Table S1. Number of *Ixodes scapularis* nymphs sampled and infected with each of seven pathogens from 64 sites sampled in Minnesota – 2015.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | No. nymphs positive for each pathogen |  |
| Site | Peaka No. nymphs | Total No. nymphs | No. nymphs tested | Peak density/ 100 m2 | *Borrelia burgdorferi* s.s. | *Borrelia mayonii* | *Borrelia miyamotoi* | *Anaplasma phagocytophilum* | *Babesia microti* | Powassan virus (DTV) | *Ehrlichia muris eauclairensis* | No. coinfected ticks |
| 1 | 77 | 135 | 50 | 10.27 | 13 | 0 | 2 | 5 | 2 | 0 | 0 | 5 |
| 2 | 44 | 49 | 49 | 5.87 | 10 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 3 | 38 | 56 | 50 | 5.07 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 4 | 35 | 43 | 43 | 4.67 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 5 | 34 | 51 | 50 | 4.53 | 13 | 1 | 0 | 6 | 5 | 0 | 1 | 6 |
| 6 | 29 | 66 | 50 | 3.87 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 7 | 28 | 56 | 50 | 3.73 | 20 | 0 | 0 | 1 | 1 | 0 | 1 | 3 |
| 8 | 28 | 49 | 49 | 3.73 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 9 | 21 | 35 | 35 | 2.80 | 7 | 0 | 0 | 2 | 1 | 0 | 0 | 1 |
| 10 | 21 | 32 | 32 | 2.80 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 11 | 20 | 36 | 38 | 2.67 | 6 | 0 | 0 | 0 | 3 | 0 | 1 | 3 |
| 12 | 17 | 47 | 47 | 2.27 | 13 | 1 | 1 | 16 | 1 | 0 | 1 | 9 |
| 13 | 17 | 39 | 39 | 2.27 | 16 | 0 | 0 | 5 | 4 | 0 | 0 | 6 |
| 14 | 17 | 30 | 30 | 2.27 | 17 | 0 | 0 | 1 | 0 | 0 | 2 | 1 |
| 15 | 16 | 48 | 48 | 2.13 | 8 | 0 | 1 | 0 | 2 | 0 | 1 | 1 |
| 16 | 13 | 24 | 24 | 1.73 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 17 | 13 | 16 | 16 | 1.73 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 18 | 12 | 38 | 39 | 1.60 | 5 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 19 | 12 | 32 | 32 | 1.60 | 12 | 0 | 0 | 6 | 6 | 0 | 0 | 6 |
|  |  |  |  |  | No. nymphs positive for each pathogen |  |
| Site | Peaka No. nymphs | Total No. nymphs | No. nymphs tested | Peak density/ 100 m2 | *Borrelia burgdorferi* s.s. | *Borrelia mayonii* | *Borrelia miyamotoi* | *Anaplasma phagocytophilum* | *Babesia microti* | Powassan virus (DTV) | *Ehrlichia muris eauclairensis* | No. coinfected ticks |
| 21 | 11 | 25 | 25 | 1.47 | 3 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 22 | 11 | 13 | 13 | 1.47 | 6 | 0 | 0 | 0 | 1 | 2 | 0 | 2 |
| 23 | 10 | 28 | 27 | 1.33 | 9 | 2 | 1 | 3 | 0 | 2 | 0 | 5 |
| 24 | 10 | 23 | 23 | 1.33 | 7 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| 25 | 10 | 18 | 18 | 1.33 | 9 | 0 | 0 | 4 | 5 | 0 | 0 | 5 |
| 26 | 9 | 16 | 16 | 1.20 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 27 | 9 | 13 | 13 | 1.20 | 7 | 0 | 1 | 2 | 3 | 0 | 1 | 3 |
| 28 | 8 | 18 | 18 | 1.07 | 3 | 0 | 0 | 3 | 2 | 1 | 1 | 3 |
| 29 | 8 | 14 | 16 | 1.07 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| 30 | 8 | 14 | 14 | 1.07 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 1 |
| 31 | 8 | 13 | 13 | 1.07 | 4 | 1 | 1 | 2 | 2 | 0 | 0 | 2 |
| 32 | 8 | 11 | 11 | 1.07 | 7 | 0 | 0 | 4 | 2 | 0 | 0 | 4 |
| 33 | 8 | 11 | 10 | 1.07 | 4 | 1 | 0 | 2 | 2 | 0 | 0 | 2 |
| 34 | 8 | 10 | 10 | 1.07 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 35 | 7 | 12 | 12 | 0.93 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 36 | 6 | 20 | 20 | 0.80 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 37 | 6 | 16 | 16 | 0.80 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 38 | 6 | 10 | 10 | 0.80 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 39 | 6 | 9 | 9 | 0.80 | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 40 | 6 | 9 | 9 | 0.80 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 41 | 6 | 8 | 8 | 0.80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  | No. nymphs positive for each pathogen |  |
| Site | Peaka No. nymphs | Total No. nymphs | No. nymphs tested | Peak density/ 100 m2 | *Borrelia burgdorferi* s.s. | *Borrelia mayonii* | *Borrelia miyamotoi* | *Anaplasma phagocytophilum* | *Babesia microti* | Powassan virus (DTV) | *Ehrlichia muris eauclairensis* | No. coinfected ticks |
| 42 | 5 | 20 | 20 | 0.67 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 5 | 9 | 9 | 0.67 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 5 | 5 | 5 | 0.67 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 4 | 7 | 7 | 0.53 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 46 | 4 | 6 | 6 | 0.53 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 4 | 6 | 6 | 0.53 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 48 | 4 | 6 | 6 | 0.53 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 4 | 6 | 6 | 0.53 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 4 | 6 | 6 | 0.53 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 4 | 4 | 4 | 0.53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 3 | 11 | 17 | 0.40 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 53 | 3 | 5 | 5 | 0.40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 3 | 5 | 5 | 0.40 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 55 | 3 | 4 | 4 | 0.40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 3 | 3 | 3 | 0.40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 3 | 3 | 3 | 0.40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2 | 5 | 5 | 0.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2 | 4 | 4 | 0.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2 | 3 | 3 | 0.27 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2 | 3 | 3 | 0.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2 | 2 | 2 | 0.27 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  | No. nymphs positive for each pathogen |  |
| Site | Peaka No. nymphs | Total No. nymphs | No. nymphs tested | Peak density/ 100 m2 | *Borrelia burgdorferi* s.s. | *Borrelia mayonii* | *Borrelia miyamotoi* | *Anaplasma phagocytophilum* | *Babesia microti* | Powassan virus (DTV) | *Ehrlichia muris eauclairensis* | No. coinfected ticks |
| 63 | 1 | 2 | 2 | 0.13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 1 | 1 | 1 | 0.13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

a Peak refers to the highest number of nymphs encountered on a single sampling occasion



Fig. S1. Location of 64 sites where *Ixodes scapularis* were present; numbers correspond to the sites listed in Table S1 and are ranked according to the density of nymphs (Table S1), with 1 being the highest density site and 64, the lowest density site.