REGAINING LOST GROUND

ECOLOGICAL

SUMMER 2003 NEWS

Governor and Researchers Stress Need for Urgent Forest Restoration

Saying we are at a critical decision point for reducing the threat of unnatural fire to our forests and communities, Arizona Governor Janet Napolitano welcomed participants to the Southwest Fire Initiative Conference at Northern Arizona University in April. She encouraged researchers and land managers to take the science and social science knowledge they have and make it a reality on the land.

Governor Napolitano and Wally Covington discuss forest health in the woods near Flagstaff.

"We can merely cut trees to reduce the risk of fire or we can commit to applying the best science-based restoration treatments to simultaneously support improved forest health and reduce the risk of fire," she said. "The benefits of a restored forest for wildlife, water and long-term sustainability make this choice easy. We need to restore forests and we need to do it now."

W. Wallace Covington, director of the Ecological Restoration Institute at NAU, echoed the governor's words of urgency in addressing the issues of forest health.

see "Restoration Action"

NORTHERN ARIZONA UNIVERSITY

Leroux Fire Site of Noxious Weed Research

Forestry graduate student Rita Reisor is studying toadflax in more than 300 research plots on the San Francisco Peaks this summer.

Among the charred, dead trees that remain in the burned area of the Leroux fire of June 2001, there is a carpet of green life. Much of it is Dalmatian toadflax, a plant in the snapdragon family that shoots up multiple stems of waxy leaves with blooms of medium-sized yellow flowers.

Many consider it to be attractive, until they learn more about it.

Toadflax is a noxious weed. It has been detrimental to rangelands of the Northwest and Canada because it changes the makeup of the ecosystem. It out-competes native grasses and forbs, creates a monoculture of itself, and cattle can't eat it. In the ponderosa pine forest around Flagstaff it is extremely prevalent.

Toadflax, or *Linaria dalmatica*, was brought to North America from the Mediterranean region, between what was Yugoslavia and Iran, in the 1890s for its ornamental qualities.

Ecological Restoration Institute graduate student and research assistant Rita Reisor, 26, will warn you that this plant is extremely persistent and adaptable. It has a very long tap root and a broad-reaching lateral root system up to three meters long. It continues to grow and bloom from spring to fall. One plant with 10 stems can produce half a million seeds!

"It's extremely difficult to get rid of and it loves disturbance," she said. In fact, the more disturbance, the better, she's finding from her research.

Reisor is studying how toadflax responds to wildfire, especially severe wildfire. Her research takes her to the areas that burned the hottest in the 1,200-acre Leroux fire. She gathers data on the vegetation in more than 300 plots on the San Francisco Peaks.

see "Leroux Fire"

Toadflax grows fast and strong. This plant growing in the severely burned area of the Leroux fire spread approximately two feet in one growing season. It is now more than five feet across and nearly four feet high.

ERI-Sponsored Book Now Available

Restoration of southwestern ponderosa pine forests is vitally needed, but it's no simple matter. That's the central message of a new book sponsored by the ERI and edited by ERI associate editor Peter Friederici.

Ecological Restoration of Southwestern Ponderosa Pine Forests is the second volume in the series *The Science and Practice of Ecological Restoration* from Island Press and the Society for Ecological Restoration International. It compiles much of what has been learned about ponderosa pine forest restoration by researchers and practitioners at the ERI, Northern Arizona University, land management agencies and other organizations.

The book brings together more than 40 contributors from a variety of fields—including forestry, fire science, philosophy, ecology, political science and archaeology—to synthesize what is known about restoration of southwestern ponderosa pine forests and to consider what's involved in developing and implementing a successful restoration effort.

In its four sections, the book examines:

- the overall context for restoration—ecological, social, economic, political and philosophical
- how ecosystem processes such as fire, hydrology and nutrient cycling are affected by restoration activities
- treatment effects on specific ecosystem components such as trees, understory plants, animals and rare or invasive species
- the details of implementing restoration projects, including smoke management, the protection of cultural resources and monitoring.

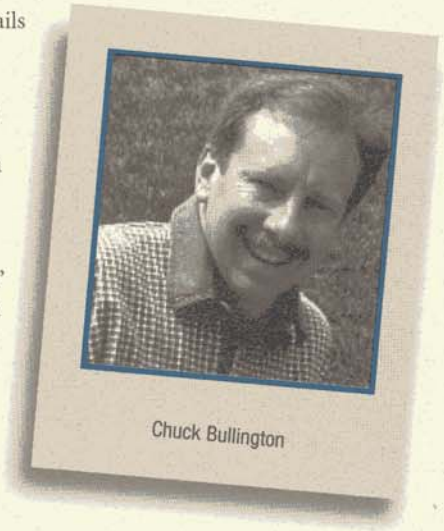
Each section is introduced with a case study that demonstrates the promise and pitfalls of restoration projects in Arizona, Colorado and New Mexico.

see "ERI Book"

Bullington is ERI's Good Humor Guy

He promotes meetings as if they were box office action hits, he celebrates payday Fridays in Hawaiian shirts and he coordinates ERI basketball events with all the gusto of the Phoenix Suns' gorilla.

Chuck Bullington is the program coordinator at the Ecological Restoration Institute. His job is to help researchers with the fiscal details of making travel plans and purchasing equipment. He's the guy to know if you need a refrigerator or a microscope. But his colleagues will tell you he's also the guy to know if you need a morale boost.



Chuck Bullington

"Chuck is definitely our 'go to' person at the ERI," said Robin Long, ERI student services coordinator. "His unflagging good humor and positive energy makes him a great coworker, and he'll always go the extra mile when asked."

Having the opportunity to work alongside researchers is what Bullington loves most about his position at the ERI. With a forestry degree from Northern Arizona University, four years experience fighting fires for the Forest Service and two years experience as a high school science teacher, ecological restoration is a logical next step for someone whose career path has taken him out in the forest and into the classroom.

"Working with research technicians, even peripherally, interests me deeply. And working with students is fun. They bring a lot of energy to the ERI and being around them evokes the teacher in me," he said.

Bullington puts his science teacher hat on in the fall when the ERI participates in the Flagstaff Festival of Science. He offers in-school presentations about fire and forest ecology to Flagstaff students of all ages and finds he's able to engage-special needs kids with fire scars and other materials from the forest that they can get their hands on.

Bullington came back to NAU after following his wife's career path to Globe and then his own career path to Roseburg, Ore. Prior to his travels, he was the program coordinator at NAU's School of Forestry for 10 years.

"Chuck's enthusiasm and motivation are inspiring to students and staff," said Pete Fulé, ERI associate director of ecology research.

ECOLOGICAL RESTORATION NEWS Regaining Lost Ground is a newsletter from NAU's Ecological Restoration Institute. The intent of this publication is to share information, discoveries and successes in the work being done to restore the southwestern forests.

Restoration Action continued

"Well-informed actions are the only way out of this," he said. "We have the best minds and the best muscle to reverse the degradation caused by 100 years of human-caused changes to our ponderosa pine ecosystems."

Research scientist Mark Finney of the Forest Service's Fire Science Center in Missoula, Mont., presented his computer program work that identifies at-risk forested areas and advocated for treating forests with a strategic pattern.

"Fuel treatments are not designed to stop fires but to change fire behavior. Fuel breaks are not valuable as a general landscape strategy. The Hayman fire in Colorado in 2002 broke right through fuel breaks," he said.

Dennis Lynch, Colorado State University professor of forest economics, shared his research findings on the costs of wildfire suppression compared to the costs of restoration treatments. He put the cost of restoration—mostly thinning trees and prescribed burning—between $650 and $1,000 an acre, and the cost of fighting a wildfire at up to nearly $5,000 an acre.

"If you do treatment and a wildfire occurs, what happens? It burns like a prescribed fire, and you still have a forest after the fire," he said.

Jim Paxon, who has served as Forest Service spokesman on some of the worst wildfires in history, described how southwestern forests are in an unnatural condition and the kind of monstrous fire behavior that can be expected once a wildfire gets started. He encouraged those who live in fire-prone mountain communities to take action around their homes.

"If every homeowner in the Show Low area would have spent a weekend cleaning up their homes, we could have saved 200 more from the Rodeo-Chediski fire," he said.

As it was, 465 homes, six businesses and 20 other structures burned in that 460,000-acre fire last summer.

The Southwest Fire Initiative Conference was part of Flagstaff's Forest Festival, April 26-30. The festival celebrates Earth Day and Arbor Day and sets the stage for public debate surrounding forest health issues.

ERI Book continued

The book is "a crucial book at a critical time," said Gregory Aplet, forest ecologist for The Wilderness Society. "In this comprehensive treatment of ecological restoration in southwestern forests, some of the field's leading experts provide an introspective look at the past, problems and promise of forestry's new paradigm. All who care about the future of forests will want to read it thoroughly."

Ecological Restoration of Southwestern Ponderosa Pine Forests is available in bookstores and online at www.islandpress.org.

Leroux Fire continued

"We can guess why the weed does so well after an intensely hot wildfire. It could be because of the lack of competition from other vegetation, it could be because there's more sunlight after a severe fire or it could be a change in the nutrients in the soil," she said.

Funded by the Forest Service's Rocky Mountain Research Station in collaboration with Northern Arizona University's ERI and School of Forestry, Reisor's research began last summer after the monsoon rains began. She expects that her three-year project will more clearly identify the effects of wildfire on this exotic species and help land managers more successfully control toadflax by knowing where the plant is most likely to start growing.

For homeowners who want to stop this invasive species in their yards, Reisor said, "The best thing to do is pull it and dig out as much of the root as possible. It has a huge carbohydrate reserve in its roots and will keep sprouting, so you have to stay on it until it has no more energy to resprout."

Reisor's drive is in ecological restoration. "I hope my career will focus on two things: controlling exotic species through education, research and management practices, and promoting native plant growth."

She earned her undergraduate degree in environmental science at Concordia University in Austin, Texas. "I came to NAU because I was looking for one of the best schools in fire ecology for my graduate work."

Northern Arizona University

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