

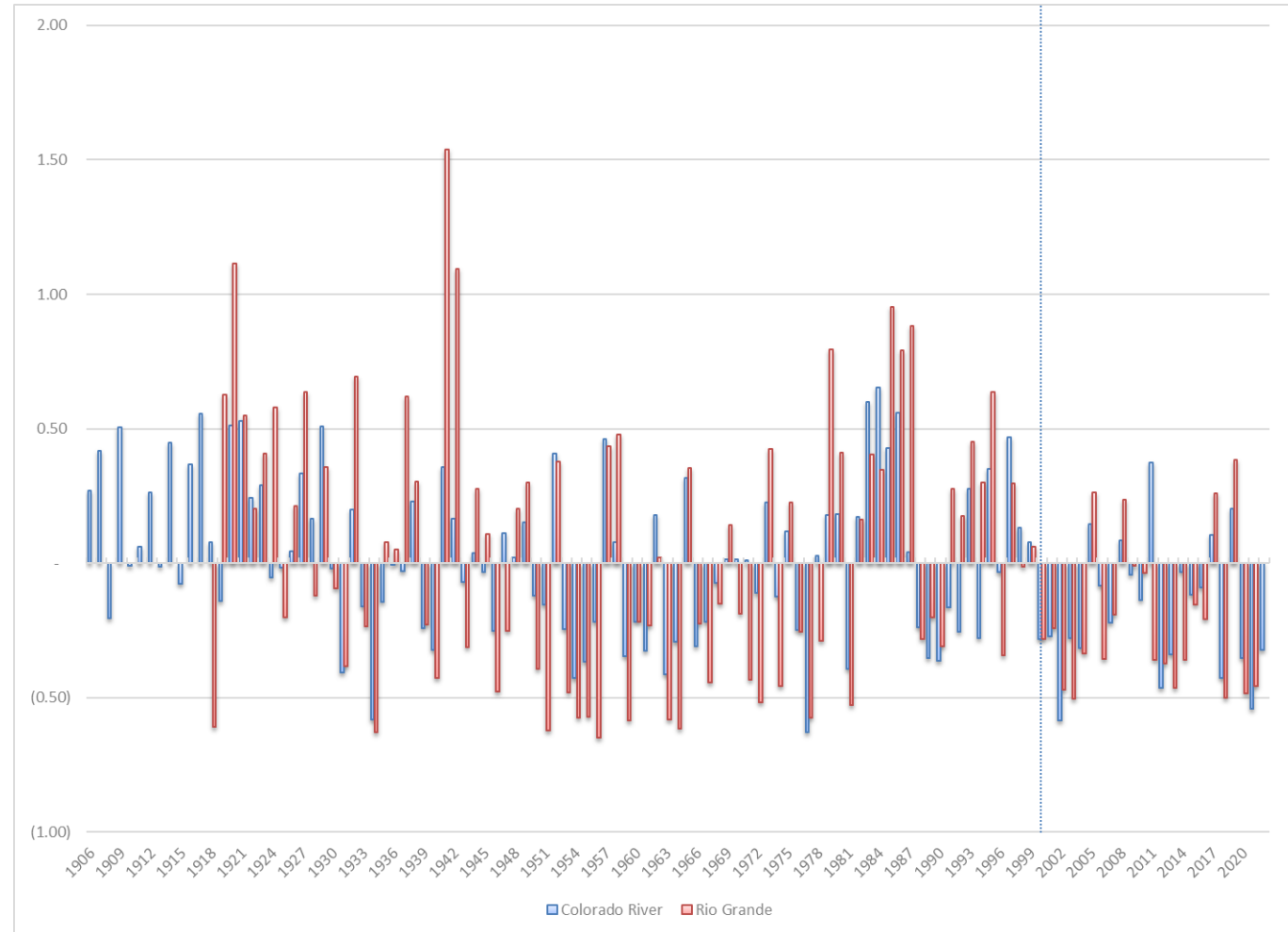
Adapting landscapes to persistent droughts and intensifying aridification

Carlos A. Bustos
Water Conservation Manager
ABCWUA



Southwest U.S. drought, worst in a century

- Rivers in the southwest have experienced significant and sustained reductions
- Conditions are expected to continue due to climate change
- Colorado River natural flow (blue lines): average flow reductions of 17% since 2000 (compare to average 1906 - 2000)
- Rio Grande Natural flow (Red lines): average flow reductions of 21% (compare to average 1906 – 2000)



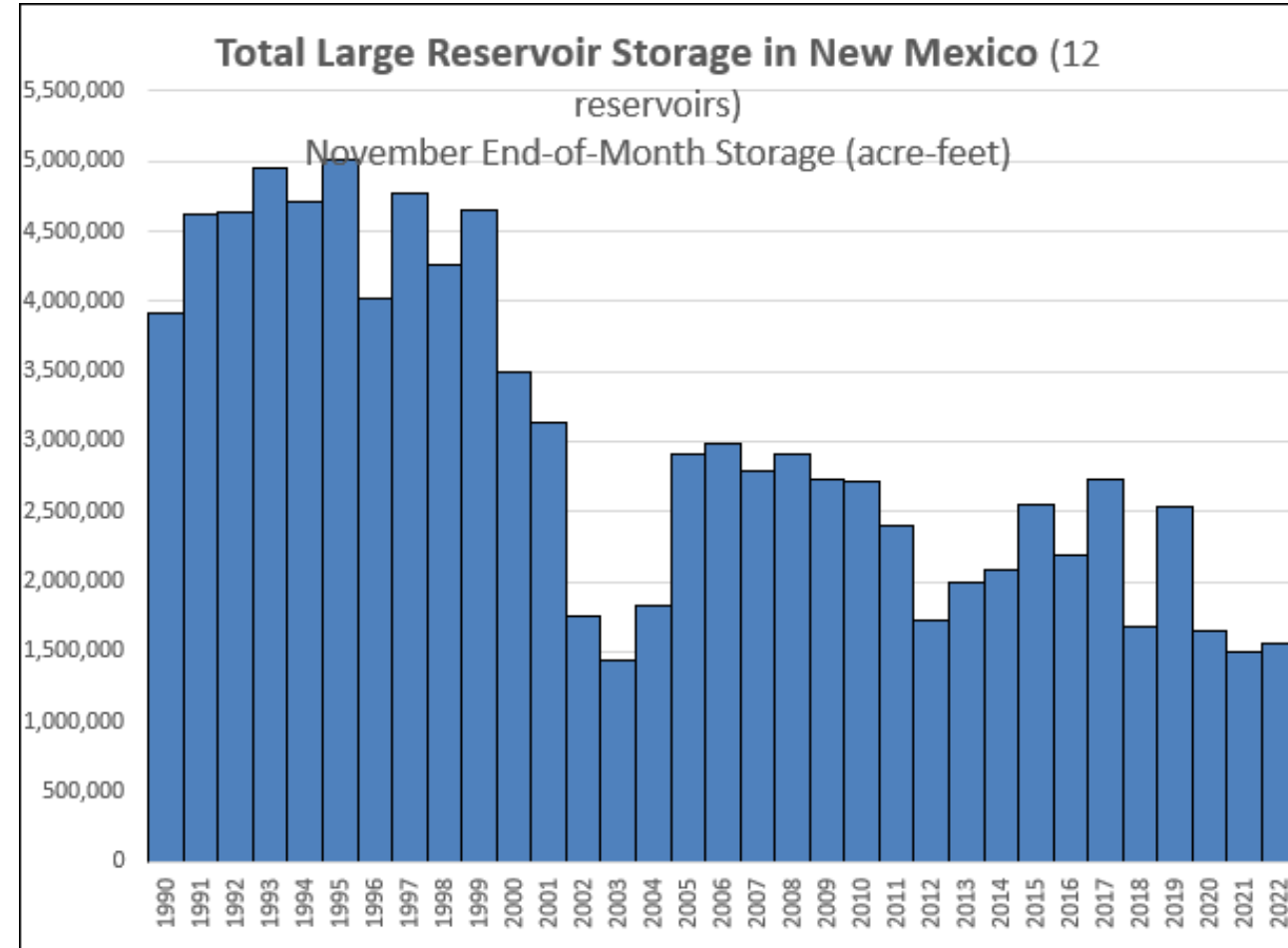
Source:

[Boulder Canyon Operations Office | Lower Colorado Region | Bureau of Reclamation \(usbr.gov\)](#)

[USGS Surface Water data for USA: USGS Surface-Water Annual Statistics](#)

Southwest U.S. drought, worst in a century

- Decreasing snowpack have impacted reservoirs
- Upstream of the Rio Grande and Colorado, there is little multi-year water storage for irrigation and other consumptive use
- Reservoir levels in New Mexico are at an all-time low
- Shortages below the Elephant Butte reservoir have occurred in most years since 2003
- Agriculture and hydropower generation has been impacted by low reservoir levels



Source: New Mexico Office of State Engineer

Call for Action and opportunities



1. *Bureau of Reclamation Call for Basin-Wide Conservation*

- Drought Response Operations and Management Plan with Upper Basin States
- Colorado Basin Water Users Memorandum of Understanding

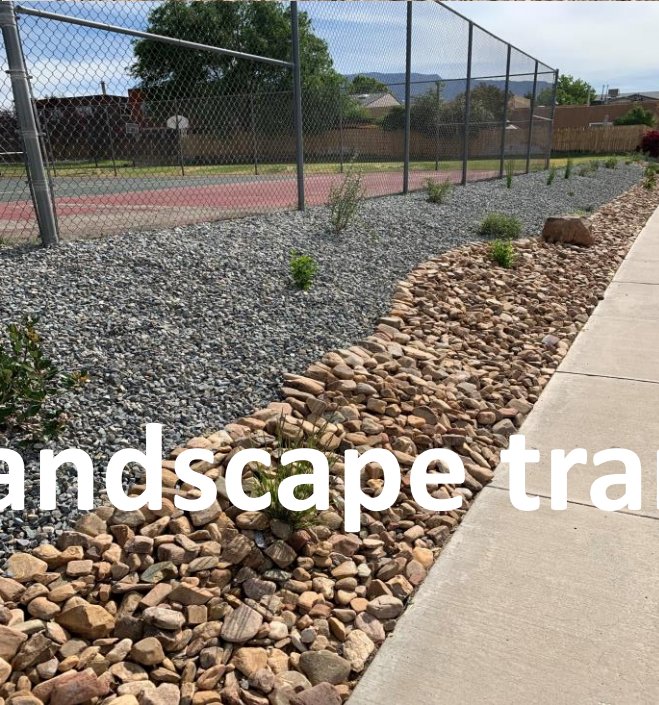
2. *Albuquerque region has an opportunity to solidify its position as one of the Conservation leaders in the basin*

- Santa Fe and ABCWUA are partners in the Regional MOU
- Introduce a program to reduce nonfunctional turf grass by 30% through replacement with drought- and climate-resilient landscaping while maintaining vital urban landscapes and tree canopies



Potential to advance conservation by removing unnecessary high-water-use turf

- 12 million sq. ft. landscape transform in 30 years
- \$8 million rebate amount issued to date
- 5 Billion gallons demand reductions (per year)
- 35% reduction or 65 gallons per sq. ft. per year
- To reduce 1 GPCD per year we need to convert ~1 million square feet per year



Landscape transformations



Implementing the MOU

- **Contract with the University of New Mexico Earth Data Analysis Center to develop a landscape classification spatial analysis**
- **Design a 30% nonfunctional turfgrass removal strategy:**
 - Develop ABCWUA Conservation 10 year goal and objectives for accomplishing the 30% reduction
 - Design and facilitate stakeholder meetings to define nonfunctional and functional turf
 - Recommend policies and regulatory actions
 - Recommend exceptions and waivers for customers.
 - Develop a plan to work with various customer classes in seeking reductions
 - Identify opportunities for partnerships
 - Financing Options for Large-Scale Turf Replacements
 - Recommend behavioral interventions for proposed sites.
- **Update the Xeriscape program**
 - Define drought- and climate-resilient landscaping
 - Connect Xeriscape requirements with the ideal landscape