MEASURING *IXODES SCAPULARIS* AND *BORRELIA BURGDORFERI* ABUNDANCE IN OSWEGO COUNTY, NY.

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The the occurrence of Lyme disease in the northeast United States is related to a complex set of ecological interactions between the spirochete pathogen (*Borrelia burgdorferi*), the tick vector (*Ixodes scapularis*; black-legged ticks), and the vertebrate hosts of the tick vector. Oswego County NY is part of a transition zone from higher Lyme disease risk to the south in Onondaga County to low risk Lyme disease to the north. Lyme disease is relatively rare in central New York, however, there has been a significant increase in reported Lyme disease cases in Oswego County between 2009 to 2012. This project extends ongoing sampling of ticks in Oswego County and vicinity. We have used drag sampling methods to collect *Ixodes scapularis* at SUNY Oswego Rice Creek Field Station (RCFS). In addition, small mammal abundance was measured through live trapping methods at Rice Creek Field Station. Ticks were also collected from hunting gear and white-tailed deer carcasses by local licensed hunters in South Granby and Fulton in the fall of 2014. We tested ticks for infection by *Borrelia burgdorferi* by polymerase chain reaction and gel electrophoresis. In 2012 and 2013 we collected 214 and 73 ticks from RCFS, respectively. Tick populations were highly abundant in forest habitats in comparison to meadows and trails. Only 1 tick from each of the 2012 and 2013 sampling seasons tested positive for *Borrelia burgdorferi*. Since May 2014, there has been a total of 52 ticks found at RCFS and 68 ticks provided by hunters. To date, two ticks that tested positive for *Borrelia burgdorferi* infection were recovered in 2014. Efforts to document tick population fluctuations in Oswego County will provide valuable information about the predicted northward expansion of ticks infected with *Borrelia burgdorferi.*

Keywords: Lyme disease, black-legged ticks, small mammal abundance, white-tailed deer, ecological interactions