**Table S1.** Co-occurrence of different parasite species. The number of red fox samples in which a particular parasite was recorded is shown in parentheses. Cells below the diagonal show the number of samples in which parasites co-occurred. Cells above the diagonal show the standardised C-score (values below zero indicate co-occurrence; values above zero indicate separation). Note that none of the relationships were statistically significant.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***S. scabiei***  | ***A. alata***  | ***Mesoc.*** | ***E. mul*.** | ***Taenia*** | ***U. stenoc.*** | ***E. aeroph.***  | ***P. plica***  | ***C. vulpis*** | ***T. canis***  | ***T. leonina*** | ***M. patens*** | ***M. bilis*** | ***I. melis*** | ***Diph.*** | ***A. vasor.*** | ***A. put.*** |
| *S. scabiei* (18) |  | -0.92 | 0.63 | -0.57 | 0.76 | -0.75 | 0.01 | 1 | 0.39 | -1.05 | 0.87 | -0.16 | -1.24 | -1.16 | -0.29 | 1.58 | -1.72 |
| *A. alata* (75) | 18 |  | 0.91 | 0.82 | -0.17 | -0.31 | 0.97 | 0.04 | -0.21 | 0.13 | -0.43 | 2.23 | -0.63 | -0.17 | -0.27 | -0.32 | -0.27 |
| *Mesocestoides* sp. (65) | 15 | 60 |  | 0.26 | 0.05 | -1.99 | -1.06 | -0.15 | 0.43 | 1.21 | 2.24 | 0.6 | 2.03 | -0.33 | -0.46 | 1.31 | -0.47 |
| *E. multilocularis* (27) | 9 | 25 | 23 |  | -0.66 | -0.01 | 2.25 | -0.84 | 1.01 | 0.48 | 2.69 | 0.49 | 2.06 | -0.93 | 0.1 | 0.67 | 1.62 |
| *Taenia* sp. (56)  | 13 | 53 | 47 | 22 |  | -0.56 | -0.23 | -1.75 | 0.19 | 1.16 | 0.05 | -1.05 | 0.8 | -0.44 | -0.68 | 0.72 | 1.24 |
| *U. stenocephala* (67) | 17 | 63 | 59 | 24 | 51 |  | -0.54 | -2.2 | 0.38 | -0.89 | 0.91 | -0.72 | 1.12 | -0.32 | -0.41 | -0.54 | -0.41 |
| *E. aerophilus* (73)  | 17 | 67 | 61 | 23 | 52 | 62 |  | 1.72 | 1.69 | 0.9 | 1.51 | -0.5 | 2.28 | -0.21 | 3.43 | -0.37 | -0.31 |
| *P. plica* (78)  | 17 | 72 | 63 | 27 | 56 | 67 | 69 |  | -0.13 | 0.95 | -0.29 | -0.31 | 1.87 | -0.14 | -0.2 | -0.26 | -0.19 |
| *C. vulpis* (43) | 11 | 41 | 36 | 15 | 32 | 37 | 38 | 42 |  | -1.63 | 1.43 | -0.56 | 0.51 | -0.65 | -0.89 | 0.1 | 0.62 |
| *T. canis* (20) | 10 | 19 | 16 | 8 | 14 | 19 | 18 | 19 | 16 |  | -0.9 | -0.01 | 0.53 | -1.08 | -0.18 | -0.87 | -1.58 |
| *T. leonina* (5) | 1 | 5 | 3 | 0 | 4 | 4 | 4 | 5 | 2 | 3 |  | -1.72 | 1.56 | 0.44 | 0.64 | 0.84 | -1.36 |
| *M. patens* (5) | 2 | 4 | 4 | 2 | 5 | 5 | 5 | 5 | 4 | 2 | 2 |  | 1.55 | -2.2 | -1.38 | 0.82 | -1.43 |
| *M. bilis* (10) | 5 | 10 | 7 | 2 | 7 | 8 | 8 | 9 | 6 | 3 | 0 | 0 |  | 0.61 | -0.79 | 1.14 | 0.89 |
| *I. melis* (1) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |  | -3.48 | 0.32 | 0.28 |
| *Diphyllobothrium* sp. (2) | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 1 | 1 |  | 0.49 | 0.39 |
| *A. vasorum* (3) | 0 | 3 | 2 | 1 | 2 | 3 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |  | 0.48 |
| *A. putorii* (2) | 2 | 2 | 2 | 0 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |  |