***PARASITOLOGY***

**Supporting information**

**Understanding transmissibility patterns of Chagas disease through complex vector-host networks**

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We assayed three different grid-cell sizes to check how robust our predictions were. We used 3,535 square grid-cells of linear size 20 km, 13,493 10 km grid-cells and 52,527 5 km grid-cells to determinate co-occurrence patterns using our spatial data mining approach. We then ranked mammal species confirmed as hosts of *T. cruzi* by epsilon from high to low values for each size of grid-cell (Table S1). Comparing the relative rank of mammal species by One-way ANOVA, we did not find any statistical differences (*F*= 0.37, *P*= 0.69) between grid cell sizes. Therefore, the relative Rank by epsilon was conserved as a function of grid-cell size, and so we conclude that our inference about mammal species that potentially interact with triatomines is robust to changes in grid-cell sizes.

**Table S1.** Wild mammal species confirmed as *T. cruzi* hosts in Mexico. The relative importance of any mammal species as a feeding resource to a given triatomine taxa is given by ɛRel, the lowest value being the most important. ɛRel = Relative rank of epsilon ordered by vector species considering 20, 10 and, 5 km grid-cell size. NS= Non-significant epsilon values.

|  |  |  | ɛRel |  |
| --- | --- | --- | --- | --- |
| Confirmed host | Vector | 20km | 10km | 5km |
| *Artibeus jamaicensis* | *T. pallidipennis* | 17 | 20 | 22 |
| *Artibeus lituratus* | *T. dimidiata 2* | 31 | 34 | 33 |
| *Baiomys musculus* | *T. mazzottii* | 2 | 3 | 5 |
|  | *T. pallidipennis* | 2 | 1 | 2 |
|  | *T. barberi* | 4 | 7 | 15 |
|  | *T. longipennis* | 19 | 12 | 13 |
| *Carolia perspicillata* | *T. dimidiata 2* | 4 | 2 | 6 |
| *Carolia sowelli* | *T. dimidiata 2* | 5 | 4 | 2 |
| *Choeronycteris mexicana* | *T. barberi* | 10 | 10 | 14 |
| *Dasyprocta punctata* | *T. dimidiata 3* | 7 | 2 | 2 |
| *Dasypus novemcinctus* | *T. dimidiata 2* | 77 | 96 | 69 |
| *Dermanura phaeotis* | *T. dimidiata 2* | 87 | 47 | 37 |
| *Desmodus rotundus* | *T. pallidipennis* | 22 | 15 | 12 |
| *Didelphis marsupialis* | *T. dimidiata 2* | 6 | 11 | 7 |
| *Didelphis virginiana* | *T. dimidiata 2* | 29 | 38 | 40 |
| *Glossophaga soricina* | *T. dimidiata 2* | 20 | 14 | 13 |
| *Heteromys desmarestianus* | *T. dimidiata 2* | 28 | 22 | 18 |
| *Heteromys gaumeri* | *T. dimidiata 3* | 2 | 7 | 6 |
| *Hodomys alleni* | *T. pallidipennis* | 7 | 18 | 21 |
|  | *T. picturata* | 8 | 8 | 50 |
| *Leptonycteris yerbabuenae (curasoae)* | *T. pallidipennis* | 12 | 8 | 13 |
|  | *T. barberi* | 13 | 8 | 18 |
| *Liomys irroratus* | *T. barberi* | 2 | 2 | 1 |
|  | *T. longipennis* | 6 | 6 | 8 |
|  | *T. pallidipennis* | 13 | 6 | 6 |
| *Myotis keaysi* | *T. dimidiata 2* | 47 | 25 | 35 |
|  | *T. dimidiata 3* | 15 | 15 | 8 |
| *Nasua narica* | *T. dimidiata 2* | 55 | 61 | 61 |
| *Neotoma mexicana* | *T. picturata* | 21 | 42 | 41 |
| *Otospermophilus (Spermophilus) variegatus* | *T. longipennis* | 7 | 8 | 6 |
|  | *T. barberi* | 11 | 11 | 5 |
| *Ototylomys phyllotis* | *T. dimidiata 3* | 4 | 4 | 15 |
| *Peromyscus leucopus* | *T. dimidiata 2* | 7 | 8 | 24 |
| *Peromyscus levipes* | *T. mexicana* | 2 | 4 | 10 |
|  | *T. barberi* | 6 | 18 | 47 |
| *Peromyscus melanophrys* | *T. barberi* | 3 | 6 | 4 |
| *Peromyscus mexicanus* | *T. dimidiata 2* | 2 | 1 | 1 |
|  | *T. phyllosoma* | 3 | 11 | 26 |
|  | *T. mazzottii* | 6 | 7 | 27 |
| *Peromyscus yucatanicus* | *T. dimidiata 3* | 1 | 1 | 5 |
| *Philander opossum* | *T. dimidiata 2* | 8 | 6 | 3 |
| *Procyon lotor* | *T. phyllosoma* | 30 | 24 | 25 |
| *Pteronotus parnelli* | *T. pallidipennis* | 32 | 23 | 25 |
| *Reithrodontomys fulvescens* | *T. longipennis* | 9 | 10 | 11 |
| *Sigmodon hispidus* | *T. dimidiata 2* | 13 | 7 | 5 |
| *Sturnira lilium* | *T. dimidiata 2* | 43 | 26 | 31 |
| *Sturnira hondurensis* |  | 51 | 36 | 43 |
| *Tylomys nudicaudus* | *T. mazzottii* | 19 | 54 | 72 |
| *Urocyon cinereoargenteus* | *T. pallidipennis* | 68 | 49 | 53 |
|  | Average | 18.29 | 17.51 | 20.73 |

**Table S2.** Confirmed mammal hosts ranked by epsilon values (Rɛ) and by range size (Rm) for *T. dimidiata* 2 and *T. picturata*, considering all mammal species studied.

|  | *T. dimidiata* 2 | |  | *T. picturata* | |
| --- | --- | --- | --- | --- | --- |
| Mammal species | Rɛ | Rm |  | Rɛ | Rm |
| *Artibeus jamaicensis* | 38 | 3 |  | 2 | 126 |
| *Artibeus lituratus* | 31 | 7 |  | 38 | 87 |
| *Baiomys musculus* | 62 | 24 |  | 31 | 99 |
| *Carollia perspicillata* | 4 | 72 |  | 62 | 91 |
| *Carollia sowelli* | 5 | 66 |  | 7 | 207 |
| *Choeronycteris mexicana* | 314 | 39 |  | 8 | 147 |
| *Dasyprocta punctata* | 264 | 208 |  | 13 | 110 |
| *Dasypus novemcinctus* | 77 | 42 |  | 4 | 257 |
| *Dermanura phaeotis* | 87 | 45 |  | 28 | 100 |
| *Desmodus rotundus* | 41 | 8 |  | 5 | 215 |
| *Didelphis marsupialis* | 6 | 84 |  | 314 | 164 |
| *Didelphis virginiana* | 29 | 6 |  | 264 | 225 |
| *Glossophaga soricina* | 20 | 12 |  | 39 | 5 |
| *Heteromys desmarestianus* | 28 | 129 |  | 41 | 247 |
| *Heteromys gaumeri* | 295 | 130 |  | 43 | 139 |
| *Hodomys alleni* | 231 | 147 |  | 77 | 26 |
| *Leptonycteris yerbabuenae* | 142 | 31 |  | 51 | 220 |
| *Liomys irroratus* | 123 | 4 |  | 55 | 216 |
| *Myotis keaysi* | 47 | 122 |  | 87 | 14 |
| *Nasua narica* | 55 | 26 |  | 66 | 80 |
| *Neotoma mexicana* | 219 | 19 |  | 6 | 123 |
| *Otospermophilus variegatus* | 393 | 20 |  | 29 | 3 |
| *Ototylomys phyllotis* | 153 | 123 |  | 88 | 97 |
| *Peromyscus leucopus* | 7 | 35 |  | 103 | 380 |
| *Peromyscus levipes* | 114 | 69 |  | 114 | 391 |
| *Peromyscus melanophrys* | 362 | 32 |  | 20 | 16 |
| *Peromyscus mexicanus* | 2 | 51 |  | 136 | 345 |
| *Peromyscus yucatanicus* | 191 | 143 |  | 142 | 351 |
| *Philander opossum* | 8 | 71 |  | 153 | 326 |
| *Procyon lotor* | 103 | 33 |  | 191 | 301 |
| *Pteronotus parnellii* | 66 | 22 |  | 123 | 364 |
| *Reithrodontomys fulvescens* | 88 | 2 |  | 231 | 260 |
| *Sigmodon hispidus* | 13 | 1 |  | 47 | 40 |
| *Sturnira hondurensis* | 51 | 43 |  | 295 | 188 |
| *Sturnira lilium* | 43 | 11 |  | 219 | 280 |
| *Tylomys nudicaudus* | 39 | 142 |  | 362 | 102 |
| *Urocyon cinereoargenteus* | 136 | 15 |  | 393 | 32 |

**Table S3.** Trophic guild of potential mammal hosts of *T. cruzi*.

| Species | Trophic guild | Species | Trophic guild |
| --- | --- | --- | --- |
| *Alouatta palliata* | Frugivore | *Lepus callotis* | Herbivore |
| *Artibeus hirsutus* | Frugivore | *Lepus flavigularis* | Herbivore |
| *Artibeus jamaicensis* | Frugivore | *Microtus quasiater* | Herbivore |
| *Artibeus lituratus* | Frugivore | *Orthogeomys grandis* | Herbivore |
| *Bassariscus sumichrasti* | Frugivore | *Orthogeomys hispidus* | Herbivore |
| *Carollia perspicillata* | Frugivore | *Osgoodomys banderanus* | Herbivore |
| *Carollia sowelli* | Frugivore | *Pappogeomys bulleri* | Herbivore |
| *Carollia subrufa* | Frugivore | *Sciurus aureogaster* | Herbivore |
| *Chiroderma salvini* | Frugivore | *Sciurus colliaei* | Herbivore |
| *Sphiggurus mexicanus* | Frugivore | *Sigmodon alleni* | Herbivore |
| *Dasyprocta mexicana* | Frugivore | *Sigmodon hispidus* | Herbivore |
| *Dasyprocta punctata* | Frugivore | *Notocitellus annulatus* | Herbivore |
| *Dermanura azteca* | Frugivore | *Ictidomys mexicanus* | Herbivore |
| *Dermanura tolteca* | Frugivore | *Otospermophilus variegatus* | Herbivore |
| *Nyctomys sumichrasti* | Frugivore | *Sylvilagus gabbi* | Herbivore |
| *Ototylomys phyllotis* | Frugivore | *Sylvilagus cunicularius* | Herbivore |
| *Platyrrhinus helleri* | Frugivore | *Sylvilagus floridanus* | Herbivore |
| *Potos flavus* | Frugivore | *Balantiopteryx plicata* | Insectivore |
| *Sciurus deppei* | Frugivore | *Conepatus semistriatus* | Insectivore |
| *Sciurus yucatanensis* | Frugivore | *Corynorhinus mexicanus* | Insectivore |
| *Sturnira hondurensis* | Frugivore | *Cryptotis goldmani* | Insectivore |
| *Uroderma magnirostrum* | Frugivore | *Cryptotis mayensis* | Insectivore |
| *Vampyrodes major* | Frugivore | *Cryptotis mexicana* | Insectivore |
| *Habromys lepturus* | Granivore | *Cryptotis phillipsii* | Insectivore |
| *Heteromys desmarestianus* | Granivore | *Eptesicus furinalis* | Insectivore |
| *Heteromys gaumeri* | Granivore | *Idionycteris phyllotis* | Insectivore |
| *Liomys irroratus* | Granivore | *Lasiurus blossevillii* | Insectivore |
| *Liomys pictus* | Granivore | *Macrotus waterhousii* | Insectivore |
| *Oligoryzomys fulvescens* | Granivore | *Marmosa mexicana* | Insectivore |
| *Oryzomys alfaroi* | Granivore | *Megasorex gigas* | Insectivore |
| *Oryzomys couesi* | Granivore | *Mephitis macroura* | Insectivore |
| *Oryzomys melanotis* | Granivore | *Molossus aztecus* | Insectivore |
| *Otonyctomys hatti* | Granivore | *Molossus rufus* | Insectivore |
| *Peromyscus difficilis* | Granivore | *Molossus sinaloae* | Insectivore |
| *Peromyscus furvus* | Granivore | *Myotis carteri* | Insectivore |
| *Peromyscus gratus* | Granivore | *Myotis nigricans* | Insectivore |
| *Peromyscus hylocetes* | Granivore | *Myotis velifer* | Insectivore |
| *Peromyscus leucopus* | Granivore | *Peropteryx macrotis* | Insectivore |
| *Peromyscus levipes* | Granivore | *Pteronotus parnellii* | Insectivore |
| *Peromyscus maniculatus* | Granivore | *Reithrodontomys fulvescens* | Insectivore |
| *Peromyscus megalops* | Granivore | *Rhogeessa tumida* | Insectivore |
| *Peromyscus melanophrys* | Granivore | *Spilogale gracilis* | Insectivore |
| *Peromyscus melanurus* | Granivore | *Tadarida brasiliensis* | Insectivore |
| *Peromyscus mexicanus* | Granivore | *Tlacuatzin canescens* | Insectivore |
| *Peromyscus pectoralis* | Granivore | *Choeronycteris mexicana* | Nectarivore |
| *Peromyscus perfulvus* | Granivore | *Glossophaga commissarisi* | Nectarivore |
| *Peromyscus spicilegus* | Granivore | *Glossophaga leachii* | Nectarivore |
| *Peromyscus yucatanicus* | Granivore | *Glossophaga morenoi* | Nectarivore |
| *Reithrodontomys gracilis* | Granivore | *Glossophaga soricina* | Nectarivore |
| *Reithrodontomys hirsutus* | Granivore | *Leptonycteris curasoae* | Nectarivore |
| *Reithrodontomys mexicanus* | Granivore | *Leptonycteris nivalis* | Nectarivore |
| *Sciurus oculatus* | Granivore | *Didelphis marsupialis* | Omnivore |
| *Sigmodon mascotensis* | Granivore | *Didelphis virginiana* | Omnivore |
| *Baiomys musculus* | Herbivore | *Philander opossum* | Omnivore |
| *Baiomys taylori* | Herbivore | *Lontra longicaudis* | Piscivorous |
| *Cratogeomys fumosus* | Herbivore | *Mazama americana* | Rumiants |
| *Cuniculus paca* | Herbivore | *Desmodus rotundus* | Sanguinivorous |
| *Hodomys alleni* | Herbivore | *Diphylla ecaudata* | Sanguinivorous |

**Appendix 1.** References used to obtain confirmed mammal hosts of *Trypanosoma cruzi*.

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