NASA Western Water Action Office

NASA WWAO Newsletter October 2025

NASA WWAO and Hazen & Sawyer Explore Integration of NASA Observations into Water Models

NASA's Western Water Applications Office (WWAO) is partnering with Hazen and Sawyer to integrate Earth observation data—such as SWOT and future NISAR datasets—into the Kansas Water Office's OASIS water system model. Current efforts include preparing data for the Governor's 2026 Water Conference disaster preparedness exercise and a drought tournament. This collaboration demonstrates how NASA science and Hazen's expertise can strengthen resilience planning and broaden the use of NASA data across the U.S. West and beyond.

View the joint media releases for more details:
WWAO media release
Hazen & Sawyer media release

NISAR: NASA-ISRO Satellite Sends First Radar Images of Earth's Surface

The first images from the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite showcase its powerful ability to map Earth's surface ahead of full science operations later this year. Launched with India's ISRO on July 30, NISAR is the first mission to carry both L- and S-band radars, enabling it to penetrate forest canopies, monitor ice, measure soil moisture, and detect subtle land shifts. Early images from Maine's Mount Desert Island and North Dakota's Forest River highlight its capacity to distinguish water, vegetation, cropland, and infrastructure with remarkable clarity. With its 39-foot-wide radar antenna scanning Earth twice every 12 days, NISAR is set to transform disaster response, agriculture, ecosystem monitoring, and Earth science research.

Read more

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WWAO Workshop at Western Snow Conference Identifies Key Snow-Related Water Management Use Cases; Report Now Online

In May 2025, NASA WWAO in partnership with Metropolitan Group convened a workshop at the Western Snow Conference in Bozeman, Montana, to explore how NASA's Earth observations can address snow-related water management challenges. Bringing together 27 participants from 15 organizations, the session produced five use cases focused on data fusion, forecasting, reservoir operations, forest change impacts, and user-friendly reporting. The outcomes reflect a growing demand to translate NASA science into decision-ready tools for western water managers while advancing WWAO's collaborative, stakeholder-driven approach. The full report is now available on the WWAO website.

Read more

UPCOMING EVENTS

WWAO "Connecting the Drops" Webinar – October 23, 2025

Please join us for this latest installment of WWAO's webinar series, Connecting the Drops. Connection details for webinars are sent to the NASA WWAO mailing list. You may subscribe to the mailing list here.

Connection details for webinar on October 23, 12:15pm PT:
Join the meeting now
Meeting ID: 224 866 878 065 5
Passcode: a9Jr3EC2

A New Dashboard Tool Bringing Cross-cutting Hydrologic Modeling Data Analysis to the Middle Rio Grande
Laurel Lacher, Principal, Lacher Hydrological Consulting
This talk will discuss a new Hydrological Modeling Data Dashboard, developed to improve access to hydrologic information for the Middle Rio Grande Basin. The dashboard integrates outputs from the MIKE SHE model with preloaded NASA datasets, allowing users to visualize, process, and download data across multiple time and spatial scales.

Urban Rainfall Modification as Future Water Resource Solutions
Dev Niyogi, Professor, Department of Earth and Planetary Sciences, Jackson School of Geosciences
This talk will examine how cities shape and respond to hydroclimatic extremes, from heat islands to altered rainfall and flood risk, and highlights emerging tools—including AI and digital twins—to support climate-resilient urban planning.

AGU Fall Meeting 2025

WWAO and NASA's Water Resources Program are co-leading a session at the American Geophysical Union (AGU) Fall Meeting in December. The session, **H088: Innovating across Boundaries for Operational Uptake of NASA Earth Observations (EO) by the Western Water Community**, will showcase poster presentations highlighting how NASA data are being applied to real-world water challenges in the Western U.S. Topics will span a wide range of water resource and risk applications, including artificial intelligence (classical and deep learning), watershed-scale wildfire risk reduction, drought planning and management, agricultural water use and rights, mountain snowpack and water supply forecasting, hydropower revenue optimization, and preparing for weather and water extremes.

Read more

"CONNECTING THE DROPS" WEBINAR SERIES ARCHIVE

NASA's Western Water Action Office (WWAO) applies science and technology to improve water management. The Connecting the Drops webinar series links NASA data with the needs of water managers, planners, and policymakers. Recent webinar presentation are described below.
Connection details for webinars are sent to the NASA WWAO mailing list. You may subscribe to the mailing list here. Access the NASA WWAO Connecting the Drops webinar archive here.

WWAO Workshop on Snow Data Needs

The Metropolitan Group's communication strategists, Paul Tigan and Nick Drushella, highlighted the success and methods of WWAO's efforts in bringing together researchers and practitioners for a workshop on snow data needs as part of the May 2025 Western Snow Conference in Bozeman, Montana.

Presentation slides
Recorded video

Snow Retrievals from NISAR: Estimating Change in Snow Depth and SWE from InSAR

Professor HP Marshall, from the Department of Geosciences at Boise State University, shared highlights of how data collected using NASA's NISAR instrument can be used to determine spatial patterns of change in Snow Water Equivalent (SWE).

Presentation slides
Recorded video

GRACE/GRACE FO for Monitoring Changes in Hydrological Extremes and Groundwater

Bailing Li, Associate Research Scientist at NASA Goddard's Hydrological Sciences Laboratory, demonstrated how GRACE and GRACE-FO mission data are being applied to assess the impacts of extreme weather events on water storage, including the development of a global groundwater storage dataset.

Presentation slides
Recorded video

Measuring River Flows from Space: When Will We No Longer Need Streamgages?

Barney Austin, Vice President at Hazen & Sawyer, discussed the challenge of data gaps in measuring river flows and highlighted how SWOT mission data can help bridge these gaps, leading to more accurate estimates of water availability.

Presentation slides
Recorded video

The Convergence of Wildfire Data and Water Management Through Hydrologic Modeling and AI

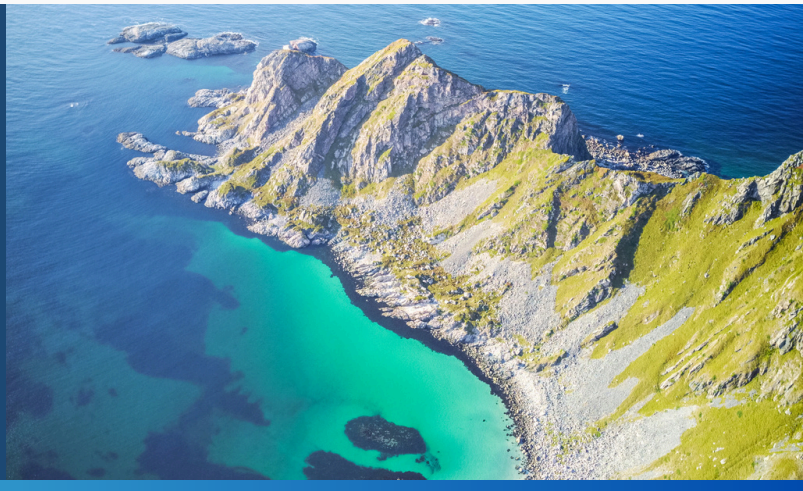
Dr. Adnan Rajib, Assistant Professor and Director of the Hydrology & Hydroinformatics Innovation (H2I) Lab at the University of Texas at Arlington, introduced HydroFlame—a geospatial platform that integrates fire and water satellite data to enhance prediction and decision-making.

Presentation slides
Recorded video

Water Science Publications

Explore our Science Publications page to access research from WWAO and its partners, featuring studies connected to WWAO water projects and the broader community of collaborators.

Read more



RESOURCES

Western Water Data Needs Identified by Practitioners

Since 2016, NASA's WWAO has systematically identified and documented water data needs across the major river basins of the western United States, informed by input from regional water practitioners. To date, WWAO has completed basin assessments for the Upper Colorado River, Lower Colorado River, Columbia River, Rio Grande, Missouri River, and Arkansas-White-Red River Basins—and will soon add the Great Basin. Additional assessments include one focused on California and a dedicated Snow Data Needs Assessment that highlights practitioner priorities for improving snow monitoring and related water management. The practitioner-identified needs are captured as use cases and detailed in a series of assessment reports. WWAO maintains a library of these reports, providing a valuable resource for researchers seeking applied opportunities for their science, practitioners aiming to understand regional data needs, and others interested in identifying data gaps in western water resource management.

Access NASA WWAO's western water needs assessment reports here.

Additional NASA Resources

NASA Western Water Action Office

NASA WWAO Connecting the Drops Webinar Series

NASA WWAO Newsletter Sign Up

NASA Earth Science to Action

NASA EarthData Gateway

About NASA's Western Water Action Office (WWAO)

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

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