

Supplemental Data 11: List of 11 species found in the Madrean Sky Islands that need further examination. These observations fall outside of the currently understood ranges of these species, implying either the range should be expanded or these specimens have been misidentified. Both *P. truei* and *P. difficilis* are known to occur on specific sky islands, however, some specimens have been reported outside of these known mountains, warranting additional verification. Specimens of *L. ega* and *M. keenii* likely belong to *L. xanthinus* and *M. evotis* respectively, but verification of specimens is needed in this case as well.

| Order | Species | Reason | Evidence |
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| Rodentia | <i>Ammospermophilus leucurus</i> | Out of range | Belk, M. C., & Smith, H. D. (1991). <i>Ammospermophilus leucurus</i> . Mammalian Species, 368, 1–8. https://doi.org/10.2307/3504191 |
| Rodentia | <i>Peromyscus beatae</i> | Out of range | Álvarez-Castañeda, S. T., Álvarez, T., & González-Ruiz, N. (2017). Keys for Identifying Mexican Mammals. JHU Press. Tiemann-Boege, I., Kilpatrick, C. W., Schmidly, D. J., & Bradley, R. D. (2000). Molecular Phylogenetics of the <i>Peromyscus boylii</i> Species Group (Rodentia: Muridae) Based on Mitochondrial Cytochrome b Sequences. Molecular Phylogenetics and Evolution, 16(3), |

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| | | | 366–378. https://doi.org/10.1006/mpev.2000.0806 |
| Rodentia | <i>Peromyscus californicus</i> | Out of range | Merritt, J. F. (1978). <i>Peromyscus californicus</i> . <i>Mammalian Species</i> , 85, 1–6. https://doi.org/10.2307/3503909 |
| Rodentia | <i>Peromyscus difficilis</i> | Out of range | Fernández, J. A., García-Campusano, F., & Hafner, M. S. (2010). <i>Peromyscus difficilis</i> (Rodentia: Cricetidae). <i>Mammalian Species</i> , 42(1), 220–229. |
| Rodentia | <i>Peromyscus truei</i> | Out of range | Hoffmeister, D. F. (1981). <i>Peromyscus truei</i> . <i>Mammalian Species</i> , 161, 1–5. https://doi.org/10.2307/3503851 Cook, J. (1986). The Mammals of the Animas Mountains and Adjacent Areas, Hidalgo County, New Mexico. <i>Occasional Papers</i> . https://digitalrepository.unm.edu/occasionalpapers/11 |
| Rodentia | <i>Thomomys talpoides</i> | Out of range | Verts, B. J., & Carraway, L. N. (1999). <i>Thomomys talpoides</i> . <i>Mammalian Species</i> , 618, 1–11. |

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| | | | https://doi.org/10.2307/3504451 |
| Chiroptera | <i>Lasiurus ega</i> | Out of range, taxonomic dispute | <p>Kurta, A., & Lehr, G. C. (1995). <i>Lasiurus ega</i>. Mammalian Species.</p> <p>Mammal Diversity Database. (2025). Mammal Diversity Database (Version 2.0) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.15007505</p> |
| Chiroptera | <i>Leptonycteris curasoae</i> | Out of range | <p>Cole, F. R., & Wilson, D. E. (2006). <i>Leptonycteris curasoae</i>. Mammalian Species, 796, 1–3. https://doi.org/10.1644/796.1</p> |
| Chiroptera | <i>Myotis keenii</i> | Out of range, taxonomic dispute | <p>Fitch, J. H., & Shump, Jr., K. A. (1979). <i>Myotis keenii</i>. Mammalian Species.</p> <p>Morales, A. E., Fenton, M. B., Carstens, B. C., & Simmons, N. B. (2021). Comment on “Population genetics reveal <i>Myotis keenii</i> (Keen’s myotis) and <i>Myotis evotis</i> (long-eared myotis) to be a single species.” Canadian Journal of Zoology, 99(5), 415–422. https://doi.org/10.1139/cjz-2020-0048</p> |

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| Chiroptera | <i>Myotis leibii</i> | Out of range | Best, T. L., & Jennings, J. B. (1997). <i>Myotis leibii</i> . Mammalian Species, 547, 1–6. https://doi.org/10.2307/3504255 |
| Eulipotyphla | <i>Sorex vagrans</i> | Out of range | Gillihan, S. W., & Foresman, K. R. (2004). <i>Sorex vagrans</i> . Mammalian Species, 744, 1–5. |