PEER EDITED

CHECKLIST OF THE AMPHIBIANS AND REPTILES OF NEW MEXICO, USA, WITH NOTES ON TAXONOMY, STATUS, AND DISTRIBUTION

CHARLES W. PAINTER^{1,2,4}, JAMES N. STUART^{1,3}, J. TOMASZ GIERMAKOWSKI², AND LELAND J. S. PIERCE¹

¹New Mexico Department of Game and Fish, Wildlife Management Division, 1 Wildlife Way, Santa Fe, New Mexico 87507, USA ²MSC03 2020, Museum of Southwestern Biology, 1 University of New Mexico, Albuquerque, New Mexico 87131-0001, USA ³Corresponding author, e-mail: james.stuart@state.nm.us ⁴Deceased, 12 May 2015

Abstract.—We present an annotated checklist of the native and non-native amphibians and reptiles that have been verified as established in the state of New Mexico based on current taxonomy, published records, and specimens found in natural history museums. The herpetofauna of the state currently consists of 137 species (27 amphibians and 110 reptiles). We provide an overview of current conservation and taxonomic issues and identify counties of verified occurrence for each species. In addition, we identify some gaps in the current knowledge of the status and distribution for various taxa and provide a list of species that have been reported from New Mexico, but are not known to be established, or that potentially could occur in the state.

Key Words.—conservation; endangered species; habitat; herpetofauna; introduced species; southwestern United States

Introduction

We provide an update on the taxonomy, distribution, and conservation status of the New Mexico herpetofauna. Due to the recent increase of research in molecular systematics, the taxonomy of many species and subspecies recorded from the state has changed considerably in the 21 y since the publication of *Amphibians and Reptiles of New Mexico* by Degenhardt et al. (1996). In addition, the discovery of new species in the state, documentation of new county records for others, and changes in both conservation and legal status for many taxa make such an update warranted. We considered all published changes in taxonomy and new distribution records as of 1 April 2017.

We have not attempted to replicate the comprehensive work of Degenhardt et al. (1996), including its extensive review of the natural history literature, or the more recent overview of the New Mexico herpetofauna by Painter and Stuart (2015). Rather, this checklist is intended to be used in conjunction with those earlier publications. As research in molecular systematics leads to further taxonomic revisions, and we learn more about the herpetofauna of New Mexico and the threats being faced by its many species, another such checklist likely will be needed within a few years.

Physiography of New Mexico

The physical features and ecozones of New Mexico and their influence on the herpetofauna of the state

were previously reviewed by Degenhardt et al. (1996) and Painter and Stuart (2015). Much of the biological diversity of the state is due to its location at the nexus of deserts, plains, and mountains. New Mexico straddles the Continental Divide in the southwestern part of the United States (31°20' to 37°N and 103° to 109°3'W) and is the fifth largest state in area (314,160 km²; 121,298 mi²). It is considered a mountain state, with an elevational range of 867 to 4,013 m (2845 to 13,166 ft) above sea level. The diverse terrain of New Mexico can be conveniently divided into several major ecoregions: the western edge of the Great Plains in the eastern one-third of the state; the southern end of the Rocky Mountains in the northern part of the state; the disjunct ranges comprising the Arizona-New Mexico mountains (including parts of the Colorado and Mogollon plateaus; Fig. 1) in the western, central, and northern parts of the state; and the Chihuahuan Desert in the central and southern parts of the state. The extreme southwestern part of New Mexico is at the northeastern limit of the Sierra Madre Occidental of Mexico, and this montane area, defined as part of the Madrean Archipelago or Sky Islands, contributes significantly to the herpetofaunal diversity of the state (Bezy and Cole 2014).

New Mexico is an arid to semi-arid state and surface waters are limited mainly to several perennial river systems, including the Rio Grande, Pecos, Canadian, and Dry Cimarron (Arkansas River basin) located east of the Continental Divide, and the San Juan, Gila, and San Francisco west of the Divide. Several endorheic (closed) basins are also present, including the Mimbres River and



FIGURE 1. County boundaries and major geographical features within New Mexico.

the Tularosa Basin. Annual precipitation generally does not exceed 250 mm over much of the southern desert and river valleys but in many places is over 500 mm at higher elevations. Much of the precipitation (up to 40%) falls during July and August, the rainiest months for the state. Winter precipitation is usually concentrated on the northern mountains and western slopes of the Continental

Divide, much of it in the form of snow. Temperatures can be high during the summer months at low elevations (up to 40° C) but rapid cooling at night can result in a range between daily highs and lows of up to 20° C, depending on elevation. Winter temperatures are mild at lower elevations, with daytime highs to 13° C, while the northern parts of the state and higher elevations can stay

TABLE 1. Total numbers of species and terminal taxa (i.e., subspecies and monotypic species, combined) of amphibians and reptiles verified from New Mexico based on the taxonomy used herein and by major group (order or suborder). By comparison, the numbers in parentheses indicate the taxa recognized by Degenhardt et al. (1996).

Major Group	Species	Terminal Taxa
Caudata	3 (3)	4 (4)
Anura	24 (23)	25 (24)
Testudines	10 (10)	12 (12)
Sauria	46 (41)	57 (65)
Serpentes	54 (46)	62 (61)
Total	137 (123)	160 (166)

below freezing during the day. The number of frost-free days per year ranges from fewer than 80 in the mountains to > 200 in southern valleys.

TAXONOMY

The herpetofauna of New Mexico currently consists of 137 species (27 amphibians and 110 reptiles), an increase of 14 from the 123 total species recorded by Degenhardt et al. (1996; Table 1). Three of those additions are species known from adjacent states and verified within the borders of New Mexico borders since 1996 (Pseudacris clarkii, Heterodon platirhinos, Lampropeltis californiae), whereas the remainder are the result of taxonomic revisions pertinent to populations already known from the state (i.e., elevation of subspecies to species). Our current list is similar to that containing the 136 species recognized by Painter and Stuart (2015), although the latter publication included Aspidoscelis gypsi (relegated to subspecies here) but not Lampropeltis californiae and Crotalus ornatus (which we include). A number of additional species have undergone name changes not reflected in either the 1996 or 2015 publications, but these revisions did not affect the total number for the state.

Since 1996, a number of phylogenetic studies of speciose groups of amphibians and reptiles have resulted in numerous changes to the taxonomy of North American genera (Crother 2012), affecting approximately 30% of New Mexico species. For anurans in New Mexico, Anaxyrus and Incilius have replaced Bufo, Craugastor has replaced Eleutherodactylus, and Lithobates has replaced Rana (Frost et al. 2006, 2009); however, Yuan et al. (2016) recently proposed the retention of Rana for North American species currently assigned to *Lithobates*. The turtle genus *Apalone* has been generally accepted in place of *Trionyx* (Iverson et al. 2012). Among the lizards, Aspidoscelis has replaced Cnemidophorus (Reeder et al. 2002; Reeder and Cole 2005; but see Oliver and Wright 2007) and Plestiodon has replaced Eumeces (Brandley et al. 2005; Smith 2005). For snakes, Rena has replaced Leptotyphlops (Adalsteinsson et al. 2009), and

Pantherophis has replaced Elaphe (Utiger et al. 2002). Coluber is provisionally used for Masticophis (Utiger et al. 2005), whereas Liochlorophis is now considered a junior synonym of Opheodrys (Crother et al. 2012).

SPECIES THAT WARRANT SPECIAL CONSIDERATION

Many of the amphibians and reptiles of New Mexico currently face threats to their persistence and receive protections at the state or federal level (Table 2), while others remain poorly known and warrant additional research on their natural history and conservation status. Recent changes in taxonomy have also complicated efforts to define the distribution limits and abundance of many species. We provide a brief overview of the taxa for which additional research or conservation actions are needed, with additional comments provided in the checklist below.

Unsustainable harvesting of some species for the pet trade or possibly as food has been an ongoing concern although difficult to quantify. However, in 2001 the New Mexico Department of Game and Fish (NMDGF), in recognition that most amphibians and reptiles in New Mexico were not protected from possible unsustainable harvesting, implemented regulations for the permitting of commercial collectors and for establishing bag limits for many species. Harvest data provided by permitted commercial collectors has been used to assess the extent of collecting for the pet trade on the herpetofauna of the state and to revise bag limits if necessary, although unauthorized collection of some species for commercial purposes possibly continues.

Salamanders.—The two species of endemic salamanders (*Aneides hardii*, *Plethodon neomexicanus*) in the state are vulnerable to habitat loss by catastrophic wildfire, climate change, and development within their forest habitats and warrant further research on their distribution and life history (NMDGF 2016). Introduced diseases such as chytridiomycosis pose a potential threat to their small populations (Cummer et al. 2005; White et al. 2016).

Anurans.—Water depletion and impacts to water quality from both human development and climate change pose a threat to many of the anurans of New Mexico that are dependent on perennial streams and wetlands. In addition, introduced diseases such as chytridiomycosis have had and continue to have impacts to populations of some species such as Anaxyrus boreas, Lithobates chiricahuensis, L. pipiens, and L. yavapaiensis (NMDGF 2006, 2016, unpubl. data; US Fish and Wildlife Service [USFWS] 2007). The establishment of non-native Lithobates catesbeianus throughout New Mexico during the 1900s, in addition to other introduced species such as sport fish and crayfish, continues to impact native anurans and other wildlife through predation (USFWS

TABLE 2. Legal status of amphibians and reptiles in New Mexico. US Status includes current listing as Threatened or Endangered under the U.S. Endangered Species Act (ESA) or by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). NM Status includes current listing as Threatened or Endangered under the New Mexico Wildlife Conservation Act or as a Protected species. CH = critical habitat has been designated in New Mexico under the ESA. CITES Appendix II = species that are not necessarily threatened with extinction but might become so unless trade is closely controlled. CITES Appendix III = species whose trade is already regulated but for which cooperation of other countries is needed to prevent unsustainable or illegal exploitation. Protected = New Mexico statute 17–2–15 makes it "unlawful for any person to willfully kill or to sell horned toads [sic; Phrynosoma spp.] within the state of New Mexico, or to ship them from the state."

Taxon	US Status	NM Status
Aneides hardii	_	Threatened
Plethodon neomexicanus	Endangered, CH	Endangered
Anaxyrus boreas	_	Endangered
Incilius alvarius	_	Threatened
Gastrophryne olivacea	_	Threatened
Lithobates chiricahuensis	Threatened, CH	_
Lithobates yavapaiensis	_	Endangered
Chelydra serpentina	CITES Appendix III	_
Pseudemys gorzugi	_	Threatened
Terrapene ornata	CITES Appendix II	_
Apalone mutica	CITES Appendix III	_
Apalone spinifera	CITES Appendix III	_
Phrynosoma cornutum	_	Protected
Phrynosoma hernandesi	_	Protected
Phrynosoma modestum	_	Protected
Phrynosoma solare	_	Protected
Sceloporus arenicolus	_	Endangered
Scleoporus slevini	_	Threatened
Aspidoscelis dixoni	_	Endangered
Aspidoscelis stictogramma	_	Threatened
Plestiodon callicephalus	_	Threatened
Heloderma suspectum	CITES Appendix II	Endangered
Lampropeltis alterna	_	Endangered
Nerodia erythrogaster	_	Endangered
Senticolis triaspis	_	Threatened
Thamnophis eques megalops	Threatened	Endangered
Thamnophis proximus	_	Threatened
Thamnophis rufipunctatus	Threatened	Threatened
Crotalus lepidus lepidus	_	Threatened
Crotalus willardi obscurus	Threatened, CH	Endangered

2002, 2014). A number of anurans with apparently marginal distributions in New Mexico remain poorly known, including *Gastrophryne olivacea* and *Pseudacris clarkii*.

Turtles.—Aquatic turtles face some of the same potential threats to habitat as many anurans due to water use and climate change. In its limited range in the Pecos River drainage, Pseudemys gorzugi is perhaps the most vulnerable to loss of habitat and is also susceptible to persecution (e.g., illegal shooting) and illegal collecting (Pierce et al. 2016). The introduction of pet turtles is an ongoing problem and has resulted in the establishment of Trachemys scripta and, to a lesser extent, Chelydra serpentina, in many water bodies outside of their natural range where they possibly compete with native species (NMDGF, unpubl. data). In addition, hybridization of non-native T. scripta with native T. gaigeae in the Rio Grande Valley is a recently identified threat to the latter species (Stuart and Ward 2009). Some larger aquatic turtles (e.g., C. serpentina, Apalone spp.) are harvested as food in parts of their geographic ranges, but at present this activity has not been documented in New Mexico. The terrestrial Terrapene ornata is a popular pet that is often collected from the wild for personal use and for local events (e.g., turtle races), which can result in introductions outside of the natural range; it is also susceptible to high mortality on highways in some areas (NMDGF, unpubl. data). Loss or alteration of habitat is of primary concern for the turtle species of New Mexico, as well as direct take through collection, shooting, or vehicular impacts.

Lizards.—Most of the many lizard species in New Mexico are likely secure in the state although several are marginal in their distribution or are experiencing ongoing threats. Sceloporus arenicolus is vulnerable to loss or degradation of habitat in its limited range (USFWS 2010), whereas Heloderma suspectum is subject to both persecution and illegal collection (NMDGF 2016, 2017). Two species that have reportedly declined in other states (Holbrookia maculata and Phrynosoma cornutum) are in need of monitoring in New Mexico. Climate change poses a potential threat to the habitat of some species, whereas others potentially could benefit from warming and drying conditions. Some common species such as Uta stansburiana and Crotaphytus collaris are collected commercially in large numbers for the pet trade (or as food for captive reptiles) and warrant monitoring. Several species have poorly understood distributions resulting from recent taxonomic revisions. The relationship between Holbrookia elegans and H. maculata in southwestern New Mexico is unclear, as is that among populations of horned lizards currently assigned to Phrynosoma hernandesi. The genus Aspidoscelis continues to provide taxonomic challenges in New Mexico, including the likelihood of multiple species within some currently recognized parthenogenetic species (e.g., A. velox), the unclear relationship between bisexual species such as A. marmorata and A. tigris, and the possibility that cryptic species exist due to

undetected hybridization between some bisexual and parthenogenetic species. The distribution and potential overlap of *Sceloporus bimaculosus* and *S. magister* warrants examination. The distribution and potential overlap of species in the *S. undulatus* complex (*S. consobrinus*, *S. cowlesi*, and *S. tristichus*) are poorly known, as is the extent of geographic variation within these taxa, including the status of formerly recognized subspecies (e.g., Smith et al. 1999b).

Snakes.—Three New Mexico snakes (Thamnophis eques megalops, T. rufipunctatus, and Crotalus willardi obscurus) are currently protected at both federal and state levels due to very limited distribution, low numbers, and vulnerability to habitat loss (Baltosser and Hubbard 1985; USFWS 2014). In the case of the two Thamnophis species, the impacts of non-native species are also of concern. Many snake species are subject to high levels of mortality due to vehicle impacts and persecution by humans, whereas others are desirable species in the pet trade (e.g., Lampropeltis spp.) and are likely vulnerable to unsustainable collecting at some locations, although quantification of these threats remains challenging (Fitzgerald et al. 2004; NMDGF, unpubl. data). Additional study is also needed on the effects of commercial collection on populations of Crotalus spp., mainly C. atrox, for skins and meat (Fitzgerald and Painter 2000) and of wildfire and prescribed burning on montane populations of rattlesnakes (Smith et al. 2001). A number of snake taxa (e.g., species of Heterodon, Hypsiglena, Lampropeltis, Trimorphodon, and some Crotalus) are in need of further study of range limits and geographic variation following recent taxonomic revisions.

FORMAT OF THE CHECKLIST

Nomenclature.—Family names are mostly based on the taxonomy proposed by Vitt and Caldwell (2013) and Pyron et al. (2013). Except where more recent nomenclatural revisions have been published, we use the genera, species, and subspecies and authors and years of original descriptions recognized in the most recent publication by the Committee on Standard English and Scientific Names (Crother 2012), including the taxonomic subsections therein: Tilley et al. (2012; Caudata), Frost et al. (2012; Anura), Iverson et al. (2012; Testudines), de Queiroz and Reeder (2012; Sauria), and Crother et al. (2012; Serpentes). We identify those subspecies that are currently recognized to occur in New Mexico; if the

subspecies entry is omitted, the species is considered to be monotypic. We mostly follow Crother (2012) in our use of standard English names for species but have included a second name if another is in current use.

Status and range.—Species that were introduced and are now established in New Mexico are indicated by an asterisk (*). For native species, we note whether it is endemic to New Mexico, believed to be extirpated (in whole or in part) or in decline, or is native but has been introduced outside of its natural range in the state. A native species for which we have no evidence of a decline in abundance or extent of distribution is considered Apparently Stable. We also note whether a species or subspecies is 1) listed as Endangered or Threatened by the USFWS under the federal Endangered Species Act (US) or under review for possible listing; 2) has designated critical habitat if federally listed; and 3) is listed as Endangered or Threatened under the New Mexico Wildlife Conservation Act (NM). Other protections, such as listing by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are also noted (e.g., USFWS 2016; Table 2). Threats to persistence in the state, either documented or potential, are identified where applicable. For each species, its geographic range in New Mexico is briefly summarized.

Counties.—For each species, we list the New Mexico counties (Fig. 1) for which there are one or more verified records. County records are based on data in Degenhardt et al. (1996) or, if a citation is provided, on older publications that were not referenced in the 1996 book or new locality records published since the mid-1990s. A few county records are based on unpublished data such as voucher photographs archived at the New Mexico Department of Game and Fish (NMDGF) or specimens at the Museum of Southwestern Biology, University of New Mexico (MSB). Counties in italics are those in which the species is known or suspected to have been introduced and is now established. A question mark following a county indicates that the county record is possibly erroneous or unverified (e.g., a confirmed specimen cannot be located or the voucher material was possibly misidentified or collected elsewhere).

Comments.—We reference the scientific name used by Degenhardt et al. (1996), preceded by an equal sign (=), if that name is different from the one used herein. Taxonomic references and other notes relevant to New Mexico populations are also included

Order CAUDATA—Salamanders (three species)

AMBYSTOMATIDAE—Mole Salamanders (one species)

Ambystoma mavortium Baird 1850 "1849"—Western Tiger Salamander

Subspecies: A. m. mavortium Baird 1850 "1849"; A. m. nebulosum Hallowell 1853.

Status and Range: Apparently stable. Past importation to the state of larval *A. mavortium* for use as fish bait has potentially influenced the genetics of some populations (NMDGF, unpubl. data). Occurs statewide, including at high elevations.

Counties: All counties except Los Alamos.

Comments: = *Ambystoma tigrinum*. Taxonomy follows Shaffer and McKnight (1996).

PLETHODONTIDAE—Lungless Salamanders (two species)

Aneides hardii (Taylor 1941)—Sacramento Mountains Salamander

Status and Range: Endemic; NM Threatened. Vulnerable to catastrophic wildfires and potentially to climate change. Limited to the White, Capitan, and Sacramento mountains where it can be locally common.

Counties: Lincoln, Otero.

Plethodon neomexicanus Stebbins and Riemer 1950— Jemez Mountains Salamander

Status and Range: Endemic; U.S. Endangered with critical habitat (USFWS 2013a,b); N.M. Endangered. Limited to the Jemez Mountains. Populations have been impacted by catastrophic wildfires and are also vulnerable to climate change (USFWS 2013a). One specimen was found with chytrid fungus (Cummer et al. 2005).

Counties: Los Alamos, Rio Arriba, Sandoval.

Order ANURA—Frogs (24 species)

SCAPHIOPODIDAE—Nearctic Spadefoots (three species)

Scaphiopus couchii Baird 1854—Couch's Spadefoot Status and Range: Apparently stable. Widespread in the state and often locally common.

Counties: Bernalillo, Chaves, Cibola (Carr and Stuart 1997a), Curry (Murray and Humphrey 2010b), Doña Ana, Eddy, Grant, Guadalupe (Christman and Cummer 2007), Harding, Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Miguel, Sandoval, Sierra, Socorro, Valencia.

Spea bombifrons (Cope 1863)—Plains Spadefoot

Status and Range: Apparently stable. Nearly statewide in distribution and often locally common.

Counties: Bernalillo, Catron (Murray and Newsom 2012), Chaves, Cibola, Colfax, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, McKinley, Mora, Otero, Quay, Rio Arriba, Roosevelt, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Union, Valencia.

Spea multiplicata (Cope 1863)—Mexican Spadefoot

Subspecies: S. m. stagnalis (Cope 1875).

Status and Range: Apparently stable. Statewide in distribution and often locally common.

Counties: All counties except De Baca.

CRAUGASTORIDAE—Northern Rainfrogs (one species)

Craugastor augusti (Dugès 1879)—Barking Frog Subspecies: *C. a. latrans* (Cope 1880).

Status and Range: Apparently stable although infrequently encountered. Southeastern New Mexico, north to Chaves Co. and west to Doña Ana Co.

Counties: Chaves, Doña Ana (Murray and Painter 2003a), Eddy, Otero.

Comments: = *Eleutherodactylus augusti*. The form *C. a. latrans* is possibly a distinct species (Goldberg et al. 2004b).

BUFONIDAE—True Toads, Harlequin Frogs and Allies (eight species)

Anaxyrus boreas (Baird and Girard 1852)—Western Toad, Boreal Toad

Status and Range: NM Endangered with state recovery plan (NMDGF 2006). The eastern population of the subspecies *A. b. boreas*, the form recognized as occurring historically in New Mexico, is presently under review by USFWS for possible protection under the US Endangered Species Act. Presumably extirpated in New Mexico although currently being reintroduced at one historical site in the Tusas Mountains (southern San Juan Mountains) from source populations in Colorado (Pierce, unpubl. data). Suitable habitat still exists in parts of Rio Arriba and Taos counties and undiscovered relict populations possibly persist.

Counties: Rio Arriba.

Comments: = *Bufo boreas*. Taxonomy within the *A. boreas* species complex, including the recognition of subspecies, is unresolved (Goebel et al. 2009; Frost et al. 2012).

Anaxyrus cognatus (Say 1822)—Great Plains Toad

Status and Range: Apparently stable. Widely distributed in eastern and southern New Mexico and north in the Rio Grande basin to Sandoval Co.

Counties: Bernalillo, Chaves, Colfax, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, Mora, Otero, Quay, Roosevelt, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Union, Valencia.

Comments: $= Bufo\ cognatus$.

Anaxyrus debilis (Girard 1854)—Chihuahuan Green Toad

Subspecies: A. d. insidior (Girard 1854).

Status and Range: Apparently stable. Southern and eastern parts of New Mexico, north to Socorro and San Miguel counties.

Counties: Chaves, Curry (Murray and Humphrey 2010a), De Baca, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Miguel, Sierra (Kamees and Burkett 2003; Christman et al. 2004), Socorro.

Comments: $= Bufo \ debilis$.

Anaxyrus microscaphus (Cope 1867)—Arizona Toad

Status and Range: Presently under review by USFWS for possible protection under the US Endangered Species Act. Possibly in decline due to habitat loss. Competition and hybridization with sympatric *A. woodhousii*, an identified issue in Arizona, might not be a significant threat to New Mexico populations (Mason Ryan, unpubl. data). Limited to the Gila, San Francisco, and Mimbres river basins and marginally in tributaries of the lower Rio Grande.

Counties: Catron, Grant, Luna (Watson 2012), Sierra, Socorro.

Comments: = *Bufo microscaphus*. Taxonomy follows Gergus (1998).

Anaxyrus punctatus (Baird and Girard 1852)—Redspotted Toad

Status and Range: Apparently stable. Almost statewide in distribution excluding high elevations and parts of the eastern plains.

Counties: Bernalillo, Catron, Chaves, Cibola, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Los Alamos, Lincoln, Luna, McKinley, Otero, Quay, Rio Arriba (Giermakowski et al. 2003), Roosevelt (Stuart and Scott 1995), San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance (Persons and Nowak 2005c), Union, Valencia.

Comments: = Bufo punctatus.

Anaxyrus speciosus (Girard 1854)—Texas Toad

Status and Range: Apparently stable. Limited to the lower Pecos River drainage and adjacent areas in the southeastern part of the state.

Counties: Chaves, Eddy, Lea, Otero (Degenhardt 1998a).

Comments: = Bufo speciosus.

Anaxyrus woodhousii (Girard 1854)—Woodhouse's Toad

Subspecies: A. w. australis (Shannon and Lowe 1955); A. w. woodhousii (Girard 1854).

Status and Range: Apparently stable and possibly has expanded its range in some areas due to human-created water bodies. Nearly statewide in distribution, mainly near perennial rivers and streams.

Counties: All counties including Lea (Hill et al. 2007). Comments: = Bufo woodhousii. The subspecies A. w. australis might be a distinct species (Masta et al. 2002).

Incilius alvarius (Girard 1859)—Sonoran Desert Toad Status and Range: NM Threatened. Apparently stable in its limited distribution in extreme southwestern New Mexico (i.e., Peloncillo Mountains and vicinity, and the Animas Valley).

Counties: Hidalgo.

Comments: $= Bufo \ alvarius$

HYLIDAE—Ameroaustralian Treefrogs (five species)

Acris blanchardi Harper 1947—Blanchard's Cricket Frog

Status and Range: Apparently stable although vulnerable to degradation and drying of its stream habitats. Limited to the lower and middle Pecos River drainage of southeastern New Mexico.

Counties: Chaves, De Baca, Eddy.

Comments: = *Acris crepitans blanchardi*. Taxonomy follows Gamble et al. (2008).

Hyla arenicolor Cope 1866—Canyon Treefrog

Status and Range: Apparently stable. Common in montane areas of western and southwestern New Mexico (e.g., Gila River drainage) with scattered populations across the northern part of the state.

Counties: Bernalillo, Catron, Cibola, Doña Ana, Grant, Harding, Hidalgo, Los Alamos, Luna (Belfit 1979), McKinley, San Miguel (Cudia and Painter 2008), Sandoval, Santa Fe, Sierra, Socorro, Taos, Union (Chiszar et al. 2003).

Comments: The taxon might contain cryptic species (Barber 1999).

Hyla wrightorum Taylor 1939 "1938"—Arizona Treefrog

Status and Range: Apparently stable but infrequently encountered. Mainly associated with the Mogollon and Colorado plateaus in western New Mexico and possibly more widespread than available records indicate.

Counties: Catron, Cibola (Monatesti et al. 2005), McKinley (Giermakowski et al. 2010), Sierra.

Comments: = *Hyla eximia*. Taxonomy follows Gergus et al. (2004).

Pseudacris clarkii (Baird 1854)—Spotted Chorus Frog Status and Range: Current status unknown. Confirmed in 2011 from one playa lake in the extreme eastern part of New Mexico, at the western edge of the species' range, but might be more widely distributed in this area.

Counties: Quay (Kissner and Griffis-Kyle 2012).

Comments: An earlier record from Colfax Co. (Painter and Burkett 1991) was re-identified as *P. maculata* (Degenhardt et al. 1996).

Pseudacris maculata (Agassiz 1850)—Boreal Chorus Frog

Status and Range: Apparently stable. Widely distributed in northern one-third of the state, extending south to the middle Rio Grande Valley and southwest to the Gila River basin.

Counties: Bernalillo, Catron, Cibola (Carr et al. 1997), Colfax, Grant, Harding, Hidalgo?, Los Alamos, McKinley, Mora, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Socorro, Taos, Union, Valencia.

Comments: = *Pseudacris triseriata*. Taxonomy follows Lemmon et al. (2007).

MICROHYLIDAE—Narrow-mouthed Toads (one species)

Gastrophryne olivacea (Hallowell 1856)—Western Narrow-mouthed Toad

Status and Range: NM Threatened. Present status unknown. Occurs marginally in northeastern, southeastern, and southwestern parts of the state, in all cases near the New Mexico state line, where infrequently encountered.

Counties: Eddy (NMDGF), Luna, Union (Moriarty et al. 2000).

RANIDAE – True Frogs (six species)

Lithobates berlandieri (Baird 1859)—Rio Grande Leopard Frog

Status and Range: Apparently stable but potentially vulnerable to local extirpation due to stream drying. Limited to the lower Pecos River basin.

Counties: Eddy.

Comments: = Rana berlandieri. Yuan et al. (2016) proposed the retention of the genus Rana for all Leopard Frogs and placed them in the subgenus Pantherana.

Lithobates blairi (Mecham, Littlejohn, Oldham, Brown and Brown 1973)—Plains Leopard Frog

Status and Range: Apparently stable and seemingly more resilient than its congeners in using ephemeral water bodies (NMDGF, unpubl. data). Widely distributed in the eastern one-third of the state and also locally in the lower Rio Grande Valley and northern New Mexico.

Counties: Chaves, Colfax, Curry, Doña Ana (Hill and Hill 2007), De Baca, Eddy, Guadalupe, Harding, Lea, Lincoln, Mora, Otero, Quay, Rio Arriba, Roosevelt, San Miguel, Sierra, Union.

Comments: = Rana blairi. See comments under L. berlandieri.

*Lithobates catesbeianus (Shaw 1802)—American Bullfrog

Status and Range: Non-native and widespread in most river basins in the state, especially the Rio Grande, Gila, and San Francisco. As voracious predators, Bullfrogs represent a significant threat to native frogs, toads, lizards and snakes (USFWS 2002, 2014; NMDGF 2016). Native populations possibly existed in northeastern New Mexico although introductions have obscured the species' natural range. Formerly classified as a game species in the state but hunting has been unregulated since 2000.

Counties: Bernalillo, Catron, Chaves, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lea, Los Alamos (Stuart and Bjorklund 2012), Luna, Mora (McInnes et al. 2008), Quay, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos (Stuart and Bjorklund 2012), Torrance, Union, Valencia.

Comments: = Rana catesbeiana. Yuan et al. (2016) proposed the retention of the genus Rana for this species and placed it in the subgenus Aquarana.

Lithobates chiricahuensis (Platz and Mecham 1979)—Chiricahua Leopard Frog

Status and Range: US Threatened, with critical habitat (USFWS 2002, 2012). Declining; most historical populations in New Mexico are extirpated although recent reintroductions as part of recovery efforts have had positive results (USFWS 2007; NMDGF, unpubl. data). Surviving populations exist in the Gila, San Francisco, and Mimbres river basins; in tributary streams of the lower Rio Grande; and possibly southern Hidalgo Co.

Counties: Catron, Grant, Hidalgo, Sierra, Socorro.

Comments: = Rana chiricahuensis. The taxonomic status of some populations is unresolved (Goldberg et al. 2004a; Frost et al. 2012). See comments under *L. berlandieri*.

Lithobates pipiens (Schreber 1782)—Northern Leopard Frog

Status and Range: Declining. Formerly widespread in northern and western parts of the state and south in the Rio Grande to Doña Ana Co. Some northern populations in the state are persisting but most historical populations, especially in the south, are extirpated.

Counties: Bernalillo, Catron, Cibola, Colfax, Doña Ana, McKinley, Mora, Otero, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Union, Valencia.

Comments: = Rana pipiens. See comments under L. berlandieri.

Lithobates yavapaiensis (Platz and Frost 1984)— Lowland Leopard Frog

Status and Range: NM Endangered. Possibly extirpated in New Mexico. Formerly in southwestern part of state (Gila and San Francisco rivers, south to the Peloncillo Mountains).

Counties: Catron, Grant, Hidalgo.

Comments: = Rana yavapaiensis. See comments under *L. berlandieri*.

Order TESTUDINES—Turtles (10 species)

CHELYDRIDAE—Snapping Turtles (one species)

Chelydra serpentina (Linnaeus 1758)—Snapping Turtle Status and Range: CITES Appendix III in the U.S. due to exploitation for food although populations in New Mexico are not known to be regularly harvested. Snapping turtles as released pets also present a problem for native populations. Apparently stable and possibly expanding due to introductions. Native to river basins east of the Rio Grande; established population in the Rio Grande is possibly introduced (Stuart 2000a). Detected in the San Juan River basin in 2016 (NMDGF, unpubl. data).

Counties: *Bernalillo*, Chaves, Colfax, *Curry*, De Baca (Painter et al. 2001b), Eddy, Guadalupe, Harding and Mora (Seidel 1975), Quay, *Roosevelt*, *San Juan* (NMDGF), San Miguel, *Sandoval* (Stuart and Clark 1991), *Socorro*, Torrance (Giermakowski and Lamb 2003), Union, *Valencia*?

EMYDIDAE—Cooters, Sliders, American Box Turtles and Allies (five species)

Chrysemys picta (Schneider 1783)—Painted Turtle

Subspecies: *C. p. bellii* (Gray 1831). See comments. Status and Range: Apparently stable in Rio Grande and Pecos Rivers; present status in San Juan River is unknown.

Counties: Bernalillo, Chaves, De Baca, Doña Ana, Eddy, Guadalupe, Rio Arriba, *Roosevelt*, San Juan, Sandoval, Santa Fe (Stuart 2001; NMDGF), Sierra, Socorro, Taos?, Valencia.

Comments: Introduced specimens of non-native *C. p. marginata* Agassiz 1857 have been detected in Bernalillo Co. (Stuart 2000a).

Pseudemys gorzugi Ward 1984—Rio Grande Cooter, Western River Cooter

Status and Range: NM Threatened. Presently under review by USFWS for possible protection under the US Endangered Species Act. Range in lower Pecos River basin is fragmented and populations are possibly declining. Although a shell was found in Chaves Co. (Giermakowski and Pierce 2016), there is no evidence of a population in this county (Pierce et al. 2016). A single specimen from Socorro Co. was introduced (Stuart 1995a).

Counties: Chaves?, Eddy.

Terrapene ornata (Agassiz 1857)—Ornate Box Turtle Subspecies: *T. o. luteola* Smith and Ramsey 1952; *T. o. ornata* (Agassiz 1857).

Status and Range: CITES Appendix II due to harvesting of wild turtles for the pet trade. Apparently stable, although often collected and translocated as pets (NMDGF, unpubl. data). Widespread in eastern and southern New Mexico, and north in the Rio Grande Valley to at least Valencia Co. Extralimital records in the state are due to introductions and might represent breeding populations (e.g., Stuart 2000a).

Counties: *Bernalillo*, Chaves, Colfax, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Miguel, *Sandoval*, *Santa Fe*, Sierra, Socorro, Torrance, Union, Valencia.

Comments: Range limits of the two subspecies are unknown and translocation of individuals within the state might further obscure geographic variation.

Trachemys gaigeae (Hartweg 1939)—Mexican Plateau Slider, Big Bend Slider

Subspecies: *T. g. gaigeae* (Hartweg 1939). See comments.

Status and Range: Vulnerable in its limited range in the middle and lower Rio Grande in New Mexico. Populations in New Mexico and Texas are possibly being affected by hybridization with introduced *T. scripta* (Stuart and Ward 2009; Lovich et al. 2016). A single introduced specimen was collected in Bernalillo Co. (Stuart 2000a).

Counties: Doña Ana (Larisch and Larisch 2003), Sierra, Socorro.

Comments: Species is monotypic if *T. g. hartwegi* (Nazas Slider) of Mexico is recognized as a species (Stuart and Ward 2009).

Trachemys scripta (Schoepff 1792)—Pond Slider

Subspecies: *T. s. elegans* (Wied-Neuwied 1838). See comments.

Status and Range: Apparently stable, although native populations are possibly being genetically altered by introduction of pet trade conspecifics. Native to the Pecos and Canadian river basins; introduced and established in the Rio Grande basin. Released individuals might be found in almost any perennial water body in the state (e.g., Stuart 2000a).

Counties: *Bernalillo*, Chaves, *Curry* (NMDGF), De Baca, Eddy, Guadalupe, Harding, *Lea* (Fitzgerald and Painter 2014), Quay, San Miguel, *Sandoval*, *Sierra*, *Socorro* (Stuart 1995a,b), *Union* (Painter and Christman 2000).

Comments: In addition to non-native *T. s. elegans*, introduced individuals of *T. s. scripta* (Schoepff 1792) occasionally are found in the state (Stuart 1995b, 2000a).

KINOSTERNIDAE—Mud and Musk Turtles (two species)

Kinosternon flavescens (Agassiz 1857)—Yellow Mud Turtle

Status and Range: Apparently stable. Widespread in eastern and southern parts of the state. Records from north-central New Mexico are likely introductions and not established populations (Stuart 2000a).

Counties: *Bernalillo* (Stuart 2000a), Chaves, Curry, De Baca, Doña Ana, Eddy, Guadalupe, Harding, Hidalgo, Lea, Luna, Quay, Roosevelt, San Miguel, *Sandoval*, Sierra, *Socorro* (Stuart 1997), Union.

Comments: Considered monotypic by Serb et al. (2001).

Kinosternon sonoriense LeConte 1854—Sonora Mud Turtle

Subspecies: K. s. sonoriense LeConte 1854.

Status and Range: Apparently stable although drying stream habitats in some areas might be impacting isolated populations (Stone et al. 2014). Gila and San Francisco rivers, south to endorheic streams in the Peloncillo and Animas mountains.

Counties (after Niles 1962): Catron, Grant, Hidalgo.

TRIONYCHIDAE—Softshell Turtles (two species)

Apalone mutica (LeSueur 1827)—Smooth Softshell Subspecies: A. m. mutica (LeSueur 1827).

Status and Range: CITES Appendix III in the U.S. due to harvesting of wild turtles for food, although this practice is apparently uncommon in New Mexico. Apparently stable although not recently assessed. Limited to the Canadian River basin.

Counties: Quay, San Miguel.

Comments: = Trionyx muticus.

Apalone spinifera (LeSueur 1827)—Spiny Softshell Subspecies: A. s. emoryi (Agassiz 1857); A. s. spinifera (LeSueur 1827).

Status and Range: CITES Appendix III in the U.S. due to harvesting of wild turtles for food, although this practice is apparently uncommon in New Mexico. Apparently stable. Native to the Rio Grande and Pecos, Canadian, and Dry Cimarron rivers. Introduced and established in the Gila and San Francisco rivers.

Counties: Bernalillo, *Catron*, Chaves, De Baca, Doña Ana, Eddy, *Grant*, Guadalupe (Stuart 1988a), Harding, *Hidalgo*, Mora, Quay, San Miguel (Stuart 1988a), Sandoval, Sierra, Socorro, Union, Valencia.

Comments: = Trionyx spiniferus.

Order SQUAMATA—Lizards and Snakes (100 species)

Suborder SAURIA—Lizards (46 species)

CROTAPHYTIDAE—Collared and Leopard Lizards (two species)

Crotaphytus collaris (Say 1823)—Eastern Collared Lizard

Status and Range: Apparently stable. Possibly being affected locally by commercial collecting for the pet trade (NMDGF, unpubl. data). Occurs almost statewide.

Counties: Bernalillo, Catron, Chaves, Cibola, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, McKinley, Mora, Otero, Quay, Rio Arriba, Roosevelt, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia.

Gambelia wislizenii (Baird and Girard 1852)—Longnosed Leopard Lizard

Status and Range: Apparently stable. Southern New Mexico and north in the Rio Grande basin to

Sandoval Co., with scattered populations elsewhere in the state.

Counties: Bernalillo, Chaves, Cibola, Eddy, Grant, Hidalgo, Lea, Lincoln, Luna, Otero, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Valencia.

PHRYNOSOMATIDAE—North American Spiny Lizards (22 species)

Callisaurus draconoides Blainville 1835—Zebra-tailed Lizard

Subspecies: C. d. ventralis (Hallowell 1852).

Status and Range: Apparently stable. Very limited range in New Mexico on west side of the Peloncillo Mountains.

Counties: Hidalgo.

Cophosaurus texanus Troschel 1852 "1850"—Greater Earless Lizard

Subspecies: C. t. scitulus (Peters 1951).

Status and Range: Apparently stable. Common in southern New Mexico; ranges north to Cibola and San Miguel counties.

Counties: Catron, Chaves, Cibola (Giermakowski and Chour 2012), De Baca, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lincoln, Luna, Otero, Quay, San Miguel, Sierra, Socorro, Valencia.

Holbrookia elegans Bocourt 1874 in Duméril, Mocquard and Bocourt 1870–1909—Elegant Earless Lizard

Subspecies: H. e. thermophila Barbour 1921.

Status and Range: Present status unknown, due in part to taxonomic uncertainty of populations in extreme southwestern New Mexico.

Counties: Hidalgo (Axtell 2009).

Comments: = Holbrookia maculata, in part. Recognition of this species was supported by Wilgenbusch and de Queiroz (2000). Formerly classified as *H. approximans* (e.g., Smith et al. 2004). The relationship between *H. elegans* and *H. maculata* in southwestern New Mexico is unclear (e.g., Jones 2010).

Holbrookia maculata Girard 1851—Common Lesser Earless Lizard

Subspecies: *H. m. flavilenta* Cope 1883; *H. m. maculata* Girard 1851; *H. m. ruthveni* Smith 1943. See comments.

Status and Range: Present status unknown. Declines have been documented in other states; in New Mexico, some populations in the eastern part of state may have declined due to habitat alteration (Michael Hill, pers. comm.). Widely distributed in the state.

Counties: Bernalillo, Catron, Chaves, Cibola, Colfax, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, McKinley, Mora, Otero, Quay, Rio Arriba, Roosevelt, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Union, Valencia.

Comments: Intraspecific variation, including status of subspecies, is unresolved (de Queiroz and Reeder 2012), as is the relationship of this species to *H. elegans* (see above). *H. m. ruthveni*, the pale form from the Tularosa Basin, is considered an incompletely-speciated form within *H. maculata* (Rosenbloom and Harmon 2011) while *H. m. bunkeri* Smith 1935, possibly invalid, also has been recognized in the state (Smith et al. 1998).

Phrynosoma cornutum (Harlan 1825)—Texas Horned Lizard

Status and Range: All *Phrynosoma* species are protected from collection and killing by state law (NM Statute § 17-2-15). Present status unknown. Declines have been documented in other states but no definite evidence exists for New Mexico. Widely distributed in eastern and southern New Mexico. Records in north-central New Mexico are due to introductions.

Counties: *Bernalillo*, Chaves, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Miguel, *Sandoval* (Watson 2006), Sierra, Socorro, Torrance, Union.

Phrynosoma hernandesi Girard 1858—Greater Shorthorned Lizard

Subspecies: P. h. hernandesi Girard 1858.

Status and Range: Protected (see *P. cornutum*). Apparently stable. Widely distributed in the state, west of the eastern plains.

Counties: Bernalillo, Catron, Chaves (Montanucci 2015), Cibola, Colfax, De Baca (Montanucci 2015), Eddy, Grant, Guadalupe, Harding, Hidalgo, Lincoln, Los Alamos, Luna, McKinley, Mora, Otero, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia.

Comments: = Phrynosoma douglasii. Taxonomy follows Zamudio et al. (1997). Placed in the clade Tapaja by Leaché and McGuire (2006). Montanucci (2015) proposed taxonomic revisions of the P. douglasii complex and recognized up to four species in New Mexico based on morphology: P. hernandesi, P. ornatissimum, P. bauri sp. nov., and possibly P. diminutum sp. nov. This proposed arrangement has not yet been evaluated genetically.

Phrynosoma modestum Girard 1852—Round-tailed Horned Lizard

Status and Range: Protected (see *P. cornutum*). Apparently stable. Widely distributed in state, north to Santa Fe and Harding counties.

Counties: Bernalillo, Chaves, Cibola, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Luna, McKinley, Otero, Quay, Roosevelt, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance (Persons and Nowak 2005a), Valencia.

Comments: Placed in the clade *Doliosaurus* by Leaché and McGuire (2006).

Phrynosoma solare Gray 1845—Regal Horned Lizard

Status and Range: Protected (see *P. cornutum*). Present status unknown. Limited in New Mexico to Guadalupe Canyon in extreme southwestern part of the state.

Counties: Hidalgo.

Comments: Placed in the clade *Anota* by Leaché and McGuire (2006).

Sceloporus arenicolus Degenhardt and Jones 1972— Dunes Sagebrush Lizard, Sand Dune Lizard

Status and Range: NM Endangered; formerly proposed as US Endangered (USFWS 2010) but proposal was withdrawn following the development of a Candidate Conservation Agreement with Assurances. Endemic to sand blowouts in shrubgrassland communities in southeastern New Mexico and adjacent Texas.

Counties: Chaves, Eddy, Lea, Roosevelt.

Comments: Taxonomy was reviewed by Chan et al. (2013). The name Sand Dune Lizard is commonly used in New Mexico and was proposed in the original description of the taxon.

Sceloporus bimaculosus Phelan and Brattstrom 1955— Twin-spotted Spiny Lizard

Status and Range: Apparently stable. Rio Grande basin north to Valencia Co., with scattered populations elsewhere in southern New Mexico.

Counties: Catron, Doña Ana, Eddy, Grant, Hidalgo, Lincoln (Burkett and Black 2000c), Luna, Otero, Sierra, Socorro, Valencia.

Comments: = Sceloporus magister bimaculosus.

Taxonomy follows Schulte et al. (2006), although
Leaché and Mulcahy (2007) suggested that this
taxon is conspecific with S. magister.

Sceloporus clarkii Baird and Girard 1852—Clark's Spiny Lizard

Subspecies: S. c. clarkii Baird and Girard 1852.

Status and Range: Apparently stable. Southwestern part of the state, mainly from the Black Range westward.

Counties: Catron, Grant, Hidalgo, Luna, Sierra.

Sceloporus consobrinus Baird and Girard 1853—Prairie Lizard

Status and Range: Apparently stable. Occurs widely in eastern one-third of state.

Counties: Chaves, Curry, Harding, Lea, Quay, Roosevelt, Union. See comments.

Comments: = Sceloporus undulatus, in part. Leaché and Reeder (2002) recognized three monotypic species in the S. undulatus complex (S. consobrinus, S. cowlesi, and S. tristichus) as occurring in New Mexico. Although collectively these three species occur in all counties of New Mexico, the boundaries of their ranges in the state are poorly understood and have been inferred from Leaché and Reeder (2002), Leaché and Cole (2007), and, for S. consobrinus, Lahti and Leaché (2009). The formerly-recognized S. u. tedbrowni is contained in this species (e.g., Smith et al. 2001). Leaché and Reeder (2002) noted the appropriate name for the Prairie Lizard might be S. thayerii Baird and Girard 1852.

Sceloporus cowlesi Lowe and Norris 1956— Southwestern Fence Lizard

Status and Range: Apparently stable. Widely distributed in southern and central New Mexico west of the eastern plains, and as far north as McKinley, Sandoval, and possibly San Miguel counties. However, see comments under *S. consobrinus*.

Counties: Bernalillo, Catron, Chaves, Cibola, Doña Ana, Eddy, Grant, Hidalgo, Lincoln, Luna, McKinley, Otero, Sandoval, Sierra, Socorro, Torrance, Valencia.

Comments: = Sceloporus undulatus, in part. See comments under S. consobrinus. Distribution also inferred from Babb and Leaché (2009). Contains the formerly recognized form S. u. speari (Smith et al. 1999a).

Sceloporus graciosus Baird and Girard 1852—Common Sagebrush Lizard

Subspecies: S. g. graciosus Baird and Girard 1852.

Status and Range: Apparently stable although not recently assessed. Mainly associated with the Colorado Plateau in the northwestern part of the state.

Counties: Cibola, McKinley, Rio Arriba, San Juan, Sandoval.

Sceloporus jarrovii Cope in Yarrow 1875—Yarrow's Spiny Lizard

Status and Range: Apparently stable; possibly expanding in range via introductions (White et al.

2010). Southern Hidalgo Co., with extralimital introductions locally in the Gila River basin.

Counties: *Grant* (Jennings et al. 2009; White et al. 2010), Hidalgo.

Comments: Considered monotypic by Wiens et al. (1999).

Sceloporus magister Hallowell 1854—Desert Spiny Lizard

Status and Range: Apparently stable. Occurs marginally in northwestern and southwestern parts of the state.

Counties: Hidalgo, McKinley, San Juan.

Comments: See also *S. bimaculosus*. The subspecies *S. m. cephaloflavus* (formerly applied to populations in northwestern New Mexico) was recognized by Schulte et al. (2006) but the name might not be applicable to *S. magister* as currently understood (de Queiroz and Reeder 2012).

Sceloporus poinsettii Baird and Girard 1852—Crevice Spiny Lizard

Subspecies: S. p. axtelli Webb 2006; S. p. poinsettii Baird and Girard 1852.

Status and Range: Apparently stable. Southern New Mexico, north to Socorro Co. and east to Eddy Co.

Counties: Catron, Chaves, Doña Ana, Eddy, Grant, Hidalgo, Lincoln, Luna, Otero, Sierra, Socorro.

Sceloporus slevini Smith 1937—Slevin's Bunchgrass Lizard

Status and Range: NM Threatened. Limited in New Mexico to the Animas Valley in extreme southwestern part of the state.

Counties: Hidalgo.

Comments: = Sceloporus scalaris slevini. Taxonomy follows Smith et al. (1996).

Sceloporus tristichus Cope in Yarrow 1875—Plateau Fence Lizard

Status and Range: Apparently stable. Widely distributed in northern one-third of the state, west of the eastern plains.

Counties: Colfax, Los Alamos?, Rio Arriba, San Juan, Santa Fe, Taos.

Comments: = *Sceloporus undulatus*, in part. See comments under *S. consobrinus*. Distribution inferred in part from Persons and Leaché (2009).

Sceloporus virgatus Smith 1938—Striped Plateau Lizard Status and Range: Apparently stable. Limited in New Mexico to the Animas, Peloncillo, and San Luis mountains in southwestern corner of the state.

Counties: Hidalgo.

Urosaurus ornatus (Baird and Girard 1852)—Ornate Tree Lizard Subspecies: *U. o. levis* (Stejneger 1890); *U. o. schmidti* (Mittleman 1940); *U. o. wrighti* (Schmidt 1921).

Status and Range: Apparently stable. Widespread west of the eastern plains.

Counties: Bernalillo, Catron, Chaves, Cibola, Doña Ana, Eddy, Grant, Hidalgo, Lincoln, Luna, McKinley, Otero, Rio Arriba, San Juan, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Valencia.

Uta stansburiana Baird and Girard in Stansbury 1852—Common Side-blotched Lizard

Subspecies: *U. s. stejnegeri* Schmidt 1921; *U. s. uniformis* Pack and Tanner 1970. See comments.

Status and Range: Apparently stable. Widely distributed in the state, including in the Rio Grande, Pecos and San Juan river basins. Often collected for pet trade, in many instances to serve as food for pet snakes (Fitzgerald et al. 2004).

Counties: Bernalillo, Chaves, Cibola, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln (Burkett and Black 2000d), Luna, McKinley, Otero, Quay, Roosevelt, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Valencia.

Comments: *U. s. stejnegeri*, which includes all New Mexico populations except those in the northwest, might be a distinct species (see de Queiroz and Reeder 2012).

EUBLEPHARIDAE—Eyelid Geckos (two species)

Coleonyx brevis Stejneger 1893—Texas Banded Gecko Status and Range: Apparently stable. Mainly in southeastern part of the state west of the Pecos River and north to the Oscura Mountains in Lincoln Co.

Counties: Eddy, Lincoln (Kamees and Burkett 1995), Otero.

Coleonyx variegatus (Baird 1859 "1858")—Western Banded Gecko

Subspecies: C. v. bogerti Klauber 1945.

Status and Range: Apparently stable. Limited to the southwestern part of the state.

Counties: Grant, Hidalgo (Price 1980).

GEKKONIDAE—True Geckos (one species)

*Hemidactylus turcicus (Linnaeus 1758)— Mediterranean Gecko

Status and Range: Non-native. Isolated populations have become established through intentional or accidental introductions in at least four New Mexico cities (Byers et al. 2007). The species is likely more widespread in the state than records indicate.

Counties: *Bernalillo* (Byers et al. 2007), *Doña Ana*, *Otero* (Murray and Painter 2003b), *Sierra* (Sias and Humphrey 2002).

TEHDAE—Whiptail Lizards, Tegus and Allies (14 species)

Aspidoscelis dixoni (Scudday 1973)—Gray-checkered Whiptail

Status and Range: NM Endangered. The species occupies a very small range near the Peloncillo Mountains, making it vulnerable to habitat alteration (NMDGF 2016). Another concern is competition and hybridization with *A. tigris* (Cole et al. 2007).

Counties: Hidalgo.

Comments: = Cnemidophorus dixoni. Species is parthenogenetic. Synonymized with A. tesselata by de Queiroz and Reeder (2012) based on Cordes and Walker (2006), although Cordes and Walker (2006) and Cole et al. (2007) considered A. dixoni a valid species.

Aspidoscelis exsanguis (Lowe 1956)—Chihuahuan Spotted Whiptail

Status and Range: Apparently stable. Widespread and locally common in much of the state except the northwest and the eastern plains.

Counties: Bernalillo, Catron, Chaves, Cibola, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lincoln, Los Alamos, Luna, Mora, Otero, Quay, Rio Arriba, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos (Stuart 1993), Torrance, Valencia.

Comments: = *Cnemidophorus exsanguis*. Species is parthenogenetic.

Aspidoscelis flagellicauda (Lowe and Wright 1964)—Gila Spotted Whiptail

Status and Range: Apparently stable. Locally common in southwestern New Mexico, mainly in the Gila and San Francisco river drainages; more recently documented in southern Hidalgo Co. (Painter, unpubl. data).

Counties: Catron, Grant, Hidalgo.

Comments: = *Cnemidophorus flagellicaudus*. Species is parthenogenetic.

Aspidoscelis gularis (Baird and Girard 1852)—Common Spotted Whiptail

Subspecies: *A. g. gularis* (Baird and Girard 1852). Status and Range: Apparently stable. Common in southeastern New Mexico.

Counties: Eddy, Lea.

Comments: = Cnemidophorus gularis.

Aspidoscelis inornata (Baird 1859 "1858")—Little Striped Whiptail

- Subspecies: A. i. gypsi (Wright and Lowe 1993); A. i. heptagramma (Axtell 1961); A. i. junipera (Wright and Lowe 1993); A. i. llanura (Wright and Lowe 1993). See comments.
- Status and Range: Apparently stable although possibly locally extirpated where grassland habitat has been degraded or eliminated. Widely distributed in New Mexico, excluding the eastern plains and northern and western parts of the state.
- Counties: Bernalillo, Chaves, Cibola, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lea, Lincoln, Luna, McKinley, Otero, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Valencia.
- Comments: = Cnemidophorus inornatus. The subspecies A. i. gypsi was formerly recognized as a species (e.g., Painter and Stuart 2015) but considered conspecific with A. inornata by Rosenbloom and Harmon (2011).

Aspidoscelis marmorata (Baird and Girard 1852)— Marbled Whiptail

Subspecies: A. m. marmorata (Baird and Girard 1852); A. m. reticuloriens (Vance 1978).

Status and Range: Apparently stable. Rio Grande and Pecos River basins north to Bernalillo and De Baca counties and across the southern part of the state.

Counties: Bernalillo, Chaves, De Baca, Doña Ana, Eddy, Grant, Hidalgo, Lea, Lincoln (Burkett and Black 2000a), Luna, Otero, Roosevelt, Sierra, Socorro, Valencia.

Comments: = Cnemidophorus tigris, in part. This species and A. tigris were considered incompletely separated species by de Queiroz and Reeder (2012). In New Mexico, hybridization occurs with A. tigris in a contact zone in the extreme southwestern part of the state and with A. tesselata in the southeast (Dessauer et al. 2000; Taylor et al. 2001).

Aspidoscelis neomexicana (Lowe and Zweifel 1952)— New Mexico Whiptail

Status and Range: Apparently stable. Widespread in the Rio Grande drainage system and in the southern part of the state, from the Tularosa Basin westward, with disjunct populations elsewhere. Extralimital populations might be due to introductions (but see Oliver and Wright 2007).

Counties: Bernalillo, Cibola, *De Baca* (Taylor 2002), Doña Ana, Grant, Hidalgo, Lincoln (Burkett et al. 2004), Luna, Otero, Rio Arriba, *Roosevelt* (Cordes et al. 2011), *San Miguel* (Manning et al. 2005), Sandoval, Santa Fe, Sierra, Socorro, Torrance, Valencia. Comments: = Cnemidophorus neomexicanus. Parthenogenetic. Hybridization with A. sexlineata was reported by Manning et al. (2005).

Aspidoscelis sexlineata (Linnaeus 1766)—Six-lined Racerunner

Subspecies: A. s. viridis (Lowe 1966).

Status and Range: Apparently stable. Widely distributed in eastern plains.

Counties: Chaves, Colfax, Curry, De Baca, Eddy, Guadalupe, Harding, Lea, Mora (Lowe 1966), Quay, Roosevelt, San Miguel, Union.

 $Comments: = Cnemidophorus\ sexlineatus.$

Aspidoscelis sonorae (Lowe and Wright 1964)—Sonoran Spotted Whiptail

Status and Range: Apparently stable. Locally common in the Gila and San Francisco river drainages and in the Peloncillo and Animas mountains.

Counties: Catron, Grant, Hidalgo.

Comments: = *Cnemidophorus sonorae*. Species is parthenogenetic.

Aspidoscelis stictogramma (Burger 1950)—Giant Spotted Whiptail

Status and Range: NM Threatened. Status not recently assessed. Marginal distribution in New Mexico; limited to Guadalupe Canyon in extreme southwestern corner of the state.

Counties: Hidalgo.

Comments: = *Cnemidophorus burti stictogrammus*. Taxonomy follows Walker and Cordes (2011).

Aspidoscelis tesselata (Say in James 1823)—Common Checkered Whiptail

Status and Range: Apparently stable. Widely distributed, north to Santa Fe and Union counties, but absent from most of western and northern parts of the state.

Counties: Bernalillo, Chaves, De Baca, Doña Ana, Eddy, Guadalupe, Harding, Hidalgo, Lea (Murray et al. 2011b), Lincoln, Luna, Otero, Quay, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Union, Valencia.

Comments: = Cnemidophorus grahamii. Species is parthenogenetic. Taxonomy follows the redescription by Walker et al. (1997). See also *A. dixoni*.

Aspidoscelis tigris (Baird and Girard 1852)—Tiger Whiptail

Subspecies: A. t. punctilinealis (Dickerson 1919); A. t. septentrionalis (Burger 1950).

Status and Range: Apparently stable in its limited range in the northwestern (San Juan River basin) and extreme southwestern parts of the state.

Counties: Hidalgo, San Juan.

Comments: = Cnemidophorus tigris. Taylor and Walker (1996) revised subspecies taxonomy. See also A. marmorata.

Aspidoscelis uniparens (Wright and Lowe 1965)— Desert Grassland Whiptail

Status and Range: Apparently stable; possibly increasing. Widespread in southern part of the state and north in the Rio Grande Valley where it might be expanding its range.

Counties: Bernalillo, Catron, Cibola (Degenhardt 1998b), Doña Ana, Grant, Hidalgo, Luna, Otero (Burkett and Black 2000b), Sierra, Socorro.

Comments: = *Cnemidophorus uniparens*. Species is parthenogenetic.

Aspidoscelis velox (Springer 1928)—Plateau Striped Whiptail

Status and Range: Apparently stable. Widespread in northern part of the state, south to the Gila and upper Pecos river basins.

Counties: Bernalillo, Catron, Cibola, Colfax, Grant, Guadalupe, Harding, Los Alamos, McKinley, Mora (Painter et al. 2000a), Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Socorro, Taos, Torrance, Union, Valencia.

Comments: = Cnemidophorus velox. Parthenogenetic. The taxon as presently defined includes both triploid and diploid lineages and is therefore best regarded as a species complex (Stuart 1998; de Oueiroz and Reeder 2012).

SCINCIDAE—Skinks (three species)

Plestiodon callicephalus (Bocourt 1879 in Duméril, Mocquard and Bocourt 1870–1909)—Mountain Skink

Status and Range: NM Threatened. Presently known in New Mexico from two locations in Peloncillo Mountains in extreme southwestern part of state.

Counties: Hidalgo.

Comments: = *Eumeces tetragrammus callicephalus*. Taxonomy follows Tanner (1987).

Plestiodon multivirgatus Hallowell 1857—Many-lined Skink

Subspecies: P. m. epipleurotus (Cope 1880).

Status and Range: Apparently stable. Widely distributed throughout New Mexico but likely disjunct and limited to areas with mesic microhabitats.

Counties: Bernalillo, Catron, Chaves, Cibola,
 Colfax, De Baca, Eddy, Grant (Bailey 1937), Lea,
 Lincoln, Los Alamos, McKinley, Mora (Watson 2003), Otero, Rio Arriba, Roosevelt, San Miguel,
 Sandoval, Santa Fe, Socorro, Taos, Torrance.

Comments: = *Eumeces multivirgatus*. Subspecies taxonomy was addressed by Axtell and Smith (2004).

Plestiodon obsoletus Baird and Girard 1852—Great Plains Skink

Status and Range: Apparently stable. Widespread and common in much of the state, excluding the northwest.

Counties: Bernalillo, Catron, Chaves, Cibola, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding (Painter and Pierce 2000), Hidalgo, Lea, Lincoln, Luna, Mora, Otero, Quay, Roosevelt, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia.

Comments: $= Eumeces \ obsoletus$.

Anguidae—Glass and Alligator Lizards (one species)

Elgaria kingii Gray 1838—Madrean Alligator Lizard Subspecies: *E. k. nobilis* Baird and Girard 1852.

Status and Range: Apparently stable. Limited to southwestern quadrant of the state.

Counties: Catron, Doña Ana (Wagner and Gurrola 1995), Grant, Hidalgo, Luna, Sierra, Socorro.

HELODERMATIDAE—Gila Monster and Mexican Beaded Lizard (one species)

Heloderma suspectum Cope 1869—Gila Monster Subspecies: *H. s. suspectum* Cope 1869.

Status and Range: NM Endangered with state recovery plan (NMDGF 2017); CITES Appendix II. Subject to persecution and illegal collection for the pet trade. Limited in New Mexico to southwestern part of state west of the Continental Divide, with questionable records (possibly introduced, historical, or relict populations) from farther east.

Counties: Doña Ana?, Grant, Hidalgo, Luna?

Suborder SERPENTES—Snakes (54 species)

LEPTOTYPHLOPIDAE—Slender Blindsnakes and Threadsnakes (two species)

Rena dissecta (Cope 1896)—New Mexico Threadsnake Status and Range: Apparently stable. Widespread in eastern and southern New Mexico and in the Rio Grande basin north to Rio Arriba Co.

Counties: Bernalillo, Chaves, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln (Sias 2002), Luna, Mora (Painter et al. 2000b), Otero (Carpenter and Painter 1999), Quay, Rio Arriba, Roosevelt, San Miguel (McAllister 1991), Sandoval, Sierra, Socorro, Union. Comments: = Leptotyphlops dulcis dissectus. Taxonomy follows Dixon and Vaughan (2003).

Rena humilis (Baird and Girard 1853)—Western Threadsnake

Subspecies: R. h. segregus (Klauber 1939).

Status and Range: Apparently stable. Scattered records across southern New Mexico, north to Socorro Co.

Counties: Doña Ana, Eddy, Grant, Hidalgo, Lincoln (Burkett and Black 2000e), Otero (Burkett and Black 2000e), Sierra, Socorro.

Comments: = *Leptotyphlops humilis*.

COLUBRIDAE—Common Snakes (42 species)

Arizona elegans Kennicott in Baird 1859—Glossy Snake
Subspecies: A. e. elegans Kennicott in Baird 1859; A.
e. philipi Klauber 1946.

Status and Range: Apparently stable. Widespread in New Mexico excluding the north-central and west-central parts of the state.

Counties: Bernalillo, Catron, Chaves, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe (Degenhardt and Stuart 1998), Harding, Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Union, Valencia. A record for Los Alamos (Hathcock and Painter 2015) is erroneous (Charles Hathcock, pers. comm.).

Bogertophis subocularis (Brown 1901)—Trans-Pecos Ratsnake

Subspecies: B. s. subocularis (Brown 1901).

Status and Range: Apparently stable. Possibly vulnerable to over-collecting for the pet trade (Fitzgerald et al. 2004; NMDGF, unpubl. data). South-central New Mexico, north to Socorro and Lincoln counties.

Counties: Doña Ana, Eddy, Lincoln (Jameson 1957b), Otero, Sierra, Socorro.

Coluber bilineatus (Jan 1863)—Sonoran Whipsnake

Status and Range: Apparently stable. Extreme southwestern New Mexico (Peloncillo and Animas mountains) and western Catron Co.

Counties: Catron (Hibbitts and Hibbitts 1999), Hidalgo.

Comments: = *Masticophis bilineatus*.

Coluber constrictor Linnaeus 1758—North American Racer

Subspecies: C. c. flaviventris Say 1823; C. c. mormon Baird and Girard 1852.

Status and Range: Apparently stable. Widely distributed in northern and central New Mexico, south to Chaves and Socorro counties. Apparently

most common in northeastern quadrant of the state. Populations in many areas are seemingly disjunct and possibly vulnerable to local extirpation.

Counties: Bernalillo, Chaves, Colfax, Curry (Glidewell 1974), Guadalupe (Hubbs et al. 2006), Harding, Lincoln (Glidewell 1974), McKinley, Mora (Seidel and Wilson 1979), Quay, San Juan, Sandoval, Socorro, Torrance?, Union.

Coluber flagellum Shaw 1802—Coachwhip

Subspecies: *C. f. piceus* (Cope 1892); *C. f. testaceus* Say in James 1823.

Status and Range: Apparently stable. Common and widespread in the state.

Counties: Bernalillo, Catron, Chaves, Cibola, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Los Alamos (Nelson and Painter 1998), Luna, Mora, Otero, Quay, Rio Arriba, Roosevelt, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Union, Valencia.

Comments: = Masticophis flagellum.

Coluber taeniatus (Hallowell 1852)—Striped Whipsnake Subspecies: *C. t. girardi* Stejneger and Barbour 1917; *C. t. taeniatus* (Hallowell 1852).

Status and Range: Apparently stable. Widely distributed in the state, excluding the eastern plains.

Counties: Bernalillo, Catron, Chaves, Cibola, De Baca (Painter et al. 2001a), Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lincoln, Luna, McKinley, Mora, Otero, Quay, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance.

Comments: = *Masticophis taeniatus*.

Diadophis punctatus (Linnaeus 1766)—Ring-necked Snake

Subspecies: *D. p. arnyi* Kennicott 1859; *D. p. regalis* Baird and Girard 1853.

Status and Range: Apparently stable. Widely distributed in New Mexico except for the north-central and northwestern parts of the state.

Counties: Bernalillo, Catron, Chaves, Cibola, Colfax, De Baca (Sias et al. 2001), Doña Ana, Eddy, Grant, Guadalupe (Stuart 2000b), Harding, Hidalgo, Lea, Lincoln, McKinley, Mora, Otero (Gordon 1997), Roosevelt, San Miguel, Sandoval, Sierra, Socorro, Torrance, Union.

Gyalopion canum Cope 1861 "1860"—Chihuahuan Hook-nosed Snake

Status and Range: Apparently stable. Southern New Mexico, north to Sandoval and Guadalupe counties.

Counties: Bernalillo, Chaves, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lincoln, Luna, Otero,

Sandoval (Stuart 1988b), Sierra, Socorro, Valencia (Williamson 1972a).

Heterodon kennerlyi Kennicott 1860—Mexican Hognosed Snake

Status and Range: Apparently stable. Distributed across southern part of state, west of the Pecos River. See comments.

Counties: Doña Ana, Eddy, Grant, Hidalgo, Luna, Otero.

Comments: = Heterodon nasicus kennerlyi.

Taxonomy and assumed distribution of this species and H. nasicus follows Smith et al. (2003). Range limits of the two species in southern New Mexico are not well-defined.

Heterodon nasicus Baird and Girard 1852—Plains Hognosed Snake

Status and Range: Apparently stable. Widely distributed in state, excluding the range of *H. kennerlyi*, with a possibly disjunct population in the San Juan River basin.

Counties: Bernalillo, Chaves, Cibola (Carr and Stuart 1997b), Colfax, Curry, De Baca, Eddy, Guadalupe, Harding, Lea, Lincoln, Mora (Stuart 2000c), Otero, Quay, Rio Arriba, Roosevelt, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Union, Valencia.

Comments: See H. kennerlyi.

Heterodon platirhinos Latreille 1801—Eastern Hognosed Snake

Status and Range: Present status unknown. Verified from New Mexico based on one specimen photographed in October 2009 in the Canadian River drainage basin near Logan, Quay Co.

Counties: Quay (NMDGF).

Hypsiglena chlorophaea Cope 1860—Desert Nightsnake Subspecies: *H. c. loreala* Tanner 1944.

Status and Range: Present status unknown. The species presumably has a limited range in extreme northwestern New Mexico where Degenhardt et al. (1996) identified one record (as *H. torquata*).

Counties: San Juan (inferred from Mulcahy 2008).

Comments: = *Hypsiglena torquata*, in part. Recognized as a distinct species by Mulcahy (2008).

Hypsiglena jani (Dugès 1866)—Chihuahuan Nightsnake Subspecies: *H. j. texana* (Stejneger 1893).

Status and Range: Apparently stable. Nearly statewide in distribution.

Counties: Bernalillo, Catron, Chaves, Cibola (Persons and Nowak 2005b), De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding (Hibbitts et al. 1999), Hidalgo, Lea, Lincoln, Luna, McKinley, Otero,

Quay, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia.

Comments: = Hypsiglena torquata jani. Taxonomy follows Mulcahy (2008); see also H. chlorophaea. An unnamed clade, presently included in H. jani, occurs in southwestern New Mexico (Mulcahy 2008).

Lampropeltis alterna (Brown 1901)—Gray-banded Kingsnake

Status and Range: NM Endangered. Vulnerable to over-collecting in its limited range in the Guadalupe Mountains and adjacent areas in southeastern New Mexico (NMDGF 2002, 2016).

Counties: Eddy, Otero (Latella et al. 2016).

Comments: Crother et al. (2012) did not recognize subspecies.

Lampropeltis californiae (Blainville 1835)—California Kingsnake

Status and Range: Current status unknown. Discovered in New Mexico in 1997. Apparently limited to San Juan River Valley in extreme northwestern part of state although potentially occurs in extreme southwestern New Mexico (Pyron and Burbrink 2009).

Counties: San Juan (Davenport et al. 1998).

Comments: = *Lampropeltis getula californiae*. Taxonomy follows Pyron and Burbrink (2009).

Lampropeltis gentilis (Baird and Girard 1853)—Western Milksnake

Status and Range: Apparently stable but potentially vulnerable to over-collecting (Fitzgerald et al. 2004). Widespread in the state, excluding the west-central area, although apparently disjunct in distribution.

Counties: Bernalillo, Chaves, Colfax, De Baca, Doña Ana, Eddy, Grant (Painter and Jennings 1996), Guadalupe (Hubbs 1998), Hidalgo (Holycross and Schwalbe 1995), Lea, Lincoln (Price and Johnson 1978b), Luna (Christman et al. 2007), Mora, Quay, Rio Arriba, Roosevelt, San Juan, San Miguel (Tanner and Loomis 1957), Sandoval, Santa Fe, Socorro, Torrance (Williamson 1972b), Union.

Comments: = *Lampropeltis triangulum*. Ruane et al. (2014) assigned all New Mexico populations to a monotypic *L. gentilis*.

Lampropeltis knoblochi Taylor 1940—Knobloch's Mountain Kingsnake

Status and Range: Apparently stable but potentially vulnerable to over-collecting (Fitzgerald et al. 2004; NMDGF, unpubl. data). Limited to mountains of southern Hidalgo Co.

Counties: Hidalgo.

Comments: = Lampropeltis pyromelana knoblochi. Recognized as distinct from L. pyromelana by Burbrink et al. (2011).

Lampropeltis pyromelana (Cope 1867 "1866")— Arizona Mountain Kingsnake, Pyro Mountain Kingsnake Subspecies: *L. p. pyromelana* (Cope 1867 "1866").

Status and Range: Apparently stable but potentially vulnerable to over-collecting (Fitzgerald et al. 2004; NMDGF, unpubl. data). Distributed in montane parts of the Gila and San Francisco river basins and also adjacent areas east of the Continental Divide.

Counties: Catron, Grant, Sierra (Price and Johnson 1978a).

Comments: See also L. knoblochi.

Lampropeltis splendida (Baird and Girard 1853)— Desert Kingsnake

Status and Range: Apparently stable. Potentially vulnerable to over-collecting (Fitzgerald et al. 2004). Widespread in New Mexico excluding much of northern and western parts of the state and locally common, especially in river valleys.

Counties: Bernalillo, Chaves, Cibola, Curry, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lea, Lincoln (Burkett and Painter 1998), Luna, Quay, Roosevelt, San Miguel, Santa Fe, Sierra, Socorro, Union, Valencia.

Comments: = Lampropeltis getula splendida.

Taxonomy follows Pyron and Burbrink (2009).

Relationship to L. holbrooki (unverified in New Mexico) in the eastern part of the state is unclear.

Nerodia erythrogaster (Forster 1771)—Plain-bellied Watersnake

Status and Range: NM Endangered. Vulnerable to loss or degradation of its limited aquatic habitat in the lower Pecos River basin. Discovered in 2011 at one site in the Canadian River basin where its status is unknown.

Counties: Eddy, Quay (Painter et al. 2011).

Comments: Subspecies were not recognized by Makowsky et al. (2010).

Opheodrys vernalis (Harlan 1827—Smooth Greensnake Status and Range: Apparently stable. Disjunct montane populations, from the San Juan and Sangre de Cristo mountains south to the Sacramento Mountains.

Counties: Colfax, Lincoln, Los Alamos, Mora, Otero, Rio Arriba, San Miguel, Sandoval, Santa Fe, Taos, Torrance (Stuart and Degenhardt 1990).

Comments: = *Liochlorophis vernalis*.

Pantherophis emoryi (Baird and Girard 1853)—Great Plains Ratsnake

Status and Range: Apparently stable. Widespread in New Mexico, excluding far western part of the state, although apparently in disjunct populations.

Counties: Bernalillo, Chaves, Cibola, Doña Ana, Eddy, Guadalupe, Los Alamos (MSB), Mora, Otero (Burkett et al. 1998), Quay, Roosevelt?, San Miguel, Sandoval, Santa Fe, Sierra (Gray and Painter 2008), Socorro (Anderson 1995), Taos, Union.

Comments: = *Elaphe guttata emoryi*. Taxonomy follows Burbrink (2002).

Pituophis catenifer (Blainville 1835)—Gophersnake, Bullsnake

Subspecies: *P. c. affinis* (Hallowell 1852); *P. c. deserticola* Stejneger 1893; *P. c. sayi* (Schlegel 1837).

Status and Range: Apparently stable. Common and statewide in distribution.

Counties: All counties except Mora.

Comments: = *Pituophis melanoleucus*. Taxonomy follows Reichling (1995) and Rodriguez-Robles and de Jésus-Escobar (2000).

Rhinocheilus lecontei Baird and Girard 1853—Longnosed Snake

Status and Range: Apparently stable. Southern New Mexico north to Sandoval and Harding counties.

Counties: Bernalillo, Chaves, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln (Burkett and Black 2000f), Luna, Otero, Quay, Roosevelt, San Miguel, Sandoval, Sierra, Socorro, Valencia.

Salvadora grahamiae Baird and Girard 1853—Eastern Patch-nosed Snake

Subspecies: S. g. grahamiae Baird and Girard 1853. Status and Range: Apparently stable. Widely distributed in New Mexico excluding the northwestern part of the state and the eastern plains.

Counties: Bernalillo, Catron, Chaves, Cibola, Doña Ana, Eddy, Grant, Guadalupe, Harding (Painter and Sias 2000), Hidalgo, Lincoln, Luna, Otero, Rio Arriba, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance (Christman et al. 1998), Union, Valencia (Christman et al. 1998).

Salvadora hexalepis (Cope 1866)—Western Patchnosed Snake

Subspecies: S. h. deserticola Schmidt 1940. See comments.

Status and Range: Apparently stable. Mainly southwestern quadrant of the state, north to Socorro Co.; also records as far east as Eddy Co.

Counties: Doña Ana, Eddy, Grant, Hidalgo, Luna, Otero (Burkett 2003), Sierra, Socorro (Jameson 1957a).

Comments: = Salvadora deserticola. The status of deserticola as a distinct species or subspecies of S. hexalepis is unresolved.

Senticolis triaspis (Cope 1866)—Green Ratsnake

Subspecies: S. t. intermedia (Boettger 1883).

Status and Range: NM Threatened. Rarely encountered; status unknown. Recorded only from the Peloncillo and adjacent Guadalupe mountains in extreme southwestern part of the state.

Counties: Hidalgo.

Sonora semiannulata Baird and Girard 1853—Western Groundsnake

Subspecies: S. s. semiannulata Baird and Girard 1853.

Status and Range: Apparently stable. Eastern and southern parts of the state.

Counties: Chaves, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Miguel, Sierra, Socorro, Union.

Tantilla hobartsmithi Taylor 1937—Smith's Black-headed Snake

Status and Range: Apparently stable. Southern onethird of New Mexico, with most records from Eddy Co.

Counties: Doña Ana, Eddy, Grant, Hidalgo, Lea, Otero.

Tantilla nigriceps Kennicott 1860—Plains Black-headed Snake

Status and Range: Apparently stable. Eastern and southern New Mexico; north in Rio Grande basin to Sandoval Co.

Counties: Bernalillo, Chaves, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding (Giermakowski and Bauernfeind 2016), Hidalgo, Lea, Lincoln, Luna, Otero, Quay, Roosevelt, San Miguel, Sandoval, Sierra, Socorro, Union, Valencia.

Tantilla yaquia Smith 1942—Yaqui Black-headed Snake Status and Range: Status unknown. Documented in New Mexico only from the Peloncillo and Guadalupe mountains in extreme southwestern part of the state.

Counties: Hidalgo (Wilcox et al. 2000).

Thamnophis cyrtopsis (Kennicott 1860)—Black-necked Gartersnake

Subspecies: T. c. cyrtopsis (Kennicott 1860).

Status and Range: Apparently stable. Widespread and common throughout much of New Mexico, excluding the eastern plains.

Counties: Bernalillo, Catron, Chaves, Cibola, Colfax, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lincoln, Luna, Mora, Otero, Quay, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Sierra (Price 1979), Socorro, Taos, Torrance, Union, Valencia.

Thamnophis elegans (Baird and Girard 1853)— Terrestrial Gartersnake

Subspecies: T. e. vagrans (Baird and Girard 1853).

Status and Range: Apparently stable. Widespread and common, excluding the southernmost and easternmost parts of the state.

Counties: Bernalillo, Catron, Chaves, Cibola, Colfax, Grant, Guadalupe, Harding, Lincoln, Los Alamos, McKinley, Mora, Otero, Rio Arriba, San Juan, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, Valencia.

Thamnophis eques (Reuss 1834)—Mexican Gartersnake Subspecies: *T. e. megalops* (Kennicott 1860).

Status and Range: US Threatened (*T. e. megalops*) with proposed critical habitat; NM Endangered. Habitat loss and non-native species are of primary concern (USFWS 2014). Limited to Mule Creek (San Francisco River drainage) and a few recently-documented locations on the Gila River where it is rarely encountered.

Counties: Grant, Hidalgo.

Thamnophis marcianus (Baird and Girard 1853)—Checkered Gartersnake

Subspecies: *T. m. marcianus* (Baird and Girard 1853). Status and Range: Apparently stable. Widespread and common in eastern and southern New Mexico; north in Rio Grande basin to Santa Fe Co.

Counties: Bernalillo, Catron, Chaves, Colfax, Curry, De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln (Burkett and Black 2003), Luna, Otero, Quay, Roosevelt, San Miguel, Santa Fe, Sierra, Socorro, Valencia.

Thamnophis proximus (Say 1823)—Western Ribbonsnake

Subspecies: T. p. diabolicus Rossman 1963.

Status and Range: NM Threatened. Disjunct distribution in the lower Pecos, Canadian, and Dry Cimarron river drainages where small populations are possibly vulnerable to extirpation (NMDGF 2016).

Counties: Chaves, Eddy, Harding, Mora, Union.

Thamnophis radix (Baird and Girard 1853)—Plains Gartersnake

Status and Range: Apparently stable. Limited in New Mexico to the northeastern quadrant of the state. Counties: Colfax, Harding, Mora, San Miguel, Union.

Thamnophis rufipunctatus (Cope 1875)—Narrowheaded Gartersnake

Status and Range: US Threatened with proposed critical habitat; NM Threatened with state recovery plan (NMDGF 2007). Habitat loss, non-native species, the effects of wildfire, and potentially disease are all issues of concern (Hibbitts et al. 2009; USFWS 2014). Limited to the Gila and San Francisco river drainages.

Counties: Catron, Grant, Hidalgo.

Comments: Wood et al. (2011) recognized three separate species within the *T. rufipunctatus* complex, including a monotypic *T. rufipunctatus* in Arizona and New Mexico.

Thamnophis sirtalis (Linnaeus 1758)—Common Gartersnake

Subspecies: T. s. dorsalis (Baird and Girard 1853).

Status and Range: Apparently stable in the Rio Grande Valley; vulnerable and possibly declining in its limited range in the Pecos River Valley.

Counties: Bernalillo, Chaves (Painter et al. 1998), Doña Ana, Rio Arriba, Sandoval, Santa Fe, Sierra, Socorro, Valencia.

Trimorphodon lambda Cope 1886—Sonoran Lyresnake Status and Range: Apparently stable. Extreme southwestern New Mexico, north to Catron Co. Range limits in relation to *T. vilkinosonii* are unclear.

Counties: Catron (Gehlbach 1958), Grant (Sias and Brand 2002), Hidalgo (Williamson 1972c).

Comments: = *Trimorphodon biscutatus lambda*. Taxonomy follows Devitt et al. (2008), who noted hybridization with *T. vilkinsonii* in Grant and Hidalgo counties.

Trimorphodon vilkinsonii Cope 1886—Texas Lyresnake Status and Range: Apparently stable. South-central and southwestern New Mexico, mainly east of the Continental Divide.

Counties: Doña Ana (Medica 1962), Grant, Hidalgo (Price 2015), Luna (Jones and Findley 1963; Vargas 2015), Sierra.

Comments: = *Trimorphodon biscutatus vilkinsonii*. Taxonomy follows LaDuc and Johnson (2003). See comments under *T. lambda*.

Tropidoclonion lineatum (Hallowell 1856)—Lined Snake

Status and Range: Apparently stable; locally common in some areas. Widespread and apparently disjunct in its range throughout much of New Mexico east of the Rio Grande.

Counties: Bernalillo (Williamson and Scott 1982), Chaves, Colfax, Curry (Jones and Painter 2005), Doña Ana?, Eddy (Newsom 2013), Guadalupe (Maslin and Koster 1954), Lincoln, Mora (Maslin and Koster 1954), Otero (Murray et al. 2010), Quay, San Miguel, Santa Fe, Torrance (Williamson and Degenhardt 1984), Union.

ELAPIDAE—Cobras, Kraits, Coralsnakes and Allies (one species)

Micruroides euryxanthus (Kennicott 1860)—Sonoran Coralsnake

Subspecies: M. e. euryxanthus (Kennicott 1860).

Status and Range: Apparently stable but infrequently encountered. Southwestern New Mexico from the Gila and San Francisco river basins south to Hidalgo Co.

Counties: Catron, Grant, Hidalgo.

VIPERIDAE—Vipers and Pit Vipers (nine species)

Crotalus atrox Baird and Girard 1853—Western Diamond-backed Rattlesnake

Status and Range: Apparently stable but subject to unregulated commercial harvest for meat and skins and vulnerable to collection and persecution at den sites (Fitzgerald and Painter 2000; NMDGF, unpubl. data). Widely distributed except for northern part of the state.

Counties: Bernalillo, Chaves, Cibola, Curry (Hornung 2015), De Baca, Doña Ana, Eddy, Grant, Guadalupe, Harding, Hidalgo, Lea, Lincoln, Los Alamos (Hathcock and Giermakowski 2017), Luna, McKinley, Mora, Otero, Quay, Rio Arriba?, Roosevelt, San Miguel, Sandoval, Santa Fe, Sierra, Socorro, Torrance, Union (Painter 1998), Valencia.

Crotalus cerberus (Coues 1875)—Arizona Black Rattlesnake

Status and Range: Current status unknown. Endemic to the Mogollon Plateau in Arizona and New Mexico where it is potentially vulnerable to overcollection due to its limited range.

Counties: Catron, Grant (Christman et al. 2000).

Comments: = Crotalus viridis cerberus. Formerly included in *C. oreganus* (Ashton and de Queiroz 2001). Recognized as a distinct species by Douglas et al. (2002) and Davis et al. (2016).

Crotalus lepidus (Kennicott 1861)—Rock Rattlesnake Subspecies: C. l. klauberi Gloyd 1936; C. l. lepidus (Kennicott 1861).

Status and Range: NM Threatened (*C. l. lepidus*). The nominal subspecies is limited to the Guadalupe Mountains in southeastern part of state. *C. l. klauberi* is more widespread in mountains west to Arizona and north to Socorro Co. Both subspecies are potentially vulnerable to over-collection (NMDGF 2016).

Counties: Catron, Doña Ana, Eddy, Grant, Hidalgo, Luna, Otero, Sierra, Socorro (Black and Burkett 2003).

Crotalus molossus Baird and Girard 1853—Western Black-tailed Rattlesnake

Subspecies: C. m. molossus Baird and Girard 1853.

Status and Range: Apparently stable. Southwestern part of state, west of the Continental Divide (Anderson and Greenbaum 2012).

Counties: Catron, Grant, Hidalgo.

Comments: See comments under C. ornatus.

Crotalus ornatus Hallowell 1854—Eastern Black-tailed Rattlesnake

Status and Range: Apparently stable. Distributed east of the Continental Divide in southern New Mexico and north to Sandoval Co.

Counties: Bernalillo, Catron?, Cibola, Doña Ana, Eddy, Grant?, Lincoln, Luna, Otero, Sandoval, Sierra, Socorro, Torrance (Christman and Painter 1998), Valencia (Murray et al. 2011a).

Comments: = Crotalus molossus, in part. Recognition of C. ornatus as distinct from C. molossus follows Anderson and Greenbaum (2012). Range limits of the two species in southwestern New Mexico are unclear but are possibly defined by the Continental Divide.

Crotalus scutulatus (Kennicott 1861)—Mohave Rattlesnake

Subspecies: C. s. scutulatus (Kennicott 1861).

Status and Range: Apparently stable. Limited in New Mexico to western Hidalgo Co. and southern Otero Co.

Counties: Hidalgo, Otero.

Crotalus viridis (Rafinesque 1818)—Prairie RattlesnakeSubspecies: C. v. viridis (Rafinesque 1818). See comments.

Status and Range: Apparently stable. Statewide in distribution and common.

Counties: All counties including Harding (Latella and Snell 2015).

Comments: See also *C. cerberus*. Recognized as polytypic by Davis et al. (2016).

Crotalus willardi Meek 1906 "1905"—Ridge-nosed Rattlesnake

Subspecies: *C. w. obscurus* Harris and Simmons 1976.

Status and Range: US Threatened with critical habitat (for subspecies *C. w. obscurus*); NM Endangered (for subspecies *C. w. obscurus*). A federal recovery plan has been prepared (Baltosser and Hubbard 1985). Small populations in the Animas and (locally) Peloncillo mountains are potentially

vulnerable to over-collecting and catastrophic wildfires.

Counties: Hidalgo.

Sistrurus tergeminus (Say 1823)—Western Massasauga Subspecies: S. t. edwardsii (Baird and Girard, 1853). See comments.

Status and Range: Present status unknown. The subspecies *S. t. edwardsii* is presently being reviewed by USFWS for possible protection under the US Endangered Species Act. Scattered records from the southern half of the state (excluding the Mogollon Plateau and Gila River basin), north to Santa Fe Co.

Counties: Bernalillo, Chaves, De Baca (Jones and Stuart 2004), Doña Ana, Eddy, Guadalupe, Hidalgo (Holycross and Rubio 2000), Lea, Lincoln, Luna, Otero (Stuart and Brown 1996), Roosevelt, Santa Fe (Stuart and Roberts 2008), Sierra, Socorro, Torrance (Stuart and Brown 1996), Valencia.

Comments: = Sistrurus catenatus. Use of S. tergeminus for western U.S. populations follows Kubatko et al. (2011) and Ryberg et al. (2015). Recognition of subspecies was questioned by Ryberg et al. (2015).

SPECIES INTRODUCED BUT NOT ESTABLISHED IN NEW MEXICO

Included here are non-native species, all of which are turtles, that have been detected in New Mexico but are not known to be established (breeding) in the state and for which there is a published record. Many additional exotic species are known or likely to be detected in the wild in the state due to the escape or release of pets.

Gopherus morafkai Murphy, Berry, Edwards, Leviton, Lathrop, and Riedle 2011—Sonoran Desert Tortoise. This species, or possibly *G. agassizii* (Cooper 1861), has been occasionally documented in eastern Cochise Co., Arizona, and adjacent Hidalgo Co., New Mexico, although it is not known to be native or established in this area (Degenhardt et al. 1996; Lee 2008). Released or escaped captives of *Gopherus* spp. also are found occasionally elsewhere in the state (NMDGF, unpubl. data).

Malayemys subtrijuga (Schlegel and Müller 1845)—Mekong Snail-eating Turtle. One specimen, presumably a released pet, was captured at Elephant Butte Dam, Sierra Co., in 1968 (Price and Johnson 1978c).

Graptemys pseudogeographica (Gray 1831)—False Map Turtle. Two specimens, presumably released pets, were captured at Elephant Butte Reservoir, Sierra Co., in 2011 (Painter et al. 2012).

Terrapene carolina (Linnaeus 1758)—Eastern Box Turtle. This species is commonly sold in the pet trade, especially *T. c. triunguis* (Agassiz 1857); released or escaped individuals are occasionally found in urban areas of New Mexico (Degenhardt et al. 1996; Stuart 2000a).

SPECIES OF POTENTIAL OCCURRENCE IN NEW MEXICO

Degenhardt et al. (1996) identified several taxa that potentially occur naturally in New Mexico based on known populations in adjacent states and near the New Mexico state line; three of those (*Pseudacris clarkii*, *Heterodon platirhinos*, and *Lampropeltis californiae* [formerly *L. getula californiae*]) have since been confirmed in New Mexico. We add two other species (*Aspidoscelis neavesi*, *Lampropeltis holbrooki*) that might occur naturally in the state and one (*Gopherus flavomarginatus*) proposed for introduction.

Ambystoma rosaceum Taylor 1941—Rosy Salamander. Documented from northeastern Sonora, Mexico, near the New Mexico state line and thus possibly occurs in southern Hidalgo Co. (Degenhardt et al. 1996; Lemos Espinal et al. 2015).

Spea intermontana (Cope 1883)—Great Basin Spadefoot. This species occurs in southeastern Utah and possibly ranges into northwestern New Mexico (Degenhardt et al. 1996).

Gopherus flavomarginatus (Legler 1959)—Bolson Tortoise. Documented from the Late Pleistocene of New Mexico, a captive population of this Mexican species is presently being maintained and has successfully bred in outdoor facilities in southern New Mexico. The species has been proposed for introduction in the state as a refugial population (Truett and Phillips 2009).

Sceloporus lemosespinali Lara-Góngora 2004—Lemos-Espinal's Spiny Lizard. This species, endemic to Mexico, was formerly included in Sceloporus grammicus Wiegmann 1828. It is documented from northeastern Sonora, Mexico, near the New Mexico state line and possibly occurs in southern Hidalgo Co. (Degenhardt et al. 1996; Lemos Espinal et al. 2015).

Aspidoscelis neavesi Cole, Taylor, Baumann, and Baumann 2014—Neaves' Whiptail. This parthenogenetic species was created in the laboratory through hybridization of specimens of *A. exsanguis* and *A. inornata* collected from the same location in Otero Co. Possible natural examples of this species might occur in the wild in New Mexico (Cole et al. 2014).

Lampropeltis holbrooki Stejneger 1903—Speckled Kingsnake. Degenhardt et al. (1996:280) noted that specimens of Lampropeltis getula splendida (as then recognized) from eastern New Mexico "show influence from L. g. holbrooki." However, no specimens from this part of the state have been definitely referred to L. holbrooki. Pyron and Burbrink (2009) and Powell et al. (2016) mapped the distribution of L. holbrooki to include eastern New Mexico although the former stated that the precise western extent of the range is unclear.

Tantilla wilcoxi Stejneger 1903—Chihuahuan Black-headed Snake. The species is documented from northeastern Sonora, Mexico, near the New Mexico state line and in southern Arizona and possibly occurs in southern Hidalgo Co. (Degenhardt et al. 1996; Lemos Espinal et al. 2015).

Crotalus tigris Kennicott in Baird 1859—Tiger Rattlesnake. The species is known from eastern Cochise Co., Arizona, near the New Mexico state line and possibly occurs in adjacent Hidalgo Co. (Degenhardt et al. 1996; Holycross 1998).

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CHARLIE PAINTER was the Herpetologist for the New Mexico Department of Game and Fish in Santa Fe from 1985 to 2013 and a Curatorial Associate in the Division of Amphibians and Reptiles, Museum of Southwestern Biology, University of New Mexico, Albuquerque. Charlie devoted his life to the study and conservation of herpetofauna. He earned a M.S. degree from Northeast Louisiana University (now University of Louisiana at Monroe) where he surveyed the amphibians and reptiles of Colima, Mexico. A major interest of his was the effect of commercial harvesting on herpetofauna, especially the impact of rattlesnake roundups on the Western Diamond-backed Rattlesnake (*Crotalus atrox*) in New Mexico and Texas. (Photographed by Lori King Painter).



JIM STUART is a Wildlife Biologist and the Non-game Mammal Specialist for the New Mexico Department of Game and Fish in Santa Fe. He earned B.S. and M.S. degrees from the University of New Mexico in Albuquerque and was previously employed as a Biologist for the U.S. Fish and Wildlife Service, U.S. Geological Survey, and the U.S. Army Corps of Engineers. He has had a life-long interest in the fauna of aquatic and riparian ecosystems in the arid Southwest. His research interests include the distribution, natural history, and conservation of mammals and herpetofauna of New Mexico. (Photographed by Jennifer Miyashiro).



J. Tomasz Giermakowski is the Senior Collection Manager of amphibians and reptiles in the Museum of Southwestern Biology at the University of New Mexico in Albuquerque. Tom received his B.Sc. in Wildlife Biology from the University of Montana, Missoula, Montana, in 1999 and his Ph.D. from the University of New Mexico in 2010. His research interests are focused on current and future distributions of amphibians and reptiles in the American Southwest. His most recent studies involve surveys of gartersnakes (*Thamnophis* spp.), Arizona Toad (*Anaxyrus microscaphus*), and Gila Monster (*Heloderma suspectum*) in New Mexico. (Photographed by Valeria Rios).



LELAND "LEE" PIERCE is the Non-game Amphibian and Reptile Biologist in the New Mexico Department of Game and Fish and has also been a Recovery Coordinator and GIS Coordinator for the Department. In addition, Leland has served as President of both the New Mexico State Chapter and the Southwest Section of The Wildlife Society. (Photographed by The Wildlife Society).