



### **Climate change and Southwestern terrestrial species**

**Project Title:** Vulnerability of species to climate change in the Southwest: terrestrial species of the Middle Rio Grande

**Brief Summary (Abstract):** The authors developed a scoring system (System for Assessing Vulnerability of Species to Climate Change) to assess the vulnerability of 117 vertebrate species that occur in the Middle Rio Grande Bosque (MRGB) to expected climate change.

**Project Location:** Middle Rio Grande Bosque, New Mexico

**Partners:** USDA Forest Service and US Fish and Wildlife Service

**Background:** Future climate scenarios predict warmer temperatures with an altered precipitation regime that will likely lead to reduced water levels in the MRGB. This assessment points to several key issues relating to future habitat changes and individual species physiology that are expected to affect species survival under climate change.

**Project Goals:** The purpose of this project is to guide wildlife managers on options and consideration for climate change adaptation.

**Strategy Goals Implemented:** Goal 2, Strategy 2.1, Action 2.1.3 – Identify species and habitats particularly vulnerable to transition under climate change and develop management strategies and approaches for adaptation

**Climate Impacts Addressed:** Impacts of climate change on terrestrial species

**Status of Project Implementation (Timeline, Milestones, Next Steps):** Analysis completed and published - [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr306.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr306.pdf)

**Project Outcomes:** Decreased availability of mesic sites is expected to directly impact many amphibian and reptile populations and is expected to have indirect effects for birds and mammals primarily through changes in habitat availability. The authors predicted that phenological changes will negatively impact many species within all taxonomic groups through altered timing of weather events and river flow. Riparian-dependent species received some of the highest vulnerability scores. Species already at the southern limit of their distributional range were also predicted to be more likely to be vulnerable to climate change. The assessment also identified important data gaps. Management for species conservation under future climate conditions will require increased research and monitoring, greater integration of landscape-scale approaches, consideration of future land-use scenarios, and increased understanding of the consequences of species' interactions. The authors reviewed the specific implications of climate change for wildlife in the MRGB in order to identify intervention points and approaches that may achieve management goals.

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CLIMATE ADAPTATION STRATEGY

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