Idaho Water Resources Research Institute

IWRRI Updates

2026 PBAC Conference

Dr. Meg Wolf, IWRRI Assistant Director

University of Idaho

IWRRI connects stakeholders, students and researchers

Research complex & urgent questions

Teach the next generation of water leaders

Translate knowledge to make findings actionable

S1209 - Section 5
Prioritizing Water Research in Idaho Higher Education

- State research allocation shall be used for the Idaho Water Resources Research Institute.
- Expenditure of these funds shall be at the direction of the IWRRI Executive Board consistent with the **Institute's research priorities.**

IWRRI shall encourage rigorous, actionable water research at all of Idaho's public institutions of higher learning and shall fund research projects accordingly.

25-26 IWRRI Accomplishments

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- Identified research priorities across the state with our 32-member Research Advisory Committee and approval from our Executive Board.
- Distributed $580,000 in funding to faculty at Boise State, Idaho State, and University of Idaho to address priority research projects.
- IWRRI is conducting research of key importance to the state through our team of research scientists.
- Continued to support the education and outreach program essential to supporting the next generation of water scientists

Research Approach

- Identify water research priorities across Idaho
- Coordinate and conduct research across institutions
- Engage with stakeholders to ensure outcomes are actionable

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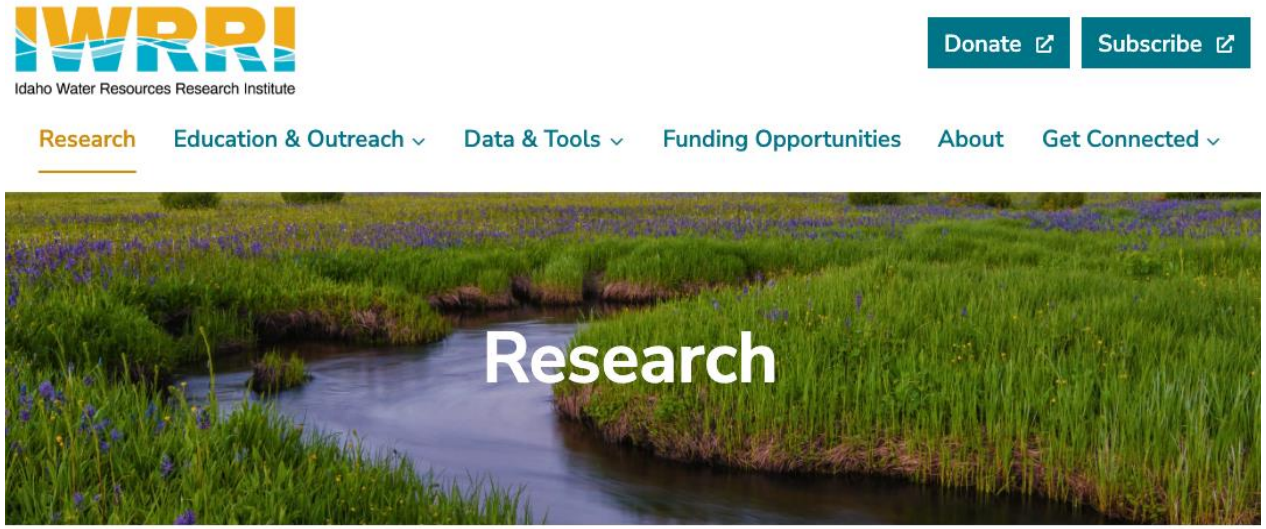
Research Prioritization Process



As part of its mission, the Idaho Water Resources Research Institute conducts applied water-related research. Two of the outcomes of IWRRI research are written reports and published papers. Explore this page for highlights of our research, a map with links to some of our previous reports, and recent scientific publications.

2025 Idaho Water Research Priorities

Suggest A Research Idea

Research Advisory Committee:
32 members across agencies, municipalities, industry, conservation organizations, and academic institutions

Identified Idaho's most pressing water challenges

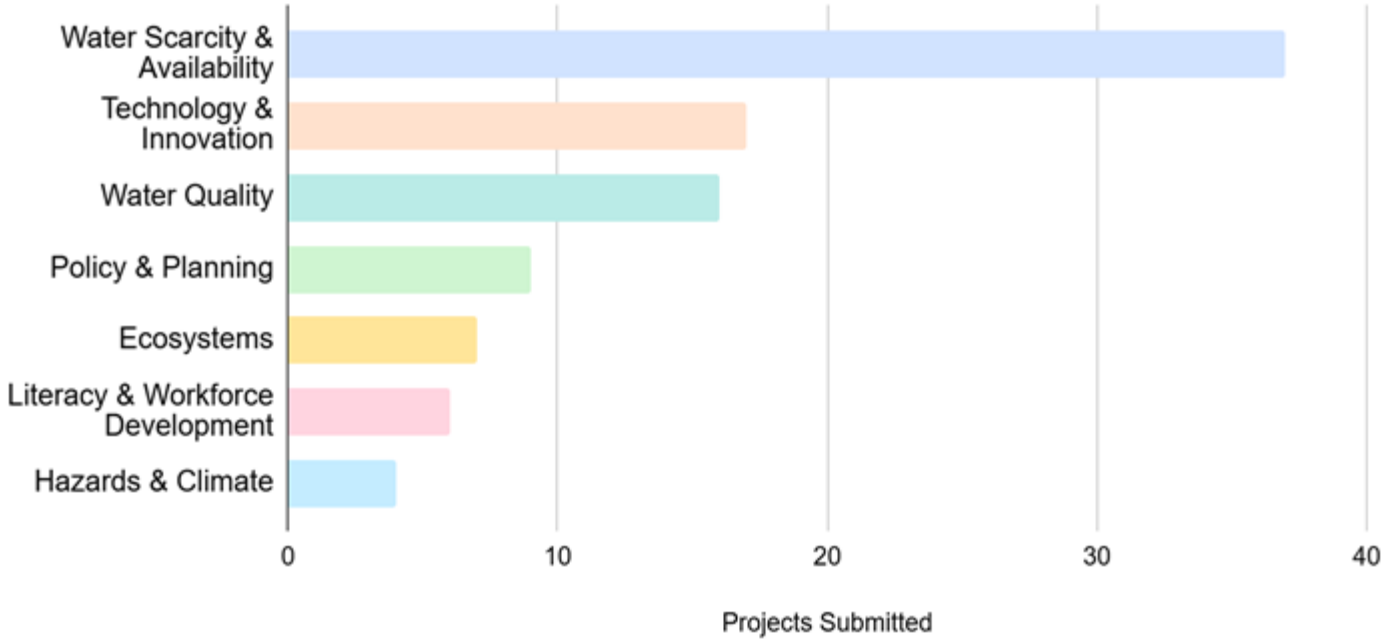
Generated over 90 research project ideas

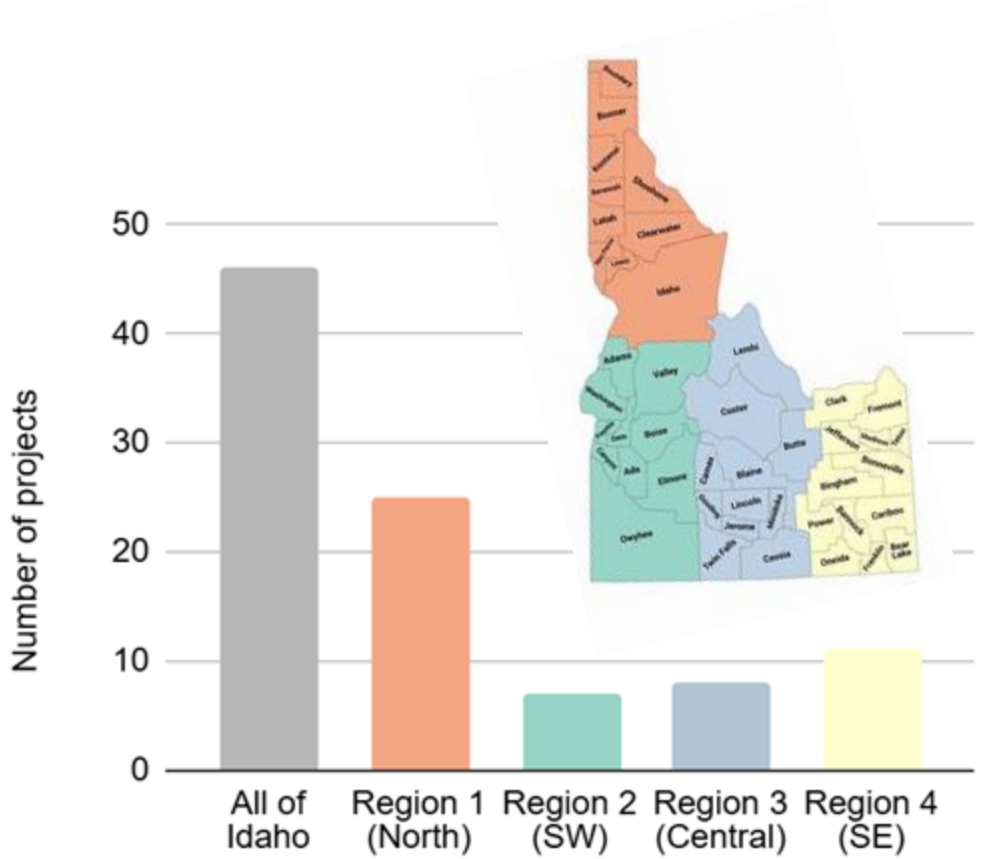
Evaluated projects based on relevance, community impact, feasibility, and geographic representation

Provided recommendations to the IWRRI Executive Board for allocation of IWRRI's legislated research funding

2025 Research Idea Submissions

Idaho Water Resources Research Institute





2025 Idaho Water Research Priorities

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STATEWIDE RESEARCH

Water Scarcity & Availability

- Evaluating L-band InSAR for Idaho Water Monitoring Applications*
- Enhancing Visualization of Snow Water Storage Conditions*

Water Technology & Data

- Assessing Sufficiency, Optimal Deployment, and Application-Readiness of Idaho's Hydrometeorological Observation Network*
- Integrated Water Data and Visualization Platform

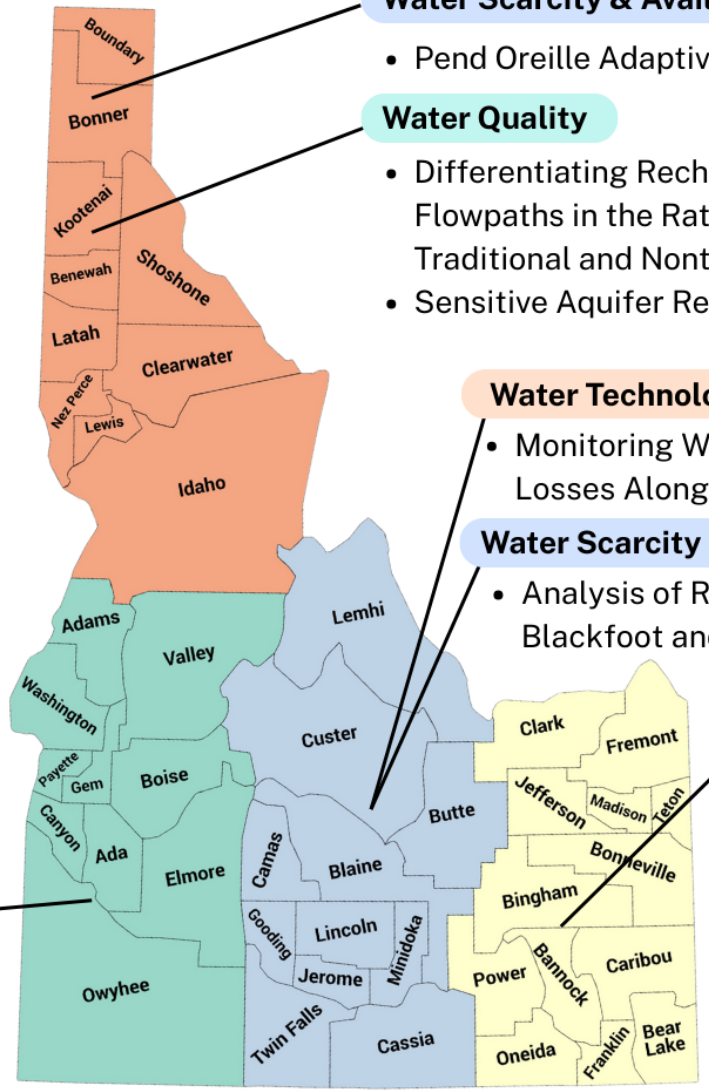
Water Quality

- Comprehensive Integration and Evaluation of Idaho Water Quality Monitoring*
- Sentinel-2 Satellite Surface Water Quality Validation
- Recycled Water and Aquifer Recharge

Water-Related Hazards

- Developing Probabilistic Flood Maps for Idaho Under Precipitation Uncertainty *

REGIONAL RESEARCH



Water Scarcity & Availability

- Pend Oreille Adaptive Lake Management Case Study

Water Quality

- Differentiating Recharge Zones and Primary Flowpaths in the Rathdrum Prairie Aquifer through Traditional and Nontraditional Groundwater Tracers*
- Sensitive Aquifer Recharge Area (SARA) Toolbox

Water Technology & Innovation

- Monitoring Water Seepage Gains and Losses Along Irrigation Canal Systems

Water Scarcity & Availability

- Analysis of Reach Gains Between Blackfoot and Minidoka

Water Scarcity & Availability

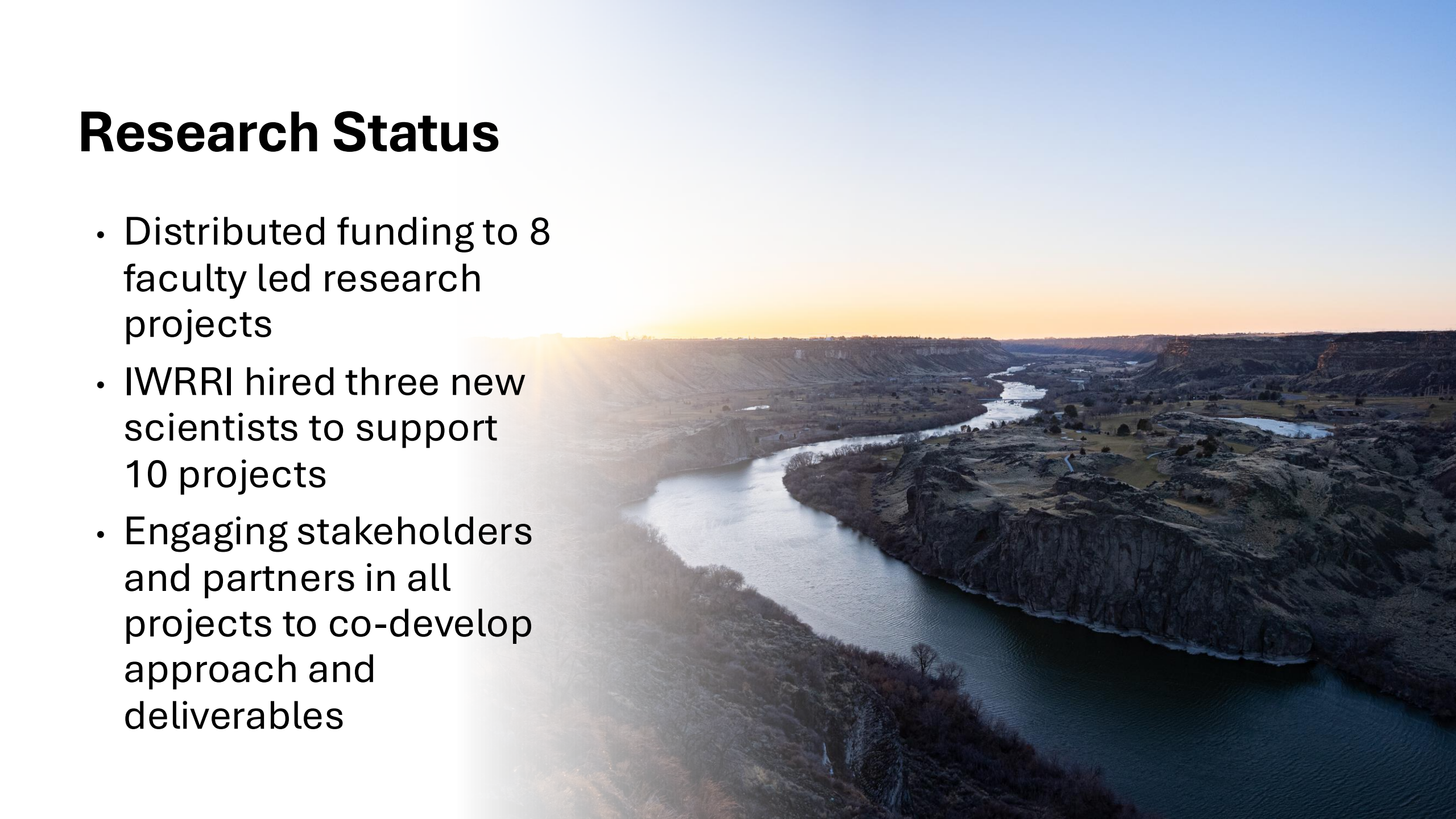
- Water Supply Analysis Below Swan Falls Dam and Major Tributaries

Water Scarcity & Availability

- Understanding Consumptive Use on the ESPA: Data Gaps, Uncertainty, and Impacts*
- ESPA Water Budget Gap Analysis
- Integrated Water Budget for the Upper Snake

Research Status

- Distributed funding to 8 faculty led research projects
- IWRRI hired three new scientists to support 10 projects
- Engaging stakeholders and partners in all projects to co-develop approach and deliverables



18 ongoing projects –Rapid Review

Monitoring Opportunities

- Assessing Idaho's weather and climate monitoring systems to identify gaps and opportunities for improvement- faculty led research
- Evaluating a new remote sensing dataset (L-band InSAR) to track- snow depth using Lidar- faculty led research

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Comprehensive Integration and Evaluation of Idaho's Water Quality Monitoring

- Assessing Idaho's water quality monitoring systems to identify opportunities to merge water quality databases across agencies
- Identify water quality monitoring gaps in the state
- Create frameworks to develop accessible visual tools for agencies, researchers and the public

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Statewide Topics: Water Quality

Sentinel-2 Satellite Surface Water Quality Analysis

This project will improve how well satellite images track the frequency and duration of phytoplankton blooms in Idaho lakes and reservoirs.

Water Quality Implications of MAR through Injection Wells & Recycled Water

Research synthesis about using surface water and recycled water for aquifer recharge, focusing on implications for drinking water protection, monitoring approaches, water quality requirements, existing regulations, and key knowledge gaps.

Steve Powers, PhD, IWRRI Research Scientist

Water Quality/ Water Quantity

- Differentiating Recharge Zones and Primary Flowpaths in the Rathdrum Prairie Aquifer through Traditional and Nontraditional Groundwater Tracers

  Faculty Study Leads: Jeff Langman, Tim Link, Eric Asten **DEQ partner-** Seth Oliver

- Sensitive Aquifer Recharge Area(SARA) Toolbox- Refine current SARA tool- North Idaho pilot over the SVRP

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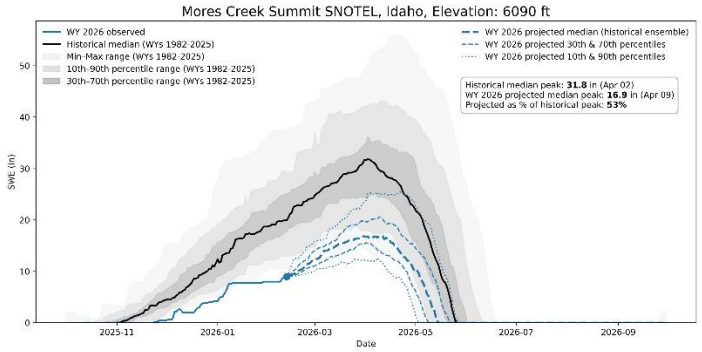
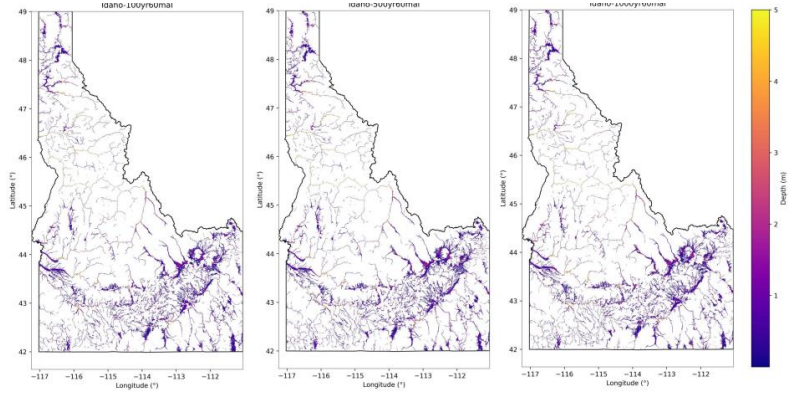
Statewide Topics: Water Quantity

- Development of Tools to Visualize how Current Snowpack Levels Compare to Historical Patterns (BSU)
- Probabilistic Flood Maps for Idaho Under Precipitation Uncertainty (ISU)

Otto Lang, PhD
BSU Postdoctoral Researcher

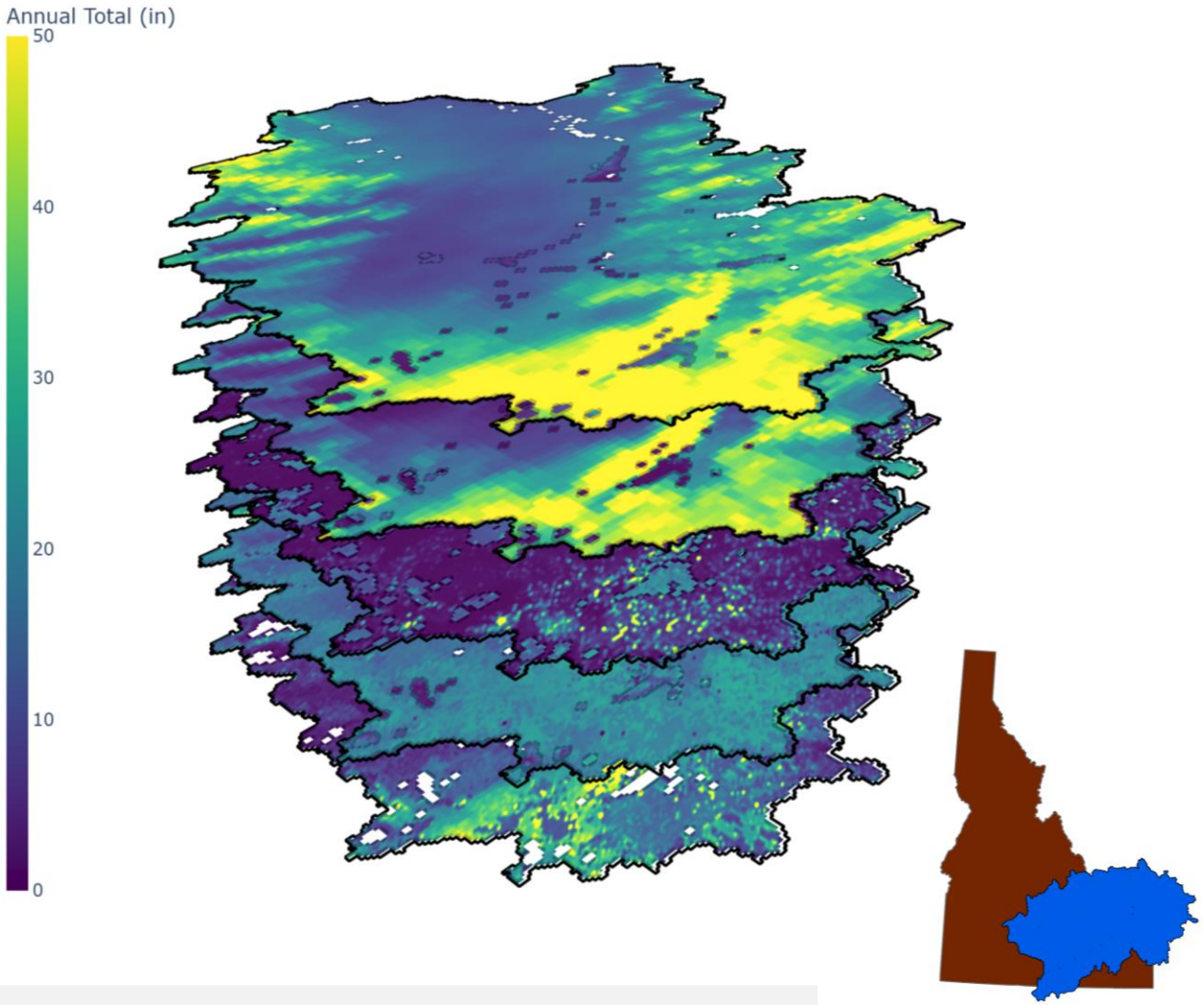




Tao Huang, PhD
ISU Faculty

Idaho Water Resources Research Institute

Water Quantity ESPA



- **Evaluating aquifer recovery strategies to support reach-gains:** Evaluate which approaches are most effective at reaching ESPA management goals
- **Quantifying headwater contributions** entering the ESPA and tracking changes through time
- **Supporting near-term planning:** Developing seasonal curtailment forecasts so irrigators can prepare and adapt in advance
- **Informing long-term management:** Identifying gaps and opportunities to improve the ESPA water budget which will strengthen the groundwater model and enable identification of management practices to prioritize
- **Responsive to urgent needs:** Fast-tracking critical projects requested by water users and the state

Phil Margarit, PhD, IWRRI Hydrogeologist

Education and Outreach

- The Confluence Project
  - Year long youth science curriculum
  - 1st year in the treasure Valley! 14th year in north Idaho
- Youth Water Summit
- May 5th in Boise - May 19th in Coeur d' Alene

Please visit the IWRRI table this afternoon to learn more about volunteering

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Idaho Water Resources Research Institute

Stay Engaged!

- Sign-up for our newsletter
- Look for research updates & outcomes
- **Submit research needs**

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