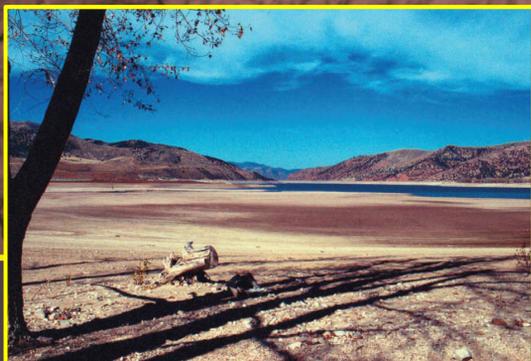
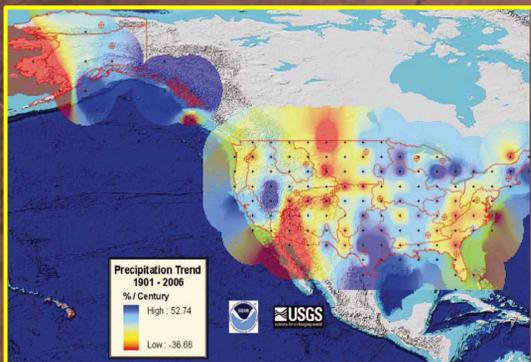


## Water and Climate

Climate change can result from a combination of human-caused and natural factors that directly affect both water quantity and quality. Some of the most significant consequences are temperature rise; sea level rise; ocean acidification; and alteration in the timing, mass and physical form of water deposition. Scientists from across the Mountain West are joining regional water, climate, and energy and environmental experts to conduct interdisciplinary R&D to discover, develop, demonstrate and communicate effective solutions to water resource and climate driven issues.



*Providing advanced modeling, analysis and information to improve the nation's infrastructure and water resource resiliency — to sustain the West's water resources in the face of a changing climate.*



# Water and Climate

The Mountain West Water Institute (MWWI) conducts research to understand and adapt to changes in water resources and the effects of climate variability. It also supports the U.S. Climate Change Technology Program by helping assess and develop national strategies and technologies, climate change policies, strategic planning, and emerging international science and technology issues. Additionally, MWWI focuses on developing tools and technologies to analyze climate, energy and water resource issues, and the potential impacts of climate change on water resources.

Idaho National Laboratory (INL), which serves as coordinating partner for the MWWI, has a long history of innovating leading-edge remote sensing and GIS methods and tools to conduct assessments related to environmental changes and to develop advance predictions of mountain snowpack runoff. INL has worked closely with NASA, the Pacific Northwest Collaboratory and the North Olympic Peninsula to develop decision support tools. These tools increase understanding of various stresses on natural resources and will help MWWI identify opportunities to minimize the impacts of increased water resource usage in the Mountain West.

MWWI's expertise also includes extensive characterization of land and water resources at various sites in Idaho and other regions of the United States. This includes characterization, modeling and managing groundwater resources, and using system dynamics models to better assess complex scientific and engineering problems, such as the dynamics associated with complex socioeconomic, energy and water resources systems and issues.

The goal of MWWI's climate change work is to collaborate with state, regional and federal agencies, universities, and other researchers and stakeholders to develop a better understanding of the probabilities, vulnerabilities and potential impacts of projected climate changes. It will also develop strategies to avoid, adapt to or mitigate negative impacts or to take advantage of positive impacts relative to water resources. Furthermore, it is MWWI's goal to conduct such evaluations in a systematic and interdisciplinary manner, and to develop a holistic understanding and comprehensive response to potential vulnerabilities and impacts on the region's water resources.

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