

## Preliminary Outbreak Assessment

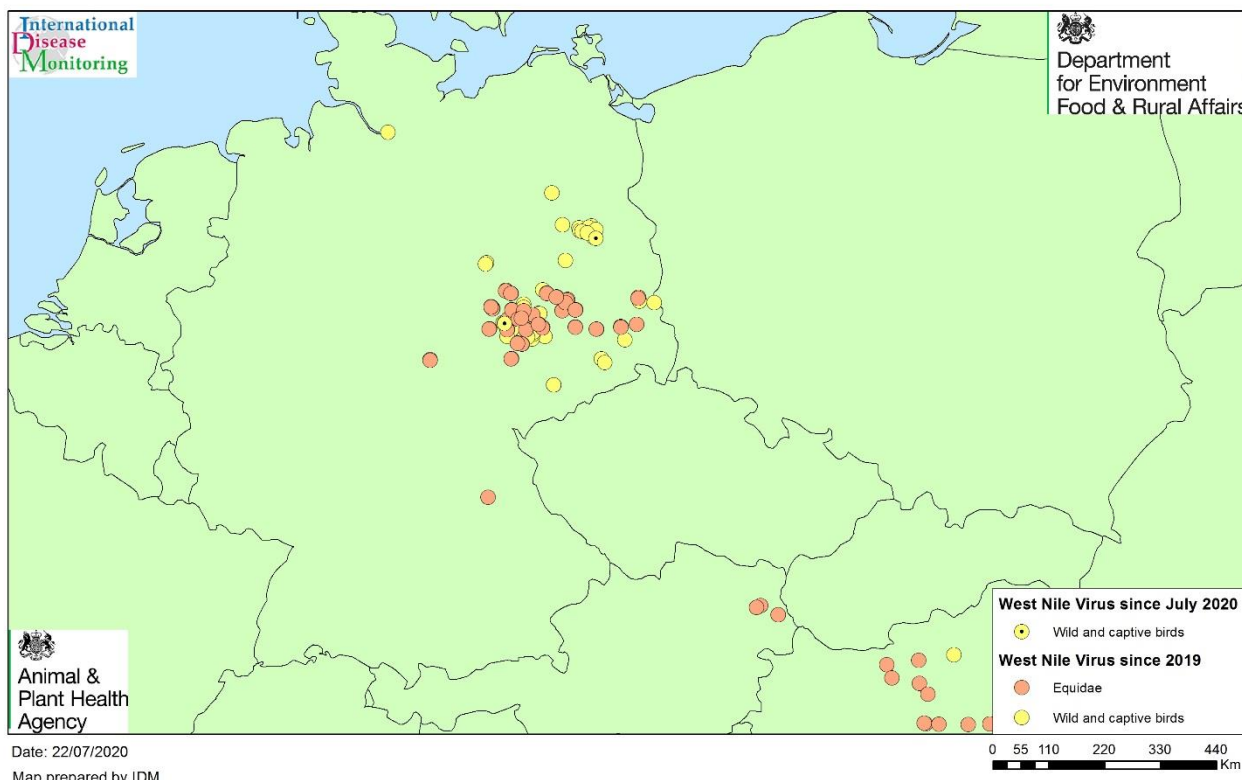
# West Nile virus in Germany

21 July 2020

Ref: VITT/1200 WNV in Germany

## Disease Report

The first cases this year of West Nile Virus (WNV) in north-east Germany were detected in mid-July, with two cases in birds occurring at almost exactly the same time of year as the first cases reported last year (3 July 2019). WNV was first reported in Germany in August 2018, with two cases in captive birds in the north-east and the first outbreaks in horses in Germany were reported the following month. It is believed the virus may be capable of over-wintering in this region. The two bird cases this year are passerines (unidentified) and one was a wild bird (i.e. non-captive), whereas in 2018/19 many of the avian cases involved large captive northern owl species. Cases in raptors and owls would not be unexpected in the next few months in this part of Germany. This is the first report of WNV in birds or equids in Europe in the 2020 transmission season.



West Nile virus in Europe from January 2019

The first avian case of WNV this year was detected on 13 July in Sachsen-Anhalt close to the locations of the avian cases and equine outbreaks of WNV last year (see map), and is in the area where multiple cases occurred in 2018. The bird was an unidentified corvid (passerine) in a zoo in Halle. The second case found on the 14 July was an unidentified wild passerine in Berlin, again in the region where WNV was reported last year (see map).

As last year, WNV appears to have over-wintered, presumably in the avian population in this region of Germany. Previously, Ziegler et al. (2019) concluded from phylogeographic analysis that a single introduction event of WNV into Germany had occurred, most likely in 2016 from the Czech Republic where it has existed since at least 2011 and that a second re-introduction in the same place in Germany in 2019 would be unlikely. A third re-introduction this year could be regarded as very unlikely.

Ziegler et al. (2019) suggested that the WNV occurrence in Germany in 2018 and its geographical northward spread were most likely a consequence of unusual climatic conditions in Europe, which were characterized by an early start of a hot and rainless season in April/May 2018 that persisted at least until the beginning of September. Indeed, the summer of 2018 in Germany was the second hottest and driest on record. The cases of WNV in both wild birds and captive raptors suggests autochthonous (i.e. spread within the same place) transmission of WNV in birds within Germany.

## Situation Assessment

WNV is a zoonosis and one of the vector-borne viral diseases causing equine encephalitis. The causative WNV strains in Germany in 2018 (and presumably in 2019 and 2020) belong to central European subclade II (Ziegler et al. 2019). 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 events, and can be infected through the bite of a bridging species of mosquito, such as *Culex modestus* and *Cx pipiens molestus* or very rarely, through surgical interventions, such as blood transfusion, organ transplant or injecting blood products.

During 2019, Germany reported eight equine outbreaks in the late summer/autumn in the north-east. Indeed, the last equine outbreak in Germany in 2019 was on a horse farm in Stadt, Sachsen-Anhalt, and close to the corvid reported this year. There were also wild bird cases in Germany in 2018/19 including both raptors and unusually for Europe, wild passerines. The last wild bird case for WNV in Germany was a passerine in Salzlandkreis, Sachsen-Anhalt in October 2019, near the case this year.

British mosquitoes are capable of transmitting WNV and recent surveillance by PHE has found established populations of *Culex modestus* in southern England (Phipps et al, 2018;

Cull, *et al.*, 2016). Mosquito activity declines from October and WNV transmission would not occur in autumn and winter.

It is likely that WNV enters the UK through WNV-infected wild birds from Europe from time to time. However, the timing may restrict the number of WNV transmission events within the UK because there needs to be synchrony between WNV entering the UK in birds and a high mosquito abundance for onward transmission to UK birds. For this reason, the risk of WNV incursion into the UK differs for each of the seasons (see a previous POA for details for each season). Currently, for the summer months the risk to the UK horses of WNV incursion is assessed to be **negligible**. This is because 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).

## Conclusion

The current risk (summer 2020) of autochthonous WNV transmission to horses in the UK as a result of the re-emergence of WNV in birds in north-east Germany is **negligible**, but there is a level of uncertainty around the current WNV situation in Germany and the lack of wild bird surveillance data across Europe. However, this risk would need to be reviewed for the autumn in the light of any further northward expansion in range of WNV in birds in Germany and perhaps even westward expansion into Belgium and France. The human-assisted movement of WNV-infected adult stage mosquitos (e.g. in containers, vehicles and aircraft) from Germany or indeed southern Europe could occur and should be reviewed later in the summer when more information on WNV prevalence in mosquitoes in southern Europe and Germany is available.

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 death. WNV is a notifiable disease 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). Similarly, 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 and revealed one month after the necropsy specific WNV-IgM antibodies (see Ziegler *et al.* 2019).

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. (<https://www.gov.uk/government/organisations/animal-and-plant-health-agency/about/access-and-opening> ).

Department for Environment, Food and Rural Affairs  
Animal and Plant Health Agency  
Advice Services - International Disease Monitoring

We will continue to monitor the situation.

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All disease reports are available from the OIE WAHIS database.

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