



Ruckelshaus Institute
of Environment and
Natural Resources

Uncharted Waters: **Incorporating Farmer and Rancher Perspectives to Address Systemic Water Shortages in the Colorado River Basin**

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Acknowledgements

- **Participants!**
- **Collaborators:**
 - **Western Landowners Alliance:** Hallie Mahowald and Matt Collins
 - **University of Wyoming:** Kristi Hansen, Hilary Byerly Flint, Travis Brammer, Lucas Thorsness, and Weston Eaton
 - **University of Nebraska-Lincoln:** Mark Burbach
 - **University of Nevada, Reno:** Elizabeth Koebele
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A Basin in (Climate) Crisis

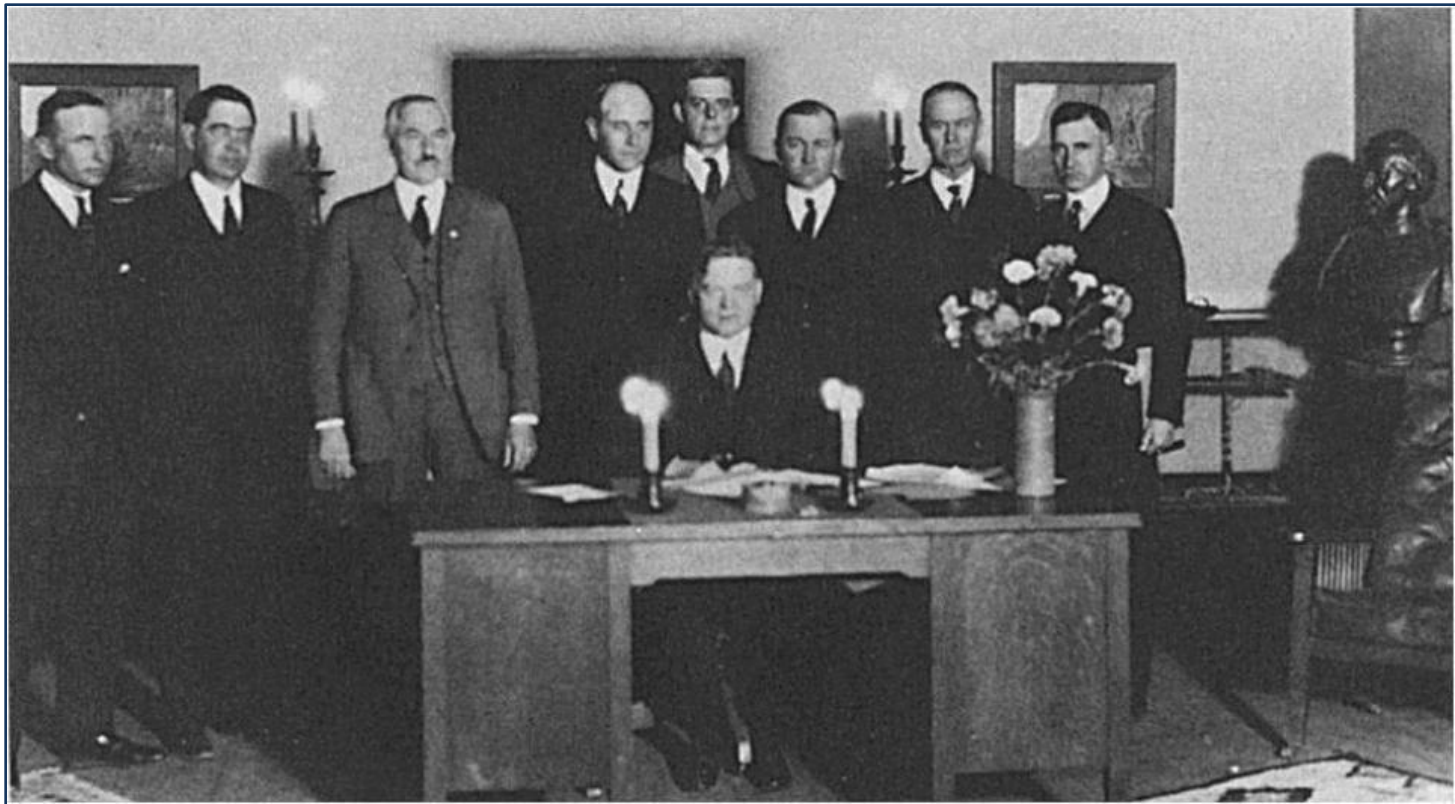


Images courtesy of Elizabeth Koebele

Source: Bass et al. 2023. *Water Resources Research* 59(7)



1922 Colorado River Compact



Source: Water Education Foundation <https://www.watereducation.org>

Need for an ag solution

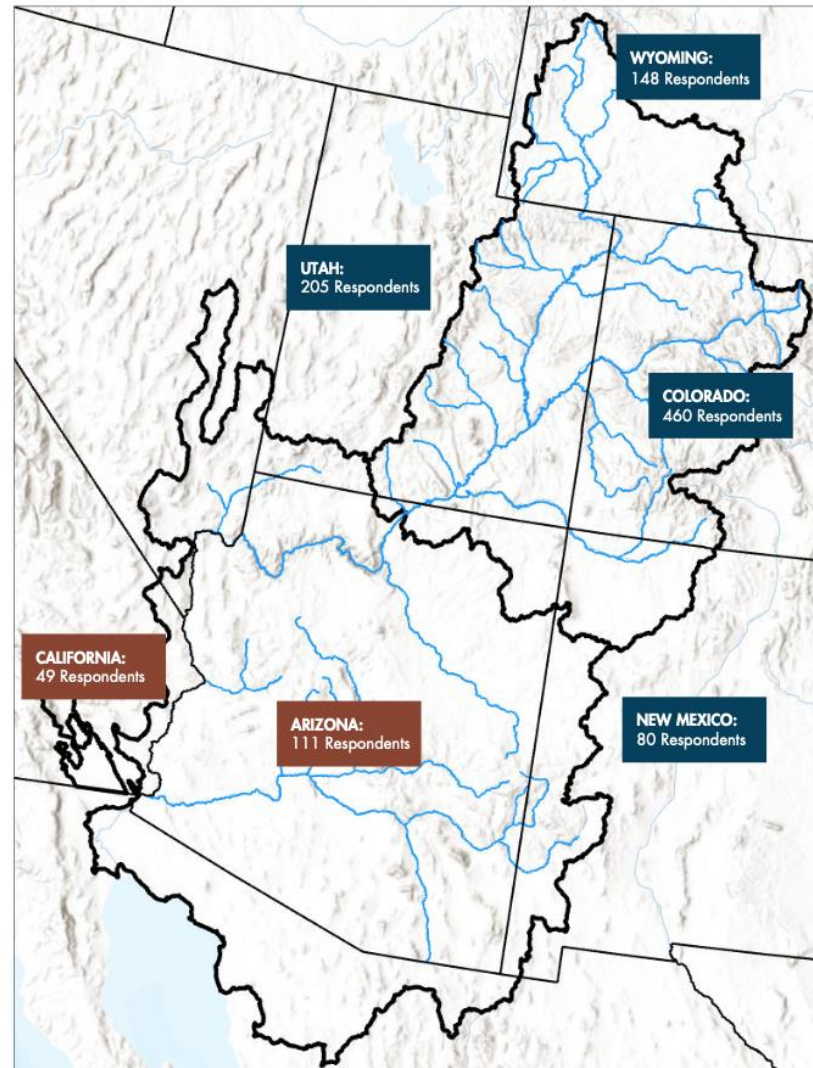


Research goals

1. Concerns and perceptions of water management
2. Adaptation strategies
3. Participation in water conservation programs

Responses







- 1,020 total responses
- 20% response rate
- Much higher in
Upper Basin, lower
in Lower Basin



Study limitations

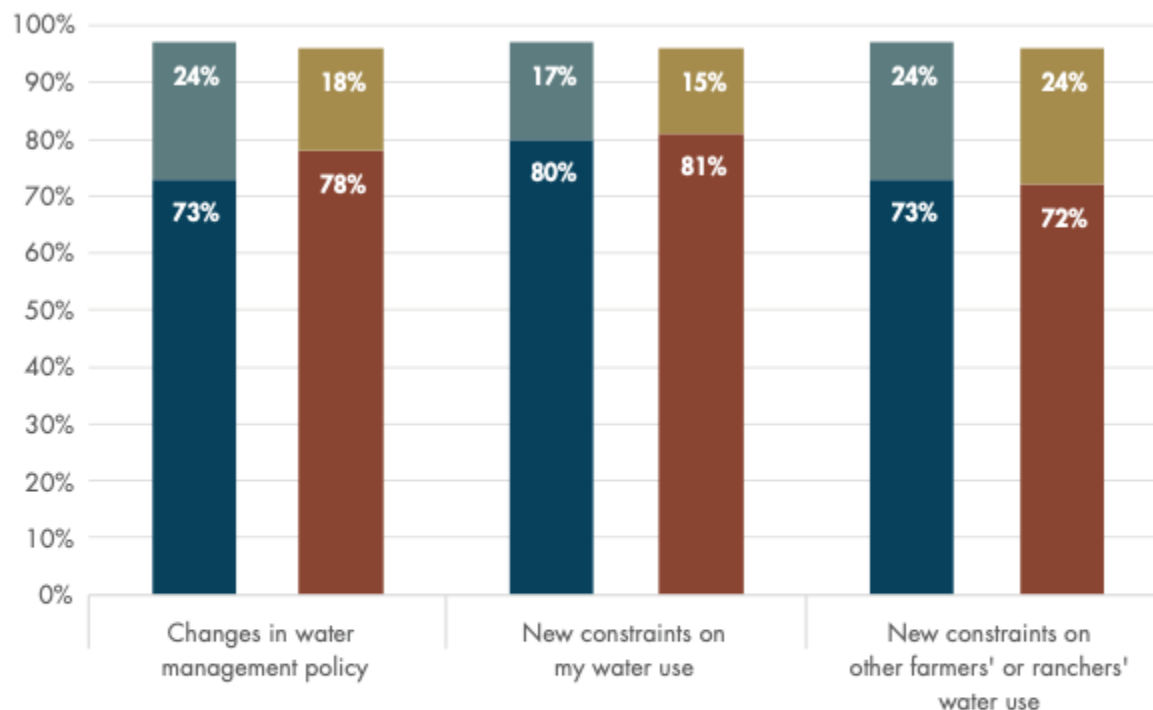
- Identifying and contacting irrigators
 - County parcel data
 - Contacting lessees
- Response bias
- Diversity of agriculture across basin

Respondent Characteristics

	UPPER BASIN	LOWER BASIN
 TOTAL RESPONSES:	863 WATER USERS	157 WATER USERS
 TOTAL ACREAGE IRRIGATED REPRESENTED	201,419 ACRES	149,821 ACRES
 AVERAGE IRRIGATED ACREAGE OF RESPONDENTS	238 ACRES	966 ACRES
 OWNER OPERATED PROPERTY (%)	81%	52%
 RESIDE ON IRRIGATED PROPERTY (FULL OR PART TIME) (%)	89%	47%
 LANDOWNER (OR THEIR FAMILY) HAVE OWNED PROPERTY FOR 30 YEARS OR MORE (%)	58%	58%

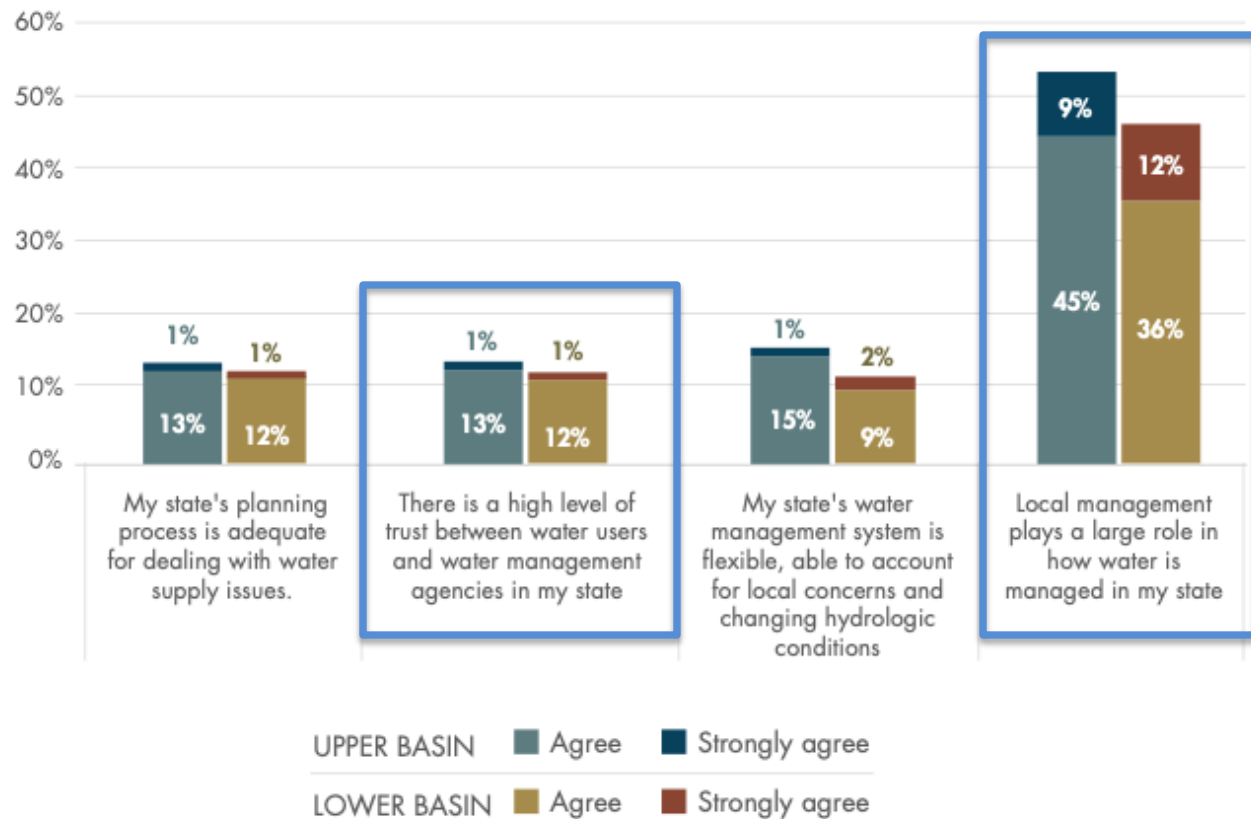


Main Concerns

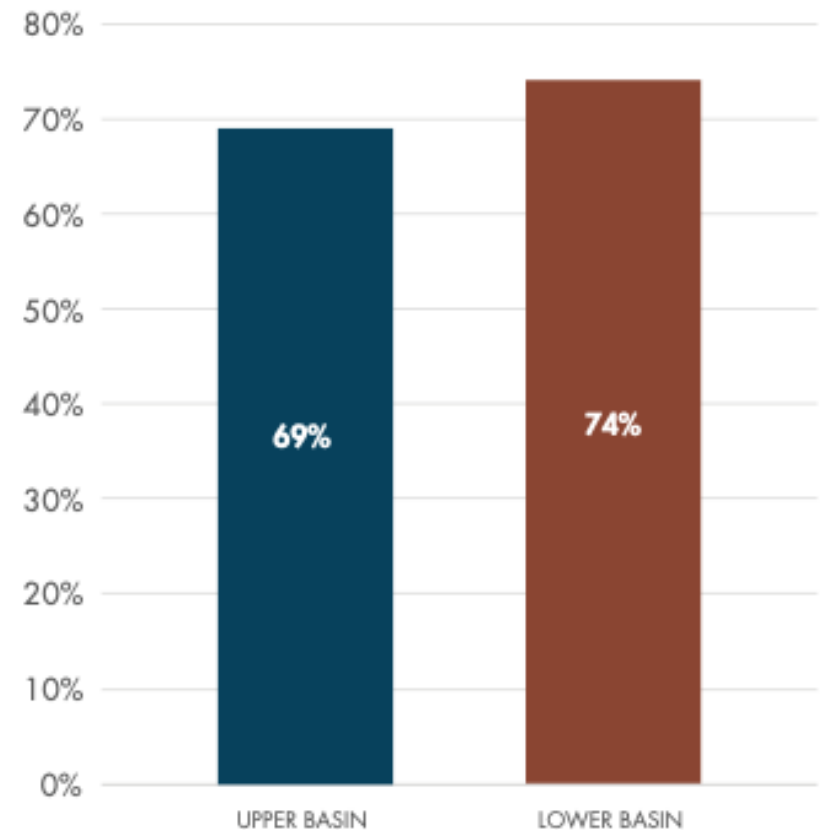


UPPER BASIN ■ Very concerned ■ Somewhat concerned
 LOWER BASIN ■ Very concerned ■ Somewhat concerned

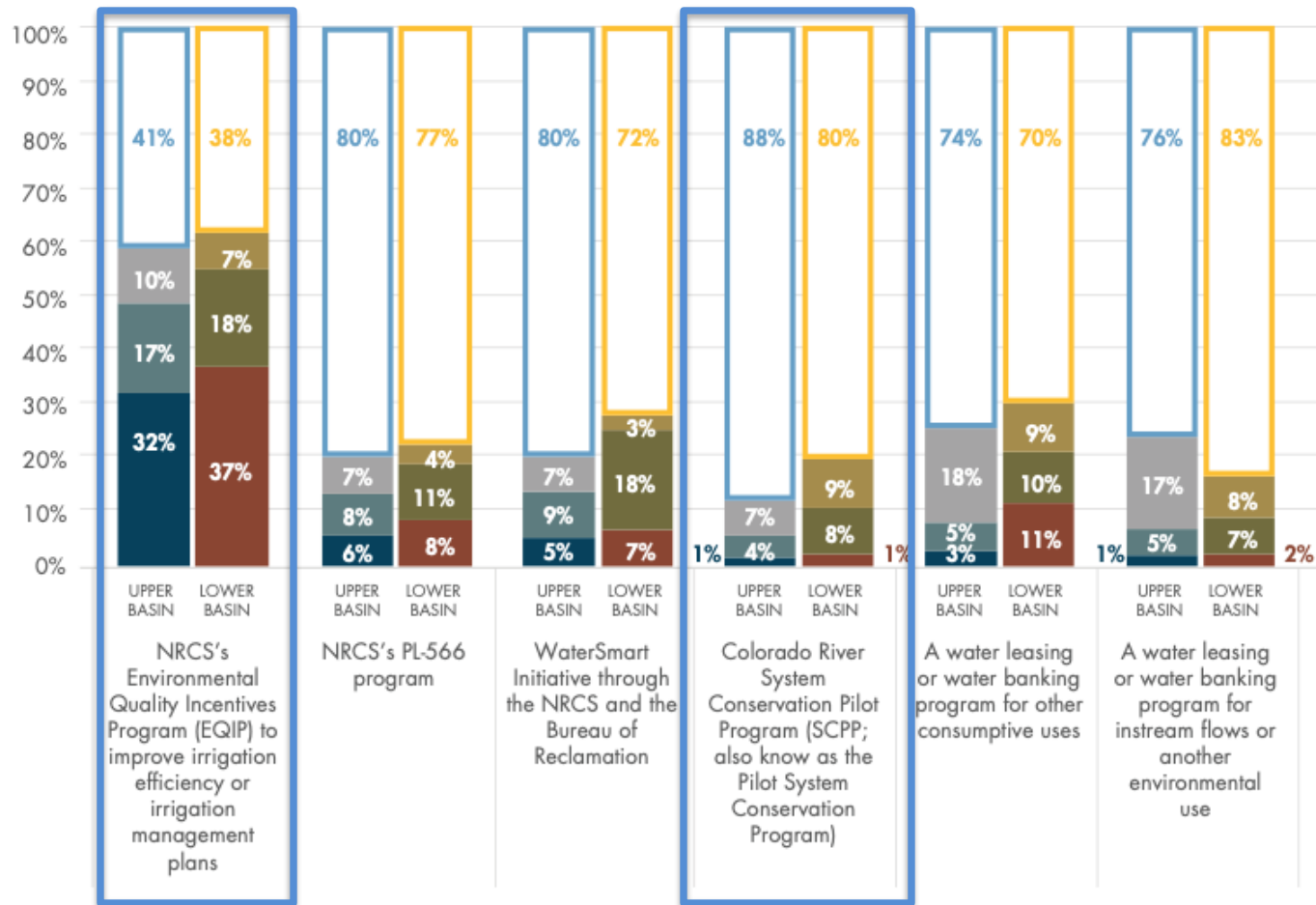
Perceptions of water management



Current water conservation or adaptation practices

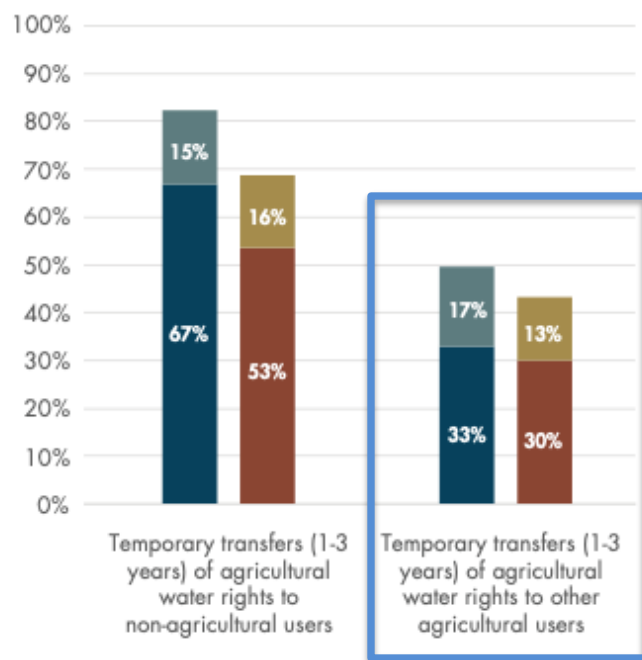


Current or previous program participation



Opposition to water transfers

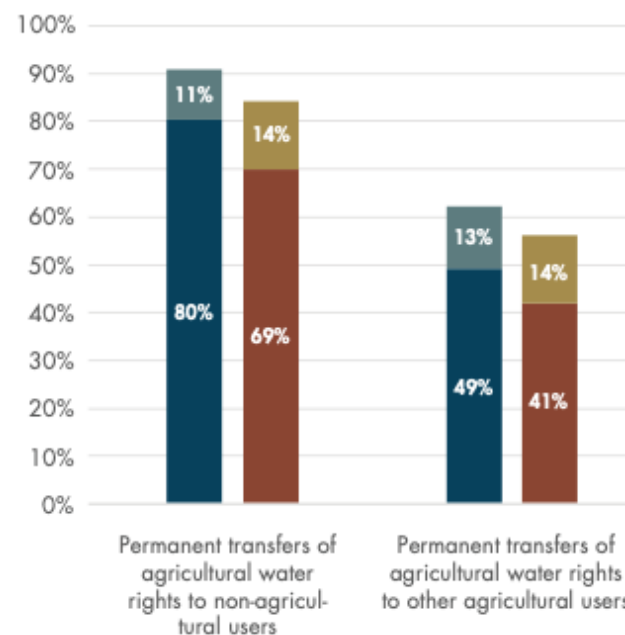
Temporary (1-3 years) Water Transfers



UPPER BASIN Strongly oppose Somewhat oppose

LOWER BASIN Strongly oppose Somewhat oppose

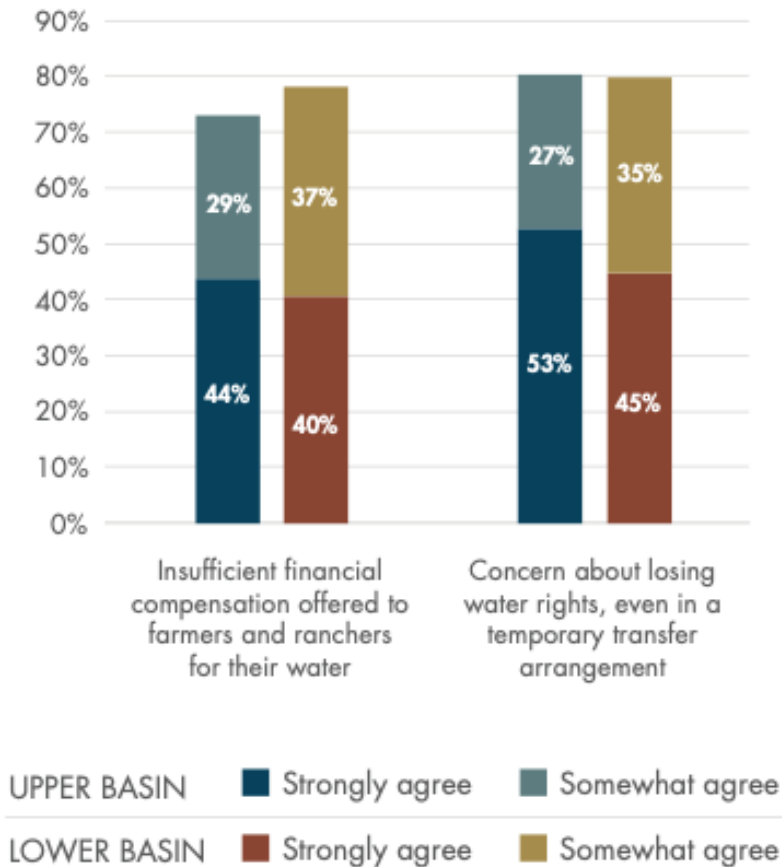
Permanent Water Transfers



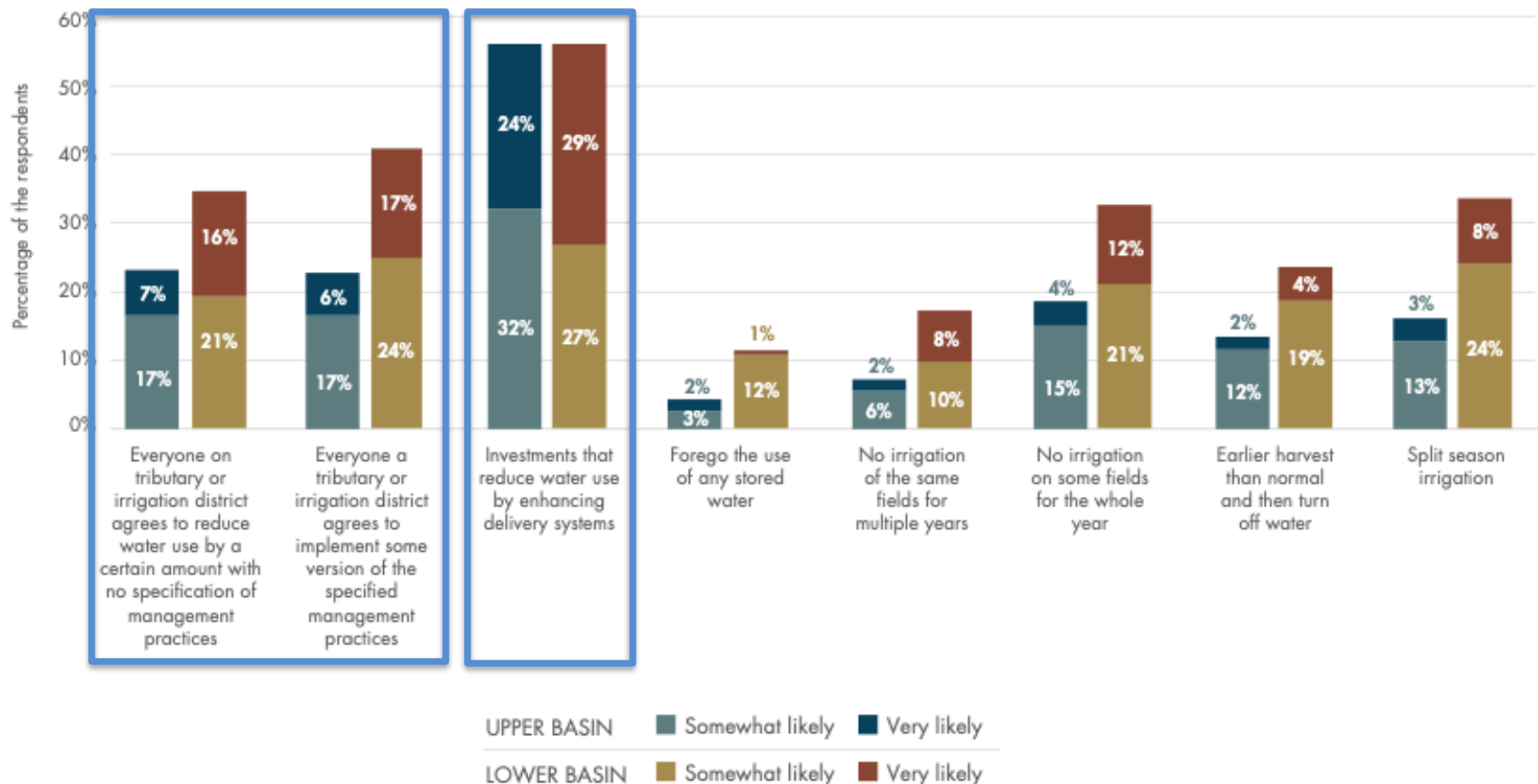
UPPER BASIN Strongly oppose Somewhat oppose

LOWER BASIN Strongly oppose Somewhat oppose

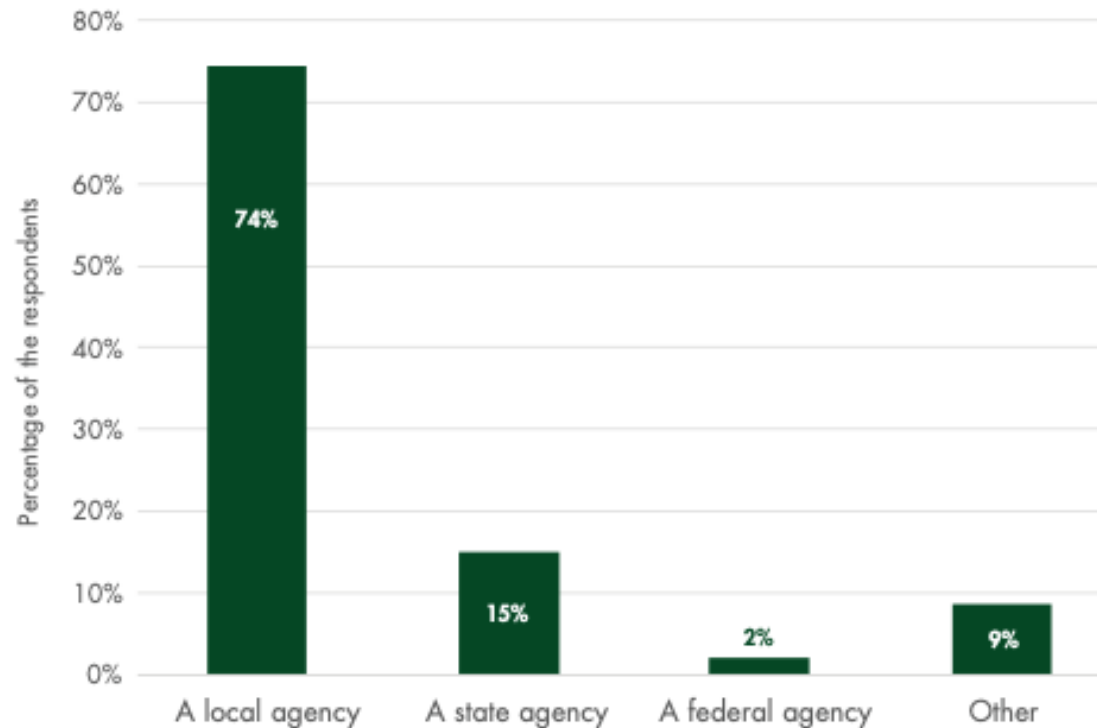
Barriers to water transfers



Willingness to adopt practices as part of a formal demand management or system conservation program



Preference for administration of water conservation programs



Key Findings

- High level of concern about potential impacts to water use
- 70% already responding to water shortages
- Low awareness and interest in participating in formal programs
- Resistance to water transfers – except from ag to ag users
- Major concerns about abandonment and forfeiture
- Overwhelming support for local approaches

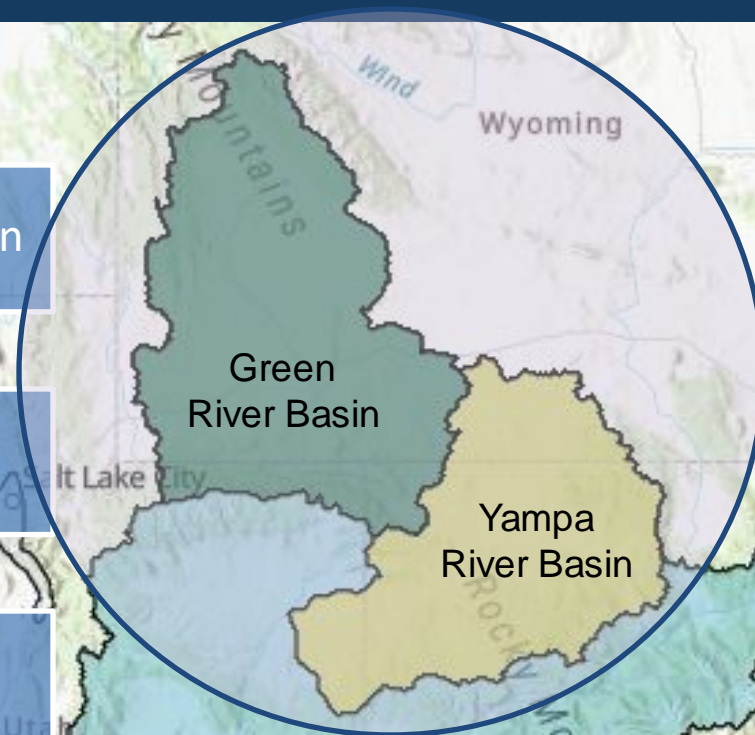


Initiative: Water Conservation

Program Structure

Facilitator

Agricultural Water User





Theme: Trust



Theme: A preference for infrastructure improvements



Theme: Incentives and Externalities



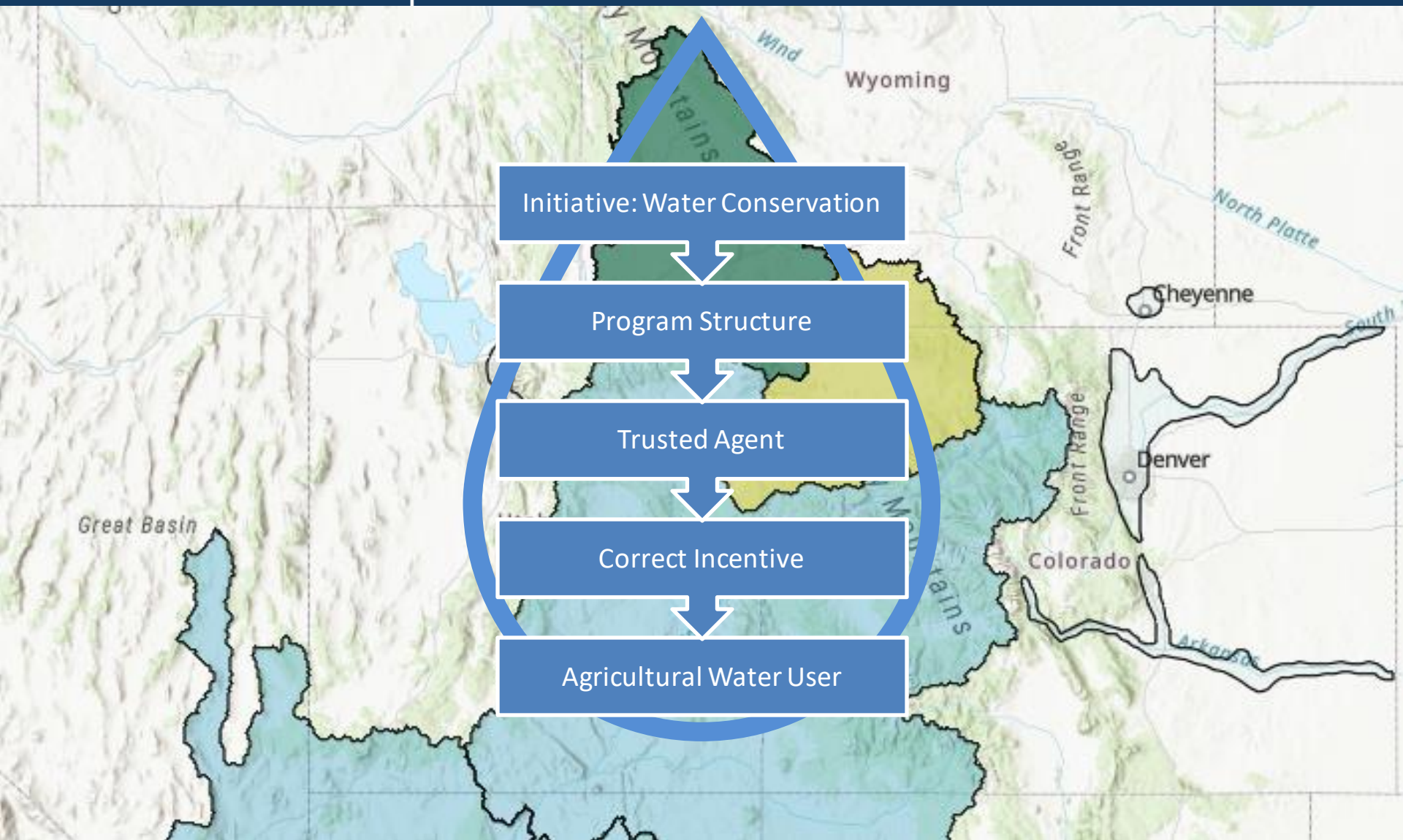




Image from: <https://share.america.gov/english-idiom-canary-coal-mine/>

Key Insights

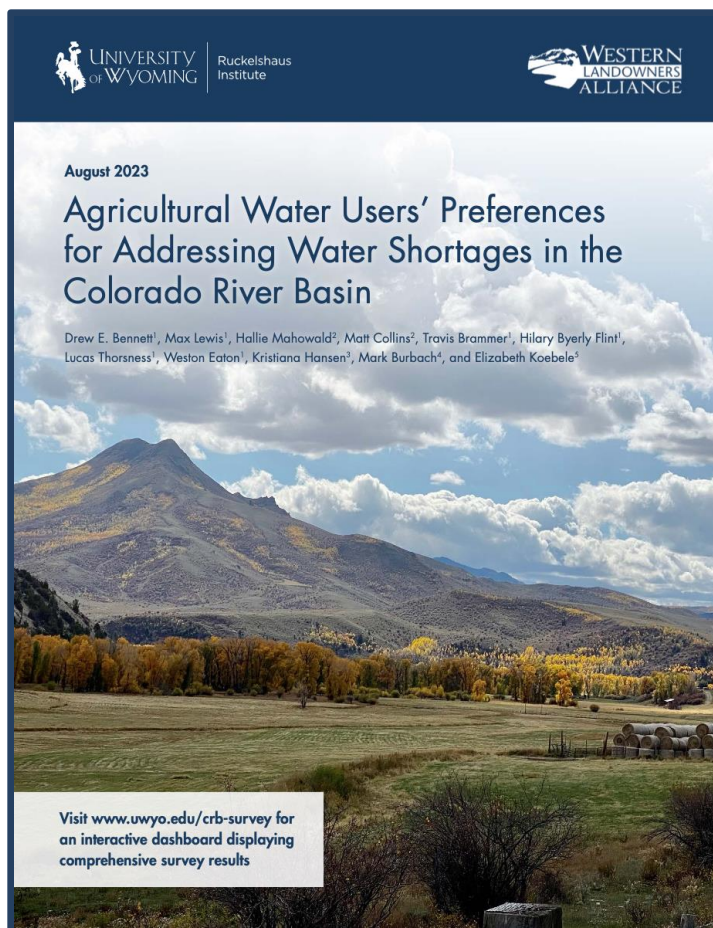
- Recognition of need to adapt
- Tailor to operation and local context
- Solutions do not require majority participation
- Trust is critical
- Build support locally





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www.uwyo.edu/crb-survey

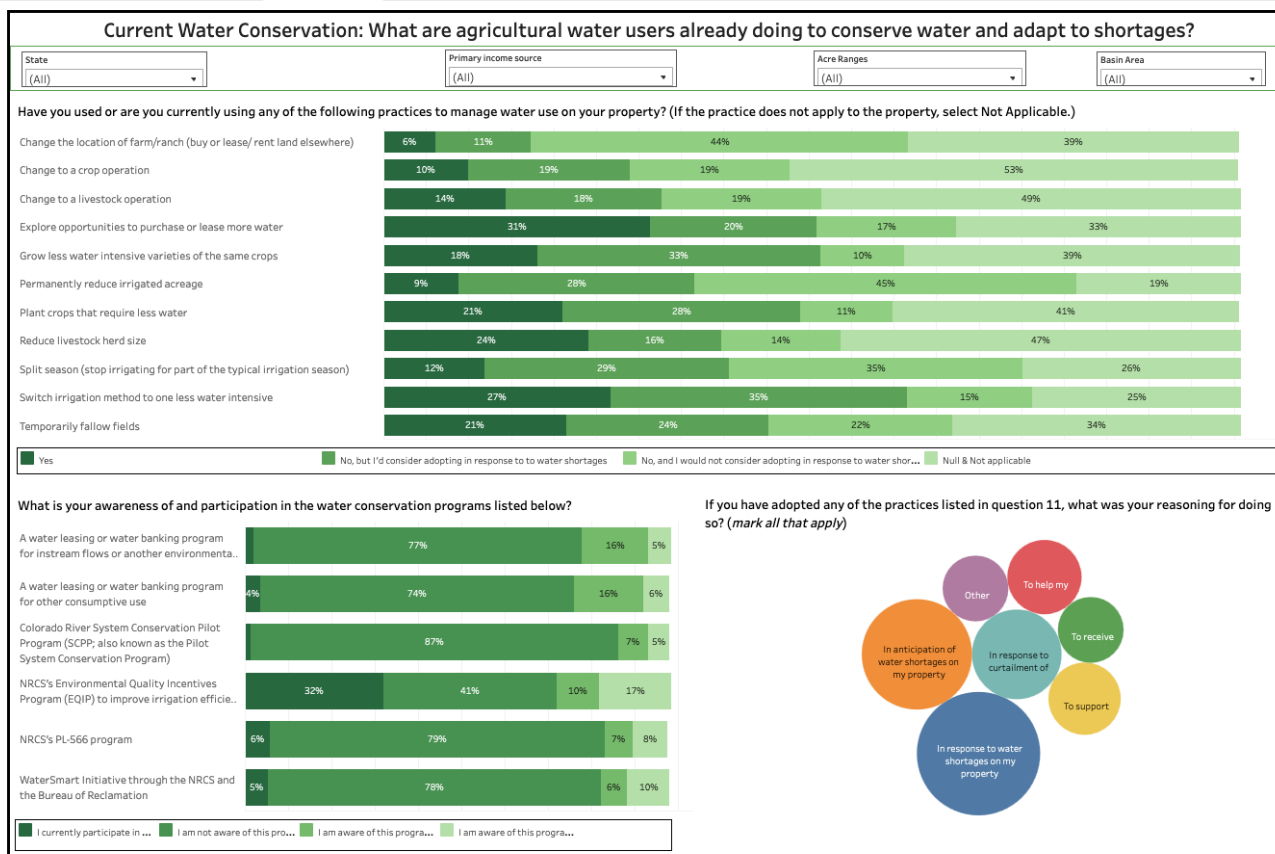




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The Dashboard

Main Page | Characteristics | Concerns | Current Practices | Moving Forward | Needs



Thank You!

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