**File S1**

**Appendix S1 Nomenclature authorities for all species names mentioned in this paper.** (\*): species used for analyses in this paper.

O. Didelphimorphia

*Caluromys lanatus* (Olfers, 1818) \*

*Caluromys philander* (L., 1758) \*

*Caluromys trinitatis* (Thomas, 1894) \*

*Chironectes minimus* (Zimmermann, 1780) \*

*Didelphis imperfecta* Mondolfi and Pérez-Hernández, 1984 \*

*Didelphis marsupialis* L., 1758 \*

*Didelphis pernigra* J. A. Allen, 1900 \*

*Gracilinanus agilis* (Burmeister, 1854)

*Gracilinanus dryas* (Thomas, 1898) \*

*Gracilinanus emiliae* (Thomas, 1909)

*Gracilinanus marica* (Thomas, 1898) \*

*Lutreolina crassicaudata* (Desmarest, 1804) \*

*Marmosa demerarae* (Thomas, 1905) \*

*Marmosa lepida* (Thomas, 1888) \*

*Marmosa murina* (L., 1758) \*

*Marmosa robinsoni* Bangs, 1898 \*

*Marmosa tyleriana* Tate, 1931\*

*Marmosa waterhousei* (Tomes, 1860) \*

*Marmosa xerophila* Handley and Gordon, 1979 \*

*Marmosops cracens* (Handley and Gordon, 1979) \*

*Marmosops fuscatus* (Thomas, 1896) \*

*Marmosops impavidus* (Tschudi, 1845) \*

*Marmosops neblina* Gardner, 1990 \*

*Marmosops pakaraimae* Voss, Lim, Díaz-Nieto and Jansa (2013)\*

*Marmosops pinheiroi* (Pine, 1981) \*

*Metachirus nudicaudatus* (É. Geoffroy, 1803) \*

*Monodelphis adusta* (Thomas, 1897) \*

*Monodelphis brevicaudata* (Erxleben, 1777) \*

*Monodelphis palliolata* (Osgood, 1914) \*

*Monodelphis reigi* Lew and Pérez-Hernández, 2004 \*

*Monodelphis* species A (see Pine and Handley, 2007) \*

*Philander andersoni* (Osgood, 1913) \*

*Philander deltae* Lew, Pérez-Hernández and Ventura, 2006 \*

*Philander mondolfii* Lew, Pérez-Hernández and Ventura, 2006 \*

O. Paucituberculata Ameghino, 1894

*Caenolestes fuliginosus* (Tomes, 1863) \*

**Appendix S2 Sources of information on the distribution of the marsupial species in Venezuela.**

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**Table S1 Matrix of significant similarities for the physiographical regions in Venezuela (for abbreviations see Fig. 1).** +, Values significantly higher than expected at random, P < 0.05; -, values significantly lower than expected at random, P < 0.05; 0, values not different from those expected at random.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | D7 | B4 | B5 | C2 | B2 | D6 | D2 | B1 | D1 | B3 | C1 | D3 | D4 | D5 |
| A2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| D7 |  | + | 0 | + | 0 | - | 0 | 0 | 0 | 0 | - | - | 0 | 0 |
| B4 |  |  | + | + | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 |
| B5 |  |  |  | + | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 |
| C2 |  |  |  |  | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 |
| B2 |  |  |  |  |  | 0 | 0 | + | 0 | + | 0 | 0 | 0 | 0 |
| D6 |  |  |  |  |  |  | - | 0 | 0 | 0 | + | 0 | 0 | 0 |
| D2 |  |  |  |  |  |  |  | 0 | + | 0 | 0 | 0 | + | + |
| B1 |  |  |  |  |  |  |  |  | + | + | 0 | 0 | 0 | 0 |
| D1 |  |  |  |  |  |  |  |  |  | + | 0 | + | + | + |
| B3 |  |  |  |  |  |  |  |  |  |  | 0 | 0 | + | + |
| C1 |  |  |  |  |  |  |  |  |  |  |  | + | + | + |
| D3 |  |  |  |  |  |  |  |  |  |  |  |  | + | + |
| D4 |  |  |  |  |  |  |  |  |  |  |  |  |  | + |

**Table S2 Matrix of significant similarities for the marsupial species from Venezuela.** +, Values significantly higher than expected at random, P < 0.05; -, values significantly lower than expected at random, P < 0.05; 0, values not different from those expected at random.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *M. cracens* | *M.* species A | *P. deltae* | *P. andersoni* | *M. lepida* | *M. pinheiroi* | *M. reigi* | *M. pakaraimae* | *M. tyleriana* | *M. neblina* | *L. crassicaudata* | *D. imperfecta* | *C. philander* | *M. brevicaudata* | *M. adusta* | *M. impavidus* | *M. waterhousei* | *D. dryyas* | *C. fuliginosus* | *D. pernigra* | *C. lanatus* | *M. nudicaudatus* | *P. mondolfii* | *C. minimus* | *M. demerarae* | *D. marsupialis* | *M. murina* | *C. trinitatis* | *G. marica* | *M. fuscatus* | *M. robinsoni* | *M. palliolata* |
| *M. xerophila* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *M. cracens* |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | - | 0 | 0 | 0 |
| *M.* species A |  |  | - | - | - | - | - | - | - | - | 0 | - | - | - | - | - | - | - | - | - | - | 0 | 0 | - | - | - | - | 0 | - | - | 0 | - |
| *P. deltae* |  |  |  | - | - | - | - | - | - | - | 0 | - | - | - | - | - | - | - | - | - | - | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | 0 |
| *P. andersoni* |  |  |  |  | + | 0 | - | - | - | - | - | 0 | + | + | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | 0 | 0 | - | - | - | - | - |
| *M. lepida* |  |  |  |  |  | + | - | - | - | - | - | - | 0 | 0 | - | - | - | - | - | - | - | 0 | - | 0 | 0 | - | 0 | - | - | - | - | - |
| *M. pinheiroi* |  |  |  |  |  |  | + | + | + | + | 0 | 0 | + | + | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| *M. reigi* |  |  |  |  |  |  |  | + | + | + | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | - | 0 | - | - | - | - | - |
| *M. pakaraimae* |  |  |  |  |  |  |  |  | + | + | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | - | 0 | - | - | - | - | - |
| *M. tyleriana* |  |  |  |  |  |  |  |  |  | + | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | - | 0 | - | - | - | - | - |
| *M. neblina* |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | - | 0 | - | - | - | - | - |
| *L. crassicaudata* |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | - | - | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | 0 | 0 |
| *D. imperfecta* |  |  |  |  |  |  |  |  |  |  |  |  | + | + | - | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| *C. philander* |  |  |  |  |  |  |  |  |  |  |  |  |  | + | - | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| *M. brevicaudata* |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| *M. adusta* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | + | + | + | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| *M. impavidus* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | + | + | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| *M. waterhousei* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | + | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| *G. dryas* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| *C. fuliginosus* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| *D. pernigra* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 |
| *C. lanatus* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *M. nudicaudatus* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | 0 | 0 | + | + | 0 | 0 | 0 | 0 | 0 |
| *P. mondolfii* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *C. minimus* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | 0 | + | 0 | 0 | 0 | 0 | 0 |
| *M. demerarae* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + | 0 | 0 | 0 | 0 | 0 |
| *D. marsupialis* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | 0 | 0 | 0 | 0 | 0 |
| *M. murina* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 |
| *C. trinitatis* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 0 | + | 0 |
| *G. marica* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | 0 | + |
| *M. fuscatus* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + | + |
| *M. robinsoni* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | + |