CU CEAE Hydrology Seminar 11/12/14

Future climate risks for Colorado's water: Findings and insights from the *Climate Change in Colorado* report

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In 2008, the Western Water Assessment (WWA) and the Colorado Water Conservation Board (CWCB) released the first *Climate Change in Colorado* report. Since then, a new set of global climate model results has been produced, and many new climate change studies relevant to our region have been conducted. This past August, WWA and CWCB released the updated *Climate Change in Colorado* report, which incorporates these new studies and datasets. While the key findings presented are not significantly different than in 2008, the updated report explores additional nuances of the projected future climate and hydrology. Those projections indicate that critical aspects of water supply and water use in Colorado are likely to change by mid-century, with changes in runoff timing (earlier), summer streamflow (lower), and crop water use (higher) being more certain than changes in annual streamflow. The overall uncertainties in the projected futures for the state point to the need for new approaches to risk assessment and long-term planning. In addition to the key findings of the reports, I will also share insights into the underlying datasets and methods, particularly with respect to the projections of future hydrology.

Jeff Lukas bio:

Jeff Lukas is a Research Integration Specialist with the CIRES Western Water Assessment (WWA), a NOAA-sponsored applied research program based at the University of Colorado Boulder. His diverse research and outreach activities reflect the program's broad mandate to collaborate with water resource managers and other stakeholders to better understand and plan for climate-related vulnerabilities in the Rocky Mountain West. He was lead author for the recently released *Climate Change in Colorado* report for the Colorado Water Conservation Board, synthesizing the latest science on observed climate trends and climate projections for Colorado. He has a long-running research program that uses multi-century tree-ring records to reconstruct past climate and hydrology in Colorado and the surrounding region. Jeff has a BA in Geography from the University of Colorado and an MS in Forestry from the University of Montana.