

# Predicting new risks to human health

Changes to UK climate and environment are already attracting new species of insects that have the potential to transmit a range of infectious diseases to humans.

Environmental research is crucial for understanding how this threat might evolve and to help regulators mitigate against it.

**Partners:**

Health Protection Agency, UK government and local authorities, University of Liverpool, Centre for Ecology & Hydrology

**The collaboration**

University of Liverpool and the Health Protection Agency (HPA) used observations and models to see how recent and simulated climate change might make Europe more favourable for the invasive Asian tiger mosquito, *Aedes albopictus*.

Future projections show that increased winter rainfall over northern Europe, together with generally higher temperatures, might allow the mosquito to survive European winters that until recently have been far too cold.

This is the first time the impact of long-term climate change has been applied to studies of this insect's distribution.

In other work, a breeding population of mosquito suspected of transmitting West Nile virus (WNV) to humans in Europe has been discovered in the marshes of north Kent and south Essex.

WNV routinely infects wildlife, and occasionally man, in parts of Africa, the Middle East and south-west Asia. More recently outbreaks have been reported in cooler regions, including France and Portugal, and it has been present in the US since 1999. The disease lives primarily in birds, but this mosquito, *Culex*



*modestus*, can transmit WNV because it regularly bites both birds and mammals.

The mosquito was identified by the Centre for Ecology & Hydrology. Once notified of the potential human health risk, the HPA confirmed its presence in their own samples.

While more work is needed to understand under what conditions species such as these could transmit disease in the UK, studies like these will help regulators and policy-makers take informed decisions about potential future risks of a range of infectious diseases.