Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

The herpetofauna of Sonora, Mexico, with comparisons to adjoining states

Erik F. Enderson [1]
Adrian Quijada-Mascareñas [2]
Dale S. Turner [3]
Philip C. Rosen [2]
Robert L. Bezy [4]

[1] *Drylands Institute.Tucson, AZ 85719, USA. E-mail:* erikenderson@msn.com

[2] *University of Arizona, School of Natural Resources and the Environment. Tucson AZ 85721, USA*

[3] *The Nature Conservancy. Tucson, AZ 85719, USA.*

[4] *Natural History Museum of Los Angeles County. Los Angeles, CA 90007, USA.*

Abstract
Situated in the topographically complex transition between the Neotropics and the temperate biomes of North America, the state of Sonora, Mexico, has an extraordinarily diverse herpetofauna. Surprisingly little research has been conducted on the state's amphibians and reptiles and many systematic and biogeographic questions remain unanswered. To facilitate future research, we provide a checklist of Sonora's herpetofauna, documenting species presence based on museum specimens, our fieldwork, and published research. Sonora's herpetofauna is placed in a regional biogeographic perspective via a checklist for the six adjoining states together with faunal analyses. A total of 402 species of amphibians and reptiles are recorded from these seven states. Sonora has the greatest species richness (187 species), followed by Chihuahua (169 species), and Sinaloa (146 species). Sonora's herpetofauna is most similar to that of Chihuahua, with which it shares a long border. Eleven biogeographic affinity-based faunal groups are recognized. Of these, three are dominant in Sonora: a core group classified as "Sonoran" demonstrates strong affinity to Sonoran Desertscrub and Sinaloan Thornscrub communities; a Tropical group - with many species reaching their northern distributional limits in the state; and a Madrean group consisting largely of montane species. Our state-level faunal analysis provides some evidence of peninsular depauperization of the herpetofauna on the Baja California peninsula due in part to the small number of Neotropical species present in Baja California Sur. Our faunal analysis points toward distinctive mainland and peninsular Sonoran Desert herpetofaunas centered on Sonora and the Baja California Peninsula, respectively, each with about 50 non-insular species, and each with species-level endemism nearing 50%.

Introduction
Sonora is the second-largest state in Mexico with a mainland territory spanning an area of 185,430 km^2 (Felger et al. 2001) between latitudes 26°16'49" N and 31°19'8" N (Figure 1; Table 1). Chihuahua (Mexico's largest state), the continental divide, and the Sierra Madre Occidental are situated near the eastern border. The Gulf of California and Sonora's 14 islands (Appendix 1) lie westward and comprise the state's western terminus.

Arizona and New Mexico border on the north, while Sinaloa lies to the south. The Tropic of Cancer crosses the 108th meridian ca. 318 km south of the Sonoran border near the eastern tip of Baja California Sur.

Van Denburgh (1922) and Slevin (1928) provided the first published lists of Sonora's herpetofauna. Legendary herpetologist Edward H. Taylor (1938) was the first to summarize the amphibians and reptiles. The best-known treatment of the herpetology of Sonora is that of Charles Bogert and James Oliver (1945). The most recent summary of Sonora's herpetofauna comes from Rorabaugh (2008). The present paper differs from Rorabaugh in that it (1) is regional in scope covering Sonora and all adjoining states; (2) uses the revised nomenclature published in Crother (2008) and Liner and Casas-Andreu (2008); (3) is inclusive of marine species and insular endemics; and (4) presents detailed discussion of species richness, faunal similarity, endemism and distributional limits among the bordering states in Mexico and U.S.

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

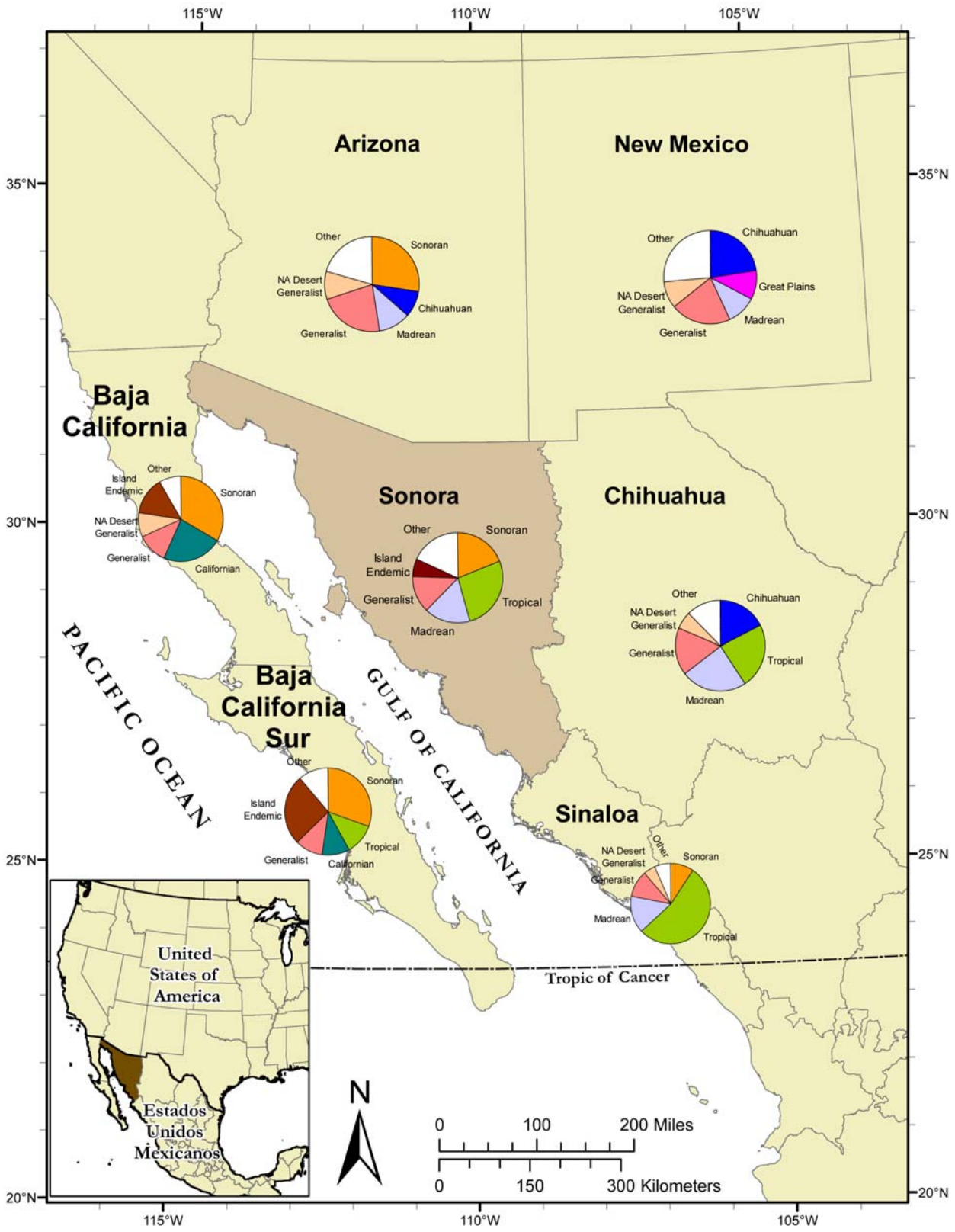

Figure 1. Map of the study area. Pie charts represent biogeographic affinities of the herpetofauna for each state, as explained in text.

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

Table 1. Areas of the seven states included in this treatment of the regional herpetofauna.

State	Land Surface Area (km^2)	% TOTAL Study Area
Arizona	295,254	23.8
BC	71,576	5.8
BCS	73,475	5.9
Chihuahua	244,938	19.7
New Mexico	315,194	25.4
Sonora	185,430	14.9
Sinaloa	58,238	4.7
TOTAL	1,244,105	

Materials and Methods

Scientific and standard English names used in this publication are based on the taxonomic lists published by Crother (2008) and Liner and Casas-Andreu (2008). Where these two checklists differed (e.g., in the recognition of *Syrrhophus*, *Sceloporus vandenburgianus*, and *Holbrookia approximans*) we followed the arrangement in the former. Taxa not included in the above lists, but added here are *Sceloporus albiventris* (Smith 1939), *Lampropeltis webbi* (Bryson et al. 2005), and *Tropidodipsas repleta* (Smith et al. 2005), as are species recognized in a recent revision of the *Trimorphodon biscutatus* complex (Devitt et al. 2008) and the *Xantusia vigilis* complex (Bezy et al. 2008), both appearing subsequent to the above two checklists.

Works consulted for construction of the initial state lists include: Grismer (2002a) - *Baja California* and *Baja California Sur*; Lowe (1964), Lowe et al. (1986), and Brennan and Holycross (2006) - *Arizona*; Degenhardt et al. (1996) - *New Mexico*; Bogert and Oliver (1945) and Schwalbe and Lowe (2000) - *Sonora*; Hardy and McDiarmid (1969) - *Sinaloa*; and Tanner (1985; 1987; 1989a) and Lemos Espinal and Smith (2007) - *Chihuahua*. Species presence and distribution in Sonora were verified by examination of preserved specimens and a review of published records.

It has been nearly four decades since the publication of the seminal work on the amphibians and reptiles of Sinaloa by Hardy and McDiarmid (1969), and we made a concerted effort to update the herpetofaunal list for this state, including a complete search of distributional records in Herpetological Review and an examination of all relevant species accounts in the Catalogue of American Amphibians and Reptiles. Other sources used to update the Sinaloa checklist include: McDiarmid and Bezy (1971), Frost and Bagnara (1974), McDiarmid et al. (1976), Smith and Smith (1976), Frost (1979), Robinson (1979), Berry and Legler (1980), Hillis et al. (1984), Webb (1984); Flores-Villela (1993), Good (1994), Seidel (2002); Flores-Villela and Canseco-Marquez (2004); Campbell and Lamar (2004), Bryson et al. (2005), Devitt et al. (2008), and Mulcahy (2008) .

We obtained data for Sonoran specimens of amphibians and reptiles in the following collections from curatorial staff (see acknowledgements) or via the HerpNET data portal (http://www.herpnet.org) on 13 May 2006 – 05 May 2007: California Academy of Sciences, Cornell University Museum of Vertebrates, Harvard Museum of Comparative Zoology, University of Kansas, Museum of Vertebrate Zoology, *Museo de Zoologia, Facultad de Ciencias* UNAM, Royal Ontario Museum, Sam Noble Oklahoma Museum of Natural History, San Diego Natural History Museum, Sternberg Museum of Natural History, University of Texas El Paso, and *Universidad Nacional Autonoma de México Instituto de Biología*.

We assigned each species to one of 11 biogeographic affinities (Table 2) based on the

occurrence of the center and majority of its distribution within a particular biotic region. Biotic communities follow Brown et al. (2007), except in the Sonoran and Chihuahuan regions where we include adjoining or contained semi-desert grasslands, chaparral, and thornscrub. We note that although Sinaloan Thornscrub (86 % of which occurs in Sonora) is in some respects transitional between Sonoran Desertscrub and Sinaloan Dry Deciduous Forest, most of the characteristically Sonoran species occur in it. To avoid complicating the analysis, therefore, we have retained such species as "Sonoran".

Rosen (2007) found little evidence for a Mohave Desert herpetofauna distinct from that of the Lower Colorado River Valley subdivision of the Sonoran Desert, and for simplicity, we have included species with Mohavean affinities as "Sonoran" (McLaughlin 1992). Species that do not demonstrate a particular biotic region association and occur over a wide distributional range are labeled "generalist." Species that occur widely in two or more desert regions (particularly in both the Chihuahuan and Sonoran deserts) are classified as "North American Desert generalist".

Species that enter the region from the east, with the great bulk of their ranges in the eastern U.S., are classified as "eastern temperate" without further specification. Although these affinity definitions and assignments are not quantitative, we found them to be a useful tool for characterizing the herpetofauna. To minimize such problems, some species that could have been designated as North American Desert generalist (such as *Sonora semiannulata*) or Madrean (such as *Hyla arenicolor*), which utilize divergent environments (such as woodland and forest, and semi-desert grassland and desertscrub, in these two examples) were entered in the "Generalist" category (Table 2).

We used Jaccard's cluster analysis to measure biotic relationships per state and faunal similarities between Sonora and bordering states. Clustering procedures are based on the nearest-neighbor criteria. Principal Coordinate Analysis (PCO) of biotic affinity per state (as defined above) was performed using the Gower General Similarity Coefficient with data expressed as number of species per biotic affinity. All the analyses were carried out using the program MVSP Version 3.1 (Kovach 1999).

Table 2. Biogeographic affinities of herpetofauna in Sonora and adjoining states. Tabled values are the percentage of species in each state in the affinity category. Affinity categories are defined and described in the Methods section.

Biogeographic Affinity	ARI	BC	BCS	CHI	NME	SIN	SON	TOTAL
Californian	1.5%	25.9%	9.9%	0.0%	0.8%	0.0%	0.0%	7.2%
Chihuahuan	8.9%	0.0%	0.0%	17.8%	22.7%	0.7%	4.8%	9.2%
Eastern Temperate	2.2%	0.0%	0.0%	2.4%	9.4%	0.7%	0.5%	3.2%
Generalist	22.2%	11.1%	8.8%	16.6%	21.1%	11.0%	13.4%	8.2%
Great Basin	5.9%	1.9%	0.0%	1.2%	5.5%	0.0%	0.0%	2.5%
Great Plains	6.7%	0.9%	0.0%	4.7%	10.2%	0.7%	2.7%	3.2%
Madrean	11.1%	0.0%	0.0%	23.7%	10.2%	15.1%	16.6%	11.6%
Marine	0.0%	5.6%	6.6%	0.0%	0.0%	4.8%	3.7%	1.7%
NA Desert Generalist	9.6%	9.3%	4.4%	6.5%	9.4%	4.8%	6.4%	3.2%
Sonoran	27.4%	45.4%	58.2%	4.1%	8.6%	8.2%	25.6%	27. 9%
Tropical	4.4%	0.0%	12.1%	23.1%	2.3%	54.1%	26.2%	22.1%
TOTAL	135	108	91	169	128	146	187	402

Results and Discussion

Species richness

A total of 402 native species of amphibians and reptiles arrayed in 36 families are found in the region (Tables 2, 3; Appendix 2); six additional species are present but exotic to the area. Overall native herpetofaunal diversity (Table 3) is highest in Sonora (187 species), Chihuahua (169 species), and Sinaloa (146 species). Sonora has the highest number of species of turtles (15), lizards (64), and snakes (72), and the second highest number of frogs (32 in Sonora, 35 in Sinaloa) and salamanders (3 in Sonora, 4 in Chihuahua).

Sinaloa lacks a recent treatment of the herpetofauna, and we suspect it supports greater diversity than we indicate; however, it is likely less than that of Sonora and Chihuahua due to its lower physiographic diversity and smaller area (Table 1). Recent analyses that were restricted to Mexico's Pacific lowlands and interior valleys found that the tropical dry forests of Sinaloa had higher diversity than those of Sonora, consistent with a general and expected decline in species richness from south to north (Garcia 2006, Garcia et al. 2007).

Total species richness continues to diminish to the north, away from the high diversity of the tropics (Table 3; Figure 2), dropping to 135 and 128 species in the well-studied faunas of Arizona and New Mexico. It is lowest on the Baja California peninsula: 108 in Baja California and 91 in Baja California Sur. Excluding insular endemics (Table 4) reduces these values to 93 and 69, respectively.

There is a correlation between number of species and state area (Figure 2), but species richness in both Baja California and Baja California Sur are substantially lower than expected on the basis of area. This may be explained by peninsular species depauperization, which consists of a decrease in species diversity from the base to the tip due the spatial effects of peninsulas on immigration and extinction (Taylor and Regal 1978; Rosenzweig 1995). Application of this model to the Baja California peninsula has been contentious (Taylor and Regal 1978, Seib 1980, Busak and Hedges 1984, Wiggins 1999). Such disagreement is not surprising considering the peninsula's complex geological history (involving rifting from the mainland and hypothesized trans-peninsular seaways; summaries in Grismer 1994, Riddle and Honeycutt 1990, Riddle et al. 2000, Murphy and Aguirre Leon 2002, Riddle and Hafner 2006, Devitt et al. 2008, Mulcahy 2009) and its ecological and topographic diversity (e.g., the Sierra San Pedro Martir and Mediterranean climate in the north and San Lucan Dry Deciduous Forest and Sierra La Laguna on the cape).

Table 3. Total number of amphibian and reptile species in each state arranged according to taxonomic order.

Order	ARI	BC	BCS	CHI	NME	SIN	SON
Caudata	1	3	0	4	3	1	3
Anura	24	11	3	30	22	35	32
Crocodilia	0	0	0	0	0	1	1
Testudinata	6	6	7	13	10	12	15
Sauria	52	49	49	51	44	35	64
Serpentes	52	39	32	71	49	62	72
TOTAL	135	108	91	169	128	146	187

Table 4. Insular and non-insular endemic amphibians and reptiles by state.

	ARI	BC	BCS	CHI	NME	SIN	SON	TOTAL
Insular	0	15	22	0	0	0	11	48
Non-insular	4	4	14	1	3	1	5	29
TOTAL	4	19	34	1	3	1	15	77

LISTS OF SPECIES

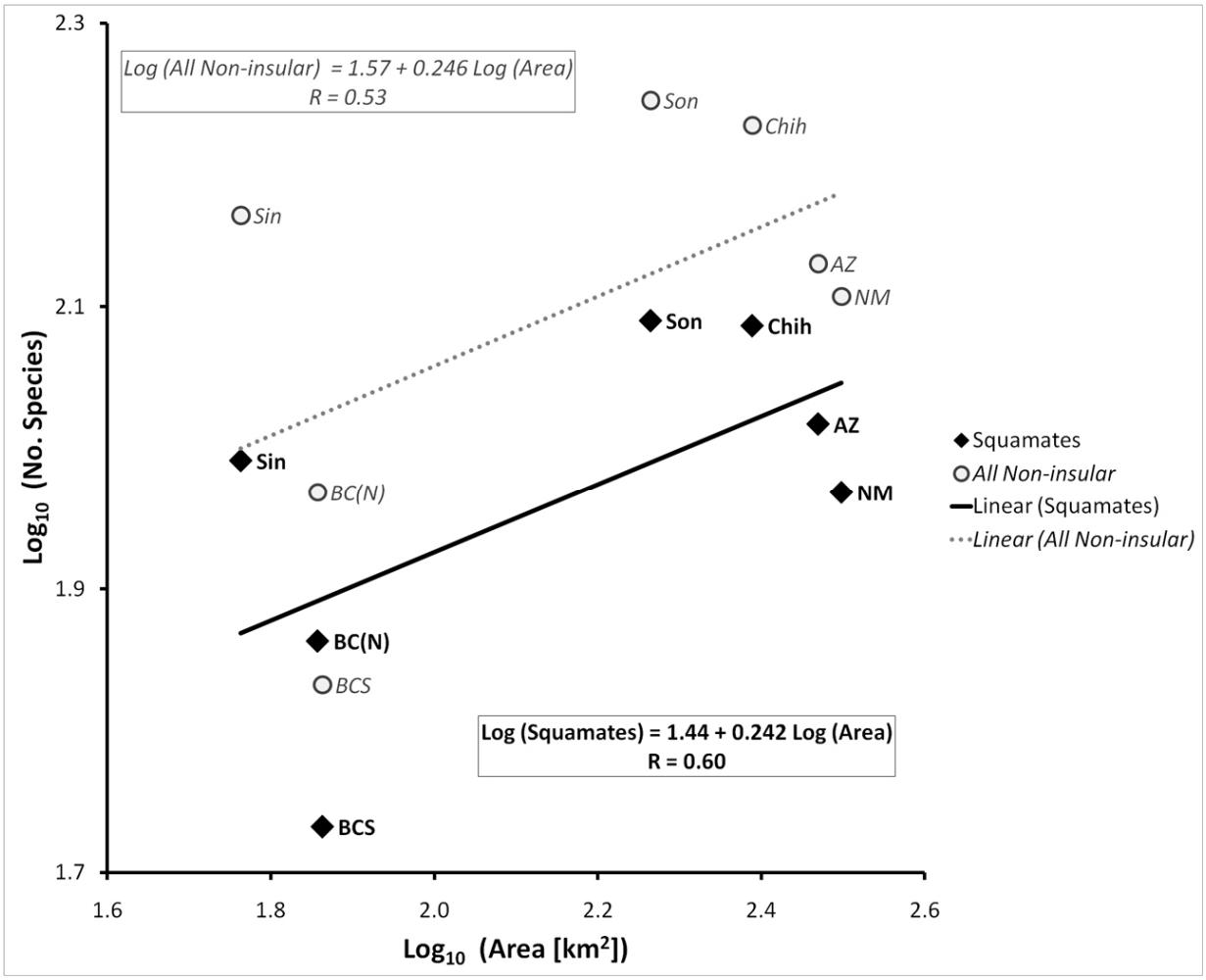

Figure 2. Logarithmic regression analysis of species/area relationship. Solid diamonds and continuous regression line represent all species of amphibians and reptiles; hollow dots and dotted regression line represent squamate species numbers. Species numbers do not include island endemics.

However, when considering only squamate reptiles (as in Seib 1980), we found evidence supporting a peninsular depauperization effect (Figure 2). This effect is almost entirely accounted for by the scarcity of tropical species (11 mostly endemic vicariant species in Baja California Sur), compared to 28 Californian-affiliated species in Baja California and 39 and 49 tropical species in Chihuahua and Sonora, respectively. The near absence of Neotropical species on the Baja California peninsula could reflect decreased migration from the mainland due to the arid conditions at the base of the peninsula and the large over-water dispersal distance. It may also reflect the peninsula's modest area of tropical vegetation and species extinction since separation from the mainland. These latter two factors, rather than the distance from source populations, most likely account for the apparent effect seen in Figure 2. However, considering the relatively low number of Sonoran-affiliated species (37 species in 4.4 million ha of Sonoran desertscrub for Baja California; 31 species in about 5.5 million ha of Sonoran desertscrub in Baja California Sur), and that Baja California Sur is at a lower latitude and would be expected to have higher species diversity for that reason, we cannot exclude the possibility of some form of peninsula depauperization. This is surprising in view of the extensive evolution of vicariant endemic species in Baja California Sur, and suggests further analysis at varied scales is required.

Faunal similarities

Similarity indices based on species occurrences indicate Sonora is closest to its adjoining continental states, particularly to Chihuahua. However, it should be noted that the phenograms (Figures 3-7) are visual representations of descriptive biogeography and do not necessarily reflect historic biogeographical processess that are better inferred using reconstruction of phylogenies for species endemic to the sub-regions of the study area. Limiting our similarity analysis to species occurrence data, rather simply reflects geographic proximity. This is clearly shown by the two minimum spanning trees (Figures 5, 6), in which the relationships of the states closely mirror their geographical positions. Our analyses for species biogeographic affinities (Figures 4, 7) group Sonora with Sinaloa, Arizona with New Mexico, and Arizona-New Mexico with Chihuahua. These arrangements seem closer to underlying historical and ecological processes detailed below (see discussion under 'Biotic affinities'). Faunal similarity based on species presence-absence suggests Sonora is closest to Chihuahua for (a) total herpetofauna, (b) amphibians, and (c) snakes (Figures 3, 5). This is likely due to the long political border (ca. 800 km) shared between these two states. The Sierra Madre Occidental is near this border and many Madrean species occur in both states. In addition, many widespread North American Desert species are shared by both states, and several Chihuahuan Desert species reach northeastern Sonora (e.g., *Anaxyrus debilis, Phrynosoma cornutum, P. modestum, Sceloporus cowlesi, Aspidoscelis exsanguis, A. uniparens, Gyalopion canum*). Together these influences result in high faunal similarity values between Sonora and Chihuahua.

For turtles, with a very small species pool, Sonora clusters with Sinaloa and together these two ally with Baja California and Baja California Sur (Figure 3). Because the species pool is so small here, faunal similarity values can be explained by the distribution of a few species. These include tropical-affiliated species linking Sonora and Sinaloa: *Kinosternon alamosae, K. integrum, Rhinoclemmys pulcherrima* and *Terrapene nelsoni*. The anomalous similarity of Sonora to Baja California Sur is due to the presence of the shared *Gopherus agassizii* and *Trachemys nebulosus*, both of which might represent introductions to the southern peninsula (Grismer 2002), although, alternatively, turtle distributions may preserve evidence of the ancient attachment of the peninsula to the west coast of Mexico.

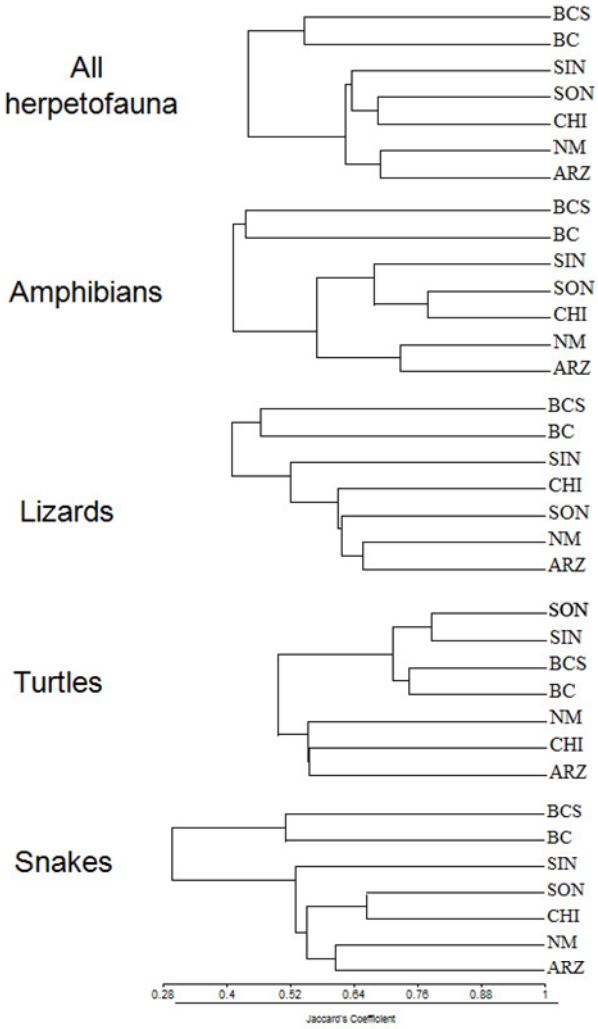

Figure 3. Jaccard's dendrogram measuring state herpetofaunal similiaries based on species occurrence (presence-absence).

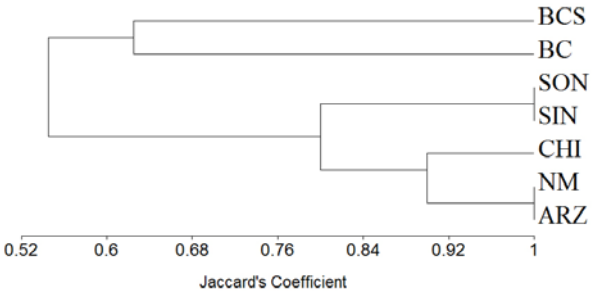

Figure 4. Jaccard's dendrogram comparing states according to biogeographic affinity of herpetofauna.

LISTS OF SPECIES

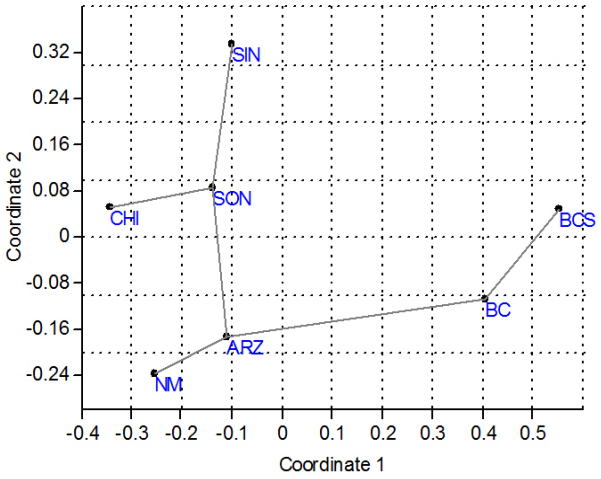

Figure 5. Minimum spanning tree from principal coordinate analysis of species occurrence (presence-absence) of all herpetofauna (Jaccard's distances).

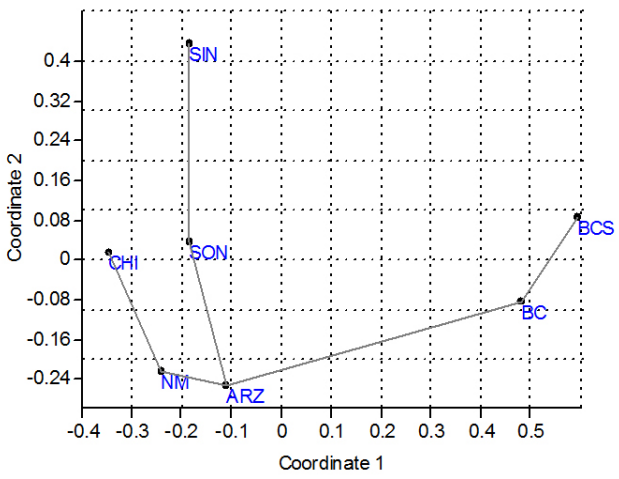

Figure 6. Minimum spanning tree from principal coordinate analysis of species occurrence (presence-absence) for lizards (Jaccard's distances).

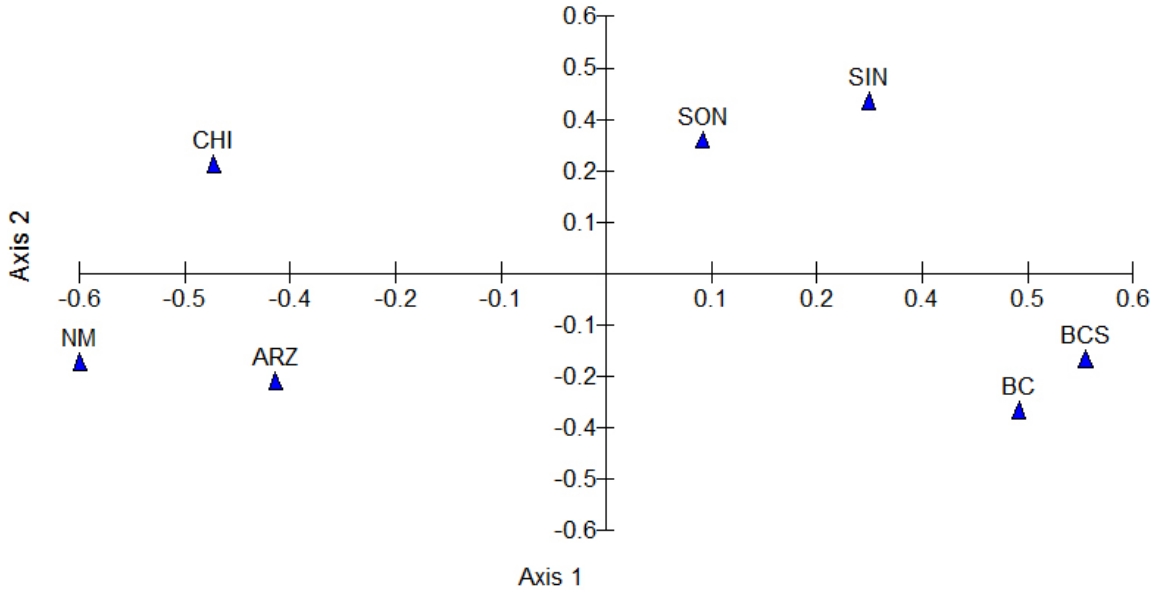

Figure 7. Principal coordinate analysis (PCO) of biogeographic affinity of the state herpetofaunas with each of the eleven categories expressed as number of species per affinity category for each state.

Sonora's lizards cluster with Arizona, New Mexico, and Chihuahua (Figures 3, 6). Lizards are quintessential desert vertebrates, and this clustering reflects the high species richness of lizards in the Sonoran and Chihuahuan Deserts present in all four states but less strikingly represented in the Neotropical dominated biota of Sinaloa (see additional discussion below under Affinities). Although the Sonoran Desert herpetofauna is only marginally present in New Mexico, several species shared with Sonora reach extreme southwestern New Mexico (e.g. *Phrynosoma solare*, *Heloderma suspectum*; see Lowe 1955).

Our results (Figures 3-7) consistently indicate that the two states of peninsular Baja California group together and are distinctive from all the other states in the region. This pattern is consistent with regional biogeographical effects demonstrated by Riddle et al. (2000). It is not surprising considering the peninsula's high degree of isolation from the rest of the study area. Moreover, the entire peninsula is highly depauperate in anuran amphibians, its ecology being strongly dominated by arid environments supporting a notable array of unique reptilian endemics. Additionally, the boundary between the states crosses the ranges of many peninsular species. These include wide-ranging peninsular species as well as some formerly viewed as cape endemics, such as *Bipes biporus,* which range into the southern edge of the state of Baja California, and some former Baja California endemics, such *Aspidoscelis labialis,* are now known to reach Baja California Sur (summary in Grismer 2002).

Regardless, the herpetofauna of Baja California and Baja California Sur are quite distinctive as is reflected in the Jaccard's coefficient dendrograms (Figures 3, 4). Undoubtedly, the California affiliated faunal elements in Baja California, and the tropical affiliated species in the San Lucan Thornscrub and San Lucan Dry Deciduous Forest in Baja California Sur contribute directly to the distinctiveness of these two closely allied states.

Biotic affinity

Our interpretation of biogeographic affinity is largely based on a qualitative-discrete assignation per our regional experience and known species distributions within the floristic provinces defined in Brown et al. (2007). Of course, some species showed several biogeographic affinities that placed them in the category of generalists. The generalist assignation could be interpreted to a greater degree if we were to take into consideration the complete distribution of each species and its phylogenetic relationships.

Thus, the lack of distributional, phylogenetic, and geographical studies in the region further obscures biogeographic placement of certain species. Future studies accounting for historical-phylogenetic relationships may help refine biogeographic affinity and may also clarify the relationships we suggest here.

In Sonora, species with Sonoran Desert (26 %), Tropical (26 %) and Madrean (17 %) affinities dominate, whereas to the south in Sinaloa, species with tropical affinities account for 54 % of the fauna. To the east in Chihuahua, species with Madrean (24 %) and Tropical (23 %) affinities compose the greater part of the herpetofauna (Figure 1; Table 2).

Baja California and Baja California Sur (excluding insular species) support the highest proportion of species with Sonoran affinities (each with 34 %; Figure 1; Table 2), compared to only 27 % for Arizona, and 26 % for Sonora. The total number of species with Sonoran affinity in Baja California (37) and Baja California Sur (31) are similar to that of Arizona (37), and if island endemics are included, they exceed Sonora (47) in both the proportion and number of Sonoran-affinity species (Figure 1; Table 2). Despite the unique and distinctive elements in the species assemblage of the Baja Californian desert herpetofauna, this most likely represents nothing more than the strong area-dominance of Sonoran Desert in both peninsular states.

The similarity phenograms based on biotic affinity (Figure 4) produced strikingly different results from those based strictly on shared species (Figure 3). Analysis of biotic affinity produced a close association of Sonora and Sinaloa, whereas Arizona and New Mexico were closely associated and linked to Chihuahua. We believe these examples, based on our assignment of species biogeographic affinities, come closer to reflecting evolutionary and biogeographic processes underlying the structure of this regional assemblage of herpetofaunas, and suggest phylogenetic reconstructions to test this hypothesis.

Although Arizona shares many Sonoran species with the state of Sonora, and New Mexico has grassland and Chihuahuan affinities that connect it with Chihuahua, these two U. S. states share much with each other. They share high proportions of wide-ranging (Generalist) species, North

American Desert Generalists, Great Basin, and Great Plains species, and they have relatively low proportions of Tropical and Madrean species. Chihuahua, like Sonora, has many Madrean and Tropical species, but is dominated by Chihuahuan Desert (Figure 1; Table 2). The Chihuahuan Biome shares species with the Great Plains (e.g., *Lithobates blairi*, *Thamnophis radix*, *Tropidoclonion lineatum*), and this tends to ally Chihuahua with the temperate zone and, thus, with Arizona and New Mexico (Figure 4).

Chihuahua and Durango, rather than Sonora, include most of the higher elevations of the Sierra Madre Occidental, producing an additional Chihuahua-to-New Mexico connection (e.g., *Opheodrys vernalis* and *Thamnophis sirtalis*) and to the more temperate U.S. states (Figure 3) via the shared biota of the U.S. Rocky Mountains and the highest elevations of the Sierra Madre. Although Sinaloa has a greater representation of tropical species than Sonora (54 % versus 26 %), these are nonetheless the two most tropical states in our study area, and they are closely similar in all other affinity categories (Figure 1; Table 2). Jaccard's dendrogram for affinity (Figure 4) and PCO using Gower's coefficient (Figure 7) both indicate a close association between Sinaloa and Sonora. This result is not surprising considering the principally subtropical evolutionary derivation of Sonoran Desertscrub and Sinaloan Thornscrub biota.

There is general paleobotanical agreement (Brown 1994) that Madrean Woodland, Sinaloan Dry Deciduous Forest, Sinaloan Thornscrub, Sonoran Desertscrub, and Mohave Desertscrub all share an ancient origin in the Madro-Tertiary Geoflora, a semi-arid formation that arose between Mesophytic (more tropical) and Arcto-Tertiary (more boreal) geofloras. There is also fairly general agreement that Sonoran Desertscrub is derived from Sinaloan Thornscrub, which in turn, is derived from Sinaloan Dry Deciduous Forest. Chihuahua and Sonora share an ancient Madrean heritage, but are in other important respects herpetofaunally and biogeographically divergent. We suspect that the derivation of species and gene clades of amphibians and reptiles may have followed along similar lines in this region, and that phylogenetic and phylogeographic analyses would yield tree topologies more similar to those of the Jaccard dendrograms for affinity (Figure 4) than comparisons based on shared species (Figure 3).

Limits of geographic distribution

The global latitudinal range of 66 species terminates in Sonora (Figure 8, Appendices 3, 4). The map illustrates that the distributional limits of species centered in the tropics (1) are concentrated in areas with greatest accessibility to herpetologists (Álamos and Yécora regions) and (2) diverge from the coast at higher latitudes. Species of tropical affinity reaching their northern limits in Sonora do so largely in moderate elevation zones of the Sierra Madre Occidental Archipelago. At higher latitudes, these species generally do not descend into warm, lower elevations (personal observations), presumably due to moisture requirements.

Eight species (7 %) of the Sonoran Desert-associated herpetofauna reach their southern range limits in Sonora, mainly near the coast (Figure 8), while the largest number (50 species, 27 %) do so in Sinaloa (Hardy and McDiarmid 1969), primarily in a progressively narrowing band of subtropical Sonoran Desertscrub and Sinaloan Thornscrub. Another large component of the herpetofaunal diversity is associated with the Sierra Madre Occidental (31 species, 17 %) and continues southward though Chihuahua and Durango (Webb 1984; McCranie and Wilson 1987; Lemos Espinal and Smith 2007). Three notable exceptions are *Aspidoscelis sonorae*, *Lithobates yavapaiensis*, and *Kinosternon arizonense*, which reach their southern limits on the western slopes of the Sierra Madre Occidental Archipelago in Sonora.

The transitions from Sonoran Desertscrub to Sinaloan Thornscrub, and thence to Sinaloan Dry Deciduous Forest, are suggested by these patterns in the latitudinal range limits of amphibians and reptiles. A more refined analysis of these transitions would be of great interest for understanding the ecological structure of the regional biota, its evolution, and its conservation.

LISTS OF SPECIES

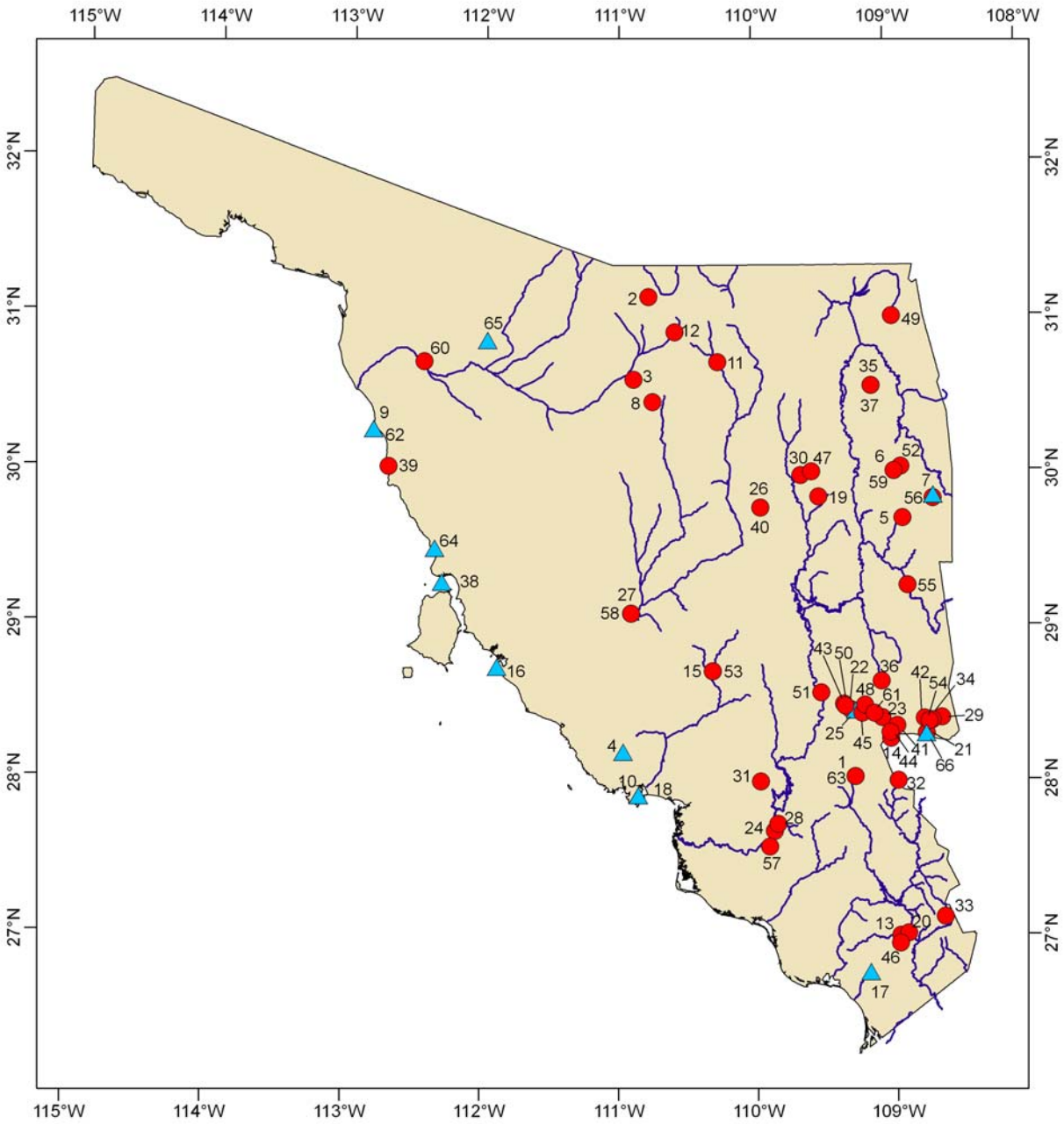

Figure 8. Species of amphibians and reptiles reaching their distributional limit in Sonora. Triangles represent localities where species reach their southern latitudinal limits as currently known. Circles represent localities where species reach their northern latitudinal limits as currently known. Sonoran endemics are not included. Species and localities are provided in Appendices 3 and 4.

Endemism

Despite the species richness of Sonora, it does not have an unusually high number of state endemics (Table 4). There are only five mainland endemics (four lizards: *Aspidoscelis opatae*, *Crotaphytus dickersonae*, *Phrynosoma ditmarsi*, *Xantusia jaycolei* and one turtle: *Trachemys yaquia*), similar to the figures for Arizona (4), Baja California (4), New Mexico (3), Chihuahua (1), and Sinaloa (1), but far less than that of Baja

California Sur (14). The high number of endemics in Baja California Sur (Table 4) is a reflection primarily of the unique tropical and semi-tropical herpetofauna of the Cape region, the existence of the isolated Sierra La Laguna, and the historical separation of the cape region from the rest of the peninsula (Murphy and Aguirre-Leon 2002, Riddle et al. 2000, Grismer 1994). It is worth noting, however, that this state-by-state comparison may obscure the rich endemism comprising the region's core Sonoran Desert herpetofauna, which is centered on Sonora but importantly includes Arizona, Sinaloa, and the Baja California peninsula.

The Sonora herpetofauna includes 11 island endemics (9 lizards: *Aspidoscelis bacata, Aspidoscelis estebanensis, Aspidoscelis martyris, Ctenosaura conspicuosa, Ctenosaura nolascensis, Sauromalus hispidus, Sauromalus varius, Uta nolascensis*, and *Uta palmeri*; and 2 snakes: *Coluber slevini, Crotalus estebanensis*), notably fewer than Baja California (15) and Baja California Sur (22). This most likely reflects the greater number of islands included in Baja California and Baja California Sur compared to Sonora. Overall, it is clear that the greatest numbers of endemics in the region covered by this checklist involve the islands of the Gulf of California (Table 4). In addition to numerous recently derived species found on "land bridge" islands, these endemics include some remarkable ancient relicts: *Aspidoscelis ceralbensis, Sceloporus* (*Sator*) *angustus*, and *Sceloporus* (*Sator*) *grandaevus*.

The question thus arises whether the unique history of the Baja California peninsula, including its rifting from the mainland and its hypothesized trans-peninsular seaways has led to enhanced species diversity compared to the mainland. Here, we restrict this comparison to species we classify as having Sonoran and/or North American Desert Generalist affinities and exclude those classified as having Madrean, Tropical, Californian, and other non-desert affinities. In the count for Sonoran Desert endemics on the peninsula (Baja California + Baja California Sur) we include species that extend into southernmost California (south of San Gorgonio Pass), and for the mainland count (Arizona + Sonora + Sinaloa), we include species that enter extreme southwest New Mexico or extreme western Chihuahua. As thus defined, the Sonoran Desert peninsular herpetofauna consists of 52 total species of which 26 are endemic, whereas the mainland Sonoran Desert herpetofauna consists of 54 species of which 26 are endemic. These data indicate that both endemism and overall species number in the Sonoran Desert herpetofauna of the Baja California peninsula is roughly comparable to that of the mainland (Arizona + Sonora + Sinaloa).

With about 9.9 million ha of Sonoran Desertscrub on the peninsula and about 17.9 million ha on the mainland, this result confirms both the uniqueness of the peninsular herpetofauna within the Sonoran Desert context and the richness apparently connected to its strong vicariant history. It again suggests that the Gulf of California and the Sonoran Desert - isolated from the mainland's tropical influence - form dispersal barriers for Neotropical species and are key factors driving a possible peninsular depauperization effect.

Conclusions

Based on our similarity and affinity analyses, we consider the Sonoran assemblage (species occurring principally in Sinaloan Thornscrub and Sonoran Desertscrub) to represent the unique and regionally endemic core of Sonora's herpetofauna. Madrean, tropical, and northern temperate elements have played a strong role interacting with core faunal elements. This accords well with the early dispersal model of Bogert and Oliver (1945), which hypothesized five dispersal routes that influenced overall species richness in Sonora: from the south, (1) along the narrow coastal plain and (2) along the Sierra Madre Occidental; (3) from the eastern plateau or plains via valleys dissected into the north end of the Sierra Madre; (4) from the north, that is, from the mountains in Arizona; and (5) from the northwest, the Colorado-Mojave Desert. Our data support these historic connections, but are not adequate to distinguish this dispersal concept from vicariant hypotheses involving *in situ* endemism. Recent taxonomic changes and species discoveries suggest that the core Sonoran assemblage may have provided conditions for *in situ* adaptive speciation of some species. Determining the historical basis

and importance of Sonora in speciation events within the Sonoran Desert and the topographically complex Sierra Madre Occidental and its associated archipelago and isolated valleys will require thorough distributional and phylogenetic studies, which are virtually non-existent for the region. To assist and perhaps stimulate such research, we offer the following conclusions:

1. Sonora has the highest overall herpetofaunal richness of any state in the region. This is due to its situation in the topographically complex transition between the Neotropical and Nearctic zones, and the presence of the richest desert formation in North America and the highly diverse, semi-temperate Madrean biota with its deep southerly penetration from the north into tropical latitudes.

2. For total herpetofauna, Sonora is most similar to Chihuahua, with which it shares a long portion of the Sierra Madre Occidental as well as many wide-ranging North American desert species.

3. The herpetofauna of Sonora is especially notable as the core and evolutionary center of the unique, subtropical Sonoran Desertscrub-Sinaloan Thornscrub species assemblage.

4. Our data on Sonora's lizard fauna clusters it with Arizona, New Mexico, and Chihuahua, reflecting the large number of shared species with eco-physiological adaptations to the hot, arid climates of the Sonoran and Chihuahuan Deserts.

5. Many Sonoran species with tropical affinities reach their northern latitudinal limits at moderate elevations in the Sierra Madre Occidental region, where they are driven upward in minimum elevation away from desert aridity and downward in maximum elevation by high-latitude cold. Thus, there is a bio-climatically determined habitat wedge for tropical and subtropical species distributions with a north-pointing tip.

6. Species with Sonoran Desertscrub and Sinaloan Thornscrub affinity have distributions that constrict south toward the coast. Most of these species range into Sinaloa, albeit usually rather sparingly. Desert-like bio-climatic conditions associated with high temperature and low rainfall at low elevation define this south-pointing habitat wedge in the distribution of the core desertscrub-thornscrub species assemblage.

7. At the state-level of analysis, the number of mainland endemics in Sonora is low and comparable to that in Arizona, New Mexico, and Baja California, but far less than Baja California Sur, where high endemism may be due in part to the historical separation of the cape region from the remainder of the peninsula and, to some extent, from mainland Sonoran influences.

8. Sonora has fewer islands and insular endemics than Baja California and Baja California Sur.

9. Peninsular Baja California, with a rich, unique herpetofauna marked by notable endemism is proportionately the most "Sonoran" in herpetofaunal affiliation. This is due to the paucity of temperate and, especially, tropical species resulting in peninsular depauperization, which is apparent at our state level of analysis.

Acknowledgements
Several curators and collections managers provided electronic output of collection data, digital photographs, and helpful answers to many questions: Ned S. Gilmore (Department of Vertebrate Zoology Academy of Natural Sciences); Anthony Gill, Robin Schroeder (Arizona State University); Jens Vindum, Robert Drewes (California Academy of Sciences); Stephen P. Rogers (Carnegie Museum of Natural History), Lee A. Fitzgerald, Toby Hibbitts (Department of Wildlife and Fisheries Sciences, Texas A and M University); Abigail Wolf, Alan Resetar, Harold Voris (Field Museum of Natural History); Oscar Flores (*Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México*); Jon Woodward, José Rosado (Harvard Museum of Comparative Zoology); Rick Feeney (Los Angeles County Museum of Natural History); Greg Schneider (Museum of Zoology University of Michigan); David Cannatella, Travis J. LaDuc (Texas Natural History Collections); George Bradley (University of Arizona); Mariko Kageyama (University of Colorado Museum); Chris Mayer, Chris Phillips (University of Illinois Museum of Natural History); Traci Hartsell,

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Ken Tighe (U.S. National Museum of Natural History); Jonathan Campbell, Carl Franklin (University of Texas at Arlington). We owe a special debt of gratitude to George Bradley at the University of Arizona for providing frequent access (often on short notice) to the collection of amphibians and reptiles at the University of Arizona.

Literature cited

Berry, J. F., and J. M. Legler. 1980. A new turtle (genus *Kinosternon*) from Sonora, Mexico. Los Angeles County Museum Contributions in Science 325: 1-12.

Bezy, R. L., K. B. Bezy, and K. Bolles. 2008. Two new species of Night Lizards *(Xantusia)* from Mexico. Journal of Herpetology 42(4): 680-688.

Bogert, C. M., and J. A. Oliver. 1945. A preliminary analysis of the herpetofauna of Sonora. Bulletin of the American Museum of Natural History 83: 297-426.

Brennan, T. C., and A. T. Holycross. 2006. Amphibians and reptiles in Arizona. Phoenix: Arizona Game and Fish Department. 150 p.

Brown, D. E. 1994 (ed.). Biotic Communities: Southwestern United States and Northwestern Mexico. Salt Lake City: University of Utah Press. 342 p.

Brown, D. E., P. J. Unmack, and T. C. Brennan. 2007. Digitized map of biotic communities for plotting and comparing distributions of North American animals. The Southwestern Naturalist 52(4): 610-616.

Bryson, R. W., J. R. Dixon, and D. Lazcano. 2005. New species of *Lampropeltis* (Serpentes: Colubridae) from the Sierra Madre Occidental, México. Journal of Herpetology 39(2): 207-214.

Busak, S. D., and S. B. Hedges. 1984. Is the peninsular effect a red herring? American Naturalist 123: 266-275.

Campbell, J. A., and W. W. Lamar. 2004. The venomous reptiles of the Western Hemisphere. Ithaca and London: Comstock. 870 p.

Crother, B. I. (ed.). 2008. Scientific and standard English names of amphibians and reptiles of North America north of Mexico with comments regarding our understanding. Sixth edition. Society for the Study of Amphibians and Reptiles Herpetological Circular #37. 31 p.

Degenhardt, W. G., C. W. Painter, and A. H. Price. 1996. Amphibians and reptiles of New Mexico. Albuquerque: University of New Mexico Press. 431 p.

Devitt, T. J., T. J. LaDuc, and J. A. McGuire. 2008. The *Trimorphodon biscutatus* (Squamata: Colubridae) species complex revisited: a multivariate statistical analysis of geographic variation Copeia (2): 370-387.

Felger, R. S., M. B. Johnson, and M. F. Wilson. 2001. The trees of Sonora, Mexico. New York: Oxford University Press. 391 p.

Flores-Villela, O. 1993. Herpetofauna Mexicana. Special Publication, Carnegie Museum of Natural History 17:1-73.

Flores-Villela, O. and L. Canseco-Marques. 2004. Nuevas especies y cambios taxonómicos para la herpetofauna of México. Acta Zoologica Méxicana 22:114-144.

Flores-Villela, O., K. M. Kjer., M. Benabib, and J. W. Sites. 2000. Multiple data sets, congruence, and hypothesis testing for the phylogeny of basal groups of the lizard genus Sceloporus (squamata, Phrynosomatidae). Systematic Biology 49: 713-739

Frost, D. F. 1979. *Sonora michoacanensis mutabilis.* Geographic Distribution. Herpetological Review 10: 60.

Frost, J. S., and J. T. Bagnara. 1974. A new species of leopard frog (*Rana pipiens* Complex) from Northwestern Mexico Copeia (2): 332-338.

García, A. 2006. Using ecological niche modeling to identify diversity hotspots for the herpetofauna of Pacific lowlands and adjacent interior valleys of Mexico. Biological Conservation 130:25-46.

García, A., H. Solano-Rodríguez and O. Flores-Villela. 2007. Patterns of alpha, beta and gamma diversity of the herpetofauna in Mexico´s Pacific lowlands and adjacent interior valleys. Animal Biodiversity and Conservation 30.2:169-177.

Good, D. A. 1994. Species limits in the genus *Gerrhonotus* (Squamata: Anguidae) Herpetological Monographs 8: 180-202.

Grismer, L. L. 1994. The origin and evolution of the peninsular herpetofauna of Baja California, Mexico. Herpetological Natural History 2:51-106.

Grismer, L. L. 2002a. Amphibians and reptiles of Baja California, its Pacific islands, and the islands in the Sea of Cortes. Berkeley: University of California Press. 399 p.

Grismer, L. L. 2002b. A re-evaluation of the evidence of a mid Pleistocene mid-peninsular seaway in Baja California. A reply to Riddle et al. Herpetological Review 33: 15-16.

Hardy, L., and R. W. McDiarmid. 1969. The amphibians and reptiles of Sinaloa, Mexico. University of Kansas Publications, Museum of Natural History 18: 39-252.

Hillis, D. M., J. S. Frost, R. G. Webb. 1984. A new species of frog of the *Rana tarahumarae* group from southwestern Mexico Copeia (2): 398–403.

LISTS OF SPECIES

Kovach W. L. 1999. MVSP – A multivariate statistical package for Windows, ver. 3.1. Kovach Computing Services. Pentraeth, Wales, United Kingdom.

Lemos-Espinal, J. A. and H. M. Smith. 2007. Anfibios y Reptiles del Estado de Chihuahua, México/Amphibians and Reptiles of the State of Chihuahua, México. México : CONABIO. 628 p.

Liner, E. A. and G. Casas-Andreu. 2008. Standard Spanish, English and scientific names of the amphibians and reptiles of Mexico, second edition. Society for the Study of Amphibians and Reptiles, Herpetological Circular #38.

Lowe, C. H. 1955. The eastern limit of the Sonoran Desert in the United States with additions to the known herpetofauna of New Mexico. Ecology 36:343-345.

Lowe, C. H. 1964. The amphibians and reptiles of Arizona; p. 153-174 *In* C. H. Lowe (ed.), The Vertebrates of Arizona. Tucson: University of Arizona.

Lowe, C. H., C. R. Schwalbe, and T. B. Johnson. 1986. The venomous reptiles of Arizona. Phoenix : Arizona Game and Fish Department. 115 p.

Martin, P. S., D. Yetman, M. Fishbein, P. Jenkins, T. R. Van Devender, and R. K. Wilson. 1998. Gentry's Rio Mayo Plants: The Tropical Deciduous Forest & Environs of Northwest Mexico. Tucson: The Southwest Center Series, University of Arizona Press. 558 p.

McCranie, J. R., and L. D. Wilson. 1987. The biogeography of the herpetofauna of the pine-oak woodlands of the Sierra Madre Occidental of Mexico. Milwaukee Public Museum Contributions in Biology and Geology 72: 1-30.

McDiarmid, R. W. and R. L. Bezy. 1971. The colubrid snake *Enulius oligostichus* in western Mexico Copeia 1971: 350-35.

McDiarmid, R. W., J. F. Copp, and D. E. Breedlove. 1976. Notes on the herpetofauna of western Mexico: new records from Sinaloa and the Tres Marias Islands. Los Angeles County Museum Contributions in Science 275: 1-17.

McLaughlin, S. P. 1992. Are floristic areas hierarchically arranged? Journal of Biogeography 19: 21-32.

Mulcahy, D. G. 2008. Phylogeography and species boundaries of the western North American nightsnake (*Hypsiglena torquata*): Revisiting the subspecies concept. Molecular Phylogenetics and Evolution 46: 1095–1115.

Mulcahy, D. G., and R. J. Macey. 2009. Vicariance and dispersal from a ring distribution in night snakes around the Gulf of California. Molecular Phylogenetics and Evolution 2009:

Murphy, R. W., and G. Aguirre-Léon. 2002. The non-avian reptiles; p. 181-220 *In* T. J. Case, M. L. Cody, and E. Ezcurra (ed.). A New Island Biogeography of the Sea of Cortés, Oxford.

Riddle, B. R., D. J. Hafner, L. F. Alexander and J. R. Jaeger. 2000. Cryptic vicariance in the historical assembly of a Baja California Peninsular Desert biota. Proceedings of the National Academy of Sciences, USA 97:14438–14443.

Riddle, B. R., and D. J. Hafner. 2006. A step-wise approach to integrating phylogeographic and phylogenetic biogeographic perspectives on the history of a core North American warm deserts biota. Journal of Arid Environments 66:435–461.

Riddle, B. R., and R. L. Honeycutt. 1990. Historical biogeography in North American arid regions: an approach using mitochondrial-DNA phylogeny in grasshopper mice (Genus *Onychomys*). Evolution 44:1–15.

Robinson, M. D. 1979. Systematics of skinks of the *Eumeces brevirostris* species group in western Mexico. Los Angeles County Museum of Natural History Contributions in Science 319: 1-13.

Rorabaugh, J. C. 2008. An introduction to the herpetofauna of mainland Sonora, México, with comments on conservation and management. Journal of the Arizona-Nevada Academy of Science 40(1): 20-65.

Rosen, P. C. 2007. The amphibians and reptiles of the dry borderlands of northwestern Sonora and southwestern Arizona; p 310-337 *In* R. S. Felger and B. Broyles (ed.), Dry Borders: Great Natural Reserves of the Sonoran Desert. Logan: University of Utah Press.

Rosenzweig, M. L. 1995. Species Diversity In Space and Time. Cambridge: Cambridge University Press. 436 p.

Schwalbe, C. R., and C. H. Lowe. 2000. Amphibians and reptiles of the Sierra de Álamos; p. 172-199 *In* R. H. Robichaux and D. A. Yetman (ed.), The Tropical Deciduous Forest of Álamos, Biodiversity of a Threatened Ecosystem in Mexico. Tucson: University of Arizona Press.

Seib, R. L. 1980. Baja California: a peninsula for rodents but not reptiles. American Naturalist 115: 613-620.

Seidel, M. E. 2002. Taxonomic observations on extant species and subspecies of slider turtles, genus *Trachemys*. Journal of Herpetology 36: 285-292.

Slevin, J. R. 1928. The Amphibians of western North America. Occasional Papers California Academy of Science 16:1-152.

Smith, H. M. 1939. The Mexican and Central American lizards of the genus *Sceloporus*. Zoological Series Field Museum of Natural History 26: 1-397.

Smith, H. M., and E. H. Taylor. 1950. Type localities of Mexican reptiles and amphibians. University of Kansas Science Bulletin 33: 313-380.

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Smith, H. M., and R. B. Smith. 1976. Synopsis of the Herpetofauna of Mexico. Volume III. Second source analysis and index for Mexican Reptiles. North Bennington: John Johnson. 23p.

Smith, H. M., J. A. Lemos-Espinal, D. Hartman, and D. Chiszar. 2005c. A new species of *Tropidodipsas* (Serpentes: Colubridae) from Sonora, Mexico. Bulletin of the Maryland Herpetological Society 41: 39-41.

Tanner, W. W. 1985. Snakes of western Chihuahua. Great Basin Naturalist 45: 615-676.

Tanner, W. W. 1987. Lizards and Turtles of western Chihuahua. Great Basin Naturalist 47: 383-421.

Tanner, W. W. 1989. Amphibians of western Chihuahua. Great Basin Naturalist 49: 38-70.

Taylor, E. H. 1938. Notes on the herpetological fauna of the Mexican state of Sonora. University of Kansas Science Bulletin 24:475-503.

Taylor, R. J. and Regal, P. J. 1978. The peninsular effect on species diversity and the biogeography of Baja California. American Naturalist 112: 538-593.

Van Denburgh, J. 1922. The reptiles of western North America. Occasional Papers California Academy Science 10: 1-1028.

Webb, R. G. 1984. Herpetogeography in the Mazatlan-Durango region of the Sierra Madre Occidental, México; p. 217-241 *In* Seigel, R. A., et al. (ed.), Vertebrate Ecology and Systematics - A Tribute to Henry S. Fitch. Special Publication 10. Lawrence: Museum of. Natural History University of Kansas.

Wiggins, D. A. 1999. The peninsula effect on species diversity: a reassessment of the avifauna of Baja California. Ecography 22:542-547.

Received November 2008
Accepted July 2009
Published online September 2009

Appendix 1: Islands of Sonora.The following lists Sonora's Gulf of California islands (Sonora Secretaría de Comunicaciones y Transportes 2007) from north to south and includes coordinates and endemic herpetofauna, if present. Asterisks represent isolated inshore sand spit formations classified as islands.
Isla El Pelicano* 31°44'28" N, 114°37'29" W; Isla Patos 29°16'11" N, 112°27'32" W; Isla Tiburón 28°57'42" N, 112°21'49" W; Isla Alcatraz (Isla Pelicanos) 28°48'33" N, 111°58'9" W (*Sauromalus hispidus*); Isla Roca La Foca (Isla Cholludo) 28°44'15" N, 112°18'19" W; Isla Turners (Isla El Dátil) 28°43'11" N, 112°17'24" W; Isla San Esteban 28°41'49" N, 112°34'28" W (*Aspidoscelis estebanensis*, *Ctenosaura conspicuosa*, *Sauromalus varius*, *Crotalus estebanensis*, *Coluber slevini*), Isla San Pedro Mártir 28°22'45" N, 112°18'26" W (*Aspidoscelis martyris*, *Uta palmeri*), Isla San Pedro Nolasco 27°57'60" N, 111°22'40" W (*Aspidoscelis bacata*, *Ctenosaura nolascoensis*, *Uta nolascoensis*); Isla Vendado 27°57'19" N, 111° 7'18" W; Isla Pájaros* 27°53'39" N, 110°50'20" W; Isla Los Algodones* 27°46'43" N, 110°36'53" W; Isla Lobos* 27°18'48" N, 110°34'60" W; Isla Siari* 27°3'46" N, 109°58'39" W; Isla Basacori* 26°21'50" N, 109°14'22" W.

Appendix 2: Checklist of the amphibians and reptiles of Sonora and adjoining states. Occurrence symbols and abbreviations are: 1 = reported, 0 = unreported, E = non-insular state endemic, M = marine species, X = insular endemic. Affinity abbreviations are as follows: CAL = Californian, CHI = Chihuahuan, ETM = Eastern Temperate, GEN = Generalist, GBN = Great Basin, GPS = Great Plains, MDN = Madrean, MAR = Marine, NDG = North American Desert Generalist, SON = Sonoran, TRO = Tropical. A summary of exotic species is included below the list. Recent synonyms are listed in brackets below current taxon where deemed useful. Names of species occurring in Sonora are in bold. Numbers presented in the TL column reference the summary of species names with type localities originally designated as being in Sonora (Appendix 5).

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
CAUDATA Ambystomatidae										
***Ambystoma rosaceum* Taylor, 1941**	**Tarahumara Salamander**	MDN	0	0	0	1	0	1	1	
Ambystoma silvensis Webb, 2004	Pine Woods Salamander	MDN	0	0	0	1	0	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Ambystoma mavortium* Baird, 1850**	**Barred Tiger Salamander**	GEN	1	0	0	1	1	0	1	
Plethodontidae										
Aneides hardii (Taylor, 1941)	Sacramento Mountains Salamander	GBN	0	0	0	0	E	0	0	
Aneides lugubris (Hallowell, 1849)	Arboreal Salamander	CAL	0	1	0	0	0	0	0	
Batrachoceps major Camp, 1919	Garden Slender Salamander	CAL	0	1	0	0	0	0	0	
Ensatina eschscholtzii Gray 1850	Monterey Ensatina	CAL	0	1	0	0	0	0	0	
***Pseudoeurycea bellii* (Gray, 1850)**	**Bell's Salamander**	MDN	0	0	0	1	0	0	1	1
Plethodon neomexicanus Stebbins and Riemer, 1950	Jemez Mountains Salamander	GBN	0	0	0	0	E	0	0	
ANURA										
Bufonidae										
Anaxyrus boreas (Baird and Girard, 1852) *[Bufo boreas]*	Western Toad	CAL	0	1	0	0	1	0	0	
Anaxyrus californicus (Camp, 1915) *[Bufo californicus]*	Arroyo Toad	CAL	0	1	0	0	0	0	0	
Anaxyrus cognatus* (Say , 1823) *[Bufo cognatus]	**Great Plains Toad**	GPS	1	1	0	1	1	1	1	
Anaxyrus debilis* (Girard, 1854) *[Bufo debilis]	**Green Toad**	CHI	1	0	0	1	1	0	1	
Anaxyrus kelloggi* (Taylor, 1938) *[Bufo kelloggi]	**Little Mexican Toad**	TRO	0	0	0	0	0	1	1	
Anaxyrus mexicanus* (Brocchi, 1879) *[Bufo mexicanus]	**Mexican Madre Toad**	MDN	0	0	0	1	0	1	1	
Anaxyrus microscaphus (Cope, 1866) *[Bufo microscaphus]*	Arizona Toad	GEN	1	0	0	0	1	0	0	
Anaxyrus punctatus* (Baird and Girard, 1852) *[Bufo punctatus]	**Red-spotted Toad**	GEN	1	1	1	1	1	1	1	
Anaxyrus retiformis* (Sanders and Smith, 1951) *[Bufo retiformis]	**Sonoran Green Toad**	SON	1	0	0	0	0	0	1	
Anaxyrus speciosus (Girard, 1854) *[Bufo speciosus]*	Texas Toad	CHI	0	0	0	1	1	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Anaxyrus woodhousii* (Girard, 1854) *[Bufo woodhousii]	**Woodhouse's Toad**	GEN	1	1	0	1	1	0	1	
Ollotis marmorea (Wiegmann, 1833) *[Bufo marmoreus]*	Marbled Toad	TRO	0	0	0	0	0	1	0	
Ollotis alvaria* (Girard in Baird, 1859) *[Bufo alvarius]	**Sonoran Desert Toad**	SON	1	1	0	1	1	1	1	
Ollotis mazatlanensis* (Taylor, 1940) *[Bufo mazatlanensis]	**Sinaloa Toad**	TRO	0	0	0	1	0	1	1	
Ollotis occidentalis* (Camerano, 1879) *[Bufo occidentalis]	**Pine Toad**	MDN	0	0	0	1	0	1	1	
Rhinella marina* (Linnaeus, 1758) *[Bufo marinus]	**Cane Toad**	TRO	0	0	0	1	0	1	1	
Brachycephalidae										
Craugastor augusti* (Dugès in Brocchi, 1879) *[Eleutherodactylus augusti]	**Barking Frog**	TRO	1	0	0	1	1	1	1	
Craugastor hobartsmithi (Taylor, 1937) *[Eleutherodactylus hobartsmithi]*	Smith's Pigmy Tropical Frog	TRO	0	0	0	0	0	1	0	
Craugastor occidentalis* (Taylor, 1941) *[Eleutherodactylus occidentalis]	**Taylor's Barking Frog**	TRO	0	0	0	0	0	1	1	
Craugastor tarahumaraensis* (Taylor, 1940) *[Eleutherodactylus tarahumaraensis]	**Tarahumara Barking Frog**	MDN	0	0	0	1	0	0	1	
Craugastor vocalis (Taylor, 1940) *[Eleutherodactylus vocalis]*	Pacific Stream Frog	TRO	0	0	0	0	0	1	0	
Eleutherodactylus interorbitalis* (Langebartel and Shannon, 1956) *[Syrrhophus interorbitalis]	**Spectacled Chirping Frog**	TRO	0	0	0	1	0	1	1	
Eleutherodactylus marnockii (Cope 1878) *[Syrrhophus marnockii]*	Cliff Chirping Frog	CHI	0	0	0	1	0	0	0	
Eleutherodactylus nitidus Peters, 1870 *[Syrrhophus nitidus]*	Shiny Peeping Frog	TRO	0	0	0	0	0	1	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Eleutherodactylus saxatilis (Webb, 1962) *[Syrrhophus saxatilis]*	Marbled Peeping Frog	TRO	0	0	0	0	0	1	0	
Eleutherodactylus teretistes (Duellman, 1958) *[Syrrhophus teretistes]*	Whistling Frog	TRO	0	0	0	0	0	1	0	
Hylidae										
Acris crepitans Baird, 1854	Northern Cricket Frog	ETM	0	0	0	0	1	0	0	
Exerodonta smaragdina (Taylor, 1940) *[Hyla smaragdina]*	Emerald Treefrog	MDN	0	0	0	0	0	1	0	
***Hyla arenicolor* Cope, 1866**	**Canyon Treefrog**	GEN	1	0	0	1	1	1	1	2
***Hyla wrightorum* Taylor, 1939**	**Mountain Treefrog**	MDN	1	0	0	1	1	0	1	
***Pachymedusa dacnicolor* (Cope, 1864)**	**Mexican Leaf Frog**	TRO	0	0	0	1	0	1	1	
Plectrohyla bistincta (Cope, 1878)	Mexican Fringe-limbed Frog	MDN	0	0	0	0	0	1	0	
Pseudacris cadaverina (Cope, 1866) *[Hyla cadaverina]*	California Treefrog	CAL	0	1	0	0	0	0	0	
Pseudacris hypochondriaca (Hallowell, 1854) *[Hyla regilla]*	Baja California Treefrog	GEN	1	1	1	0	0	0	0	
Pseudacris maculata (Agassiz 1850)	Boreal Chorus Frog	ETM	1	0	0	0	1	0	0	
***Smilisca baudinii* (Duméril and Bibron, 1841)**	**Mexican Tree Frog**	TRO	0	0	0	1	0	1	1	
Smilisca fodiens* (Boulenger, 1882) *[Pternohyla fodiens]	**Lowland Burrowing Treefrog**	TRO	1	0	0	0	0	1	1	
Tlalocohyla smithii* (Boulenger, 1902) *[Hyla smithii]	**Dwarf Mexican Treefrog**	TRO	0	0	0	1	0	1	1	
Trachycephalus venulosus (Laurenti, 1768) *[Hyla venulosa]*	Veined Treefrog	TRO	0	0	0	0	0	1	0	
Triprion spatulatus (Günther, 1882)	Shovel-headed Treefrog	TRO	0	0	0	0	0	1	0	
Leptodactylidae										
***Leptodactylus melanonotus* (Hallowell, 1861)**	**Sabinal Frog**	TRO	0	0	0	0	0	1	1	
Microhylidae										
***Gastrophryne olivacea* (Hallowell, 1856)**	**Great Plains Narrow-mouthed Toad**	GEN	1	0	0	1	1	1	1	
Gastrophryne usta (Cope, 1866)	Two-spaded Narrow-mouthed Toad	TRO	0	0	0	0	0	1	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Hypopachus variolosus* (Cope, 1866)**	**Sheep Frog**	TRO	0	0	0	1	0	1	1	
Pelobatidae										
***Scaphiopus couchii* Baird, 1854**	**Couch's Spadefoot**	GEN	1	1	1	1	1	1	1	
Spea bombifrons (Cope, 1863)	Plains Spadefoot	GPS	1	0	0	1	1	0	0	
Spea hammondii (Baird, 1859 "1857")	Western Spadefoot	CAL	0	1	0	0	0	0	0	
Spea intermontana (Cope, 1883)	Great Basin Spadefoot	GBN	1	0	0	0	0	0	0	
***Spea multiplicata* (Cope, 1863)**	**Mexican Spadefoot**	GEN	1	0	0	1	1	0	1	
Ranidae										
Lithobates berlandieri (Baird, 1854) *[Lithobates berlandieri]*	Rio Grande Leopard Frog	CHI	0	0	0	1	1	0	0	
***Lithobates blairi* (Mecham, Littlejohn, Oldham, Brown, and Brown, 1973)** *[Rana blairi]*	Plains Leopard Frog	GPS	1	0	0	0	1	0	0	
Lithobates chiricahuensis* (Platz and Mecham, 1979)** ***[Rana chiricahuensis]	**Chiricahua Leopard Frog**	MDN	1	0	0	1	1	0	1	
Lithobates forreri* (Boulenger, 1883)** ***[Rana forreri]	**Forrer's Leopard Frog**	TRO	0	0	0	1	0	1	1	
Lithobates lemosespinali (Smith and Chiszar 2003) *[Rana lemosespinali]*	Lemos-Espinal's Leopard Frog	MDN	0	0	0	E	0	0	0	
Lithobates magnaocularis* (Frost and Bagnara, 1974)** ***[Rana magnaocularis]	**Northwest Mexico Leopard Frog**	GEN	0	0	0	1	0	1	1	
Lithobates onca (Cope, 1875) *[Rana onca*	Relict Leopard Frog	SON	1	0	0	0	0	0	0	
Lithobates pipiens (Schreber, 1782) *[Rana pipiens]*	Northern Leopard Frog	ETM	1	0	0	0	1	0	0	
Lithobates pustulosus* (Boulenger, 1883)** ***[Rana pustulosa]	**White-striped Frog**	TRO	0	0	0	0	0	1	1	
Lithobates tarahumarae* (Boulenger, 1917)** ***[Rana tarahumarae]	**Tarahumara Frog**	MDN	1	0	0	1	0	1	1	
Lithobates yavapaiensis* (Platz and Frost, 1984)** ***[Rana yavapaiensis]	**Lowland Leopard Frog**	SON	1	0	0	0	1	0	1	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Rana draytonii Baird and Girard, 1852 *[Rana aurora]*	California Red-legged Frog	CAL	0	1	0	0	0	0	0	
CROCODILIA										
Crocodylidae										
***Crocodylus acutus* Cuvier, 1807**	**American Crocodile**	MAR	0	0	0	0	0	M	M*	
TESTUNDINATA										
Cheloniidae										
***Caretta caretta* (Linnaeus, 1758)**	**Loggerhead Sea Turtle**	MAR	0	M	M	0	0	M	M	
***Chelonia mydas* (Linnaeus, 1758)**	**Green Sea Turtle**	MAR	0	M	M	0	0	M	M	
***Eretmochelys imbricata* (Linnaeus, 1766)**	**Hawksbill Sea Turtle**	MAR	0	M	M	0	0	M	M	
***Lepidochelys olivacea* (Eschscholtz, 1829)**	**Olive Ridley Sea Turtle**	MAR	0	M	M	0	0	M	M	
Chelydridae										
Chelydra serpentina (Linnaeus, 1758)	Snapping Turtle	ETM	0	0	0	0	1	0	0	
Dermochylidae										
***Dermochelys coriacea* (Vandelli, 1761)**	**Leatherback Sea Turtle**	MAR	0	M	M	0	0	M	M	6
Emydidae										
Actinemys marmorata (Baird and Girard, 1852)	Pacific Pond Turtle	CAL	0	1	0	0	0	0	0	
Chrysemys picta (Schneider, 1783)	Painted Turtle	GEN	1	0	0	1	1	0	0	
Pseudemys gorzugi Ward, 1984	Rio Grande Cooter	CHI	0	0	0	0	1	0	0	
***Terrapene nelsoni* Stejneger, 1925**	**Spotted Box Turtle**	MDN	0	0	0	1	0	1	1	7
***Terrapene ornata* (Agassiz, 1857)**	**Ornate Box Turtle**	GPS	1	0	0	1	1	0	1	
Trachemys gaigeae (Hartweg, 1939)	Mexican Plateau Slider	CHI	0	0	0	1	1	0	0	
Trachemys nebulosa (Van Denburgh, 1895)	**Baja California Slider**	TRO	0	0	1	0	0	1	1	
Trachemys ornata (Gray, 1831)	Ornate Slider	TRO	0	0	0	0	0	1	0	
Trachemys scripta (Schoepff, 1792)	Pond Slider	ETM	0	0	0	0	1	0	0	
***Trachemys yaquia* Legler & Webb, 1979**	Yaqui Slider	SON	0	0	0	0	0	0	E	5
Geoemydidae										
***Rhinoclemmys pulcherrima* (Gray, 1856)**	**Painted Wood Turtle**	TRO	0	0	0	1	0	1	1	

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Kinosternidae										
***Kinosternon alamosae* Berry and Legler, 1980**	**Alamos Mud Turtle**	TRO	0	0	0	0	0	1	1	3
Kinosternon arizonense* Gilmore, 1922 *[Kinosternon flavescens arizonense]	**Arizona Mud Turtle**	SON	1	0	0	0	0	0	1	4
Kinosternon durangoense Iverson, 1979	Durango Mud Turtle	CHI	0	0	0	1	0	0	0	
Kinosternon flavescens (Agassiz, 1857)	Yellow Mud Turtle	GPS	1	0	0	1	1	0	0	
Kinosternon hirtipes Wagler, 1830	Rough-footed Mud Turtle	GEN	0	0	0	1	0	0	0	
***Kinosternon integrum* LeConte, 1854**	**Mexican Mud Turtle**	TRO	0	0	0	1	0	1	1	
***Kinosternon sonoriense* LeConte, 1854**	**Sonoran Mud Turtle**	GEN	1	0	0	1	1	0	1	
Testudinidae										
***Gopherus agassizii* (Cooper, 1863)**	**Desert Tortoise**	SON	1	0	1	1	0	1	1	
Gopherus flavomarginatus Ligler 1959	Bolson Tortoise	CHI	0	0	0	1	0	0	0	
Trionychidae										
Apalone mutica (Lesueur, 1827)	Smooth Softshell	ETM	0	0	0	0	1	0	0	
Apalone spinifera (Lesueur, 1827)	Spiny Softshell	GPS	0	0	0	1	1	0	0	
SAURIA										
Anguidae										
Anniella geronimensis Shaw, 1940	Baja California Legless Lizard	CAL	0	E	0	0	0	0	0	
Anniella pulchra Gray, 1852	California Legless Lizard	CAL	0	1	0	0	0	0	0	
Barisia ciliaris (Smith, 1942)	Northern Alligator Lizard	MDN	0	0	0	1	0	0	0	
Barisia levicollis Stejneger, 1890	Chihuahuan Alligator Lizard	MDN	0	0	0	1	0	0	0	
Elgaria cedrosensis (Fitch, 1934)	Isla Cedros Alligator Lizard	SON	0	E	0	0	0	0	0	
***Elgaria kingii* Gray, 1838**	**Madrean Alligator Lizard**	MDN	1	0	0	1	1	1	1	
Elgaria multicarinata (Blainville, 1835)	Southern Alligator Lizard	CAL	0	1	1	0	0	0	0	
Elgaria nana (Fitch, 1934)	San Martin Alligator Lizard	CAL	0	X	0	0	0	0	0	
Elgaria paucicarinata (Fitch, 1934)	San Lucan Alligator Lizard	TRO	0	0	E	0	0	0	0	
Elgaria velazquezi Grismer and Hollingsworth 2001	Central Baja Alligator Lizard	SON	0	0	E	0	0	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Gerrhonotus infernalis Baird 1859	Texas Alligator Lizard	MDN	0	0	0	1	0	0	0	
Gerrhonotus liocephalus Wiegmann 1828	Wiegmann's Alligator Lizard	TRO	0	0	0	0	0	1	0	
Bipedidae										
Bipes biporus (Cope, 1894)	Five-toed Worm Lizard	SON	0	1	1	0	0	0	0	
Crotaphytidae										
Crotaphytus bicinctores Smith and Tanner, 1972	Great Basin Collared Lizard	GBN	1	0	0	0	0	0	0	
***Crotaphytus collaris* (Say, 1823)**	**Eastern Collared Lizard**	GEN	1	0	0	1	1	0	1	
***Crotaphytus dickersonae* Schmidt, 1922**	**Sonoran Collared Lizard**	SON	0	0	0	0	0	0	E	16
Crotaphytus grismeri McGuire, 1994	Sierra los Cucapas Collared Lizard	SON	0	E	0	0	0	0	0	
Crotaphytus insularis Van Denburgh and Slevin, 1921	Desert Collared Lizard	SON	0	X	0	0	0	0	0	
***Crotaphytus nebrius* Axtell and Montanucci, 1977**	**Sonoran Collared Lizard**	SON	1	0	0	0	0	0	1	
Crotaphytus vestigium Smith and Tanner, 1972	Baja California Collared Lizard	SON	0	1	1	0	0	0	0	
Gambelia copeii (Yarrow, 1882)	Cope's Leopard Lizard	SON	0	1	1	0	0	0	0	
***Gambelia wislizenii* (Baird and Girard, 1852)**	**Long-nosed Leopard Lizard**	NDG	1	1	0	1	1	0	1	
Eublepharidae										
Coleonyx brevis Stejneger, 1893	Texas Banded Gecko	CHI	0	0	0	1	1	0	0	
***Coleonyx fasciatus* (Boulenger, 1885)**	**Black Banded Gecko**	TRO	0	0	0	0	0	1	1	
Coleonyx gypsicolus Grismer and Ottley, 1988	Isla San Marcos Barefoot Banded Gecko	SON	0	0	X	0	0	0	0	
Coleonyx switaki(Murphy, 1974)	Switak's Banded Gecko	SON	0	1	1	0	0	0	0	
***Coleonyx variegatus* (Baird, 1859)**	**Western Banded Gecko**	SON	1	1	1	0	1	0	1	15
Gekkonidae										
Phyllodactylus bugastrolepis Dixon, 1966	Isla Santa Catalina Leaf-toed Gecko	SON	0	0	X	0	0	0	0	
***Phyllodactylus homolepidurus* Smith, 1935**	**Sonoran Leaf-toed Gecko**	SON	0	0	0	0	0	1	1	26
***Phyllodactylus nocticolus* Dixon, 1964**	**Peninsular Leaf-toed Gecko**	SON	0	1	1	0	0	0	1	
Phyllodactylus partidus Dixon, 1966	Isla Partida Norte Leaf-toed Gecko	SON	0	X	0	0	0	0	0	

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Phyllodactylus tuberculosus* Wiegmann, 1835**	**Yellowbelly Gecko**	TRO	0	0	0	1	0	1	1	
Phyllodactylus unctus (Cope, 1863)	San Lucan Leaf-toed Gecko	TRO	0	0	E	0	0	0	0	
Phyllodactylus xanti (Cope, 1863)	Cape Leaf-toed Gecko	SON	0	0	E	0	0	0	0	
Helodermatidae										
***Heloderma horridum* (Wiegmann, 1829)**	**Beaded Lizard**	TRO	0	0	0	1	0	1	1	
***Heloderma suspectum* Cope, 1869**	**Gila Monster**	SON	1	0	0	1	1	1	1	20
Iguanidae										
Ctenosaura conspicuosa* Dickerson, 1919 *[Ctenosaura hemilopha conspicuosa]	**Isla San Esteban Spiny-tailed Iguana**	SON	0	0	0	0	0	0	X	
Ctenosaura hemilopha(Cope, 1863)	Cape Spiny-tailed Iguana	TRO	0	0	E	0	0	0	0	
Ctenosaura macrolopha* Smith, 1972 *[Ctenosaura hemilopha macrolopha]	**Sonoran Spiny-tailed Iguana**	TRO	0	0	0	1	0	1	1	17
Ctenosaura nolascensis* Smith, 1972 *[Ctenosaura hemilopha nolascensis]	**Isla San Pedro Nolasco Spiny-tailed Iguana**	SON	0	0	0	0	0	0	X	
Ctenosaura pectinata (Wiegmann 1834)	Western Spiny-tailed Iguana	TRO	0	0	0	0	0	1	0	
Dipsosaurus catalinensis Van Denburgh, 1922	Isla Santa Catalina Desert Iguana	SON	0	0	X	0	0	0	0	18
***Dipsosaurus dorsalis* Baird and Girard, 1852**	**Desert Iguana**	SON	1	1	1	0	0	1	1	
Iguana iguana (Linnaeus 1758)	Common Green Iguana	TRO	0	0	0	0	0	1	0	
Sauromalus ater* Dumeril, 1856 *[Sauromalus obesus]	**Common Chuckwalla**	SON	1	1	1	0	0	0	1	27
***Sauromalus hispidus* Stejneger, 1891**	**Spiny Chuckwalla**	SON	0	X	0	0	0	0	X	
Sauromalus klauberi Shaw, 1941	Spotted Chuckwalla	SON	0	0	X	0	0	0	0	
Sauromalus slevini Van Denburgh, 1922	Montserrat Chuckwalla	SON	0	0	X	0	0	0	0	
***Sauromalus varius* Dickerson, 1919**	**Piebald Chuckwalla**	SON	0	X	0	0	0	0	X	
Phrynosomatidae										
***Callisaurus draconoides* Blainville, 1835**	**Zebra-tailed Lizard**	SON	1	1	1	0	1	1	1	8
***Cophosaurus texanus* Troschel, 1852**	**Greater Earless Lizard**	NDG	1	0	0	1	1	0	1	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Holbrookia elegans* Bocourt, 1874**	**Elegant Earless Lizard**	GEN	1	0	0	1	1	1	1	21
***Holbrookia maculata* Girard, 1851**	**Common Lesser Earless Lizard**	GEN	1	0	0	1	1	0	1	
Petrosaurus mearnsi (Stejneger, 1894)	Banded Rock Lizard	SON	0	1	0	0	0	0	0	
Petrosaurus repens (Van Denburgh, 1895)	Short-nosed Rock Lizard	SON	0	1	1	0	0	0	0	
Petrosaurus slevini (Van Denburgh, 1922)	Slevin's Banded Rock Lizard	SON	0	X	0	0	0	0	0	
Petrosaurus thalassinus (Cope, 1863)	San Lucan Rock Lizard	TRO	0	0	E	0	0	0	0	
Phrynosoma blainvillii Gray, 1939 *[Phrynosoma coronatum blainvillii]*	Short-tailed Horned Lizard	CAL	0	1	0	0	0	0	0	
Phrynosoma cerroense Stejneger, 1893 *[Phrynosoma coronatum cerroense]*	Cedros Island Horned Lizard	SON	0	1	1	0	0	0	0	
***Phrynosoma cornutum* (Harlan, 1825)**	**Texas Horned Lizard**	CHI	1	0	0	1	1	0	1	22
Phrynosoma coronatum (Blainville, 1835)	Coast Horned Lizard	CAL	0	0	E	0	0	0	0	
***Phrynosoma ditmarsi* Stejneger, 1906**	**Rock Horned Lizard**	MDN	0	0	0	0	0	0	E	23
Phrynosoma goodei* Stejneger, 1893 *[Phrynosoma platyrhinos goodei]	**Goode's Horned Lizard**	SON	1	0	0	0	0	0	1	24
***Phrynosoma hernandesi* Girard, 1858**	**Greater Short-horned Lizard**	MDN	1	0	0	1	1	0	1	31
***Phrynosoma mcallii* (Hallowell, 1852)**	**Flat-tailed Horned Lizard**	SON	1	1	0	0	0	0	1	
***Phrynosoma modestum* Girard, 1852**	**Round-tailed Horned Lizard**	CHI	1	0	0	1	1	0	1	
***Phrynosoma orbiculare* (Linnaeus 1789)**	**Mountain Horned Lizard**	MDN	0	0	0	1	0	0	1	
Phrynosoma platyrhinos Girard, 1852	Desert Horned Lizard	NDG	1	1	0	0	0	0	0	
***Phrynosoma solare* Gray, 1845**	**Regal Horned Lizard**	SON	1	0	0	0	1	1	1	25
Phrynosoma wigginsi Montanucci, 2004 *[Phrynosoma coronatum]*	Gulf Coast Horned Lizard	SON	0	0	E	0	0	0	0	
***Sceloporus albiventris* Smith, 1939** *[Sceloporus horridus]*	Whitebelly Spiny Lizared	TRO	0	0	0	1	0	1	1	
Sceloporus angustus (Dickerson, 1919)	Santa Cruz Island Sator	SON	0	0	X	0	0	0	0	
Sceloporus arenicolus Degenhardt and Jones, 1972	Dunes Sagebrush Lizard	CHI	0	0	0	0	1	0	0	

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Sceloporus clarkii* Baird and Girard, 1852**	**Clark's Spiny Lizard**	GEN	1	0	0	1	1	1	1	28
Sceloporus cowlesi* Lowe and Norris, 1956** ***[Sceloporus undulatus consobrinus]	**Southwestern Fence Lizard**	CHI	1	0	0	1	1	0	1	
Sceloporus bimaculosus Phelan and Brattstrom, 1955 *[Sceloporus magister]*	Twin-spotted Spiny Lizard	CHI	1	0	0	1	1	0	0	
Sceloporus bulleri Boulenger 1894	Buller's Spiny Lizard	MDN	0	0	0	0	0	1	0	
Sceloporus edbelli Smith, Chiszar and Lemos-Espinal, 2002c	Bell's Spiny Lizard	CHI	0	0	0	1	0	0	0	
Sceloporus graciosus Baird and Girard, 1852	Common Sagebrush Lizard	GBN	1	1	0	0	1	0	0	
Sceloporus grandaevus (Dickerson, 1919)	Cerralvo Island Spiny Lizard	SON	0	0	X	0	0	0	0	
Sceloporus hunsakeri Hall and Smith, 1979	Hunsaker's Spiny Lizard	TRO	0	0	E	0	0	0	0	
***Sceloporus jarrovii* Cope in Yarrow, 1875**	**Yarrow's Spiny Lizard**	MDN	1	0	0	1	1	1	1	
***Sceloporus lemosespinali* Lara-Gongora, 2004** *[Sceloporus grammicus]*	**Lemos-Espinal's Spiny Lizard**	MDN	0	0	0	1	0	0	1	
Sceloporus licki Van Denburgh, 1895	Cape Arboreal Spiny Lizard	TRO	0	0	E	0	0	0	0	
Sceloporus lineatulus (Dickerson, 1919)	Isla Santa Catalina Spiny Lizard	SON	0	0	X	0	0	0	0	
***Sceloporus magister* Hallowell, 1854**	**Desert Spiny Lizard**	SON	1	1	0	1	0	1	1	
Sceloporus merriami Stejneger (1904)	Canyon Lizard	CHI	0	0	0	1	0	0	0	
***Sceloporus nelsoni* Cochran, 1923**	**Nelson's Spiny Lizard**	TRO	0	0	0	1	0	1	1	
Sceloporus occidentalis Baird and Girard, 1852	Western Fence Lizard	CAL	0	1	0	0	0	0	0	
Sceloporus orcutti Stejneger, 1893	Granite Spiny Lizard	CAL	0	1	1	0	0	0	0	
***Sceloporus poinsettii* Baird and Girard, 1852**	**Crevice Spiny Lizard**	CHI	0	0	0	1	1	1	1	29
Sceloporus shannonorum Langebartel 1959	Shannon's Spiny Lizard	TRO	0	0	0	0	0	1	0	
Sceloporus slevini* Smith, 1937** ***[Sceloporus scalaris]	**Slevin's Bunchgrass Lizard**	MDN	1	0	0	1	1	0	1	
Sceloporus spinosus Wiegmann 1828	Eastern Spiny Lizard	TRO	0	0	0	0	0	1	0	
Sceloporus tristichus Cope in Yarrow 1875 *[Sceloporus undulatus tristichus]*	Plateau Fence Lizard	GPS	1	0	0	0	1	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Sceloporus utiformis Cope 1864	Yellow-backed Spiny Lizard	TRO	0	0	0	0	0	1	0	
***Sceloporus virgatus* Smith, 1938**	**Striped Plateau Lizard**	MDN	1	0	0	1	1	1	1	30
Sceloporus zosteromus Cope, 1863	Baja California Spiny Lizard	SON	0	1	1	0	0	0	0	
Uma notata Baird, 1859 ***[Uma notata notata]***	Colorado Desert Fringe-toed Lizard	SON	0	1	0	0	0	0	0	
Uma paraphygas Williams, Chrapliwy, and Smith 1959	Chihuahua Fringe-toed Lizard	CHI	0	0	0	1	0	0	0	
Uma rufopunctata* Cope, 1895 *[Uma notata rufopunctata]	**Yuman Desert Fringe-toed Lizard**	SON	1	0	0	0	0	0	1	32
Uma scoparia Cope, 1894	Mohave Fringe-toed Lizard	SON	1	0	0	0	0	0	0	
***Urosaurus bicarinatus* (Duméril, 1856)**	**Tropical Tree Lizard**	TRO	0	0	0	1	0	1	1	
***Urosaurus graciosus* Hallowell, 1854**	**Long-tailed Brush-lizard**	SON	1	1	0	0	0	0	1	
Urosaurus lahtelai Rau and Loomis, 1977	Baja California Brush Lizard	SON	0	E	0	0	0	0	0	
Urosaurus nigricaudus (Cope, 1864)	Black-tailed Brush Lizard	SON	0	1	1	0	0	0	0	
***Urosaurus ornatus* (Baird and Girard, 1852)**	**Ornate Tree Lizard**	GEN	1	1	0	1	1	1	1	33
Uta encantadae Grismer, 1994	Enchanted Side-blotched Lizard	SON	0	X	0	0	0	0	0	
Uta lowei Grismer, 1994	Dead Side-blotched Lizard	SON	0	X	0	0	0	0	0	
***Uta nolascensis* Van Denburgh and Slevin, 1921**	**Isla San Pedro Nolasco Side-blotched Lizard**	SON	0	0	0	0	0	0	X	34
***Uta palmeri* Stejneger, 1890**	**Isla San Pedro Mártir Side-blotched Lizard**	SON	0	0	0	0	0	0	X	35
Uta squamata Dickerson, 1919	Isla Santa Catalina Side-blotched Lizard	SON	0	0	X	0	0	0	0	
***Uta stansburiana* Baird and Girard, 1852**	**Common Side-blotched Lizard**	NDG	1	1	1	1	1	0	1	
Uta tumidarostra Grismer, 1994	Swollen-nosed Side-blotched Lizard	SON	0	X	0	0	0	0	0	
Polychrotidae										
***Anolis nebulosus* (Wiegmann, 1834)**	**Clouded Anole**	TRO	0	0	0	1	0	1	1	
Anolis utowanae Barbour 1932	Utowana Anole	TRO	0	0	0	0	0	1	0	

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Scincidae										
Plestiodon brevirostris (Günther, 1860) *[Eumeces brevirostris]*	Short-nosed Skink	MDN	0	0	0	1	0	0	0	
Plestiodon callicephalus* (Bocourt, 1879) *[Eumeces callicephalus]	**Mountain Skink**	MDN	1	0	0	1	1	1	1	
Plestiodon colimensis (Taylor 1935) *[Eumeces colimensis]*	Colima S kink	TRO	0	0	0	0	0	1	0	
Plestiodon gilberti Van Denburgh, 1896 *[Eumeces gilberti]*	Gilbert's Skink	CAL	1	1	0	0	0	0	0	
Plestiodon lagunensis (Van Denburgh, 1895) *[Eumeces lagunensis]*	San Lucan Skink	TRO	0	0	E	0	0	0	0	
Plestiodon obsoletus* (Baird and Girard, 1852) *[Eumeces obsoletus]	**Great Plains Skink**	GPS	1	0	0	1	1	0	1	
Plestiodon multilineatus (Tanner, 1957) *[Eumeces multilineatus]*	Chihuahuan Skink	MDN	0	0	0	1	0	0	0	
Plestiodon multivirgatus (Hallowell, 1857) *[Eumeces multivirgatus]*	Many-lined Skink	GBN	1	0	0	1	1	0	0	
Plestiodon parviauriculatus* (Taylor, 1933) *[Eumeces parviauriculatus]	**Northern Pigmy Skink**	MDN	0	0	0	1	0	1	1	19
Plestiodon parvulus (Taylor 1933) *[Eumeces parvulus]*	Southern Pigmy Skink	TRO	0	0	0	0	0	1	0	
Plestiodon skiltonianus (Baird and Girard, 1852) *[Eumeces skiltonianus]*	Western Skink	CAL	1	1	0	0	0	0	0	
Plestiodon tetragrammus (Baird, 1859 “1858”) *[Eumeces tetragrammus]*	Four-lined Skink	CHI	0	0	0	1	0	0	0	
Teiidae										
A*spidoscelis arizonae* (Van Denburgh, 1896) *[Cnemidophorus inornatus arizonae]*	Arizona Striped Whiptail	CHI	E	0	0	0	0	0	0	
Aspidoscelis bacata* (Van Denburgh and Slevin, 1921) *[Cnemidophorus bacatus]	**Isla San Pedro Nolasco Whiptail**	SON	0	0	0	0	0	0	X	9
Aspidoscelis burti* (Taylor, 1938) *[Cnemidophorus burti]	**Canyon Spotted Whiptail**	SON	1	0	0	0	1	0	1	10

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Aspidoscelis cana (Van Denburgh and Slevin, 1921) *[Cnemidophorus canus]*	Isla Salsipuedes Whiptail	SON	0	X	0	0	0	0	0	
Aspidoscelis carmenensis (Maslin and Secoy, 1986) *[Cnemidophorus carmenensis]*	Isla Carmen Orange-throated Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis catalinensis (Van Denburgh and Slevin, 1921) *[Cnemidophorus catalinensis]*	Isla Santa Catalina Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis celeripes (Dickerson, 1919) *[Cnemidophorus celeripes]*	Isla San Jose Western Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis ceralbensis (Van Denburgh and Slevin, 1921) *[Cnemidophorus ceralbensis]*	Isla Cerralvo Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis costata* (Cope, 1878) *[Cnemidophorus costatus]	**Western Mexico Whiptail**	TRO	0	0	0	1	0	1	1	14
Aspidoscelis danheimae (Burt, 1929) *[Cnemidophorus danheimae]*	Isla San Jose Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis dixoni (Scudday, 1973) *[Cnemidophorus dixoni]*	Gray Checkered Whiptail	CHI	0	0	0	0	1	0	0	
Aspidoscelis espiritensis (Van Denburgh and Slevin, 1921) *[Cnemidophorus espiritensis]*	Isla Espiritu Santo Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis estebanensis* (Dickerson, 1919) *[Cnemidophorus estebanensis]	**San Esteban Whiptail**	SON	0	0	0	0	0	0	X	
Aspidoscelis exsanguis* (Lowe, 1956) *[Cnemidophorus exsanguis]	**Chihuahuan Spotted Whiptail**	CHI	1	0	0	1	1	0	1	
Aspidoscelis flagellicauda (Lowe and Wright, 1964) *[Cnemidophorus flagellicaudus]*	Gila Spotted Whiptail	SON	1	0	0	0	1	0	0	

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Aspidoscelis franciscensis (Van Denburgh and Slevin, 1921) *[Cnemidophorus franciscensis]*	San Francisco Island Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis gularis (Baird and Girard, 1852) *[Cnemidophorus gularis]*	Common Spotted Whiptail	CHI	0	0	0	1	1	0	0	
Aspidoscelis gypsi (Wright and Lowe, 1993) *[Cnemidophorus gypsi]*	Little White Whiptail	CHI	0	0	0	0	E	0	0	
Aspidoscelis hyperythra (Cope, 1863) *[Cnemidophorus hyperythrus]*	Orange-throated Whiptail	CAL	0	1	1	0	0	0	0	
Aspidoscelis inornata (Baird, 1859 "1858") *[Cnemidophorus inornatus]*	Little Striped Whiptail	CHI	0	0	0	1	1	0	0	
Aspidoscelis labialis (Stejneger, 1890) *[Cnemidophorus labialis]*	Baja California Whiptail	SON	0	1	1	0	0	0	0	
Aspidoscelis marmorata (Baird and Girard, 1852) *[Cnemidophorus tigris marmoratus]*	Marbled Whiptail	CHI	0	0	0	1	1	0	0	
***Aspidoscelis martyris* (Stejneger, 1892)** *[Cnemidophorus martyris]*	**Isla San Pedro Mártir Whiptail**	SON	0	0	0	0	0	0	X	13
Aspidoscelis neomexicana (Lowe and Zweifel, 1952) *[Cnemidophorus neomexicanus]*	New Mexico Whiptail	CHI	0	0	0	0	1	0	0	
Aspidoscelis opatae* (Wright, 1967) *[Cnemidophorus opatae]	**Opata Whiptail**	SON	0	0	0	0	0	0	E	12
Aspidoscelis pai (Wright and Lowe, 1993) *[Cnemidophorus inornatus pai]*	Pai Striped Whiptail	GBN	E	0	0	0	0	0	0	
Aspidoscelis picta (Van Denburgh and Slevin, 1921) *[Cnemidophorus pictus]*	Isla Monserrate Whiptail	SON	0	0	X	0	0	0	0	
Aspidoscelis sexlineata (Linnaeus, 1766) *[Cnemidophorus sexlineatus]*	Six-lined Racerunner	ETM	0	0	0	0	1	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Aspidoscelis sonorae* (Lowe and Wright, 1964) *[Cnemidophorus sonorae]	**Sonoran Spotted Whiptail**	SON	1	0	0	1	1	0	1	
Aspidoscelis tesselata (Say, 1823) *[Cnemidophorus tesselatus]*	Common Checkered Whiptail	CHI	0	0	0	1	1	0	0	
Aspidoscelis tigris* (Baird and Girard, 1852) *[Cnemidophorus tigris]	**Tiger Whiptail**	NDG	1	1	1	0	1	1	1	11
Aspidoscelis uniparens* (Wright and Lowe, 1965) *[Cnemidophorus uniparens]	**Desert Grassland Whiptail**	CHI	1	0	0	1	1	0	1	
Aspidoscelis velox (Springer, 1928) *[Cnemidophorus velox]*	Plateau Striped Whiptail	GBN	1	0	0	0	1	0	0	
Aspidoscelis xanthonota* (Duellman and Lowe 1953) *[Cnemidophorus buti xanthontus]	**Red-backed Whiptail**	SON	1	0	0	0	0	0	1	
Xantusiidae										
Xantusia arizonae Klauber, 1931 *[Xantusia vigilis arizonae]*	Arizona Night Lizard	SON	E	0	0	0	0	0	0	
Xantusia bezyi Papenfuss, Macey, and Schulte, 2001	Bezy's Night Lizard	SON	E	0	0	0	0	0	0	
Xantusia henshawi Stejneger, 1893	Granite Night Lizard	CAL	0	1	0	0	0	0	0	
Xantusia gilberti Van Dengurgh, 1895 *[Xantusia vigilis gilberti]*	Gilbert's Night Lizard	TRO	0	0	E	0	0	0	0	
***Xantusia jaycolei* Bezy, Bezy, and Bolles, 2009** *[Xantusia vigilis]*	**Cole's Night Lizard**	SON	0	0	0	0	0	0	E	52
Xantusia sherbrookei Bezy, Bezy, and Bolles, 2009 *[Xantusia wigginsi]*	Sherbrooke's Night Lizard	SON	0	0	E	0	0	0	0	
Xantusia vigilis Baird, 1859	Desert Night Lizard	SON	1	0	0	0	0	0	0	
Xantusia wigginsi Savage, 1952	Wiggins' Desert Night Lizard	SON	0	1	1	0	0	0	0	
SERPENTES **Boidae**										
***Boa constrictor* Linnaeus, 1758**	**Boa Constrictor**	TRO	0	0	0	1	0	1	1	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Lichanura trivirgata* (Cope, 1861)**	**Rosy Boa**	SON	1	1	1	0	0	0	1	
Colubridae										
***Arizona elegans* Kennicott 1859**	**Glossy Snake**	NDG	1	1	0	1	1	1	1	
Arizona pacata Klauber, 1946	Peninsular Glossy Snake	SON	0	1	1	0	0	0	0	
Bogertophis rosaliae (Mocquard, 1899)	Baja California Ratsnake	SON	0	1	1	0	0	0	0	
Bogertophis subocularis (Brown, 1901)	Trans-Pecos Ratsnake	CHI	0	0	0	1	1	0	0	
Chilomeniscus savagei Cliff, 1954	Isla Cerralvo Sand Snake	SON	0	0	X	0	0	0	0	
Chilomeniscus stramineus* Cope, 1861 *[Chilomeniscus cinctus]	**Variable Sand Snake**	SON	1	1	1	0	0	1	1	37
***Chionactis occipitalis* (Hallowell, 1854)**	**Western Shovel-nosed Snake**	SON	1	1	0	0	0	0	1	
***Chionactis palarostris* (Klauber, 1937)**	**Sonoran Shovel-nosed Snake**	SON	1	0	0	0	0	0	1	48
Coluber aurigulus (Cope, 1861) *[Masticophis aurigulus]*	Cape Striped Racer	TRO	0	0	E	0	0	0	0	
Coluber barbouri Van Denburgh and Slevin, 1921 *[Masticophis barbouri]*	Isla Espiritu Santos Striped Racer	SON	0	0	X	0	0	0	0	
Coluber bilineatus* (Jan, 1863) *[Masticophis bilineatus]	**Sonoran Whipsnake**	GEN	1	0	0	1	1	1	1	44
Coluber constrictor Linnaeus, 1758	North American Racer	GEN	1	0	0	1	1	0	0	
Coluber flagellum* Shaw, 1802 *[Masticophis flagellum]	**Coachwhip**	NDG	1	1	0	1	1	1	1	45
Coluber fulginosus (Cope, 1895) *[Masticophis fulginosus]*	Baja California Coachwhip	CAL	0	1	1	0	0	0	0	
Coluber lateralis (Hallowell, 1853) *[Masticophis lateralis]*	California Striped Racer	CAL	0	1	1	0	0	0	0	
Coluber mentovarius* (Duméril, Bibron and Duméril 1854) *[Masticophis mentovarius]	**Neotropical Whipsnake**	TRO	0	0	0	1	0	1	1	
Coluber slevini* (Lowe and Norris, 1953) *[Masticophis slevini]	**Isla San Esteban Whipsnake**	SON	0	0	0	0	0	0	X	
Coluber taeniatus (Hallowell, 1852) *[Masticophis taeniatus]*	Striped Whipsnake	GEN	1	0	0	1	1	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Coniophanes lateritus Cope 1862 (1861)	Stripeless Snake	TRO	0	0	0	0	0	1	0	
Conopsis nasus Günther (1858)	Large-nosed Earthsnake	MDN	0	0	0	1	0	1	0	
***Diadophis punctatus* (Linnaeus, 1766)**	**Ring-necked Snake**	GEN	1	1	0	1	1	1	1	38
***Drymarchon melanurus* (Duméril, Bibron and Duméril, 1854)**	**Central American Indigo Snake**	TRO	0	0	0	1	0	1	1	
***Drymobius margaritiferus* (Schlegel, 1837)**	**Speckled Racer**	TRO	0	0	0	1	0	1	1	
Enulius oligostichus Smith, Arndt, Sherbrooke, 1967	Mexican Long-tailed Snake	TRO	0	0	0	0	0	1	0	
***Geophis dugesii* Bocourt, 1883**	**Duges' Earth Snake**	MDN	0	0	0	1	0	1	1	
***Gyalopion canum* Cope, 1860**	**Chihuahuan Hook-nosed Snake**	CHI	1	0	0	1	1	0	1	
***Gyalopion quadrangulare* (Günther, 1893)**	**Thornscrub Hook-nosed Snake**	TRO	1	0	0	1	0	1	1	41
***Heterodon kennerlyi* Kennicott, 1860**	**Mexican Hog-nosed Snake**	CHI	1	0	0	1	1	0	1	
Hypsiglena chlorophaea* Cope, 1860 *[Hypsiglena torquata chlorophaea]	**Desert Nightsnake**	GEN	1	1	1	0	0	1	1	
Hypsiglena jani (Duges, 1866) *[Hypsiglena torquata jani]*	Chihuahuan Nightsnake	CHI	1	0	0	1	1	0	0	
Hypsiglena ochrorhyncha (Cope, 1860)	Coast Nightsnake	SON	0	1	1	0	0	0	0	
Hypsiglena slevini Tanner, 1943 *[Eridiphas slevini]*	Baja California Nightsnake	SON	0	1	1	0	0	0	0	
Hypsiglena torquata (Günther, 1860)	Nightsnake	GEN	0	0	0	0	0	1	0	
***Imantodes gemmistratus* Cope, 1861**	**Central American Tree Snake**	TRO	0	0	0	1	0	1	1	
Lampropeltis alterna (Brown, 1901)	Gray-banded Kingsnake	CHI	0	0	0	0	1	0	0	
Lampropeltis catalinensis (Van Denburgh and Slevin, 1921)	Isla Santa Catalina Kingsnake	SON	0	0	X	0	0	0	0	
***Lampropeltis getula* (Linnaeus, 1766)**	**Common Kingsnake**	GEN	1	1	1	1	1	1	1	42
Lampropeltis herrerae Van Denburgh and Slevin, 1923	Islas Todos Santos Mountain Kingsnake	CAL	0	X	0	0	0	0	0	
Lampropeltis knoblochi* Taylor, 1940 *[Lampropeltis pyromelana knoblochi]	**Chihuahuan Mountain Kingsnake**	MDN	0	0	0	1	0	0	1	

Check List **5**(3): 632–672, 2009.
ISSN: 1809-127X

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Lampropeltis mexicana (Garman, 1884)	San Luis Potosi Kingsnake	MDN	0	0	0	0	0	1	0	
***Lampropeltis pyromelana* (Cope, 1867)**	**Sonoran Mountain Kingsnake**	MDN	1	0	0	1	1	0	1	
***Lampropeltis triangulum* (Lacépède, 1789)**	**Milksnake**	ETM	1	0	0	1	1	1	1	
Lampropeltis webbi Bryson, Dixon, and Lazcano 2005		MDN	0	0	0	0	0	E	0	
Lampropeltis zonata (Lockington ex Blainville, 1876)	California Mountain Kingsnake	CAL	0	1	0	0	0	0	0	
Leptodeira maculata (Hallowell, 1861)	Southwestern Cat-eyed Snake	TRO	0	0	0	0	0	1	0	
***Leptodeira punctata* (Peters, 1867)**	**Western Cat-eyed Snake**	TRO	0	0	0	0	0	1	1	
Leptodeira septentrionalis (Kennicott in Baird, 1859)	Northern Cat-eyed Snake	TRO	0	0	0	0	0	1	0	
***Leptodeira splendida* Günther, 1895**	**Splendid Cat-eyed Snake**	TRO	0	0	0	1	0	1	1	43
***Leptophis diplotropis* (Günther, 1872)**	**Pacific Coast Parrot Snake**	TRO	0	0	0	1	0	1	1	
Mastigodryas cliftoni* (Hardy, 1964) *[Dryadophis cliftoni]	**Clifton's Lizard Eater**	TRO	0	0	0	1	0	1	1	
Mastigodryas melanolomus (Cope, 1868)	Common Lizard Eater	TRO	0	0	0	0	0	1	0	
Nerodia erythrogaster (Forster, 1771)	Plain-bellied Watersnake	ETM	0	0	0	0	1	0	0	
Opheodrys vernalis (Harlan, 1827)	Smooth Greensnake	ETM	0	0	0	1	1	0	0	
***Oxybelis aeneus* (Wagler, 1824)**	**Brown Vine Snake**	TRO	1	0	0	1	0	1	1	
Pantherophis emoryi (Baird and Girard, 1853)	Great Plains Ratsnake	CHI	0	0	0	1	1	0	0	
***Phyllorhynchus browni* Stejneger, 1890**	**Saddled Leaf-nosed Snake**	SON	1	0	0	0	0	1	1	52
***Phyllorhynchus decurtatus* (Cope, 1868)**	**Spotted Leaf-nosed Snake**	SON	1	1	1	0	0	1	1	53
***Pituophis catenifer* (Blainville, 1835)**	**Gophersnake**	GEN	1	1	1	1	1	1	1	
***Pituophis deppei* (Duméril 1853)**	**Mexican Bullsnake**	MDN	0	0	0	1	0	0	1	
Pituophis vertebralis (Blainville, 1835)	Baja California Gophersnake	SON	0	1	1	0	0	0	0	
Procinura aemula* Cope, 1879 *[Sonora aemula]	**File-tailed Ground Snake**	TRO	0	0	0	1	0	1	1	
***Pseudoficimia frontalis* (Cope, 1864)**	**False Ficimia**	TRO	0	0	0	0	0	1	1	46
Rhadinaea hesperia Bailey, 1940	Western Graceful Brownsnake	MDN	0	0	0	1	0	1	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
***Rhinocheilus lecontei* Baird and Girard, 1853**	**Long-nosed Snake**	NDG	1	1	0	1	1	1	1	
***Salvadora bairdii* Jan, 1860 in Jan & Sordelli, 1860-1866**	**Baird's Patch-nosed Snake**	MDN	0	0	0	1	0	1	1	
***Salvadora grahamiae* Baird and Girard, 1853**	**Eastern Patch-nosed Snake**	GEN	1	0	0	1	1	0	1	47
***Salvadora hexalepis* (Cope, 1866)**	**Western Patch-nosed Snake**	NDG	1	1	1	1	1	1	1	
***Senticolis triaspis* (Cope, 1866)**	**Green Ratsnake**	TRO	1	0	0	1	1	1	1	
Sonora michoacanensis Duges, 1885	Michoacán Groundsnake	TRO	0	0	0	0	0	1	0	
***Sonora semiannulata* Baird and Girard, 1853**	**Western Groundsnake**	GEN	1	1	1	1	1	0	1	49
***Storeria storerioides* (Cope, 1865)**	**Mexican Brownsnake**	MDN	0	0	0	1	0	1	1	
***Sympholis lippiens* Cope, 1862**	**Mexican Short-tailed Snake**	TRO	0	0	0	1	0	1	1	
Tantilla bocourti (Günther, 1895 in Salvin & Godman, 1885-2002)	Bocourt's Blackheaded Snake	TRO	0	0	0	0	0	1	0	
Tantilla calamarina Cope 1867 (1866)	Pacific Coast Centipede Snake	TRO	0	0	0	0	0	1	0	
***Tantilla hobartsmithi* Taylor, 1937**	**Smith's Black-headed Snake**	NDG	1	0	0	1	1	0	1	50
***Tantilla nigriceps* Kennicott, 1860**	**Plains Black-headed Snake**	GPS	1	0	0	1	1	0	1	
Tantilla planiceps (Blainville, 1835)	Western Black-headed Snake	CAL	0	1	1	0	0	0	0	
***Tantilla wilcoxi* Stejneger, 1902**	**Chihuahuan Black-headed Snake**	MDN	1	0	0	1	1	1	1	
***Tantilla yaquia* Smith, 1942**	**Yaqui Black-headed Snake**	TRO	1	0	0	1	1	1	1	
***Thamnophis cyrtopsis* (Kennicott, 1860)**	**Black-necked Gartersnake**	GEN	1	0	0	1	1	1	1	
Thamnophis elegans (Baird and Girard, 1853)	Terrestrial Gartersnake	GBN	1	1	0	1	1	0	0	
***Thamnophis eques* (Reuss, 1834)**	**Mexican Gartersnake**	GEN	1	0	0	1	1	0	1	40
Thamnophis errans Smith, 1942	Mexican Wandering Gartersnake	MDN	0	0	0	1	0	0	0	
Thamnophis hammondii (Kennicott, 1860)	Two-striped Gartersnake	CAL	0	1	1	0	0	0	0	
***Thamnophis marcianus* (Baird and Girard, 1853)**	**Checkered Gartersnake**	GEN	1	1	0	1	1	0	1	
***Thamnophis melanogaster* Peters, 1864**	**Mexican Black-bellied Gartersnake**	MDN	0	0	0	1	0	0	1	
Thamnophis radix (Baird and Girard, 1853)	Plains Gartersnake	GPS	0	0	0	0	1	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Thamnophis proximus (Say, 1823)	Western Ribbonsnake	ETM	0	0	0	0	1	0	0	
***Thamnophis rufipunctatus* (Cope, 1875)**	**Narrow-headed Gartersnake**	MDN	1	0	0	1	1	0	1	
Thamnophis sirtalis (Linnaeus, 1758)	Common Gartersnake	ETM	0	0	0	1	1	0	0	
***Thamnophis validus* (Kennicott, 1860)**	**Mexican West Coast Gartersnake**	TRO	0	0	1	1	0	1	1	
***Trimorphodon lambda*(Duméril, Bibron and Duméril 1854)**	**Western Lyre Snake**	SON	1	0	0	1	1	0	1	51
Trimorphodon lyrophanes (Cope 1861)	California Lyre Snake	SON	0	1	1	0	0	0	0	
Trimorphodon paucimaculatus Taylor, 1936		TRO	0	0	0	0	0	1	0	
Trimorphodon vilkinsonii Cope 1886	Texas Lyresnake	CHI	0	0	0	1	1	0	0	
***Trimorphodon tau* Cope, 1870**	**Mexican Lyre Snake**	TRO	0	0	0	1	0	1	1	
Tropidoclonion lineatum (Hallowell, 1856)	Lined Snake	GPS	0	0	0	0	1	0	0	
Tropidodipsas annulifera (Boulenger, 1894)	Western Snail-eating Snake	TRO	0	0	0	0	0	1	0	
Tropidodipsas philippi (Jan, 1863)	Philippi's Snail-eating Snake	TRO	0	0	0	0	0	1	0	
***Tropidodipsas repleta* Smith, Lemos-Espinal, Hartman and Chiszar 2005**		TRO	0	0	0	1	0	0	1	
Hydrophiidae										
***Pelamis platurus* (Linnaeus, 1766)**	**Yellow-bellied Seasnake**	MAR	0	M	M	0	0	M	M	
Elapidae										
***Micruroides euryxanthus* (Kennicott, 1860)**	**Sonoran Coral Snake**	SON	1	0	0	1	1	1	1	39
***Micrurus distans* (Kennicott, 1860)**	**West Mexican Coral Snake**	TRO	0	0	0	1	0	1	1	
Leptotyphlopidae										
***Leptotyphlops dissectus* (Cope, 1896)**	**New Mexico Threadsnake**	CHI	1	0	0	1	1	0	0	
***Leptotyphlops humilis* (Baird and Girard, 1853)**	**Western Threadsnake**	NDG	1	1	1	1	1	1	1	
Viperidae										
***Agkistrodon bilineatus* Günther, 1863**	**Cantíl**	TRO	0	0	0	1	0	1	1	
Agkistrodon contortrix (Linnaeus, 1766)	Copperhead	ETM	0	0	0	1	0	0	0	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Crotalus angelensis Klauber, 1963	Isla Angel de la Guarda Rattlesnake	SON	0	X	0	0	0	0	0	
***Crotalus atrox* Baird and Girard, 1853**	**Western Diamond-backed Rattlesnake**	NDG	1	1	0	1	1	1	1	36
***Crotalus basiliscus* (Cope, 1864)**	**Mexican West Coast Rattlesnake**	TRO	0	0	0	1	0	1	1	
Crotalus caliginis Klauber, 1949	Isla Coronado Rattlesnake	CAL	0	X	0	0	0	0	0	
Crotalus catalinensis Cliff, 1954	Santa Catalina Island Rattlesnake	SON	0	0	X	0	0	0	0	
***Crotalus cerastes* Hallowell, 1854**	**Sidewinder**	SON	1	1	0	0	0	0	1	
Crotalus cerberus (Coues, 1875) *[Crotalus viridis cerberus]*	Arizona Black Rattlesnake	GBN	1	0	0	0	1	0	0	
Crotalus enyo (Cope, 1861)	Baja California Rattlesnake	SON	0	1	1	0	0	0	0	
***Crotalus estebanensis* Klauber, 1949**	**Isla San Esteban Black-tailed Rattlesnake**	SON	0	0	0	0	0	0	X	
***Crotalus lepidus* (Kennicott, 1861)**	**Rock Rattlesnake**	MDN	1	0	0	1	1	1	1	
Crotalus lorenzoensis Radcliffe and Maslin, 1975	San Lorenzo Island Diamond Rattlesnake	SON	0	X	0	0	0	0	0	
***Crotalus mitchellii* (Cope, 1861)**	**Speckled Rattlesnake**	SON	1	1	1	0	0	0	1	
***Crotalus molossus* Baird and Girard, 1853**	**Black-tailed Rattlesnake**	GEN	1	0	0	1	1	1	1	
Crotalus muertensis Klauber, 1949	Isla El Muerto Rattlesnake	SON	0	X	0	0	0	0	0	
Crotalus oreganus Holbrook, 1840 *[Crotalus viridis]*	Western Rattlesnake	GEN	1	1	1	0	0	0	0	
Crotalus ruber Cope, 1892	Red Diamond Rattlesnake	CAL	0	1	1	0	0	0	0	
***Crotalus scutulatus* (Kennicott, 1861)**	**Mohave Rattlesnake**	NDG	1	0	0	1	1	0	1	
Crotalus stejnegeri Dunn, 1919	Long-tailed Rattlesnake	TRO	0	0	0	0	0	1	0	
***Crotalus pricei* Van Denburgh, 1895**	**Twin-spotted Rattlesnake**	MDN	1	0	0	1	0	0	1	
***Crotalus tigris* Kennicott in Baird, 1859**	**Tiger Rattlesnake**	SON	1	0	0	0	0	0	1	
Crotalus tortugensis Van Denburgh and Slevin, 1921	Tortuga Island Diamondback Rattlesnake	SON	0	0	X	0	0	0	0	
***Crotalus viridis* (Rafinesque, 1818)**	**Prairie Rattlesnake**	GPS	0	0	0	1	1	0	1	
***Crotalus willardi* Meek, 1905**	**Ridge-nosed Rattlesnake**	MDN	1	0	0	1	1	0	1	

LISTS OF SPECIES

Taxon	English Common Name	Affin	ARI	BC	BCS	CHI	NME	SIN	SON	TL
Sistrurus catenatus (Rafinesque, 1818)	Massasauga	GPS	1	0	0	0	1	0	0	
Introduced species										
Lithobates berlandieri* (Baird, 1854) *[Rana berlandieri]	**Rio Grande Leopard Frog**		1	0	0	0	0	0	1	
Lithobates catesbeianus* (Shaw, 1802) *[Rana catesbeiana]	**American Bullfrog**		1	1	1	1	1	1	1	
Lithobates forreri (Boulenger, 1883) *[Rana forreri]*	Forrer's Leopard Frog		0	0	1	0	0	0	0	
Smilisca baudinii (Duméril and Bibron, 1841)	Mexican Tree Frog		0	0	1	0	0	0	0	
Xenopus laevis (Daudin, 1802)	African Clawed Frog		1	0	0	0	0	0	0	
Chelydra serpentina (Linnaeus, 1758)	Snapping Turtle		1	0	0	0	0	0	0	
Trachemys scripta (Schoepff, 1792)	Pond Slider		1	0	0	1	0	0	0	
Ctenosaura conspicuosa Dickerson, 1919 *[Ctenosaura hemilopha conspicuosa]*	Isla San Esteban Spiny-tailed Iguana		1	0	0	0	0	0	0	
Ctenosaura macrolopha Smith, 1972 *[Ctenosaura hemilopha macrolopha]*	Sonoran Spiny-tailed Iguana		1	0	0	0	0	0	0	
***Hemidactylus frenatus* Duméril and Bibron, 1836**	**Common House Gecko**		0	0	1	0	0	1	1	
Hemidactylus turcicus (Linnaeus, 1758)	**Mediterranean House Gecko**		1	1	0	1	0	0	1	
Gehyra mutilata (Wiegmann, 1843)	Mutilating Gecko		0	0	1	0	0	1	0	
Aspidoscelis neomexicana (Lowe and Zweifel, 1952) *[Cnemidophorus neomexicanus]*	New Mexico Whiptail		1	0	0	0	0	0	0	
***Ramphotyphlops braminus* (Daudin, 1803)**	**Brahminy Blind Snake**		1	0	0	0	0	1	1	

* Extirpated

Appendix 3: Species reaching their northern distributional limit in Sonora. Records consist of verified voucher specimens, published distributional records, and personal observations by the authors. Endemic species are not included. Superscripts denote placement on distributional map (Figure 8).
Ambystoma rosaceum[2] (UAZ 52139) Sierra El Pinito - Municipio de Nogales, *Pseudoeurycea bellii*[44] (UAZ 12138) Mesa del Campañero - Municipio de Yécora, *Anaxyrus mazatlanensis*[3] (UAZ 11827) South de Magdalena - Municipio de Santa Ana, *Ollotis occidentalis*[35] (UMMZ 78323) Sierra el Tigre - Municipio de Nacozari de

LISTS OF SPECIES

Garcia, *Tlalocohyla smithii*[58] (UAZ 16070) West of Hermosillo - Municipio de Hermosillo, *Pachymedusa dacnicolor*[36] (UAZ 56714-PSV) South of Güisamopa –Municipio de Sahuaripa, *Smilisca baudinii*[51] (UAZ 45964) Río Yaqui crossing at Hwy 16 – Municipio de Soyopa, *Craugastor occidentalis*[13] (UAZ 46884) Vicinity Choquincahui - Municipio de Álamos, *Craugastor tarahumaraensis*[14] (UAZ 56716-PSV) West of Mesa del Campañero - Municipio de Yécora, *Leptodactylus melanonotus*[27] (UAZ 08213) Hermosillo - Municipio de Hermosillo (unconfirmed sight record near Moctezuma would extend the range 145 km east northeast, Jim Mead pers. obs.), *Syrrhophus interorbitalis*[54] (UAZ 56549-PSV) East of Yécora - Municipio de Yécora, *Lithobates forreri*[31] (Frost and Bagnara 1976) Vicam - Municipio de Bacum, *Lithobates magnaocularis*[32] (Frost and Bagnara 1976) Yécora - Municipio de Yécora, *Terrapene nelsoni*[55] (O'Brien et al., 2006) South of the Sierra los Arrieros - Municipio de Bacerac, *Kinosternon alamosae*[24] (J Rorabaugh pers obs.) Río Sonora crossing at Ures - Municipio de Ures, *Kinosternon integrum*[26] (UAZ 56547-PSV) West slope of Sierra El Chinito - Municipio de Baviácora, *Trachemys yaquia*[59] (UAZ 39965) Rio Bavispe near Huachinera - Municipio de Huachinera, *Coleonyx fasciatus*[11] (Grismer 1990) South of Cananea - Municipio de Cananea, *Phyllodactylus homolepidurus*[39] (UAZ 47990) Sierra Julio - Municipio de Caborca, *Phyllodactylus tuberculosus*[40] (UAZ 39970) Sierra El Chinito - Municipio de Baviácora, *Heloderma horridum*[22] (UAZ 56579-PSV) Sierra El Dátil - Municipio de Soyopa, *Ctenosaura macrolopha*[19] (UAZ 56701-PSV) Northwest of Benjamín Hill - Municipio de Benjamín Hill, *Phrynosoma orbiculare*[37] (UMMZ 78416) Sierra el Tigre - Municipio de Nacozari de Garcia, *Sceloporus lemosespinali*[49] (UTA 17365) Sierra San Luis - Municipio de Agua Prieta, *Sceloporus albiventris*[48] (UAZ 28236) South of Sierra La Laguna - Municipio de Yécora, *Sceloporus nelsoni*[50] (UAZ 56713-PSV) Sierra El Dátil - Municipio de Soyopa, *Urosaurus bicarinatus*[63] (UAZ 39969) South of Nuri - Municipio de Rosario Tesopaco, *Anolis nebulosus*[5] (Lieb 1981) East of Nácori Chico - Municipio de Nácori Chico, *Plestiodon parviauriculatus*[42] (UAZ 45083) East of Sierra El Chuchupate - Municipio de Yécora, *Aspidoscelis costata*[6] (LACM 121365-71) East of Nácori Chico - Municipio de Nácori Chico, *Boa constrictor*[8] (UAZ 42356) Southeast of Magdalena– Municipio de Magdalena de Kino, *Coluber mentovarius*[12] (UAZ 56736-PSV) Northeast of Imuris - Municipio de Imuris, *Mastigodryas cliftoni*[33] (ASU 5848) Northeast of Álamos - Municipio de Álamos, *Drymobius margaritiferus*[20] (UAZ 42838) Vicinity of Álamos - Municipio de Álamos, *Geophis dugesii*[21] (UAZ 56421-PSV) Sierra El Chuchupate - Municipio de Yécora, *Imantodes gemmistratus*[23] (UAZ 56042-PSV) West of Mesa del Campañero - Municipio de Yécora, *Leptodeira punctata*[28] (CAS 93855) North of Obregón - Municipio de Cajeme, *Leptodeira splendida*[28] (UAZ 56548-PSV) East of Yécora - Municipio de Yécora, *Leptophis diplotropis*[30] (UCM 14165) Southeast of Cumpas - Municipio de Cumpas, *Pituophis deppei*[41] (Smith et al. 2005[a]) West of Yécora - Municipio de Yécora, *Pseudoficimia frontalis*[45] (UAZ 56368-PSV) East of the Sierra El Dátil - Municipio de Soyopa, *Salvadora bairdi*[47] (UAZ 44947) Sierra La Madera - Municipio de Moctezuma, *Procinura aemula*[43] (USNM 214124) Sierra El Dátil - Municipio de Soyopa, *Storeria storerioides*[52] (UAZ 32821) Sierra de Huachinera - Municipio de Huachinera, *Sympholis lippiens*[53] (UAZ 14428) Southeast of Hermosillo - Municipio de Hermosillo, *Thamnophis melanogaster*[56] (CAS 88444) Vicinity of Mesa Tres Rios - Municipio de Bacadéhuachi, *Thamnophis validus*[57] (UAZ 42848) Río Yaqui at Esperanza - Municipio de Cajeme, *Trimorphodon tau*[60] (BYUH 41160) East of Caborca - Municipio de Pitiquito, *Tropidodipsas repleta*[61] (MZFC 12057) Sierra El Dátil - Municipio de Soyopa, *Micrurus distans*[34] (UAZ 56584-PSV) West of Maycoba - Municipio de Yécora, *Agkistrodon bilineatus*[1] (UAZ 56577-PSV) South of Nuri - Municipio de Rosario Tesopaco, *Crotalus basiliscus*[15] (UAZ 45754) Vicinity of San Jose de Pimas - Municipio de La Colorada.

Appendix 4: Species reaching their southern distributional limit in Sonora. Records consist of verified voucher specimens, published distributional records, and reliable personal observations. Endemic species are not included. Superscripts denote placement on distributional map (Figure 7).

Anaxyrus retiformis[4] (UAZ 47698) 32 km north of Guaymas – Municipio de Guaymas, *Lithobates yavapaiensis*[66] (Hale 2001) Sierra El Chuchupate - Municipio de Yécora, *Kinosternon arizonense*[25] (UAZ 56715-PSV) Sierra El Dátil - Municipio de Soyopa, *Aspidoscelis xanthonota*[65] (UAZ 57076-PSV) Sierra la Gloria – Municipio de Caborca, *Aspidoscelis sonorae*[7] (UAZ 21717) Vicinity de Mesa Tres Rios - Municipio de Bacadéhuachi, *Crotaphytus nebrius*[18] (AMNH 73715) Vicinity de Guaymas – Municipio de Guaymas, *Phrynosoma goodei*[38] (UAZ 13927) Punta Sargento - Municipio de Hermosillo, *Urosaurus graciosus*[64] (UAZ 38110) Vicinity de Desemboque - Municipio de Hermosillo, *Uma rufopunctata*[62] (CAS 53373) Bahia Tepoca - Municipio de Pitiquito, *Chionactis occipitalis*[9] (UAZ 32307) Vicinity de Desemboque - Municipio de Caborca, *Chionactis*

LISTS OF SPECIES

palarostris[10] (LACM 51574) Vicinity de Guaymas – Municipio de Guaymas, *Crotalus cerastes*[16] (UAZ 27526) Vicinity de Bahia Kino - Municipio de Hermosillo, *Crotalus tigris*[17] (UAZ 27846) Vicinity de Masiaca – Municipio de Navojoa

---

Appendix 5: Names having type localities originally designated as being in Sonora. Some localities are no longer within the present boundaries of the state and/or have been restricted to other states. Total numbers of names by group are: salamanders (1), anurans (2), turtles (5), lizards (37), and snakes (20). ST denotes type localities restricted by Smith and Taylor (1950). * Denotes species names (but not necessarily the genus-species combination) used in this publication. Numbers in brackets indicate names in the checklist of this paper to which the original names apply (as species, subspecies, or synonyms).
Salamanders (1): [1] *Pseudoeurycea belli sierraoccidentalis* Lowe, Jones, and Wright 1968: "ca. 11 mi (rd) E Santa Ana, on old road to Yécora, Sonora."
Anurans (2): [2] *Hyla affinis* Baird 1854: "northern Sonora;" restricted to Santa Rita Mts, Arizona (ST), and to Pena Blanca Springs, 10 miles northwest of Nogales, Santa Cruz Co. (Gorman 1960). [2] **Hyla arenicolor* Cope 1866 (replacement name for *Hyla affinis* Baird 1886): "northern Sonora"; restricted to Santa Rita Mts., Arizona (ST).
Turtles (5): [3]**Kinosternon alamosae* Berry and Legler: 1980: "Rancho Carrizal, 7.2 km N and 11.5 km west of Alamos, Sonora". [4] *Kinosternon flavescens stejnegeri* Hartwig 1938: Llano, Sonora (midway between Nogales and Hermosillo). [5] *Pseudemys scripta yaquia* Legler and Webb 1970: "Río Mayo, Conicarit, Sonora". [6] *Sphargis coriacea schlegelii* Garman 1884: tropical Pacific and Indian Ocean; restricted to Guaymas, Sonora (ST). [7] *Terrapene klauberi* Bogert 1943: Güirocoba, Sonora.
Lizards (36): [8] *Callisaurus draconoides brevipes* Bogert and Dorson 1942: Güirocoba, Sonora. [8] *Callisaurus inusitatus* Dickerson 1919: Tiburón Island, Sonora. [9] **Cnemidophorus bacatus* Van Denburgh and Slevin 1922: San Pedro Nolasco Island, Sonora. [10] **Cnemidophorus burti* Taylor 1938: La Posa, 10 miles northwest of Guaymas, Sonora. [11] *Cnemidophorus disparalis* Dickerson 1919: Tiburon Island, Sonora. [12] **Cnemidophorus opatae* Wright 1967:"5.5 miles (by road) south of Oputo, Sonora". [13] *Cnemidophorus martyris* Stejneger 1891: San Pedro Mártir Island, Gulf of California, Sonora[11] *Cnemidophorus puntilineatus* Dickerson 1919: Tiburon Island, Sonora. [14] *Cnemidophorus sacki barrancorum* Zweifel 1959:"Rancho Guirocoba, about 20 miles southeast of Álamos, México". [14] *Cnemidophorus sacki griseocephalus* Zweifel 1959: "11.4 miles east of Navojoa, Sonora, México". [11] *Cnemidophorus tesselatus aethiops* Cope "1998" (1900): Hermosillo, Sonora. [15] *Coleonyx variegatus sonoriense* Klauber 1945: "5 miles southeast of Hermosillo, Sonora". [16] **Crotaphytus dickersonae* Schmidt 1922: Tiburón Island, Sonora. [17] **Ctenosaura hemilopha macrolopha* Smith 1972: "La Posa, San Carlos Bay, 10 mi NW Guaymas, Sonora". [18] *Disps-saurus dorsalis sonoriense* Allen 1933: Hermosillo, Sonora. [19] **Eumeces parviauriculatus* Taylor 1933: Near Álamos, Sonora. [20] **Heloderma suspectum* Cope 1869: Sierra de la Union, "Sonora" [=Arizona]. [21] *Holbrookia thermophila* Barbour 1921: San José de Guaymas, Sonora [22] *Phrynosoma bufonium* Wiegmann 1828: unknown; restricted to Los Nogales, Sonora (ST). [23] **Phrynosoma ditmarsi* Stejneger 1906: State of Sonora, not far from the boundary of Arizona. [24] **Phrynosoma goodei* Stejneger 1893: "Coast deserts of the state of Sonora, Mexico". [25] *Phrynosoma regale* Girard *in* Wilkes 1858: Sierra de la Naris, near Zuñi, Sonora.[26] **Phyllodactylus homolepidurus* Smith 1935: five miles southwest of Hermosillo, Sonora. [26] *Phyllodactylus homolepidurus nolascoensis* Dixon 1964: "Isla San Pedro Nolasco, Sonora.[27] *Sauromalus townsendi* Dickerson 1919: Tiburón Island, Gulf of California. [28] **Sceloporus clarkii* Baird and Girard 1852: "Province of Sonora", restricted by Smith and Taylor (1950) to Santa Rita Mountains, Arizona. [29] **Sceloporus poinsettii* Baird and Girard 1854: "Rio San Pedro of the Rio Grande del Norte, and the Province of Sonora, restricted by Smith and Taylor (1950) to the former. [30] **Sceloporus undulatus virgatus* Smith 1939: Above Santa María Mine, Tigre Mountains, Sonora. [31] **Tapaya hernandesi* Girard 1858: New Mexico and Sonora, restricted by Cope 1900 to Santa Fe, New Mexico. [32] *Uma notata cowlesi* Heifetz 1941: Shores of Tepoca Bay, Sonora. [33] *Uta gularis* Cragin 1884: Guaymas, Sonora. [34] **Uta nolascensis* Van Denburgh and Slevin 1921: San Pedro Nolasco Island, Sonora. [33] *Uta ornata* var. *linearis* Baird 1859: Los Nogales, Sonora. 35 *Uta palmeri* Stejneger 1890: San Pedro Mártir Island, Sonora. [33] *Uta schottii* Baird 1858: "Sta. Madelina, Cal.-Mex. Boundary survey. [33] *Uta taylori* Smith 1935: Ten miles northwest of Guaymas, Sonora. [52] *Xantusia jaycolei* Bezy, Bezy, and Bolles 2008: Near Desemboque del Rio San Ignacio.

LISTS OF SPECIES

Snakes (21): [36] *Caudisona atrox sonoraensis* Kennicott 1861: Sonora and vicinity; restricted to Guaymas, Sonora (SN). [37] **Chilomeniscus cinctus* Cope 1861: “near Guaymas, east coast of the Gulf of California”, Sonora. [38] *Diadophis regalis* Baird and Girard 1853: Sonora,; restricted to Santa Magdalena (SN).[39] **Elaps euryxanthus* Kennicott 1850: Sonora [in USNM records]; restriction by Smith and Taylor (1945) to “Guaymas, Sonora,” was rejected by Roze (1974). [40] *Eutaenia megalops* Kennicott 1850 Tucson, Arizona and Santa Magdalena Sonora, restricted by Smith and Taylor (1950b) to Tucson, Arizona. [41] *Ficimia desertorum* Taylor 1936: “about 12 kilometers northwest of Guaymas, Sonora”. [42] *Lampropeltis getulus nigritus* Zweifel and Norris 1955: 30.6 road miles south of Hermosillo, Sonora. [43] *Leptodeira ephippiata* Smith and Tanner 1944: Agua Marin, 8.3 miles west-northwest of Álamos, Sonora. [44] **Masticophis bilineatus* Jan 1853: “Messico occid.” restricted by Smith and Taylor (1950) to Guaymas, Sonora. [45] *Masticophis flagellum cingulum* Lowe and Woodin 1954: Moctezuma, Sonora. [39] *Micruroides euryxanthus australis* Zweifel and Norris 1955: “Guirocoba, Sonora,”. [42] *Ophibolus splendida* Baird and Girard: “Sonora”, restricted by Smith and Taylor (1950) to Santa Rita Mts., Arizona. [52] *Phyllorhynchus browni fortitus* Bogert and Oliver: “Álamos, Sonora”. [53] *Phyllorhynchus decurtatus norrisi* Smith and Langebartel 1951: “45.1 miles south of Santa Ana, Sonora.” [46] *Pseudoficimia hiltoni* Bogert and Oliver 1945: “Guirocoba, Sonora”. [47] **Salvadora grahamiae* Baird and Girard 1853: Sonora [= southern Arizona; restricted by Schmidt 1053 to Huachuca Mts, Cochise Co., Arizona]. [48] **Sonora palarostris* Klauber 1937: “six miles south of Hermosillo, Sonora,”. [49] **Sonora semiannulata* Baird and Girard 1853: Sonora, restricted by Stickel 1943 to Santa Rita Mts, Pima and Santa Cruz Counties, Arizona. [50] **Tantilla hobartsmithi* Taylor “1936’ [1937]: ‘near La Posa, 10 mi northwest of Guaymas,” Sonora. [51] **Trimorphodon lambda* Cope 1886: “Guaymas, Sonora”. **Crotalus tigris* Kennicott 1859: "Sierra Verde and Pozo Verde" [along Arizona-Sonora border].