P 32 Ecology of Lyme borreliosis in central United Kingdom

Judy Bettridge[a], Marine Renard[a], Fan Zhao[a], Kevin Bown[a], Richard J. Birtles[a,b]

[a] School of Veterinary Science, Leahurst Campus, University of Liverpool, CH64 7TE, UK
[b] School of Environment & Life Sciences, University of Salford, M5 4WT, UK

Lyme borreliosis is an emerging infectious disease of humans and animals in the United Kingdom, with cases reported from most counties in England and Wales. The causative organisms, which are members of the *Borrelia burgdorferii* sensu lato group of spirochaetes, have complex ecological relationships with their vector, *Ixodes ricinus*, and with their vertebrate reservoir host. Both the prevalence and composition of *B. burgdorferii* s.l. communities have implications for public health risk. We conducted a cross-sectional survey to investigate the prevalence of *Borrelia* species occurring in a number of sites with abundant tick populations across northern England, North Wales, and the Scottish Border region. This region includes both areas with frequent reports of human infection, and areas where few cases are reported. We found markedly a different prevalence of infection across the sites, ranging from 0% to almost 10% of questing nymphs. A higher prevalence of infection was consistently associated with a deciduous forest habitat. We explored the composition of *Borrelia* species across the region, frequently encountering *B. garinii* and *B. valaisiana*, and occasionally encountering *B. afzelii*.