# West Nile virus detected in UK mosquitoes highlights rising climate-driven health risks



The detection of West Nile virus in mosquitoes in Britain marks a significant ecological shift, revealing the impact of climate change on the spread of tropical diseases. Researchers identified genetic material from the virus in mosquitoes collected in Nottinghamshire in July 2023, signalling a notable change in the landscape of disease vectors in the UK. While the Health Security Agency assessed the risk to human health as very low, it reiterated the potential severity of outbreaks, as around one in five symptomatic cases can result in fever, with fatalities occurring in approximately one in 150 infections.

This finding aligns with broader trends observed across Europe, where extreme weather events driven by climate change, such as heatwaves and heavy flooding, have led to an increase in the spread of mosquito-borne diseases. Conditions favourable for the proliferation of invasive species like the Asian tiger mosquito (Aedes albopictus) have been identified, which poses risks for diseases such as dengue, chikungunya, and Zika. Research indicates that the establishment of Aedes albopictus has already occurred in 13 European countries, with Aedes aegypti making inroads in regions like Cyprus.

Experts suggest that the Nottinghamshire mosquitoes may have been infected abroad, having either travelled with infected birds or migrated from regions where the virus is endemic. This possibility raises questions about the broader implications of global travel and trade facilitating the introduction of diseases previously confined to warmer climates. Speaking to the media, Arran Folly, an arbovirologist at the UK's Animal and Plant Health Agency, noted the importance of continuous surveillance to understand the evolving risks to both animal and public health.

The European Centre for Disease Prevention and Control has also highlighted the urgent need for robust monitoring systems in light of these trends. Their reports point to an alarming uptick in the incidence of diseases such as dengue, with numbers reported to the World Health Organization increasing eightfold in the past two decades. The past decade has seen nine out of the ten warmest years conducive to disease transmission, exacerbated by gradual shifts in climatic patterns.

Climate change is not merely altering weather; it is recalibrating the very framework of health risks in Europe. According to Tom Solomon, director of The Pandemic Institute in Liverpool, the implication is clear: "We are likely to see more of this [West Nile virus] and similar viruses in the future," as changing climates allow emerging viruses to gain a foothold in previously inhospitable regions.

The rising prevalence of mosquito-borne diseases serves as a grim reminder that environmental changes are reshaping public health landscapes. With health authorities ramping up disease surveillance in response to this emerging threat, the imperative for both public awareness and strategic preventive measures has never been more critical. As demonstrated by these developments, the intersection of climate conditions and health security presents a complex challenge that nations must confront collaboratively.

### Reference Map

1. Paragraph 1: [[1]](https://www.ft.com/content/9d2319b1-ce8f-4466-895c-a5e26495a023)
2. Paragraph 2: [[2]](https://www.gov.uk/guidance/mosquito-summary-hecc-chapter-8-climate-and-vector-borne-diseases), [[3]](https://www.euractiv.com/section/health-consumers/news/risk-of-mosquito-borne-diseases-rises-in-eu-as-heatwaves-flooding-increase/), [[4]](https://www.bbc.com/news/health-65985838)
3. Paragraph 3: [[1]](https://www.ft.com/content/9d2319b1-ce8f-4466-895c-a5e26495a023), [[6]](https://apnews.com/article/climate-change-europe-mosquito-fever-ecdc-b1f0e0471ae645344c2ed3f9425d7a97)
4. Paragraph 4: [[3]](https://www.euractiv.com/section/health-consumers/news/risk-of-mosquito-borne-diseases-rises-in-eu-as-heatwaves-flooding-increase/), [[5]](https://www.theguardian.com/environment/2024/apr/25/mosquito-borne-diseases-spreading-in-europe-due-to-climate-crisis-says-expert)
5. Paragraph 5: [[4]](https://www.bbc.com/news/health-65985838), [[7]](https://edition.cnn.com/2023/06/29/world/mosquitoes-spread-climate-dengue-malaria-scn/index.html)
6. Paragraph 6: [[1]](https://www.ft.com/content/9d2319b1-ce8f-4466-895c-a5e26495a023), [[2]](https://www.gov.uk/guidance/mosquito-summary-hecc-chapter-8-climate-and-vector-borne-diseases), [[3]](https://www.euractiv.com/section/health-consumers/news/risk-of-mosquito-borne-diseases-rises-in-eu-as-heatwaves-flooding-increase/)
7. Paragraph 7: [[5]](https://www.theguardian.com/environment/2024/apr/25/mosquito-borne-diseases-spreading-in-europe-due-to-climate-crisis-says-expert), [[6]](https://apnews.com/article/climate-change-europe-mosquito-fever-ecdc-b1f0e0471ae645344c2ed3f9425d7a97)

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## Bibliography

1. <https://www.ft.com/content/9d2319b1-ce8f-4466-895c-a5e26495a023> - Please view link - unable to able to access data
2. <https://www.gov.uk/guidance/mosquito-summary-hecc-chapter-8-climate-and-vector-borne-diseases> - This UK government guidance discusses how climate change, including increased rainfall and warmer temperatures, affects the distribution of mosquitoes in the UK. It highlights that extreme weather events can create new habitats for mosquitoes, and warmer temperatures can speed up their development and increase survival rates. The document also mentions the potential for invasive species, such as Aedes albopictus, to establish themselves in the UK, posing risks for diseases like dengue, chikungunya, and Zika. Surveillance is emphasized to identify new species early and prevent their spread.
3. <https://www.euractiv.com/section/health-consumers/news/risk-of-mosquito-borne-diseases-rises-in-eu-as-heatwaves-flooding-increase/> - This article reports on the European Centre for Disease Prevention and Control's warning about the growing risk of mosquito-borne diseases in Europe due to climate change. It notes that heatwaves and flooding are creating favorable conditions for invasive mosquito species like Aedes albopictus and Aedes aegypti. The article highlights the establishment of Aedes albopictus in 13 European countries and the spread of Aedes aegypti in Cyprus, raising concerns about potential increases in diseases such as dengue, chikungunya, and West Nile fever.
4. <https://www.bbc.com/news/health-65985838> - This BBC News article discusses the increasing risk of mosquito-borne diseases in Europe, attributing the spread to climate change. It reports that mosquitoes carrying viruses like dengue and chikungunya have moved into new parts of Europe, with heatwaves and flooding creating more favorable conditions. The article cites a European Centre for Disease Prevention and Control report indicating that Aedes albopictus has established itself in 13 European countries, and Aedes aegypti has become established in Cyprus, raising concerns about potential increases in diseases such as dengue, chikungunya, and West Nile fever.
5. <https://www.theguardian.com/environment/2024/apr/25/mosquito-borne-diseases-spreading-in-europe-due-to-climate-crisis-says-expert> - This Guardian article highlights the spread of mosquito-borne diseases in Europe due to climate change. It quotes experts stating that global warming allows disease vectors like mosquitoes to thrive in new regions, leading to outbreaks in areas previously unprepared. The article mentions the establishment of the Asian tiger mosquito (Aedes albopictus) in 13 European countries as of 2023 and notes that nine out of the ten most hospitable years for transmission of diseases have occurred since 2000, with dengue cases reported to the WHO increasing eightfold in the past two decades.
6. <https://apnews.com/article/climate-change-europe-mosquito-fever-ecdc-b1f0e0471ae645344c2ed3f9425d7a97> - This Associated Press article reports on the European Centre for Disease Prevention and Control's warning about the growing risk of mosquito-borne viral diseases in Europe due to climate change. It notes that heatwaves and flooding are creating favorable conditions for invasive mosquito species like Aedes albopictus and Aedes aegypti. The article highlights the establishment of Aedes albopictus in 13 European countries and the spread of Aedes aegypti in Cyprus, raising concerns about potential increases in diseases such as dengue, chikungunya, and West Nile fever.
7. <https://edition.cnn.com/2023/06/29/world/mosquitoes-spread-climate-dengue-malaria-scn/index.html> - This CNN article discusses how climate change is enabling mosquitoes to thrive in new regions, raising concerns about the spread of diseases they transmit. It explains that rising temperatures allow mosquitoes to grow faster and live longer, increasing their populations and the potential for disease transmission. The article mentions that dengue is spreading to Europe and the US, with the European Centre for Disease Prevention and Control warning that Aedes albopictus is pushing northwards and westwards in Europe as climate change grips the continent.