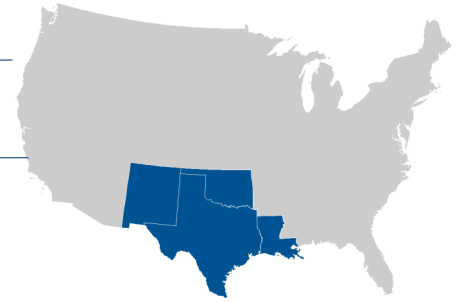




# NEW MEXICO

## PROJECT HIGHLIGHTS

*New Mexico falls within the domain of the South Central Climate Adaptation Science Center (CASC), managed by the USGS.*



### PREDICTING WATER SUPPLY FOR THE RIO GRANDE

*The iconic Rio Grande supplies about two-thirds of the agricultural irrigation needs of central and southern New Mexico and provides drinking water for Santa Fe and other cities.*

**WHAT:**

- Climate projections show that streamflow in the Rio Grande will decrease by one-third and become less predictable over the current century.
- South Central CASC is generating models to better understand how changing snowpack affects streamflow patterns and, as a result, water supply.

**IMPACT:**

- Results will be used to improve water supply outlooks for the Rio Grande. Water supply outlooks are a critical tool for water managers, who are making decisions about reservoir operations, allocations of water for irrigation, power generation, and water supply to communities.



### MAPPING CRUCIAL WILDLIFE HABITAT

*Wildlife populations are shifting their ranges in response to changing climate, potentially imperiling some species and presenting challenges for wildlife managers and others who are making decisions about wildlife stewardship.*

**WHAT:**

- South Central CASC examined the effect of shifting climate conditions on 20 species of conservation concern.

**RESULTS:**

- 19 of the 20 species examined will have their ranges significantly affected by changing climate. Quails – a favorite among New Mexico’s hunters and birdwatchers – face particularly adverse impacts, losing habitat under almost all climate scenarios.

**IMPACT:**

- Maps evaluating patterns of loss of suitable habitat were incorporated into the publicly accessible New Mexico Crucial Habitat Assessment Tool, which is being used by state wildlife managers for conservation planning.



## DROUGHT THREATENS AMERICA'S ANTELOPE

*Pronghorn hunting contributes \$9 million annually to New Mexico's economy. Yet in the Southwest, North America's fastest land mammal is declining – and drought may be partially to blame.*

### WHAT:

- Scientists investigated the effects of temperature and precipitation on southwestern pronghorn populations.

### RESULTS:

- Half of the examined populations could disappear by 2090, as conditions become hotter and drier. While temperature influences pronghorn population growth, precipitation is especially important.

### IMPACT:

- Results will be used by the New Mexico Department of Game & Fish and other stakeholders to focus pronghorn conservation efforts on areas where habitat conditions are expected to remain suitable.



## NEW MEXICO'S STATE FISH AT RISK

*New Mexico's state fish, the Rio Grande cutthroat trout, has already been restricted to an estimated 12% of its former range – and now warming waters and drought threaten its long-term persistence. More than half of remaining cutthroat trout populations are considered to be in fair or poor condition.*

### WHAT:

- Scientists are examining the effects of higher stream temperature and reduced streamflow on Rio Grande cutthroat trout and modeling how the fish will respond under predicted future conditions.

### RESULTS:

- Preliminary results suggest that water temperature and habitat play a critical role in maintaining healthy cutthroat trout populations.

### IMPACT:

- Managers at the New Mexico Department of Game & Fish and the U.S. Forest Service's Carson and Santa Fe National Forests will use this information to take actions that protect the Rio Grande cutthroat trout and other southwestern trout species, such as the Gila trout and the Apache trout.



*The South Central CASC is hosted by the University of Oklahoma and has six partner institutions: Texas Tech University, Chickasaw Nation, Choctaw Nation of Oklahoma, Louisiana State University, Oklahoma State University, and the University of New Mexico.*

*The CASC works with natural and cultural resource managers to gather the scientific information and build the tools needed to help fish, wildlife, and ecosystems adapt to the impacts of climate change.*