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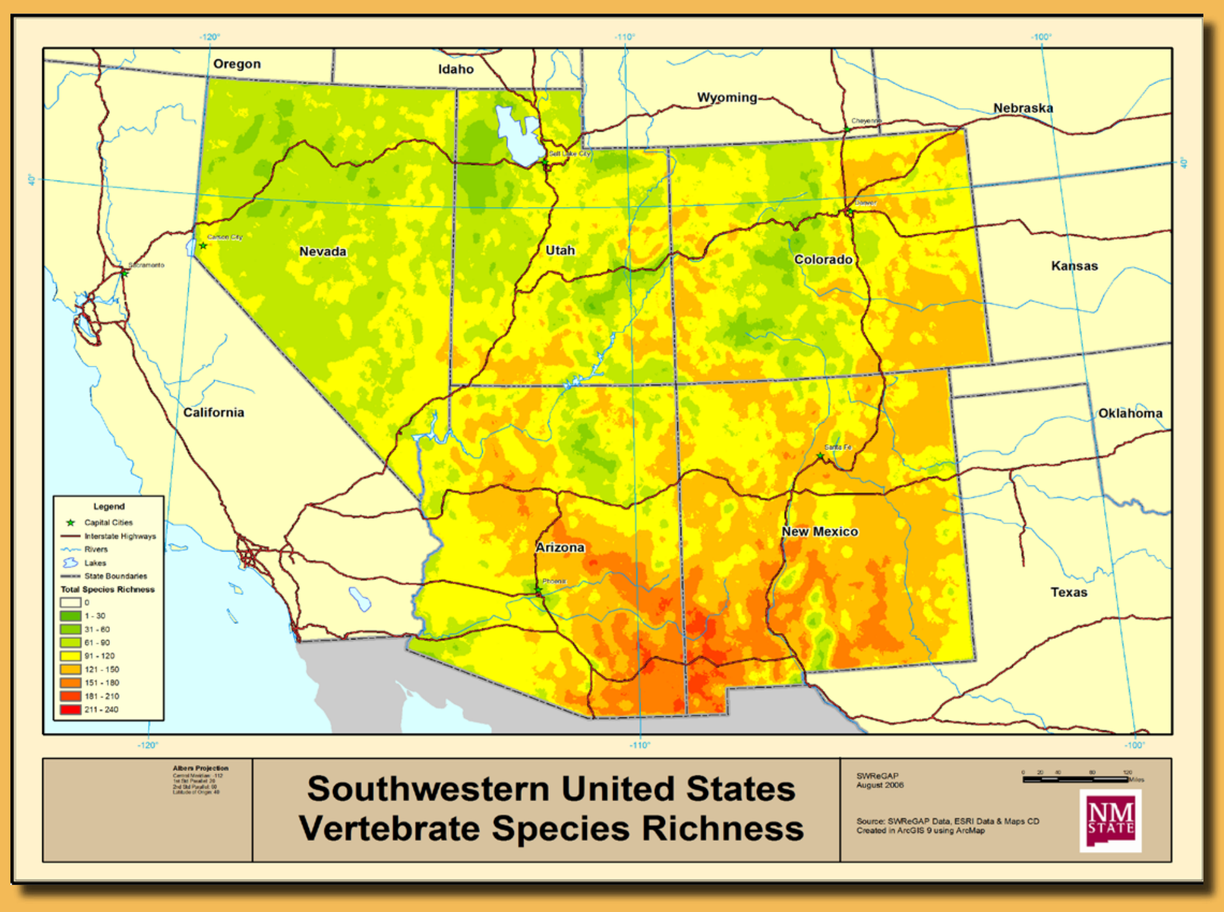
Southwest Regional Gap Analysis Project
Terrestrial Vertebrate Species Richness



All data for the SWReGAP vertebrate species are currently available at <http://fws-nmcfwru.nmsu.edu/swregap/HabitatModels/>. Models were reviewed by taxon experts and various agency representatives relative to the wildlife habitat relationship models, range extent, and spatial depiction of predicted habitat for each species.

The Gap Analysis Program (GAP) is a national program of the U.S. Geological Survey that maps the distribution of plant communities and selected animal species and compares these distributions with land stewardship to provide broad scale geographical information on biological diversity. This information can then be used by resource managers, planners, and policymakers to make informed decisions. GAP uses satellite imagery and Geographic Information System (GIS) technology to assemble and view large amounts of biological and land management data to identify areas (gaps) where conservation efforts may not be sufficient to maintain diversity of living natural resources. Gap analysis is a process to keep common species common by identifying the gaps in our network of lands managed for biodiversity. The GAP methodology and its products are straightforward: 1) map the distributions of natural plant communities; 2) map predicted habitat distributions of native terrestrial vertebrate species; 3) map the degree of management for biodiversity maintenance; and 4) analyze the representation of vegetation and animal species distributions in the conservation network to identify "gaps" in long-term security.

Historically, GAP has been conducted on an individual state basis. The program's first formalized multi-state regional effort includes the five states (Arizona, Colorado, Nevada, New Mexico, and Utah) comprising the Southwest Regional Gap Analysis Project (SWReGAP).

A key SWReGAP task was the development of seamless animal-habitat models for terrestrial vertebrate species for the Southwest region. Through the collaborative efforts of participating state, federal, and non-governmental organizations, 819 seamless habitat models were completed for the project area. SWReGAP predicted habitat for terrestrial vertebrate species that reside, breed, or use habitat in the five-state region for a substantial portion of their life history. These species habitat models are based on the concept of Wildlife Habitat Relationships (WHRs). For each species, these relationships were identified by reviewing the available literature and then generating a spatial representation of habitat within the species known range. The objectives of the habitat models are to: 1) provide maps that predict the habitat distribution of terrestrial vertebrate species in the project area to support analysis of conservation status; and 2) develop a database of geographic range, wildlife habitat relationships, and predicted distribution of each vertebrate species for the long-term utility of GAP and its cooperators. The following assumptions apply to the GAP vertebrate habitat models:

1. Species are assumed to occur within a grid cell representing potential habitat but are not predicted to occur at any particular point within that cell.
2. Species are assumed to be present within a grid cell, but no assumptions are made about the abundance of the species in the cell.
3. Species are assumed to be present in a grid cell at least once in the last 10 years but need not be present every year in the last decade.
4. Species are assumed to be present during some portion of their life history, not necessarily during the entire year.

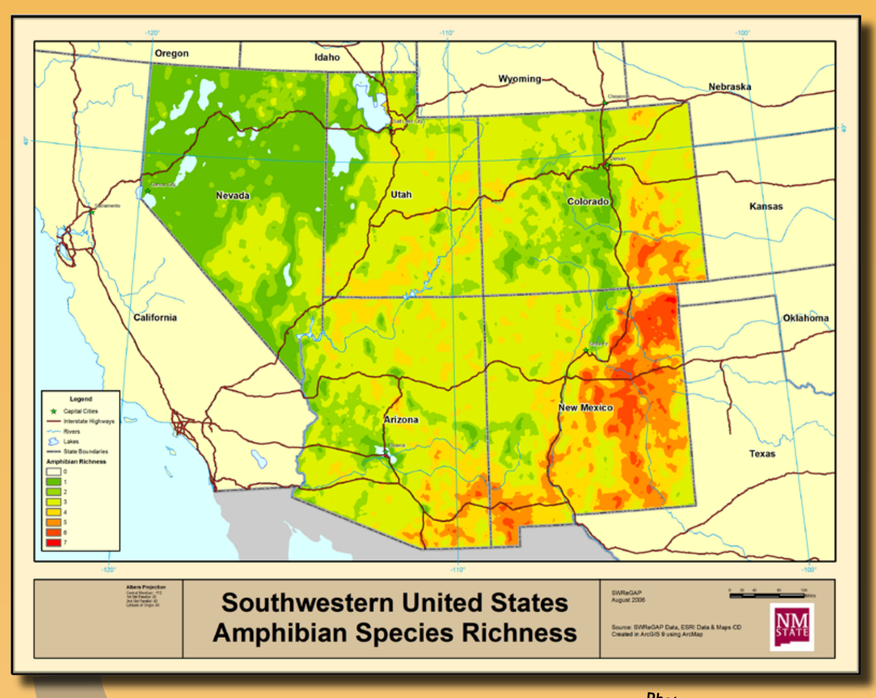



Photo credit: JStolz, Gary M.: Woodhouse's Toad (Bufo woodhousii)

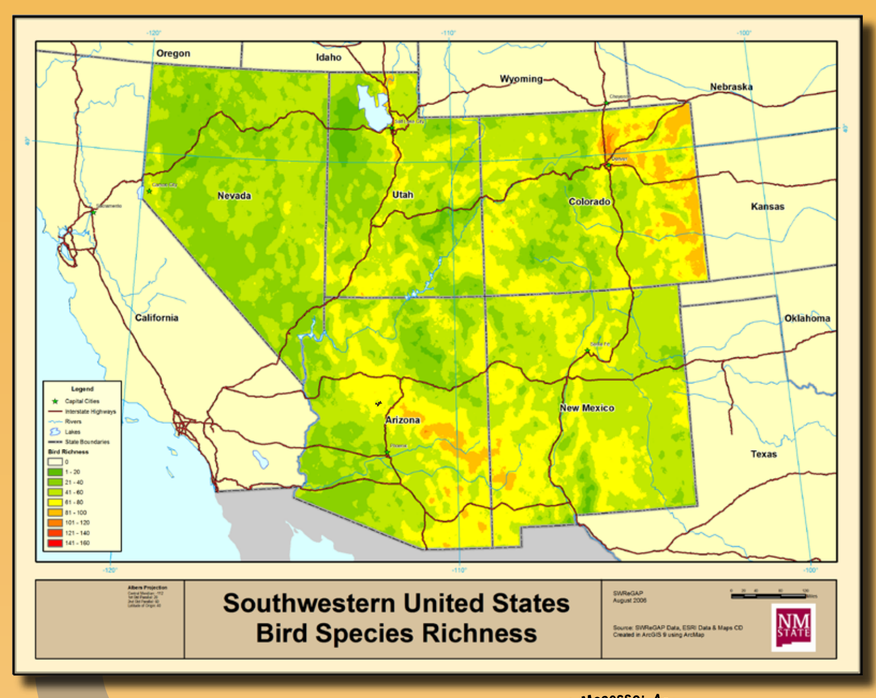



Photo credit: John J. Mosesso: Acorn Woodpecker (Melanerpes formicivorus) Arizona, USA

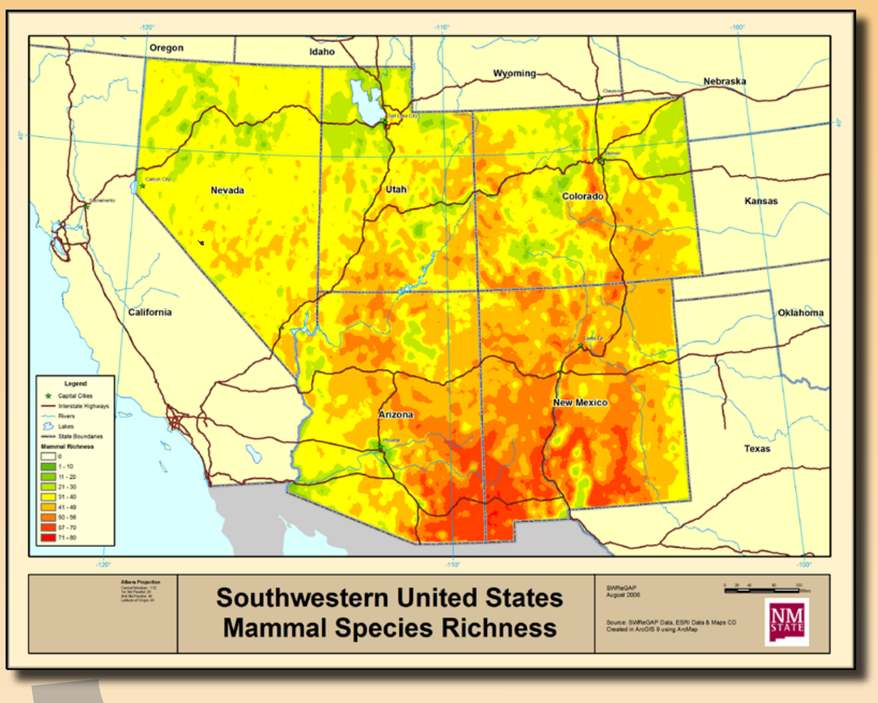



Photo credit: John J. Mosesso: Elk (Cervus elaphus) Colorado, USA

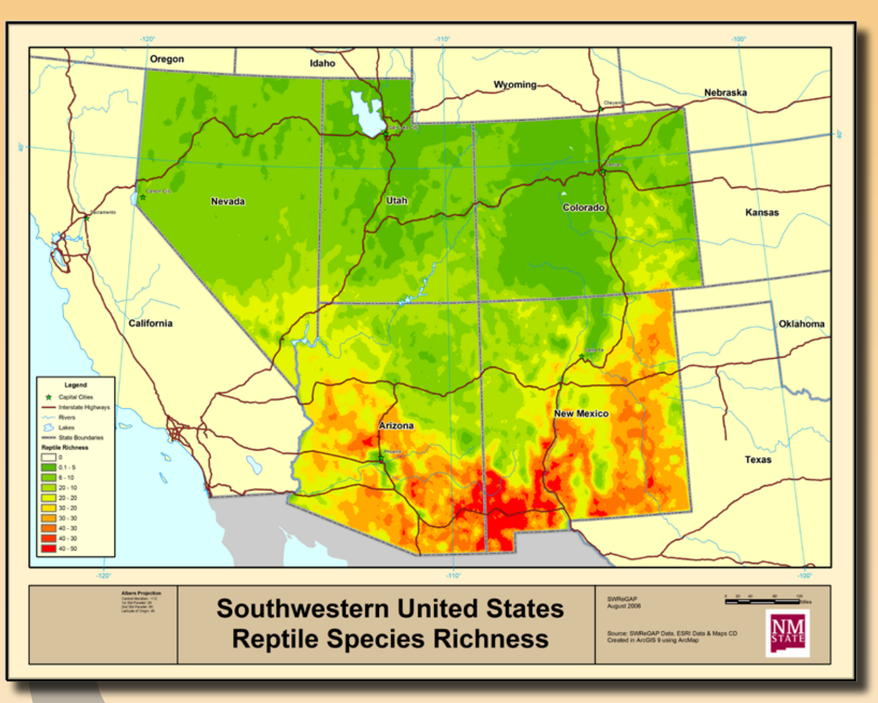



Photo credit: John J. Mosesso: Western Fence Lizard (Sceloporus occidentalis) California, USA

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Albers Equal Area Projection
Central Meridian 109° 02′ 35″ West Longitude
Standard Parallels 29° 30′ and 45° 30′ North Latitude
North American Datum of 1983

Boykin, K. G., B. C. Thompson, R. A. Deitner, D. Schrupp, D. Bradford, L. O'Brien, C. Drost, S. Propeck-Gray, W. Rieth, K. A. Thomas, W. Kepner, J. Lowry, C. Cross, B. Jones, T. Hamer, C. Mettenbrink, K.J. Oakes, J. Prior-Magee, K. Schulz, J. J.Wynne, C. King, J. Puttere, S. Schrader, and Z. Schwenke. 2007. "Predicted animal habitat distributions and species richness." Chapter 3 in J.S. Prior-Magee, et al., eds. *Southwest Regional Gap Analysis Final Report.* U.S. Geological Survey, Gap Analysis Program, Moscow, ID.

<http://fws-nmcfwru.nmsu.edu/swregap/HabitatModels/>

NM CASE Center for Applied Spatial Ecology