



**AGU Chapman Conference Examining Ecohydrological Feedbacks of Landscape Change  
Along Elevation Gradients in Semiarid Regions**

**Boise and Sun Valley, Idaho, USA  
4 – 8 October 2009 (updated 8-31-09)**

| <b>Author</b>           | <b>Affiliation</b>               | <b>Abstract Title</b>   | <b>Presentation Type</b> |
|-------------------------|----------------------------------|---|--------------------------|
| <b>H Adams</b>          | University of Arizona            | Rapid landscape Change Along Semiarid Elevation Gradients: Ecohydrological Drivers and Temperature Sensitivity of Drought-Triggered Tree Die-off                      | Poster                   |
| <b>C Allen</b>          | (U.S. Geological Survey)         | Climate-Induced Forest Die-off: Emerging Global Patterns and Ecohydrological Feedbacks  | Oral                     |
| <b>S Archer</b>         | University of Arizona            | Ecosystem Change on Rangelands  | Oral                     |
| <b>R Armstrong</b>      | University of Saskatchewan       | Differences in Growing Season Actual Evaporation Across Climatological Gradients Within the Canadian Prairie Agricultural Region                                      | Poster                   |
| <b>A Arogundade</b>     | University of Idaho              | Comparison Between Turbulent Fluxes Measured Over Burned and Unburned Sites of a Sagebrush-Dominated Mountain   | Poster                   |
| <b>G Barron-Gafford</b> | University of Arizona            | A multiple-scale analysis of temperature and precipitation as controls over CO <sub>2</sub> fluxes across a vegetative landscape change gradient in a semiarid region | Poster                   |
| <b>D Bear</b>           | Los Gatos Research               | Recent Advances in Field Instrumentation for Rapid Isotope Measurements of Water in Streams, Precipitation, Groundwater and Ambient Air                               | Poster                   |
| <b>J Belnap</b>         | US Geological Survey             | “Eco” at the Local Scale Affects “Hydro” at the Regional Scale  | Oral                     |
| <b>H Bernard</b>        | University of Wyoming            | A Dual Isotope (13C and 18O) Approach to Infer Annual Aboveground Net Primary Production in Young Douglas-fir   | Poster                   |
| <b>G Bertoldi</b>       | Institute for Alpine Environment | Ecohydrological controls on land surface temperature along elevation gradients  | Poster                   |
| <b>P Bíró</b>           | University of Potsdam            | Ecohydrological Feedback Dynamics at Grassland-Shrubland Transitions in New Mexico? A Modelling Approach  | Poster                   |
| <b>B Bond</b>           | Oregon State University          | Does Ecohydrological Connectivity Affect Sensitivity to Environmental Variability?  | Oral                     |

|                     |   |  |        |
|---------------------|---|--|--------|
| <b>D Bowling</b>    | University of Utah                      | Carbon, Water, and Energy Fluxes of a Semiarid Utah Grassland During Multi-year Drought  | Poster |
| <b>R Brazier</b>    | University of Exeter                    | Carbon Loss due to 'Natural' Vegetation Change in Semi-arid Environments: Causes, Characteristics and Likely Implications  | Poster |
| <b>S Brenner</b>    | Boise State University                  | Hydrological Stores and Fluxes Along Elevation Gradients in the Dry Creek Watershed  | Poster |
| <b>D Breshears</b>  | University of Arizona                   | Toward a More Holistic Perspective of Wind and Water Erosion Within Ecohydrology   | Poster |
| <b>J Cable</b>      | University of Alaska                    | Ecohydrological feedbacks in subarctic and arctic ecosystems: deep soil water buffers ecosystems from climate variability  | Poster |
| <b>D Chandler</b>   | Kansas State University                 | *Infiltrability Response to Vegetation and Fire Across a Sage-Steppe Catchment*  | Poster |
| <b>J Cleverly</b>   | University of New Mexico                | Ecohydrology of groundwater-dependent, semi-arid riparian ecosystems: restoration, fire, and energetics  | Poster |
| <b>P D'Odorico</b>  | University of Virginia                  | Tree root profiles along the Kalahari rainfall gradient  | Poster |
| <b>T Dawson</b>     | University of California, Berkeley      | Ecohydrological Consequences of Landscape Changes for California's Redwoods: Latitudinal Gradients as Proxies for Elevation, Precipitation and Future Climate Change | Oral   |
| <b>J Dozier</b>     | University of California, Santa Barbara | The Hydrologic Cycle and the Color of Snow   | Oral   |
| <b>D Dean</b>       | Texas A&M University                    | Rainfall and Runoff Dynamics of a Forested Coastal Wetland   | Poster |
| <b>C Duffy</b>      | Pennsylvania State University           | Critical Zone Hydrology  | Oral   |
| <b>D Eamus</b>      | University of Technology                | Functional Convergence in Tree Water use Across Ecosystems: Results of a Comparative Study Using a Multiple Site Comparison and a Modified Jarvis-Stewart Model      | Oral   |
| <b>C Ellis</b>      | University of Saskatchewan              | Sensitivity of Radiation to Snow in Rocky Mountain Coniferous Forests  | Poster |
| <b>J Ehleringer</b> | University of Utah                      | Land-use Change Impacts will Predominate Over Environmental Gradients in the Ecohydrology of Most Semi-arid Ecosystems   | Oral   |
| <b>R Essery</b>     | University of Edinburgh                 | Improving Modeled Snowmelt Energetics in Semiarid Shrub Landscapes Through a Better Representation of Vegetation Characteristics                                     | Poster |

|                      |                                     |   |        |
|----------------------|-------------------------------------|---|--------|
| <b>S Fernald</b>     | New Mexico State University         | Juniper Density Reduction Effects on Soil Moisture in Central New Mexico: Implications for Climate Thresholds of Water Availability   | Poster |
| <b>J Finzel</b>      | University of Idaho                 | Long term Inter-annual Variability of Vegetation Production   | Poster |
| <b>G Flerchinger</b> | Northwest Watershed Research Center | Comparison of Energy and Carbon Fluxes of Sagebrush and Aspen Canopies within a Small Mountainous Catchment   | Poster |
| <b>A Flores</b>      | Boise State University              | Assimilation of Anticipated L-band Microwave Observations for Hillslope-scale Soil Moisture Estimation in Semiarid Landscapes: The Importance of Topography and Soils                           | Poster |
| <b>A Fox</b>         | University of New Mexico            | Linking Ecosystem Scale Vegetation Change to Shifts in Water and Carbon Cycling: the Consequences of Widespread Piñon Mortality in the Southwest.   | Poster |
| <b>A Frankl</b>      | Ghent University                    | Analyzing Long-Term Gully Erosion Evolution and Environmental Change in North Ethiopia's Semi-Arid Mountains  | Poster |
| <b>T Franz</b>       | Princeton University                | Prediction of Regional Woody Species Distribution Patterns in the Drylands of the Central Kenyan Highland   | Poster |
| <b>M Germino</b>     | Idaho State University              | Feedback relationships between plant community composition and soil hydrology: results from a long-term experimental manipulation of amount and timing of precipitation in cold desert of Idaho | Poster |
| <b>I Geroy</b>       | Boise State University              | Factors Influencing Soil Moisture at the Hillslope Scale in a Semiarid Mountainous Environment  | Poster |
| <b>S Good</b>        | Princeton University                | Modeling the Ecohydrology of Vegetation Succession Patters With Plant Functional Groups in Heterogeneous Landscapes   | Poster |
| <b>D Goodrich</b>    | Southwest Watershed Research Center | Ecological Valuation: A Framework for Applications in the Semiarid Southwest  | Poster |
| <b>C Gunning</b>     | University of New Mexico            | Time-Frequency Visualization of Diel Riparian Groundwater Fluctuations using Wavelets   | Poster |
| <b>P Gupta</b>       | Picarro, Inc                        | Real-time Measurements of Water Vapor Isotopes Using Cavity Ring Down Spectroscopy: A Short Study of the Impact of Precipitation Gradients on Vegetation  | Poster |
| <b>A Guswa</b>       | Smith College                       | Spatial Variability of Throughfall and Implications for Root Architecture   | Poster |

|                           |   |  |        |
|---------------------------|---|--|--------|
| <b>H Gutiérrez-Jurado</b> | New Mexico Institute of Mining and Technology | Topographic and Vegetation Feedbacks on the Ecogeomorphic and Radiation Properties of a Semiarid Basin with Contrasting Ecosystems   | Poster |
| <b>W Gwenzi</b>           | The University of Western Australia           | Complex Temporal Dynamics of Vegetation in Water-limited Ecosystems Caused by Multiple Ecohydrological Feedbacks   | Poster |
| <b>C Hale</b>             | Oregon State University                       | Discerning the Influence of Landscape Position on Forest-Stream Connections in Pacific Northwest Headwater Catchments  | Poster |
| <b>B Janzen</b>           | Idaho State University                        | Responses of Community Cover, Diversity, and Species Assemblages to Long-Term Changes to Seasonal Precipitation in Sagebrush Steppe Communities                                | Poster |
| <b>G D Jenerette</b>      | University of California Riverside            | Ecosystem Metabolism Along a 3000m Elevation Gradient in Southern California: Interactions Between Continuous Climate Gradients and Discrete Community Patches                 | Poster |
| <b>M Johnson</b>          | University of British Columbia                | Integrating Streamwater and Eddy Covariance-based Measurements of Carbon and Aater Fluxes for a Douglas-fir Headwater Catchment in Coastal British Columbia                    | Poster |
| <b>J Johnson</b>          | The University of Texas at Austin             | Feedbacks Between Hydrology and Gully Headwall Erosion in a Discontinuous Arroyo Network, Southeast Arizona: Insights From Field Monitoring Using a Wireless Sensor Network    | Poster |
| <b>K Kavanagh</b>         | University of Idaho                           | Topographical Influences on Nocturnal Transpiration in Mountainous Forests   | Poster |
| <b>P Kirchner</b>         | University of California, Merced              | Snowmelt Processes in Southern Sierra Nevada Red Fir Forests   | Poster |
| <b>M Kumar</b>            | Pennsylvania State University                 | Exploring the Effects of Topography and Vegetation on Streamflow and Aquifer Response in a Mesoscale Watershed   | Poster |
| <b>D Law</b>              | University of Arizona                         | Water Use Efficiency of Gambell's Oak in a Semi-arid Ponderosa Pine Forest: Partitioning Between Transpiration and PhotoSynthesis Changes Along Spatial and Temporal Gradients | Poster |
| <b>C Lai</b>              | San Diego State University                    | Water Isotope Ratios of Atmospheric Vapor in Forests: Effects of Air Entrainment and Rain Evaporation with Low Deuterium-Excess  | Poster |
| <b>H Lavee</b>            | Bar-Ilan University                           | Ecogeomorphic Trends and Thresholds Along Climatic Transects   | Poster |
| <b>A Liljedahl</b>        | University of Alaska Fairbanks                | Evapotranspiration at an Arctic Coastal Desert Wetland, Barrow, Alaska   | Poster |
| <b>T Link</b>             | University of Idaho                           | A Sensitivity Study of Radiant Energy During Snowmelt in Non-Uniform Forests   | Poster |

|                    |   |  |        |
|--------------------|---|--|--------|
| <b>M Litvak</b>    | University of New Mexico                | Determining the sensitivity of New Mexico biomes to predicted climate change scenarios of the Southwest                        | Poster |
| <b>C Luce</b>      | USDA                                    | Declining Annual Streamflow Distributions in the Pacific Northwest United States, 1948-2006                                    | Poster |
| <b>M Madsen</b>    | Brigham Young University                | Influence of Post-fire Soil Water Repellence and Simulated Rainfall Regimes on Revegetation Success                            | Poster |
| <b>D Marks</b>     | Northwest Watershed Research Center     | Changes in Snowmelt Runoff   | Oral   |
| <b>A McDonald</b>  | Texas A&M University                    | Understanding the Importance of Small Scale Hydrologic Variability to Successful River Management                              | Poster |
| <b>G Miller</b>    | Texas A&M University                    | Upscaling Sap Flow: Observations From a Pilot Study and Implications for Transpiration Measurement Across a Gradient           | Poster |
| <b>H Moussa</b>    | Universiti Sains Malaysia               | 2D Electrical Resistivity Arras to Predict Slope Failure in USM Campus, Penang, Malaysia                                       | Poster |
| <b>N Neupane</b>   | Tribhuvan University                    | Quality Assessment, Reserve Estimation & Economic Analysis of Roofing Slate in the West Central Lesser Himalaya-Nepal          | Poster |
| <b>J Nyssen</b>    | Ghent University                        | Hydrological Response of Catchment Management in the North Ethiopian Highlands   | Poster |
| <b>F O'Donnell</b> | Princeton University                    | Soil CO <sub>2</sub> Fluxes Following Wetting Events: Field Observations and Modeling  | Poster |
| <b>G Orkin</b>     | University of California, Los Angeles   | Connectivity and Ecohydrological Feedbacks in Desertification  | Oral   |
| <b>L Pangie</b>    | Oregon State University                 | Thresholds and Feedbacks Between Rainfall, Soil Moisture, Evapotranspiration, and Groundwater Recharge: A Microcosm Experiment | Poster |
| <b>D Pataki</b>    | University of California, Irvine        | Linking ecology, hydrology, and decision-making in semi-arid cities  | Oral   |
| <b>J Pomeroy</b>   | University of Saskatchewan              | Snow-vegetation Interactions in Cold Regions Mountain Environment  | Oral   |
| <b>M Poulos</b>    | Boise State University                  | Microclimate Controls on Slope Angles in the Idaho Batholith   | Poster |
| <b>S Ravi</b>      | University of Arizona                   | Resource Redistribution Patterns Induced by Rapid Vegetation Shifts and Their Impacts on Desertification                       | Poster |
| <b>M Reba</b>      | ARS-Northwest Watershed Research Center | A 25-year Dataset for Hydrologic Modeling from a Semiarid Research Watershed-Reynolds Creek Experimental Watershed             | Poster |
| <b>K Rebel</b>     | Utrecht University                      | Linking Hydrology and Biogeochemistry to Assess the Impact of Lateral Nutrient Fluxes  | Poster |

|                   |                                     |   |        |
|-------------------|-------------------------------------|---|--------|
| <b>D Ren</b>      | The University of Texas at Austin   | Prediction of Yangjiashan Creeping Slope's Next Landslide Cycle   | Poster |
| <b>R Scott</b>    | Southwest Watershed Research Center | Ecohydrological Consequences of Woody Plant Encroachment in Bottomland and Upland Locations of the Sonoran Desert   | Poster |
| <b>M Seyfried</b> | USDA-ARS                            | Soil Water Content and Global Change Across an Elevation Gradient at Reynolds Creek, Idaho  | Poster |
| <b>K Smettem</b>  | University of Western Australia     | Ecohydrological Trends Across a 1000mm Rainfall Gradient in Southwestern Australia  | Oral   |
| <b>T Smith</b>    | Boise State University              | Using Soil Moisture Trends Across Topographic Gradients to Examine Controls on Ecosystem Dynamics in a Semi-arid Watershed  | Poster |
| <b>A Springer</b> | Northern Arizona University         | Role of Large-Scale Forest Restoration Treatments on the Ecohydrology of Semi-Arid Catchments   | Poster |
| <b>Z Sun</b>      | China University of Geosciences     | Stable Hydrogen and Oxygen Isotopes in Precipitation in Linze, Northwestern China: Influence of Local Moisture Recycling and Secondary Evaporation                          | Poster |
| <b>A Swallow</b>  | University of Wyoming               | Hydrologic Impacts of Vegetation Treatments Within Bates Creek Watershed, Wyoming   | Poster |
| <b>M Tu</b>       | Texas A&M University                | Runoff and Erosion Dynamics on Semi-arid Rangelands in Central Texas: Influence of Scale and Disturbance  | Poster |
| <b>L Turnbull</b> | Arizona State University            | A Theoretical Approach to Urban Ecohydrology: Incorporating the Role of Humans as Engineers of Ecosystem Change   | Poster |
| <b>S Tyler</b>    | University of Nevada                | Headwater Catchments: Linking Aquatic Ecology, Hydrology and Habitat Recovery in a Changing Climate   | Poster |
| <b>A Tyler</b>    | University of Arizona               | Effects of Annual and Ephemeral Plants on Carbon and Water Cycling in a Riparian Ecosystem and a Sonoran Desert Upland  | Poster |
| <b>J Villegas</b> | University of Arizona               | Evapotranspiration Partitioning Along Gradients of Tree Cover: Ecohydrological Insights From Experimental Evaluation In The Biosphere 2 Glasshouse Facility                 | Poster |
| <b>E Vivoni</b>   | Arizona State University            | Catchment Patterns and Controls on Soil Moisture and Evapotranspiration in a Mountainous Basin within the North American Monsoon Region                                     | Poster |
| <b>L Wang</b>     | Princeton University                | Refining the Partitioning of Evapotranspiration as a Function of Woody Plant Cover Continuous Stable Isotope Monitoring Provides Bridge from Glasshouse to Field Conditions | Poster |

|                     |  |   |        |
|---------------------|--|---|--------|
| <b>J Wainwright</b> | Arizona State University                     | Ecohydrological Interactions During Vegetation Change in the Southwestern USA   | Poster |
| <b>C Watts</b>      | Universidad de Sonora                        | Effects of latitudinal gradient in surface characteristics over the North American Monsoon core region                          | Poster |
| <b>M Weiler</b>     | Albert Ludwigs University of Freiburg        | On the Scaling of Snow Processes: Can Tiny Beetles Alter Watershed Hydrology?   | Oral   |
| <b>B Wilcox</b>     | Texas A&M University                         | Woody Plant Encroachment Paradox: Rivers Rebound as Degraded Grasslands Convert to Woodlands                                    | Poster |
| <b>D Williams</b>   | University of Wyoming                        | The Isotopic Signature of Water Vapor, Leaf Water and Transpiration in Mixed Conifer Forest                                     | Poster |
| <b>J Williams</b>   | USDA-ARS Northwest Watershed Research Center | Hydrologic Impacts of Soil Water Repellency on Fine- to Coarse-Textured Soils of Wooded Shrublands and Shrub-Steppe Communities | Poster |
| <b>A Winstral</b>   | USDA-ARS Northwest Watershed Research Center | Modeling Wind Speed and Snow Accumulation Gradients Over Complex Terrain From Typically Collected Meteorological Data           | Poster |
| <b>M Young</b>      | Desert Research Institute                    | Near-Surface Water Content and Carbon Flux in Biological Soil Crust   | Poster |
| <b>C Zou</b>        | Oklahoma State University                    | Woody Plant Encroachment and Water Cycle in Mesic Great Plain Grassland   | Poster |