EBONIE T. HICKS & KIMBERLY A. BJORGO-THORNE. Department of Biology and Environmental Science, West Virginia Wesleyan College. Connecting the ticks- highways as potential corridors for Lyme transmission

We investigated the correlation between Lyme disease cases and highway density in Virginia. Our hypothesis was that there would be a relationship between highway density and Lyme disease cases. Highways could provide migration corridors for white-tailed deer as well as white-footed mice, both of which are hosts for the black-legged tick*, Ixodes scapularis*, the vector of the Lyme bacterium *Borrelia burgdorferi*. We used recorded cases of Lyme disease in Virginia from 2006 and 2016. We then converted the data into GIS databases to examine spatial relationships between the cases of Lyme Disease and highway density. For these purposes, we defined a highway as a Federal or State divided road (e.g., Interstate 81). Our findings show that the number of confirmed Lyme disease cases in Virginia have increased in the last ten-year period according to Virginia Department of Health data. We feel that there is the possibility of correlation between movement of deer and small mammals along highway corridors and the number of confirmed Lyme disease cases. Future research should focus on how permeable highways are to deer migration.