Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

Carriers of Diseases & Human Health

Mosquito-borne diseases that are present in Western Europe could conceivably be transmitted by British mosquitoes. *(Photograph - Shutterstock)*

Background

Recent (2009) UK government climate change scenarios have predicted changes in rainfall patterns and an average increase in UK summer temperatures of between 3-5°C. In the event of such environmental change, vectors of disease (including mosquitoes) will alter their ranges and there may be an increased risk of outbreaks of disease. This would have a direct impact on human health in this country. Mosquito-borne diseases that are present in Western Europe that could conceivably be transmitted by British mosquitoes include West Nile Virus and heartworm. To develop effective mitigation strategies we need to understand and monitor the changes taking place, and create models to predict future trends.

Research and Monitoring by CEH

The Biological Records Centre (BRC) is hosted by CEH and co-funded with the Joint Nature Conservation Committee. It holds data on species distributions in Britain and works with the National Biodiversity Network to make these records accessible to the research community and environmental practitioners. Many of the datasets are collected by voluntary schemes and societies. The BRC links these data and undertakes meta-analyses to identify and interpret trends which show, for example, how different species ranges are changing over time and what might cause these changes. Through the BRC, CEH is involved in or linked to a number of schemes in collaboration with the Health Protection Agency and Chartered Institute of Environmental Health to record distributions for species such as ticks and mosquitoes. One project, EMMPOWER, seeks to understand environmental parameters that explain mosquito population abundance in UK wetlands. Six of the 34 species of UK mosquitoes feed on both humans and animals, and nine species have been linked to West Nile Virus. Only through the work of these and similar projects can we improve our understanding of the processes underlying disease-vector dynamics and disease transmission. Once we have this deeper understanding, we can then contribute to the development of targeted and cost-effective intervention strategies.

Much of CEH's research is carried out in partnership with, or funded in conjunction with, other organisations.

NATURAL ENVIRONMENT RESEARCH COUNCIL

enquiries@ceh.ac.uk
www.ceh.ac.uk