

REGAINING LOST GROUND

ECOLOGICAL RESTORATION

SPRING 2003

NEWS

Bark Beetle Epidemic: Another Symptom of a Sick Forest

One look across the high-country landscape and it's easy to see that Arizona's once green forests are heavily peppered with brown, dead trees.

The Forest Service estimates that some two million to six million ponderosa pine trees have been killed by bark beetles and that estimate is admittedly low. What's worse is that the bark beetle epidemic is expected to be at least as bad this year with the potential for the bark beetle population to explode to 10 to 20 times what it was in 2002.

The most heavily impacted forests are the Tonto, Apache-Sitgreaves and Prescott national forests with some stands at 80 percent to 90 percent tree mortality.

"The two main reasons why bark beetles are killing so many trees is that the forest has too many trees and the trees are very dry," says Tom DeGomez, Ph.D., University of Arizona Cooperative Extension Office forest health specialist.

"Overcrowded forest conditions coupled with drought lead to the high probability of beetle attack."

Ecological Restoration Institute Director W. Wallace Covington, Ph. D., says the bark beetle epidemic is just one more symptom of a ponderosa pine forest in poor health. "The record-setting wildfires, the bark beetle attacks, the loss of grasses and natural meadows—all of this is pointing toward the crash of our southwestern forest ecosystems. These forests are teetering on the brink of massive destruction and long-term losses of biological diversity and sustainability."

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A Ballerina's Leap into Forest Restoration



With her long, black hair tied back, welder's goggles firmly in place, and huge apron wrapped around her oversized ripped gray T-shirt and jeans, Kristina Fernández turns off the sanding machine and flashes her huge brown eyes at the door of NAU's woodshop to see who has just entered.

At this instant, any visitor witnessing this scene is likely to experience a flashback

to the movie *Flashdance*. The similarities between Kristina and *Flashdance* star Jennifer Beales are astounding. Like Jennifer's character, Kristina is a dancer at heart, even though her coworkers recognize her as the tiny person in welder's goggles.

Kristina is an undergrad in the School of Forestry. Her work with the Ecological Restoration Institute includes data entry, measuring trees, setting up experimental plots, mounting and reading tree cores, and working in the woodshop cutting and sanding fire scars. She says she loves the outdoors and especially the fieldwork that takes her to the Paiute Reservation. The long hours can be grueling and conducting her own research project is challenging. "I'm studying the response of antelope bitterbrush to herbivory grazing. It takes dedication," she says.

Kristina is no stranger to hard work, long hours and dedication. Not long ago her life was about as different as her hiking boots are from her ballet slippers.

At 18, Kristina had captured the prize she had had her eyes on since she was a little girl pirouetting around her Tucson home. She was offered a full scholarship to the School of American Ballet, which led to a position with the New York City Ballet. Kristina had made it to what could be considered the equivalent of the Olympics for American ballerinas. Her childhood had been consumed by dance and now her adulthood would be as well.

Her life in New York would be mostly experienced in a dance studio. She practiced from 9 a.m. to 11 p.m. daily, with a total of three hours of free time. And she loved it for years.

see "Ballerina"

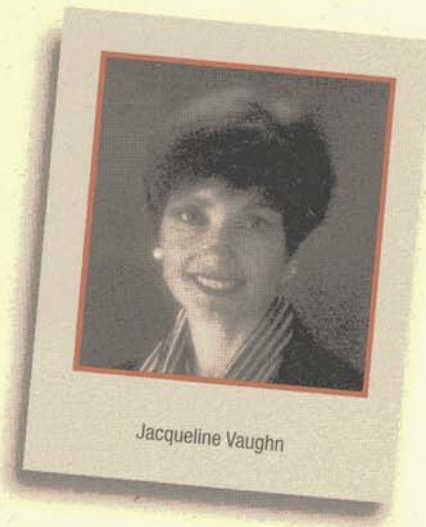




Study Investigates Impact of Appeals on Forest Health Projects

As mountain communities become more aware of the consequences of overcrowded forests and Americans are inundated with images of forests being devoured in a wall of flames, the national finger of blame has been wildly waving around for somewhere to land.

Some blame the drought, some blame years of fire suppression and some blame a lack of Forest Service funding for forest health projects, but the most inflammatory language seems to be directed at environmental groups for filing appeals and lawsuits. Some believe they are intentionally holding up forest restoration projects.



However, the true impact of administrative appeals and litigation on forest health projects has never been scientifically measured, until now. Jacqueline Vaughn, Ph.D., associate professor of political science at NAU, is leading an Ecological Restoration Institute research project to find out just what that impact is.

After extensive research, Vaughn, working with Forestry and ERI graduate student Gretchen Teich and ERI research professor Hanna Cortner, Ph.D., has discovered that some 3,600 appeals were filed on Forest Service projects

see "Study"

A new ERI publication, *Forest Restoration for Homeowners — A Guide for Residents of Southwestern Ponderosa Pine Forests*, is now available to help homeowners reduce the risk of fire while enhancing wildlife habitat and other ecological values. For information call (928) 523-7182.

Conference Features Computer Games That Highlight Most At-Risk Forest Areas

Since the mid '90s, Mark Finney, Ph.D., a research scientist for the Forest Service, has been helping firefighters design their strategies for fighting wildfires from the Fire Sciences Laboratory in Missoula, Mont. Now, he's demonstrating another computer program, this one to help land managers identify forest areas most at risk for crown fires to help them prioritize forest restoration projects.

Finney will be sharing his work on spatial optimization programs with Flagstaff 9 a.m., Tuesday, April 29, in the du Bois Center Ballroom on Northern Arizona University's south campus.

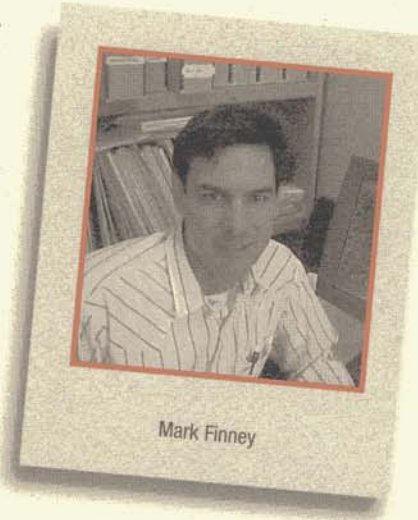
"One thing we really needed was a means to evaluate how successful fuel treatments will be," says Finney. "Some say forest restoration treatments are needed only in the urban interface, some say a band or strip around forest communities is needed, others say a wider area of treatment is necessary in the wildlands. But this debate has been taking place on the emotional level, usually without any data to help with the decision. What I'll be talking about is a quantitative method that will help land managers make and justify their decisions."

Data about any landscape can be entered into Finney's computer programs. For example, using Geographic Information System (GIS) data, local land managers can simulate how effective thinning efforts around Kachina Village, a community just south of Flagstaff, would be in the face of a catastrophic fire. "These computer fire models work like a video game," says Ecological Restoration Institute Associate Director Pete Fulé. "You can select weather conditions and watch what a fire will do under different circumstances."

Finney's talk will kick off the Southwest Fire Initiative Conference, sponsored by the ERI at NAU. His keynote presentation will be free to the public. Registration for the conference is \$12; \$16 includes lunch and parking.

The conference will be showcasing two years of forest research funded by the ERI through federal grant money. Topics will range from the ecological effects of severe wildfires to ways in which Western

see "Conference"



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.



Beetle Epidemic continued

Meantime, the buildup of dead and dry trees is a threatening combination as mountain communities head into fire season.

"Arizona can only handle about four or five fires the size of the Rodeo-Chediski Fire and then that's it. I don't think people believe anything like that could really happen where they live, but certainly it will happen, it's just a

matter of when," says Covington.

The experts agree that the way to avoid further bark beetle invasion and to reduce the risk of crown fires is to lower the tree density by thinning.

"We need to take action now," says Covington. "We can't wait for complete consensus or perfect knowledge. We've got to remove trees for forest health."

Ballerina continued

"Being on stage is the place I can't re-create anywhere else," she says. "It's where I'm the most comfortable and the most like myself."

In her young dancing career, Kristina caught the eye of world-renowned choreographer Jerome Robbins—the man who designed the famous steps in *West Side Story* and *Fiddler on the Roof*.

Inspired by Kristina, Robbins created the lead role for her in his 1994 ballet, *2 & 3 Part Inventions*. The move twirled her into the spotlight. Kristina, the dancer, was featured in international magazine articles; her image captured by fashion photographers. Critics raved about her dance instinct and her movie-star smile.

But after five years with NYCB, a longing for the outdoors crept up

inside Kristina, a longing she says she couldn't suppress, not even with frequent visits to Central Park.

After making a brave and graceful leap from the bright lights of New York, she landed under the dark skies of Flagstaff. Kristina now prefers her jeans to her tutus and her new life in forest restoration to the glitz of the big stage.

"It was a dramatic but positive change. I wanted to do something important that had a bigger purpose," she says. "I'm so happy to be at the ERI and look forward to coming here every day."

Kristina has not completely retired her leotards. She is taking a ballet class at Coconino Community College. "I can dance recreationally now for my own enjoyment. . .and nobody in the class has to know about my past." 🌲

Conference continued

communities are developing collaborative restoration projects. The conference is part of the Forest Festival, Saturday, April 26, through Tuesday, April 29.

Registration and other conference information is available on the ERI web site, www.eri.nau.edu. 🌲



Study continued

from Jan. 1, 1997, through Sept. 30, 2002. But this number includes all appeals—everything from Americans with Disabilities Act appeals that deal with forest access to appeals from ranchers over the closure of grazing allotments.

“People have a difficult time understanding the difficulty in data gathering,” says Vaughn. “You would assume the Forest Service would have complete records on appeals and litigation. They don’t. There are bits and pieces at the local, regional and national levels.”

Another challenge to data gathering is that names for similar projects are inconsistent. One project might be called a timber salvage sale, while another might be referred to as vegetative management, forest health, a prescribed burn, or forest restoration. So Vaughn is working to sort out and clump those appealed projects related to forest health and fire.

The next step will be case studies involving interviews with appellants and a review of the media coverage. Key objectives will be to

identify how long the process took, how the project changed from its initial proposal to its implementation on the ground and if the process resulted in a better project.

“A lot of the decision processes surrounding fuel reduction treatments are being redefined and appeals are one of the critical issues topping the national policy-making agenda,” says Cortner.

While the Forest Service is looking at streamlining the environmental process for forest health projects, Vaughn is hopeful this research can provide valuable scientific information about appeals and litigation to policy makers.

“We want to shed some light on all the claims and counterclaims being made about the appeals process so that both agencies and Congress have a better informational base to inform their decisions,” says Vaughn.

When the research is complete, the ERI will likely have the first comprehensive database and the most extensive study on the appeals process in the country. 🌲

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