Geophysical Research Abstracts
Vol. 16, EGU2014-3071-2, 2014
EGU General Assembly 2014

On the ecohydrologic implications of changing forests, climates and societies

Scott Tyler (1), Shawn Wheelock (2), Gordon Grant (3), Cara Nadler (1), Chris Sladek (1), Matt Staudacher (5), Dave Young (4), and Paula Adkins (1)

(1) University of Nevada, Reno, Geological Sciences and Engineering, Reno, United States (styler@unr.edu), (2) USFS Lassen National Forest, Fall River Mills, United States, (3) USFS Pacific Northwest Research Station, Corvallis, United States, (4) USFS North Zone, Redding, United States, (5) USFS Shasta-Trinity National Forest ,Redding, United States

Management of forest resources in the 21st century face major challenges in the world as a result of population pressures, changing climate and changing perceptions on the role of forests in ecohydrology. In Mediterranean climates, forest management now significantly strives to reduce fire risk through reduction of fuel loads through the hot and dry summers. However, the impacts of these practices on the ecohydrologic response of forests and their biota show widely varying (in space and time) results. While tree removal at first glance, will decrease evapotranspiration and yield greater water for either runoff or infiltration; secondary impacts such as increased snow translocation/ablation and greater radiation to the snowpack may counteract these changes in the hydrologic budget. In this work, we present detailed soil, water and vegetative monitoring data from two of the most common modern forest management practices (selective thinning and group selection) in California to determine the impacts of these approaches on the annual water and energy budgets. In addition to traditional hydraulic and meteorological measurements, the site utilizes fiber-optic sensing to measure the daily evolution of snow storage, low-cost airborne photogrammetry via drones, simple remote photography, as well as wireless mesh and real time data transmission from the remote site.