

# Rapid Risk assessment

# on highly pathogenic avian influenza H5 (HPAI H5) clade 2.3.4.4b



Update on basis of the period July-August (01/07-31/08) 2023

# Situation in Germany

Between 1 July and 31 August 2023, an HPAI H5N1 outbreak was detected in geese in the north of the district of Schleswig-Flensburg in Schleswig-Holstein in Germany on 7 July, which is presumably due to an entry by wild birds.

As expected, the number of cases in wild birds decreased in July (n=83) and August (n=17). Most cases were reported from the coastal federal states of Lower Saxony (n=56), Schleswig-Holstein (n=17) and Mecklenburg-Western Pomerania (n=8), followed by North Rhine-Westphalia (n=8), Saxony (n=4), Bavaria, Berlin, and Hamburg (2 each) and Saxony-Anhalt (n=1) (Tab. 1, Fig. 1). Similar to the previous months, the reports most frequently concerned gulls (n=45) and terns (n=42), birds of prey (n=2) and only occasionally alcids (n=2), wild geese (n=2) and gannet (n=1) (Tab. 1).

Increased mortalities with more than a hundred deaths of colony-breeding shorebirds were reported in July from Mecklenburg-Western Pomerania (Großwerder in Krakower See: black-headed gulls), Schleswig-Holstein (foreland Neufelderkoog and Eidersperrwerk near Tönning: black-headed gulls, common terns), Lower Saxony (Banter See Wilhelmshaven: common terns) and Hamburg (Neuwerk: black-headed gulls). Not all dead birds at a site are examined for HPAIV. Therefore, the figures given in Table 1 are only a minimum, and the total number of HPAIV H5-infected birds is estimated to be many times higher for colony-breeding species. Unfortunately, current mortality figures from the localities of positive finds (Tab.1) are not centralised, but only available by individual query. In July, the breeding colonies dissolved and consequently, the mortalities also decreased in August.

Only the HPAIV subtype H5N1 was detected.

In July, a dead seal (*Phoca vitulina*) tested positive for HPAIV H5N1 in the district of Dithmarschen in Schleswig-Holstein.

Table 1: Number of reported HPAIV H5 wild bird cases, affected bird groups and locations for the period 01/07–31/08/2023 by federal state. Data source: TSN, FLI. Data status: 14/09/2023 \*Increased mortalities (more than 100 dead birds found at the site)

Bavaria (2/0)   Coburg   Golbergsee, biotope lake   Geese (2)   26/07     Bertin (0/2)   Bertin   Bertin City   Bird of prey (2)   0.3/08     Hamburg (2/0)   Hamburg   Neuwerk*   Black-headed gull (1)   26/07     Mecklenburg-   Rostock   Großwerder* in Dobbiner/   Black-headed gull (5)   14/07     Mestern Pomerania   Rostock   Großwerder* in Dobbiner/   Black-headed gull (2)   14/07     Western Pomerania   Rostock   Großwerder* in Dobbiner/   Black-headed gull (2)   14/07     (45/11)   Vorpommern-   Worder Island in Lake Balm,   Gull (3), tern (1)   21/07     Lower Saxony   Aurich   Batrum   Gull (3), tern (1)   21/07     (45/11)   Dornum Deich   Gull (1)   07/07   North   Gull (1)   07/07     (45/11)   Dornum Deich   Gull (1)   07/07   North   Gull (1)   07/07     (45/11)   Dornum Deich   Gull (1)   07/07   North   Gull (1)   07/07     Morth   Gull (1)   Gull (1)   <	State (July/August)	County	Location	Wild birds (number of HPAIV notifications)	Period Detection
Berlin   Berlin   Berlin   Birl of prey (2)   03/08     Hamburg (2/0)   Hamburg   Neuwerk*   Black-headed gull (1),   26/07     Mecklenburg-   Rostock   Großwerder* in Dobbiner / Krakow Lake   Black-headed gull (2)   14/07     Mecklenburg-   Rostock   Großwerder* in Dobbiner / Krakow Lake   Black-headed gull (2)   14/07     Mecklenburg-   Vorpommern-   Werder Island In Lake Balm, Großwerder*   Gull (3), tern (1)   21/07     Lower Saxony   Aurich   Baltrum   Gull (3), tern (1)   21/07     (45/11)   Aurich   Baltrum   Gull (1)   07/07     North   Gull (1)   07/07   10/07     March   Spika Neufeld   Gull (1)   04/08     Beach   N/O-Cuxhaven   Gull (1)   04/07-25/08     (1)   Schillig   Gull (1)   01/07     Withelmshaven   Baater See   Tern (21)   18-19/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   07/08     North Rhine-   Wesel   Diesfordt Waldsee   Gull	Bavaria (2/0)	Coburg	Golbergsee, biotope lake	Geese (2)	26/07
Hamburg (2/0)   Hamburg   Neuwerk*   Black-headed gull (1), tern (1)   26/07 tern (1)     Mecklenburg- Western Pomerania (8/0)   Rostock   Großwerder* in Dobbiner/ Krakow Lake   Black-headed gull (5)   14/07     Vorpommern- Greifswald   Dahmen, Lake Malchin shore   Black-headed gull (2)   14/07     Lower Saxony (45/11)   Aurich   Baltrum   Gull (3), tern (1)   21/07     Norderney   Alc (1)   27/07   Norderney   Alc (1)   27/07     Norderney   Alc (1)   07/07   Norderney   Alc (1)   07/07     North   Gull (4), tern (1)   19/07   05   10/07/08   10/07/07     Osnabrück   Dievenmoor   Bird of prey (1)   21/07   21/07     Vietnund   Spiekeroog   Gannet (1), tern (1)   19/07     Osnabrück   Dievenmoor   Bird of prey (1)   21/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   11/07     Wester   Diesfordt Waldsee   Gull (1)   07/07     Westphalia (6/2)   Viersen   Atstadt Kempen   Bird of prey (1	Berlin (0/2)	Berlin	Berlin City	Bird of prey (2)	03/08
Mecklenburg- Western Pomerania (8/0)   Rostock   Großwerder* in Dobbiner/ Krakow Lake   Black-headed gull (5)   14/07     (8/0)   Dahmen, Lake Malchin shore Greifswald   Dahmen, Lake Malchin shore Black-headed gull (2)   14/07     Lower Saxony (45/11)   Aurich   Baltrum Baltrum Greifswald   Gull (3), tern (1)   21/07     Lower Saxony (45/11)   Aurich   Baltrum Baltrum Dornum Deich Gull (1)   Gull (2)   27–31/07     Norderney   Alc (1)   27/07   Eykön   Gull (1)   07/07     North   Gull (1)   04/08   Gull (1)   04/08   04/07-25/08     Gunabrück   Dievenmoor   Bird of prey (1)   21/07   07/07   07/07     Withelmshaven   Banter See   Tern (2)   18–19/07   07/08     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/08   07/08     North Rhine- Westphalia (6/2)   Wesel   Diesfordt Waldsee   Gull (1)   07/07     Westphalia (6/2)   Wittmund   Spiekeroog   Gannet (1), tern (1)   21/07     Saxony (4/0)   Bautzen   Brösaer Teich   Te	Hamburg (2/0)	Hamburg	Neuwerk*	Black-headed gull (1), tern (1)	26/07
Dahmen, Lake Malchin shore   Black-headed gull (2)   14/07     Vorpommern- Greifswald   Usedom   Gull (1)   05/07     Lower Saxony   Aurich   Baltrum   Gull (3), tern (1)   21/07     (45/11)   Dornum Deich   Gull (2)   27–31/07     Norderney   Alc (1)   27/07     Leyhörn   Gull (13)   07/07     North   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1), tern (1)   19/07     Osnabrück   Dievenmoor   Bird of prey (1)   21/07     Friesland   Wangerooge   Gull (6), tern (6), Alc   04/07–25/08     (1)   Schillig   Gull (1)   31/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   07/08     North Rhine-   Wesel   Diesfordt Waldsee   Gull (1)   07/07     Westphalia (6/2)   Wesel   Diesfordt Waldsee   Gull (1)   07/07     Bautzen	Mecklenburg- Western Pomerania	Rostock	Großwerder* in Dobbiner/ Krakow Lake	Black-headed gull (5)	14/07
Vorpommern- Greifswald   Werder Island in Lake Balm, Gull (1)   Gull (1)   05/07     Lower Saxony (45/11)   Aurich   Baltrum   Gull (3), tern (1)   21/07     (45/11)   Dornum Deich   Gull (2)   27–31/07     Leyhörn   Gull (1)   07/07     Leyhörn   Gull (1)   07/07     Leyhörn   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1)   04/08     Geach N/O-Cuxhaven   Gull (1)   04/07     Onabrück   Dievenmoor   Bird of prey (1)   21/07     Friesland   Wangerooge   Gull (1)   04/07-25/08     (1)   Schillig   Gull (1)   31/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/08     Viersen   Attstadt Kempen   Bird of prey (1)   01/08     Kaldenkirchen   Bird of prey (1)   01/08   Kaldenkirchen     Westphalia (6/2)   Viersen   Attstadt Kempen   Bird of prey (1)   24/07     Westphalia (6/2)   <	(8/0)		Dahmen, Lake Malchin shore	Black-headed gull (2)	14/07
Lower Saxony (45/11)   Aurich Pornum Deich Norderney   Gull (3), tem (1)   21/07     (45/11)   Dornum Deich Norderney   Gull (2)   27–31/07     Norderney   Alc (1)   27/07     Leyhörn   Gull (13)   07/07     Nord   Gull (11)   07/08     Cuxhaven   Spika Neufeld   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1), tern (1)   19/07     Osnabrück   Dievenmoor   Bird of prey (1)   21/07     Friesland   Wangerooge   Gull (6), tern (6), Alc   04/07–25/08     (1)   Schiltig   Gull (1)   31/07     Wilhelmshaven   Banter See   Tern (21)   18–19/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/08     O7/08   Viersen   Altstadt Kempen   Bird of prey (1)   07/07     Westphalia (6/2)   Viersen   Altstadt Kempen   Bird of prey (1)   11/08     Minden-Lübbecke   Jakobsberg, Porta   Bird of prey (1)   11/07     Saxony (4/0)   Bautzen   Brösaer Teich		Vorpommern- Greifswald	Werder Island in Lake Balm, Usedom	Gull (1)	05/07
(45/11)   Dornum Deich   Gull (2)   27-31/07     Norderney   Alc (1)   27/07     Leyhörn   Gull (1)   07/07     North   Gull (1)   07/08     Cuxhaven   Spika Neufeld   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1)   04/07     Osnabrück   Dievenmoor   Bird of prey (1)   21/07     Friesland   Wangerooge   Gull (6), tern (6), Alc   04/07-25/08     (1)   Schillig   Gull (1)   31/07     Wilhelmshaven   Banter See   Tern (21)   18-19/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/08     North Rhine-   Wesel   Diesfordt Waldsee   Gull (1)   07/07     Westphalia (6/2)   Wesel   Diesfordt Waldsee   Gull (1)   07/07     Bottrop   Osterfelder Straße, Bottrop   Bird of prey (1)   01/08     Kaldenkirchen   Bird of prey (1)   11/07     Saxony (4/0)   Bautzen   Brösaer Teich   Tern (1)   14/07     Saxony-Anhal	Lower Saxony	Aurich	Baltrum	Gull (3), tern (1)	21/07
Norderney   Alc (1)   27/07     Leyhörn   Gull (13)   07/07     North   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1)   04/08     Beach N/O-Cuxhaven   Gull (1)   04/08     Osnabrück   Dievenmoor   Bird of prey (1)   21/07     Friesland   Wangerooge   Gull (1), tern (1), alk   04/07-25/08     (1)   Schillig   Gull (1)   31/07     Withelmshaven   Banter See   Tern (21)   18-19/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/08     North Rhine-   Wesel   Diesfordt Waldsee   Gull (1)   07/08     Westphalia (6/2)   Viersen   Altstadt Kempen   Bird of prey (1)   07/07     Bottrop   Osterfelder Straße, Bottrop   Bird of prey (1)   11/08     Minden-Lübbecke   Jakobsberg, Porta   Bird of prey (1)   14/07     Saxony (4/0)   Bautzen   Brösaer Teich   Tern (1)   11/07     Sakobserg, Porta   Gannet (1), gull (2)   25/08,   Tern (1)	(45/11)		Dornum Deich	Gull (2)	27-31/07
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			Norderney	Alc (1)	27/07
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			Leyhörn	Gull (13)	07/07
CuxhavenSpika NeufeldGull (1)04/08 Beach N/O-CuxhavenBeach N/O-CuxhavenGull (1), tern (1)19/07OsnabrückDievenmoorBird of prey (1)21/07FrieslandWangeroogeGull (6), tern (6), Alc04/07–25/08(1)SchilligGull (1)31/07WithelmshavenBanter SeeTern (21)18–19/07WittmundSpiekeroogGannet (1), tern (1)21/08North Rhine-WeselDiesfordt WaldseeGull (1)07/07Westphalia (6/2)ViersenAltstatk KempenBird of prey (1)01/08KaldenkirchenBird of prey (1)07/07BottropOsterfelder Straße, BottropBird of prey (1)11/07Minden-LübbeckeJakobsberg, PortaBird of prey (1)24/07WestfalicaGull (1)13/075/07LeipzigRehbachGull (1)13/07Saxony (4/0)BautzenBrösær TeichTern (2), gull (1)05/07LeipzigRehbachGull (1)13/07Saxony-Anhalt (1/0)CoswigAltte ElbeTern (1)11/07Schleswig-HolsteinDithmarschenKronenlochGannet (1), gull (2)25/08,(15/2)Tern (1)14/07Eider Sperwerk*Tern (1)19/07North FrisiaReußenkögeGull (1)21/07Back-headed gull (1)Eider Sperwerk*Tern (1)14/07KielCitype, heachGull (1)21/07Bird of Drey (1)14/07E			North	Gull (1)	07/08
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Cuxhaven	Spika Neufeld	Gull (1)	04/08
OsnabrückDievenmoorBird of prey (1)21/07FrieslandWangeroogeGull (6), tern (6), Alc04/07-25/08(1)SchilligGull (1)31/07WithelmshavenBanter SeeTern (21)18-19/07WittmundSpiekeroogGannet (1), tern (1)21/08North Rhine-WeselDiesfordt WaldseeGull (1)07/08Westphalia (6/2)ViersenAltstadt KempenBird of prey (1)01/08KaldenkirchenBird of prey (1)07/0707/07BottropOsterfelder Straße, BottropBird of prey (1)11/08Minden-LübbeckeJakobsberg, PortaBird of prey (1)24/07WestfalicaGull (3)14/0714/07Field north of PetershagenSaxony-Anhalt (1/0)CoswigAlte ElbeTern (2), gull (1)05/07Schleswig-HolsteinDithmarschenKronenlochGannet (1), gull (2)25/08,(15/2)North FrisiaReußenkögeGull (1)14/07North FrisiaReußenkögeGull (1)21/07ListTern (1)19/07KielCityGull (1)21/07ListTern (1)19/07Rider Sperrwerk*Tern (1)19/07KielCityGull (1)21/07ListTern (1)19/07Rider Sperrwerk*Tern (1)16/08BirdGull (1)21/07Back-headed gull (1)21/07Back-headed gull (1)21/07Back-headed gull			Beach N/O-Cuxhaven	Gull (1), tern (1)	19/07
		Osnabrück	Dievenmoor	Bird of prey (1)	21/07
SchilligGull (1)31/07WilhelmshavenBanter SeeTern (21)18–19/07WittmundSpiekeroogGannet (1), tern (1)21/08North Rhine-WeselDiesfordt WaldseeGull (1)07/07Westphalia (6/2)ViersenAltstadt KempenBird of prey (1)01/08Minden-LübbeckeJakobsberg, PortaBird of prey (1)11/08Minden-LübbeckeJakobsberg, PortaBird of prey (1)24/07WestfalicaGull (3)14/07Field north of PetershagenField north of PetershagenSaxony (4/0)BautzenBrösaer TeichTern (2), gull (1)05/07LeipzigRehbachGull (1)13/07Saxony-Anhalt (1/0)CoswigAlte ElbeTern (1)14, 19/07(15/2)DithmarschenKronenlochGannet (1), gull (2)25/08,(15/2)North FrisiaReußenkögeGull (1)21/07Birder Koog*Common tern (4), Dishnarschen07/07, 21/07Birder Koog*Gull (1)21/07ListTern (1)19/07ListTern (1)19/07KielCityGull (1)14/07KielCityGull (1)14/07KielCityGull (1)14/07KielCityGull (1)14/07KielCityGull (1)16/08Renden KogeGull (1)14/07KielCityGull (1)16/08 <td></td> <td>Friesland</td> <td>Wangerooge</td> <td>Gull (6), tern (6), Alc</td> <td>04/07-25/08</td>		Friesland	Wangerooge	Gull (6), tern (6), Alc	04/07-25/08
Wilhelmshaven   Banter See   Tern (21)   18–19/07     Wittmund   Spiekeroog   Gannet (1), tern (1)   21/08     North Rhine-   Wesel   Diesfordt Waldsee   Gull (1)   07/07     Westphalia (6/2)   Viersen   Altstadt Kempen   Bird of prey (1)   01/08     Kaldenkirchen   Bird of prey (1)   07/07   07/07   07/07     Bottrop   Osterfelder Straße, Bottrop   Bird of prey (1)   07/07     Minden-Lübbecke   Jakobsberg, Porta   Bird of prey (1)   24/07     Westfalica   Gull (3)   14/07   Field north of Petershagen   13/07     Saxony (4/0)   Bautzen   Brösaer Teich   Tern (2), gull (1)   05/07     Leipzig   Rehbach   Gull (1)   13/07     Saxony (4/0)   Dithmarschen   Kronenloch   Gannet (1), gull (2)   25/08,     (15/2)   Dithmarschen   Kronenloch   Gannet (1), gull (2)   25/08,     (15/2)   North Frisia   Reußenköge   Gull (1)   21/07     Dagebüll   Gull (1)   21/07			Schillig	Gull (1)	31/07
North Rhine- Westphalia (6/2)WeselDiesfordt WaldseeGannet (1), tern (1)21/08 07/08North Rhine- Westphalia (6/2)WeselDiesfordt WaldseeGull (1)07/07Westphalia (6/2)ViersenAltstadt Kempen KaldenkirchenBird of prey (1)01/08 07/07BottropOsterfelder Straße, BottropBird of prey (1)07/07BottropOsterfelder Straße, BottropBird of prey (1)11/08 07/07Minden-LübbeckeJakobsberg, Porta Jakobsberg, PortaBird of prey (1)24/07 04/07Saxony (4/0)BautzenBrösaer TeichTern (2), gull (1)05/07 05/07LeipzigRehbachGull (1)13/07Saxony-Anhalt (1/0)CoswigAlte ElbeTern (1)11/07Schleswig-Holstein (15/2)DithmarschenKronenlochGannet (1), gull (2)25/08, 07/07, 21/07North FrisiaReußenköge Dagebüll ListGull (1)21/07 19/07KielCityGull (1)21/07 07/07, 21/07Bird of Tern (1)19/07Roth FrisiaReußenköge Dagebüll Eider Sperrwerk*Gull (1)21/07 19/07KielCityGull (1)21/07 19/07BirdCityGull (1)14/07KielCityGull (1)14/07KielCityGull (1)14/07KielCityGull (1)16/08Bird of PreyLabra beachGull (1)16/08		Wilhelmshaven	Banter See	Tern (21)	18-19/07
North Rhine- Westphalia (6/2)WeselDiesfordt WaldseeGull (1)07/07Westphalia (6/2)WeselDiesfordt WaldseeGull (1)07/07Westphalia (6/2)ViersenAltstadt Kempen KaldenkirchenBird of prey (1)01/08Minden-LübbeckeJakobsberg, PortaBird of prey (1)11/08Minden-LübbeckeJakobsberg, PortaBird of prey (1)24/07WestfalicaGull (3)14/07Field north of PetershagenField north of PetershagenSaxony (4/0)BautzenBrösaer TeichTern (2), gull (1)05/07LeipzigRehbachGull (1)13/07Saxony-Anhalt (1/0)CoswigAlte ElbeTern (1)11/07Schleswig-Holstein (15/2)DithmarschenKronenlochGannet (1), gull (2)25/08, 107/07, 21/07North FrisiaReußenkögeGull (1)21/07Black-headed gull (1)01/07ListTern (1)19/07ListTern (1)19/07ListeTern (1)19/07KielCityGull (1)21/07ListeTern (1)14/07KielCityGull (1)11/0714/0714/07		Wittmund	Spiekeroog	Gannet (1) tern (1)	21/08
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**Figure 1**: Outbreaks of HPAIV H5N1 in Germany in poultry (dots), other kept birds (zoo/wildlife sanctuary; squares), cases in wild birds (triangles) since 01/10/2022. In colour outbreaks and cases for July and August 2023. Different colours: see legend. Data status: 14/09/2023; data source: TSN, FLI.

#### Situation in Europe

Across Europe, the number of **outbreaks** in **poultry** fell sharply in July and August. Up to 24 July, the United Kingdom (3), France (2), Denmark (1), Italy (1), the Netherlands (1) and Poland (1) reported isolated outbreaks. In August, only the United Kingdom reported four outbreaks in small poultry (Figure 2). France will introduce compulsory vaccination of all duck holdings for fattening or foie gras production by national derogation (no current vaccine is yet licensed on the national market) from 1 October 2023. Furthermore, France announced that in case of HPAIV H5 outbreaks, emergency vaccination will be carried out for poultry.

In **captive birds**, HPAIV H5N1 was detected in Ireland in July in flamingos at Phoenix Park near Dublin and in August in the UK in six pheasant holdings. In early July, France reported an outbreak of HPAIV H5N1 in birds in a small holding near Montargis.

Not only in Germany, but further on all over Europe, deaths in **breeding colonies of shorebirds** have been clustered, sometimes reaching the scale of local mass mortalities. In recent weeks and months, conservationists have been removing the carcasses of thousands of dead birds from European shores. Only a fraction of the dead birds has actually been examined and in 328 cases infection with HPAIV H5N1 has been confirmed. In August, the number of cases (n=102) declined sharply as breeding activity ceased. Only the Netherlands, the United Kingdom and Germany still reported cases (Fig.2).

The species range affected includes shorebirds, especially gulls and terns (together >70%), but also alcids, followed by raptors (7%) and other carrion-eating bird species, and only about 2% waterfowl (ducks, geese and swans). Among the raptor species, the most frequently reported was the peregrine falcon.

The HPAI H5N1 viruses in gulls investigated in Europe so far belong almost exclusively to the gulllike BB genotype of clade 2.3.4.4b HPAIV H5, which emerged (presumably in France) from a reassortment event of H5N1 and a gull-adapted AIV of subtype H13 and has been spread across Europe since June 2022. This genotype currently dominates events in Germany and Europe and was responsible for both HPAIV cases in a mink farm in Spain in autumn 2022 and the majority of infected foxes in Europe.

While Poland reported an unusual occurrence of dozens of deaths in domestic cats in June 2023, with HPAIV H5N1 detected in over 20 of the samples tested, Finland reported HPAIV H5N1 infections in diseased foxes, minks or tanuki in a total of 25 fur farms from late June until August (Fig. 3-4). The Finnish authorities ordered culls in the affected farms (approximately 120,000 animals) and active surveillance of all major fur farms in the country.

A survey for H5 antibodies in sera from wild carnivores in the Netherlands indicates a considerable number of asymptomatic infections in mammals.



**Figure 2**: HPAI cases in poultry, kept birds and wild birds reported in ADIS and to WOAH from 1 October 2022 to 31 August 2023. Cases for July and August in red and blue; poultry = (domestic) poultry kept for commercial purposes; zoo birds/other birds = other captive birds. Status of data query: 14/09/2023.



■ Red fox ■ Seal ■ Grey seal ■ Cat ■ Dog ■ Pine marten ■ Polecat ■ Coati ■ Furry (Farm) ■ Otter ■ Caracal

Figure 3: Confirmed HPAIV H5 infections in mammals in Europe since 2020.



**Figure 4**: HPAIV H5 infections in mammals reported to WOAH in Europe since 2020 \*Polish mammalian cases involve 33 cats and 1 caracol and are described on the homepage of the "Main Veterinary Inspectorate" in Poland. Data query: 14/09/2023.

#### Situation in the world/special events

Outbreaks and wild bird cases due to HPAIV H5 clade 2.3.4.4b continue to be reported worldwide: Russia reported HPAIV H5 in alcids and at least one fur seal (*Callorhinus ursinus*) in the Sea of Okhotsk north of Japan and in gulls in Murmansk, northern Russia. In early August, deaths of shorebirds on the Pacific coast, north of Seattle, in North America included seals identified as having died from HPAIV H5N1. Reports of HPAIV H5N1 infections continue to come from South America, where Brazil has also been affected since May with large numbers of infected wild birds and isolated outbreaks in poultry. In August, Argentina reported a cluster of deaths due to neurological disease in sea lions (*Otaria flavescens*) on the coast of Patagonia, which can be attributed to infection with HPAIV H5N1. At the end of August, a sea lion on the coast of Uruguay, not far from the capital Montevideo, was also found to be infected with HPAIV H5; the animal had probably contracted the disease from wild birds observed with HPAI symptoms on the coast. Ten further deaths have been registered, and the results of the investigations are still pending.

Despite the very high number of outbreaks in poultry worldwide and presumed multiple contacts between humans and infected birds, **HPAIV H5 clade 2.3.4.4b infections in humans** still appear to be very rare events, but are closely monitored and documented. Since 2020, fewer than 10 human infections with mild or asymptomatic courses have occurred in Europe and North America, although severe courses have been reported in two individuals from Ecuador and Chile following infection with HPAIV H5. In July and August, there were no further reports of human infections with clade 2.3.4.4b-HPAIV H5.

According to an assessment by the European Centre for Disease Prevention and Control (ECDC), the risk of zoonotic transmission of HPAIV H5N1 clade 2.3.4.4b and the associated public health impact is still considered low. However, a moderate risk is assumed for occupationally exposed groups who have close contact with infected poultry or who have been exposed to infected and diseased cats (e.g. in Poland) (<u>source</u>).

#### Summary and risk assessment

Despite the summer, the current global HPAI H5N1 epidemic has not subsided in Europe. With the end of the breeding season, the population densities of wild birds and thus, the number of cases has decreased, but HPAIV H5 cases in wild birds are still reported daily from Europe.

A particular event is the clustered deaths of captive fur animals (mink, arctic fox, red fox and raccoon dog) in Finland, attributed to an HPAIV H5N1, resulting in the killing of over 100,000 animals. However, infected wild mammals (marine and terrestrial carnivores) also continue to be reported from Europe.

Thus, the year-round presence of the virus can be confirmed again this year. Although the number of outbreaks in poultry in Europe has decreased significantly, the virus is still prevalent in wild birds across northern Europe.

In many parts of Germany, there are well-suited resting and wintering areas for a large number of water birds, mainly from Scandinavia and the Baltic States, but also from northern and western Russia, and in some cases even from Siberia. In the course of the upcoming autumn migration, which has already started for waders in July and will increase in September/October for geese, swans and ducks, an increased movement dynamic (over long distances) and in some places a higher population density of the resting population can be expected. During this period, small- to medium-scale movements of roosting waterfowl (geese), cranes, and gulls between inland feeding sites (cereal fields) and overnight roosting areas in shallow-water coastal areas will occur and promote virus spread over short distances to other populations. Depending on temperatures, water bird populations are expected to peak around mid-October. In addition, cooler temperatures and weaker UV radiation favour the persistence of HPAI viruses in the environment. This creates favourable conditions for both new arrivals from Scandinavia, the Baltic States, and eastern and central Russia, and for possible reassortment events between HPAIV H5 and various low pathogenic avian influenza viruses, which occur in high diversity and cluster in wild water birds from September onwards. Local breeding birds (e.g. terns, some gulls) have already largely moved to their resting and wintering areas further south. In this context, countries in North and West Africa must also anticipate an introduction of the virus from Europe.

The <u>risk of introduction, spread and further dissemination of HPAI H5 viruses in water bird</u> populations in the context of increasing population densities of water birds at staging areas within <u>Germany is</u> considered <u>high</u>.

The <u>risk of HPAIV H5 introduction into German poultry production sites and bird populations in</u> <u>zoological facilities through direct and indirect contacts with wild birds is</u> considered <u>high</u>. As bridge species, some gull species can bring poultry production sites and water bird habitats into contact with each other.

The <u>risk of introduction through the sale of live poultry in the travel trade or poultry exhibitions</u> <u>within Germany and Europe is</u> considered as <u>moderate</u>, but will increase accordingly with a possible increase in outbreaks in poultry.

The number of outbreaks in poultry and captive birds in Europe declined over August. There is currently a *low* risk of introduction of the virus between holdings (secondary outbreaks) within <u>Germany</u>.

For waterfowl farms in Germany <u>the risk of undetected circulation of HPAI H5 viruses and</u> <u>consequently of spread between poultry flocks is also</u> estimated to be <u>moderate</u>.

#### Current recommendation

The top priority is to protect poultry from the introduction and possible further spread of HPAIV infections. To this end, the relevant recommended biosecurity measures and surveillance or clarification examinations must be checked and consistently adhered to. Poultry farmers are legally obliged to comply with basic biosecurity rules. The reporting of deaths in poultry keeping to the veterinary authority with subsequent official investigation is considered a measure for early detection of the disease, which is fatal in chickens and turkeys.

Poultry or bird exhibitions or the sale of live poultry (in travel trade) should only be allowed if high biosecurity rules are observed and, if necessary, subject to a coordinated regional risk assessment. Bringing together (pedigree) poultry of different origins and keeping them for several days at the exhibition site should be avoided at all costs.

Increased attention to compliance with biosecurity measures must also be paid to intra-Community movements of poultry, especially to or from EU-countries with current outbreaks. Careful cleaning and disinfection must be carried out on poultry transport vehicles returning from affected countries.

In the vicinity of clustered cases of HPAIV-infected wild birds, a risk-based restriction of free-range poultry keeping (stabling) is recommended. The use of TSIS to view wild bird cases in the counties (TSIS query) is available to every citizen.

In poultry farms, zoos and animal parks, especially those with open-air and free-range systems, prevention and biosecurity measures should be urgently reviewed and, if necessary, optimised. Livestock keepers can check the biosecurity of their farms anonymously and free of charge using the so-called "AI risk traffic light" (https://risikoampel.uni-vechta.de/), among other things. In particular, it should be possible to prove that farmers had already taken effective measures to prevent the entry and spread of HPAIV before an HPAIV case occurred.

Even though EU Regulation 2023/361 has made vaccination of poultry against HPAI possible since February 2023, there are still no suitable, approved commercial vaccines on the European market. In this respect, considerations of vaccination as a further preventive protective measure flanking the known biosecurity precautions must remain theoretical (Benefits and risks of vaccinating poultry against highly pathogenic avian influenza - DGS MAGAZIN (dgs-magazin.de). Vaccination of poultry is linked to considerable monitoring requirements, which are financially costly and will also place a heavy burden on personnel capacities in veterinary offices and testing facilities.

Surveillance of wild mammals for HPAIV H5 infection (see below), but also captive mammals (fur animals), should be strengthened following the clustering of HPAIV findings in cats in Poland and fur animals in Finland. Similarly, dogs, cats and pigs kept on farms with poultry with HPAI outbreaks should be included in the environmental testing (swab and serum samples).

It is hardly possible to influence the course and spread of HPAIV infections in wild bird populations. The collection of carcasses has proven to be a useful measure against further food-chain-related

transmission (especially mammals and birds of prey such as white-tailed eagles!). Conservationists, national park rangers, bird wardens, bird ringers, etc. should be prepared to handle sick and dead birds in cooperation with the competent veterinary authorities, and the possible collection and disposal of dead birds should be planned in advance. The registration of the number of dead birds found and the associated communication between environmental and veterinary authorities should be intensified. A detailed document with instructions for action and background information can be found here: <a href="https://www.waddensea-worldheritage.org/sites/default/files/2023\_Avian%20flu%20">https://www.waddensea-worldheritage.org/sites/default/files/2023\_Avian%20flu%20</a> management%20guidelines\_vers2.pdf.

In times of high risk or when HPAIV cases or outbreaks are known in an area, suspension of hunting of waterfowl should be considered, both to reduce disturbance to wild bird populations and to reduce the possibility of spread of infection from the wild to domestic areas when killed infected birds are moved.

After close personal contact with dead or sick birds, a doctor should be consulted immediately if (even mild) symptoms of disease appear individually, in order to clarify a possible HPAIV human infection.

The same precautions should be taken when finding dead wild carnivores (especially foxes). Carnivores found alive with neurological changes may also be infected with HPAIV H5N1. If foxes or other carnivores are examined at national testing facilities as part of rabies screening, tissue samples of the CNS and lungs should always also be tested for influenza virus RNA.

Conspicuous behaviour and dead finds in wild birds and mammals in connection with wild bird deaths should be reported immediately to the veterinary authorities for recovery and, if necessary, investigation.

Correct species identification of dead birds is required and, in addition to the total number of non-investigated dead birds, must be reported via TSN. This is the only way to ensure that the extent of the incident can be realistically estimated and documented.

For an overview of further options for action, a catalogue of recommendations can be found here.

Data sources: TSN, ADIS, WOAH, Scientific publications (here: Eurosurveillance); For the Polish cats: <u>Communication VII GLW on Feline Diseases | Chief Veterinary Inspectorate (wetgiw.gov.pl</u>). Query period: 01/07/2023–31/08/2023. Query date: 14/09/2023

#### Further notes

The data in the databases is dynamic and changes daily. Therefore, there are shifts in the figures if they are queried at other times.

The European Food Safety Authority (EFSA) provides an update on the scientific assessment of what is happening in Europe: <u>Avian influenza overview April - June 2023 | EFSA (europa.eu)</u>.

In addition to weekly updated <u>outbreak maps</u>, the FLI also provides information on molecular virological investigations of HPAI viruses in Germany (<u>HPAIV genotypes in Germany | Zenodo</u>) and a questionnaire (<u>FAQ</u>).

The Radar Bulletin Germany is published at monthly intervals on the FLI website.

The Poultry Business Magazine (DGS) has set up an Avian Influenza Radar, which lists avian influenza outbreaks chronologically with details of species and locations. <u>Avian Influenza Radar - Specialist</u> Information for Poultry Business - DGS MAGAZIN (dgs-magazin.de)

The European Reference Laboratory for Avian Influenza has launched a new HPAI Dashboard (<u>https://eurlaidata.izsvenezie.it/</u>) regarding HPAI detection in the EU.

EFSA has also set up an HPAI dashboard where the figures in Europe can be viewed in real time. <u>EFSA HPAI dashboard (aus.vet)</u>

The WHO published a risk assessment on 21/12/2022. <u>Assessment of risk associated with recent</u> influenza A(H5N1) clade 2.3.4.4b viruses (who.int)

The US authorities publish mammalian cases on a daily basis on a website: <u>USDA APHIS | 2022-2023</u> <u>Detections of Highly Pathogenic Avian Influenza in Mammals.</u>

The British Trust of Ornithology (BTO) has published helpful advice for bird ringers: <a href="https://www.bto.org/sites/default/files/bto\_hpai\_guidance\_to\_ringers\_v04.pdf">https://www.bto.org/sites/default/files/bto\_hpai\_guidance\_to\_ringers\_v04.pdf</a>.

The FAO Scientific Task Force on Avian Influenza in Wild Birds, among others, is calling on authorities to also understand HPAI as a problem for biodiversity conservation, and to gear monitoring and control measures also to the protection of wild fauna. https://www.fao.org/3/cc6936en/cc6936en.pdf

Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health Headquarters: Riems Island, Südufer 10, D-17493 Greifswald-Insel Riems, <u>www.fli.de</u> Photo/source: private