

Title: Shortage, Hydrology, and Uncertainty in the Colorado River Basin

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Abstract: The past 22 years of drought in the Colorado River Basin have had major impacts on system storage, and in August Reclamation declared the first ever Level 1 Shortage Condition based on a projection of Lake Mead's end-of-December 2021 elevation. In this presentation we will discuss the implications, policy, and modeling background related to the declaration. We will then reflect on the broader context of shortage and give an overview of what the Basin is experiencing in terms of drought, climate change projections, uncertainty, and upcoming planning considerations.

James Prairie, Ph.D. is a Hydrologic Engineer working for Reclamation's Upper Colorado Basin Region since 2000. He is stationed at the University of Colorado's Center for Advanced Decision Support for Water and Environmental Systems (CADSWES). Dr. Prairie leads applied research in short and mid-term operations and long-term water resource planning, climate variability, and decision support under uncertainty. He directs river basin modeling technical teams; and oversees the consumptive use, natural flow and natural salinity development programs for the upper Colorado River basin.

Dr. Prairie received his Ph.D. in Civil Engineering for the University of Colorado, Boulder and a B.S. in Environmental Resource Engineering from the State University of New York College of Environmental Science and Forestry.

Dr. Rebecca Smith is an engineer with the Lower Colorado Basin Region of Reclamation and a member of the Modeling and Research Team stationed at the University of Colorado Boulder's Center for Advanced Decision Support for Water and Environmental Systems. She coordinates the Region's Colorado River Basin Research-to-Operations Program and uses her background in Decision Making under Deep Uncertainty to contribute to planning and policy studies.