colorado waterwise

*Addressing the state's water challenges by improving water efficiency through diverse community connections, innovative solutions and valuable member resources.*

# Welcome to the 2020 Water Conservation Symposium

We will get started in a couple minutes.

# Who is CWW?

- Colorado WaterWise is addressing the state's water challenges by improving water efficiency through diverse community connections, innovative solutions and valuable member resources.
- We offer educational tools, events and resources to our members and the public to allow you to make a difference.

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# 2020 Symposium Sessions

- **Oct. 13 1 p.m.** - System-wide technologies: real-world review of AMI and Leak Detection systems
- **Oct. 15 10 a.m.** - Managing water in the headwaters of Colorado
- **Oct. 20 10 a.m.** - Supporting water resources through alternative water supplies
- **Oct. 22 1 p.m.** - Introduction to landscape and irrigation certification programs in Colorado
- **Oct. 27 2 p.m.** - Understanding water conservation efforts across Colorado
- **Oct. 29 10 a.m.** - Advancing Water Efficient Landscape Ordinances: What's been done and where do we go next?

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# Thank you to our 2020 sponsors

City of Fountain – Pure Colorado

Northern Water – Northern Colorado Water Conservancy District

Aurora Water

City of Greeley Colorado – Water Conservation

AIQUEOUS

MetronFarnier – Smart Water Meters & Systems

WaterSmart – a vertexone brand

Alliance for Water Efficiency

YEAROUT Energy Services

waternow alliance – water leaders. resilient solutions.

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JOIN US!

COLORADO WATERWISE

# SYMPOSIUM HALLOWEEN HAPPY HOUR

COSTUME CONTEST!

OCTOBER 27 | 4 TO 5:30 PM
ZOOM

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# Managing water in the headwaters of Colorado

# Managing water in the headwaters of Colorado

- Origin of 4 Major River Basins
- Colorado waters reach 17 States & 2 countries (U.S. & Mexico)
- Approx. 80% Colorado’s population Front Range
- Approx. 80% precipitation falls on the Western Slope
- The rate of warming in the last century alone was higher than in the last thousand years.

# Session Speakers:

**Mike Eytel**

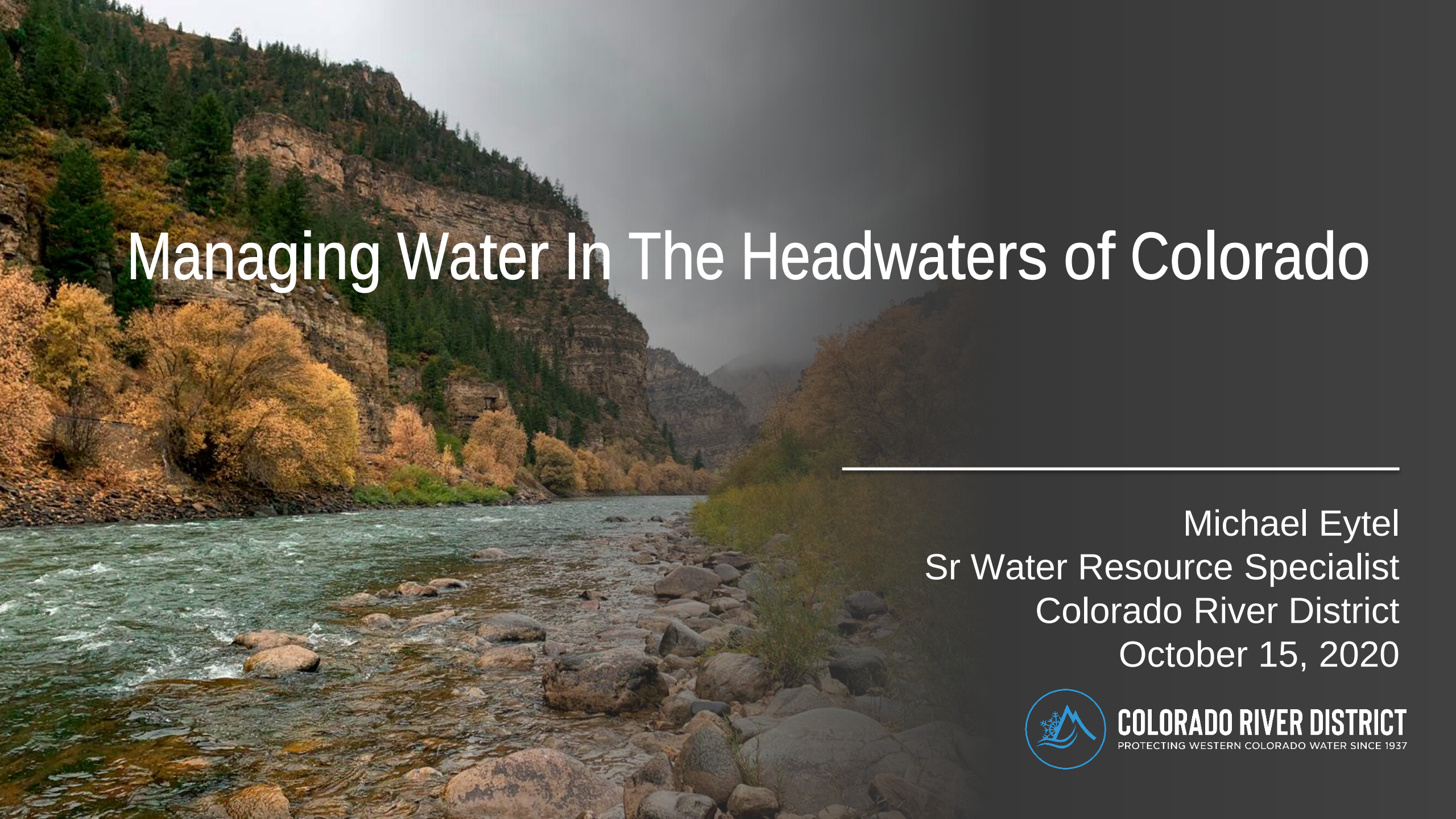
Colorado River Water Conservation District

**Marjo Curgus**

Del Corazón Consulting

**Rachel Zerowin**

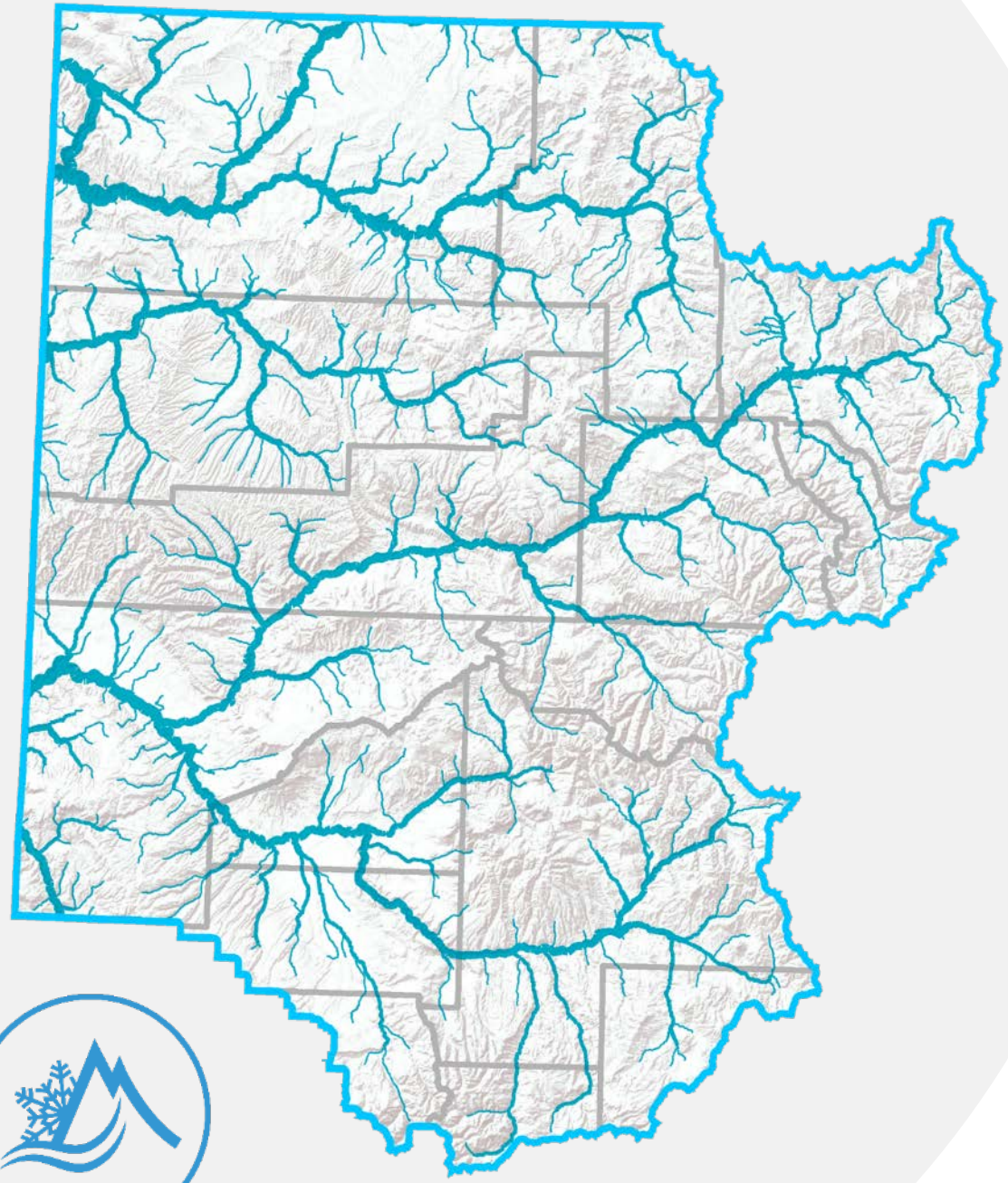
High Country Conservation Center



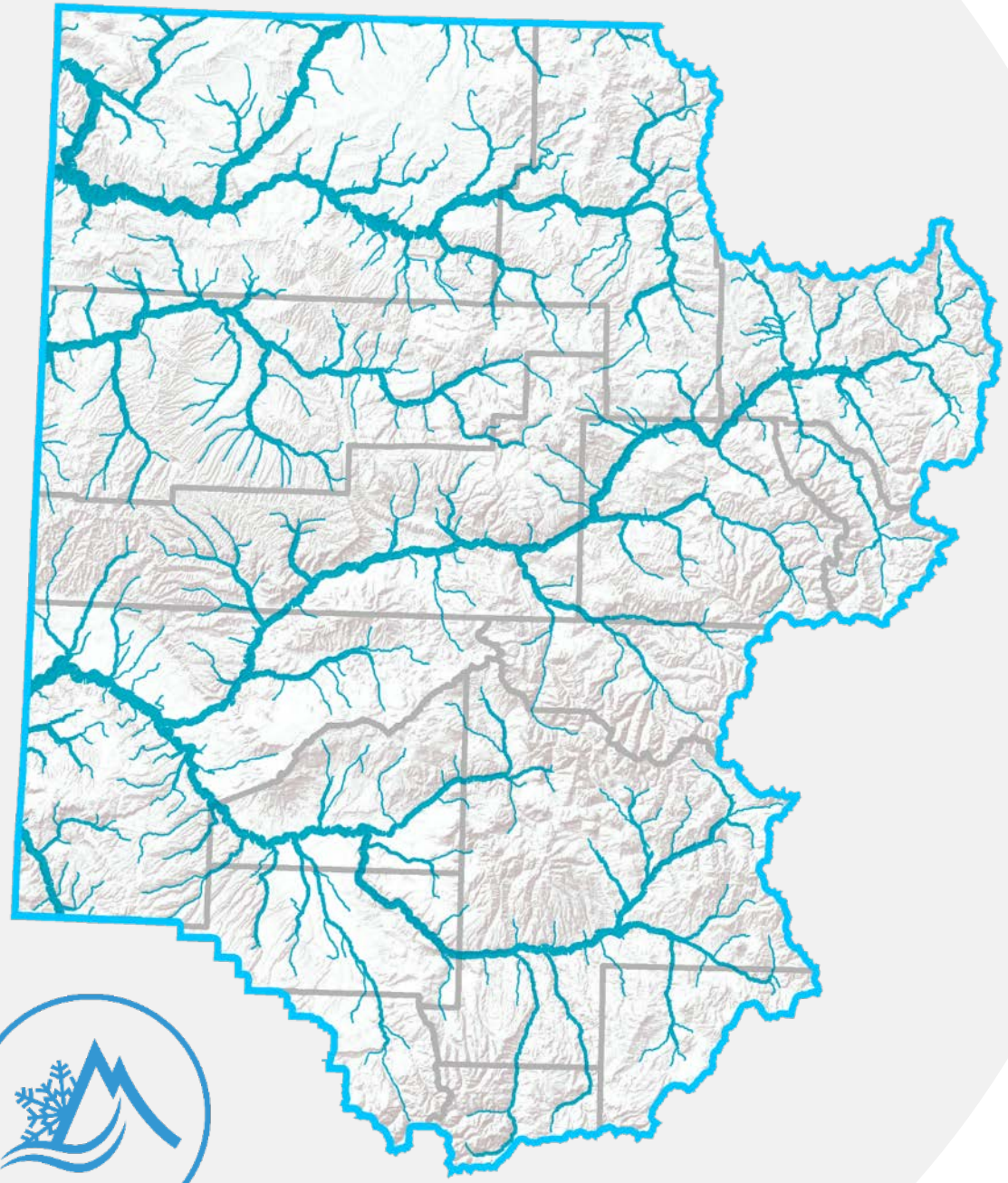
# Managing Water In The Headwaters of Colorado

Michael Eytel
Sr Water Resource Specialist
Colorado River District
October 15, 2020

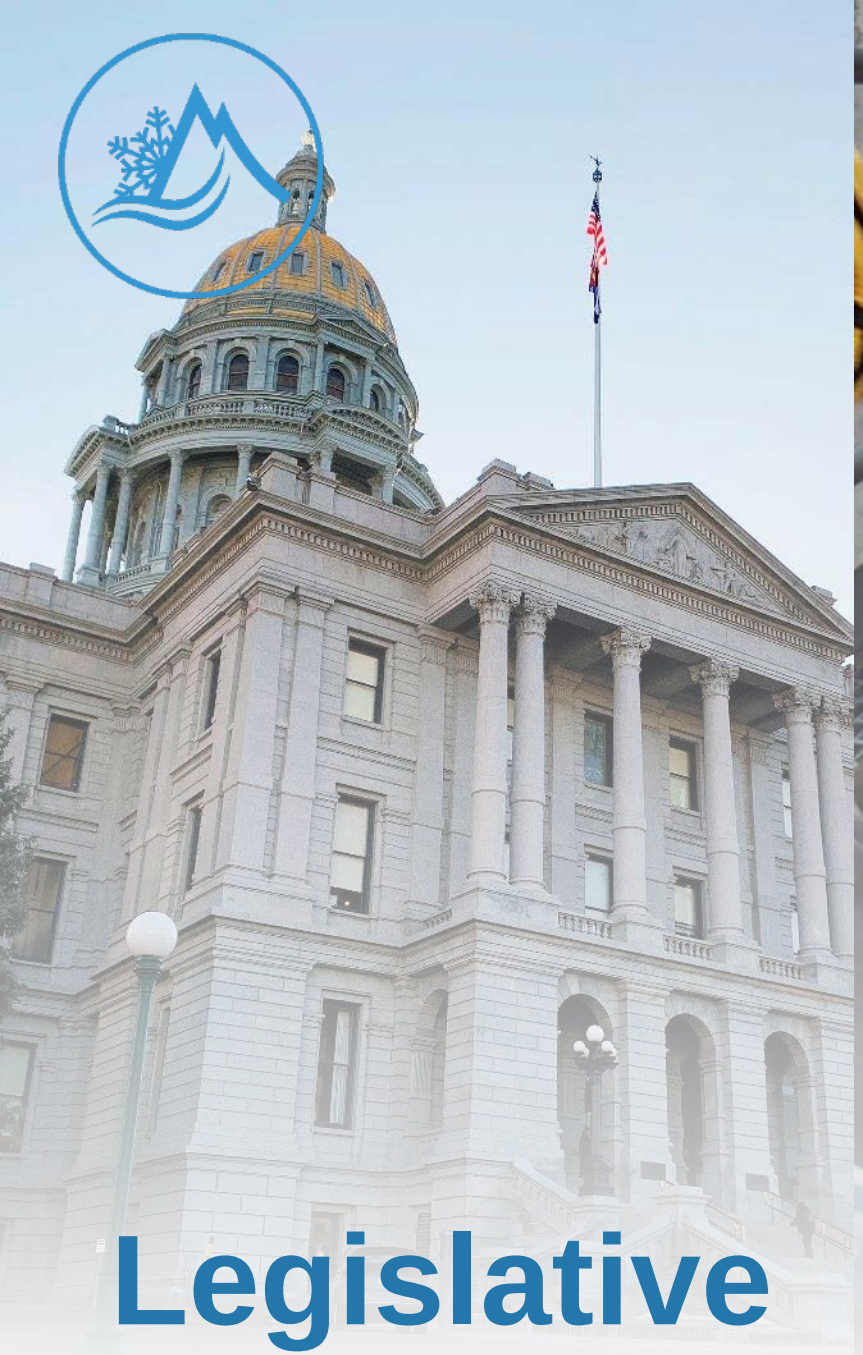
COLORADO RIVER DISTRICT
PROTECTING WESTERN COLORADO WATER SINCE 1937



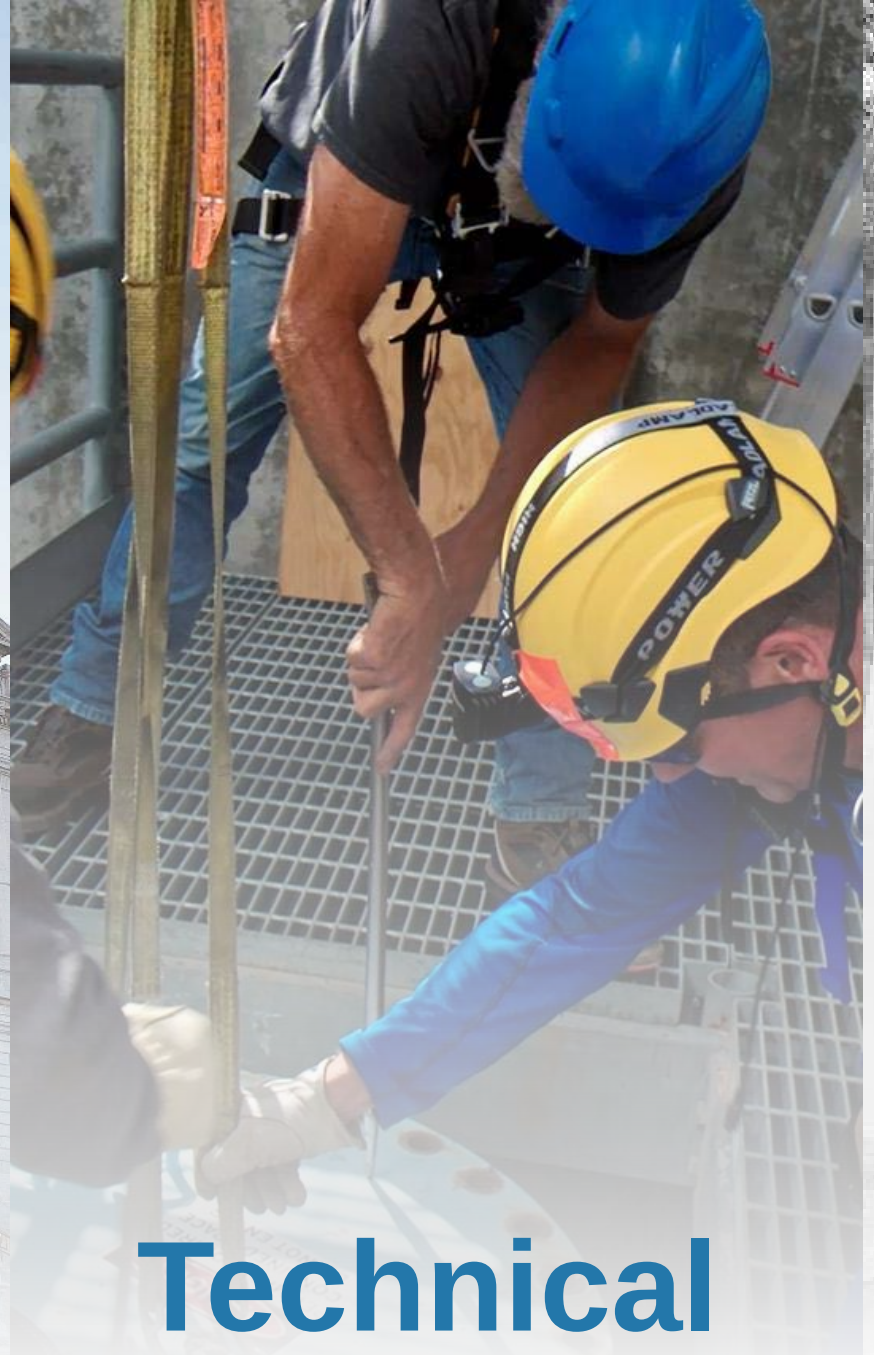
To lead in the **protection, conservation, use, and development** of the water resources of the Colorado River basin.



- The Colorado River District covers 28% of the area of Colorado
- The District contains 80% of the state’s water but only 10% of the population
- Each county has representation on the District’s Board of Director’s
- Funded exclusively through mill levy & water activity enterprise



Legislative




Technical


Legal


Keeping water flowing to farms and ranches


Securing legal protections to keep water on the West Slope

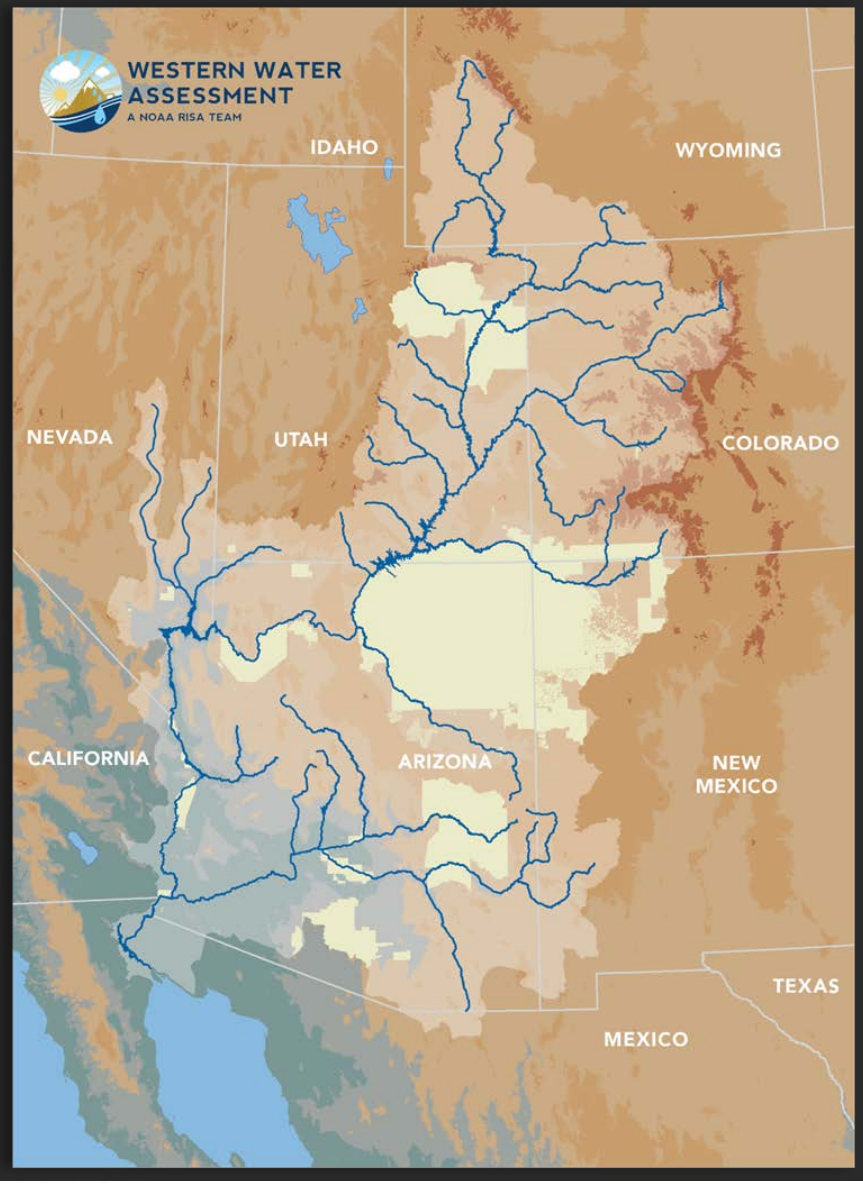

Maintaining healthy rivers


Protecting adequate drinking water supplies

# Colorado River Basin

# Streamflows by sub-basin

| Basin or Sub-basin (gage) | Natural Streamflow (maf) | Proportion of Colorado River at Imperial (%) |
|---|---|---|
| **Green River** (nr Green River, UT) | 5.4 | 34 % |
| **Colorado River** (nr Cisco, UT) | 6.8 | 42 % |
| **San Juan River** (nr Bluff, UT) | 2.1 | 13 % |
| **Total Upper Basin (Lees Ferry)** | **14.8** | **92 %** |
| Inflows between Powell and Mead | 0.8 | 5 % |
| Inflows between Mead and Imperial Dam | 0.4 | 3 % |
| **Total inflows between Powell and Imperial Dam** | **1.3** | **8 %** |
| **Total Colorado River above Imperial Dam** | **16.1** | **100 %** |
| **Gila River** (nr Dome, AZ at mouth) | 1.1 | |
| Total Colorado River at Yuma, AZ | 17.2 | |

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A NOAA RISA TEAM

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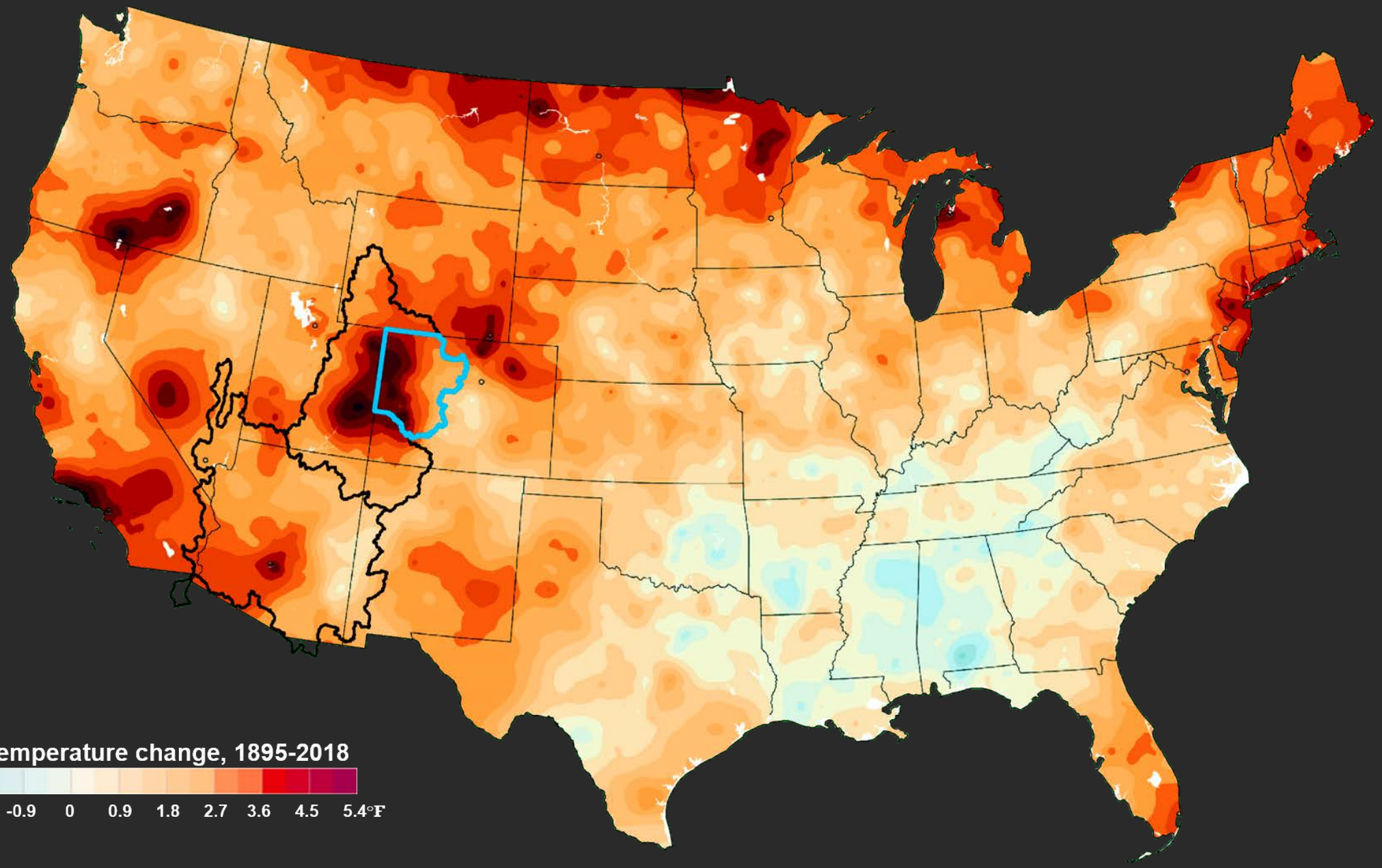
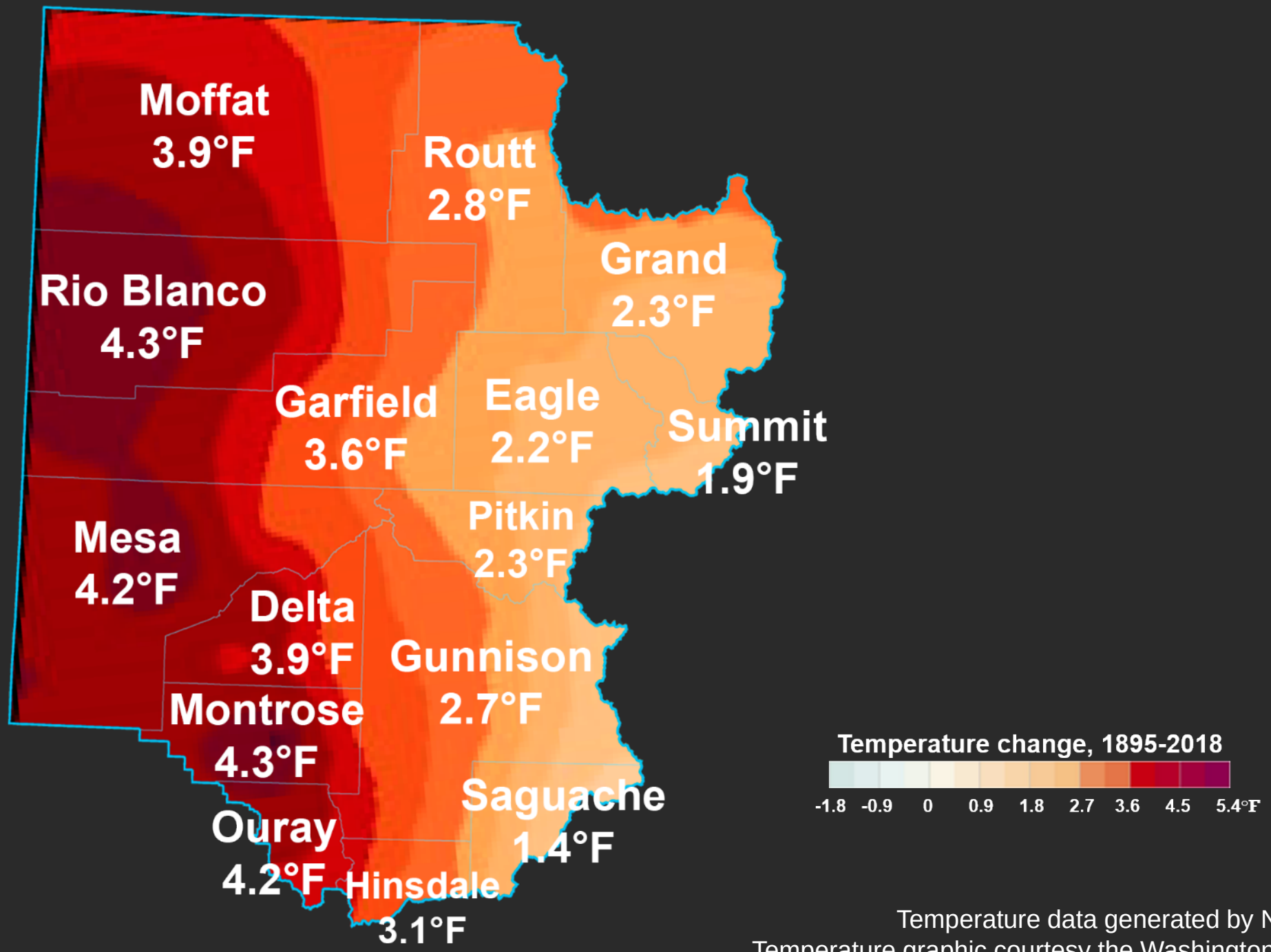
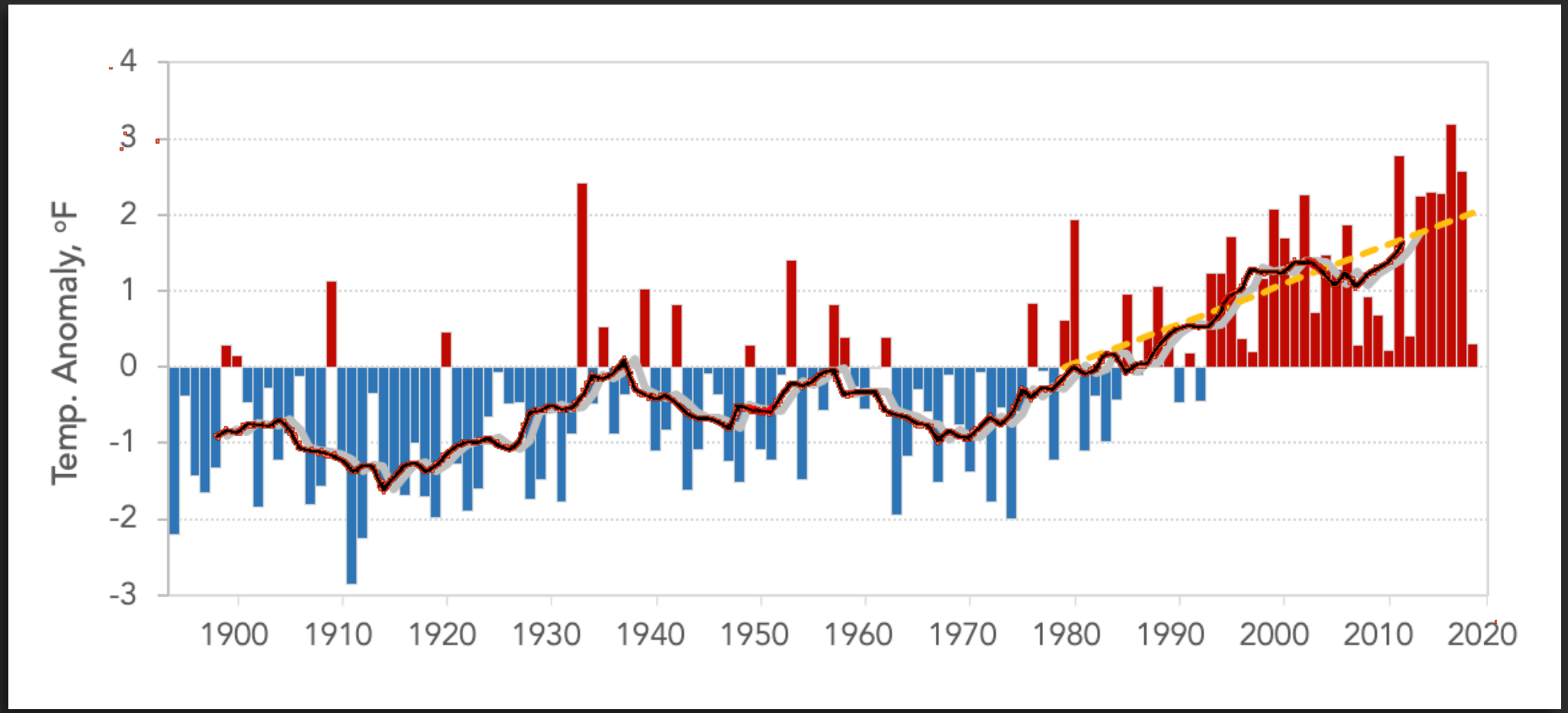



Temperature data generated by NOAA
Temperature graphic courtesy the Washington Post




Temperature data generated by NOAA
Temperature graphic courtesy the Washington Post

# Basin temperatures: 2º F of warming since 1980

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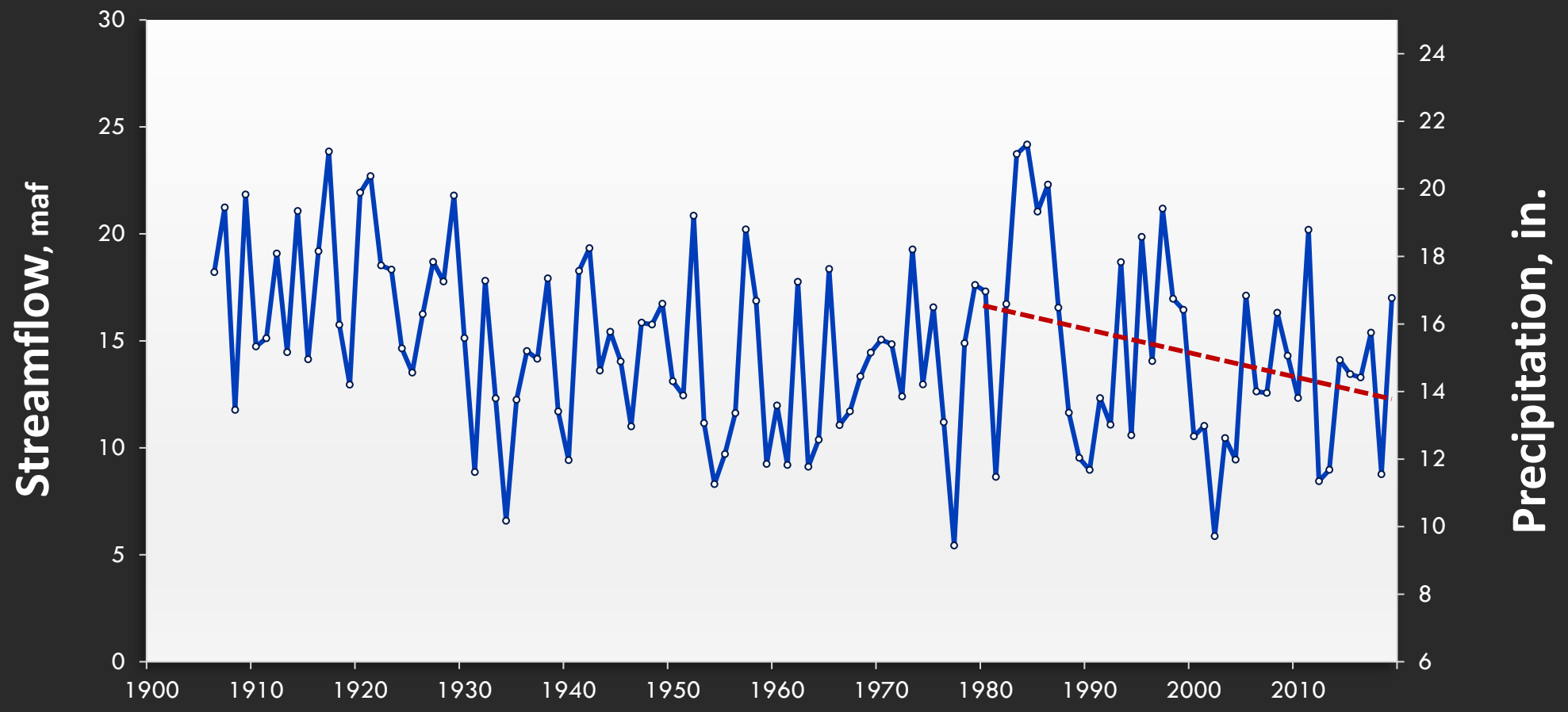
# Upper Basin streamflow

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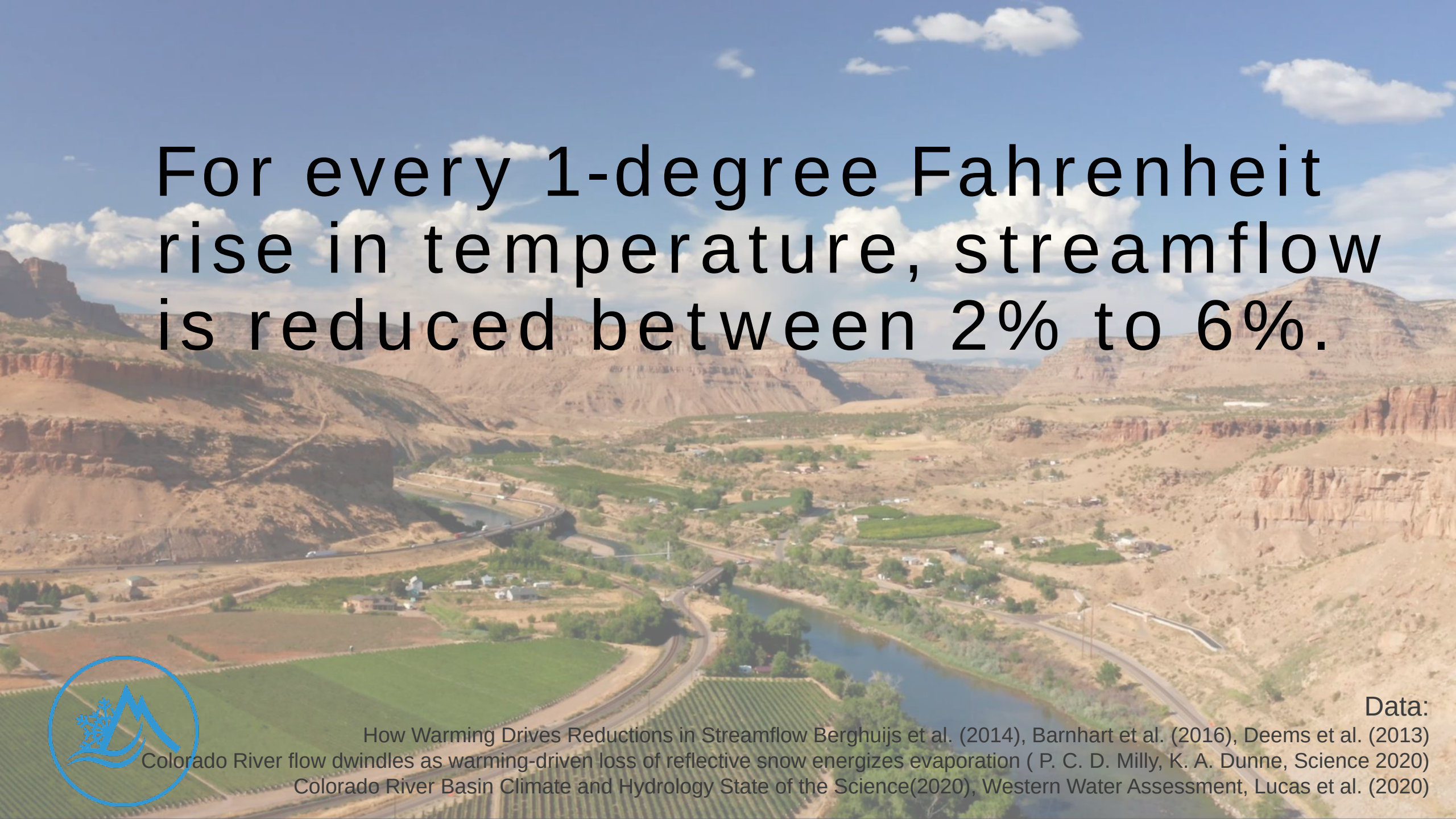

# For every 1-degree Fahrenheit rise in temperature, streamflow is reduced between 2% to 6%.

Data:

How Warming Drives Reductions in Streamflow Berghuijs et al. (2014), Barnhart et al. (2016), Deems et al. (2013)

Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation ( P. C. D. Milly, K. A. Dunne, Science 2020)

Colorado River Basin Climate and Hydrology State of the Science(2020), Western Water Assessment, Lucas et al. (2020)

- More fall and spring precipitation falling as rain instead of snow
- More snowpack lost to sublimation
- Earlier snowmelt
- A longer growing season

# West Slope Water Supply Agreements

- Eagle River MOU
- Colorado Cooperative Agreement
- Windy Gap IGA
- Shop – Shoshone Outage Protocol
- LBD – Learning By Doing (CRCA)
- Wild & Scenic Alternative Management Plan
- Grand Lake Clarity MOU


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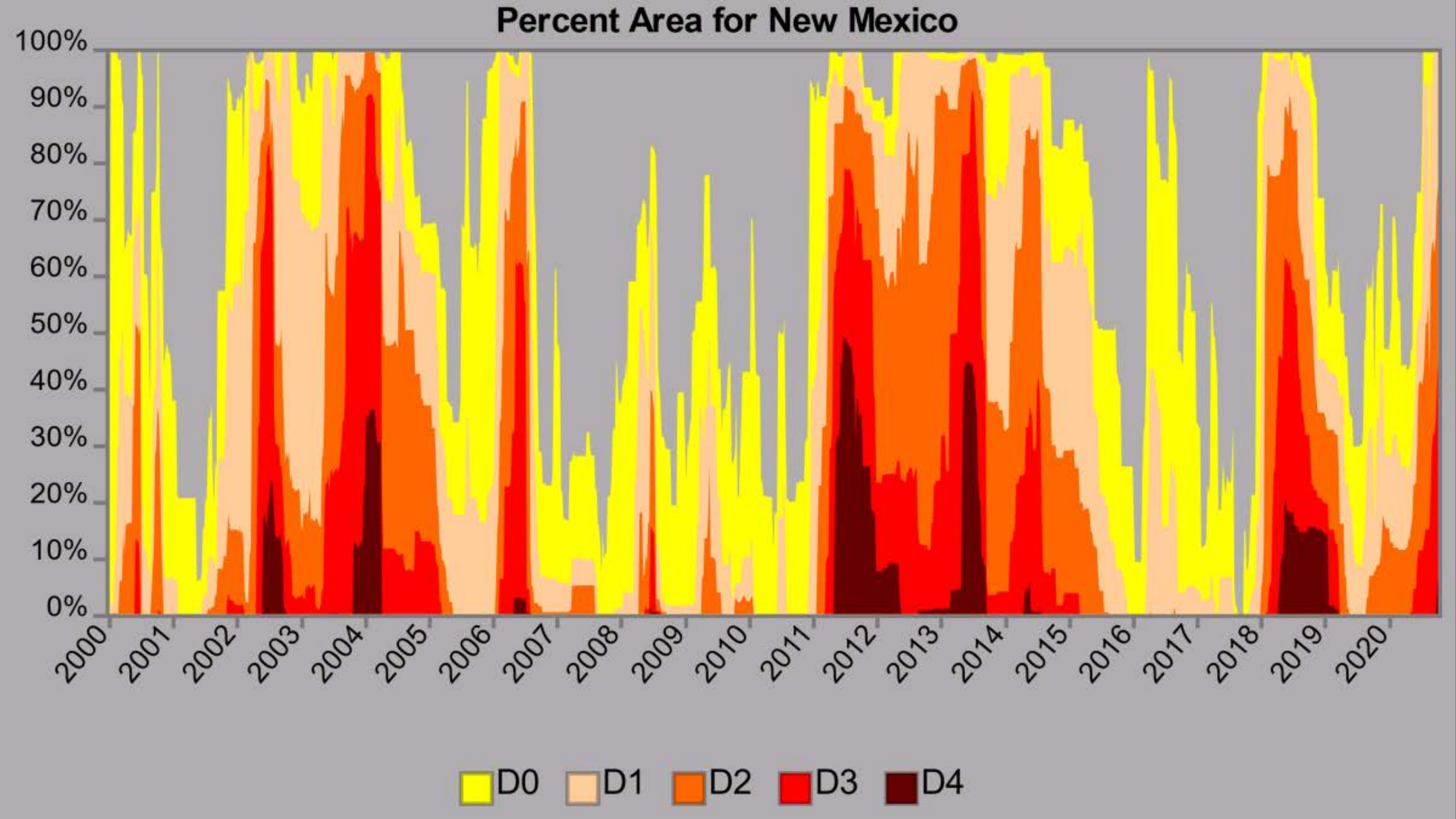
@ColoradoWater
ColoradoRiverDistrict

## REPORT ON THE LANDS OF THE ARID REGIONS OF THE US (1878)

- Set property boundaries to encompass natural watersheds to avoid competition for streams.
- Sell no more farmland that doesn’t have access to water.
- Do not rely on private water companies to develop water projects.

# JOHN WESELY POWELL


Percent Area for New Mexico
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
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2017
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2019
2020
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D1
D2
D3
D4

# RIVER FLOWS

**HEADLINE 2020:**

Managers Warn That Rio Grande Could Go Dry In Albuquerque

# STORAGE

## HEADLINE 2020:

When the river dries, a struggle to stay afloat. Thin mountain snowpack, recent heat wave and light monsoon have depleted water levels

# STORAGE

**HEADLINE 2020:**

Low Water Levels A Concern At Blue Mesa Reservoir in Gunnison County

# LAND DEVELOPMENT PATTERNS MATTER FOR WATER

LINKING LAND USE AND WATER.

## 1 SMALLER LOT SINGLE FAMILY DEVELOPMENT

Studies found 10 to 60% water savings with increased density of single-family residences.

## 2 MULTI FAMILY DEVELOPMENT

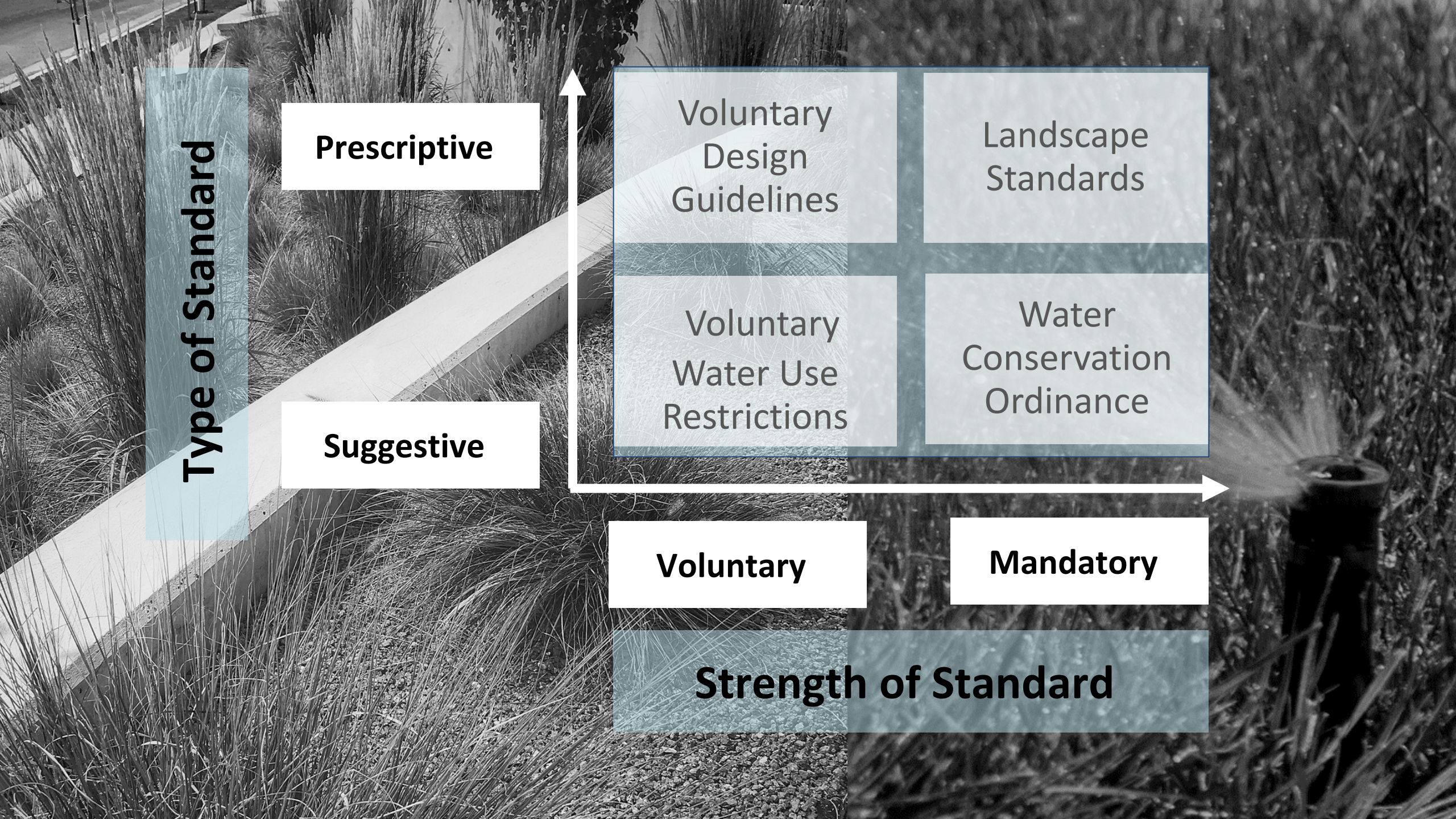
Multifamily units consume 35 to 50% less water than single family detached homes. If a high-density development requires cooling towers, the savings may decrease or be eliminated.


## 3 EFFICIENT LANDSCAPING AND IRRIGATION

Landscape code requirements can reduce outdoor water use by 35-50%.

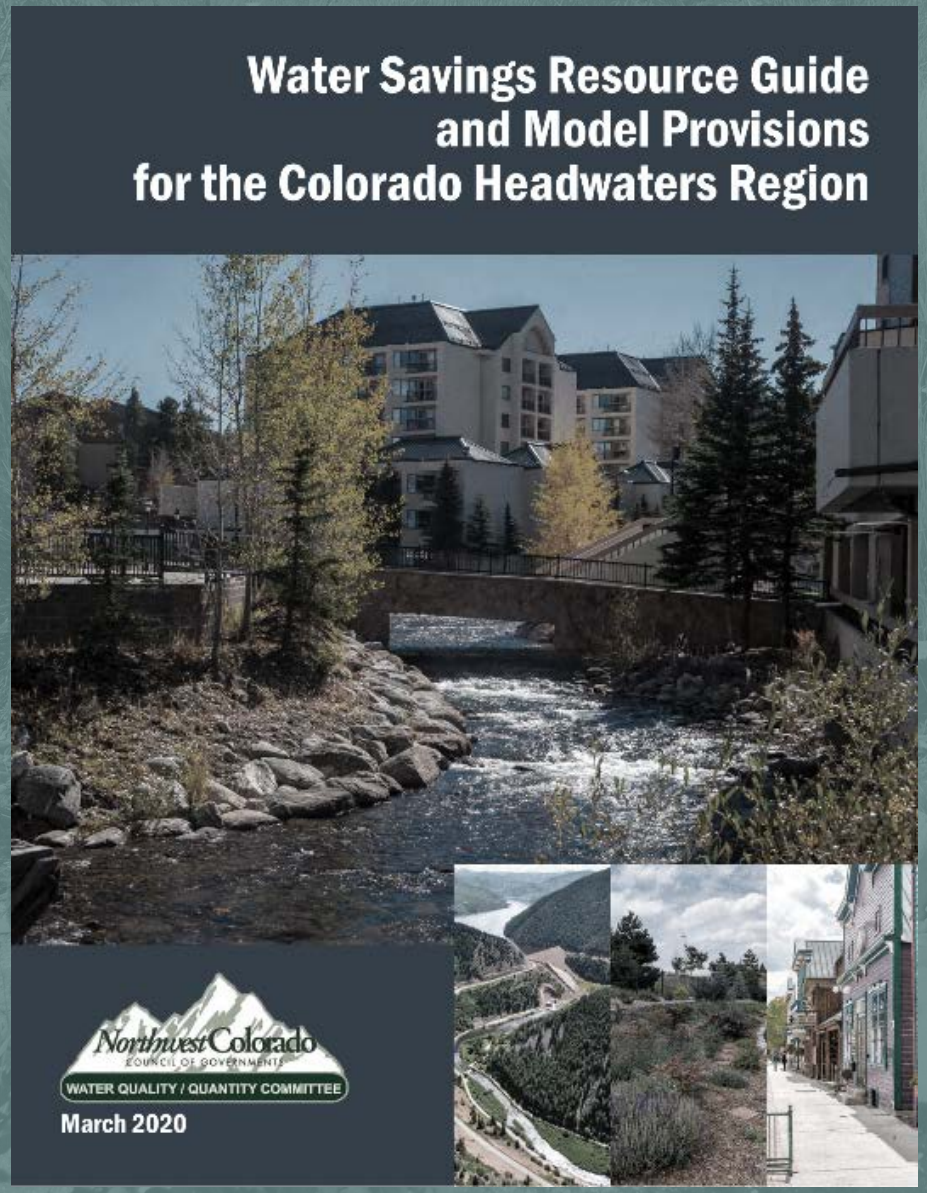
## 4 INDOOR WATER USE

Water efficient fixtures and appliances, building and plumbing codes can have significant savings.


Type of Standard
Prescriptive
Suggestive
Voluntary Design Guidelines
Landscape Standards
Voluntary Water Use Restrictions
Water Conservation Ordinance
Voluntary
Mandatory
Strength of Standard

# 3 DAY WORKSHOP


https://sonoraninstitute.org/resource/growing-water-smart-rfp/




https://nwccog.org/water-savings-guidance/

# RESOURCE GUIDE


Water is life.


# del corazón CONSULTING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**PHONE NUMBER**

(505) 699 - 8532

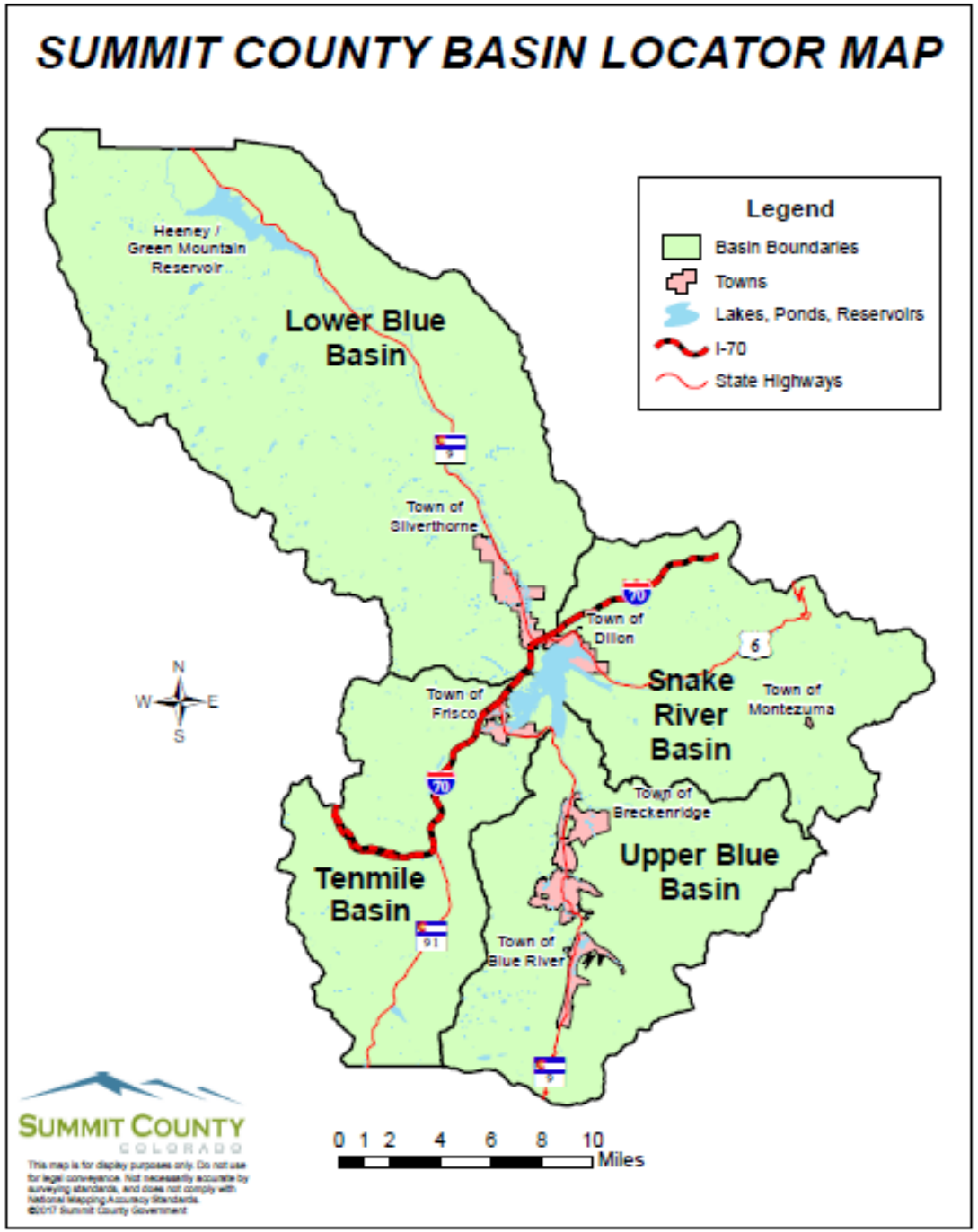

Rachel Zerowin
Community Programs Director
High Country Conservation Center

# High Country Conservation Center (HC3)

Promoting practical solutions to resource conservation and waste reduction in Summit County

# Blue River Watershed

- 6 municipalities, 4 ski resorts
- More than 80% is public land
- By 2050: Gap of 22k-48k AF per year between water supplies and demands



# Blue River Watershed Water Efficiency Plan(s)

Supplying water while prioritizing:

- Environment/economy
- Mountain lifestyle
- Responsibility
- Collaboration

# Implementation

- Land use
- Technical efficiency


HighCountryConservation.org

Rachel@highcountryconservation.org

Instagram: @hc3summit

Facebook: @HighCountryConservation

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# Discussion & Questions

Please type your questions into the Q&A box.

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Join us next Tuesday for “Supporting water resources through alternative water supplies” at 10 a.m.

Big thank you to our speakers today!