

## Updated Outbreak Assessment

# West Nile virus in Germany and southern Europe

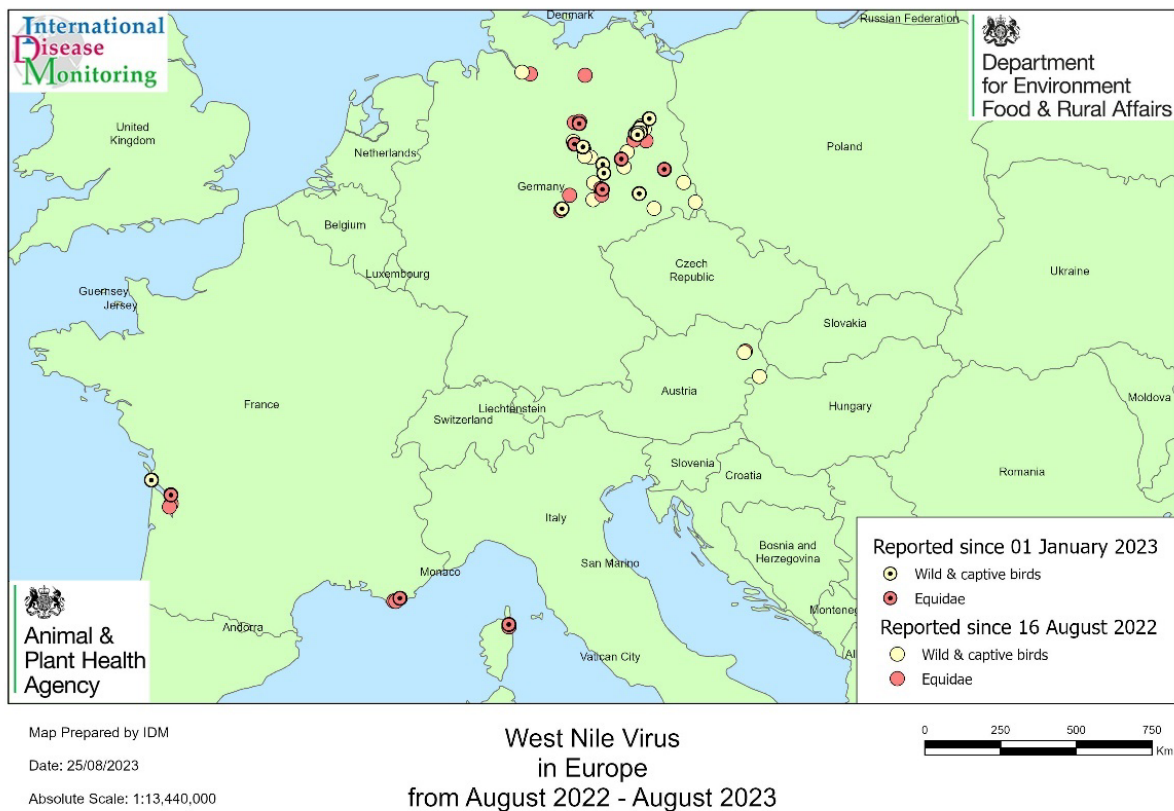
24 August 2023

### Disease report

West Nile virus (WNV) first emerged in north-east Germany in August 2018 with several cases in birds, and subsequently 2 outbreaks in horses in September and October 2018 (see [previous outbreak assessments](#) are available on GOV.UK.) The virus appears to be persisting in this region through successful over-wintering in mosquitoes (Ziegler et al. 2020), as there were more avian cases and equine outbreaks in the late summers of subsequent years.

The first avian case of WNV this year in northern Germany was reported on 18 July 2023 in a captive tawny owl (*Strix aluco*) in a zoo north of Leipzig, Saxony-Anhalt. Five further cases occurred wild *Accipitridae* (species not specified) in July and August in Saxony-Anhalt, Berlin and Saxony.

In France, in June and August 2023, there have been 2 outbreaks of WNV in horses in the Nouvelle-Aquitaine region, in the same region where WNV was reported in a horse in September 2022. In this region, WNV was also reported in 5 Chilean flamingos (*Phoenicopterus chilensis*) in a zoo in August 2023.



## Situation assessment

WNV is a zoonosis, and one of the vector-borne viral diseases causing equine encephalitis. The virus circulates between wild birds transmitted by ornithophilic mosquitoes (the most common is *Culex pipiens*) in Southern and Eastern Europe, North America, East and West Africa. Horses and humans are rare accidental spill-over hosts and can be infected through the bite of a bridging species of mosquito, such as *Culex modestus* and *Culex pipiens molestus*, or very rarely through surgical interventions, such as blood transfusion, organ transplant, or injecting blood products.

It is noteworthy that the veterinarian who performed the necropsy of a captive, WNV-infected great grey owl (*Strix nebulosa*) in Germany in 2018, developed flu-like symptoms 3 days after the necropsy and specific WNV-IgM antibodies were detected one month later (See Ziegler et al. 2019).

Since 3 July 2023, and as of 23 August 2023, there have been a total of 13 WNV outbreaks among equids and 47 events among birds reported across Europe during the 2023 transmission season (ECDC 2023). The outbreaks among equids were in Spain (6), Hungary (4), France (2) and Italy (1). Of the 60 avian cases, 47 were in Italy with the remainder in Germany (7), Spain (4), Bulgaria (1) and France (1) (ECDC 2023).

It is possible that WNV enters the UK through WNV-infected wild birds from Europe from time-to-time. In Autumn, large numbers of thrushes (including Fieldfare (*Turdus pilaris*) and Redwing (*Turdus iliacus*)) migrate from Scandinavia to the UK, together with other passerines from north-eastern Europe. Direct bird-to-bird transmission of WNV does not occur, and so the probability of a WNV-infected wild bird is reliant on such birds stopping off in northern Germany or western France and being bitten by mosquitoes. British mosquitos are capable of transmitting WNV from wild birds, and established populations of *Culex modestus* are documented in southern England (Phipps *et al*, 2018; Cull, *et al.*, 2016), but mosquito activity declines from October.

Hence, the number of WNV transmission events within the UK may be restricted because there needs to be synchrony between WNV entering the UK in migratory birds from northern Europe and high UK mosquito abundance, for onward transmission to UK birds and equines.

For this reason, the risk of WNV incursion into the UK differs for each of the season(see [previous outbreak assessments](#) are available on GOV.UK.). The recent droughts and heatwaves in northern Europe in June and July 2023 may have affected the transmission dynamics of WNV in wild birds in ways that are not fully understood at present. In particular, bird movements and behaviour may change with perhaps more livestock, birds and mosquitoes congregating at the small remaining freshwater bodies over the late summer and autumn. Droughts may cause people to use containers to collect water providing breeding sites for mosquitoes in urban areas.

The detection of WNV in a Common whitethroat (*Curruca communis*) and mosquito pools in the Netherlands in August 2020 followed a heatwave in the country (Sikkema *et al.* 2020), and the WNV occurrence in Germany in 2018 was linked to a hot and rainless season in April/May 2018 (Zieglet *al.* 2019). The expansion in range of WNV into north-western Europe may increase the likelihood of more WNV-positive birds entering the UK during autumn as passage migrants.

While migratory passerines may not arrive until October, a further consideration is the arrival of wading birds such as Common snipe (*Gallinago gallinago*) and ruff (*Philomachus pugnax*) from breeding grounds in the Baltic States and Scandinavia. These bird species may arrive earlier (August to September) when mosquito numbers are still relatively high in the UK. Compared to thrushes, however, these wading birds represent relatively small numbers and are located at coastal sites.

Taking into account both the lack of synchrony, with migrant birds from Germany arriving in the UK in October when the UK mosquito abundance is falling, together with the large number of pathway steps required for infecting a horse in the UK (namely infection of migrant passerine in Germany, migration of passerine to UK, infection of UK mosquito),

and the relatively small number of WNV cases in birds in Germany, it is considered that the risk of autochthonous infection of an equine in the UK through entry of WNV in wild birds in the summer is **negligible**.

Very few wild birds migrate from north-east or central Europe to the UK in the summer months when both mosquito numbers peak and the WNV vector transmission season has started (ECDC 2019). This risk could increase in Autumn, particularly if hot dry weather leads to higher mosquito populations when passerines begin to arrive in the UK from northern Europe, but the risk would be expected to reduce again as the mosquito population declines.

## Conclusion

The current risk of autochthonous WNV transmission to horses in the UK as a result of the recurrence of WNV in birds and horses in north-east Germany and south-west France is currently considered to be **negligible**.

However, there is continued uncertainty around the ongoing WNV situation in both countries, and the sensitivity of wild bird surveillance across Europe as a whole, particularly in the light of the recent heatwaves and drought situation in summer 2023, although affected regions are now recovering ([Map of Current Droughts in Europe - European Drought Observatory](#)).

While passerines in Europe have been reported as infected with WNV, other species such as waders which arrive earlier in the autumn may need more consideration as potential routes of entry to the UK.

The majority of infected horses will not show any clinical signs, but some horses may develop a fever and rarely central nervous signs, such as tremors, staggering and ultimately, death. All causes of equine viral encephalo-myelitis are notifiable in horses and suspicion of disease must be reported to APHA.

The movement of WNV-infected people or horses would not be a risk pathway for establishing disease in the UK in terms of mosquito transmission, although it should be emphasised that disease in humans can result from exposure to equine tissues at necropsy (Venter et al. 2010).

We would like to remind veterinarians and operators of equine establishments of the requirement to report suspect disease to APHA and that there is a 'testing to exclude' programme to rule out infection in horses showing clinical signs where there is a low suspicion of WNV as a differential diagnosis. Veterinarians [should discuss this option with APHA](#).

We will continue to monitor the situation.

## Authors

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## References

All disease reports are available from the OIE WAHIS database.

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