



NORTHERN ARIZONA
UNIVERSITY

Ecological Restoration Institute



Restoration News

Fall 2010

Reports from the Field

The Ecological Restoration Institute Ecological Research Unit had a busy summer field season in 2010. Here are reports from some of this year's field research trips.

Barney Springs—Mike Stoddard

Barney Springs, which is a privately owned property located south of Flagstaff along the Mogollon Rim, is unique because of the unharvested, old-growth ponderosa pine stand found there. Given this rare opportunity to study a relatively pristine forest, an ERI research team set out to explore the spatial arrangement of old-growth ponderosa pine to determine whether ponderosa pine actually do grow in distinct groups. We also wanted to determine the age distribution of the trees and see if big trees are really old trees (a recurring question in the ongoing diameter cap debate). The team of Mike Stoddard (team leader), Eryn Schneider, Ashlee Simpson, Isaac Bickford, Chris Adakai, Alicia Formanack, and Avianna Acid set up a basic research grid and measured ponderosa pine trees at the 160-acre site. The team found many large, old trees--roughly 57 trees per acre that were at least 14.75 inches in diameter. Most of these trees were fairly tall, ranging from

Alumni News

By Robin Long



The ERI family welcomes a new baby! **Jason Jerman** (BS Forestry '02) and his wife are now the proud parents of a baby girl, Valerie Lynnae Jerman, born May 24th. He writes, "Much less importantly, I've accepted a job on the Coeur d'Alene River Ranger District as their silviculturist." Congratulations to Jason and his family.

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55 feet to 148 feet, with an average height of about 82 feet. Definitely, some of the tallest ponderosa pines I have measured! In order to follow-up on this initial baseline work, the ERI and NAU are discussing with the owner, Phoenix businessman, Warren Smith, about the possibility of using the site for multiple restoration experiments. You can read more about the Barney Springs Project [here](#).

Sudden Aspen Decline Research—Isaac Bickford

Various teams of NAU Forestry graduate student researchers (Tom Zegler, Mary-Bridget Nowicki) and ERI staff and students (Susan Nyoka, Robin Long, Isaac Bickford, Mark Daniels, Justy Leppert, Patrick Shin, Alicia Formanack, Jeremy McWhorter, Zac Timmons, Kelcey Adelmeyer, Zach Bastrow, Taylor Orriss, and Chris Adakai) visited 21 high-elevation sites and eight low-elevation sites west of Flagstaff to study the regional phenomenon known as sudden aspen decline or SAD. High-elevation sites were located on Bill Williams Mountain, Sitgreaves Mountain, Kendrick Mountain, and the tops of Government Mountain and Government Hill. Low-elevation sites were located south of Williams and north of Parks. The team worked cheerfully and diligently to collect high-quality data despite long hikes to the research sites (up to 10 miles per day), snow on the plots, and bear sightings. They also had the best seats in the house for viewing the mid-June Eagle Rock Fire on Sitgreaves Mountain, which was first spotted by Patrick Shin. They were able to see the fire grow from a single point to more than 800 acres by Wednesday evening, when they decided to leave the field to escape the risk of road closures.



Various members of the Aspen Trip field crew: (clockwise from the upper right): Isaac Bickford, Mary-Bridget Nowicki, Kelcey Adelmeyer, Alicia Formanack, Zach Bastrow, Tom Zegler, Taylor Orriss, and Chris Adakai.

Aspen Fire Scar Research—John Paul Roccaforte

The team of John Paul Roccaforte, Walker Chancellor, Megan Nasto, Katelynn Jenkins, Taylor Orriss, and Joe Smithson had a successful outing collecting fire scars from 13 aspen sites on the South Kaibab National Forest. In all, the team collected 109 fire-scarred samples mostly from



This summer brought another sweet little girl with the arrival of Sena Rae Stoddard born on July 10th to **Mike** (MS Forestry '06) and **Juliana (Suby) Stoddard** (B.A. Spanish/International Affairs '03). Everyone is doing well and Sena makes guest appearances at ERI functions to much fanfare. Mike says fatherhood is "dreamy." Does that mean he's not getting enough sleep?



Jenny Hartman (BA International Affairs '08) checks in from Flagstaff where she had been working as an advocate at Northland Family Help Center, a domestic violence shelter, until resigning to volunteer with Amigos de las Américas. She just returned from an 11-week trip to Nicaragua as a project supervisor for AMIGOS, where she led volunteers in community-based development and environmental education projects. A surprise awaited her when fellow ERIer, **Bobby Benedetto** (BS Engineering student),

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ponderosa pines, but also a few white pines. A sample from the Mud Seen Tank site had about 30 fire scars; most samples had an average of eight scars. The crew did some crazy hikes and carried some heavy equipment up and down steep slopes.



John Paul Roccaforte (left) and Walker Chancellor collecting fire scars



The crew from left to right: Megan Nasto, John Paul Roccaforte, Taylor Orriss, Katelynn Jenkins, Joe Smithson, Walker Chancellor.

Pinyon-Juniper Wildfire Studies—Dave Huffman

ERI research teams made four trips to the Tusayan District of the Kaibab National Forest to study the long-term responses of pinyon-juniper ecosystems to wildfire. The researchers are particularly interested in vegetation development following wildfire; the dynamics of coarse, woody material (dead trees); and the importance of coarse wood in providing “safe sites” for tree regeneration.

The Trip 2 Team, led by Joe Crouse, included



Niki Steffens (BS Forestry '08) Niki has been busy as ever. Last summer and this summer she worked for the U.S. Forest Service. In 2009, she worked out of Norwood, Colorado as a biological sciences technician spraying weeds on the Uncompahgre National Forest. This summer she worked as a forestry tech on the Tongass National Forest, where she helped repair and improve the Perseverance Trail. During the winter season, Niki heads south to work at a resort in Telluride.



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RSS Megan Nasto, Taylor Orriss, and Zac Timmons. This team measured ten plots for tree sizes and conditions; amount of woody, surface fuel; number of tree seedlings; and association between young trees and coarse wood. Four plots were in a moderately old fire (60-100 yrs), five plots were located where fire has had minimal occurrence for a few centuries, and one plot in an older fire (100-150 yrs). The trip not only included hard, sometimes repetitive, work but good meals and conversation around the campfire, seeing antelope and elk, hearing coyotes, and watching the sunset at Shoshone Point in Grand Canyon National Park.

Trip 3, which was led by Mike Stoddard, included the team of Avianna Acid, Katelynn Jenkins, Brian Moss, and Tyler Wade. They installed and completed measurements on five sample plots inside the area burned by the 1960 Dillman Fire; completed measurements on two sample plots in the Red Butte East Fire area, which burned about 1900; and completed measurements on one sample plot at the Griffin Fire Control. In addition, they enjoyed the company of cedar gnats ("no-see-ums"), had fantastic dinners (thanks Avi!), observed enormous cliffrose, discovered pictographs, and enjoyed views of the Eagle Rock Fire.

The researchers completed their work near Tusayan during Trip 4 and then spent the rest of the trip working in the San Francisco Peaks. By the end of Trip 4, they added the following sites to the ERI's PJ fire chronosequence study: Tusayan District--Griffin Fire (2006), Dillman Fire (1960), 'Red Butte West' (ca. 1930), 'Red Butte East' (ca. 1900), Griffin Fire Control (no significant fire ~200-300 yrs.), and Red Butte Control (no significant fire ~200-300 yrs.).



Young sapling emerging under the protection of coarse, woody material.

Mt. Trumbull Understory Report—Judy Springer

There were two trips to Mt. Trumbull this summer to study the effects of previous restoration treatments on the understory. Joining me on the first trip in late May were Mark Daniels, Justy Leppert, Brian Moss, Kristen Shive, Ashlee Simpson, Mike Stoddard, Jason Vignochi, and Yolanda Williams. This team of researchers revisited 108 of

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Barb Storn (MS Forestry '01) is our most far-flung alum to write to us for this

newsletter. She lives in beautiful Portland, Maine, where she works for L.L. Bean. Barb provides market analysis as well as GIS to support retail store site selection and retail trade area definitions. She volunteers with The Nature Conservancy on prescribed burns in pitch pine/scrub oak ecosystems. But the most interesting news is that she's taken up American Tribal Style bellydancing!



That **Randi Walker** (BS Advertising '10) is always up to something! Here she is as Ranger Randi teaching education camps at Montezuma Castle and Montezuma Well this summer. During the school year, Randi teaches 4th graders at Chino Valley and says she has been blessed with an amazing group of kiddos.



Steven Martin (BS Biology '04) writes that the Martin family now resides in Dallas, Texas where he is the Division Manager for Trutech Inc. in Texas responsible for Texas and soon Oklahoma and Arizona. Steven

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30 plots that ERI staff and students installed, in cooperation with BLM personnel, at Mt. Trumbull in 1997 and 1998. These blocks were thinned and burned in 1999 and 2000, and then received a second re-entry burn in 2007. Post-treatment data was last collected in 2005. The team found that the shrub community in a treated plot in Experimental Block 1 (EB1) was responding nicely with vigorous growth of *Amelanchier utahensis* (Utah serviceberry), *Artemisia tridentata* (big sagebrush), *Ribes cereum* (gooseberry), and a healthy mat of *Ceanothus fendleri* (buckbrush). We found very few non-native species.



Mt. Trumbull EB1

In nearby EB2, the researchers discovered quite a contrast between the treated and control portions of the experimental block (see photos). Dense stands of small-diameter ponderosa pine remain in the control plots, while the treated plots have released ponderosa pine, *Quercus gambelii* (Gambel oak), *Robinia neomexicana* (New Mexico locust), and *Bromus tectorum* (cheatgrass). Ground-disturbing gophers are also prevalent in the treated block.



Mt. Trumbull Experimental Block 2, Treated

anyone who likes reptiles. He's a picture of him holding one of 31 rattlesnakes removed from a commercial property where the snakes had denned under a storage container. He reports that his sons are the best of buds and love to do anything with daddy, especially fishing.



And finally, wedding bells continue to ring for ERI couples.....



Brandon Oberhardt (B.S. Photography '03) married Stacey Marlatt on a fall October weekend up in the Peaks. It was a glorious outdoor wedding at a remote cabin. In a neat ERI twist (this is so Flagstaff), the happy couple was married by your correspondent's husband, Pastor Bob Norton, giving me a front row seat to the happy event!



Mt. Trumbull Experimental Block 2, Control

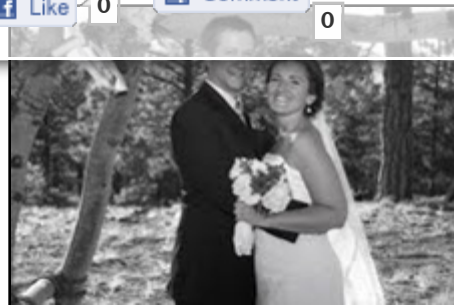
Part of the team, while on an evening hike, talked with a turkey hunter from Show Low while he was eviscerating a large gobbler. He told them that he admired the restoration research they were conducting and that they are his "heroes" for working to protect the forests of northern Arizona—a really quite gratifying comment.

The team for the second trip included Judy Springer, Mark Daniels, Marissa Joe, Justy Leppert, Chris McGlone, Taylor Orriss, and Jason Vignochi. We completed understory measurements on the remaining EB plots and spent the final day collecting trait data on several species of plants, assisted the overstory crew (see below), and helped Chris Erickson (NAU Forestry grad student) find some elusive ecosystem monitoring plots. The data collected this summer at Mt. Trumbull will be combined with data from Grandview (South Rim) and Fort Valley (near Flagstaff) to create a multi-site analysis of understory responses to restoration treatments in ponderosa pine forests.

Mt. Trumbull Overstory Studies—John Paul Roccaforte

ERI crews made two trips to Mt. Trumbull to remeasure the overstory following restoration treatments. The crew Trip 3 consisted of John Paul Roccaforte (trip leader), Joe Crouse, Madison Daniels, Taylor Orriss, Joe Smithson, and Kelsey Adelmeyer. NAU Forestry graduate student, Chris Erickson, and several of the ERI botanists also helped out. We remeasured 72 EB plots in EB1 and EB2 for tree diameters, conditions, dwarf-mistletoe rating, crown base height, regeneration and shrub inventories, and fuel loading. In addition, we took two reference photos at each plot. The treated units look good in terms of overstory tree survival.

During Trip 4 to Mt. Trumbull, the crew of John Paul, Justy Leppert, Isaac Bickford, Karin Kralicek, Patrick Shin, and Steve Booher, along with help from Chris Erickson, continued the monitoring work on the EB plots. Joe Seidenberg and I finished up the overstory remeasurements in late September.



Finally, we called it the "ERI wedding of the century" when **Chris Sorensen** (BS Forestry '08 and MS Forestry '10) and **Jen Tsonis** (BS Forestry '07) tied the knot in June at a lovely outdoor ceremony presided over by Dr. Thom Alcoze (NAU School of Forestry). Of course, the wedding served as a mini ERI reunion, too! Chris and Jen moved to Twain Harte, California. Chris works as a forest planner with the Stanislaus National Forest, while Jen serves as the interim fire program coordinator for the NAU School of Forestry.

ERI "Let's Restore" wins four Emmy Awards!

By Krista Coquia



Saturday, October 9 the Public Service Announcement "Let's Restore," featuring NAU Regents' Professor and ERI Executive Director Wally Covington, along with ERI researchers and students, won four Rocky Mountain Emmy awards in Phoenix. The ERI 'commercial' played in Flagstaff's Harkins Theaters last winter and was televised on Fox Sports and northern Arizona cable channels throughout the year.

The spot produced by the ERI and NAU Television Services received emmy awards in four categories: best photography (Jerry Anderfuren), best post-production directing, best editing and best audio (Jesse Vaughan). The ERI production team included Jerry Anderfuren, Chris Boyes, Bonnie Stevens

The Rocky Mountain Southwest Chapter of the National Academy of Television Arts and Sciences is a membership organization dedicated to excellence in television by honoring exceptional work through the prestigious Emmy® Award. Each year, the NATAS Chapters across the country recognize and reward excellence in their broadcasting communities. For more than 30 years, the Rocky Mountain Southwest Chapter has done this through the annual Rocky Mountain Emmy Awards.

In the spring of each year, the Chapter sends out a Call for Entries, encouraging broadcasters throughout the region to submit their best work to be considered for nomination. Those pieces are sent to another Chapter to be judged. Each entry is judged individually on its own merit against a standard of excellence. The Emmy statuette symbolizes the excellence for which we all strive. [Watch the video](#)



Abundant Gambel oak and New Mexican locust regeneration in the EB4 treatment.



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