SAHRA NSF Science and Technology Center for Sustainability of semi-Arid Hydrology and Riparian Areas
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Ephemeral Flow

A NEWSLETTER ABOUT SAHRA
2008, no. 4

Welcome to the fourth 2008 issue of Ephemeral Flow, *a newsletter for sharing information within the SAHRA community.* Ephemeral Flow *is sent to SAHRA researchers, staff, and students at all participating institutions every few months. Your contributions and suggestions are always welcome. Please send items to Mary Black at mblack@sahra.arizona.edu.*

FEATURES

Sabino Canyon Invaded!

Arundo donax, the lovely but havoc-wreaking giant cane, has infested Sabino Canyon, north of Tucson. The plant is rapidly encroaching on the banks of the lower canyon, aided by disturbances in the watershed from the Aspen Fire of 2003 and dramatic debris flows in 2005. You can help eradicate this menace! SAHRA participants who live in the Tucson area are invited to join this effort, which is being coordinated by SAHRA's own **Jim Washburne**, Associate Director for Education.

The Arundo Project is seeking volunteers to clear stalks and dig up or destroy the plant's rhizomes. Two workdays already held in November attracted around 50 participants each. New "Golden Days" workdays are scheduled for 8:00 am to noon on the first Sundays in December and January. Workdates for groups of four to six volunteers can also be arranged on a date you select.

Partners in this project are SAHRA, Master Watershed Stewards, Sabino Canyon Volunteer Naturalists, Friends of Sabino, and the U.S. Forest Service. Visit *www.sahra.arizona.edu/education2/arundo* for more information or contact Jim at *jwash@hwr.arizona.edu.*

Arundo donax stands (too) tall in Sabino Canyon.

UPCOMING EVENTS

Dec. 1-5, 2008: *International Conference on Water Scarcity, Global Changes, and Groundwater Management Responses, Irvine, CA*

Dec. 15-19, 2008: *AGU Fall Meeting, San Francisco, CA*

CONTACT US!

Please let us know when you have news to share or a reason to brag. Students, let us know for example when you have completed your oral exam, defended your thesis/dissertation, or accepted a position in the real world (or even academia). Faculty members, are you offering a new course, hosting a workshop, leading a panel, editing a new journal? Anonymous or second-party tips on newsworthy announcements are also gratefully accepted.

Send comments, information, suggestions to mblack@sahra.arizona.edu.

AWARDS AND HONORS

Jacobs to Chair National Academies Panel

Kathy Jacobs, SAHRA's Associate Director for Science Implementation and Director of the Arizona Water Institute, has been appointed to the prestigious National Academies' Committee on America's Climate Choices. The group's formation was mandated by the U.S. Congress to provide advice on actions and strategies the United States can take on issues related to global climate change. Jacobs will also chair the Panel on Adapting to the Impacts of Climate Change. SAHRA External Advisory Board member **Diana Liverman** has also been appointed to the committee. She will be returning to the UA after five years at the University of Oxford to co-direct with Jonathan Overpeck the new Institute for the Environment and Society. More information is at *americasclimatechoices.org*.

RESEARCH

Another Very Special Issue

The new journal *Ecohydrology* has published a special issue (vol. 1, no. 3) focusing on SAHRA's mountain ecohydrology research on how changes in vegetation affect basin-scale water balance and water availability. The studies address: 1) the role of vegetation in the partitioning of precipitation into evaporation, sublimation, transpiration, soil moisture, streamflow and recharge; and 2) how to represent process understanding obtained at the plant or plot scale, at the scale of catchments or basins. The issue was edited by **Paul Brooks** and **Enrique Vivoni** and includes the following contributions:

- Mountain ecohydrology: Quantifying the role of vegetation in the water balance of montane catchments – Paul Brooks and Enrique Vivoni
- Transpiration and stomatal conductance across a steep climate gradient in the southern Rocky Mountains – Nate McDowell, Sandra White, Will Pockman
- Comparison of soil moisture and meteorological controls on pine and spruce transpiration – Eric E. Small, Joseph R. McConnell
- Monitoring the timing of snowmelt and the initiation of streamflow using a distributed network of temperature/light sensors – Steve Lyon, Peter Troch, Patrick Broxton, Noah Molotch, Paul Brooks
- Vegetation controls on soil moisture distribution in the Valles Caldera, New Mexico, during the North American monsoon – Enrique Vivoni, Alex Rinehart, Luis Méndez-Barroso, Carlos Aragón, Gautam Bisht, M. Bayani Cardenas, Emily Engle, Barton Forman, Marty Frisbee, Hugo Gutiérrez-Jurado, Song-ho Hong, Taufique Mahmood, Kinwai Tai, Robert Wyckoff
- Seasonal and interannual variation of streamflow pathways and biogeochemical implications in semi-arid, forested catchments in Valles Caldera, New Mexico – Fengjing Liu, Robert Parmenter, Paul Brooks, Martha Conklin, Roger Bales
- Effects of vegetation, albedo, and solar radiation sheltering on the distribution of snow in the Valles Caldera, New Mexico – Alex Rinehart, Enrique Vivoni, Paul Brooks
- Evaluation of distributed soil moisture simulations through field observations during the North American monsoon in Redondo Creek, New Mexico – Taufique Mahmood, Enrique Vivoni.

Additional papers by Noah Molotch et al. and Will Veatch et al. are forthcoming in the journal. Well done, all!

KT NEWS

What's in a Phenophase? A Rose by Any Other Name…

SAHRA will use its expertise in citizen-scientist projects, forged from the wildly successful RainLog.org, to help the **National Phenology Network** (NPN) achieve its goal of establishing a continental-scale network of phenological observations of selected native plant species and widely cultivated indicator plants. Phenology is the study of plant and animal life cycle events and how they are influenced by seasonal and interannual variations in climate. NPN aims to involve citizen scientists in making and recording regular observations of up to 200 plant species at 40,000 sites, which in many cases will be plain old backyards. Headquartered at the University of Arizona, NPN also involves researchers and programmers at Oak Ridge National Laboratory and Yale University. With project management by **Ramon Vazquez**, SAHRA is working on the registration interface for participants and sites, web content, and data visualization.

Anyone can enjoy observing and recording a phenophase!

R&R

Where Are They Now? Dept.

Former SAHRA education program coordinator **Melissa Higgins** reports from Fresno that she is now working as the sole GIS person for the Bureau of Reclamation's south central region (most of the area from the Pacific Coast to Nevada, roughly bounded on the north by Sacramento and on south by Santa Barbara) and in the office's water conservation program. Melissa writes that "…water issues in the Central Valley are very interesting. Just like in Arizona, there is incredible tension between the irrigators and the environmentalists. One of the largest and most contentious projects in our region is the San Joaquin River Restoration Program. After an 18-year lawsuit, the Bureau is now working to restore a currently dry stretch of the San Joaquin River with the ultimate goal of restoring the salmon populations. Apparently restoring salmon populations this far south on other rivers in California has proved quite challenging in the past!" We wish her much success.

Matt Weber, who received his Ph.D. from the UA in 2007, is moving from a position at EcoTrust, a nonprofit in Portland, Oregon, to a postdoc as an economist for EPA's National Risk Management Research Laboratory. Through special arrangement, he will be based at the National Health and Environmental Effects Research Laboratory in Corvallis. Matt will focus on ecosystem services, splitting his attention between the Willamette River in Oregon and the familiar San Pedro in Arizona. We are already beginning to see more of his smiling face!

Former confirmed bachelor **Kyle Carpenter,** who left his indelible mark on SAHRA from 2000 to 2007, entered into a life of marital bliss on October 11, when he married UA HWR MS graduate Laura Lindenmeyer. The two were wed at the scenic Keyways Vineyard and Winery in Temecula, California, and left soon thereafter for a honeymoon in Fiji. They send greetings to all their old friends.

First dance for Mr. and Mrs. Carpenter.

PEOPLE

New Graduates

On October 15, **Patrick Broxton** successfully defended his thesis, "Understanding the importance of aspect on mountain catchment hydrology: A case study in the Valles Caldera National Preserve, NM," and will receive his MS at the UA in December. Patrick is on a roll, having just received word that he has won a prize in CUAHSI's first Hydrograf(x) Visualization competition. The competition aims to foster greater understanding and appreciation of hydrologic science while allowing graduate students to present the results of their research in a nontraditional format and to audiences that they would not regularly reach.

Caitlan Zlatos also will receive her MS in hydrology from the UA in December. Her thesis, "Using geochemical tracers to determine aquifer connectivity, flow paths, and base-flow sources: Middle Verde River Watershed, Central Arizona" was completed under the able mentorship of Tom Meixner and James Hogan. Caitlan is looking forward to stepping out of academia and into the "real world." Amen to that. Congratulations, Caitlan!

The SAHRA administration and Ephemeral Flow staff send best wishes to all for a happy holiday season and a healthy, prosperous new year.

SAHRA