Updated Outbreak Assessment #33

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

21 September 2022 Ref: VITT/1200 HPAI in the UK and Europe

Disease report

Since our last outbreak assessment on 01 September 2022, there have been further reports of high pathogenicity avian influenza (HPAI) H5, both in domestic poultry and in wild birds, in the United Kingdom (UK) and Europe. These include 13 new infected premises (IPs) confirmed with HPAI H5N1 in England and Wales; seven in commercial poultry and six in non-commercial backyard poultry premises. There have been 36 further HPAI H5 events detected in wild birds in Great Britain (GB) since our last assessment.

Across Europe, HPAI continues to be reported in domestic poultry and wild birds, with an increase in the number of poultry outbreaks reported by the EU reference laboratory (IZSVe) in the last few weeks.

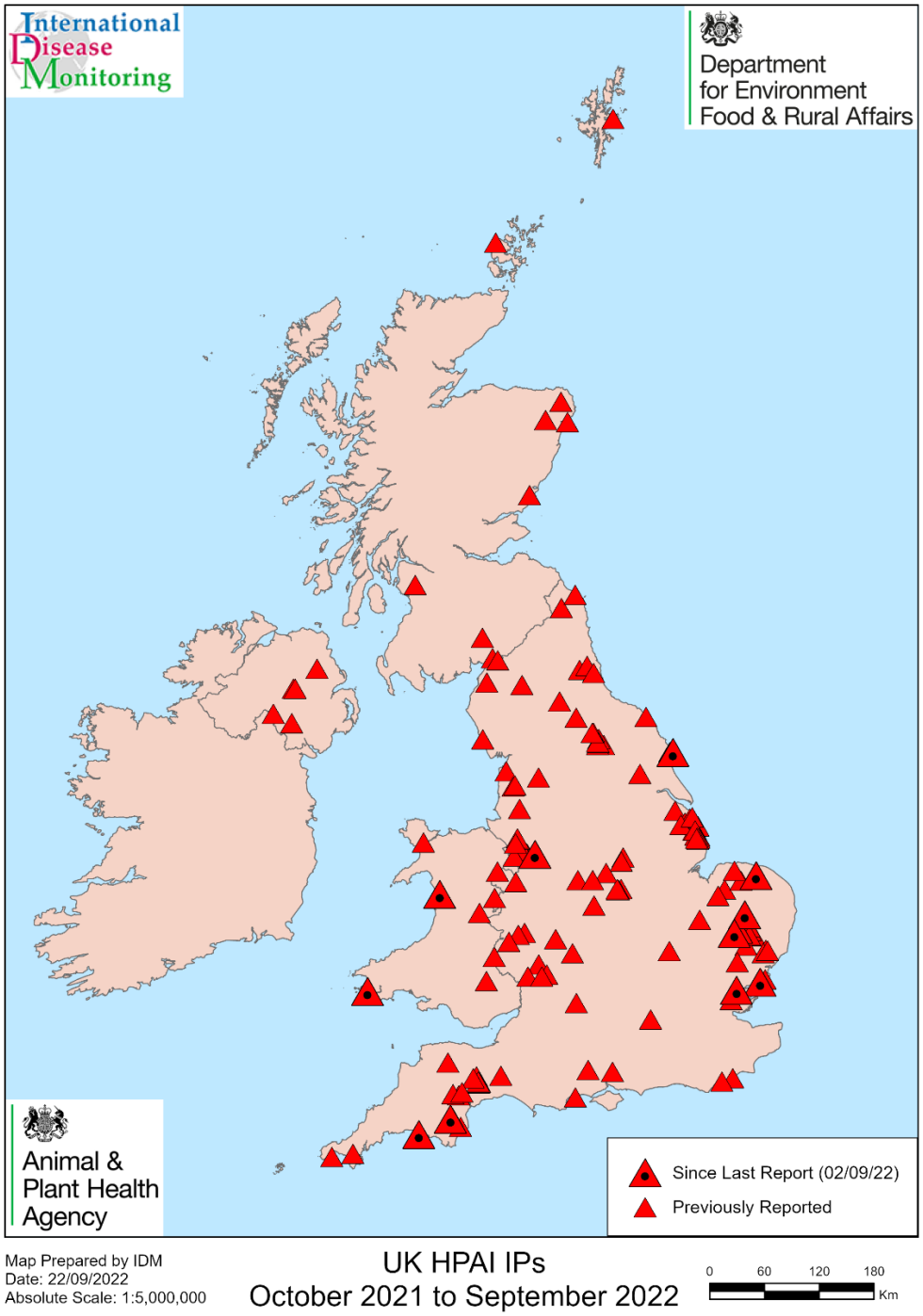
For the first time, HPAI H5N1 has been maintained in bird populations over the summer months in GB and there has been an increased number of confirmed infected premises (IPs) throughout September. All of these IPs had free-ranging birds with increased exposure to the external environment. Given that these outbreaks have occurred ahead of the arrival of migratory waterfowl species, they are suggestive of potential reinfection of native wild bird species from seabirds as they have dispersed from their breeding grounds.

The **wild bird risk** across GB is maintained at **medium** and the risk to poultry with stringent biosecurity is maintained at **low** with low uncertainty. However, the risk to **poultry** with suboptimal biosecurity has been increased to **medium** with medium uncertainty, in light of the increased number of IPs observed during September and the distance of some of these, as well as some wild bird cases, from the coast.

Although the GB-wide Avian Influenza Protection Zone (AIPZ) was lifted on 16 August 2022, a regional AIPZ was subsequently declared in Cornwall, Devon and parts of Somerset on 31 August 2022 and remains in place.

As we head towards the winter months wild bird migrations will become more significant once again, with ongoing events across Europe and North America of concern in regard to implications to the UK. We will continue to monitor the situation.

Map 1: HPAI H5 outbreaks in domestic poultry[1] and captive birds across the United Kingdom, October 2021 to 21 September 2022



[1] According to the 2021 WOAH definition of poultry: Terrestrial Code Online Access - WOAH - World Organisation for Animal Health

Situation assessment

United Kingdom

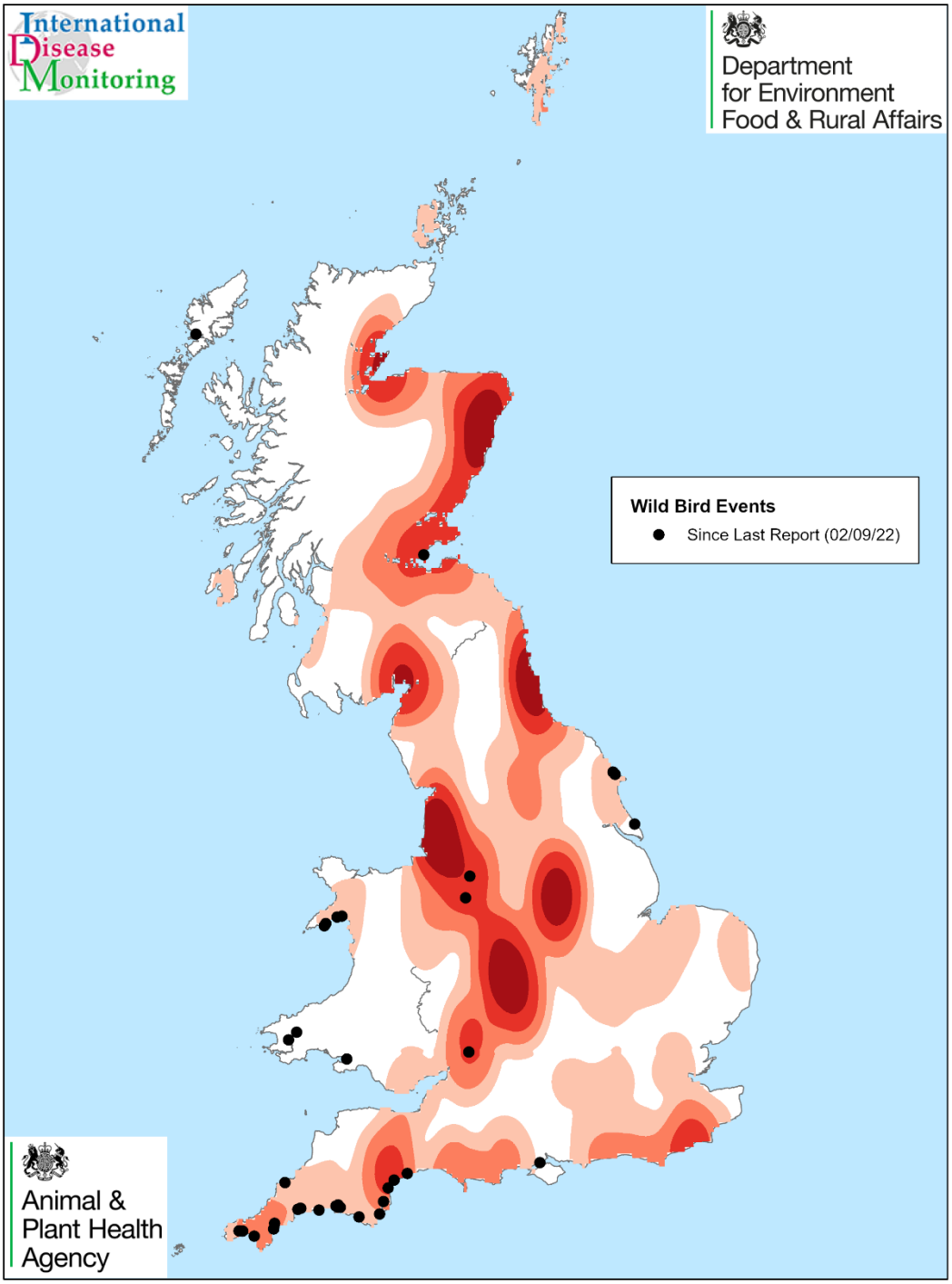
Since the first HPAI H5N1 detection on 15 October 2021, there have been 143 further confirmed IPs with HPAI H5N1 in poultry and captive birds across Great Britain (Map 1), (Appendix 1). Of these 144 IPs in total, 126 have occurred in England, 11 have occurred in Scotland (including the Scottish Islands), and seven in Wales. The AIPZ, which required personnel working with poultry and hobbyists to take additional biosecurity measures, was lifted across England, Wales and Scotland on 16 August 2022. However, a regional AIPZ was subsequently declared on 31 August across Cornwall, Devon and parts of Somerset following the increase in the number of detections of HPAI in poultry, captive and wild birds in the area.

Since our last assessment on 01 September 2022, HPAI H5N1 has been confirmed at seven further commercial, free-range premises, with six in England and one in Wales. The six commercial premises in England comprised of pheasants and mixed poultry in Devon, chickens in Norfolk, laying hens in the East Riding of Yorkshire, gamebirds in Essex and chickens in Suffolk. The commercial IP in Wales was a broiler chicken premises in Pembrokeshire.

There have also been six outbreaks of HPAI H5N1 in non-commercial poultry since 01 September, with five in England and one in Wales. Three of the outbreaks in England occurred in premises with mixed species in Norfolk, Cornwall and Cheshire, and two backyard IPs had chickens in Essex and Suffolk. The non-commercial IP in Wales kept mixed species, and was located in Gwynedd.

There have been no new premises with HPAI H5N1 confirmed in Northern Ireland (NI) since our last report on 01 September 2022 (DAERA, 2022). There have been three further confirmed cases of HPAI in wild birds in NI since our last report. As of 21 September 2022, the number of wild bird findings of HPAI H5 in Northern Ireland is 22 (IZSVe, 2022).

Map 2: Map showing the relative density of, and most recent HPAI H5 positive findings in, wild birds across Great Britain October 2021 to 21 September 2022

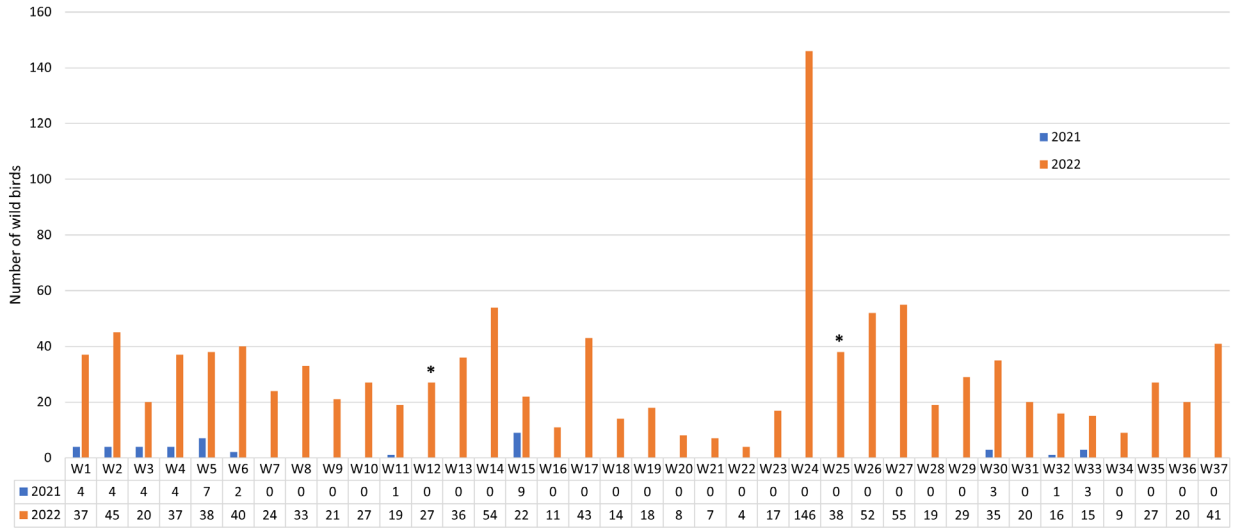


Since our last outbreak assessment on 01 September 2022, HPAI H5 has been detected in wild birds in 36 locations in Great Britain and the Scottish Isles, 23 of which have not had HPAI reported in wild birds previously. This brings the total to 395 separate wild bird positive locations, including 57 wild bird species (listed in Appendix 2), in 82 counties. The total number of positive wild bird findings is 1,672, with most in England (Appendix 2). The findings reported since 01 September were widespread across Great Britain with both coastal and inland locations. Most of these findings (69) were seabird species at coastal sites, although findings in waders (7), raptors (2) and gamebirds (16) have also been detected since our last assessment.

The majority of wild birds that have tested positive for HPAI H5 in Great Britain during the 2021 to 2022 season have been infected with the H5N1 strain. There have been many more reports between January and September 2022 compared to the same period in 2021, and the sustained transmission and circulation of HPAI virus in breeding birds over the summer of 2022 is unprecedented in GB (Figure 1).

There have been 90 cases for which the HPAI H5 genotype has been identified, but characterisation of neuraminidase (NA) subtype is in progress due to low viral loads in samples. The NA could not be determined for a total of eight H5 HPAI samples from wild birds, due to very low viral loads.

Figure 1: Wild bird HPAI H5N1 positives per week across Great Britain: January to September 2021 and 2022. Asterisks denote changes in surveillance sensitivity[1]. For earlier data from both HPAI seasons, see our previous outbreak assessment.

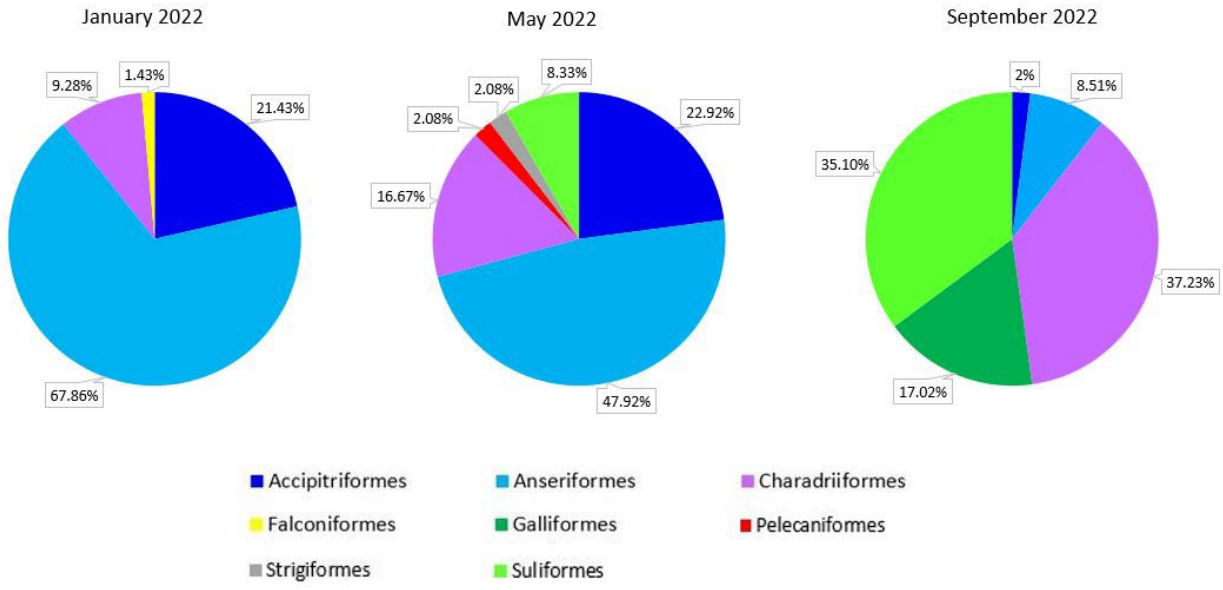


	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31	W32	W33	W34	W35	W36	W37
2021	4	4	4	4	7	2	0	0	0	0	1	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	3	0	0	0	0
2022	37	45	20	37	38	40	24	33	21	27	19	27	36	54	22	11	43	14	18	8	7	4	17	146	38	52	55	19	29	35	20	16	15	9	27	20	41

[1]Increased sensitivity of surveillance in England in week 12 and decreased sensitivity of surveillance in heavily affected seabird populations across Great Britain in week 25.

The species of wild birds affected by HPAI in mainland Great Britain have varied throughout the 2021 to 2022 season, including a greater variety of wild bird species overall compared to previous seasons (in 2020/21 315 birds, 30 species, in 43 counties). Throughout the summer of 2022, a much greater proportion of wild birds testing positive for HPAI H5 were Charadriiformes and Suliformes compared to the proportions of these orders observed earlier in the year. The increased proportion of Galliformes represents the detections in gamebirds (Figure 2).

Figure 2: Proportion of wild birds positive for HPAI H5 by Order between January and September 2022



The increased number of cases in sea birds observed over the summer may have been in part due to auk species such as guillemot being closely packed at breeding sites on vertical cliff faces, rather than dispersed out to sea. As breeding colonies disperse over the coming weeks, seabird cases of HPAI may be anticipated to decrease. The detections observed in waders, raptors and gamebirds in inland locations throughout August and September suggest possible reinfection from the coastal birds, which may be via gulls visiting coastal sites then travelling inland. As temperatures begin to decrease into the autumn, the potential for environmental contamination with HPAI remains, especially given the unprecedented scale of infection pressure observed at

coastal locations throughout the summer. For further details, please see the report (updated weekly) on findings of HPAI in wild birds in Great Britain and Northern Ireland.

As of 21 September 2022, there has been a total of 58 wild bird HPAI findings from across the Scottish islands of Shetland (36), Orkney (12) and the Western Isles (10).

Europe

Across Europe, the number of poultry IPs reported weekly by IZSVe is still low; at one to 10 per week across the last 4 weeks (Figure 3). The weekly number of HPAI cases in wild birds has shown little variation since our last assessment, with just over 40 cases per week from week 34 to week 36, then the number of cases reported in week 37 was around 35 (Figure 3). The total number of weekly reports of HPAI H5 in domestic poultry and particularly wild birds across Europe throughout the summer of 2022 (weeks 20 to 37) has been consistently higher than the numbers reported for the same period in 2021 (Figure 4), with fewer than 40 reports in week 20 (versus 45 in 2022), then fewer than 10 reports from week 27 to week 34 (versus over 20 reports per week over the same period in 2022).

Figure 3: Number of HPAI positive events reported in poultry, captive and wild birds each week in Europe from October 2021 to 21 September 2022 (IZSVe, 2022)

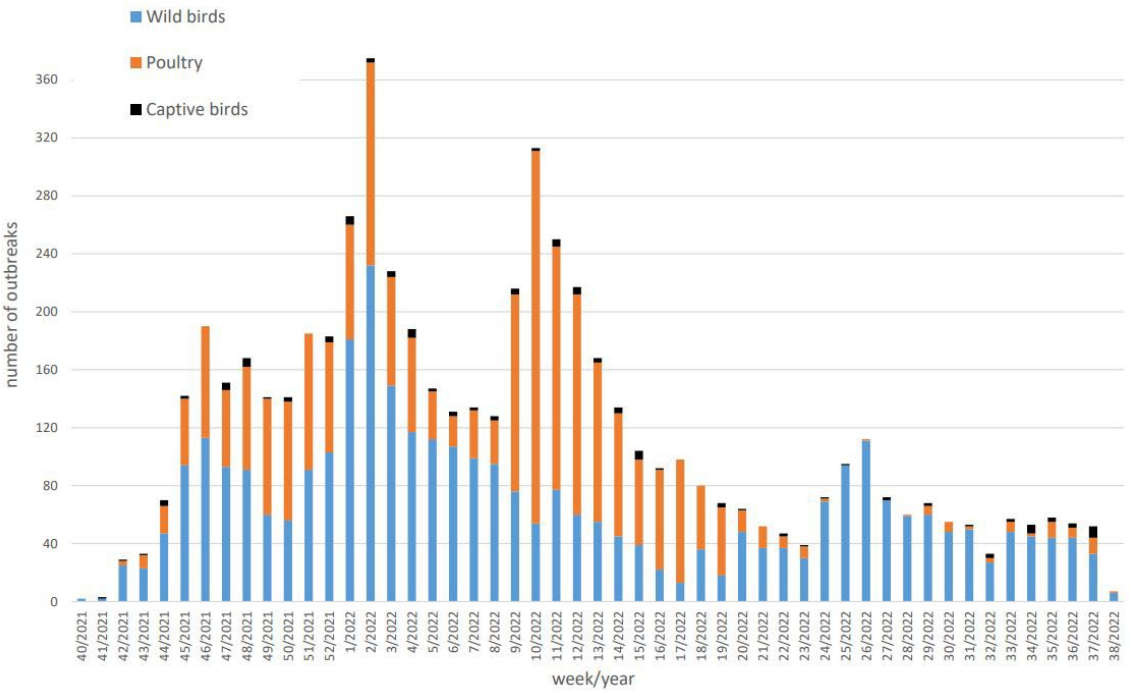
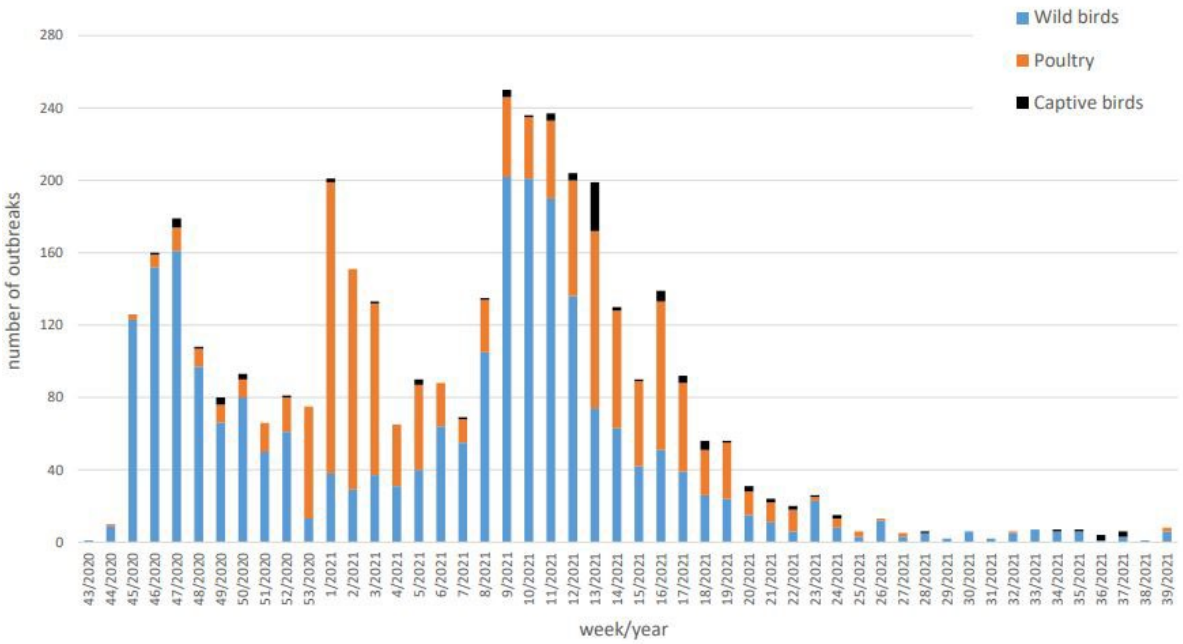


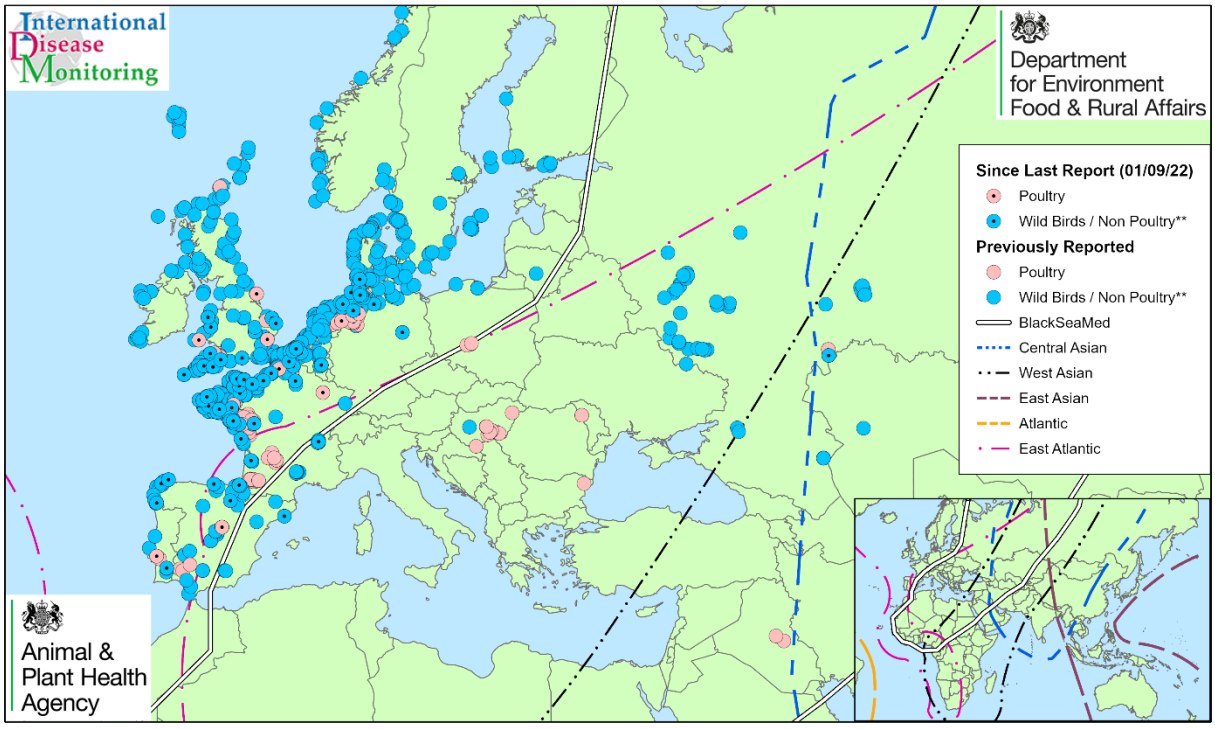
Figure 4: Number of HPAI positive events reported in poultry, captive and wild birds each week in Europe from October 2020 to 07 October 2021 (IZSVe, 2021)



Map 3 shows the distribution of HPAI H5 outbreaks in poultry and captive birds, together with cases in wild birds, in Europe, reported by WOAH between 01 June 2022 and 21 September 2022. Those events reported since our last outbreak assessment on 01 September are identified with black central dots.

All cases of HPAI H5 that have been reported by WOAH since 01 September 2022 have been of the subtype H5N1. Throughout this 2021 to 2022 epizootic, several HPAI subtypes have been reported in Europe including H5N1, H5N8 and H5N2 in domestic poultry and wild birds. Furthermore, HPAI subtypes H5N3 and H5N5 have also been reported, in wild birds only, across Europe. For details on reporting countries for the different subtypes, see our previous assessments. This evident circulation of several HPAI subtypes within Europe poses potential for either new subtypes entering Great Britain due to migratory waterfowl in the coming months, or potential mutation and modification of the virus.

Map 3: HPAI outbreaks (from WOAH) in poultry, captive, and wild birds across Europe, 01 June 2022 to 21 September 2022.



Implications for GB

The ongoing situation with HPAI H5N1 in breeding birds over the summer months in GB and north-west Europe is unprecedented. In previous years, HPAI has generally not been detected in wild birds in the summer months, and certainly not maintained in breeding bird species. The national risk level for HPAI H5 in wild birds is typically at low at this time of year (mid-September) in GB. However, this summer that risk level has been assessed as medium, with no evidence to lower it.

The number of wild bird cases in Europe has been decreasing since the unprecedented third peak of over 100 cases per week in week 26 (Figure 3). However, while there were just 25 cases in week 32 (mid-August), over 40 cases have been detected each week for the last month (Figure 3). Most of the recent wild bird cases in Europe are in north-western Europe (and the Iberian Peninsula), running along the English Channel through the northern coast of France and Belgium into The Netherlands, northern Germany and as far east as Denmark (Map 3). The presence of HPAI in wild birds in northern Europe at this time of year (mid-September) is of concern as a potential source of infection for ducks, geese and swans migrating west to GB now and over the next few weeks, many of them flying through the Baltic and west through the Netherlands to GB. Although there have been fewer reports this month of wild bird cases in northern Norway, Svalbard, Iceland and off Greenland (Jan Mayen Island for example), many geese and swans will be currently flying into the UK through these routes and may be exposed to virus via any remaining seabirds. These include whooper swans, Greenland barnacle geese, pink-footed geese and Greenland white-fronted geese from Greenland and Iceland, and Solway Barnacle geese from Svalbard. In addition, HPAI H5N1 was circulating in wild geese and ducks in North America during the 2022 winter/spring, with potential for carriage of H5N1 virus to their breeding sites in north-west Greenland where, over the summer, mixing may have occurred with light-bellied brent geese which will currently be returning to their wintering sites in Republic of Ireland. Auks infected with H5N1 were detected in Canada north of Hudson Bay (Coat's Island) this summer, although it is not known if H5N1 was carried as far north as western Greenland. The current (August/September) increase in H5N1 wild bird cases and poultry outbreaks in the USA is of no relevance to GB because birds do not fly across the Atlantic. Also, wild birds in north America only move north-south between Greenland/Canada and the USA in spring and autumn, with Greenland the potential mixing point.

Residual infectivity from affected seabird colonies at coastal sites in southern and eastern England could serve as a source of infection for the dark-bellied brent geese and pink-footed geese which overwinter in the UK. These geese will be returning from their summer breeding sites (along the arctic coast of Russia for dark bellied brent geese, Iceland and Greenland for the pink-footed geese) in the next few weeks.

The mass mortality events observed in seabirds appeared not to have posed the same level of onward risk to the GB and EU poultry population as the migratory waterfowl species in autumn and the poultry risk appeared to have become uncoupled from the wild bird risk during this unprecedented summer. This is in part due to the specialised nesting and feeding behaviours of seabirds; many of which, such as gannets; do not fly inland.

While the risk from wild seabirds may have been uncoupled from the risk to poultry over this summer, the possible spill-over of infections to resident wild birds at inland sites may represent a shift in wild bird species that begins to restore the coupling to poultry risk. The increase in IPs across GB in September suggests that this may be the case. The strength of the coupling between wild bird risk and poultry risk will continue to increase as wild migratory waterbirds begin to arrive this autumn, and will be closely monitored. While the wild bird risk may be beginning to increase, uncertainty prior to the arrival of the migratory waterbirds in the next few weeks warrants maintaining the national risk level for HPAI H5 in wild birds at **medium**.

In view of the increased coupling between the wild bird risk and the poultry risk and the increase in poultry outbreaks in both the UK and north-west Europe, the risk of infection of poultry in GB with sub-optimal biosecurity is increased from low (with high uncertainty) to **medium** (with **medium uncertainty**). It is imperative that biosecurity is maintained to the highest extent possible to mitigate against the ongoing risk of infection posed by wild birds across the UK, especially since the infection pressure in wild birds is anticipated to increase in the coming months. The ongoing wild bird infection pressure will likely expose any weaknesses that exist, even where biosecurity is good.

Conclusion

Cases of HPAI H5 in wild birds and confirmations in poultry premises have continued to be reported across Europe and in Great Britain since our last assessment.

There have been 1,672 confirmed cases of HPAI H5 in wild birds in Great Britain to 21 September 2022 across a range of species, with multiple detections in wild birds in the last four weeks (Figure 1). The overall number of detections in wild birds and the wild bird infection pressure are still greatly elevated for this time of year (Figure 1).

The risk of HPAI H5 infection in wild birds in GB remains at **MEDIUM**. While the risk to poultry may have become uncoupled for the risk in wild birds over this unprecedented summer, this coupling may be strengthening as infection spreads into resident wild birds inland. This wild bird risk is anticipated to increase over the next few weeks as migratory

waterbirds return to GB from their breeding sites; extending from Greenland to northern Russia.

The risk of exposure of poultry across GB where biosecurity is suboptimal is therefore increased to **MEDIUM** (with medium uncertainty) while the risk to poultry in GB where biosecurity is stringent is maintained at **LOW** (with low uncertainty).

On 24 November 2021, the Chief Veterinary Officers for England, Scotland, Wales, and Northern Ireland announced housing measures, which came into force on the 29 November 2021. The housing measures were subsequently lifted across the UK on Monday 2 May 2022. Although the GB-wide AIPZ was lifted on 16 August 2022, a regional AIPZ was subsequently declared in Cornwall, Devon and parts of Somerset on 31 August 2022.

We are continuing to closely monitor the situation and reviewing the risk.

It is particularly important that stringent adherence to good biosecurity practices is still maintained, particularly as the onset of cold and wet weather begins. Strict attention should be made to ensure compliance with reviewed contingency plans, with regular maintenance checks and repairs being carried out promptly not only on buildings, but to fencing and boundaries of outdoor areas to minimise contact with wild birds.

Reinforcement of good biosecurity awareness behaviours and practices should be a constant reminder to all personnel working with birds; any lapse of these measures could still easily result in disease being introduced to poultry and captive birds. Special consideration should be made when bringing in equipment and materials, especially bedding and outer packages which may have become contaminated following environmental exposure whilst stored outside.

If you keep poultry (including game birds or as pets), you should follow our biosecurity best practice advice on GOV.UK

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 guidance about Avian Influenza including updated biosecurity advice for poultry keepers, in:

- England is available on GOV.UK
- Wales, is available on the Welsh Government's website
- Scotland, is available on the Scottish Government's website
- North Ireland is available on DAERA's website

The WOAH, FAO International Reference Laboratory and the UK National Reference Laboratory at Weybridge has the necessary diagnostic capability for strains of avian influenza virus, whether of low or high pathogenicity, 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 to the situation in Europe and in particular, any changes in disease distribution or wild bird movements which may increase the risk to the UK.

In England, Scotland and Wales, any findings of the following dead wild birds found at the same location at the same time should be reported to the Wild bird Helpline (Telephone: 03459 33 55 77 – select option 7):

- 3 or more swans, geese, ducks, gulls and waders
- Any number of birds of prey, including owls
- five or more birds of any species

It is advisable that you do not touch these birds.

Appendix 1: Current poultry[1] and captive bird premises with High Pathogenicity Avian Influenza (HPAI) H5N1 in Great Britain and Scottish Isles as of 21 September 2022. For outbreaks which were resolved before 12 September, see our previous outbreak assessment

Outbreak Number	Date HPAI H5N1 confirmed	Location, County	Description	Date resolved[2]
120	23 July 2022	Near Newton Abbott, Devon	Commercial broiler	12 September 2022
121	28 July 2022	Near Sandy, Bedfordshire	Mixed ornamental duck & geese	15 September 2022
122	05 August 2022	Near Ashburton, Devon	Backyard chickens	12 September 2022
123	07 August 2022	Near Cullompton, Devon	Commercial laying ducks	
124	09 August 2022	Near Cullompton, Devon	Commercial ducks and quail	
125	10 August 2022	Near Tiverton, Devon	Backyard mixed species	
126	19 August 2022	Near Newlyn, Cornwall	Wild bird hospital	
127	21 August 2022	Near Gayton, Norfolk	Commercial fattening geese	
128	26 August 2022	Near Cullompton, Devon	Commercial rearing turkeys	

Outbreak Number	Date HPAI H5N1 confirmed	Location, County	Description	Date resolved[2]
129	28 August 2022	Near Bridlington, East Yorkshire	Commercial fattening turkeys	
130	30 August 2022	Near Paignton, Devon	Zoo	
131	30 August 2022	Near Constantine, Cornwall	Backyard laying hens	
132	02 September 2022	Near North Molton, Devon	Commercial pheasants	
133	03 September 2022	Near Holt, Norfolk	Backyard mixed species	
134	05 September 2022	Near Arthog, Gwynedd	Backyard mixed species	
135	06 September 2022	Near Bridlington, East Riding of Yorkshire	Commercial laying hens	
136	06 September 2022	Near Heybridge, Essex	Commercial gamebirds	
137	08 September 2022	Near Torpoint, Cornwall	Backyard mixed species	
138	10 September 2022	Near Milford Haven, Pembrokeshire	Commercial broiler chickens	

Outbreak Number	Date HPAI H5N1 confirmed	Location, County	Description	Date resolved[2]
139	14 September 2022	Near Crewe, Cheshire	Non-commercial mixed species	
140	16 September 2022	Near Bury St Edmunds, Suffolk	Backyard chickens	
141	18 September 2022	Near Clacton on Sea, Essex	Backyard chickens	
142	19 September 2022	Near Honington, Suffolk	Commercial chickens	
143	19 September 2022	Near Attleborough, Norfolk	Commercial chickens	
144	20 September 2022	Near Dartington, Devon	Commercial mixed species	

[1] According to the 2021 WOAH definition of poultry: Terrestrial Code Online Access - WOAH - World Organisation for Animal Health

[2] Date resolved refers to the date when all disease control restrictions (3km Protection Zone, 10km Surveillance Zone, 3km Captive Bird Monitoring Controlled Zone) have been removed from the premises

Appendix 2: Wild bird species in Great Britain that have tested positive for HPAI H5 as of 21 September 2022

Region and species	Total number of birds testing positive
England (below)	**1006**
Arctic Tern	1
Barnacle Goose	13
Bewick's Swan	1
Black headed gull	37
Black Swan	2
Canada Goose	168
Common Buzzard	64
Common Eider	1
Common Tern	8
Coot	2
Cormorant	4
Curlew	3
Gadwall	1
Gannet	56
Goshawk	1
Great black-backed gull	1
Great-crested Grebe	3
Grey Heron	3
Greylag goose	43
Guillemot	15
Gull sp.	11
Hen Harrier	3
Herring Gull	116
Kestrel	6
Kittiwake	10
Lapwing	1
Little Egret	1
Little Gull	1
Magpie	1
Mallard Duck	21
Moorhen	5
Mute Swan	249
Oystercatcher	1
Peregrine Falcon	6
Pheasant	24
Pied Wagtail	6

Pink Footed goose	18
Puffin	1
Razorbill	1
Red Kite	3
Rock Dove	1
Roseate Tern	1
Sandwich Tern	9
Sea Eagle	2
Sparrowhawk	8
Tawny Owl	3
Tufted Duck	1
Unidentified Swan	17
Unspecified Dove	2
Unspecified Duck	1
Unspecified Goose	16
White Fronted Goose	1
Whooper Swan	31
Widgeon	1
Wales (below)	**68**
Black headed gull	2
Canada Goose	4
Carrion Crow	2
Common Buzzard	5
Curlew	1
Gannet	9
Goshawk	1
Greylag goose	1
Hen Harrier	3
Herring Gull	9
Kittiwake	1
Lesser black-backed gull	1
Mute Swan	15
Peregrine Falcon	1
Pheasant	5
Rock Dove	1
Sparrowhawk	1
Unidentified Swan	1
Unspecified Goose	5
Scotland (below)	**598**
Arctic Tern	5
Barnacle Goose	34

Bird of Prey Unspecified	5
Black headed gull	2
Blackbird	1
Canada Goose	3
Common Buzzard	64
Common Eider	16
Gannet	113
Golden Eagle	3
Great black backed gull	4
Great Northern Diver	1
Great skua	22
Greylag goose	26
Guillemot	53
Gull sp.	19
Herring Gull	16
Kestrel	1
Kittiwake	5
Magpie	1
Mallard Duck	1
Manx Shearwater	1
Mute Swan	28
Pink Footed goose	80
Puffin	4
Razorbill	3
Red Kite	3
Sandwich Tern	1
Sea Eagle	5
Sparrowhawk	5
Unidentified Swan	16
Unspecified Crow	1
Unspecified Duck	2
Unspecified Goose	42
Unspecified Gull	1
Unspecified Skua	1
Unspecified waterfowl	1
Whooper Swan	9
Wood Pigeon	1
Grand Total	**1,672**

Authors

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- Anthony Pacey
- Dr Paul Gale
- Dr Lauren Perrin

References

All outbreaks and cases were taken from the World Organisation for Animal Health (WOAH). 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 (WOAH).

- DAERA (2022) Department of Agriculture, Environment and Rural Affairs Avian influenza information page

- IZSVe (2021) IZSVe report - Number of highly pathogenic avian influenza positive events notified by country and poultry category (pdf)

- IZSVe (2022) IZSVe report - Number of highly pathogenic avian influenza positive events notified by country and poultry category (pdf)

This publication is available at https://www.gov.uk/government/collections/animal-diseases-international-monitoring

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