National Aeronautics and
Space Administration

NASA earth

Welcome from the Western Water Action Office

Stephanie Granger
Program Director
NASA WWAO /Jet Propulsion Laboratory-Caltech

Yá’át’ééh
Bienveniuẽ
Dobrodošlí
স্বাগতম
Welkom
Soo dhowow
ようこそ
환모
Soo dhowow
Isten hozott
欢
स्वागतहे
Welcome
Vitamy
Viebien
欢迎
Bine ati venit
Benvinguts
Fållte
Bemvenʉts
Aloha
Mabuhay
ΚΑΛΩΣ ΗΛΘΑΤΕ
Fălțuțe
Bine ati venit
Fâilte
Dobrodošao
Benvingutis

Purpose and Goals

Bridging Science and Solutions

Innovating Water Management for the Western U. S.

2025 WWAO Annual Meeting Goals

1. Facilitate the exchange of information between NASA research and data, and water management communities on key water challenges in the Western U. S.

2. Highlight innovative Earth Observation (EO) solutions and showcase ongoing projects addressing Wester water management challenges

3. Empower the community by providing a platform to offer an opportunity for feed back and input in the next phase of the WWAO program.

WWAO Staff and Science Team

Stephanie Granger,
Program Director

Sean Fleming,
Program Scientist

Alphan Altinok,
Program Coordinator

Bailing Li,
NASA-GSFC

Renatto Frasson,
NASA-JPL/Caltech

Sharon Vasquez Ray,
Stakeholder Engagement

Mark Davidson,
Private Sector

Nikki Tulley,
Impact and Transition

Amita Mehta,
NASA-GSFC

AJ Purdy,
NASA-ARC/CSUMB

Charlene Barone,
Information Infrastructure

"Great things in business are never done by one person, they're done by a team of people."

Steve Jobs

WWAO's Mission

Compelled by urgent challenges to our nation's Western water supply, the Western Water Applications Office (WWAO) harnesses the power of NASA to drive innovative solutions that benefit of people, the environment, and the economy.

WWAO Value Proposition: WWAO strengthens water resilience to build a more sustainable future for people and communities across the Western US by…

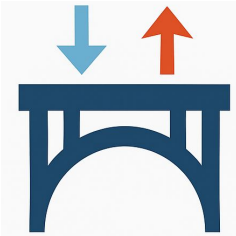
Understanding the issues

Build strong relationships with water leaders and communities to better understand complex water challenges in the Western US.

Co-creating solutions

Work with local partners to turn NASA's science and data into practical, sustainable solutions.

Bridging science and action



Act as a bridge between NASA and communities, sharing knowledge both ways to drive innovation

Key Challenges Addressed

WWAO has identified key water challenges facing the western U. S. that can benefit from NASA's Earth science capabilities

Water Availability: surface water levels, groundwater storage, and snowpack, to monitor and forecast freshwater availability.

Water Use: water use for agriculture, urban areas, and industries, and assess the impact of environmental factors like temperature and precipitation changes on water demand.

Water Infrastructure: help detect issues like subsidence and structural weaknesses, supporting risk management to protect infrastructure

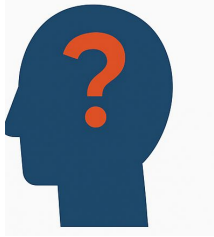
Water Quality: monitor water quality parameters such as chlorophyll, turbidity, temperature, and contaminants to support ecosystem health and water management

Extreme Events: Data assist in predicting and monitoring floods and droughts, improving water management and decision-making during extreme weather events.

Watershed Health and Management: provide vital data on land use changes, vegetation health, water quality, and atmospheric conditions, supporting the management and sustainability of watersheds.

WWAO Achievements

Understanding

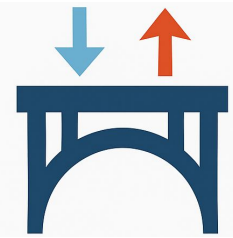


- 7 Needs Assessment Completed
- 8 Western Basins / Watersheds Studied
- Over 75 Use Cases Documented
- 160+ participants from federal, state, local, tribal, private sector and academic organizations

Co-Creating

- 30+ Projects
- 7 Award Rounds
- 23 Completed Projects
- 7 Active Projects
- ~38 Project Partners
- 2 Private Sector and NGO Alliance partners
- 1 Business Case Developed – Airborne Snow Observatory, Inc.

Bridging Science and Action



- 5 Solutions Transitioned
- 2 Final Mile Projects
- 1 New Company Formed – ASO, Inc
- 2 Interagency Research to Operations Publications
- 3 Impact Assessment Reports

Success Stories

"I'm...Navajo – I grew up on the Navajo Reservation. It is monumental to have an organization like NASA work with us to diversify and augment the water tools we have at our disposal."
Carlee McClellan, Navajo Nation Department of Water Resources

The Navajo Nation Drought Severity Evaluation Toolkit (DSET)

Impact: DSET is used in drought reporting and provides a more detailed picture of drought extent and severity on the Navajo Nation.

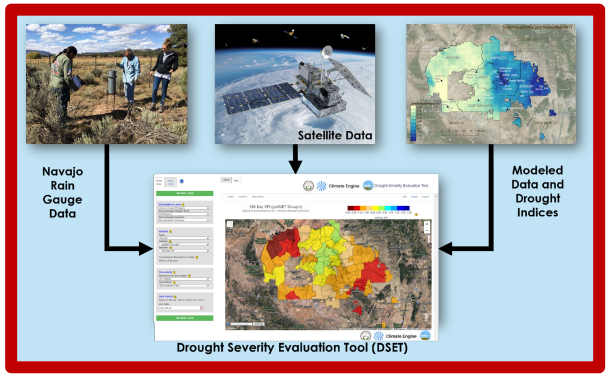


Image Credit: Amber McCullum, Ames Research Center

Advancing Next Generation Seasonal Water Supply Predictions

Impact: NASA data improved skill of water supply forecasts in a new data driven operational model being developed by USDA-NRCS.

Image Credit: Karl Rittger, CU Boulder

Helping to Build Consensus in the Upper Colorado River Basin

Impact: Replaced a +50 year-old approach to estimating consumptive use for water allocations that all 4 upper Colorado Basin states agreed to adopt.

Image Credit: Upper Colorado River Commission

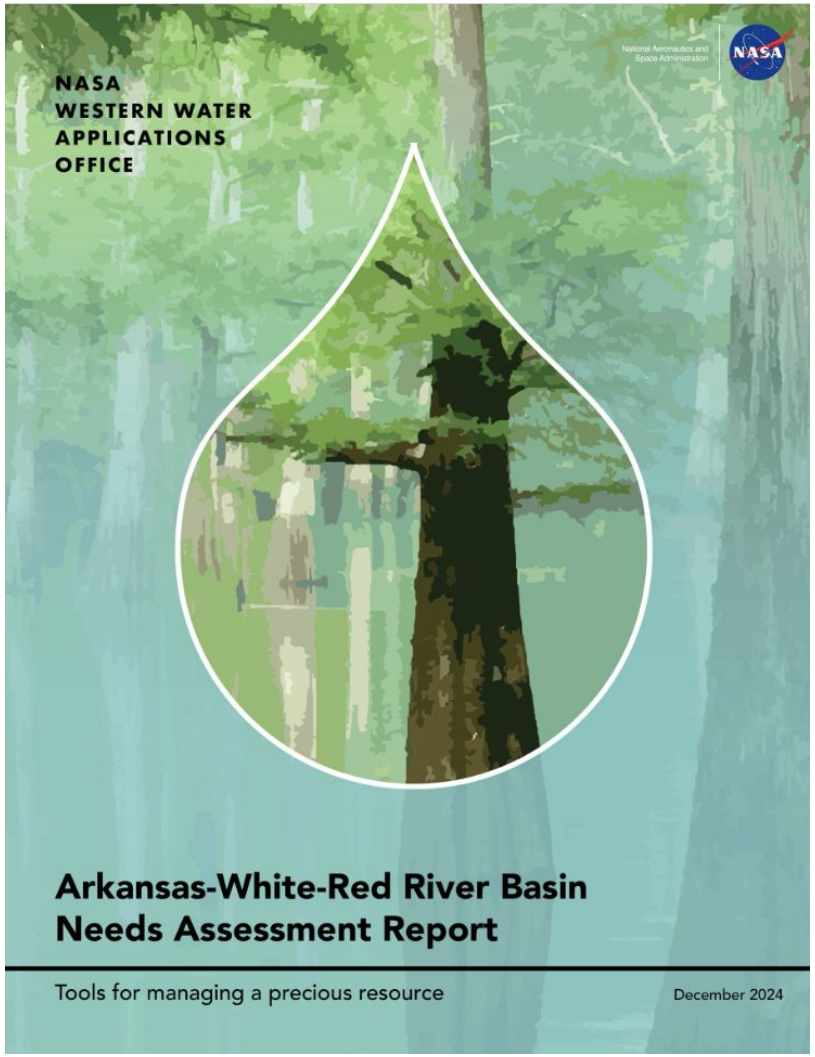
Looking Back at 2024 – Results and Progress

Seven Big Things

1. **7** Rio Grande Projects Launched and Underway
2. Publication of a Request for Information (RFI) for the Missouri Basin
   - **30** concepts received - review in process
3. Arkansas-White-Red Needs Assessment Completed
4. Cross-basin Analysis and Market Assessment Completed
5. WWAO changed its name to the Western Water Action Office
6. Sean Fleming joins WWAO as the new Program Scientist
7. Nikki Tulley joins WWAO as the new Impact and Transition Lead

Progress

- Great Basin Assessment pre-work and planning are underway.
- Private Sector partnerships gaining steam
- 2 Final mile projects nearing completion



Looking Ahead: A Year of Change

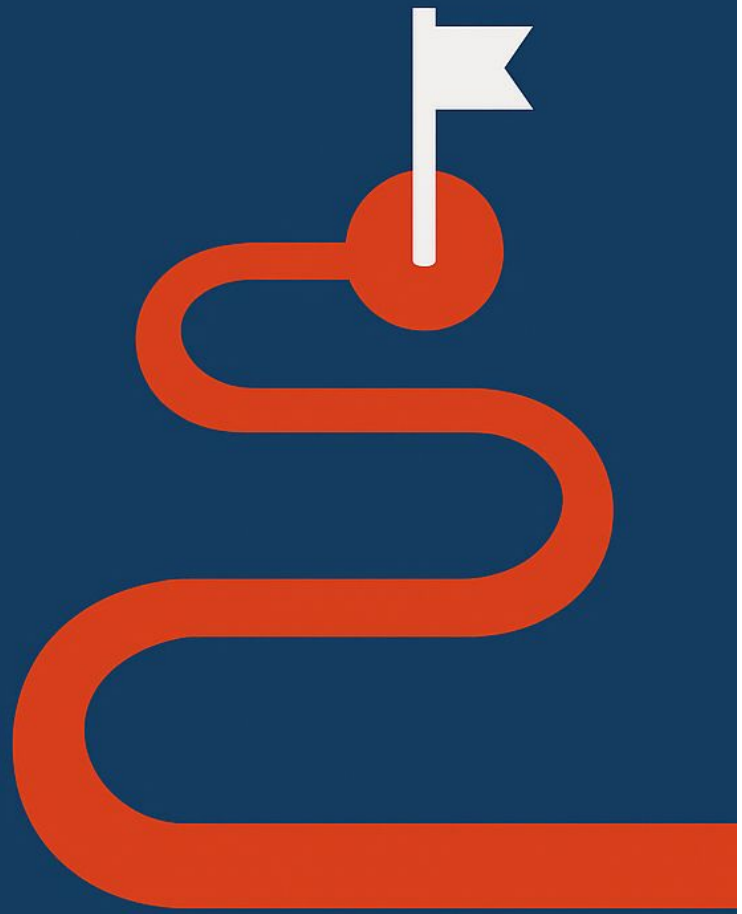
- This is a pivotal year for WWAO
- We're evolving our approach to addressing critical needs in the Western US

Resilience Sustainability Risk Mitigation

- With all basins completed – WWAO is transitioning into a new model shaped by deep reflection and planning.
- We are building on what we've learned and the relationships we've cultivated to focus on broad challenges where NASA's expertise can make a meaningful impact.

Charting What Comes Next—Together

- This week is not just about reflection—it's about direction.
- We're already in motion, with ongoing activities and evolving priorities.
- Your insights and experience will help shape how we move forward.



Thank you!