CHECKLIST OF NEW MEXICO MAMMALS

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OVERVIEW

New Mexico has a rich diversity of fauna, including mammals (Fig. 1, Patterson et al., 2007; Jenkins et al., 2015). New Mexico ranks as the third most speciose state in the United States with 180 recognized mammalian species. Only California and Texas have more species, largely due to their inclusion of marine mammals (Fig. 2A) and larger land areas. California is the only state with more terrestrial species than New Mexico. Arizona, New Mexico, and Texas have similar numbers of volant species (bats). Within New Mexico, faunal composition includes 10 orders, 30 families, and 91 genera. Rodents are especially diverse in New Mexico (Figs. 1, 2B).

Evaluating the causes of high mammalian diversity in New Mexico has been a focus of several generations of mammalogists that are constantly deploying new techniques and tools to measure geographic variation, but often returning to re-evaluate the historic specimens. Through these efforts, several themes have emerged that help explain the elevated mammalian diversity in New Mexico, including:

1) Location – New Mexico is at the junction of several important biotic zones, including the southern Great Basin, southern Rocky Mountains, western Great Plains, the northern Sierra Madre Occidental, the northeastern Sonoran and the northwestern Chihuahuan deserts.

2) Topographic and Habitat Complexity – New Mexico is one of the most topographically heterogeneous areas in North America spanning 3145 m in elevation (highest: Wheeler Peak, 4011 m; lowest: Red Bluff Reservoir, 866 m) with elements of the cold deserts of the Basin and Range and Colorado Plateau, Rocky Mountain boreal forests, grasslands on the Llano Estacado, and deserts interspersed with volcanic sky islands, all separated east-west by the Rio Grande and other smaller rivers.

3) Time – climatic oscillations of the late Pleistocene shifted biotic zones back and forth across the landscape and up and down mountains and valleys (elevation), enabling diversification through evolutionary species pumps primed by vicariance and isolation of populations, in addition to cyclical dispersal and colonization of new regions.

Mammalian diversity of the region has long been appreciated by diverse indigenous peoples as perhaps most eloquently documented by Mimbreño pottery. Written documentation of mammalian diversity in New Mexico began with a US military expedition into the Rocky Mountains led by Major Stephen Harriman Long in 1820, and included the naturalists Thomas Say and Titian Ramsey Peale, but no known mammalian specimens were collected from New Mexico. Edgar Mearns and Frank Holzner collected several species along the proposed US-Mexico boundary during 1893-95 (Mearns, 1907). Vernon Bailey, under the direction of C. Hart Merriam, was the first to conduct comprehensive specimen-based studies of mammals from New Mexico for the US Bureau of Biological Survey and provided the first summary of mammalian diversity for the state (Bailey, 1931). Later, Arthur Harris (Harris, 1959) provided the first comprehensive checklist. Based largely on Harris's work, *Mammals of New Mexico* (Findley et al., 1975) provided an assessment of geographic distributions, taxonomy, and comparison of mammals for the Land of Enchantment.

Combined with a growing series of publications on particular groups of mammals, many completed by graduate students at the University of New Mexico, these works laid the groundwork for our understanding of biogeography, geographic variation, taxonomy and systematics, and the broad ecology and evolution of mammals in New Mexico. More recently, specimens have been essential to our understanding of the impacts of a century of climate change and land use (Moritz et al., 2008; Rowe et al., 2009; McCain et al., 2021). Ongoing and projected alterations to habitats and climates are restructuring biodiversity (Ceballos et al., 2017, 2020) and will require focused, specimen-based efforts to document changes in mammalian populations and provide the next generation of biologists the biodiversity samples necessary to derive essential insights (Schindel and Cook, 2018).

Specimen-based sampling is the foundation to our understanding of all aspects of mammalian ecology and evolutionary diversity, providing the retrospective sampling necessary to more completely evaluate environmental change (Suarez and Tsutsui, 2004; McLean et al., 2016; Cook and Light, 2019), and provides raw data for forecasting future biodiversity change (Funk, 2018; Schindel and Cook, 2018). Traditional methods for preparing mammalian specimens have evolved over the past few decades and now include the holistic preparations that maximize the kinds of studies possible on each specimen (Cook et al., 2017). For example, Art Harris, while a graduate student at MSB, pioneered the now-standard practice of preparing skins plus full skeletal specimens, instead of the traditional skin and skull specimens (Hafner et al., 1984). That practice has now been adopted by many other museums in the United States and elsewhere. Holistic specimens now include the traditional vouchers (e.g., fluid, skin and skeleton) but also incorporate associated ancillary materials (e.g., multiple kinds of ultrafrozen tissues), preserved endo- and ecto-parasites, and gastrointestinal microbiomes (Dunnum and Cook, 2012; Galbreath et al., 2019). This broad array of material allows for more intensive and integrated investigations of the biology of these organisms (Cook et al., 2020; Dunnum et al., 2020), taking advantage of recent advances in technology (e.g., genomics, stable isotopes, microCT scans) and analyses (e.g., ecological niche modeling; Cook and Light, 2019).

Within New Mexico there are nine natural history collections curating mammal specimens from across the state (Dunnum et al., 2018). As of November 2020, 165,931 digitized specimen records have been published by some of these museums and there are an additional 55 other publishers (mostly museums) to on-line databases (*i.e.,* GBIF; https://doi.org/10.15468/dl.3xscrm). Of those records, 162,621 (98.0%) have a documented year of collection and 127,204 (76.6%) have a georeference (Fig. 3). Approximately 75% of published specimen records from New Mexico are web-accessible on the Arctos database (arctos.database.museum). While overall rates of adding new mammalian specimens to museums are in decline (Malaney and Cook, 2018), new insights on species distributions, taxonomy, and natural history, among others, continue to emerge, and the necessity of continued collection efforts cannot be over stressed. Photo documentation or other observation-based initiatives are poor substitutes for well-developed specimen infrastructure that future scientists will depend on.

Revisionary work resulting in new taxonomic designations for some mammals, as well as novel records not previously recorded for the state, necessitate periodic updates of the

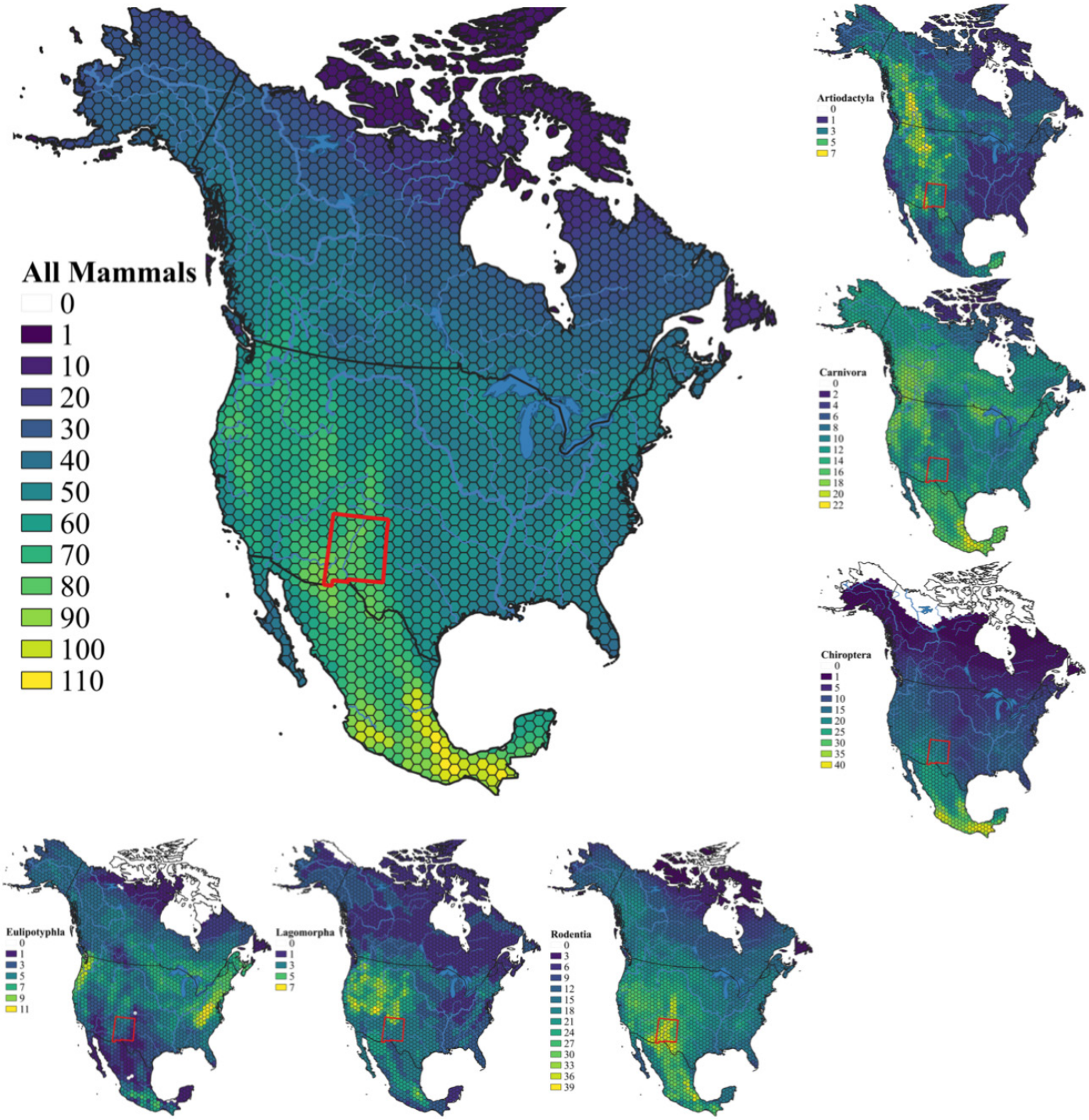

FIGURE 1. Mammalian diversity and species richness across North America and within New Mexico for all mammals and 6 orders. Note: Cingulata, Didelphimorphia, and Primates are excluded.

Checklist of New Mexico Mammals (Frey, 2004; Frey et al., 2006; Bradley et al., 2014). We detect at least 30 changes within the last two decades (Table 1). This checklist comprises all native and non-native free-ranging mammalian species that occur or recently occurred (within the last ca. 150 years) in New Mexico. Scientific and common names generally follow The Handbook of the Mammals of the World (Volumes 1-3, 6-9) and reflect updated taxonomy recognized by the Mammal Diversity Database (MDD, 2020) and Burgin et al. (2018).

Orders and families are arranged according to phylogenetic relationships (Upham et al., 2019), but species are listed alphabetically within families. Following each scientific name, the author(s) who first described the species and the year of publication is cited. Parentheses indicate that the species has since been assigned to another genus despite retaining the specific epithet.

Notes following common names indicate:

(I) Introduced in the state (excludes domestic species but includes feral domestic and game species)

(R) Reintroduced

(B) Includes both native and introduced populations

(E) Presumed extirpated from the state

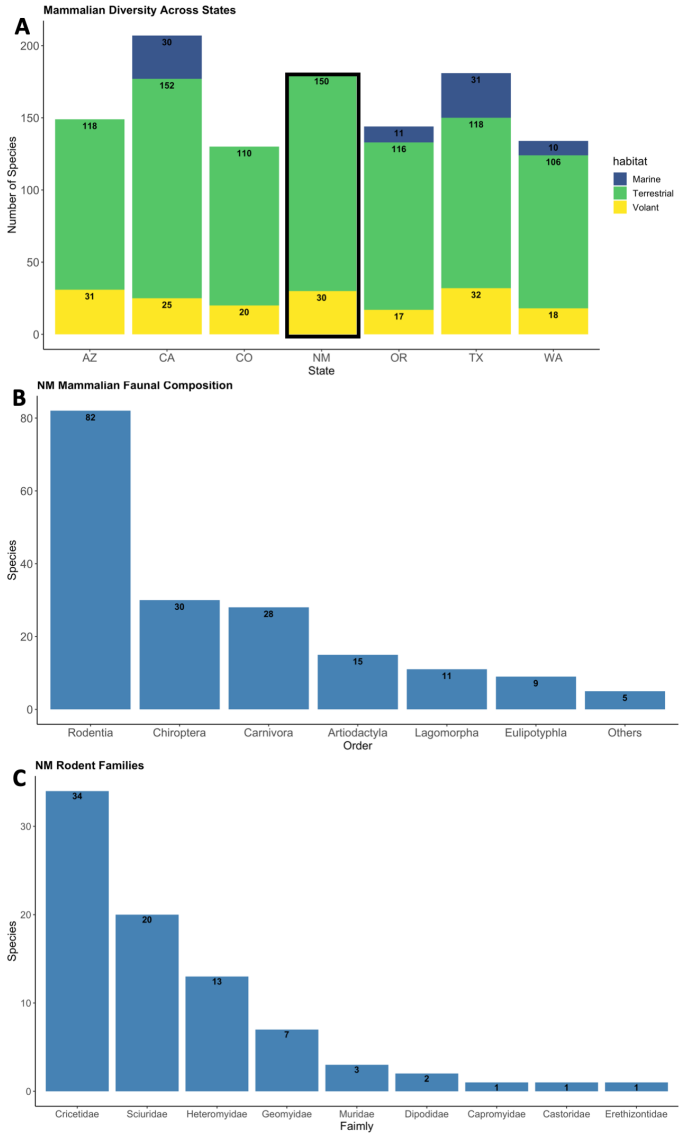

FIGURE 2. A, Mammalian diversity in New Mexico is among the highest in the United States with 180 species. B, Faunal composition is composed of 10 orders, 30 families, and 91 genera with C, rodents composed of nine families and 82 species (45% of all NM Mammals).

(V) Not validated with a voucher specimen

(P) Protected species in New Mexico with subscripts indicating game (g), furbearer (u), plus state (s) and/or federally (f) listed, and (c) species of greatest conservation need (SGCN) listed in the State Wildlife Action Plan (NMDGF, 2016).

ARTIODACTYLA—even-toed ungulates

Suidae

Wild Boar or Feral Hog (I) *Sus scrofa* Linnaeus, 1758

Tayassuidae

Collared Peccary (Pg) *Pecari tajacu* (Linnaeus, 1758)

Cervidae

Moose (I, V, P) *Alces alces* (Linnaeus, 1758)

Wapiti or Elk (B, Pg) *Cervus canadensis* (Erxleben, 1777)

Mule Deer (Pg) *Odocoileus hemionus* (Rafinesque, 1817)

White-tailed Deer (Pg) *Odocoileus virginianus* (Zimmermann, 1780)

Antilocapridae

Pronghorn (Pg) *Antilocapra americana* (Ord, 1815)

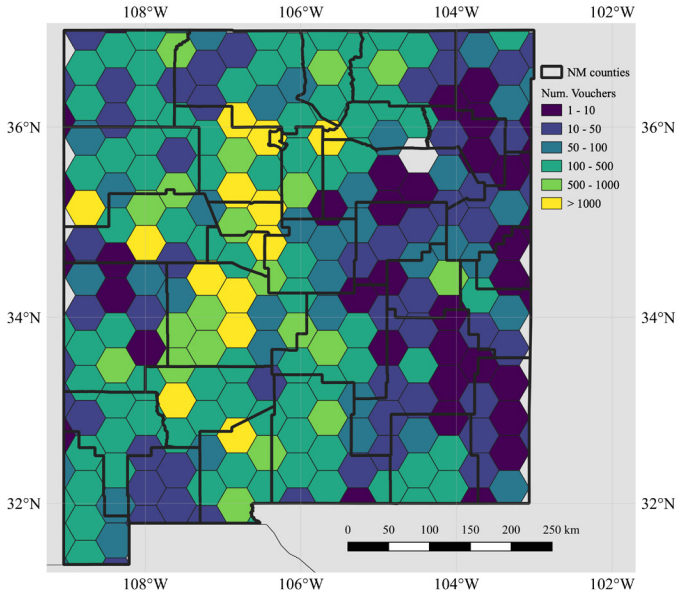

FIGURE 3. Heat map of the density of 127,204 georeferenced mammal specimens from New Mexico. Cooler colors indicate poorly documented regions of the state.

Bovidae

Aoudad or Barbary Sheep (I, Pg) *Ammotragus lervia* (Pallas, 1777)

American Bison (I, E, Pg) *Bos bison* (Linnaeus, 1758)

Persian Ibex (I, Pg) *Capra aegagrus* (Erxleben, 1777)

Siberian Ibex (I, E, Pg) *Capra sibirica* (Pallas, 1776)

Himalayan Tahr (I) *Hemitragus jemlahicus* (C. H. Smith, 1826)

Gemsbok or Oryx (I, Pg) *Oryx gazella* (Linnaeus, 1758)

Red Sheep (I) *Ovis aries* Linnaeus, 1758

Bighorn Sheep (R, Pc,g) *Ovis canadensis* Shaw, 1804

DIDELPHIMORPHIA—American opossums

Didelphidae

Virginia Opossum (B) *Didelphis virginiana* Kerr, 1792

CINGULATA—armadillos

Dasypodidae

Nine-Banded Armadillo *Dasypus novemcinctus* Linnaeus, 1758

PRIMATES—primates

Hominidae

Modern Humans *Homo sapiens* Linnaeus, 1758

RODENTIA—rodents

Sciuridae

Harris's Antelope Squirrel *Ammospermophilus harrisii* (Audubon and Bachman, 1854)

Texas Antelope Squirrel *Ammospermophilus interpres* (Merriam, 1890)

White-tailed Antelope Squirrel *Ammospermophilus leucurus* (Merriam, 1889)

Golden-mantled Ground Squirrel *Callospermophilus lateralis* Say, 1823

Gunnison's Prairie Dog (Pc) *Cynomys gunnisoni* (Baird, 1855)

Black-tailed Prairie Dog (Pc) *Cynomys ludovicianus* (Ord, 1815)

Mexican Ground Squirrel *Ictidomys mexicanus* (Erxleben, 1777)

Thirteen-lined Ground Squirrel *Ictidomys tridecemlineatus* (Mitchill, 1821)
Yellow-bellied Marmot (P) *Marmota flaviventris* (Audubon and Backman, 1841)
Gray-footed Chipmunk *Neotamias canipes* (V. Bailey, 1902)
Gray-collared Chipmunk *Neotamias cinereicollis* (J. A. Allen, 1890)
Cliff Chipmunk *Neotamias dorsalis* (Baird, 1855)
Least Chipmunk (Pc,s-part) *Neotamias minimus* (Bachman, 1839)
Colorado Chipmunk (Pc,s-part) *Neotamias quadrivittatus* (Say, 1823)
Rock Squirrel *Otospermophilus variegatus* (Erxleben, 1777)
Abert's Squirrel (Pg) *Sciurus aberti* Woodhouse, 1852
Arizona Gray Squirrel (Pg) *Sciurus arizonensis* Coues, 1867
Eastern Fox Squirrel (B, Pg) *Sciurus niger* Linnaeus, 1758
Southern Red Squirrel (Pg) *Tamiasciurus fremonti* (Audubon and Bachman, 1853)
Spotted Ground Squirrel *Xerospermophilus spilosoma* (Bennett, 1833)

Castoridae
American Beaver (B, Pu) *Castor canadensis* Kuhl, 1820

Heteromyidae
Bailey's Pocket Mouse *Chaetodipus baileyi* (Merriam, 1889)
Chihuahuan Desert Pocket Mouse *Chaetodipus eremicus* (Mearns, 1858)
Hispid Pocket Mouse *Chaetodipus hispidus* (Baird, 1858)
Rock Pocket Mouse *Chaetodipus intermedius* (Merriam, 1889)
Nelson's Pocket Mouse *Chaetodipus nelsoni* (Merriam, 1889)
Desert Pocket Mouse *Chaetodipus penicillatus* (Woodhouse, 1852)
Merriam's Kangaroo Rat *Dipodomys merriami* Mearns, 1890
Ord's Kangaroo Rat *Dipodomys ordii* Woodhouse, 1853
Banner-tailed Kangaroo Rat *Dipodomys spectabilis* Merriam, 1890
Apache Pocket Mouse *Perognathus apache* Merriam, 1889
Plains Pocket Mouse *Perognathus flavescens* Merriam, 1889
Silky Pocket Mouse *Perognathus flavus* Baird, 1855
Merriam's Pocket Mouse *Perognathus merriami* J. A. Allen, 1892

Geomyidae
Yellow-faced Pocket Gopher *Cratogeomys castanops* (Baird, 1852)
Desert Pocket Gopher *Geomys arenarius* Merriam, 1890
Plains Pocket Gopher *Geomys bursarius* (Shaw, 1800)
Knox Jones's Pocket Gopher *Geomys knoxjonesi* Baker and Genoways, 1975
Botta's Pocket Gopher *Thomomys bottae* (Eydoux and Gervais, 1836)
Northern Pocket Gopher *Thomomys talpoides* (Richardson, 1829)
Southern Pocket Gopher (Pc,s) *Thomomys umbrinus* (Richardson, 1829)

Dipodidae
NM Meadow Jumping Mouse (Pc,s,f) *Zapus luteus* Miller, 1911
Western Jumping Mouse *Zapus princeps* J. A. Allen, 1893

Cricetidae
Northern Pygmy Mouse *Baiomys taylori* (Thomas, 1887)
Western Meadow Vole *Microtus drummondii* (Audubon and Bachman, 1853)
Long-tailed Vole *Microtus longicaudus* (Merriam, 1888)
Mogollon Vole *Microtus mogollonensis* (Mearns, 1890)
Montane Vole (Pc,s-part) *Microtus montanus* (Peale, 1848)
Prairie Vole *Microtus ochrogaster* (Wagner, 1842)
Southern Red-backed Vole *Myodes gapperi* (Vigors, 1830)
White-throated Woodrat *Neotoma albigula* Hartley, 1894
Bushy-tailed Woodrat *Neotoma cinerea* (Ord, 1815)
Mexican Woodrat *Neotoma mexicana* Baird, 1855
Southern Plains Woodrat *Neotoma micropus* Baird, 1855
Stephens's Woodrat *Neotoma stephensi* Goldman, 1905
Common Muskrat (Pu) *Ondatra zibethicus* (Linnaeus, 1766)
Chihuahuan Grasshopper Mouse *Onychomys arenicola* Mearns, 1896
Northern Grasshopper Mouse *Onychomys leucogaster* (Wied-Neuwied, 1841)
Southern Grasshopper Mouse *Onychomys torridus* (Coues, 1874)
Brush Mouse *Peromyscus boylii* (Baird, 1855)
Canyon Mouse *Peromyscus crinitus* (Merriam, 1891)
Cactus Mouse *Peromyscus eremicus* (Baird, 1857)
Osgood's Mouse *Peromyscus gratus* Merriam, 1898
Southern Deer Mouse *Peromyscus labecula* Elliot, 1903
White-footed Mouse *Peromyscus leucopus* (Rafinesque, 1818)
Sonoran Deer mouse *Peromyscus sonoriensis* (Le Conte, 1853)
Northern Rock Mouse *Peromyscus nasutus* (J. A. Allen, 1891)
White-ankled Mouse *Peromyscus pectoralis* Osgood, 1904
Piñon Mouse *Peromyscus truei* (Shufeldt, 1885)
Western Heather Vole *Phenacomys intermedius* Merriam, 1889
Fulvous Harvest Mouse *Reithrodontomys fulvescens* J. A. Allen, 1894
Western Harvest Mouse *Reithrodontomys megalotis* (Baird, 1857)
Plains Harvest Mouse *Reithrodontomys montanus* (Baird, 1855)
Arizona Cotton Rat *Sigmodon arizonae* Mearns, 1890
Tawny-bellied Cotton Rat *Sigmodon fulviventer* J. A. Allen, 1889
Hispid Cotton Rat *Sigmodon hispidus* Say and Ord, 1825
Yellow-nosed Cotton Rat *Sigmodon ochrognathus* V. Bailey, 1902

Muridae
House Mouse (I) *Mus musculus* Linnaeus, 1758
Brown Rat (I) *Rattus norvegicus* (Berkenhout, 1769)
House (Black or Roof) Rat (I) *Rattus rattus* (Linnaeus, 1758)

Erethizontidae
North American Porcupine *Erethizon dorsatum* (Linnaeus, 1758)

Capromyidae
Coypu or Nutria (I, Pu) *Myocastor coypus* (Molina, 1782)

LAGOMORPHA—lagomorphs

Ochotonidae
American Pika (Pc,g) *Ochotona princeps* (Richardson, 1828)

Leporidae
Snowshoe Hare *Lepus americanus* Erxleben, 1777
Black-tailed Jackrabbit *Lepus californicus* Gray, 1837
White-sided Jackrabbit (Pc,s) *Lepus callotis* Wagler, 1830
White-tailed Jackrabbit *Lepus townsendii* Bachman, 1839
Desert Cottontail *Sylvilagus audubonii* (Baird, 1857)

Manzano Mountain Cottontail *Sylvilagus cognatus* Nelson, 1907
Eastern Cottontail *Sylvilagus floridanus* (Allen, 1890)
Holzner's Cottontail *Sylvilagus holzneri* (Mearns, 1896)
Mountain Cottontail *Sylvilagus nuttallii* (Bachman, 1837)
Robust Cottontail *Sylvilagus robustus* (Bailey, 1905)

EULIPOTYPHLA—shrews

Soricidae
North American Least Shrew (Pc,s) *Cryptotis parva* (Say, 1823)
Crawford's Gray Shrew *Notiosorex crawfordi* (Coues, 1877)
Arizona Shrew (Pc,s) *Sorex arizonae* Diersing and Hoffmeister, 1977
Cinereus Shrew *Sorex cinereus* Kerr, 1792
Merriam's Shrew *Sorex merriami* Dobson, 1890
Dusky Shrew *Sorex monticola* Merriam, 1890
Dwarf Shrew *Sorex nanus* Merriam, 1895
Western Water Shrew *Sorex navigator* Richardson, 1828
Preble's Shrew *Sorex preblei* Jackson, 1922

CHIROPTERA—bats

Phyllostomidae
Mexican Long-tongued Bat (Pc) *Choeronycteris mexicana* Tschudi, 1844
Mexican Long-nosed Bat (Pc,s,f) *Leptonycteris nivalis* (Saussure, 1860)
Lesser Long-nosed Bat (Pc,s) *Leptonycteris yerbabuenae* Miller, 1900

Molossidae
Western Mastiff Bat *Eumops perotis* (Schinz, 1821)
Pocketed Free-tailed Bat *Nyctinomops femorosaccus* (Merriam, 1889)
Big Free-tailed Bat *Nyctinomops macrotis* (Gray, 1840)
Brazilian Free-tailed Bat *Tadarida brasiliensis* (Geoffroy, 1824)

Vespertilionidae
Hoary Bat *Aeorestes cinereus* Palisot de Beauvois, 1796
Pallid Bat *Antrozous pallidus* (Le Conte, 1856)
Townsend's Big-eared Bat (Pc) *Corynorhinus townsendii* (Cooper, 1837)
Western Yellow Bat (Pc,s) *Dasypterus xanthinus* Thomas, 1897
Big Brown Bat *Eptesicus fuscus* (Beauvois, 1796)
Spotted Bat (Pc,s) *Euderma maculatum* (Allen, 1891)
Allen's Big-eared Bat *Idionycteris phyllotis* (Allen, 1916)
Silver-haired Bat *Lasionycteris noctivagans* (Le Conte, 1831)
Southern Red Bat *Lasiurus blossevillii* (Lesson and Garnot, 1826)
Eastern Red Bat *Lasiurus borealis* (Müller, 1776)
Southwestern Myotis *Myotis auriculus* (Baker and Stains, 1955)
Californian Myotis *Myotis californicus* (Audubon and Bachman, 1842)
Yellowstone Little Brown Myotis *Myotis carissima* Thomas, 1904
Western Small-footed Myotis* *Myotis ciliolabrum* (Merriam, 1886)
Long-eared Myotis *Myotis evotis* (Allen, 1864)
Arizona Myotis *Myotis occultus* Hollister, 1909
Fringed Myotis *Myotis thysanodes* Miller, 1897
Cave Myotis *Myotis velifer* (Allen, 1890)
Long-legged Myotis *Myotis volans* (Allen, 1866)
Yuma Myotis *Myotis yumanensis* (Allen, 1864)
Evening Bat *Nycticeius humeralis* (Rafinesque, 1818)
Canyon Bat *Parastrellus hesperus* Allen, 1864
Tricolored Bat *Perimyotis subflavus* Cuvier, 1832

* Note: *Myotis ciliolabrum* and *Myotis melanorhinus* (Dark-nosed Small-footed Myotis) are considered conspecific because not all authorities recognize *M. melanorhinus* as distinct from *M. ciliolabrum* (Ammerman et al., 2016).

CARNIVORA—carnivores

Felidae
Canada Lynx (R, V, Pf) *Lynx canadensis* Kerr, 1792
Bobcat (Pu) *Lynx rufus* (Schreber, 1777)
Jaguar (Pc,f) *Panthera onca* (Linnaeus, 1758)
Cougar, Puma or Mountain Lion (Pg) *Puma concolor* (Linnaeus, 1771)

Canidae
Coyote *Canis latrans* Say, 1823
Gray Wolf (R, Pc,s,f) *Canis lupus* Linnaeus, 1758
Gray Fox (Pu) *Urocyon cinereoargenteus* (Schreber, 1775)
Kit Fox (Pu) *Vulpes macrotis* Merriam, 1888
Swift Fox (Pu) *Vulpes velox* (Say, 1823)
Red Fox (B, Pu) *Vulpes fulva* (Desmarest, 1820)

Ursidae
American Black Bear (Pg) *Ursus americanus* Pallas, 1780
Brown or Grizzly Bear (E, Pf) *Ursus arctos* Linnaeus, 1758

Mustelidae
Wolverine (V) *Gulo gulo* (Linnaeus, 1758)
North American River Otter (I, R, Pc) *Lontra canadensis* (Schreber, 1777)
Pacific Marten (Pc,s) *Martes caurina* (Merriam, 1890)
Stoat or Ermine (Pu) *Mustela richardsonii* Linnaeus, 1758
Black-footed Ferret (E, Pc,f) *Mustela nigripes* (Audubon and Bachman, 1851)
Long-tailed Weasel (Pu) *Neogale frenata* Lichtenstein, 1831
American Mink (Pc) *Neogale vison* (Schreber, 1777)
American Badger (Pu) *Taxidea taxus* (Schreber, 1777)

Mephitidae
American Hog-nosed Skunk *Conepatus leuconotus* (Lichtenstein, 1832)
Hooded Skunk *Mephitis macroura* Lichtenstein, 1832
Striped Skunk *Mephitis mephitis* (Schreber, 1776)
Rocky Mountain Spotted Skunk *Spilogale gracilis* Merriam, 1890
Desert Spotted Skunk *Spilogale leucoparia* Merriam, 1890

Procyonidae
Ringtail (Pu) *Bassariscus astutus* (Lichtenstein, 1830)
White-nosed Coati or Coatimundi (Pc) *Nasua narica* (Linnaeus, 1766)
Northern Raccoon (Pu) *Procyon lotor* (Linnaeus, 1758)

PERISSODACTYLA—odd-toed ungulates

Equidae
Ass or Burro (I, E) *Equus asinus* Linnaeus, 1758
Horse (I) *Equus caballus* Linnaeus, 1758

ACKNOWLEDGMENTS

We gratefully recognize the original peoples of New Mexico, including the Navajo Nation, Fort Sill Apache Tribe, Jicarilla Apache Nation, Mescalero Apache Tribe, and the 19 Pueblos composed of Acoma, Cochiti, Isleta, Jemez, Kewa, Laguna, Nambe, Ohkay Owingeh, Picuris, Pojoaque, Sandia, San Felipe, San Ildefonso, Santa Ana, Santa Clara, Taos, Tesuque, Zuni and Zia. We honor their deep connections to the land and biodiversity, and especially those who remained stewards of this land throughout the generations. We also recognize previous and current researchers, and Arthur Harris, in particular, who have valued and built the specimen-based biodiversity infrastructures that many scientists depend on today. We thank Dave Hafner and one anonymous reviewer for critical feedback. This checklist is derived from efforts to improve our understanding of the species

TABLE 1. Revisionary work since Bradley et al., 2014 and Frey et al., 2006, has led to at least 30 distributional and taxonomic (nomenclature, systematic) changes altering our understanding of mammals occurring in New Mexico.

This study	Bradley et al., 2014	Frey et al., 2006	Difference; citation
Alces alces	*Alces americanus*	*Alces americanus*	*americanus* considered a subspecies of *alces*; Hundertmark et al., 2002, 2003
Cervus canadensis	*Cervus elaphus*	*Cervus elaphus*	*canadensis* split from *elaphus* and subspecies elevated; Lorenzen et al., 2012, Lorenzini and Garofalo, 2015
Bos bison	*Bos bison*	*Bison bison*	revision of *Bison*; Wang et al., 2018
Capra aegagrus	*Capra hircus*	*Capra hircus*	Wild form considered different from domestic derivatives: *aegagrus* wild, *hircus* domestic, Gentry et al., 2004
Callospermophilus lateralis	*Callospermophilus lateralis*	*Spermophilus lateralis*	revision of *Spermophilus*; Helgen et al., 2009
Ictidomys mexicanus	*Ictidomys mexicanus*	*Spermophilus mexicanus*	revision of *Spermophilus*; Helgen et al., 2009
Ictidomys tridecemlineatus	*Ictidomys tridecemlineatus*	*Spermophilus tridecemlineatus*	revision of *Spermophilus*; Helgen et al., 2009
Neotamias canipes	*Tamias canipes*	*Tamias canipes*	revision of *Tamias*; Patterson and Norris, 2016
Neotamias cinereicollis	*Tamias cinereicollis*	*Tamias cinereicollis*	revision of *Tamias*; Patterson and Norris, 2016
Neotamias dorsalis	*Tamias dorsalis*	*Tamias dorsalis*	revision of *Tamias*; Patterson and Norris, 2016
Neotamias minimus	*Tamias minimus*	*Tamias minimus*	revision of *Tamias*; Patterson and Norris, 2016
Neotamias quadrivittatus	*Tamias quadrivittatus*	*Tamias quadrivittatus*	revision of *Tamias*; Patterson and Norris, 2016
Otospermophilus variegatus	*Otospermophilus variegatus*	*Spermophilus variegatus*	revision of *Spermophilus*; Helgen et al., 2009
Tamiasciurus fremonti	*Tamiasciurus hudsonicus*	*Tamiasciurus hudsonicus*	*fremonti* split from *hudsonicus* and subspecies elevated; Hope et al., 2016
Xerospermophilus spilosoma	*Xerospermophilus spilosoma*	*Spermophilus spilosoma*	revision of *Spermophilus*; Helgen et al., 2009
Zapus luteus	*Zapus hudsonius*	*Zapus hudsonius*	*luteus* split from *hudsonius* and subspecies elevated; Malaney et al., 2017
Microtus drummondii	*Microtus pennsylvanicus*	*Microtus pennsylvanicus*	*drummondii* split from *pennsylvanicus* and subspecies elevated; Jackson and Cook, 2020
Neotoma albigula	*Neotoma leucodon*	*Neotoma leucodon*	*leucodon* synonymized with and demoted back to subspecies of *albigula*; Derieg, 2020
Peromyscus labecula	*Peromyscus maniculatus*	*Peromyscus maniculatus*	*labecula* split from *maniculatus* and subspecies elevated; Bradley et al., 2019, Greenbaum and Honeycutt, 2019
Peromyscus sonoriensis	*Peromyscus maniculatus*	*Peromyscus maniculatus*	*sonoriensis* split from *maniculatus* and subspecies elevated; Bradley et al., 2019, Greenbaum and Honeycutt, 2019

TABLE 1 (continued). Revisionary work since Bradley et al., 2014 and Frey et al., 2006, has led to at least 30 distributional and taxonomic (nomenclature, systematic) changes altering our understanding of mammals occurring in New Mexico.

This study	Bradley et al., 2014	Frey et al., 2006	Difference; citation
Sorex monticola	*Sorex monticolus*	*Sorex monticolus*	*monticola* is invariable noun in apposition; Woodman 2012, 2018
Sorex monticola	*Sorex monticolus*	*Sorex neomexicanus*	*neomexicanus* synonymized and demoted to subspecies of *monticolus*, *monticolus* reverted to *monticola*; Demboski and Cook, 2001, Woodman, 2018
Sorex navigator	*Sorex navigator*	*Sorex palustris*	*navigator* split from *palustris* and subspecies elevated; Hope et al., 2014, Nagorsen et al., 2017
Leptonycteris yerbabuenae	*Leptonycteris yerbabuenae*	*Leptonycteris nivalis*	*yerbabuenae* split from *nivalis* and subspecies elevated; Simmons and Wetterer, 2002; Cole and Wilson, 2006a
		Leptonycteris curasoae	*curasoae,* only occurs in South America; Cole and Wilson, 2006b
Aeorestes cinereus	*Lasiurus cinereus*	*Lasiurus cinereus*	revision of *Lasiurus*; Baird et al., 2015, 2017
Dasypterus xanthinus	*Lasiurus xanthinus*	*Lasiurus xanthinus*	revision of *Lasiurus*; Baird et al., 2015, 2017
Myotis carissima	*Myotis lucifugus*	*Myotis lucifugus*	*carissima* split from *lucifugus* and subspecies elevated; Morales and Carstens, 2018
Nycticeius humeralis	N/A	N/A	first record of species in NM; Andersen et al., 2017
Parastrellus hesperus	*Parastrellus hesperus*	*Pipistrellus hesperus*	revision of *Pipistrellus*; Hoofer and Van Den Bussche, 2003, Hoofer et al., 2006
Perimyotis subflavus	*Perimyotis subflavus*	*Pipistrellus subflavus*	revision of *Pipistrellus*; Hoofer and Van Den Bussche, 2003, Hoofer et al., 2006
Vulpes fulva	*Vulpes vulpes*	*Vulpes vulpes*	*fulva* split from *vulpes* and subspecies elevated; Statham et al., 2014
Martes caurina	*Martes caurina*	*Martes americana*	*caurina* split from *americana* and subspecies elevated; Stone and Cook, 2002, Dawson et al., 2017, Colella et al., 2018
Mustela richardsonii	*Mustela erminea*	*Mustela erminea*	*richardsonii* split from *erminea* and subspecies elevated; Colella et al., 2021
Neogale frenata	*Mustela frenata*	*Mustela frenata*	revision of *Mustela*; Patterson et al., 2021
Neogale vison	*Neovison vison*	*Neovison vison*	revision of *Neovison*; Patterson et al., 2021
Spilogale leucoparia	*Spilogale gracilis*	*Spilogale gracilis*	*leucoparia* split from *gracilis* and subspecies elevated; Mcdonough et al., 2020

and their systematics and taxonomy that occur in New Mexico – specimens are fundamental to that effort.

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