbihan (in Brittany). This was in a wetland area within the high-risk migration corridor.

Germany has reported a further 17 cases of HPAI H5N8 in wild birds which is relatively few compared to the 364 cases reported to 18 December (Table 4). These were in the following districts: Friesland, in Lower Saxony (a Barnacle Goose (*Branta leucopsis*)); Herzogtum Lauenburg, in Schleswig-Holstein (a Barnacle Goose and a Common Buzzard (*Buteo buteo*)); Nordfriesland, in Schleswig-Holstein (a Barnacle Goose, a Black-headed Gull (*Chroicocephalus ridibundus*), a Eurasian Wigeon (*Mareca penelope*) and an unspciated gull); Dithmarschen, also in Schleswig-Holstein, (a Barnacle Goose);l Nordwestmecklenburg, in Mecklenburg-Vorpommern (an unspciated swan); Stade, also in Lower Saxony (a Greylag Goose (*Anser anser*)); Vogelsbergkreis, in Hesse (unspciated swans); and Vorpommern-Greifswald, in the east of Mecklenburg-Vorpommern (a Greylag Goose).

Italy has reported more wild bird cases including both HPAI H5N8 and HPAI H5N1 in wigeon (*Mareca penelope*) on the north-east coast.

The **Netherlands** reported one outbreak of HPAI H5Nx (N untyped) in poultry. This was in a premises of 27,681 (unspecified) birds in the northern province of Friesland. Incidents of HPAI H5Nx in wild birds were also reported in Friesland (Eurasian Wigeon and a Greylag Goose), in the province of North Holland (a Greylag Goose and a Mute Swan (*Cygnus olor*)), and in the province of Utrecht (Greylag Goose).

Norway has reported two incidents of HPAI H5N8 in wild birds. Both were in the county of Rogaland in south-western Norway (a Eurasian Wigeon and a European Herring Gull (*Larus argentatus*)).

Poland has reported seven outbreaks of HPAI H5N8 in poultry. In Gostynin County, in west Poland, an outbreak was reported in a small, non-commercial farm of hens and ducks. In Grodzisk Wielkopolski County (also in west Poland), there were two reported outbreaks: one in a premises of approximately 200,000 laying hens, and the other a premises of turkey broilers containing approximately 33,000 birds). Nowe Miasto County, in northern Poland, reported an outbreak in a premises of approximately 9,000 turkey broilers. In west-central Poland, in Szamotuły County, an outbreak was reported in a commercial farm containing over 10,000 slaughter turkeys. And in Wolsztyn County (west-central Poland), there were two reported outbreaks: one in a commercial farm containing in excess of 12,600 turkey broilers; and the other in a commercial farm containing approximately 30,500 slaughter turkeys. Poland also reported one incident of HPAI H5N8 in wild birds. This was in Gryfino County in north-western Poland (a Tundra Bean Goose (*Anser serrirostris*)).

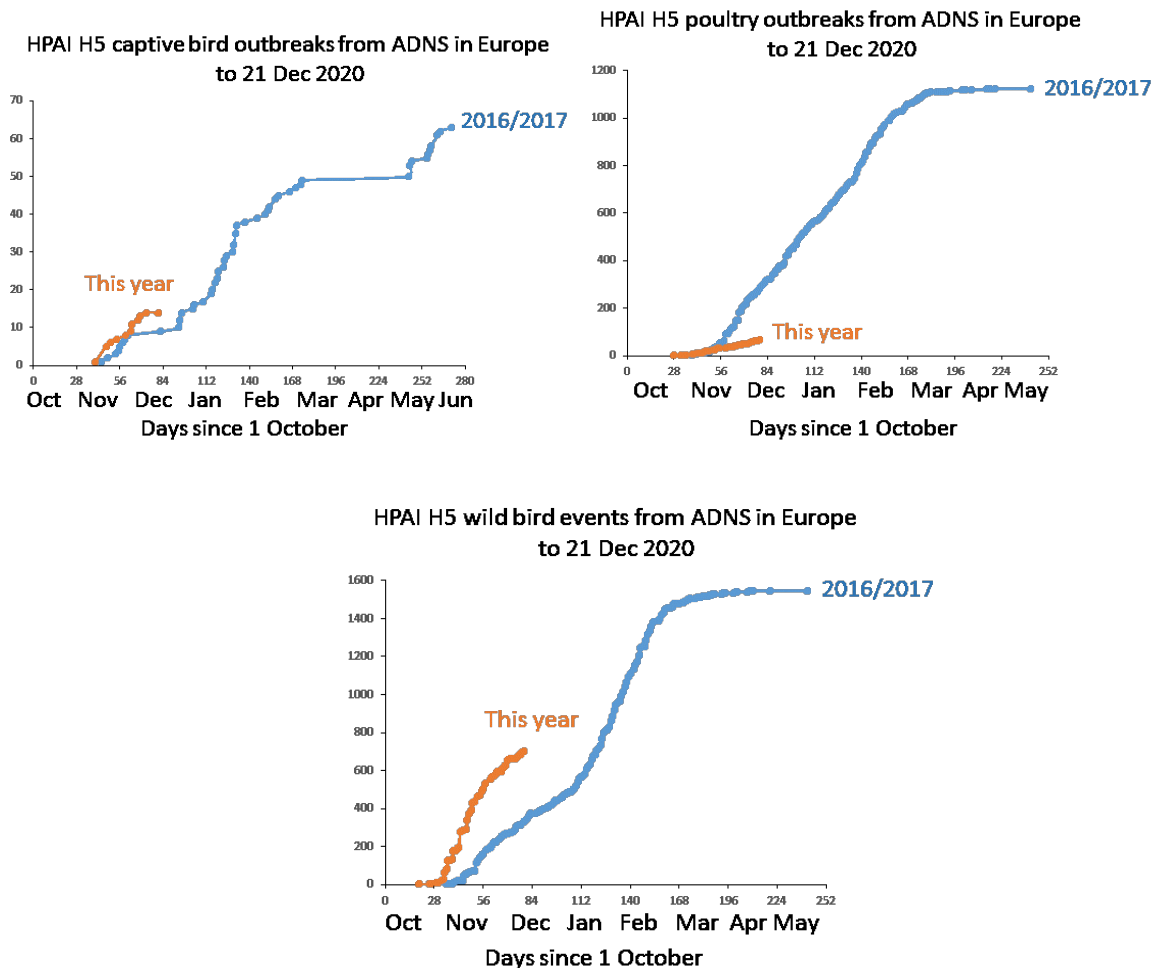
Slovenia has reported one incident of HPAI in wild birds. In the municipality of Ljubljana, in central Slovenia, where a Mute Swan was found with clinical signs.

Comparison of 2020 figures with the 2016/17 HPAI H5N8 outbreak in Europe

The number of cases in wild birds and outbreaks in poultry and captive birds are compared for this year with the 2016/17 HPAI H5N8 outbreak in Figure 1. The first case in wild birds this year was detected on 20 October 2020. In the 2016/17 outbreak of HPAI H5N8, the first case in wild birds was detected on 26 October 2016. When comparing this 2020 European outbreak to date; with the 2016/17 H5N8 outbreak, there are some interesting early differences and trends.

- The trend of captive bird outbreaks against time is similar, except that the number of outbreaks by Day 79 (at 14), is almost double that seen in 2016.
- While poultry outbreaks increased approximately linearly with time in both years, the initial rate in 2016 was much higher than in 2020. Thus, at Day 79, there have been 67 outbreaks in poultry in 2020; whereas there were 281 in 2016.
- The numbers of wild birds are much higher in 2020; with 700 at Day 79 this year, compared to 332 in 2016. For both years, the case rate in wild birds increased rapidly in November, falling slightly in December. However, numbers in the 2016/17 outbreak then increased greatly in late January/early February 2017, with a second wave of cases reflecting spill over to indigenous species.

Figure 1: Comparison of European detections of HPAI H5 in captive birds, poultry and wild birds; between 2016/17 and 2020, to 21 December. Winter 2016/17 is in blue, and winter 2020 in orange.



Implications for the UK

The presence of H5N8 in the UK was not unexpected given the annual autumn migration, and the rapidly developing epidemiological situation (first in southern central Russia during the early autumn, and now in Europe as described in previous Outbreak Assessments). Taken together with the findings of HPAI H5N8 in UK domestic poultry and captive birds in Great Britain, and the wide geographical distribution of the reports in wild birds, circulating HPAI H5N8 virus appears to be widespread in wild birds, particularly in England. The geographical dispersal across the UK (Devon to the Orkneys) supports a relatively heavy infection pressure mediated via wild birds with spill over into domestic poultry and captive birds.

The detection of three H5 HPAI subtypes in the same epidemic event is unparalleled in the UK. All these viruses are genetically closely related through their haemagglutinin gene which is the key viral gene influencing pathogenesis, host range, transmission and host

immunity. Continued virus change by genetic reassortment in wild birds is not unexpected and further genetic variation at genome level may be expected as the epidemic progresses. However fundamentally irrespective of subtype to date these HPAI viruses possess common characteristics underlying risk.

In GB, the sensitivity of surveillance has been increased, to ensure collection and analyses of targeted species of wild birds (ducks, geese, swans, gulls, and birds of prey) known to carry a risk of infection with H5 HPAI viruses. Single dead birds of target species, where possible, will be collected and tested. Several systems are in place, including working through NGOs (non-governmental organisations), and members of the public reporting wild bird mortality.

The migration season for wild waterfowl to overwinter in the UK is well underway, and numbers are expected to peak in December/January, depending on the species and the weather conditions in Continental Europe. Generally the Netherlands has a far higher number of wintering water birds than the UK, but cold weather on the Continent can force birds to fly west across the North Sea.

Following confirmation of cases of both HPAI H5N8 and low pathogenicity avian influenza (LPAI) H5N2 in poultry, the UK is no longer free from notifiable avian influenza under the World Organisation for Animal Health (OIE) rules.

Where disease is confirmed, measures are put in place in accordance with Council Directive 2005/94/EC. The EU will put safeguard measures in place, meaning that no trade with the EU in live poultry or poultry products will be permitted from disease control zones.

Public Health England has confirmed that the risk to public health is very low from all strains detected and characterised to date (H5N8, H5N5, H5N1), and the Food Standards Agency has said that avian influenza does not pose a food safety risk for UK consumers.

Conclusion

As a consequence of the HPAI H5N8 (predominantly) outbreaks in poultry and captive birds in the UK, also in Croatia, Denmark, France, Germany, Ireland, Netherlands, Poland and Sweden; as well as the increasing HPAI H5N8 cases in wild birds in the UK, Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Slovenia, Spain and Sweden, and the known migration routes to the UK from these countries: the risk of HPAI incursion in wild birds in GB remains **VERY HIGH**. The overall risk of exposure of poultry in GB remains **MEDIUM** (with stringent biosecurity) **TO HIGH** (where there are biosecurity is not adequate).

An Avian Influenza Prevention Zone is in place in [England](#), [Scotland](#) and [Wales](#) and the Chief Veterinary Officers from England, Scotland, Wales and Northern Ireland are urging bird keepers across the UK to take additional biosecurity measures; in order to prevent further outbreaks of avian influenza in the UK.

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On 03 December, the Chief Veterinary Officers for England, Scotland and Wales announced housing measures, which came into force on the 14 December 2020. It is a legal requirement for all bird keepers to keep their birds indoors and to follow strict biosecurity measures in order to limit the spread of and eradicate the disease. These housing measures build on the strengthened biosecurity regulations that were brought in as part of the Avian Influenza Protection Zone (AIPZ) on 11 November 2020.

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 sign of avian influenza to Defra Rural Services Helpline on 03000 200 301.

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. 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.

We ask that the public use the Defra helpline (Tel: 03459 33 55 77) to report findings of any dead wild birds. In particular, any wild ducks, wild geese, swans, gulls, or birds of prey.

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References

All outbreaks and cases were taken from the Animal Disease Notification System (ADNS).

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