



Exploring Local Waters

October 10, 2024

The webinar will begin at 11:00 am
Mountain Time and will be recorded

Place-Based Approach

- Use the local community and environment as a platform for learning/engaging
- Make meaningful connections between the content and the lives of the learners
- Acknowledge the intergenerational knowledge stored within local communities
- Room for a critical examination of the social, political, and economic elements that shape a place and people's attitudes to it

(Sobel, 2004; Yemini et al., 2023)



Facilitators

Claire Ratcliffe Adams (she/her)

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Space Science Institute (SSI)

Noah Newman (he/him)

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Colorado Climate Center

Community Collaborative Rain, Hail and Snow Network (CoCoRaHS)

Today's Agenda

- Welcome/Icebreaker
- We are Water Overview
- Water Systems in the Four Corners Region
- CoCoRaHS Overview
- Culturally Relevant Resources
- Water Celebration Event: Tips and Tricks
- Discussion and Q&A

Icebreaker: What Water Quality Indicator Are You Today?



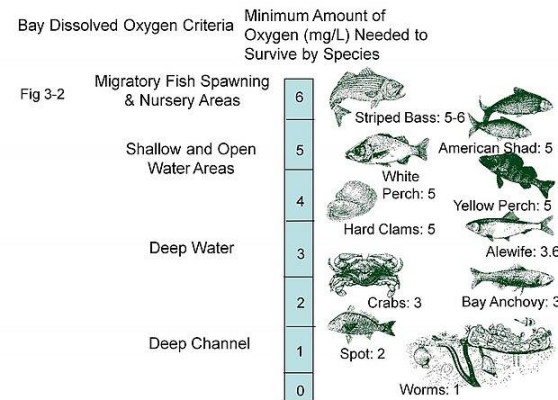
Turbidity
 (The relative clarity of water)
 Unclear, scattered
 Clear and light



Temperature
 Hot, cold, maybe just chillin'



pH
 (The acidity of water)
 Sharp, caustic, abrasive
 Relatively neutral



Dissolved oxygen
 Ready to support others
 Dank, cold, and inhospitable

Introductions

What waters
do you come
from?

What waters
resonate most
with you now?



**Funded by the National Science
Foundation**



We are Water

Sharing stories and
inspiring conversations
about what water
means to communities
across the Four Corners
Region of the
Southwestern U.S.



Collaboration between scientists, Indigenous science educators, learning researchers, informal educators, and library staff.



We are Water Project Partnership

Southern Ute Indian Tribe Cultural Preservation Department

- Lorelei Cloud
- Shelly Thompson
- Ute elders

Navajo Nation Educators and Elders

- Vikki Tomas
- Lorraine Redday

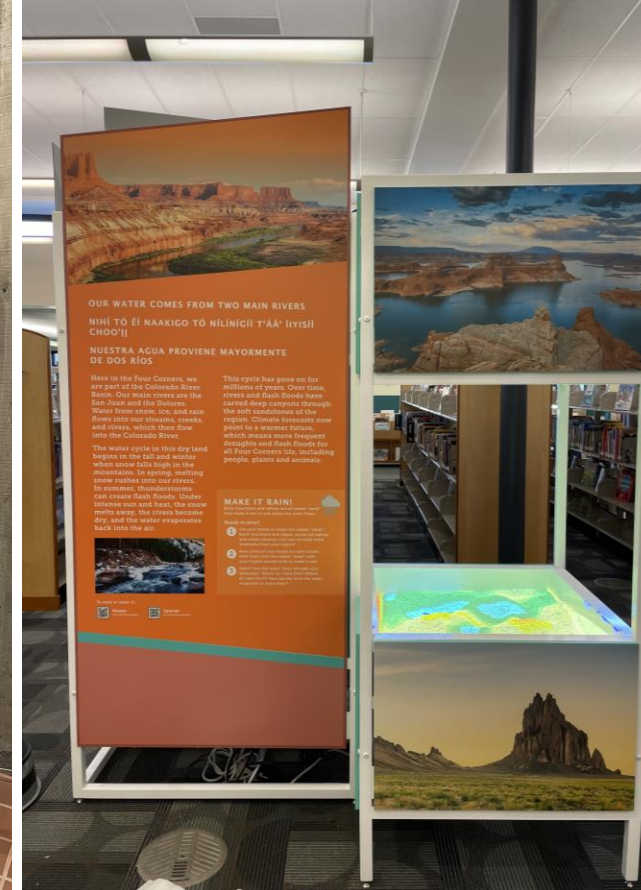
Laguna Pueblo

- Kyle Swimmer

Library Partners

- Lafayette Public Library in Lafayette (CO)
- Aztec Public Library in Aztec (NM)
- Navajo Nation Museum, Navajo Nation Library
- Pine River Library in Bayfield (CO)
- Montrose Regional Library in Montrose (CO)
- Zuni Tribal Archives in Pueblo of Zuni
- Ignacio Community Library in Ignacio (CO)
- Page Public Library in Page (AZ)
- Cortez Public Library in Cortez (CO)
- Mesa County Public Library in Grand Junction (CO)





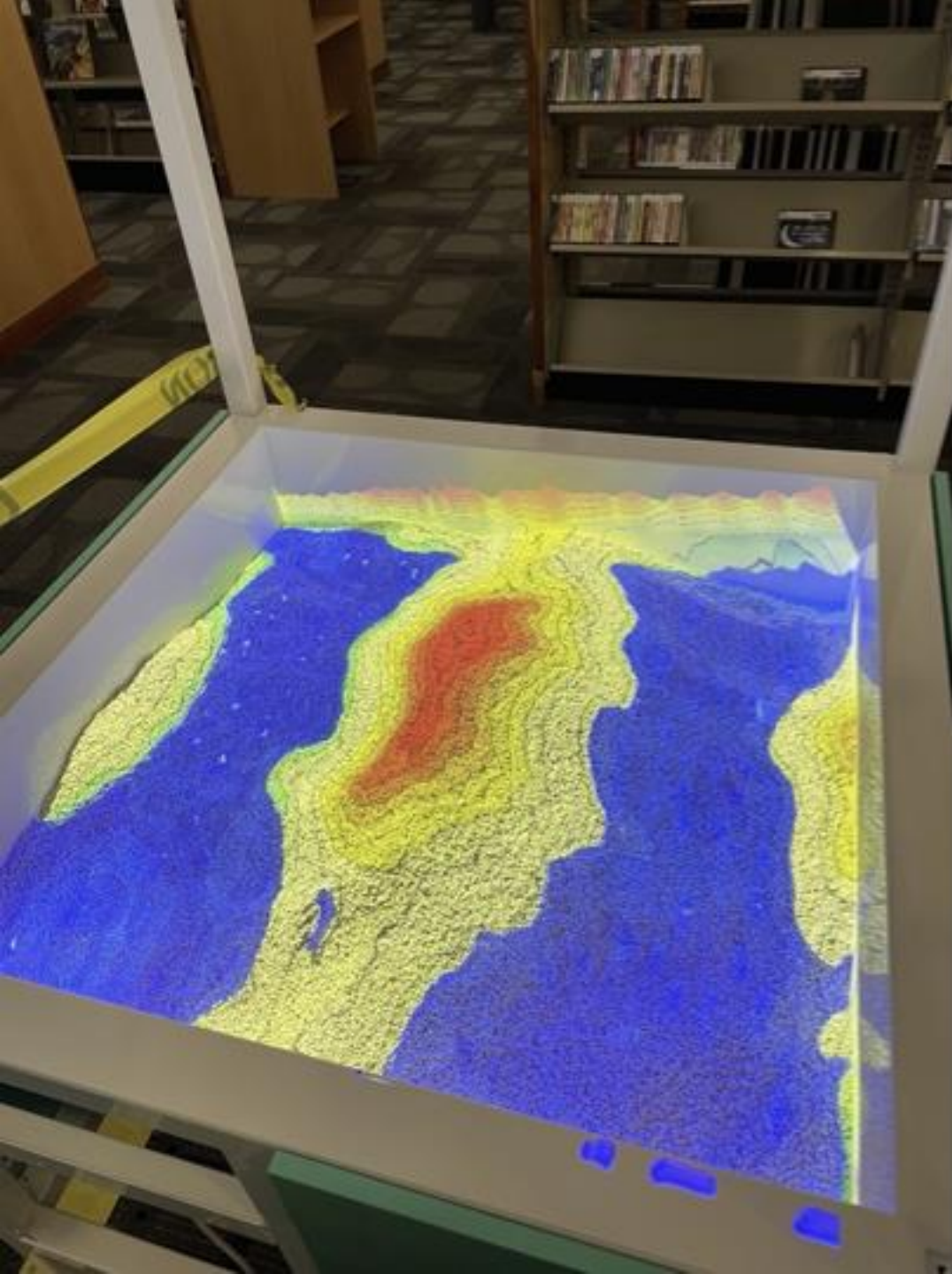
Four Exhibition Pieces



WATER AND OUR COMMUNITIES

aka Story Wall





WATER IN THE LANDSCAPE

aka AR Sandbox

OUR WATER COMES FROM TWO MAIN RIVERS
NIHI TO EI NAAKIGO TO NIIINIGII T'AA' IIVISII CHOO'II

NUESTRA AGUA PROVIENE MAYORMENTE DE DOS RIOS

Here in the Four Corners, we are part of the Colorado River Basin. Our main rivers are the San Juan and the Dolores. Water from snow, ice, and rain flows into our streams, creeks, and rivers, which then flow into the Colorado River.

The water cycle in this dry land begins in the fall and winter when snow falls high in the mountains. In spring, melting snow rushes into our rivers. In summer, thunderstorms can create flash floods. Under intense sun and heat, the snow melts away, the rivers become dry, and the water evaporates back into the air.

This cycle has gone on for millions of years. Over time, rivers and flash floods have carved deep canyons through the soft sandstones of the region. Climate forecasts now point to a warmer future, which means more frequent droughts and flash floods for all Four Corners life, including people, plants and animals.

MAKE IT RAIN!
How important is water to all species? How does water change when the water cycle occurs?

1. How does water change when it rains?
2. How does water change when it evaporates?
3. How does water change when it condenses?

By: [unreadable]

WATER USE, WATER RIGHTS, WATER ACCESS

aka Plinko



WATER AND LIFE

aka Connect 4

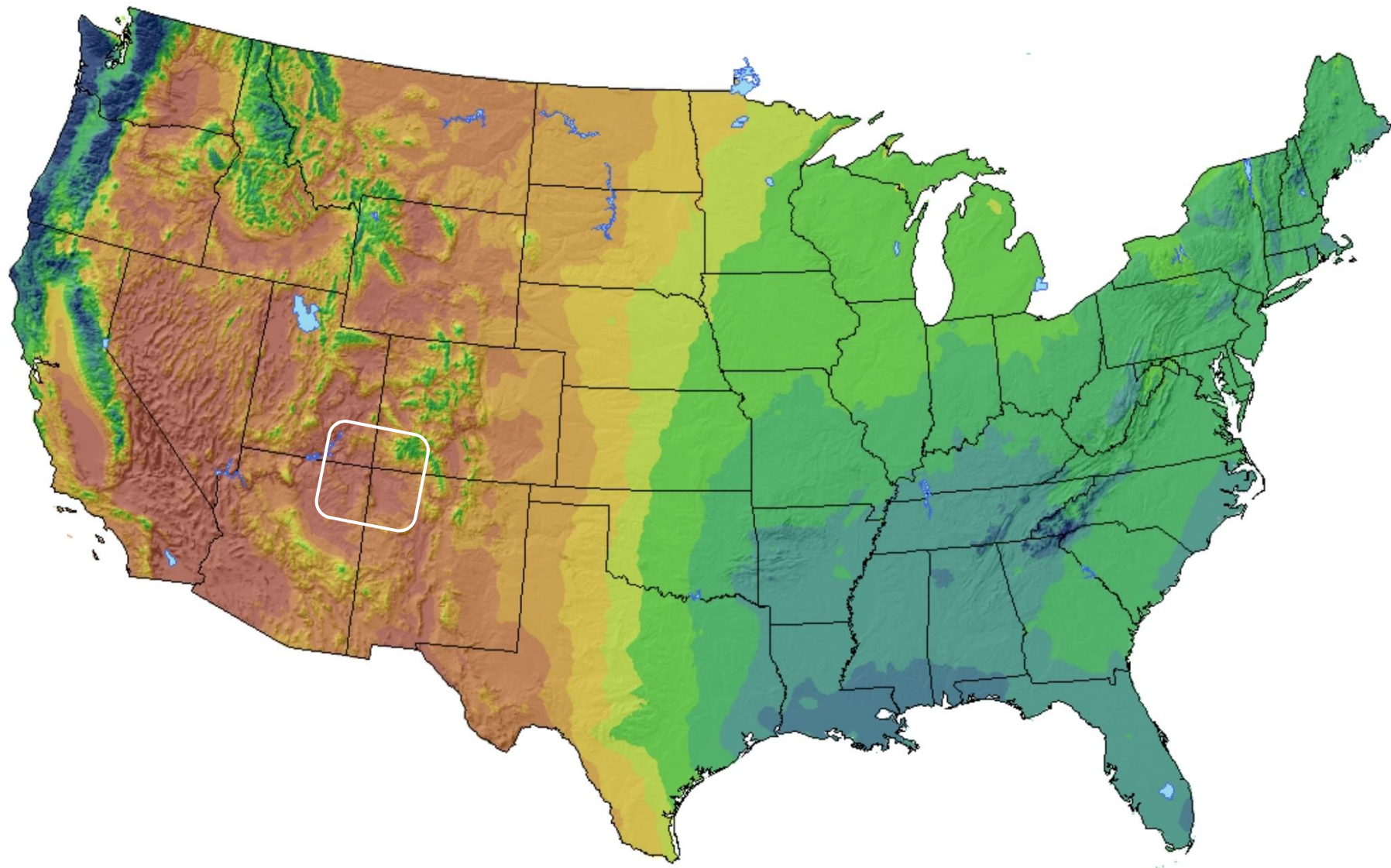


The
Powerhouse
Science Center
Durango, Colorado

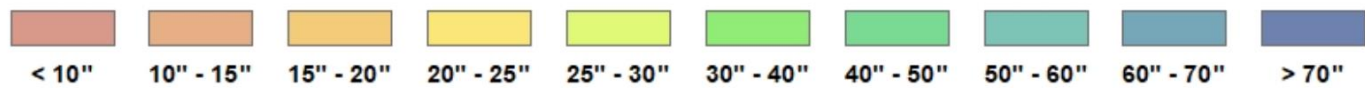


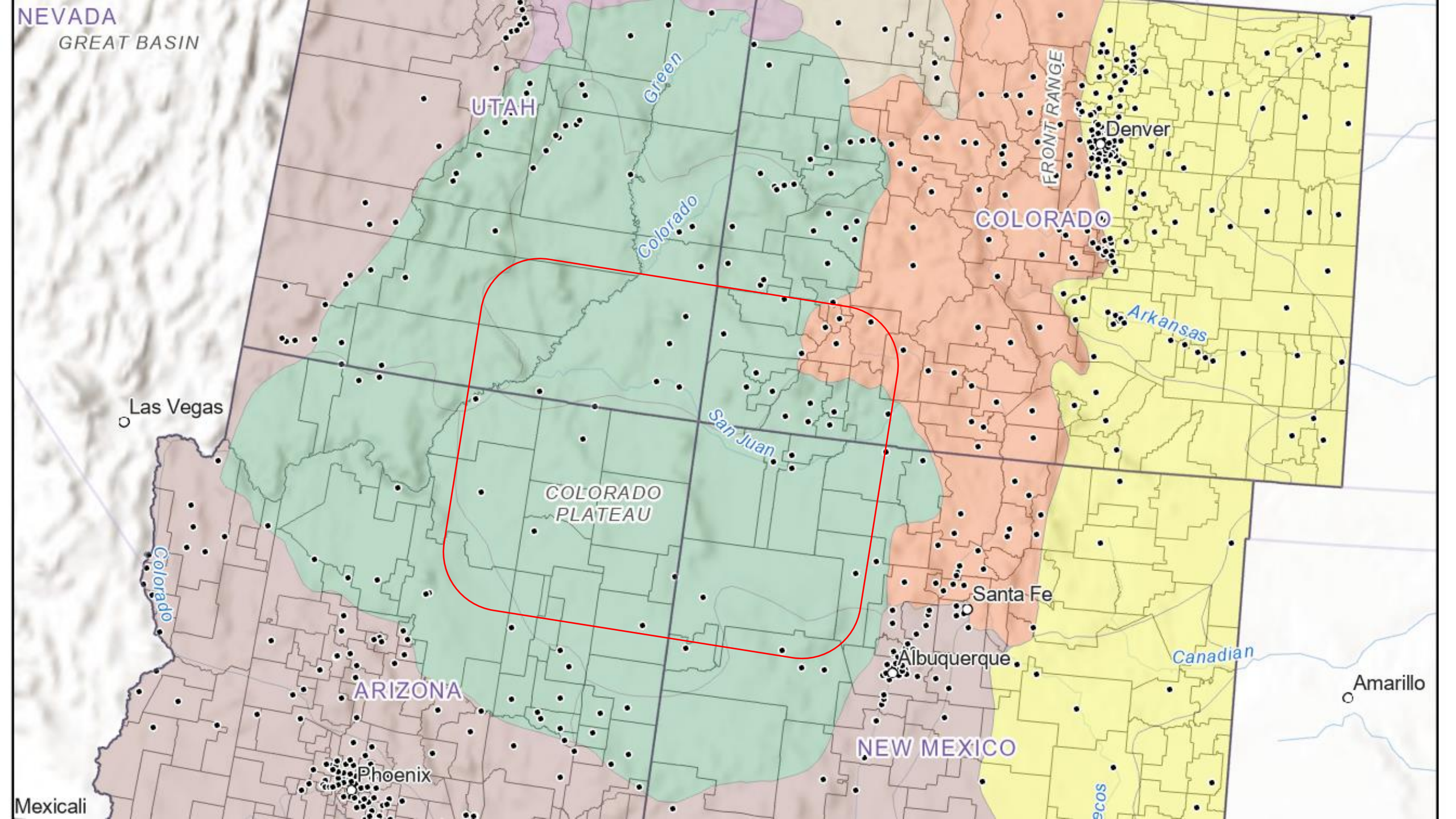


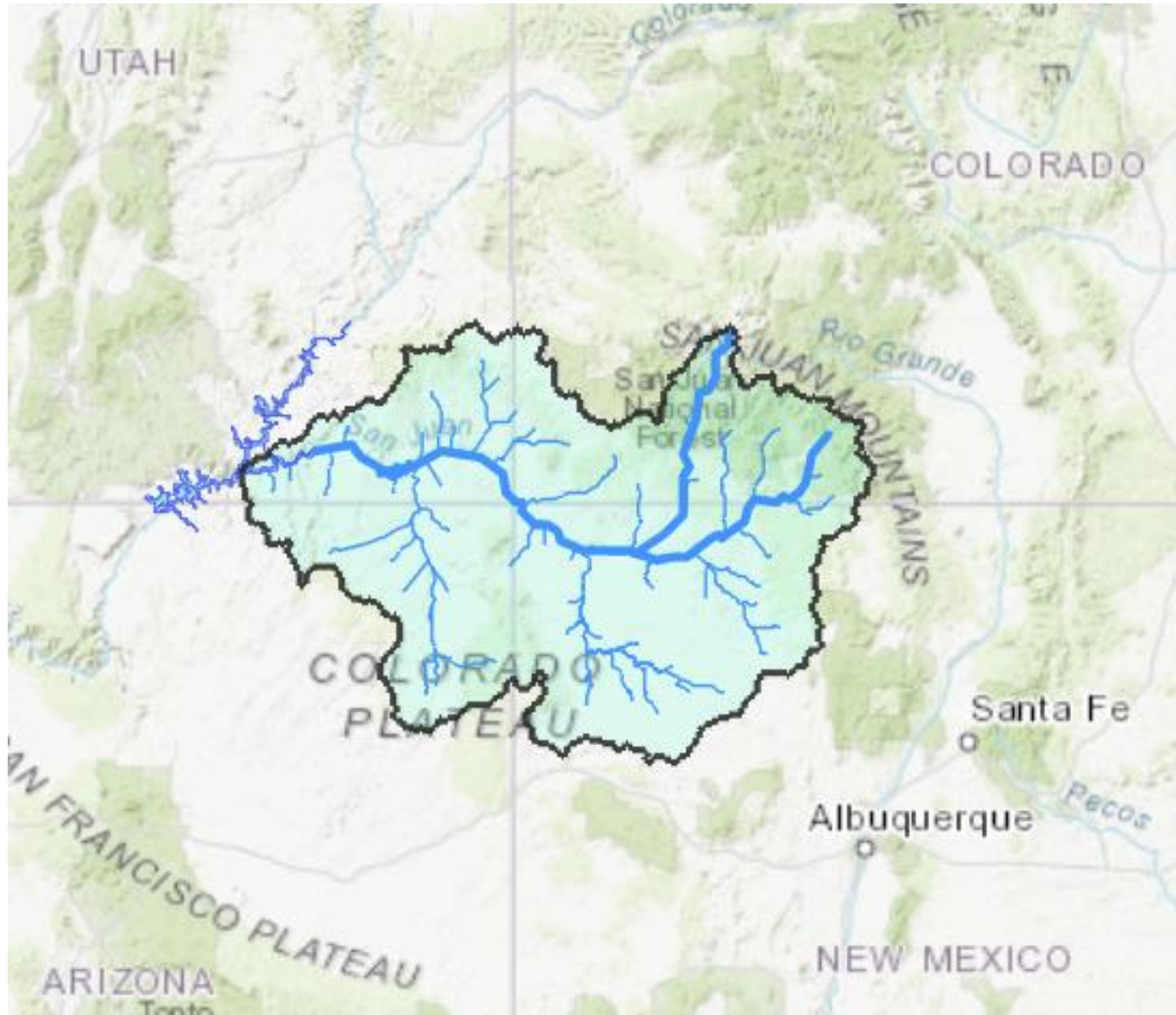
How would you describe the Four Corners region?



**Average Annual Precipitation
Based on 1991-2020 Normals
Annual**







Water Systems of the Four Corners

The San Juan Watershed

<https://storymaps.arcgis.com/stories>



**Noah
Newman**

STEM

ACTIVITY

Clearinghouse

clearinghouse.starnetlibraries.org

clearinghouse.starnetlibraries.org

STARnet
Science-Technology Activities & Resources For Libraries

In partnership with
Cornerstones of Science
awakening curiosity, enriching lives

STEM ACTIVITY
Clearinghouse

Search

VIEWED ITEMS

A Wonderful Weather Story

Practice the parts of speech as you...

Browse and Filter All Activities

FEATURED COLLECTIONS [All Collections >](#)

We Are Water

I'm Super

We're Super Creative

Look Up! Explore Our Universe

In the STEM Activity Clearinghouse, librarians and library staff can find high quality, vetted STEM activities that are appropriate for library use. STEM stands for Science, Technology, Engineering, and Math.

You can search by audience, content level, and difficulty, among others. You can also browse collections that we've curated just for you! Almost all the activities in the Clearinghouse have pictures or videos of real libraries doing these activities. Activities developed outside the STAR_Net Project will include tips and tricks for implementing in your library, and will link you back to the original source content so you can explore more.

**We are
Water
Activities**

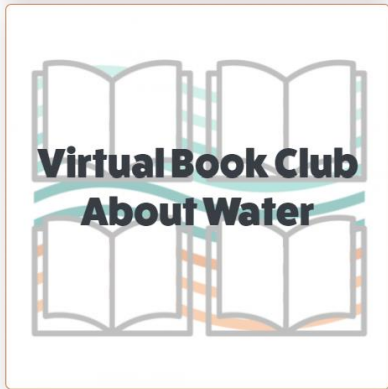
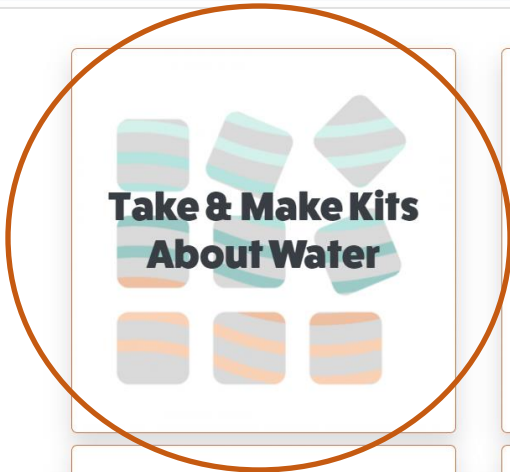
Highlighted Activities

- **Who Dirtied the Water?** (storytime activity, easy to customize for local relevance)
- **Low-Tech Water Filter** (engineering extension to Who Dirtied the Water)
- **Paper Mountains** (low-cost, easy, low-cost about watersheds)
- **Build-A-Bug** (low-cost, adaptations)
- **Waffle Gardens** (take-and-make; long-term activity)



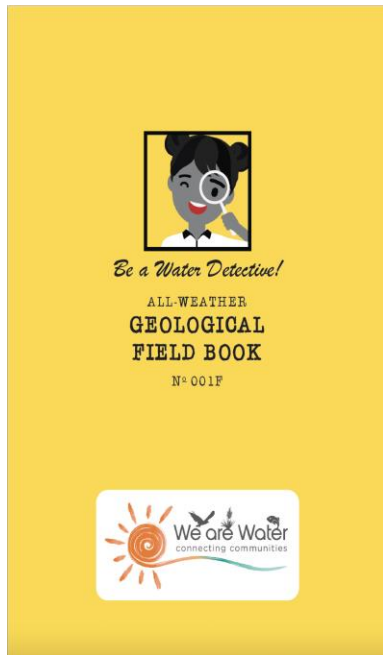
wearewater.colorado.edu/learn

wearewater.colorado.edu/learn



Learning Resources: Take and Make Kits

Be a Water Detective



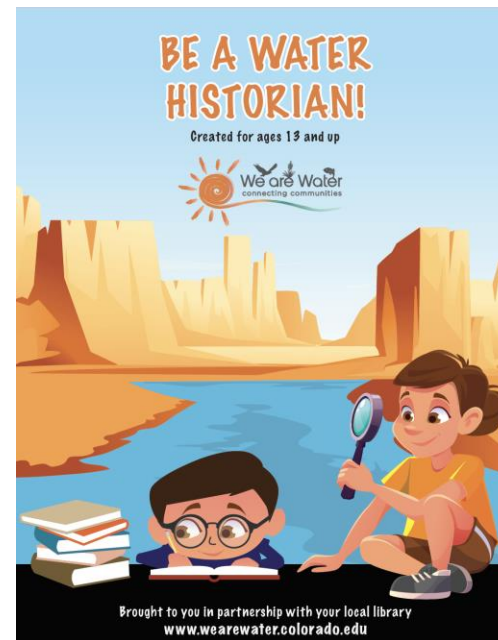
English | Spanish

Be a Water Ecosystem Hero



English | Spanish

Be a Water Historian



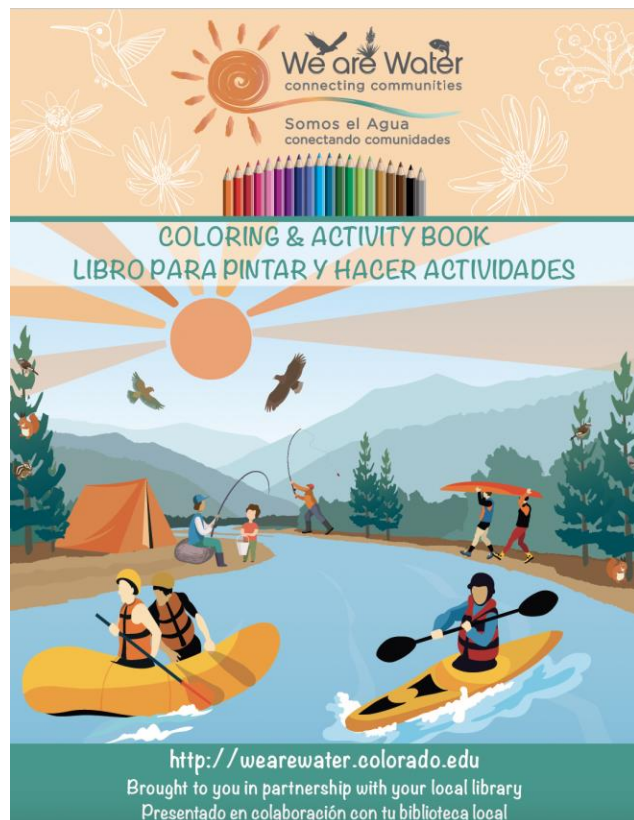
English | Spanish
Navajo & English

Waffle Gardens

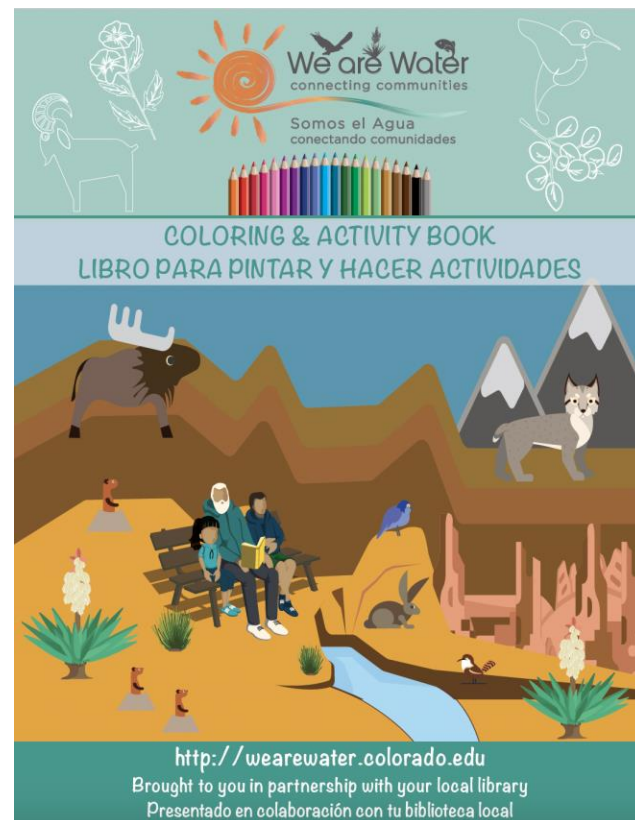


English | Spanish

Learning Resources: Take and Make Kits



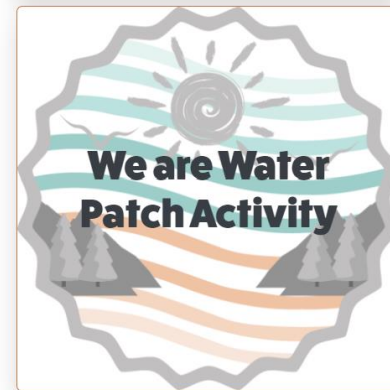
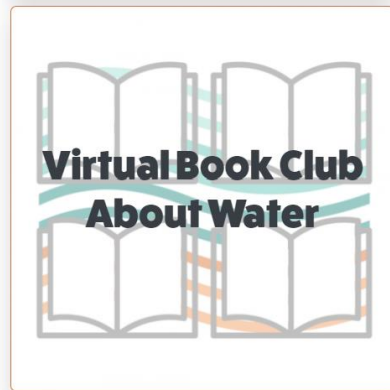
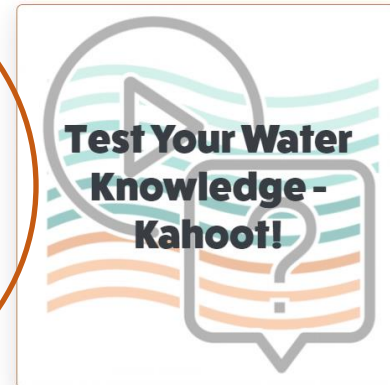
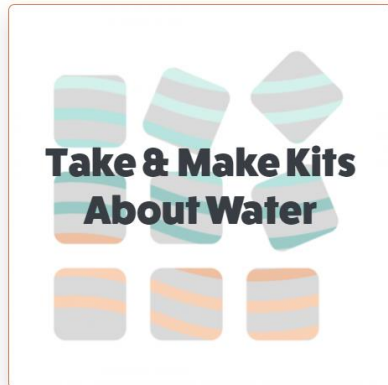
English & Spanish



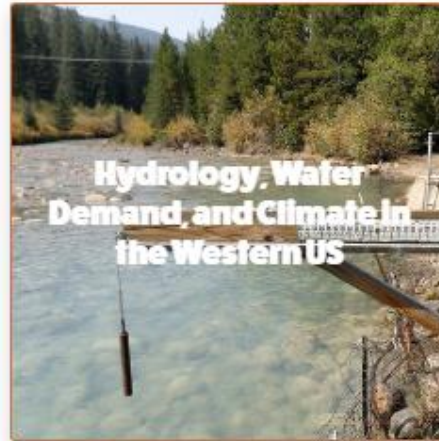
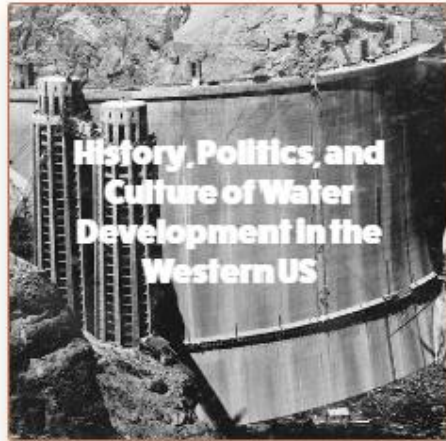
English & Spanish
English & Navajo

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wearewater.colorado.edu/learn



wearewater.colorado.edu/learn/moocs



Self-paced videos / curriculum related to water access issues in the western US

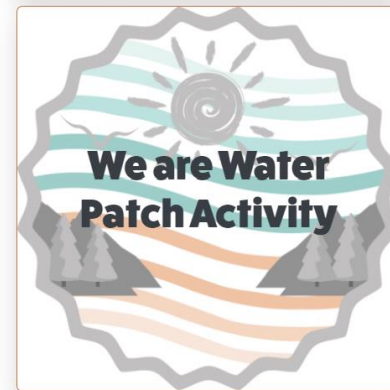
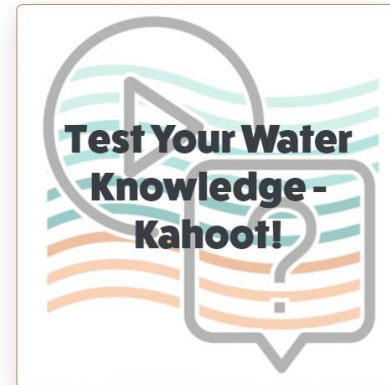
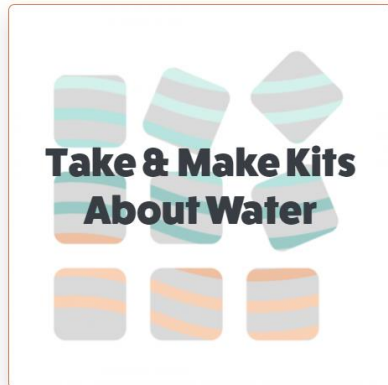
Good for young adult and adult library patrons

5 individual modules; ~15 hours to complete or can simply watch individual videos

No prerequisites or requirements to participate

wearewater.colorado.edu/learn

wearewater.colorado.edu/learn



wearewater.colorado.edu
/engage/book-club

Book Club

We are Water hosted 3 virtual book clubs about water in the Southwestern U.S. in 2021. Video prompts, discussion questions, and other materials used in each book club offering are shared below. You are free to use these materials for your own book club with attribution to the We are Water project.

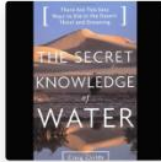


Recommended Books about Water in the Southwest

Looking for more books about water in the Southwest? Look no further than our list of recommendations! Grab that coffee, tea, or hot coca and settle in for an adventure of the imagination.

[Learn More](#)

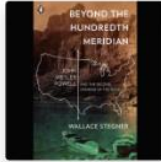
Past Book Club



The Secret Knowledge of Water by Craig Childs

Join the conversation about the book on our Facebook page, and watch the recording of the discussion with the author on Facebook Live! — Deserts are environments that can be inhospitable even to those who know the region. Craig Childs has spent years in the deserts of the American West, and his treks through arid lands in search of water reveal the natural world at its most extreme.

[Learn More](#)



Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West by Wallace Stegner

In Beyond the Hundredth Meridian, Wallace Stegner recounts the successes and frustrations of John Wesley Powell, the distinguished ethnologist and geologist who explored the Colorado River, the Grand Canyon, and the homeland of Indigenous peoples of the Southwestern U.S.

[Learn More](#)



Enduring Acequias: Wisdom of the Land, Knowledge of the Water

Join us for the June 2021 virtual book club featuring Enduring Acequias: Wisdom of the Land, Knowledge of the Water by Juan Estevan Arellano.

[Learn More](#)



STAR^{net} Webinar Series

Exploring Local Waters: A Place-Based Approach to Water Education and Conservation

Noah Newman

- Research Coordinator, Colorado Climate Center (CSU)
- Education & Outreach Coordinator, CoCoRaHS



Colorado State University



This program is funded by the National Science Foundation under the award DRL- 1907024

We honor and acknowledge that the University of Colorado's campuses are on the traditional territories and ancestral homelands of the Cheyenne, Arapaho, Ute, Apache, Comanche, Kiowa, Lakota, Pueblo and Shoshone Nations.

Life-size Connect Four

Theme: Water and Life



Plinko Game

Theme: Water Use, Water Rights



Four-Piece Library Exhibit

- Interactive
- Translation materials include English, Spanish, Navajo and Ute where applicable

Augmented Reality Sandbox

Theme: Water in the Landscape



Story Wall with Artwork & Stories

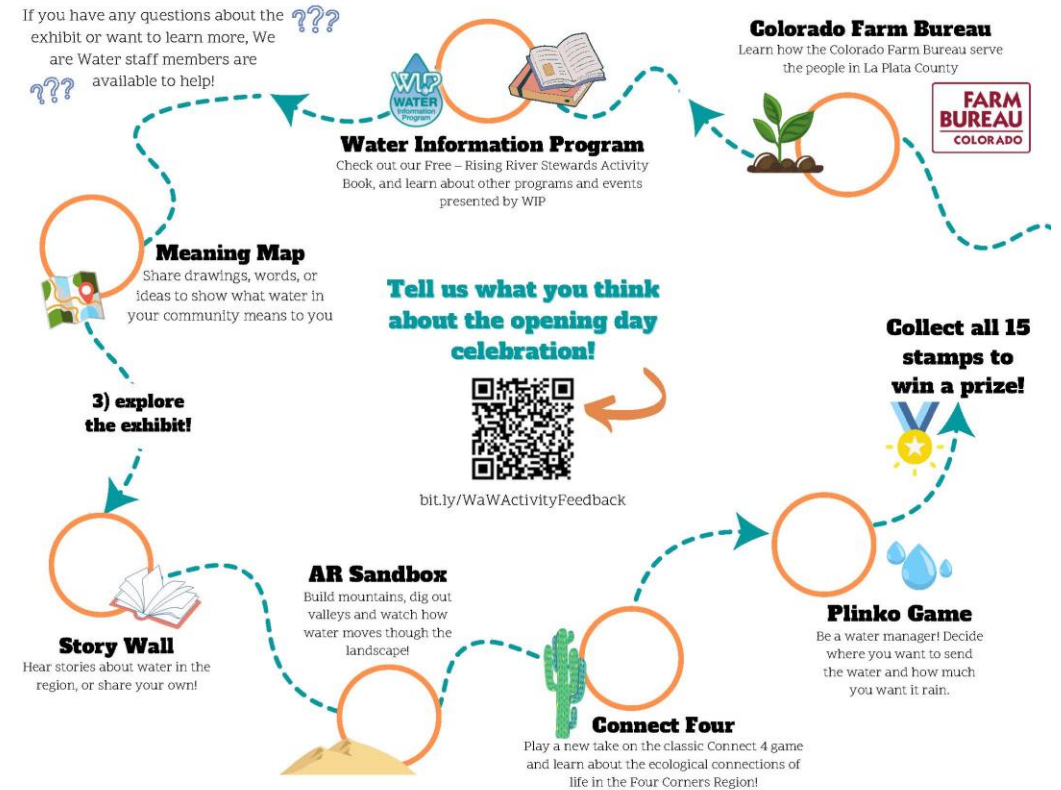
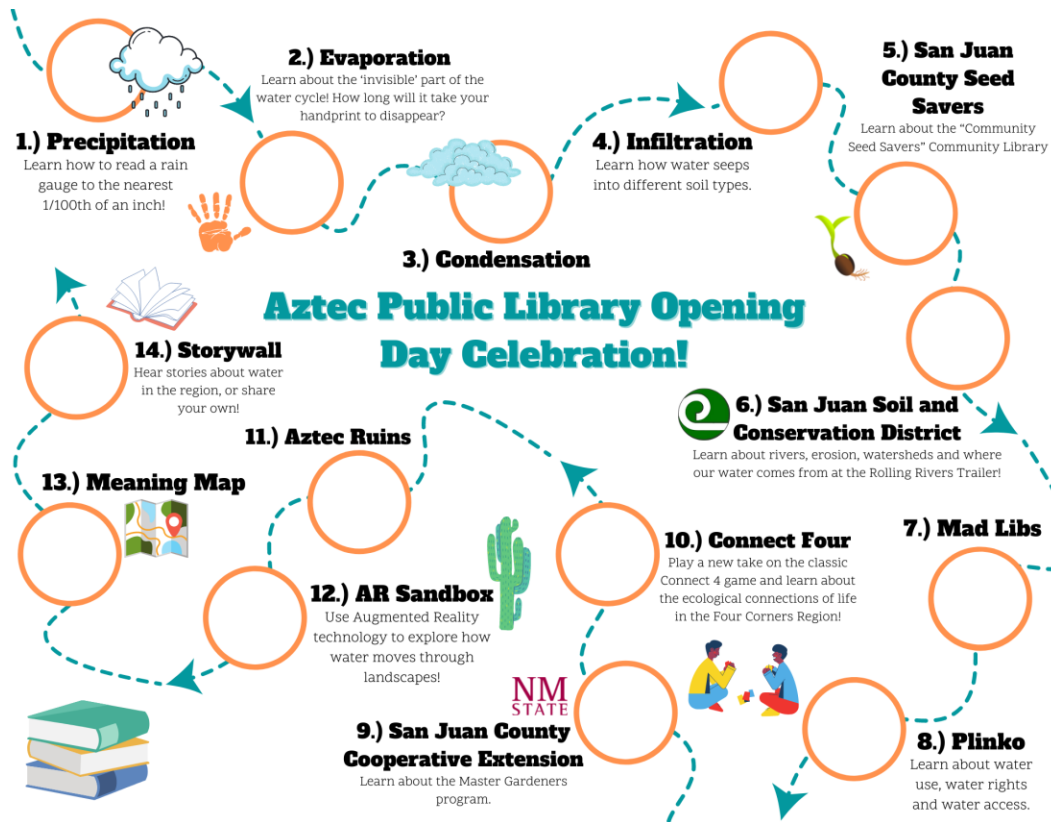
Theme: Water and Our Community



We Are Water Opening Day Event



We Are Water Opening Day Event Scavenger Hunt



We Are Water Opening Day Event Steps

Step 1: Brainstorm your Vision for the Event

[View examples of past events to get inspiration for your event!](#)

[Examples of tabletop activities you could utilize at your event.](#)

We Are Water Opening Day Event

Step 2: Invite Partners!

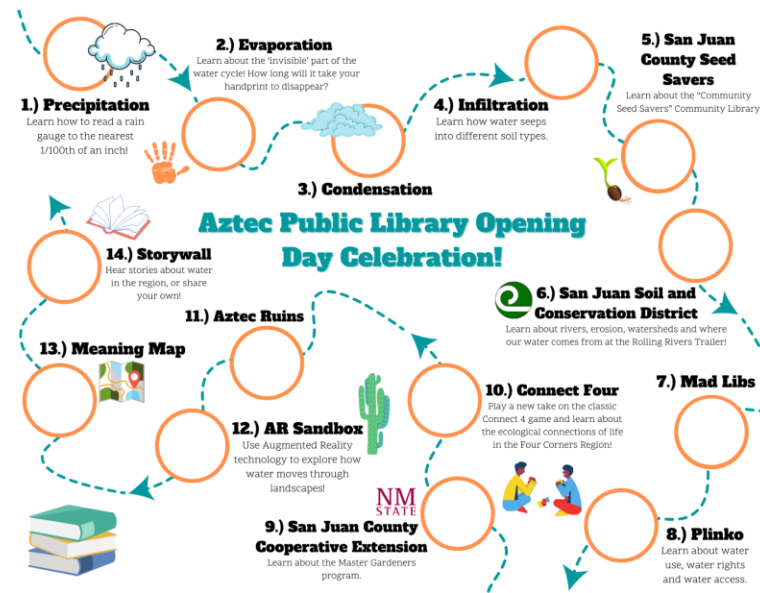
- Water Conservation Districts
- Extension Offices
- State Parks/Natural Resource groups
- Local Public Utilities
- Other water education groups

We Are Water Opening Day Event

Step 3: Design/Plan Scavenger Hunt

[Canva Template](#)

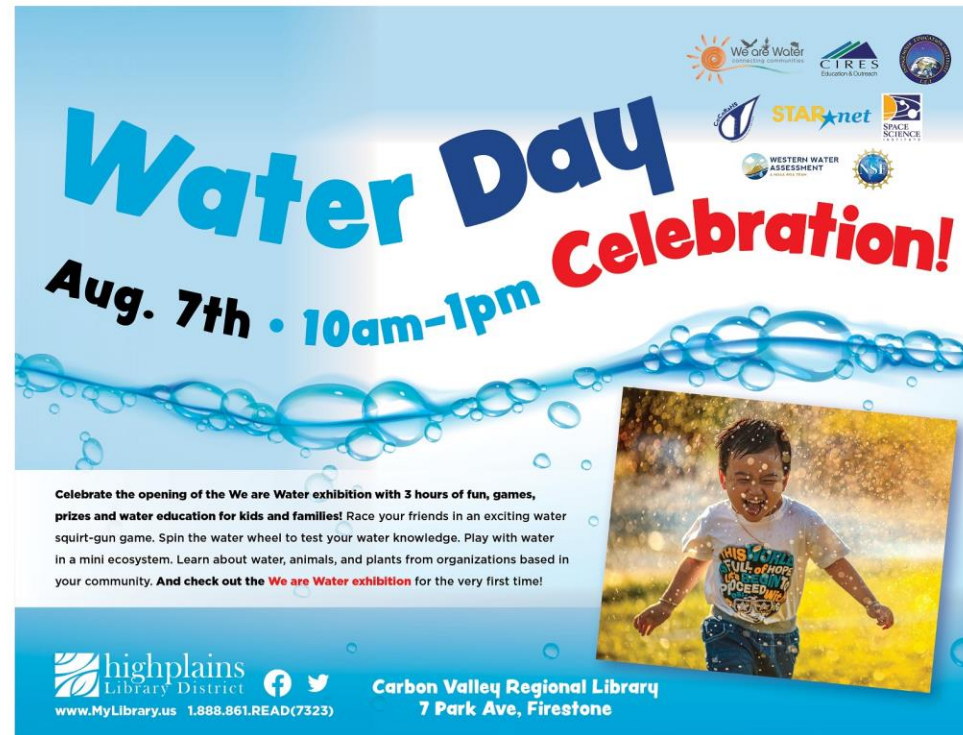
[PPT Template](#)



We Are Water Opening Day Event

Step 4: Invite the community

- Social Media
- Local Newspaper
- Signs and banners
- Schools
- Encourage invited partners to spread the word through their channels



We Are Water Opening Day Event

Step 5: Additional Considerations

- Opening Ceremony
- Food!



We Are Water Opening Day Event

Thank you!



Noah Newman

noah.newman@colostate.edu



Share in the chat

What community assets can you bring to your library for a Water Celebration Event?

Thank you!



Questions?