

## Governor Takes Healthy Interest in Forests

Arizona Gov. Janet Napolitano says Arizona's forests are a disaster in the making after years of mismanagement, punctuated by drought and bark beetle infestation.

Speaking before a group of Flagstaff residents at Pine Canyon Country Club near Lake Mary Road in February, the governor praised the developers of the new subdivision for their firewise planning.

"Each property owner plays a key role in protecting his property and neighborhood," she said. As part of the draft recommendations released by the governor's Arizona Forest Health Oversight Council, Napolitano is seeking a statewide building code requiring all new homes in the forest to be built with non-combustible materials and be defensible against wildfires through the thinning of trees.

The governor added that the poor health of Arizona's forests is not just a state issue, but a federal issue, for which she is seeking funding.

Flagstaff Mayor Joe Donaldson thanked the governor for not only understanding the problem, but for doing something about it.

Final recommendations were released in March following input from the public on the council's draft document. Napolitano calls these recommendations a roadmap to solutions to the forest health issue for the next six to 10 years.

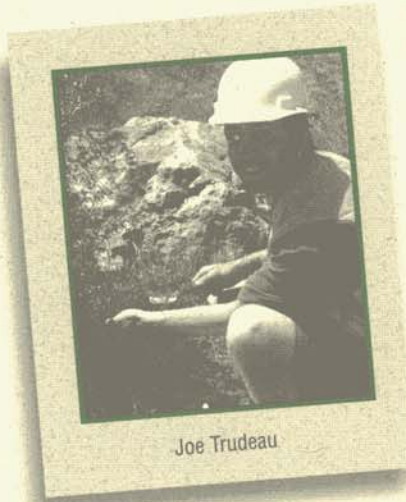
Diane Vosick, ERI associate director for outreach and administration, co-chairs the governor's council. She showed the group what a fire the size of the Rodeo-Chediski Fire would look like if it started just south of Flagstaff and grew to 500,000 acres.

"The breadth of the recommendations demonstrate that we are all in this together. We have identified actions that are needed by the governor, legislature, Congress and private individuals. When enacted together they will go a long way to help communities co-exist with the fire-prone ponderosa pine forest," said Vosick.

ERI Director Wally Covington serves on the governor's Forest Health Advisory Council.



# The Power of Fungi



Joe Trudeau

**S**uggesting that mushrooms and other fungi don't get the respect they deserve, an NAU liberal studies major hopes to change that this summer with experiments involving the restoration of forest roads.

As Joe Trudeau, 24, explains, fungus plays an important role in the forest ecosystem. Mycorrhizal fungi consists of microscopic

organisms that grow on the roots of plants and help them absorb more nutrients; saprophytic fungi, like the mushrooms you find in the woods, are critical decomposers of wood, which put nutrients such as stored carbon dioxide back into the soil.

"Almost every plant on earth forms a symbiotic relationship with fungi," he said. "Spores are found in healthy soil, but soil that's been compacted, such as soil in forest roads, can lose its structure including its mycorrhizal and saprophytic fungi."

Often land management agencies will work to restore degraded forest areas with seeds from native grasses and wildflowers. Sometimes plants will grow from these seeds and sometimes they won't. "The difference can be that fungi spores are not present in the soil," said Trudeau.

As a research assistant for the ERI, Trudeau plans to conduct experiments on about 350 feet of a forest road in the NAU Centennial Forest, a few miles west of The Arboretum at Flagstaff. He plans to first spread wood chips over the road – wood chips created from the removal of small trees in overcrowded sections of the forest – then spray a mixture of seeds from native grasses and wildflowers and spores from both kinds of fungi.

"This hasn't been done under strict scientific protocols around here before, and I believe what we'll see is greater success in restoring the road," he said. Trudeau will be revisiting the road to monitor his project for the next five years.

The forest road was built in June 2003 as part of a tree thinning project designed to improve forest health. As Trudeau explains, roads are a necessary evil of sorts when it comes to forest health.

"You have to build roads to get the equipment in there to thin the overcrowded forest but even the impact from a temporary road can hurt the soil, and we don't want to hurt the ecosystem while we're trying to help it."



While in Fla  
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health solut



While in Flagstaff, Keane toured the Gus Pearson Natural Area and discussed forest health solutions with students and faculty.

## Keane on Computer Modeling

**R**esearch ecologist Bob Keane says computer models of forest treatments should never be looked at as a replacement for going out in the woods but they do allow land managers to tie together various conditions and landscape characteristics to explore different alternatives.

Keane has developed a number of fire ecology models at the Forest Service Fire Science Lab in Missoula, Mont. He is one of the nation's leading experts when it comes to mapping fuels and predicting vegetative change as a result of fire, lack of fire or other management treatments.

In February, Keane visited Flagstaff and the ERI, one of many places in the Southwest where his research is being used.

"If we carry out experiments such as those at the Gus Pearson Natural Area, it takes a long time to see the results, but computer modeling lets you assess the impact of different treatments or changes on a landscape scale over long periods of time," said Pete Fulé, ERI associate director of research.

By entering data such as fire frequency, severity, topography, soils and climate, Keane's computer models help land managers be strategic with treatments that can impact the greater ecosystem. "These models offer another level of knowledge that we are not able to envision," he said.

For more information about Kean's work, check the web at [www.frames.gov](http://www.frames.gov).



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**Bob Keane**  
Fire Ecologist

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By Peter Friederici

**I**t's a problem as wide as the Southwest: the region's forests need to be thinned of small trees so that fire may once again burn safely, but what can we do with all those small-diameter trees, which have little or no value for lumber?

On the Silver City Ranger District, in New Mexico's Gila National Forest, an innovative project is helping to shape a solution. A nonprofit group, Gila WoodNet, is using a collaborative approach to thin overly dense forests near Silver City and use the wood removed to create value-added products – and good local jobs.

Gila WoodNet got its start in 1999 as a collaborative effort spearheaded by entrepreneur Gordon West and environmentalist Todd Schulke. The idea was to sustainably harvest small-diameter logs for businesses in the Silver City area. Several grants helped the group buy equipment, build a processing plant and begin thinning an 18-acre pilot project. Staff from the ERI assisted with the initial thinning prescription.

The pilot project succeeded, and Gila WoodNet workers have since begun thinning larger tracts on a 1,400-acre block of National Forest land. They move logs with a modified all-terrain-vehicle with fat tires, thereby limiting impacts to soils. The prescription calls for removing most of the small trees, leaving the largest trees and some small trees in clumps, and then conducting prescribed burns.

From each acre, 20 to 25 tons of small trees are trucked to Gila WoodNet's plant outside Silver City. The nonprofit provides roundwood logs to entrepreneurs who make and sell such products as vigas, furniture and building materials to the local market. West himself builds beautiful log cabins for sale. It's a small project, but an important step on the road to sustainable forests and sustainable local economies. 

*Peter Friederici is an associate editor with the Ecological Restoration Institute.*



*West, shown here at the Gila WoodNet processing plant, was visited by Friederici and a group from the ERI in March.*

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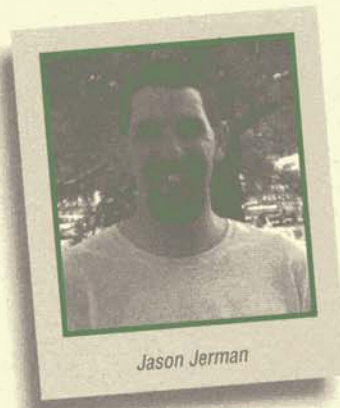
## **ECOLOGICAL RESTORATION NEWS Regaining Lost Ground**

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. For more information, visit the ERI Web site at [www.eri.nau.edu](http://www.eri.nau.edu).



## Alumni Corner

**Jason Jerman** (Forestry '02) has joined the Forest Service working as a fire ecologist for the Mogollon Rim Ranger District in Happy Jack. "The in-depth education you are able to get at NAU in fire ecology and the expertise available here is phenomenal. This has been an enormous benefit for me," said Jerman. He returned to the ERI to talk to undergraduates at a student meeting in March.



**Sam Bourque** (Geology '03) has been hired as an underground mine geologist with Newmont Mining Corporation, a gold mine company, in Elko, Nev. Bourque reports that this is a dream job as he is a caving enthusiast who likes nothing better than to have to go underground to look for ore.

**Brett Crary** (Forestry '03) has been hired as a forester with the Cibola National Forest in Magdalena, N.M. An avid outdoorsman, Crary is looking forward to some serious climbing, white water rafting and mountain biking.

**Kendra Lyons** (Parks and Recreation Management '03) is enjoying her job as an activities manager for the Enchantment Resort in Sedona where she coordinates Camp Coyote, a children's camp for guests. Thanks to her major, Lyons said, "I learned a lot about program planning, interpretation and computer programs that helped me prepare for this position." 

*Have alumni news to share? Please send your news to Robin Long, ERI student services coordinator, at [robin.long@nau.edu](mailto:robin.long@nau.edu) or call (928) 523-7187.*

## Kirk Smith Memorial Scholarship Fund to Help ERI Students




*Kirk Smith shown here in a 2002 photo with daughters Kayla, then 7, and Kyla then 9.*

A scholarship fund memorializing Flagstaff outdoorsman and firefighter Kirk Smith is being set up to help undergraduate research assistants working for the ERI with the financial challenges of pursuing a higher education.

Organizers of the Kirk Smith Memorial Scholarship Fund have a goal of raising \$1,500 by July 1, 2005. Scholarships in the amount of \$250 will be available beginning in fall 2005.

Kirk Smith, the son of Kathy and Doc Smith, was the superintendent of the Mormon Lake Hotshots. He died at age 37 from cancer in 2002. Kirk's wife Jessie and daughters Kyla, 11, Kayla, 9, and Madison, 2, live in Flagstaff.

Donations to the scholarship fund are tax deductible. Pledge forms can be found at [www.eri.nau.edu/announcement.aspx](http://www.eri.nau.edu/announcement.aspx). 



# ERI's Brent Tyc Student Employee of the Year




*Brent Tyc*

Northern Arizona University physics major Brent Tyc is the recipient of the NAU Student Employee of the Year Award and the first NAU student to receive the State of Arizona Student Employee of the Year Award.

The 21-year-old is being acknowledged for his efforts as an undergraduate research assistant with the ERI where he played a critical role in the collection of forest research data using electronic equipment in the field.

"The awards mean a lot to me. I've never been honored like this in my life," said Tyc.

Tyc, an honor student, has also served as a volunteer for Habitat for Humanity, Goodwill Industries and the City of Flagstaff Fuels Management Crew. 

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