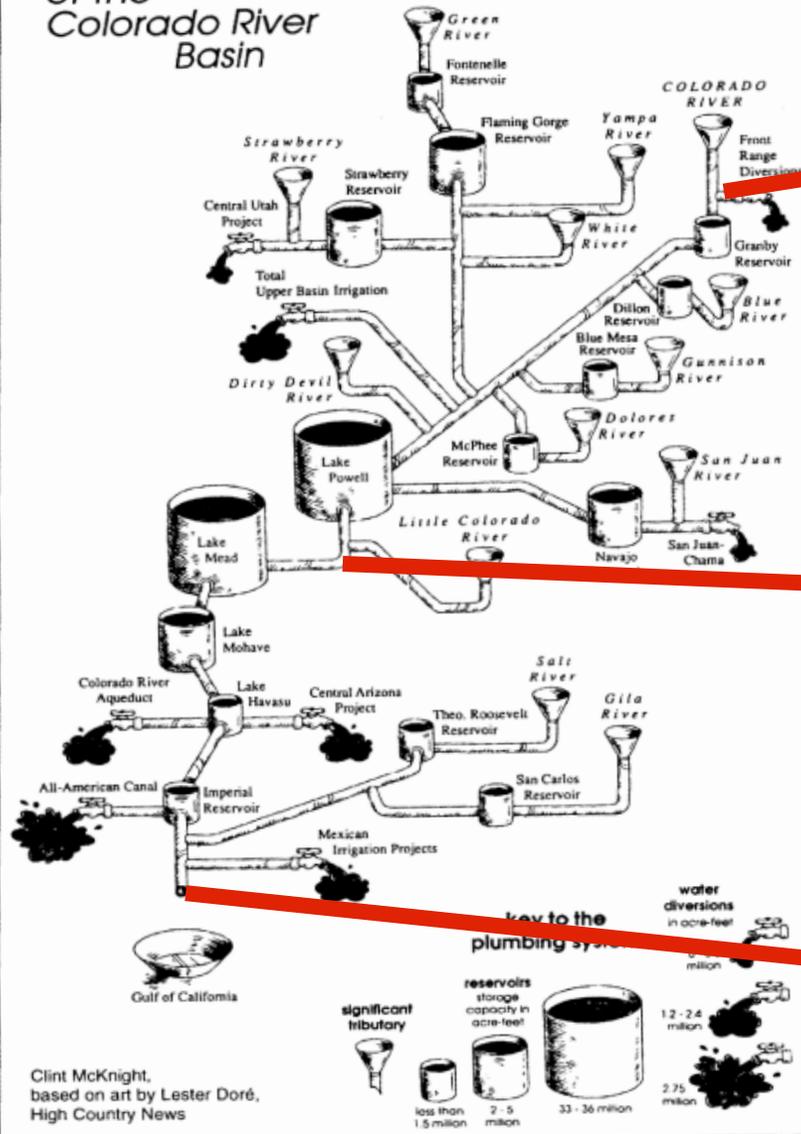
An aerial photograph of a dry, arid landscape. The terrain is sandy and rocky, with scattered green shrubs and small trees. A winding riverbed or dry channel is visible, cutting through the landscape. The overall scene conveys a sense of drought and environmental stress.

Binational River Ecosystems in Crisis: Conservation and Restoration

**Jennifer Pitt, National Audubon Society
Nancy Smith, The Nature Conservancy**

the plumbing of the Colorado River Basin



Colorado River supports wildlife

Rocky Mountain bighorn sheep



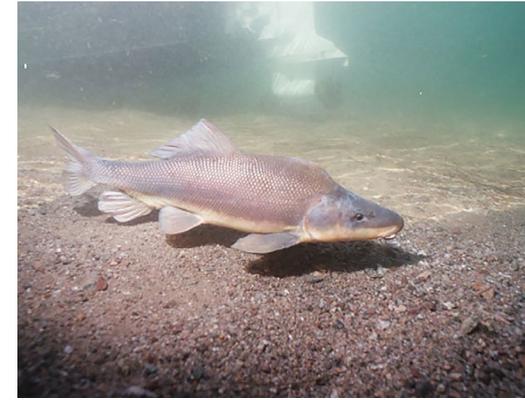
Yellow-billed cuckoo



Sandhill crane



Razorback sucker



Humpback chub



Yuma Ridgway's Rail



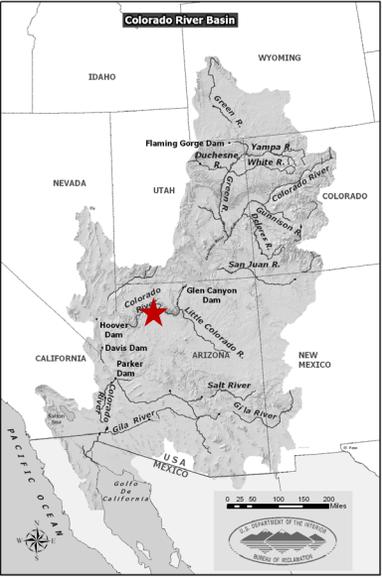
Elf owl



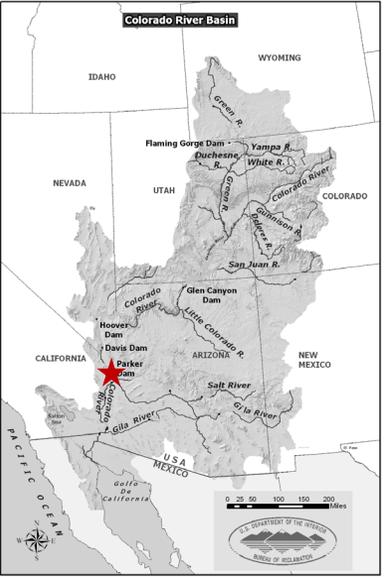
North American river otter



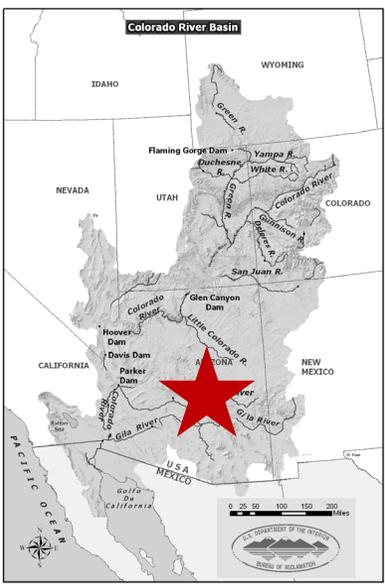
Grand Canyon



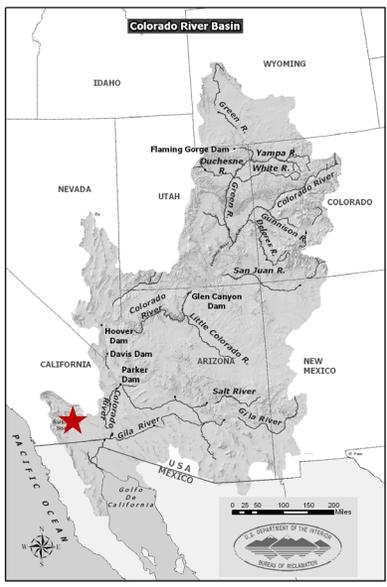
Lower Colorado River Multi-Species Conservation Program

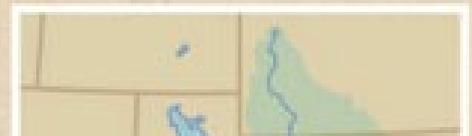
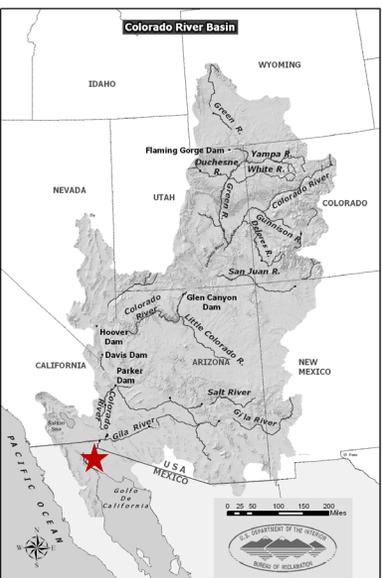


Groundwater-Dependent Springs and Tributaries in Arizona

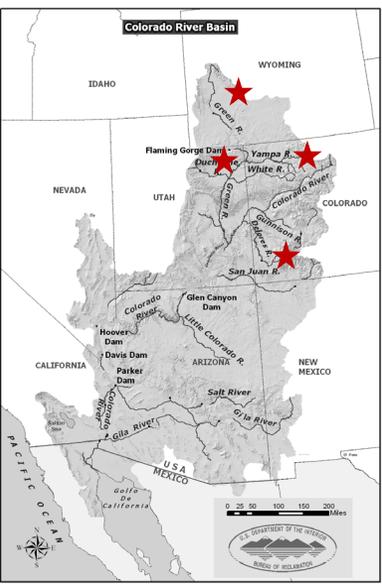


Salton Sea

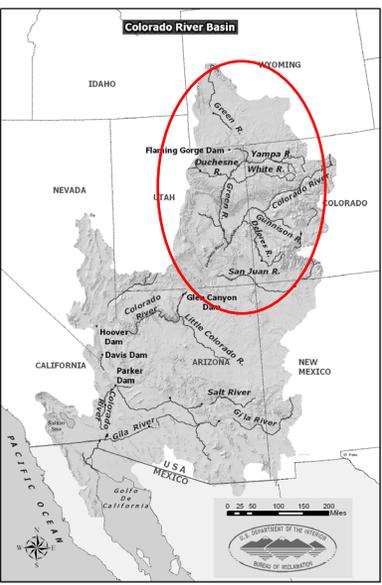




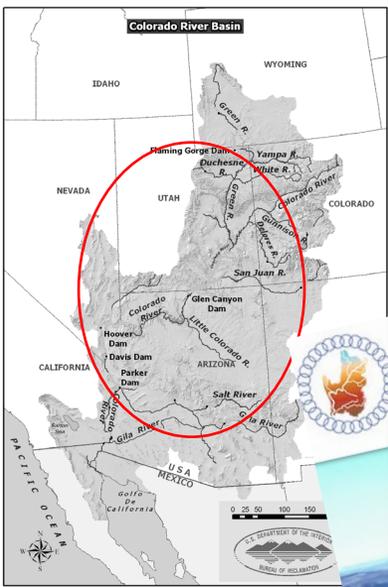
Upper Basin Forested Headwaters



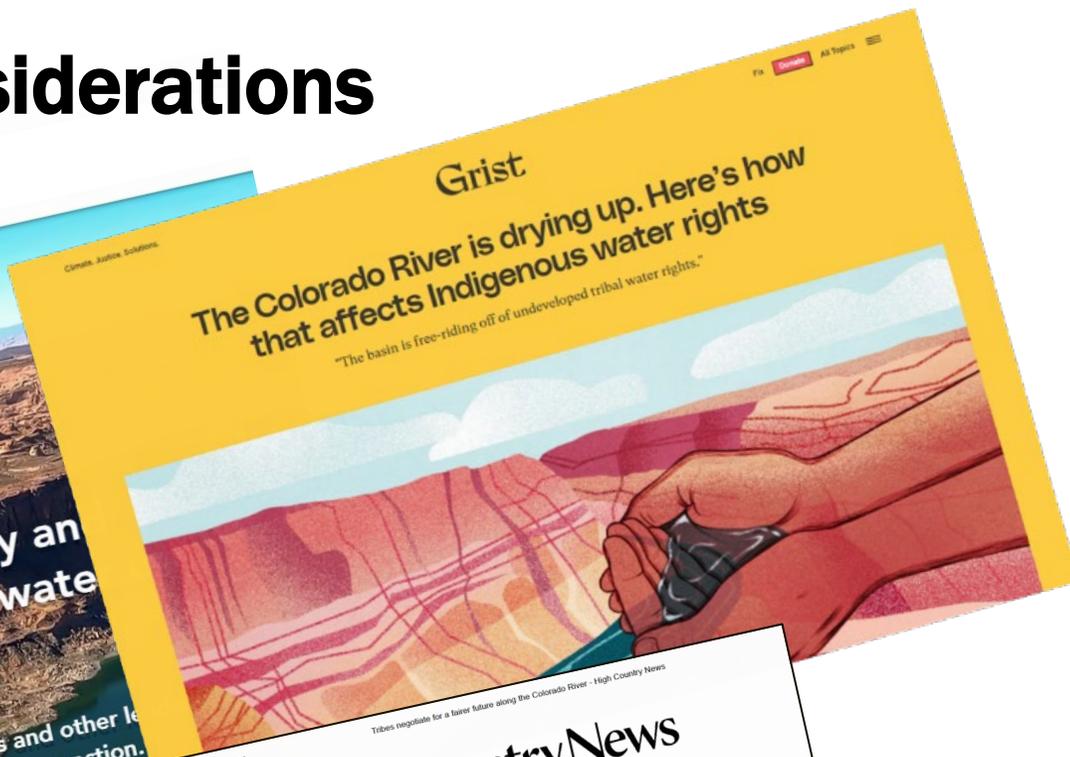
Upper Basin Agricultural Water Use



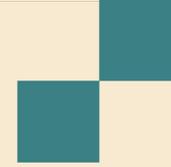
Tribal Water Considerations



Water & Tribes Initiative
Colorado River Basin



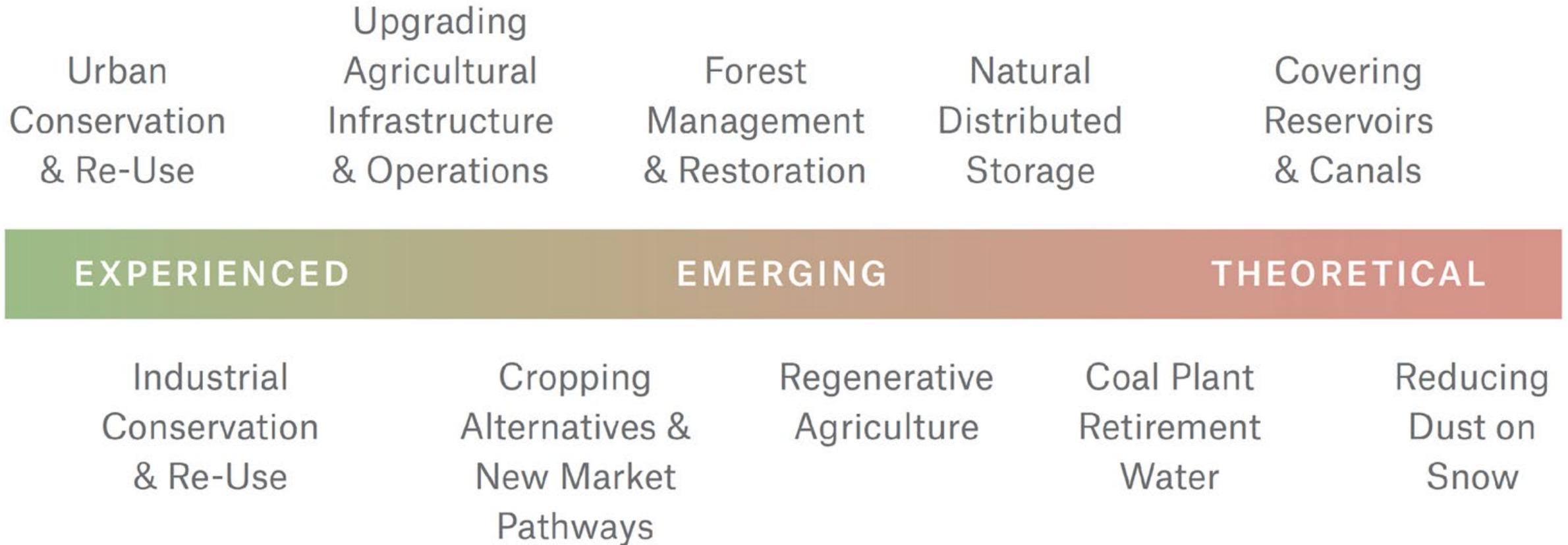
To tackle the daunting impacts of climate change in the Colorado River Basin, we must explore broader strategies to increase resilience.



TEN STRATEGIES FOR CLIMATE RESILIENCE IN THE COLORADO RIVER BASIN

WWW.TENSTRATEGIES.NET

Ten Strategies for Climate Resilience



Forest Management & Restoration

- Mitigating wildfire risk
- Protecting communities
- Improving wildlife habitat
- Safeguarding water quality
- Climate adaptation and resilience
- Recreation
- Influencing watershed hydrology
- Snowpack management



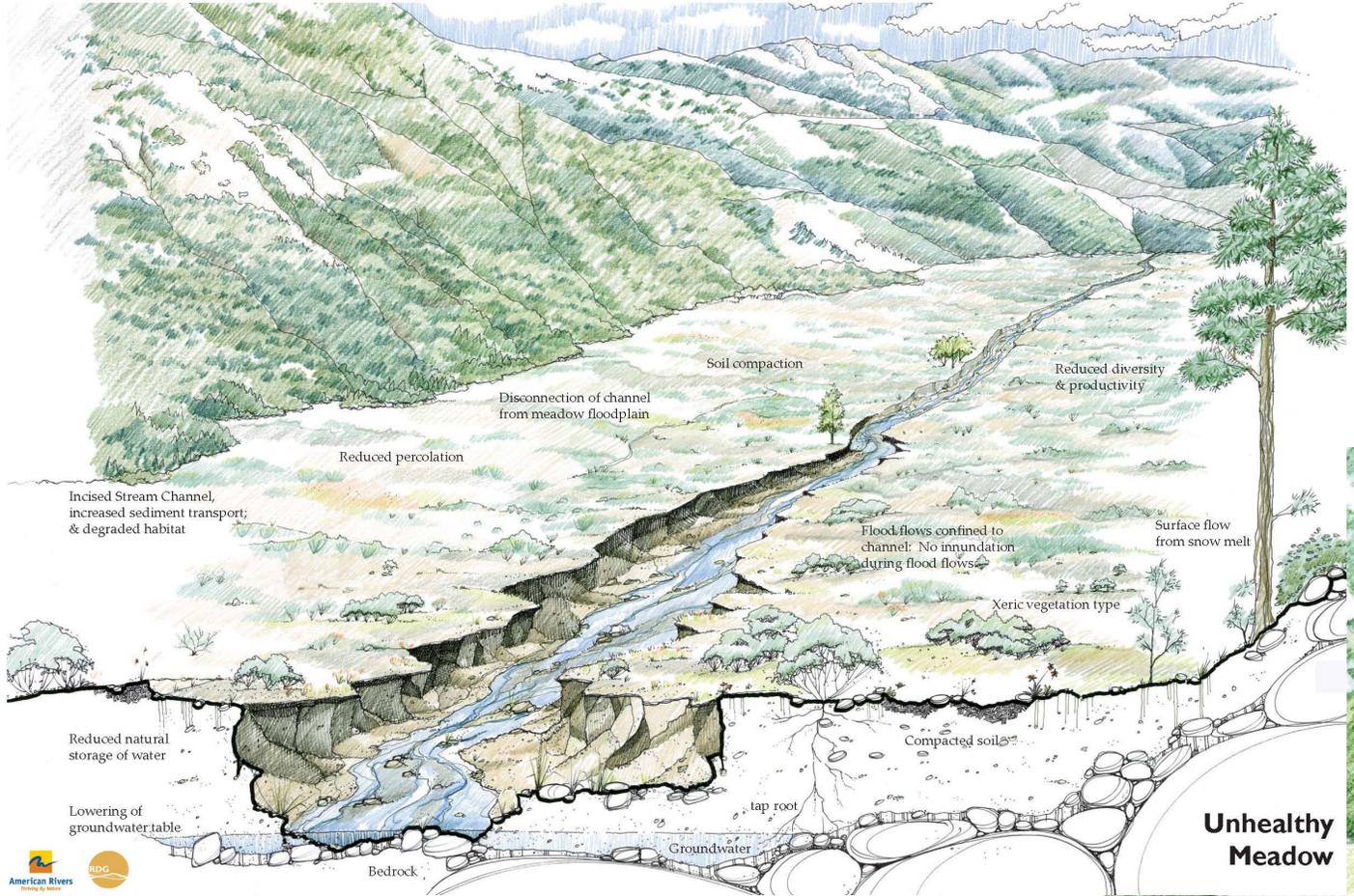
Natural Distributed Storage

Restoring highly degraded natural meadow systems to improve local aquifer recharge, water retention, reconnect historic floodplains, and support productive meadows and riparian ecosystems

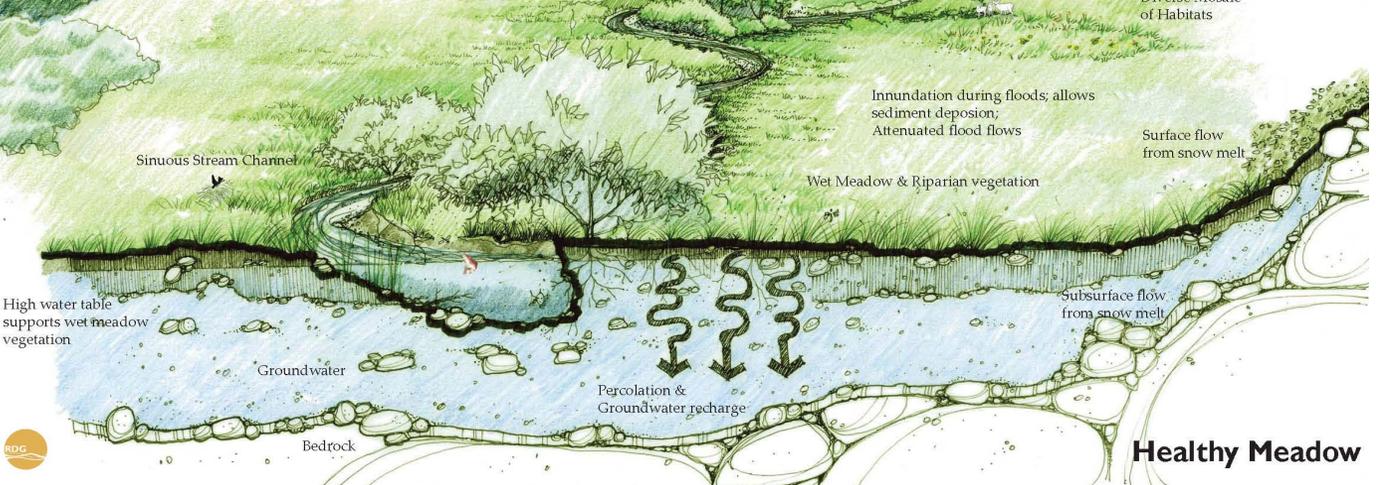


Wet meadow restoration can:

- create fire breaks
- increase groundwater recharge
- improve forage & species habitat



Unhealthy Meadow



Healthy Meadow

Regenerative Agriculture

Promoting voluntary farming and ranching principles and practices that enrich soils, enhance biodiversity, restore watershed health, and improve overall ecosystem function and community health



Upgrading Agricultural Infrastructure & Operations

Upgrading diversion, delivery and on-farm infrastructure and operations, including irrigation systems, to improve water conservation



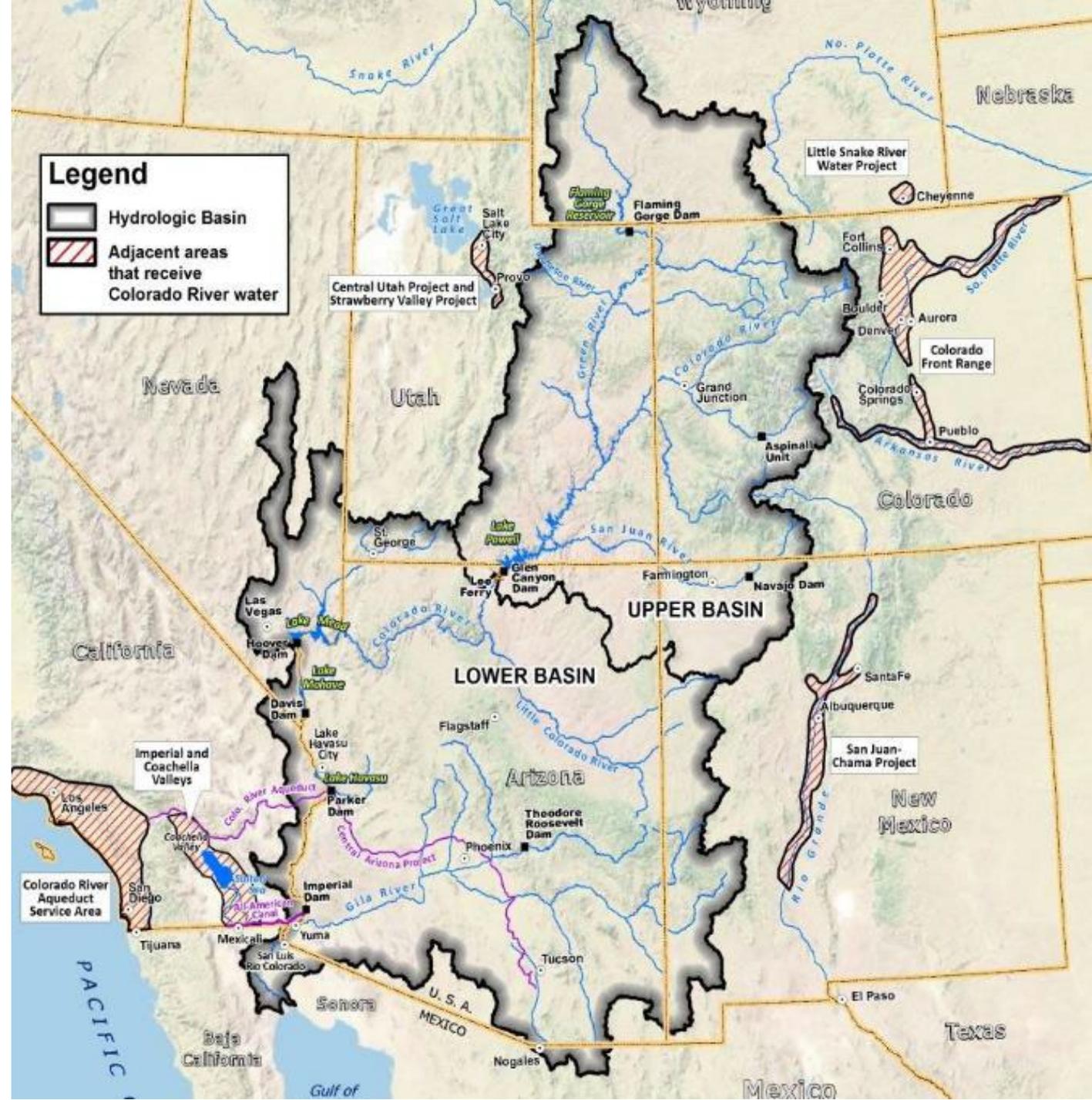


Urban & Industrial Conservation & Re-Use

Incentivizing conservation technologies, indoor and outdoor conservation programs, and direct and indirect potable reuse without negatively impacting downstream fish, wildlife, or ecosystem functions



State Legislature & Tribal Nation “Best in Class” Examples



Jicarilla Apache Nation to lease river water to New Mexico

BY [THERESA DAVIS](#) / JOURNAL STAFF WRITER

PUBLISHED: THURSDAY, JANUARY 20TH, 2022 AT 6:19PM

UPDATED: THURSDAY, JANUARY 20TH, 2022 AT 11:10PM



Jicarilla Apache Nation water lease and New Mexico Strategic Water Reserve

Utah passed 28 (!)
water bills in 2022 –
appropriating ~\$500
million for water
management,
drought resilience,
etc.

WATER FOCUS OF UTAH'S 2022 LEGISLATIVE SESSION

Nearly \$500 Million in Spending Committed to Water
Conservation Initiatives



NEWS RELEASE BY WASHINGTON COUNTY WATER CONSERVANCY DISTRICT

St. George, UT | March 15, 2022 08:50 AM Mountain Daylight Time

Utah's 2022 legislative session concluded on March 4 with a record number of water conservation bills and appropriations totaling nearly \$500 million in spending. Utah Governor Spencer J. Cox is expected to sign the bills into law in the next few weeks.

"Utah's population and economy are exploding but our water supply is dwindling," said Brian Steed, executive director of the Utah Department of Natural Resources. "We have to protect, conserve and develop our water. Doing nothing and running out of water isn't an option."

The bills are designed to help bolster water levels in reservoirs throughout the state by reducing demand via grass rebate programs, additional metering of secondary water and watershed enhancement efforts. Statewide water storage is at a dismal 54% of capacity.

"As one of the driest and fastest-growing states in the nation, strains on Utah's water supply threaten our ability to thrive, our recreational opportunities, our environment, and our food supply," said Brad Wilson, speaker, Utah House of Representatives. "The actions taken this legislative session to conserve, preserve, and optimize Utah's water resources reiterate our commitment to address current needs while preparing for the future."

Drought conditions are common throughout Utah, especially in the southwest section of the state. Washington County's major population centers are currently dependent on one water source that has been in a drought 16 of the last 20 years.

The Washington County Water Conservancy District (district) is working with its local municipal partners to pass additional water efficiency ordinances that will eliminate or reduce the amount of grass allowed in new construction and developing a more robust regional wastewater reuse system to help prevent approaching water supply shortages.

"We are elevating our water conservation efforts while developing the critical

Utah 2020

SB 26: Utah Water Banking

HB 130: Fixed-time and Split-season water sharing

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NEWSLETTERS

Saving water for Utah farms: 'Banking' may be the key in face of growth

Senate committee endorses 10-year pilot project

By Amy Joi O'Donoghue | Feb 1, 2020, 6:00pm MDT

SHARE



The Bear River cuts through agricultural land near Honeyville in Box Elder County on Thursday, Jan. 30, 2020. | Spenser Heaps, Deseret News | [Purchase Photo](#)

Bill Sponsor: Sen. Iwamoto, Jani

Floor Sponsor: Rep. Hawkes, Timothy D.

CoSponsor(s): Hinkins, D., Okerlund, R.

SALT LAKE CITY — Most states across the West have adopted some sort of water sharing program that provides more flexibility for users in time of need, or in time of excess.

Report ad

Colorado
Legislature
transferred \$20
million in ARPA
funding for forest
management and
watershed
restoration projects



Second Regular Session | 73rd General Assembly
Colorado General Assembly

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HB22-1379

Wildfire Prevention Watershed Restoration Funding

Concerning transfers from the economic recovery and relief cash fund to provide additional funding for the management of certain natural resources, and, in connection therewith, making an appropriation.

SESSION: 2022 Regular Session

SUBJECTS: State Government, Water

BILL SUMMARY

The act requires the state treasurer to make the following transfers from the economic recovery and relief cash fund:

- \$3,000,000 to the healthy forests and vibrant communities fund for projects that will help communities address the urgent need to reduce wildfire risks by supporting implementation

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PRIME SPONSORS

- Representative Karen McCormick
- Representative Marc Catlin
- Senator Kerry Donovan
- Senator Cleave Simpson

Incentives for the removal of thirsty, non-functional turf grass in cities.



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HB22-1151

Turf Replacement Program

Concerning measures to incentivize water-wise landscapes, and, in connection therewith, creating a state program to finance the voluntary replacement of irrigated turf and making an appropriation.

SESSION: 2022 Regular Session

SUBJECT: [Water](#)

BILL SUMMARY

The act requires the Colorado water conservation board (board) to develop a statewide program to provide financial incentives for the voluntary replacement of irrigated turf with water-wise landscaping (turf replacement program). The act defines water-wise landscaping as a water- and plant-management practice that emphasizes using plants with lower water needs. Local governments, certain districts, Native American tribes, and nonprofit organizations with their own turf replacement programs may apply to the board for money to help finance their turf replacement programs. The board will contract with one or more third parties to administer one or more turf replacement programs in areas where local turf replacement programs do not exist.

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COMMITTEES

SB22-028
Transfers \$60 million of
ARPA funds to support
voluntary well retirement
in San Luis Valley and
Republican Basin as a
model for future CO
River Basin programs.



2022 Ballot Information Booklet (Blue Book)
COVID-19 Resources

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SB22-028

Groundwater Compact Compliance Fund

Concerning the creation of the groundwater compact compliance and sustainability fund, and, in connection therewith, making an appropriation.

SESSION: 2022 Regular Session

SUBJECT: Water

BILL SUMMARY

The act creates the groundwater compact compliance and sustainability fund (fund) to help finance groundwater use reduction and sustainability efforts in the Rio Grande river basin and the Republican river basin, such as efforts to buy and retire irrigation wells and irrigated acreage in the river basins. The Colorado water conservation board (board) administers the fund and can make expenditures from the fund based on recommendations from the board of directors of the Rio Grande water conservation district or the Republican river water conservation district. A conservation district's recommendations must first be approved by the state engineer.

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Arizona legislature appropriated \$30M to enable Drought Contingency Plan interstate agreements

also \$200M for water conservation

Rural groundwater reform can protect Arizona's tributary rivers and springs as well as today's rural groundwater users

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JOANNA ALLHANDS | Opinion *This piece expresses the views of its author(s), separate from those of this publication.*

Arizona's rural groundwater strategy: Once wells run dry, just keep pumping

Opinion: Willcox is the hardest hit by heavy groundwater pumping. But problems are popping up all over rural Arizona - and we're doing little to stop them.



Joanna Allhands

The Republic | azcentral.com

Published 9:17 a.m. MT Aug. 3, 2018 | Updated 2:56 p.m. MT Aug. 9, 2018

View Comments



A center pivot irrigates a field while a new 1,200-foot well is drilled on a farm in the Kansas Settlement area south of Willcox. *Mark Henle/The Republic*

Institutional Solutions: Protecting and restoring Colorado River ecosystems in the context of multi-party agreements



2026 Guidelines for Operation of Colorado River Reservoirs

- Glen Canyon Dam operations need to protect function of reservoirs (water, power) and provide flows that support endangered fish and wildlife and the recreational economy of Grand Canyon National Park
- Implications for operations of Flaming Gorge reservoir (WY)

Institutional Solutions: Protecting and restoring Colorado River ecosystems in the context of multi-party agreements

Lower Colorado River Multi- Species Conservation Program

- investments needed to increase habitat for ESA compliance
- Inflation Reduction Act opportunity



Institutional Solutions: Protecting and restoring Colorado River ecosystems in the context of multi-party agreements



Salton Sea

- CA legislature has appropriated >\$200M for Salton Sea mitigation (for past transfers)
- Imperial Irrigation District unlikely to voluntarily reduce use of Colorado River water without commitments to suppress dust and develop habitat on exposed shoreline
- Inflation Reduction Act opportunity

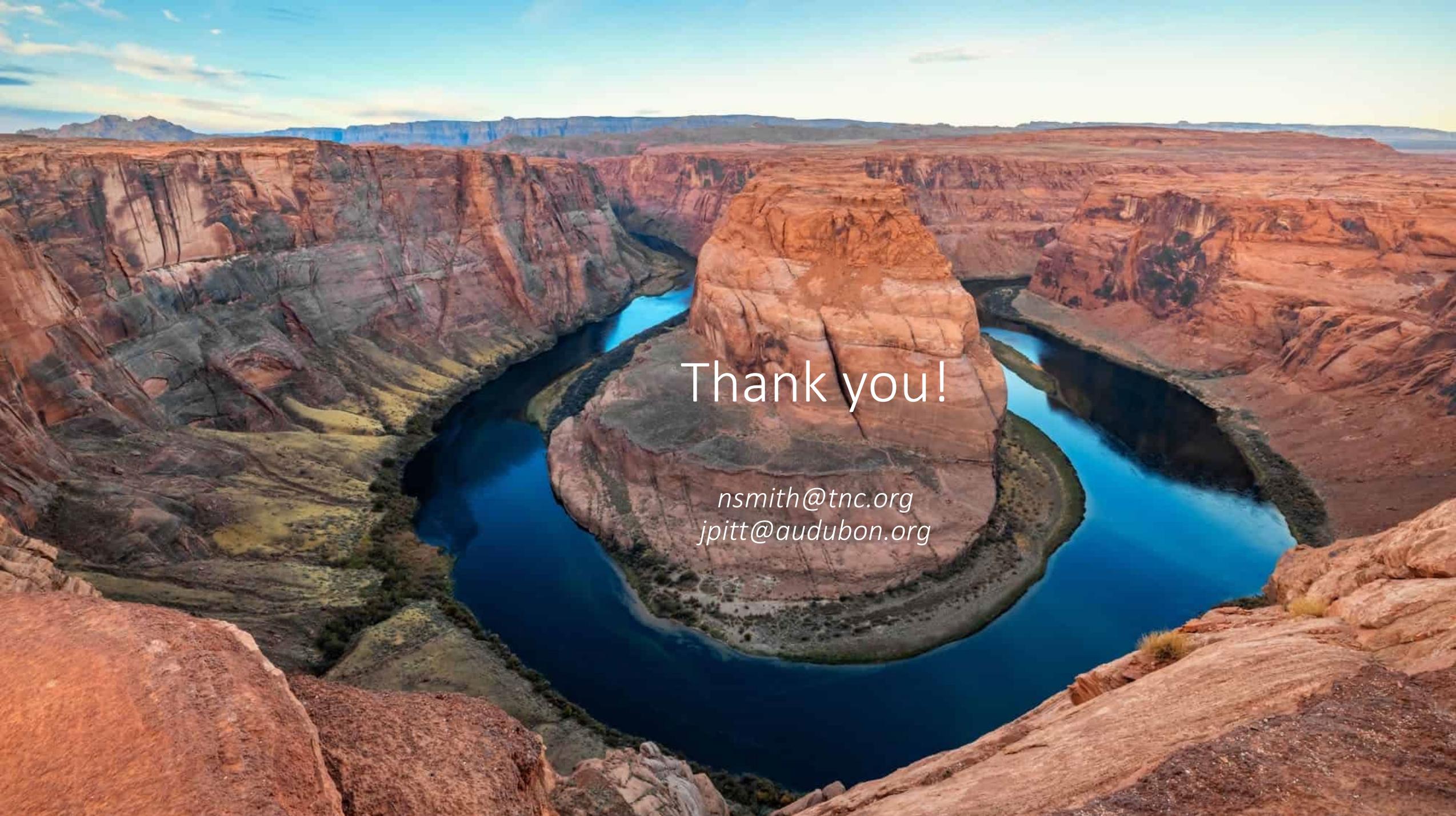
Minute 323: US-Mexico Binational Collaboration

Successor agreement post-2026 can extend commitments to water and restoration funding





photo: Claudio Contreras Koob/Audubon



Thank you!

nsmith@tnc.org
jpitt@audubon.org