

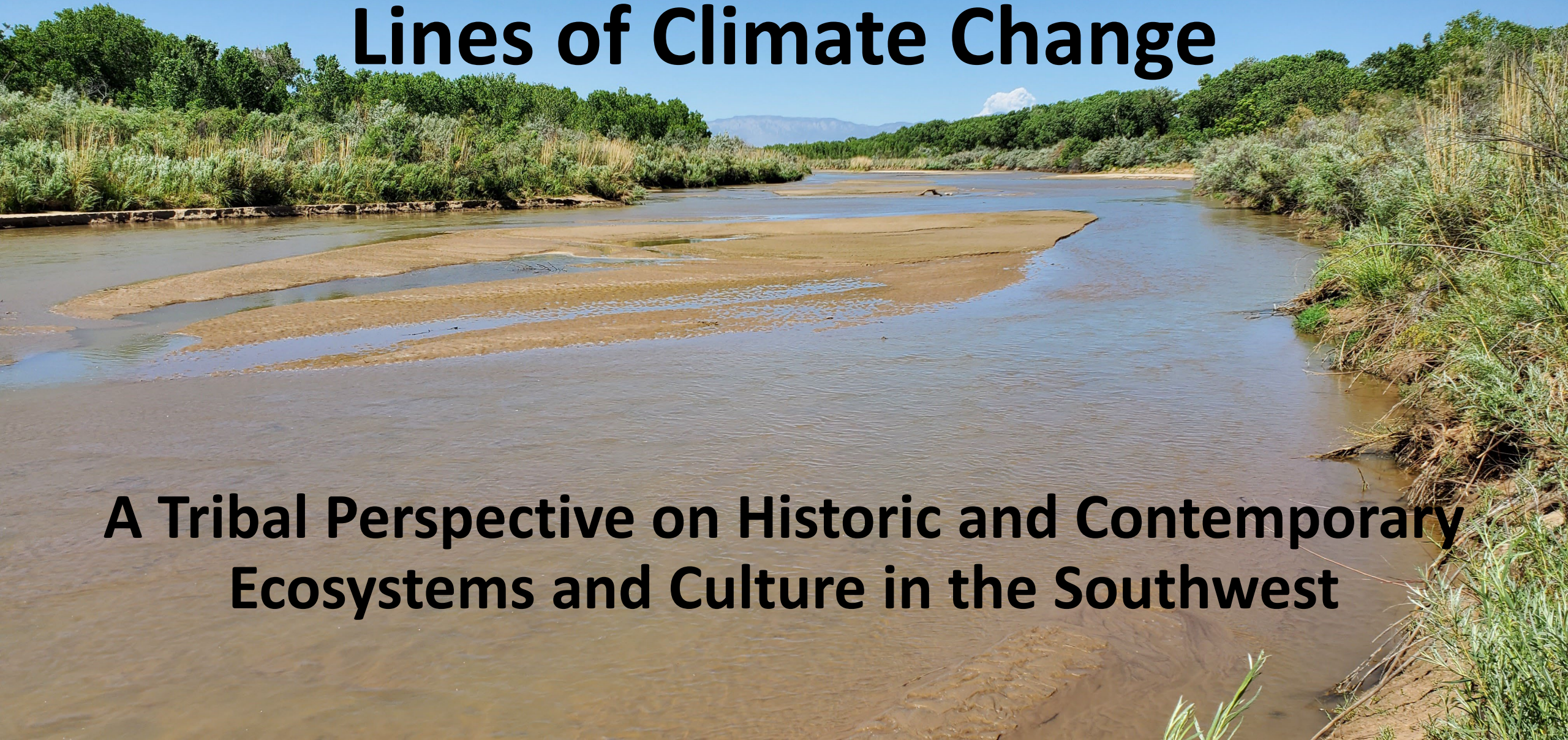
# Disclaimer

My keynote presentation does not represent any of the Pueblos, Nations, Tribes or, other governmental entities mentioned and my viewpoints are solely my own.



# **The Desert Southwest - The Front Lines of Climate Change**

**A Tribal Perspective on Historic and Contemporary Ecosystems and Culture in the Southwest**





# **Ecosystem Change**

1776



NORTH AMERICA

A WORKING MAP AND ILLUSTRATION OF THE  
THE SUBSTANTIAL DEFORMATION OF LAND  
BY THE ACTION OF THE SEA AND THE EARTH'S CRUST  
BY WILLIAM C. CLEVELAND

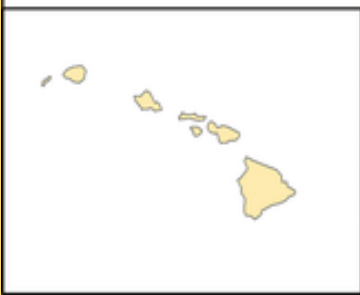
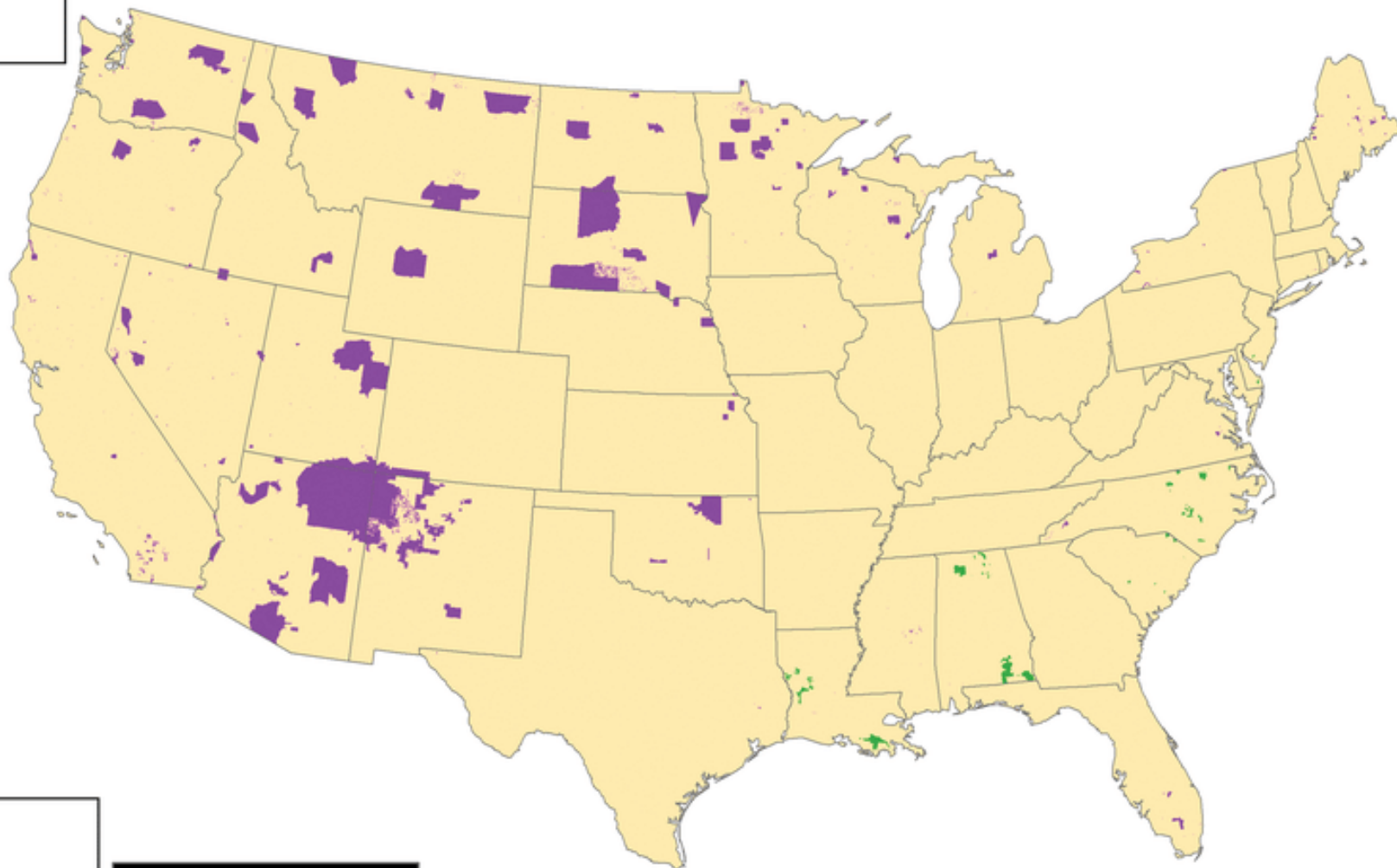


UNIVERSITY OF CALIFORNIA, SAN DIEGO

UNIVERSITY OF CALIFORNIA, SAN DIEGO



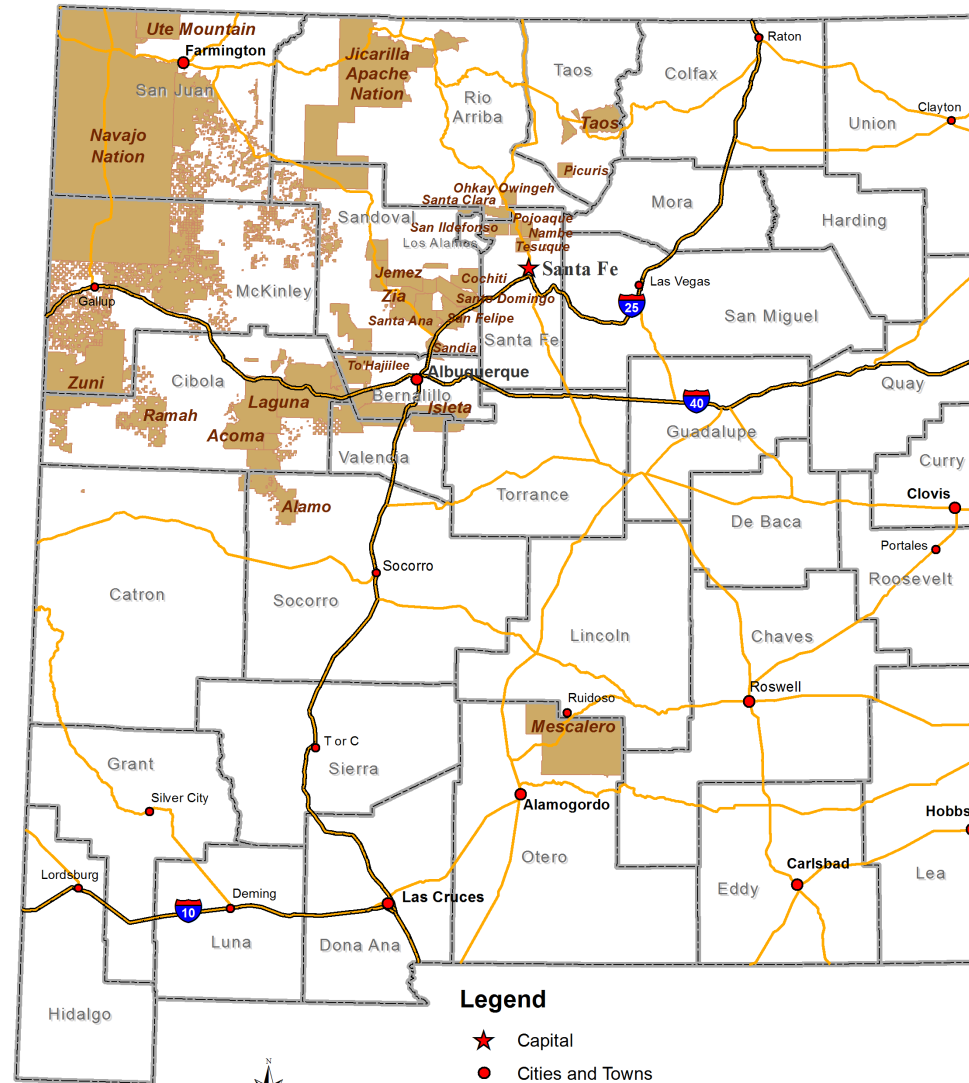
# American Indian Reservations



## MAP KEY

-  Federal American Indian Reservations
-  State American Indian Reservations

# Native Nation Lands New Mexico



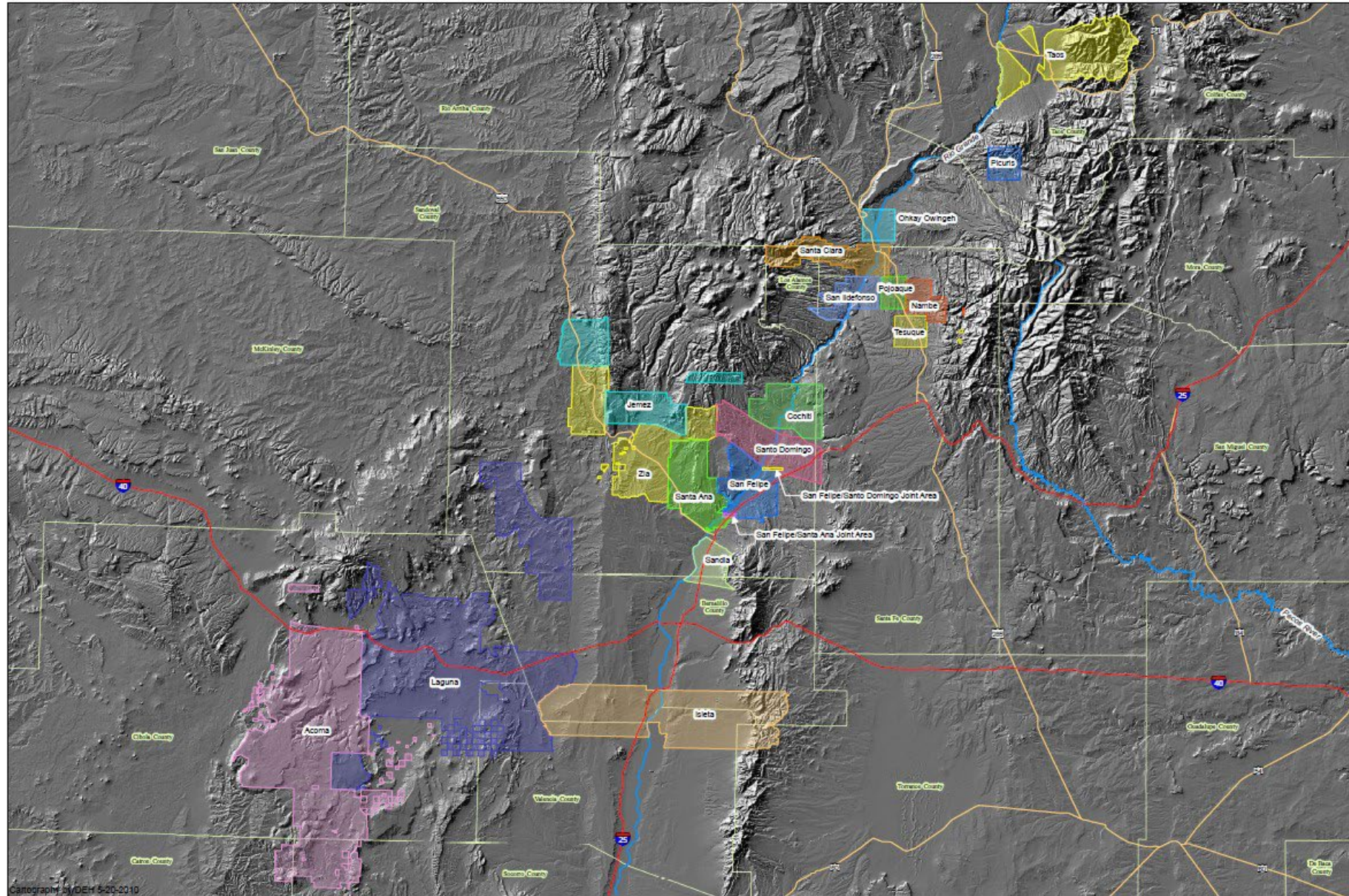
## Legend

- ★ Capital
- Cities and Towns
- Interstate
- US Highway
- Native Nation Boundary
- New Mexico County Boundary





# Rio Grande Pueblos in New Mexico



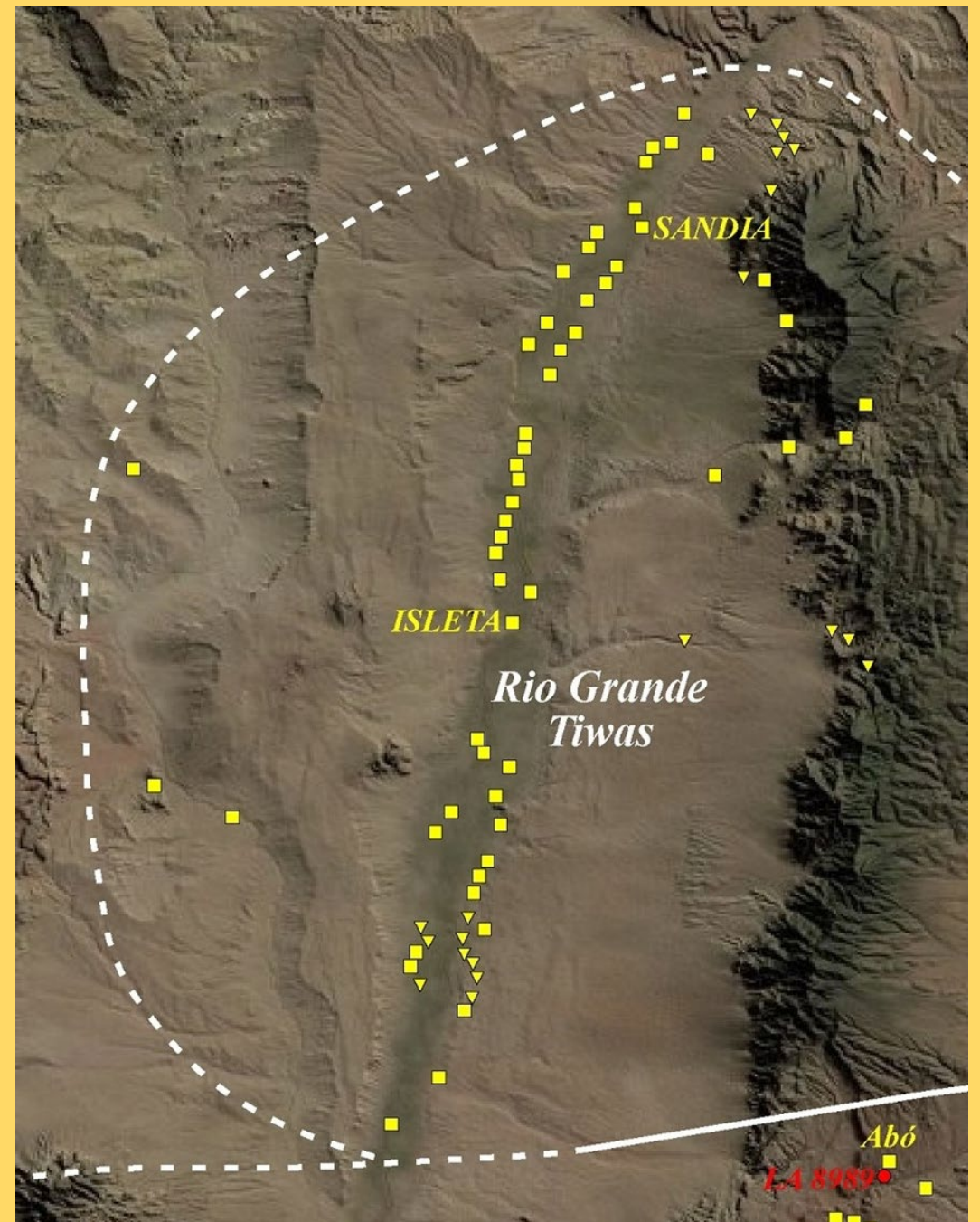
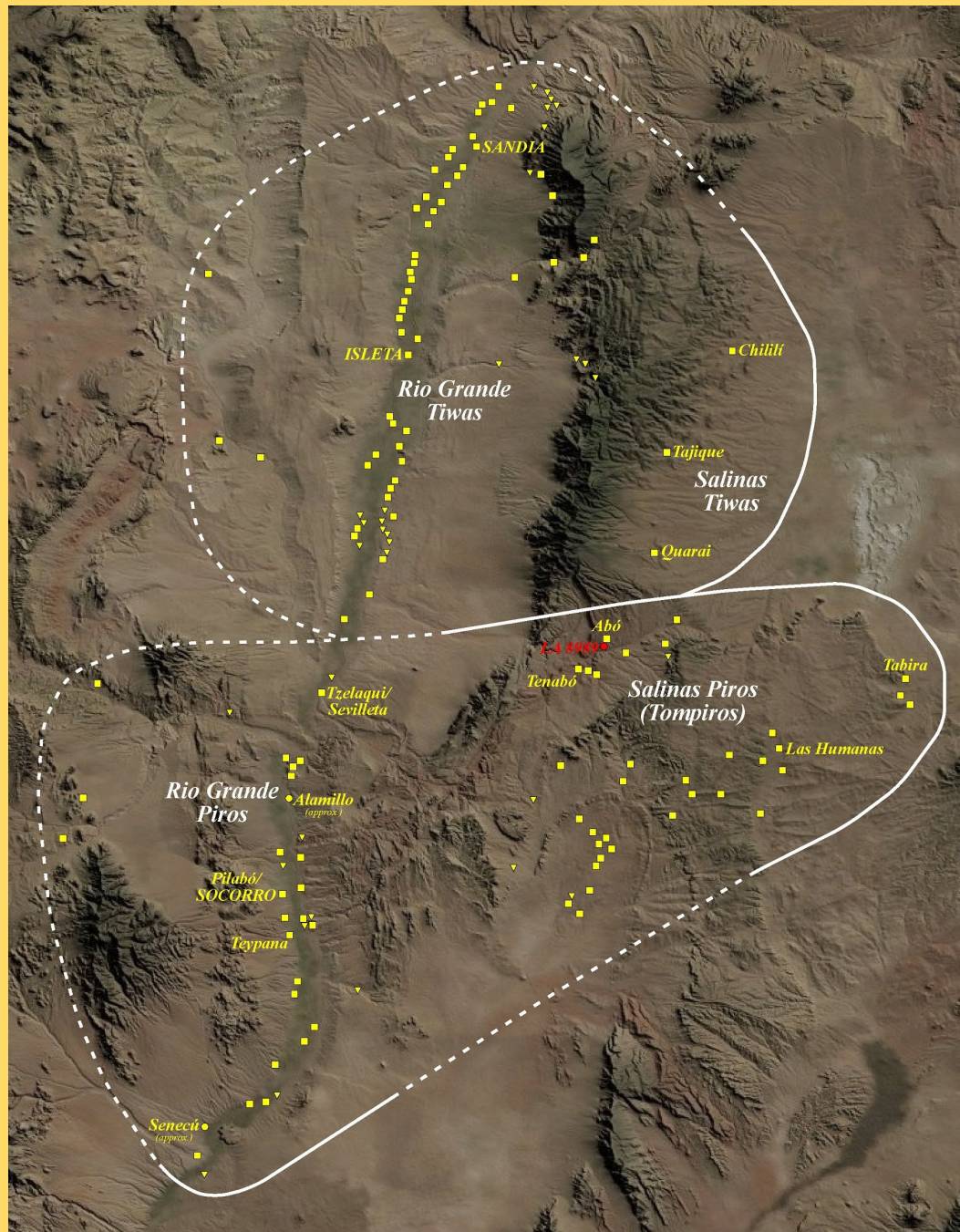
Cartography by DEH 5-20-2010



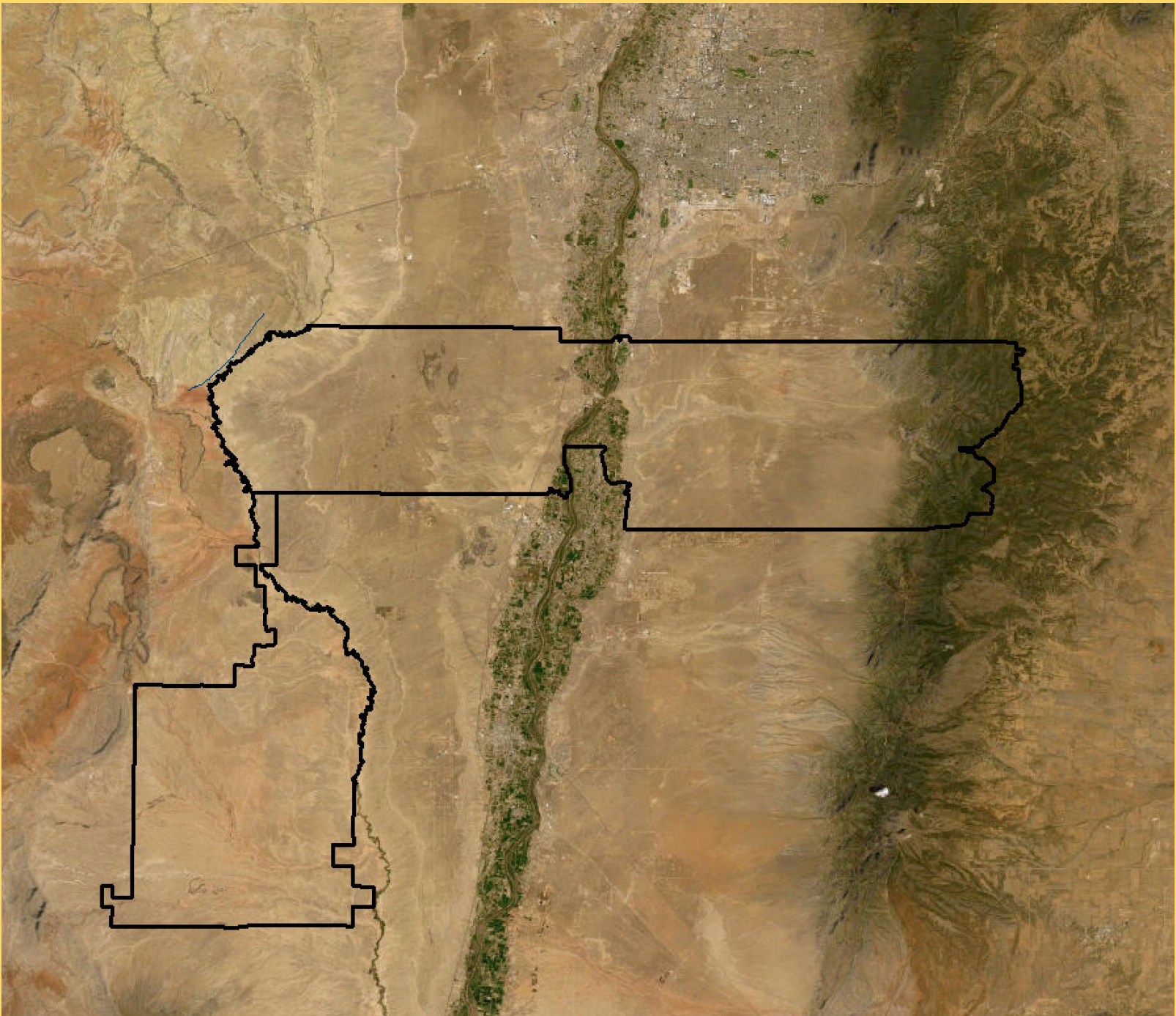
0 25 Miles







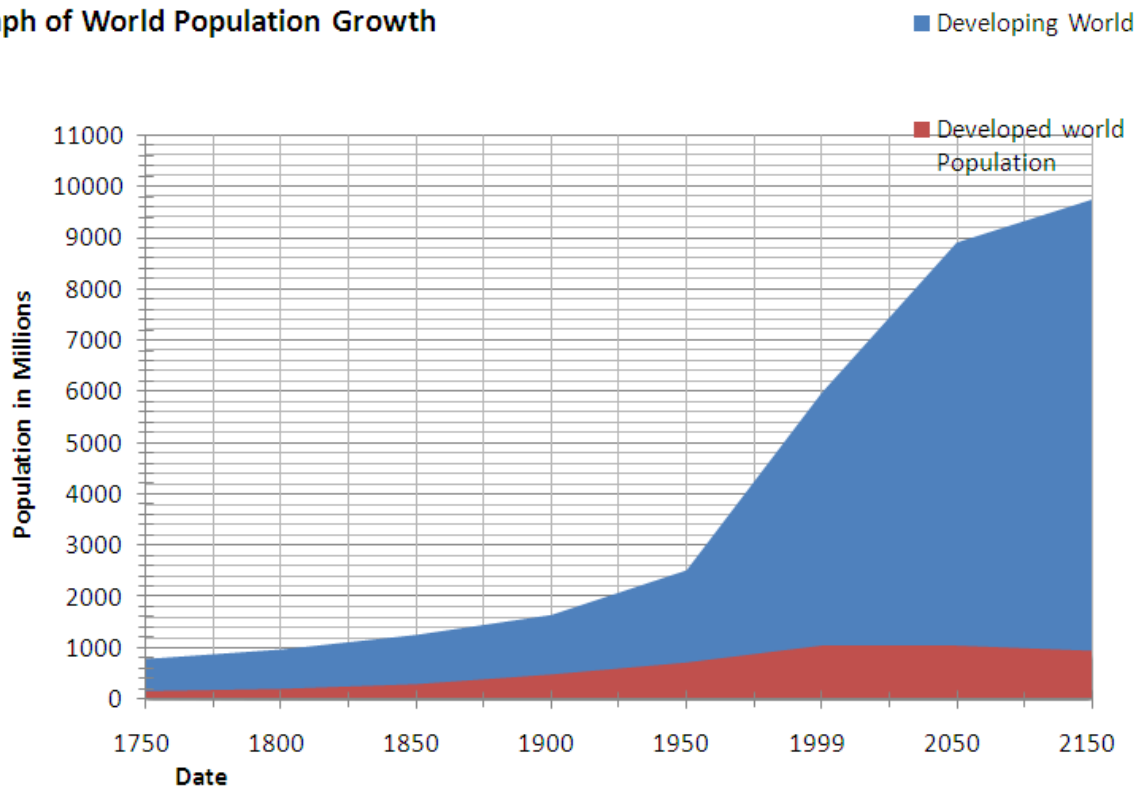




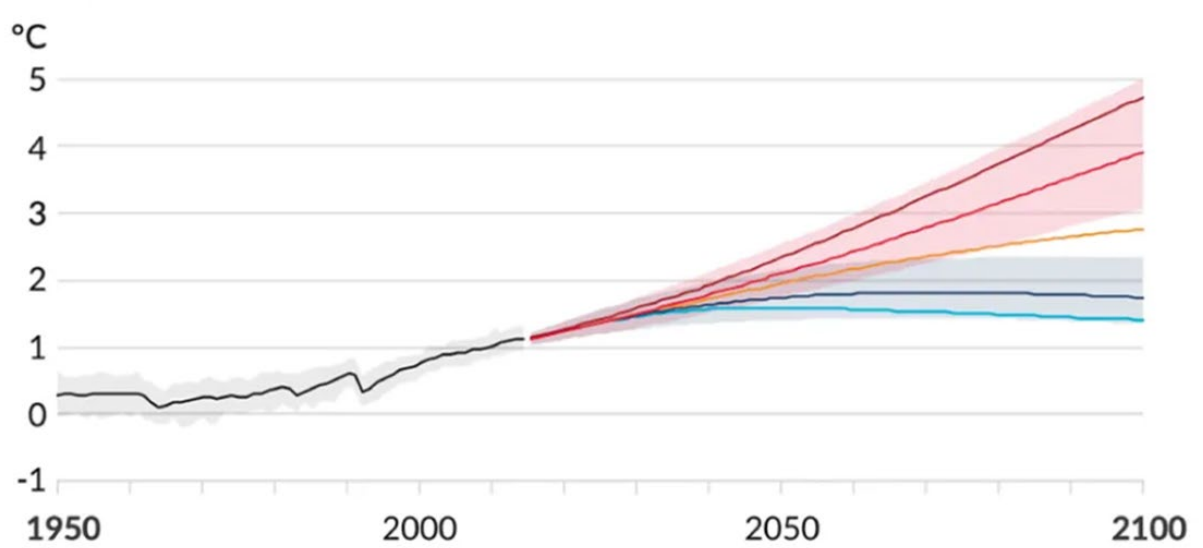
# **Realities of Contemporary Ecosystem Restoration**



A Graph of World Population Growth



Projected Temperature Increase (°C)

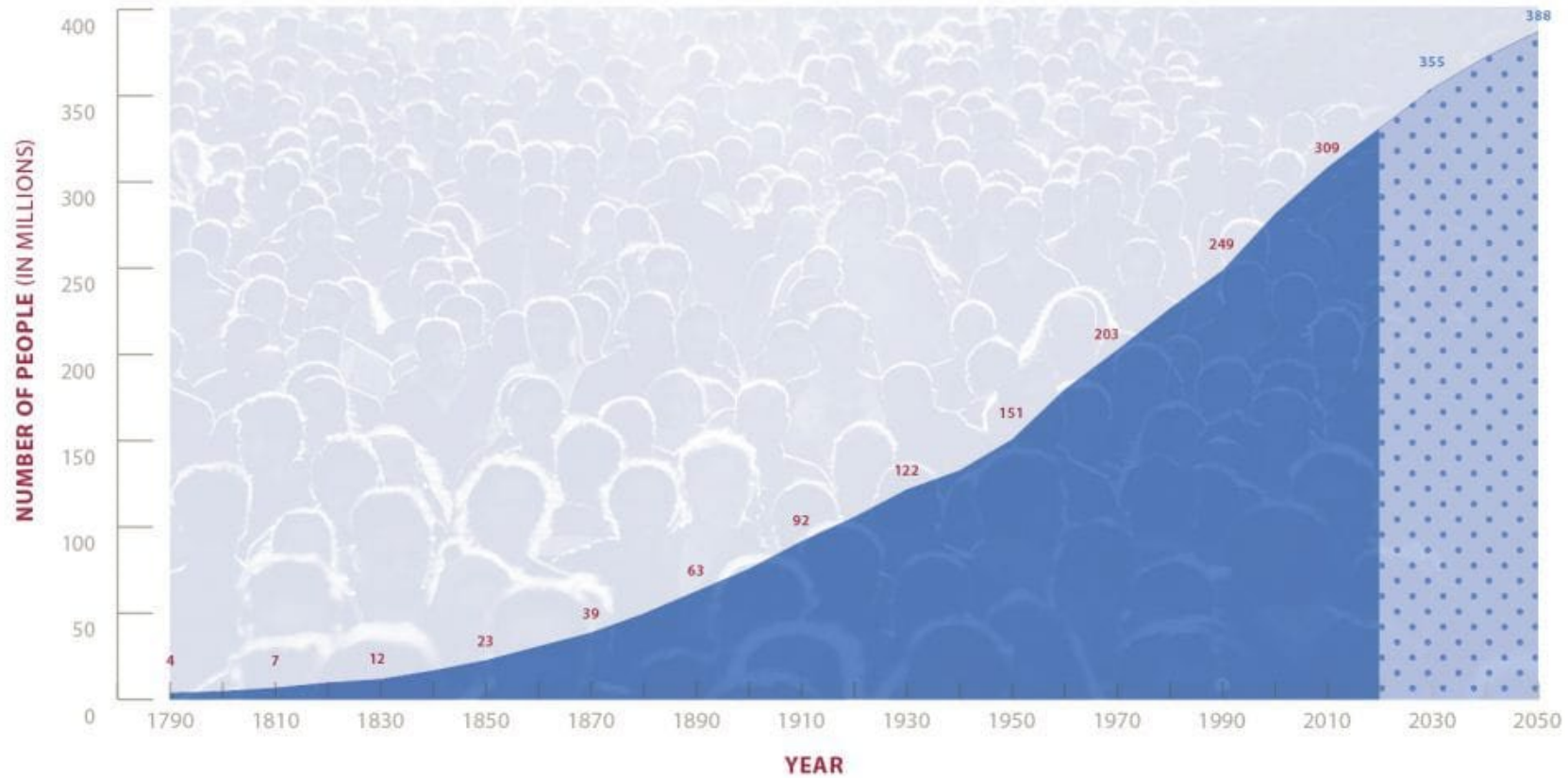


Five Scenarios of Fossil Fuel Burning

- Highest CO<sub>2</sub> amounts
- Medium to high CO<sub>2</sub> amounts
- Medium CO<sub>2</sub> amounts
- Smaller CO<sub>2</sub> amounts, then no increase in CO<sub>2</sub> late in the 21st century
- No increase in CO<sub>2</sub> beginning in 2050



## U.S. Population and Projection (1790–2050)







## A government proposal to kill a half-million owls sparks controversy



By Clare Marie Schneider

Published April 1, 2024 at 6:01 AM MDT



Don Ryan Steve Legge / AP

A4 ALBUQUERQUE JOURNAL

METRO & NM

TUESDAY, APRIL 2, 2024

## THE PARK(ING) HEADACHE

Officials at 'Colorado's beach' seek solutions to problems created by visitation spike

BY JOHN MEYER  
THE DENVER POST



Dogs are allowed on dog-friendly areas including the main dunes at Great Sand Dunes National Park.

DONN FRIEDMAN / JOURNAL



See photos



See outside

## Kasha-Katuwe Tent Rocks National Monument

4.8 ★★★★★ 2,058 Google reviews

National monument in Sandoval County, New Mexico

Temporarily closed







KRQE News 13

18m ·

Activity in the Albuquerque area has contributed to chemical contamination of the Rio Grande, according to researchers.



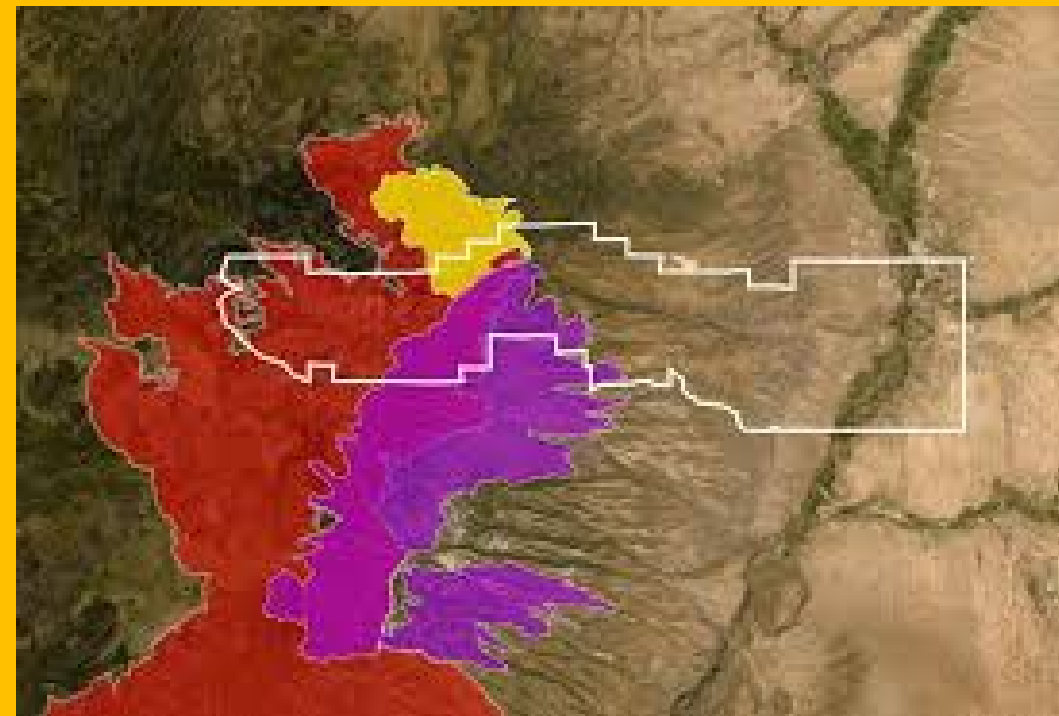
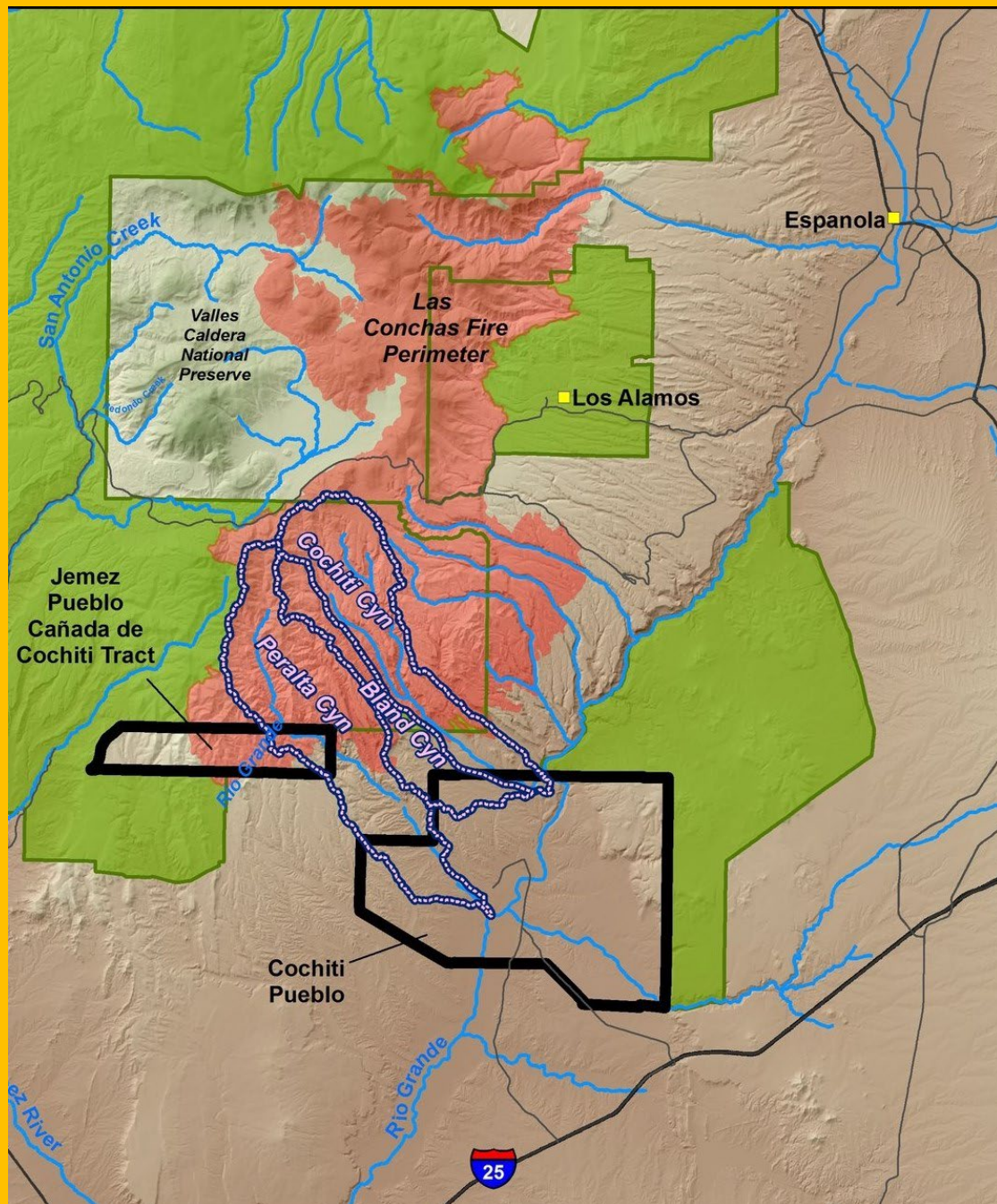
krqe.com

Albuquerque area contributes to chemical contamination of the Rio Grande, studies find

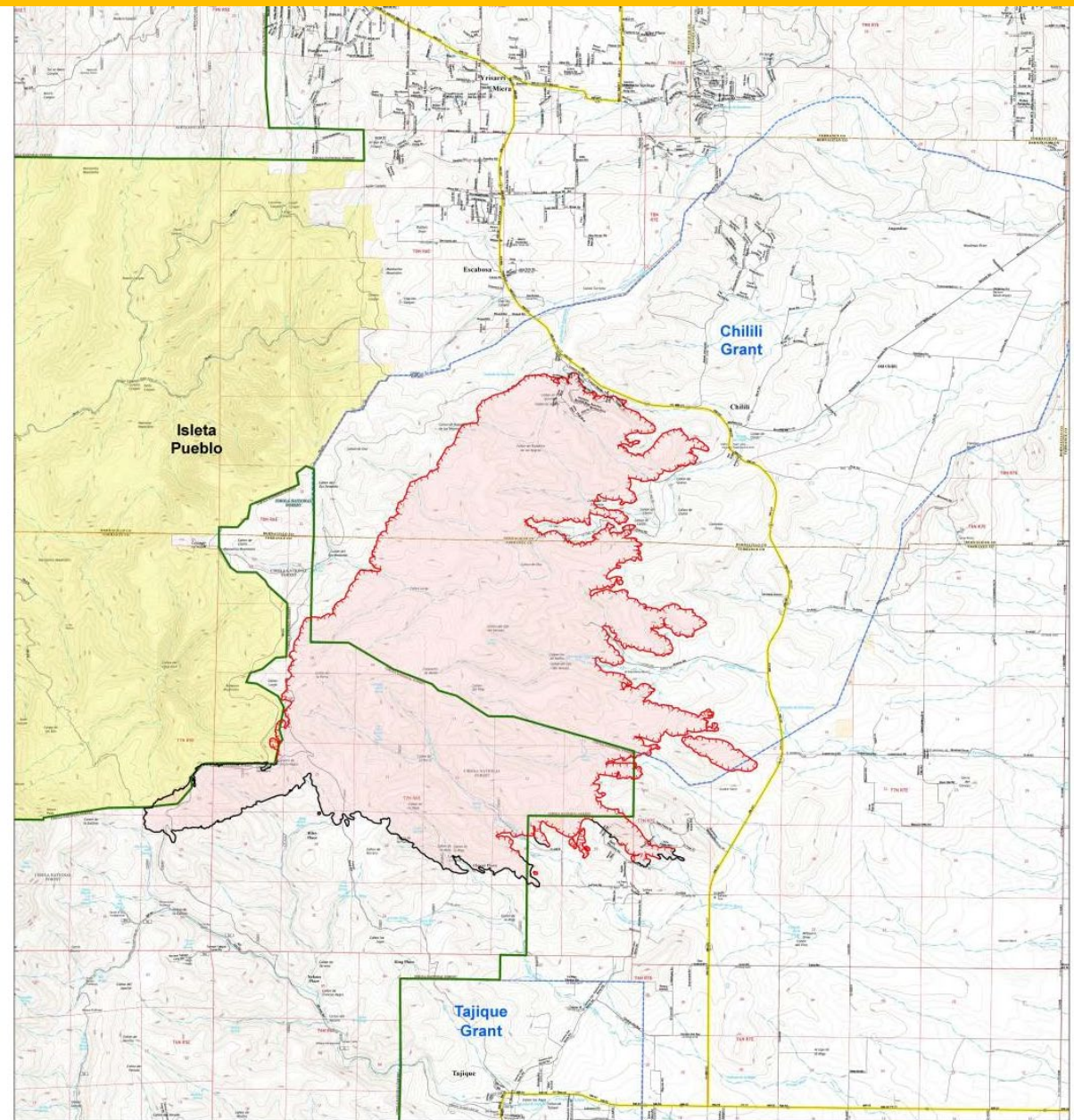












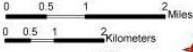
**Dog Head Fire Information Map**

**NM-CIF-000277**

Day Operational Period 6/19/2016

GIS Acres 17,428

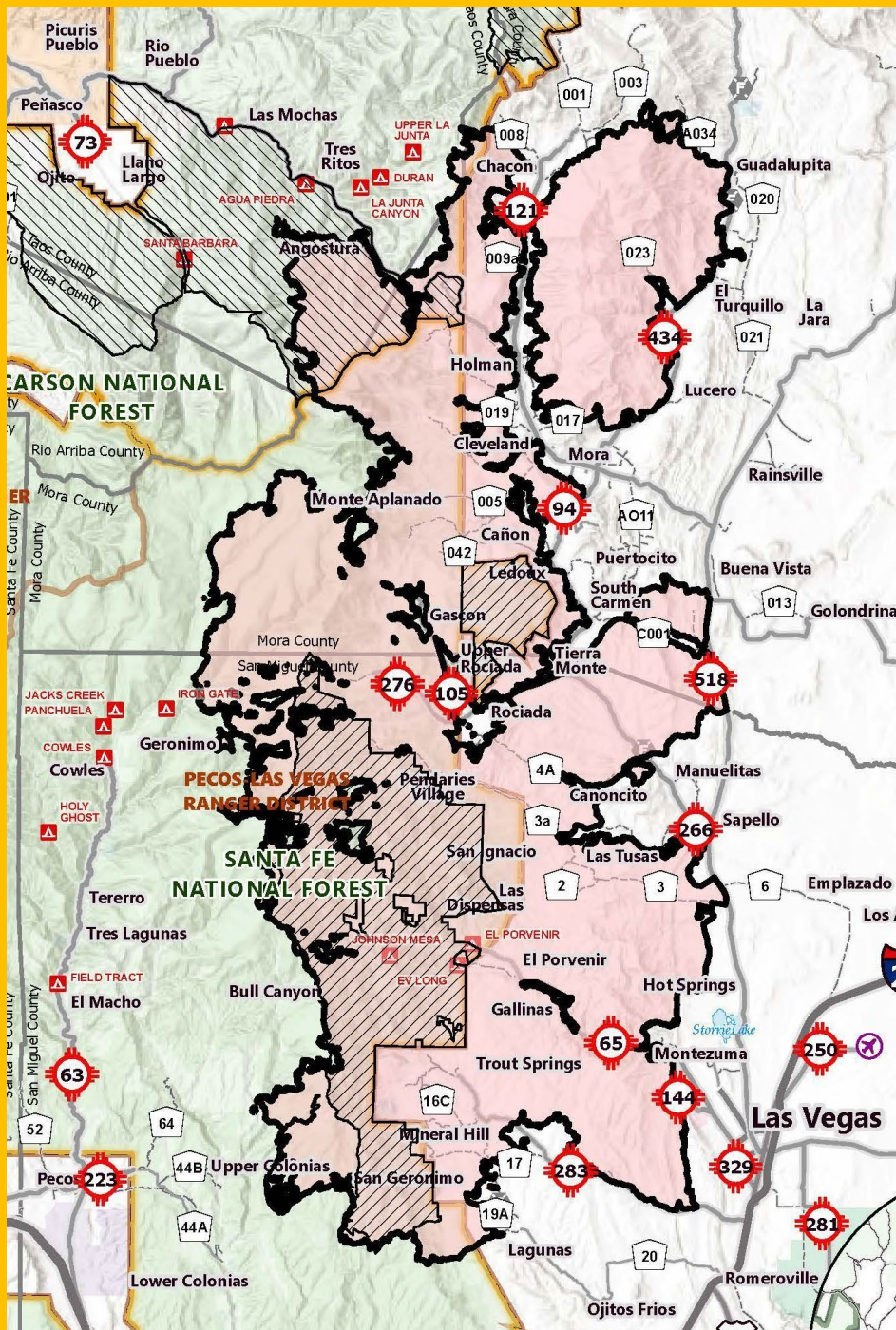
6/18/2016 17:45



- Uncontrolled Fire Edge
- Fire Perimeter
- Completed Line
- Cibola NF
- Grant Lands
- BLM
- Tribal









# **Grazing Management**



Graze?

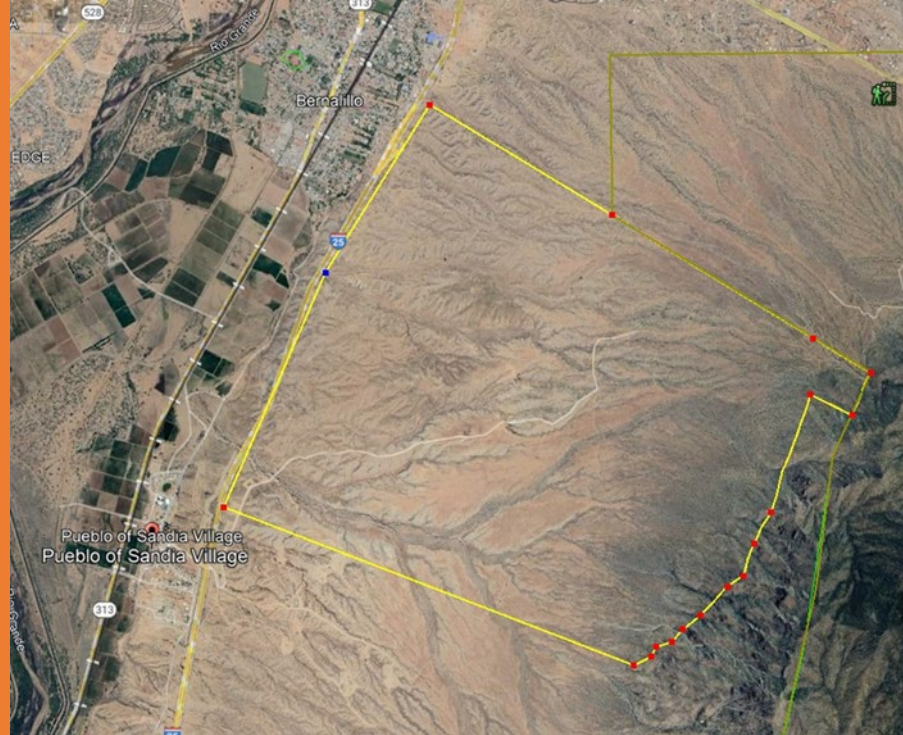
Not graze?





# Holistic Resources Management

- Rest/rotation concept of grazing wildlife characteristics
- Attempted on Sandia, Santa Ana, Zia Pueblos by BIA

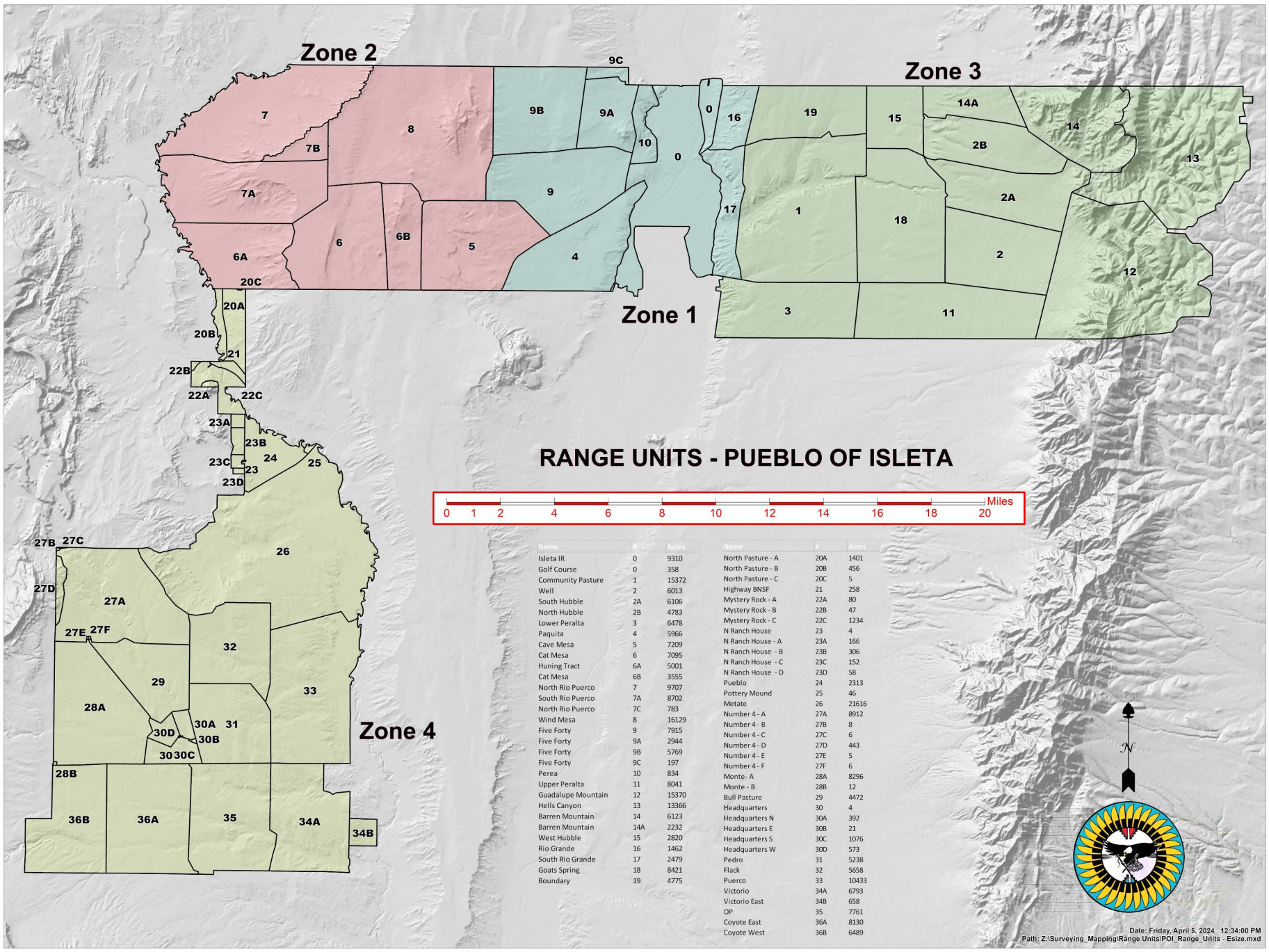


Sandia Pueblo



Santa Ana Pueblo









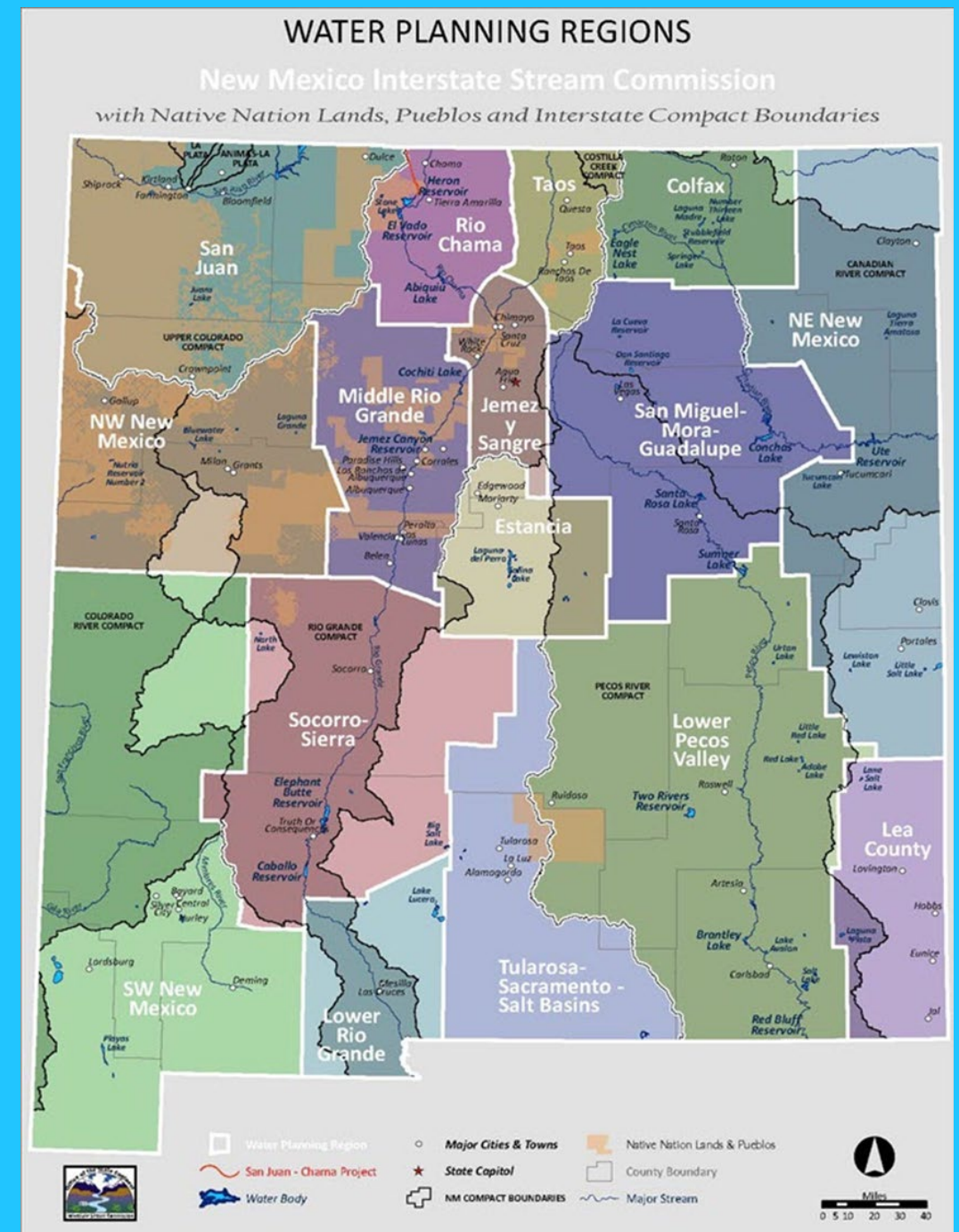


# **Water Resources Planning**



# NM Water Planning Regions

- **NM State Water Plan** with 16 Planning Regions
- Follows county boundaries
- Planning areas should be based on watershed boundaries
- **50 Year Water Plan** (Climate Change)



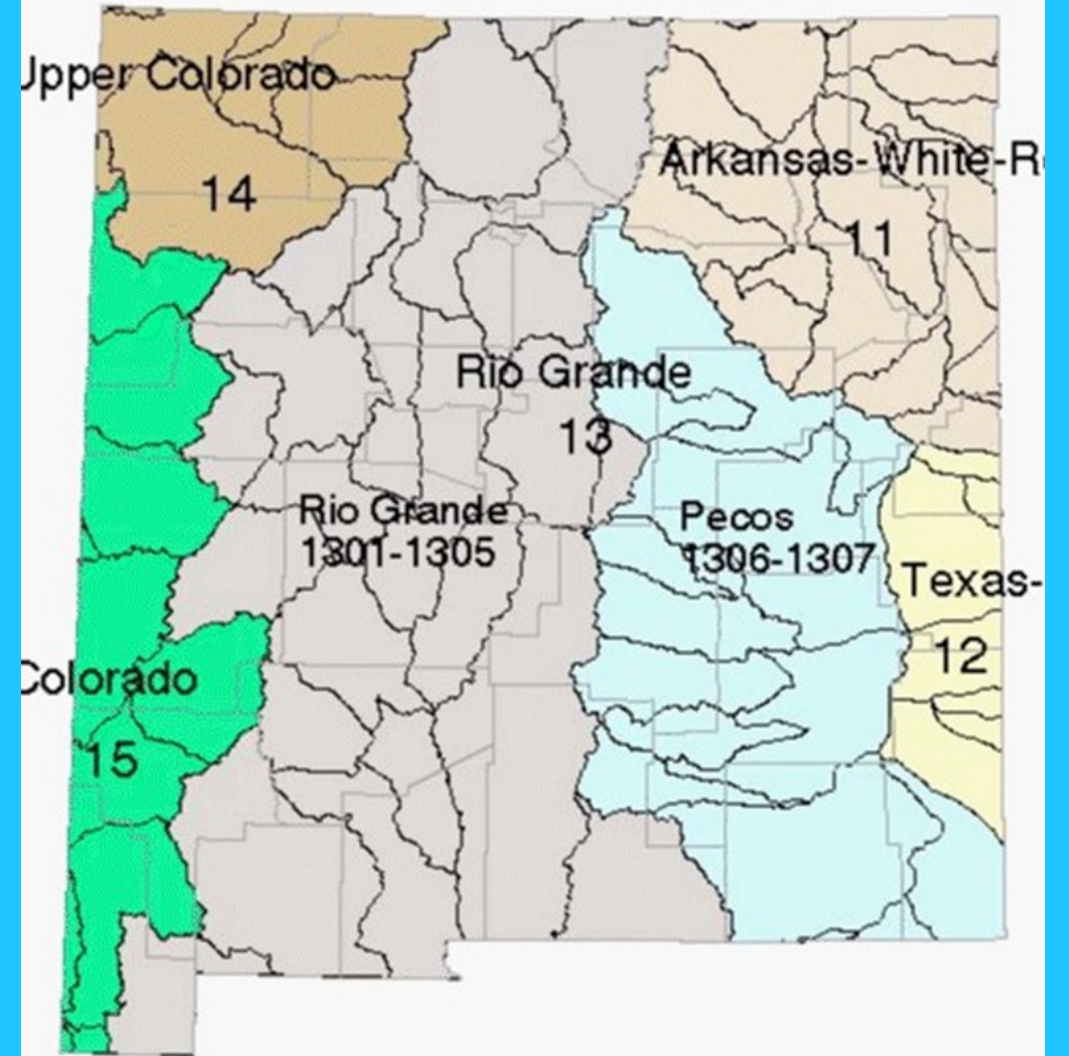


# NM Watershed Boundaries

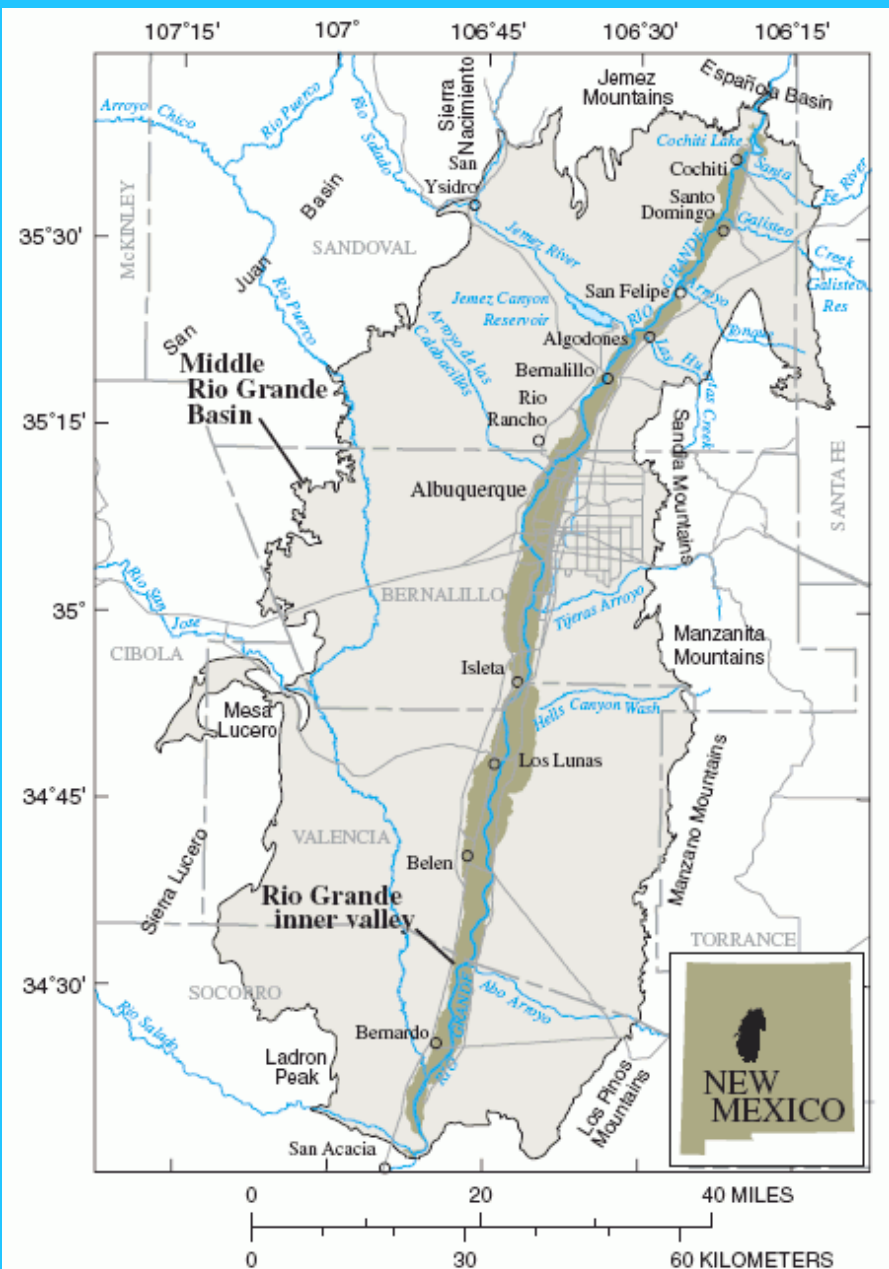
## MAJOR WATERSHEDS OF NEW MEXICO



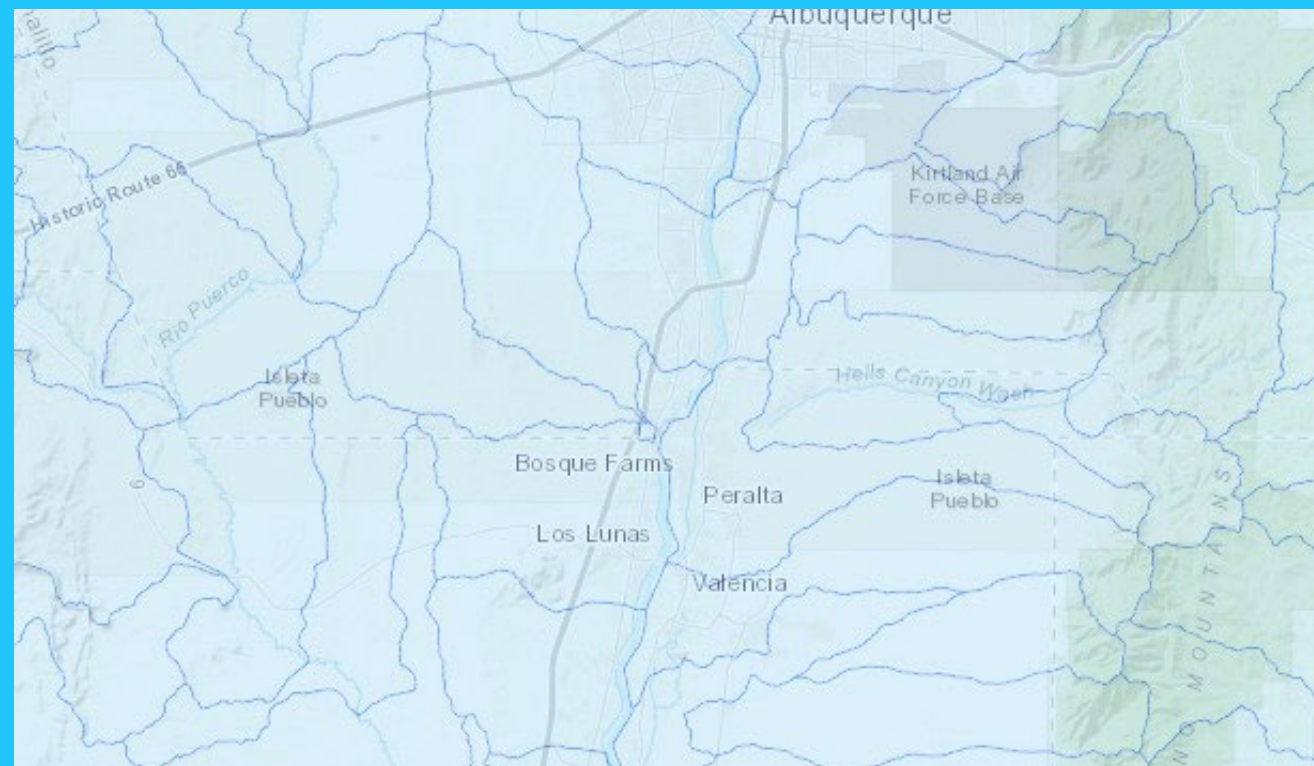
Source: U.S. Geological Survey  
National Hydrography Dataset and  
Watershed Boundary Dataset 2010  
Map by Katie Wetzel, 2018







Major physiographic and hydrologic features of the Middle Rio Grande Basin.





# **Bosque and Riverine Habitat**









BR5-163-15-7-8 5

2











# Isleta Bosque and Riverine Restoration and Implementation Plan



**Pueblo of Isleta  
Bosque and Riverine Restoration  
and Implementation Plan**

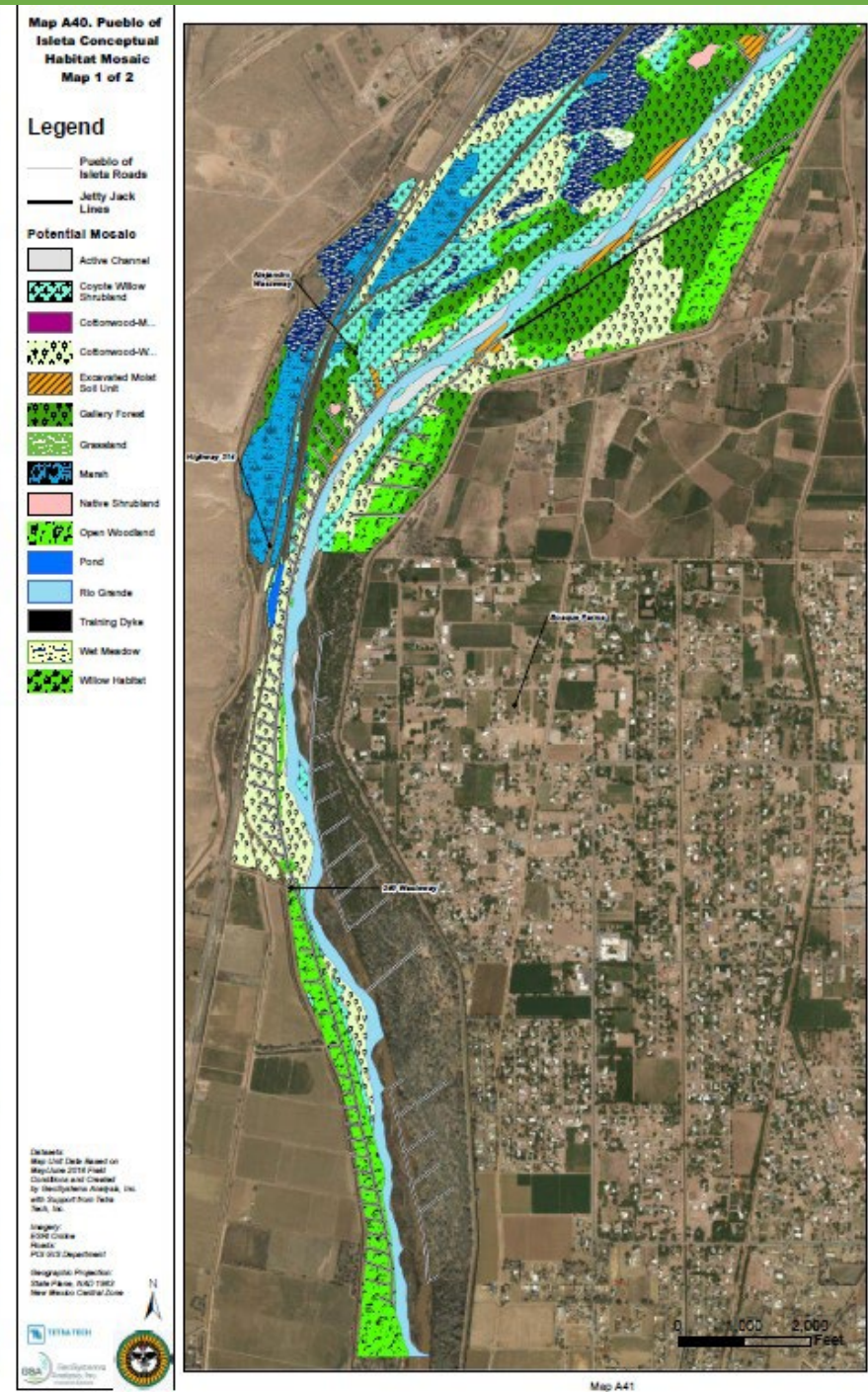
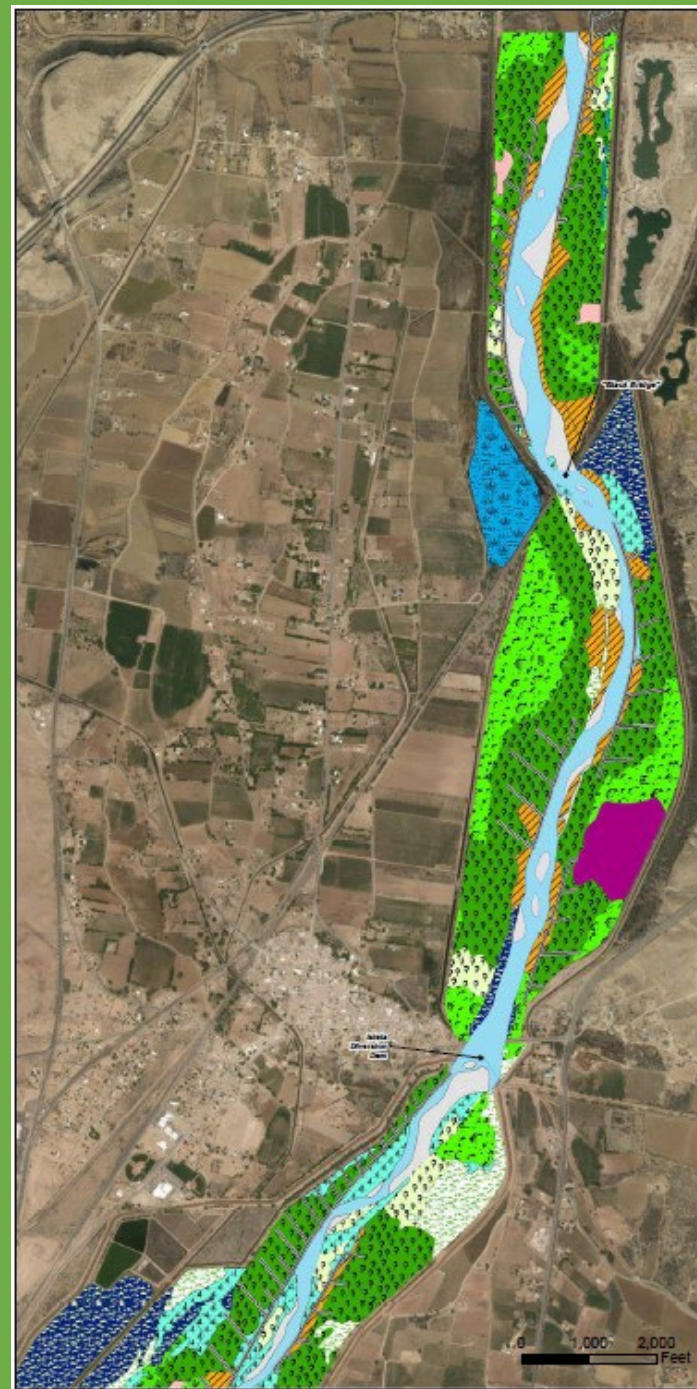
**March 2019**

Prepared for:  
Pueblo of Isleta  
P.O. Box 1270  
Isleta, NM 87022

Prepared by:  
GeoSystems Analysis, Inc. and Tetra Tech, Inc.  
3150 Carlisle Blvd. NE 6121 Indian School Rd. NE  
Albuquerque, NM 87110 Albuquerque, NM 87110  
[www.gsanalysis.com](http://www.gsanalysis.com) [www.tetratech.com](http://www.tetratech.com)



# Potential Habitat Mosaic





# Bosque| Restoration Plan

- Completed in March 2019
- Four Focal Areas
  1. Cultural Preservation
  2. Fire Risk Reduction
  3. Improve Wildlife Habitat
  4. Improve River-Floodplain Connectivity



# Major Implementation Actions

## PHASE 1 (2021 THRU 2025)

### ➤ Remove and control non-native plant species

- Saltcedar, Russian olive, Siberian elm, Tree of Heaven
- Ravenna grass, perennial pepperweed,
  - Forestry equipment + saw crews
  - Herbicide applications

### ➤ Revegetation with native plant species

### ➤ Monitoring Success





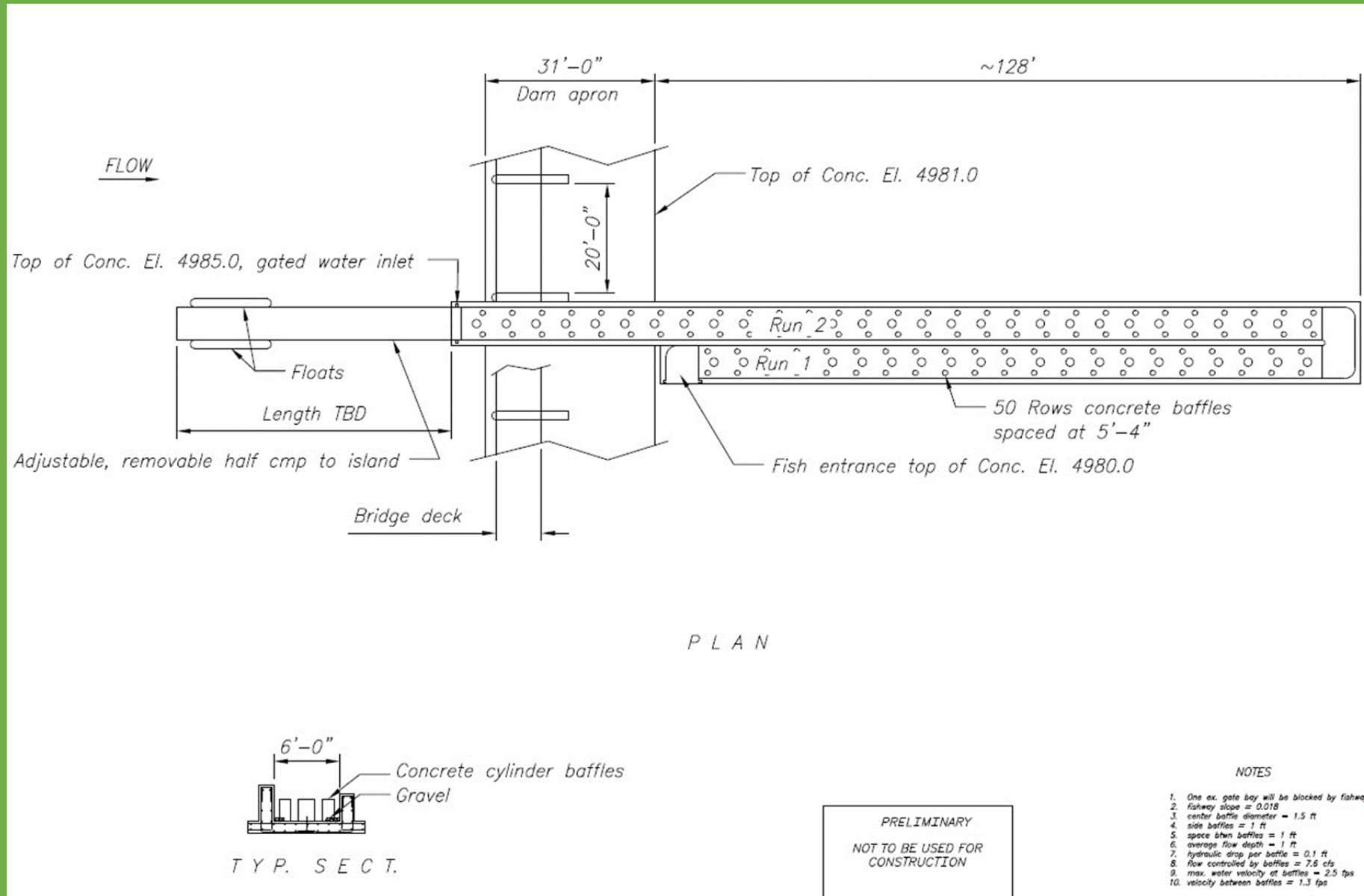








# Fish Passage for Rio Grande Silvery Minnow













# Rio Grande Watershed Dams and Diversions

- 12 Dams
- 9 Diversion dams





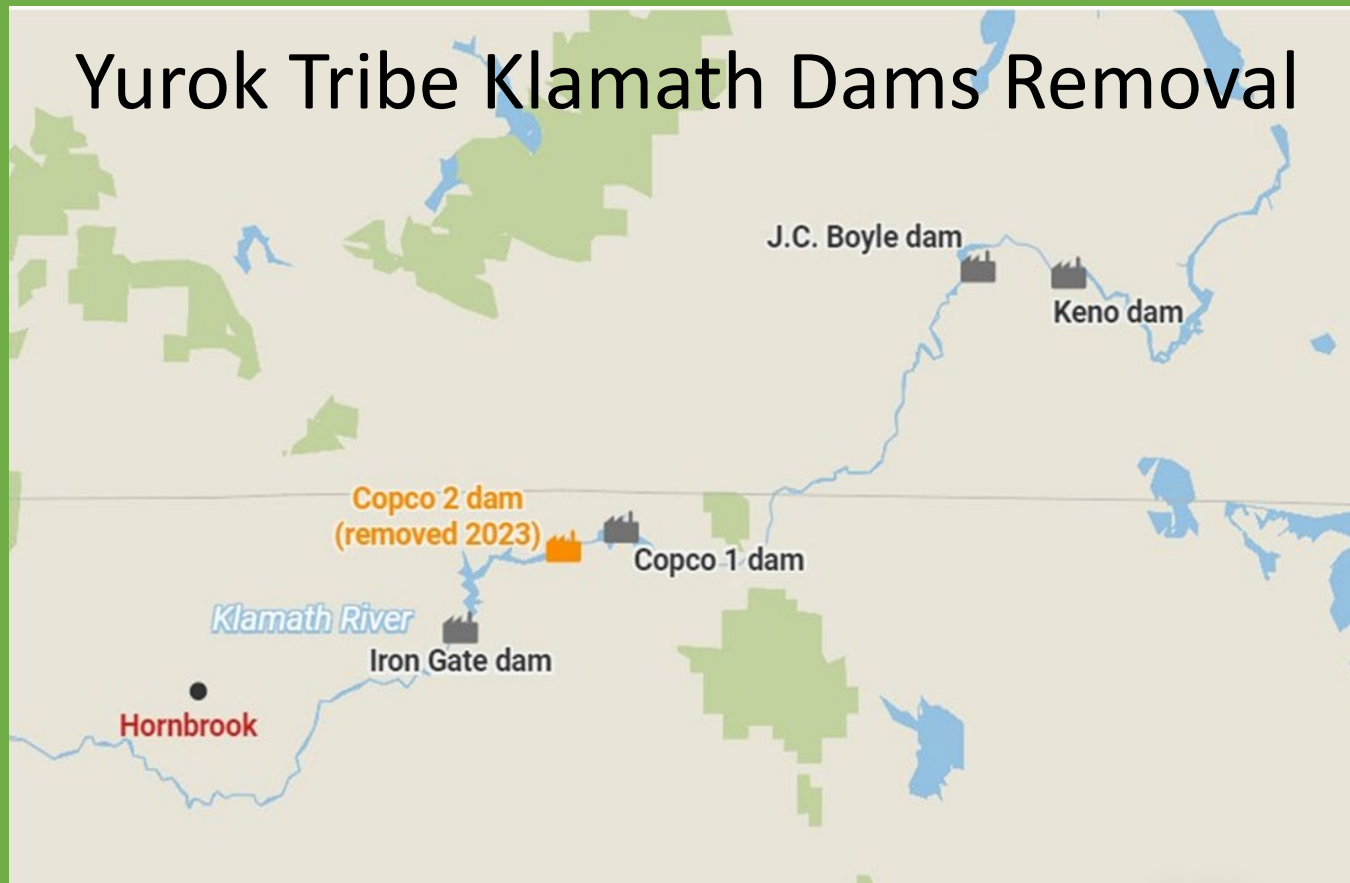
# Cochiti Dam

- Constructed on Cochiti Pueblo
- Completed 1973
- ***“The History of Cochiti Lake from the Pueblo Perspective”*** by Regis Pecos, NRJ Vol. 47, Issue 3





# Yurok Tribe Klamath Dams Removal



- Copco2 Removed Oct. 2023
- Copco1, Iron Gate, J.C. Boyle scheduled for removal Summer 2024



# **Impacts of Renewable Energy**





El Paso Electric Co. Buena Vista Energy Center, Chaparral, NM



- 11 Western States Follows county boundaries
- 548.6 GW generation by 2045
- Goal of 1/3 from Solar and  $\frac{3}{4}$  of that from utility scale
- 1M acres of BLM land ultimately needed

HighCountryNews

SOLAR ENERGY

# The great solar build-out

*Public-land managers ponder where to allow utility-scale solar projects*

**Erin X. Wong**    **April 1, 2024**






# SunZia Wind Project






# Fort McDermitt Paiute-Shoshone Tribe - Nevada

NEWS NEWSCASTS

DONATE




## Lithium Mine



**NEWS**

### Tribes face uphill battle to defend sacred land against lithium mining

BY CRONKITE NEWS · FEB 10, 2024



*The coming electric battery revolution in America will require billions upon billions of gallons of water to mine lithium – and many of the new U.S. mines will be located in the drought-prone American West. An investigative report from the Howard Center at Arizona State University. Find more stories from the project [here](#) and [here](#).*

**Noel Lyn Smith and Pacey Smith-Garcia**  
*Howard Center for Investigative Journalism*



# **Potential to Connect Ecosystem Restoration Efforts**



United States  
Department of  
Agriculture

Forest  
Service

Southwestern  
Region

MB-R3-03-23

July 2012



# Environmental Assessment for the Isleta Collaborative Landscape Analysis Project

Bureau of Indian Affairs, Cibola  
National Forest, and Chilili Land  
Grant

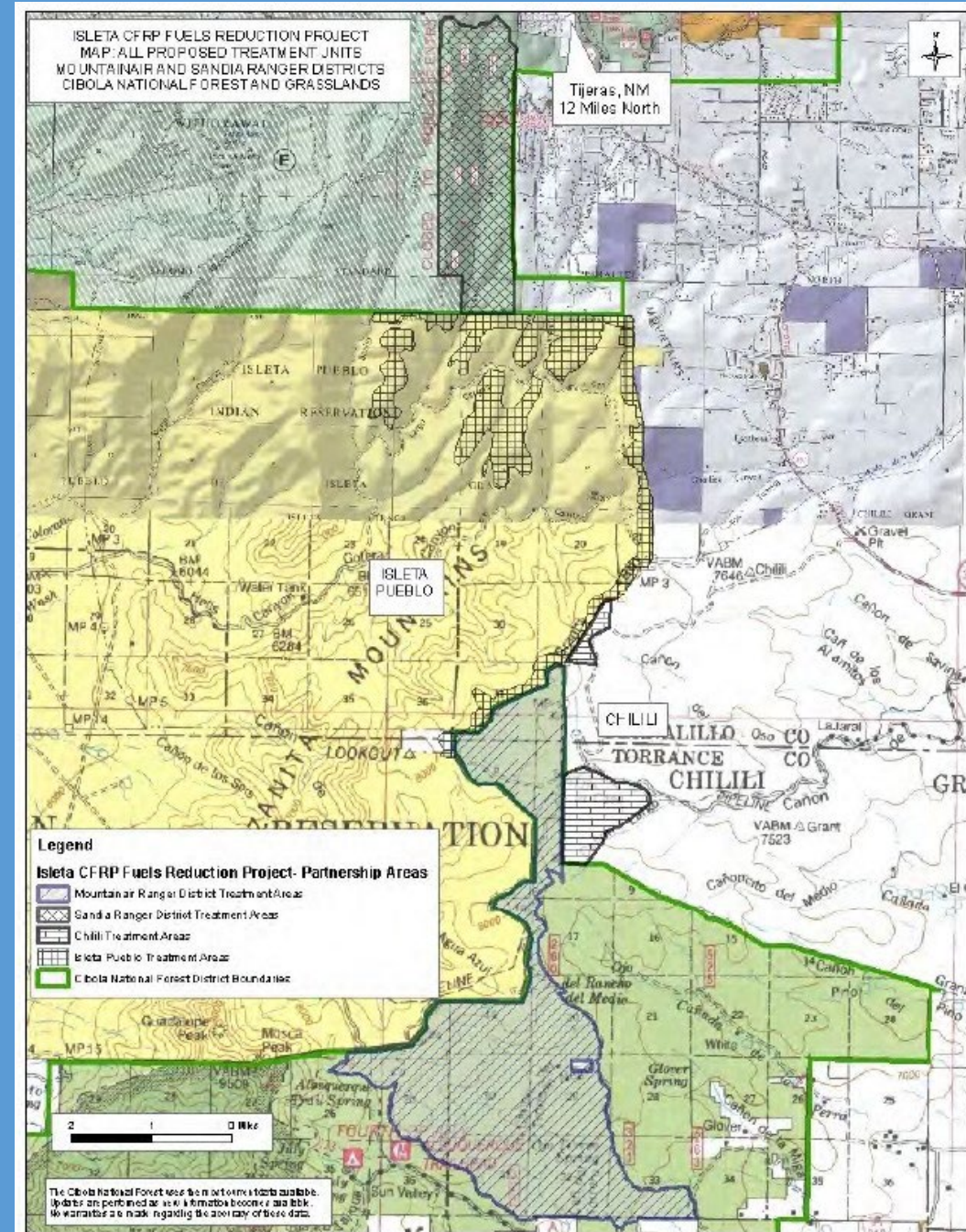


Figure 1. Project location (Source: Cibola National Forest 2011)





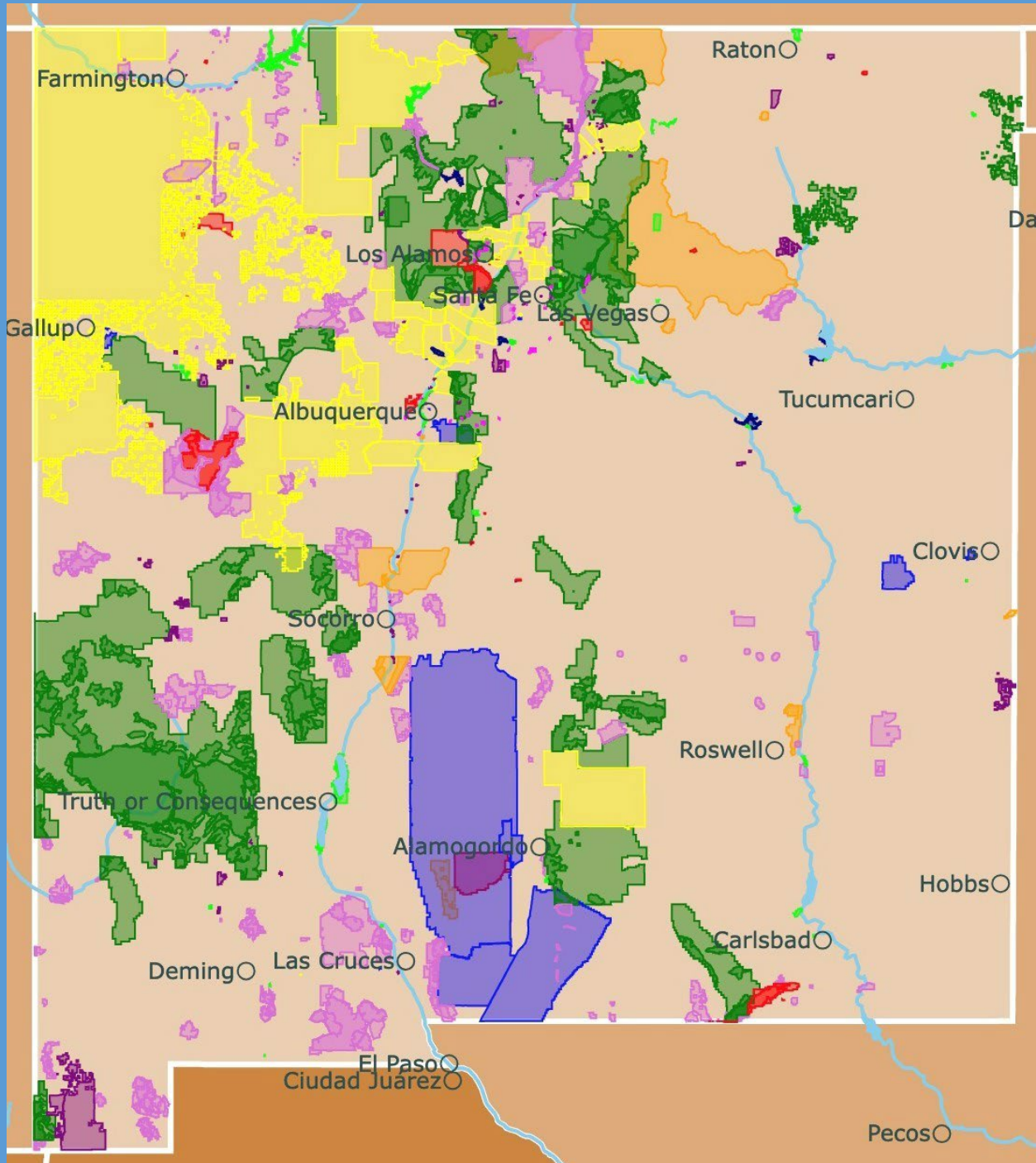
## Hold It High: 3 Restoration Projects That Are Improving Life in the Rio Grande Watershed

- Santa Fe Indian School  
Community Based ED Program



- Caja del Rio





Key	
	Lake or River
	City
Manager	
	National Park Service
	State
	U.S. Forest Service
	Fish and Wildlife Service
	Tribal Lands
	Bureau of Land Management
	Department of Defense
	U.S. Army Corps of Engineers
	Other



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