HPAI in colonies of terns and gulls in Europe

Information collated by the European Sandwich Tern Research Group

Status on 20th July 2023

Collated by
Thomas Bregnballe, Wouter Courtens, Fanny Caracchioli & Ulrich Knief

Introduction

The recent development in the spread and impact of HPAI in colonies of Black-headed Gulls, Sandwich Terns, Common Terns, Mediterranean Gulls and other species of gulls calls for a short update on reports received from colonies around Europe. This notice is a follow-up of the notice we mailed out on 5th May 2023.

Information about outbreaks of bird flu inside breeding colonies is not always easy to collect. This is especially true when and where information about the colonies can be obtained only by observing from a distance. One may observe that adults of terns and/or gulls bring food to their chicks and the same time hundreds of chicks may lay dead inside the colony. So even extensive mortality of chicks can go unnoticed.

Several of the reports on outbreaks of HPAI in breeding colonies presented here include presentations of numbers of birds found dead. However, these numbers will in most cases only represents a sub-set of numbers actually killed by HPAI.

Please be aware that the pieces of information we present here is insufficient to give the full overview of the species and countries affected. We only add pieces to the overall picture.

We thank those of you who found the time during a busy field season to collate information and even submit information for this newsletter or to other relevant data collation bodies.

Sources of information and recent publications

Through our network we have received news about outbreaks of HPAI via e-mails, of which some also were passed on to the bird flu part of the "Wadden Sea World Heritage Exchange Platform".

A review of outbreaks this spring has recently become available in the report "Avian influenza overview April – June 2023" published by the European Food Safety Authority [https://doi.org/10.2903/j.efsa.2023.8191]. We here include some of the information presented in this report (here referred to as EFSA et al. 2023).

Furthermore, here in July a statement was published by the "Scientific Task Force on Avian Influenza and Wild Birds". The statement provides firstly a situation update and secondly a number of useful recommendations and guidance for those responding to the threat of HPAI to wild birds. The statement is available from this link:
[https://www.cms.int/en/workinggroup/scientific-task-force-avian-influenza-and-wild-birds]

Submission of supplementary information

We continue to collate information about occurrence of HPAI in colonies of especially Sandwich Terns, but we also try to organise incoming information about occurrence of HPAI in other species of terns as well as in gulls. We therefore acknowledge submission of information that can supplement what we present here in this newsletter. You are welcome to send supplementary information to <ulrich.knief@biologie.uni-freiburg.de> and/or to <tb@ecos.au.dk>. You can also post news on the "Wadden Sea World Heritage Exchange Platform". Those of you who are not connected to this platform are welcome to register by sending an e-mail to Kristine Meise <meise@waddensea-secretariat.org>. You will then be able to post and receive updates linked to avian influenza.

Emerging patterns

The virus

The following description is based on a description given by EFSA et al. (2023). Between October 2022 and January 2023, the majority of the characterised viruses belonged to the AB genotype. However, a rapid increase in the number of detections of the BB genotype (also known as the Herring Gull type) was observed starting from December 2022. Since February 2023, the BB genotype has become the most frequently identified variant, reaching in April–May 2023 a frequency of about 90%, based on the data available.

The vast majority of genotype BB viruses have been identified in gulls, with the Black-headed Gull representing the most affected species during the ongoing epidemic. This genotype has showed a recent wide geographic expansion. During the past winter it mainly circulated in Western Europe, whereas since spring 2023 it spread eastward reaching countries such as Croatia, Czechia, Denmark, Luxembourg, Norway, Poland and Sweden, where mass mortality events in Laridae were reported.

Genetic data indicates that viruses of the BB genotype identified in Sandwich Terns and gulls along the Mediterranean coasts (Italy and France) are closely related to viruses recently identified in wild birds in Africa, which is possibly due to a new virus incursion in Europe that took place during the spring migration.

Black-headed Gulls and Sandwich Terns

In late winter and early spring many Black-headed Gulls were found dead in their wintering areas and at spring staging sites in central and western Europe.

In April-May many countries in Europe reported on incidences of mortality due to HPAI among adult Black-headed Gulls in breeding colonies. In particular due to the outbreak of HPAI among Black-headed Gulls, outbreaks were recorded in colonies located at freshwater areas far from the coast.

At first, it appeared that the Sandwich Terns breeding next to Black-headed Gulls were unaffected by being 'neighbours' to infected and dying Black-headed Gulls. However, later in the season, as tens or hundreds of chicks of Black-headed Gulls started to die in a number of colonies, we observed that also chicks of Sandwich Terns began to die in some of the colonies. For a number of the colonies it has been confirmed that the chicks of Black-headed Gulls and Sandwich Terns were infected with H5N1. There are indications that the initial risk of infection of Sandwich Tern chicks was related to the proximity to Black-headed Gulls. Thus, in some colonies we observed 'high' survival rates of Sandwich Tern chicks hatched in colonies (or sub-colonies) where there was little or no contact with

infected chicks of Black-headed Gulls whereas many of the Sandwich Tern chicks that grew up close to infected chicks of Black-headed Gulls died before fledging. However, it appears that studies from this spring indicate that some adult Sandwich Terns carry the virus without becoming obviously ill, and some of these individuals may as well have transferred virus to their own and other chicks.

So, although we have reports on successful fledging of Sandwich Tern chicks from some colonies (including some of the larger colonies), we experienced yet another season with an overall reduced production of fledged chicks. There are also reports on mortality among adult Sandwich Terns, but only in low numbers and mainly from colonies located in parts of Europe (e.g. South France and Italy) where Sandwich Terns were not affected by HPAI in the breeding season of 2022.

The consequences of the outbreak of HPAI among Sandwich Terns in 2022 had clearly detectable effects on the size of the breeding population of the species in NW Europe here in 2023. In the Netherlands and Flanders, the number of breeding pairs of Sandwich Terns in 2023 was less than half of the one in 2022 (9000 vs 19,000 pairs) and breeding colonies that were severely affected in 2022 stayed vacant in 2023 (Volgelbescherming, online-b via EFSA et al. 2023).

To conclude, HPAI has again affected fledging success and adult survival in NW-European Sandwich Tern colonies. Furthermore, a large number of adult Black-headed Gulls have died in Europe and this species has bred with reduced success here in 2023 due to the outbreak of the new variant of HPAI.

Other species of gulls and terns

In the spring of 2023 HPAI viruses have been detected in NW Europe in at least the following species of terns and gulls (besides Black-headed Gulls and Sandwich Terns): Common Tern, Arctic Tern, Gull-billed Tern, Little Tern, Kittiwake, Common Gull, Herring Gull, Lesser Black-backed Gull, Great Black-backed Gull, Mediterranean Gull, Slender-billed Gull and Yellow-legged Gull.

To our knowledge there are no reports of deaths of Caspian Terns caused by infection of HPAI.

Furthermore, in West Africa deaths due to HPAI has been recorded in West African Crested Tern (formerly considered a sub-species of Royal Tern) and Grey-headed Gull as well as in other species.

Country-by-country reporting

In the reported information given below “Date” refers to the date of submission of the information. So, the observations and records reported will always refer to days before the given date. In most cases, the text presented in the following is a slightly edited version of the text received from the person(s) who submitted the information. For countries from which we received information more than once, the most recently received information is presented first whereafter the information received earlier in spring follows.

We include information given in the report “Avian influenza overview April – June 2023” published by the European Food Safety Authority (EFSA et al. 2023).

Mortality among terns and gulls due to HPAI has been reported over most of Europe in 2023, from the north coast of Norway to Spain in the south and from Ireland in the west to Latvia/Russia in the east (cf. EFSA et al. 2023). We do not have information on effects from all affected countries and all gull and tern species in Europe.

Spain

Source: IM Veterinaria Date: spring of 2023

via EFSA et al. (2023).

515 Sandwich Terns, 23 Gull-billed Terns and 2 Common Terns were reported dead from HPAI in a mixed-species breeding colony in Albufera, Valencia.

Italy

Source: EURL communication Date: spring of 2023

via EFSA et al. (2023).

In the Veneto region 1460 dead chicks of Sandwich Terns were reported dead at the end of June. Besides in Sandwich Terns, H5N1 outbreaks were also reported in Yellow-legged Gulls, Slender-billed Gulls and Mediterranean Gulls in Italy.

Source: Roberto Valle, Marco Basso & Lorenzo Serra Date: 06-07-2023

The Italian Sandwich Tern colonies were not hit in 2022. In the colony at Venice lagoon, a massive die-off of Sandwich Tern chicks and a few adults was recorded in 2023. Almost all chicks died in a colony of 2500 breeding pairs (positive for H5N1). Adults of Slender-billed Gulls were also dying.

France

Source: Olivier Scher Date: 13-06-2023

The South French colonies were not hit in 2022 but adults have been found dying this year. In one colony, 90% of the chicks died from H5N1 and in another colony, a huge failure was recorded. Four colonies were affected in total in southern France. Breeding adults of Slender-billed Gulls were also recorded dying.

Source: Régis Marty Date : 05-07-2023

In the "polder de Sébastopol" reserve, holding 3600 pairs of Sandwich Terns, there will probably be no fledging of chicks this year. The first dead birds were Black-headed Gulls (found at the beginning of May). After this, some Mediterranean Gulls were found dead, followed by the first Sandwich Terns two or three weeks later. There were 1 or 2 dead Sandwich Terns per week until June, and then in the middle of June chicks started to die, followed by the adults. Now (5/7) the estimation is 200 dead adults (but we can certainly double the number because not all dead Sandwich Terns were collected) and many more chicks had died. Several of the dead birds were tested and it was confirmed that they had died from H5N1.

There was also mass mortality of Mediterranean Gulls, with now more than 500 dead adults out of 5000 pairs (and here we can also surely double the number of dead adults). Many of the chicks of the Mediterranean Gulls were also dying.

There were around 300 pairs of Black-headed Gull that were less affected (the success was estimated at around 0.7-0.8 fledged chicks per nest). Many chicks of Sandwich Terns and Black-headed Gulls died around two weeks after hatching and not soon after hatching. Common Terns were also breeding (about 200-250 pairs) but until now, only one or two adults of this species were reported dead due to HPAI. The dead birds have only been found in the colony and not on the beaches around or on the islands away from the colony.

Source: Alexandre Sibille Date : 07-07-2023

In the "Platier d'Oye" reserve, some Black-headed Gulls have been tested for bird flu. Last year, the situation was a disaster, and this year the colony is once more at a really low number of individuals (200 pairs vs 1800 last year), but it seems that the decline could also be due to human disturbance. Incubation and hatching went well but the adults left the colony, abandoning eggs and chicks. As a result, only 4-6 young terns are expected to fledge.

Source : Aurélie Barbotin Date : 07-07-2023

Reported on behalf of the Office Français de la Biodiversité – Pays de la Loire. The OFB is carrying out epidemiological monitoring of the virus circulating in wildlife. The collection of cadavers is the responsibility of the local council. They apply the following protocol: if a species tests positive for HPAI, the OFB no longer collects the species in question in the municipality (within 15 days of the previous collection). In Pays de la Loire >600 dead Mediterranean Gulls, >200 Black-Headed Gulls, 100 Sandwich Terns and 30 Common Terns were collected since the beginning of 2023. Later on 300 dead Sandwich Tern and Black-headed Gulls were also reported, in addition to the others. Other species found dying due to HPAI include Little Tern, Herring Gull, Lesser Black-Backed Gull and Yellow-legged Gull.

United Kingdom

Source: BTO Date: spring of 2023

via EFSA et al. (2023).

Up to hundreds to thousands of HPAI virus-associated deaths of adult and/or juvenile Black-headed Gulls per breeding colony with an outbreak.

In North Wales 40% of 800 Common Terns were found dead from HPAI at one breeding colony and 50% of 400 Common Terns at another breeding colony.

Source: Julian Smith, Daryl Short, Ewan Weston & Leigh Lock Date: 27-06-2023

via Wouter Courtens

The Scolt Head Sandwich Tern colony has 3500 breeding pairs and a very good chick production, but very recently chicks started to die from HPAI with 700 dead birds collected on 26th June.

St. John's Pool in Scotland has no signs of HPAI and a very high productivity.

At Forvie NNR, North-east Scotland, at least 300 Sandwich Tern chicks died from H5N1, but only few adults died, starting mid to end of June. The die-off seems to have settled down and not all chicks died. The same phenomenon was also observed in Black-headed Gulls, in which also more adults died. There is also a worrying amount of mortality among adult Arctic Terns and Common Terns.

Belgium

Source: Natuurpunt Date: spring of 2023

via EFSA et al. (2023).

Up to hundreds to thousands of HPAI virus-associated deaths of adult and/or juvenile Black-headed Gulls per breeding colony with an outbreak.

Source: Wouter Courtens, Eric Stienen and Hans Matheve Date: 04-07-2023

As for the Belgian situation, since 19th June we removed 2106 Sandwich Tern chicks, 52 adult Sandwich Terns, 1662 Common Tern chicks and 267 adult Common Terns (almost all adult Common Terns have been found since 26th June, 'only' 17 found before 19th June), 577 Black-headed Gull chicks, 42 adult Black-headed Gull, 243 Mediterranean Gull chicks and 26 adults. No clue what this means as HPAI has been present since the start of the breeding season, why should those adults drop dead in those numbers just now?

Apart from that, we had 4679 Sandwich Tern nests and 1500-2000 chicks still alive. For Common Terns, Black-headed Gull and Mediterranean Gull the situation is more dire. While some chicks are still alive, the numbers are dropping rapidly.

Source: Wouter Courtens Date: 27 and 28-06-2023

Up to 19th June the Sandwich Tern colony in Zeebrugge (Belgium) was thriving: 4700 breeding pairs, massive chick production and spectacular food availability and only very infrequently a dead adult was found. From 19th June onwards things changed dramatically with large numbers of chicks dying, also fledged ones. In one week we removed 1100 dead chicks with many live ones showing symptoms of HPAI. Over the same week we removed 16 dead adults. Since last around 19th June also Common Terns started to die with 400 dead chicks removed (but many more that still have to be collected) and also most Black-headed Gull and Mediterranean Gull chicks (many of them already fledged) are dying. Fortunately, there are still 2500+ Sandwich Tern chicks alive and in apparently good condition but we know this might change rapidly.

On 28th June a colleague found 50+ dead adult Common Terns and 15+ adult Sandwich Terns in the colony of Zeebrugge (and a large number of newly dead chicks, no definitive figures). This seems to indicate an increase in adult mortality as up to now only relatively small numbers were found. Still a lot of healthy chicks fortunately.

The Netherlands

Source: SOVON, Deltamilieu Projecten, Nature Today Date: spring of 2023

via EFSA et al. (2023).

Up to hundreds to thousands of HPAI virus-associated deaths of adult and/or juvenile Black-headed Gulls per breeding colony with an outbreak.

Around 1200 chicks of gulls and terns, of which 750 were Black-headed Gulls, 240 Sandwich Terns, and 130 Mediterranean Gulls were reported dead from HPAI at breeding colonies in the Haringvliet,

More than 4000 birds, of which 86% were Black-headed Gulls and 14% Common Terns, were reported dead from HPAI from a mixed-species breeding colony on Stern Island, River Eems.

Source: Sander Lilipaly & Monika Ballmann Date: 27-06-2023

via Wouter Courtens

At the island of Bliek 250 dead Sandwich Tern chicks were collected on 24th June. These were found next to a lot of Common Tern, Mediterranean Gull and Black-headed Gull chicks. Around 2000 live Sandwich Tern chicks were counted.

Source: Peter de Boer Date: 23-06-2023

Since two weeks a large and ongoing outbreak of HPAI is occurring on the island Stern in the Ems estuary. Black-headed Gull was affected first, followed by Common Tern. For Black-headed Gull we collected >2000 dead birds till 20th June, mainly chicks with only few adults. Until 20th June 250 dead Common Terns were counted/collected, 4% of which were adults and the remainder were chicks.

Germany

Source: Veit Hennig, Jens Umland & Bernd Hälterlein Date: 21-06-2023

Around 15th June increasing numbers of dead birds were detected in the Black-headed Gull colony at the Eider Barrage west of Tönning in Schleswig-Holstein. This colony is expected to number about 1700 breeding pairs this year. Infection with HPAI was confirmed. All 9 sampled carcasses (8 chicks, 1 adult bird) were tested H5 positive at the state laboratory in Neumünster.

Up to and including 21st June about 700 carcasses (about 100/day) were removed from the colonies and disposed of. The total number of victims is significantly higher, as large parts of the colony are difficult to see and cannot be walked on now for safety reasons and to protect the living chicks. The victims are almost exclusively Black-headed Gull chicks of various ages; the finding of dead adults occur only occasionally.

The colony at Neufelderkoog was severely hit, both by H5N1 and predation. Black-headed Gulls (chicks) and Common Terns were dying in large numbers.

On Neuwerk Black-headed Gulls started to die in the beginning of July.

In all other gull and tern colonies on the Schleswig-Holstein North Sea coast (including the Sandwich Tern colony on Hallig Norderoog, which was severely affected by bird flu mortality in June 2022), only very few dead birds have been found in recent months and these have only occasionally tested positive for bird flu. So far, there is no evidence of an outbreak in other areas (Halligen, forelands of the Friedrichskoog peninsula, etc.). All Black-headed Gull colonies with growing chicks are now being monitored particularly intensively.

Source: Elmar Ballstaedt Date: 20-06-2023

It is now confirmed that we have an H5N1 outbreak in guillemots at Helgoland. In total, around 600 dead young birds (1st calendar year) have been collected by us. On the German coast (Lower Saxony), hundreds of adult guillemots have been found ashore (only around 30 on Helgoland!). Our colony consisted of over 4000 breeding pairs in 2023. The exact numbers are difficult to quantify. Normally, we are currently at the peak of the guillemot jump. This year the cliffs are almost completely empty.
In addition, we have confirmed H5N1 cases in the following species: Kittiwake (around 30 dead adults so far); Gannet (juveniles from this year as well as adults - but so far no mass outbreak like last year); Herring Gull (some adults, probably from eating carcasses). Outstanding are results from juvenile Kittiwakes, Great Black-backed Gull and Lesser Black-backed Gull.

Source: Kristine Meise Date: 06-06-2023

The Common Tern Project at the Banter See, Wilhelmshaven, reports that numbers at the breeding colony are still only at 49% of the number of transponder-marked birds that had returned this day last year.

Source: Florian Packmor Date: 24-05-2023

We received a note from the island of Neuwerk, Wadden Sea National Park of Hamburg, Germany, that they found about 35+ Black-headed Gull dead so far. These include a few confirmed cases of HPAI. Some test results are still pending...

Source: Florian Packmor Date: 15-05-2023

We just received a note from our colleagues in Schleswig-Holstein, Germany, that on 5th of May a Black-headed gull has been tested positive for a H5 virus infection in Friedrichskoog (mouth of river Elbe).

Denmark

Source: T. Bregnballe, J. Sterup, A. Urvang, K.T. Pedersen & J. Gregersen Date: spring of 2023

Dead Black-headed Gulls began to appear in breeding colonies in Denmark in early May. Some of these were quickly tested and found positive for HPAI. Before the end of May we knew of occurrence of unusually high mortality among adults in 12 breeding colonies of which most were located in Jutland. These colonies had between 1000 and 20,000 breeding pairs. There were only a few attempts to count the dead adults, and a maximum of 417 dead adults were found at a single locality. Overall, and based on rough estimates, a guesstimate suggested that at least 3000 adult Black-headed Gulls had died in Danish breeding colonies in the spring of 2023. From mid-June we began to find unusually many 7-20 days-old chick of Black-headed Gulls that had died. By then extra high mortality among chicks was also recorded in colonies from which we had no former reports on extraordinary mortality among adult breeders. The gull chicks that were collected in different colonies and analysed had died from HPAI. There were no systematic attempts to count the dead chicks. As far as we have been able to observe most of the Black-headed Gull colonies that had been affected by HPAI managed to produce at least some fledged chicks.

Adult Sandwich Terns were not found dead in unusual numbers in any of the seven Danish colonies. However, mortality among Sandwich Tern chicks due to HPAI was recorded. Despite our finding of many dead chicks in the colony at Krik Sandø (NW Jutland) during the second half of June, we recorded a production of at least 300 fledged chicks. This colony had 1019 nests in 2023 vs >2000 in 2022. The colony at Krik Sandø consisted of four sub-colonies, and it appeared that chick survival was far higher in the sub-colony located isolated from nesting Black-headed Gulls. The fledging success at the Hirsholm colony (holding >745 nests) was reasonably good, despite the finding of dead chicks (of which at least some had died due to infection with HPAI) and the colony being surrounded by Black-headed Gulls where also some chicks died due to HPAI. The colony at Hjarnø (520 nests) did not do very well. Most of the chicks of both Sandwich Terns and Black-headed Gulls died at an early stage and the breeders left the colony. The Sandwich Tern colony at Sprogø (303 nests) produced fledglings despite records of dead chicks of both Sandwich Terns and Black-headed Gulls. The other three smaller colonies of Sandwich Terns (36, 67 and 106 nests, respectively) were – as far as we know – not affected by HPAI.

Mortality of Common Terns was only recorded in a single colony where the terns were breeding in close contact with Black-headed Gulls, and no more that 12 dead adult Common Terns were found here. However, many dead chicks of both species were found at the breeding islet.

Unusually high mortality among Herring Gulls was recorded in the colony at Hirsholm in northern Kattegat (the colony had 3000-3500 breeding pairs). At least 300 adults were found dead but it was judged that more had died.

Norway

Source: NRK Date: spring of 2023

via EFSA et al. (2023).

More than 30 Black-legged Kittiwakes were reported dead from HPAI in Leirvag, Harstad.

Sweden

Source: SVA Date: spring of 2023

via EFSA et al. (2023).

Hundreds to thousands of HPAI virus-associated deaths of adult and/or juvenile Black-headed Gulls per breeding colony.

Source: Patrik Olofsson Date: 18-06-23

The colony at Blekinge was hit by HPAI mid-June. Chicks but no adults died.

References

EFSA (European Food Safety Authority), ECDC (European Centre for Disease Prevention and Control), EURL (European Reference Laboratory for Avian Influenza), Adlhoch C, Fusaro A, Gonzales JL, Kuiken T, Melidou A, Mirinavičiūtė G, Niqueux É, Ståhl K, Staubach C, Terregino C, Baldinelli F, Broglia A and Kohnle L, 2023. Scientific report: Avian influenza overview April–June 2023. EFSA Journal 2023;21(7): 8191, 54 pp. https://doi.org/10.2903/j.efsa.2023.8191

Dead Black-headed Gulls lying along the shore of an islet holding more than 1000 breeding pairs. Drones have successfully been used to survey breeding colonies in the early stages of outbreaks.