



University of Idaho

Water Resources Program

Challenges and Opportunities for Idaho Water Resources (April 19, 2022)

Key Emerging Themes:

- **Adaptability and Resiliency:** Systems need to be designed to be adaptable and resilient to the increasingly urgent and complex water resources challenges in Idaho and the western U. S.
- **Climate Change:** We need to address continuing impacts of climatic change through our work and engagement with industries, governments, NGOs, and the public.
- **Historical Legacies:** We need to effectively address past practices and relationships while accomplishing current needs and enhancing resilience to future stressors.
- **Cooperation:** We need to partner effectively with industry, academia, governments, and the public, while recognizing tribal sovereignty and engaging stakeholders to understand the needs of Idaho's communities.
- **Financial Assurance:** We need to develop improved mechanisms to fund the basic and applied research needed to address ongoing water resources challenges.
- **Incentivizing Best Practices:** We need to modernize our regulatory and policy environment to ensure that best practices are adopted across all actors spanning local, state, tribal, and federal levels.
- **Monitoring and Feedback Loops:** We need to more effectively track and communicate key data in a timely manner to the appropriate stakeholders to ensure that emerging evidence supports adaptability and resilience.
- **Interdisciplinary Approaches:** We need to continue to address water resources challenges using a combination of integrated technical, scientific, social, and legal approaches.

Snapshots of Each Discussion:

Welcome (President Scott Green, University of Idaho)

- Idaho is a national leader on water. Water drives the economy of the state. Water as a renewable energy source provided more than 50% of in-state electricity in 2021.

Keynote (Governor Brad Little)

- The Idaho 2022 legislative session allocated an additional \$325M to water initiatives.
- Idahoans face major issues pertaining to water: more expensive projects, aging infrastructure, aquifer recharge development. These pressures are exacerbated by Idaho's rapid population growth.
- Technical schools updated their programming to offer career guidance to meet the shift of traditional industries requiring broader skillsets, in part to address these challenges.

Keynote (CEO Lisa Grow, Idaho Power)

- Hydropower is 2% of Idaho’s GDP, but it’s the *first* part of the GDP.
- With population growth, there was a 9% increase of energy use last year. Water management must also adapt to changing hydropower demands.
- Transmission and storage of energy are key challenges. It may seem logical to develop as much wind, solar, and hydropower in the state as possible, but because generators must move and battery storage isn’t able to manage anything beyond 8 hours, power transmission is critical.
- Water rights can be a source of conflict. It is important to meet with those who are affected to find compromises. There is high value in partnerships – we all depend on water.

Keynote: Climate Change and Water Resources in Idaho (Charles Luce, Research Hydrologist, U.S. Forest Service, Rocky Mountain Research Station)

- Mountains are predicted to get less precipitation and snow; droughts to become more severe; both of these lead to lower and earlier flows. The atmosphere holds more water, which translates to bigger and longer storms with fewer occurrences and a longer wait to recharge the system.
- Idaho’s higher elevations provides a “bank” of resilience related to seasonal snow, but this is changing dramatically.
- Water and power generation have become dependent on one another. Energy is needed to move water and water is needed to generate energy.

Panel: The State of Water Resources in Idaho (Alex Maas, Assistant Professor of Agricultural Economics – Moderator)

Panelists: Brian Patton, Executive Officer, Idaho Water Resources Board
Dylan Hedden-Nicely, Professor, University of Idaho
Erin Whorton, Water Supply Specialist, NRCS
Mark Limbaugh, President, The Ferguson Group

- The overall precipitation might stay the same but is increasingly variable. With less snowpack and more winter rain, new ways to store water are needed.
- Increased modeling ability is needed to adapt more rapidly to real-time fluctuations in weather and available water resources that support the economic engines of the state.
- Federal investment priorities: aquifer recharge, infrastructure replacement, enhanced storage.
- There needs to be a shift from an adversarial model toward a cooperative model – this increases adaptability. Historically, tribal land has been fractured, which impacts watershed management because there are multiple managers across one watershed.

Keynote (John Echohawk, Executive Director, Native American Rights Fund)

- The Native American Rights Fund was started to provide legal assistance to tribes and other entities who might lack adequate legal representation.
- The Native American Rights Fund has represented tribes in 32 water rights settlements and has acted as a mediator to western state governors and attorneys general.
- The largest issue is to get the necessary funding in place.
- 30% homes on Native lands do not have running water. Legal settlements should not have to be finalized for tribes to have access to water.

Idaho Mining, Critical Minerals, and Water Resources (Claudio Berti, Director and State Geologist, Idaho Geological Survey – Moderator)

Panelists: Alan Prouty, VP Environmental and Regulatory Affairs, Simplot
Mckinsey Lyon, VP External Affairs, Perpetua Resources
Laird Lucas, Executive Director, Advocates for the West
John Swallow, CEO, Idaho Strategic Resources
Rob Morgan, VP Exploration, Idaho Strategic Resources
Nic Nelson, Executive Director, Idaho Rivers United

- We continue to be challenged with legacy impacts of historical mining practices throughout the state.
- We need to understand past and potential future impacts on the environment. We need to make changes in how we are using water.
- There is potential to redevelop old sites to eventually improve overall conditions. Responsible production of mined materials needs to be considered today, not tomorrow.
- Initially involve tribes and other stakeholders in this process. If there is collaboration and mindfulness about the environment, this can be a changed relationship.
- Invest in communities when the mine starts to build a system that alleviates the economic downturn once the mining operation leaves that community. Set up a system that is multi-generational; recycling our way out of this isn't feasible to start, but this is the goal.

Keynote (Speaker Scott Bedke, Idaho House of Representatives)

- Speaker Bedke helped to negotiate a settlement between surface water and groundwater users in the Eastern Snake Plain Aquifer region that led to the stabilization and recovery of aquifer levels.
- Water runs downhill and toward money. Ensure inputs and outputs of the aquifer match. Incidental recharge is a thing of the past. More efficient water use can cause groundwater declines.
- As the science develops along with climate variability, the only thing that can give is the human response. This is where the work starts. We need to be flexible and nimble to adapt to variations.

Idaho's Watersheds (Timothy Link, Director, Water Resources Graduate Program and Professor of Hydrology & Chris Caudill, Associate Professor of Fisheries – Moderators)

Panelists: Dustin Miller, Director, Idaho Department of Lands
Michael Edmondson, Administrator, Idaho Governor's Office of Species Conservation
Lance Hebdon, Bureau Chief of Fisheries, Idaho Fish and Game
Charles Luce, Research Hydrologist, U.S. Forest Service
John Robison, Public Lands Director, Idaho Conservation League
Emmit Taylor, Fisheries Watershed Deputy Director, Nez Perce Tribe
Caroline Nash, Principal, CK Blueshift, LLC

- Forest restoration is critical, especially given increased drought and wildfire. We need to understand how this ties into aquatic systems. We need look holistically at the ecosystem and tie that into the fire system to sustain both terrestrial and aquatic ecosystem functions.
- Labor shortage solutions: generating credits, incentivizing good practices, and leveraging federal contributions will lead to increased participation in watershed conservation practices. Building out educational infrastructure with both 4-year and 2-year degrees to meet employment needs is an important need.

- Monitoring allows us to use resources most effectively and empowers prioritization processes to form data-driven decisions. Use existing synergies like citizen science, which pulls communities into the conversation and creates natural pipelines into careers. Create one-off research projects and story maps for people to learn what is known and contribute their own knowledge.

Intergovernmental Cooperation in Water Resource Management (Katherine Himes, Director, McClure Center for Public Policy Research – Moderator)

Panelists: Caj Matheson, Natural Resources Director, Coeur d’Alene Tribes
 Duane Mecham, Senior Attorney, US Dept. of the Interior
 Barbara Cosens, Distinguished Professor Emerita, University of Idaho
 Neil Crescenti, Agriculture Program Manager, The Nature Conservancy

- There frequently are challenges connected to intergovernmental cooperation.
- Increased transparency helps to build initial understandings; uncertainty breeds fear.
- To facilitate cooperation, it is important to invite all stakeholders to the table. Focus on intent at the front end and follow through on commitments. Create conditions for establishing trust and communicating with intentionality. Cooperation leads to tailored, co-created, lasting solutions and more equitable treatment.
- Water supply is variable; we need to be too.
- Information management infrastructure is needed to advance data, modeling, and information dissemination to empower leaders and stakeholders to engage in evidence-based conversations to enhance cooperation.

Agricultural Sustainability and Water (Jodi Johnson-Maynard, Department Head and Professor of Soil and Water Systems – Moderator)

Panelists: Richard Allen, Professor, University of Idaho
 Jesse Trushenski, Chief Science Officer, Riverence
 David Bjorneberg, Research Leader, USDA-ARS

- We need to develop ways to maximize water use efficiency and minimize water quality degradation with the technology that we have. We need to determine what new technology is needed.
- We need to be able to map water inflows, outflows, and storage changes within water resource systems. It is important to understand who is using the various components of available water resources.
- There is a need to make key data available to the public through data management plans and increase water literacy for the public and government through innovative visualizations. There are opportunities to improve the way we train our graduate students, principally through collaboration and integrated work across different disciplines.