

**Statement of Laura Falk McCarthy, Forest Trust**  
**Before the**  
**Subcommittee on Forests and Forest Health**  
**Field Hearing Regarding**  
**Management and Access Challenges Across Southwestern Forests**  
**December 15, 2003**

Thank you for the opportunity to testify today. I have twelve years experience working for the U.S. Forest Service as a firefighter and a NEPA planner. I am now the Forest Protection Program Director at the Forest Trust in New Mexico. The mission of the Forest Trust is to protect the integrity of forest ecosystems and improve the livelihoods of rural people. The Trust operates several programs that include a research center, technical assistance to forest-dependent communities, and consulting forestry on private lands. We have first hand experience with the management challenges facing Southwestern forests.

The Healthy Forests Restoration Act has been signed into law, and we will soon find out what impacts the law has on forests, wildfires, and forest-dependent communities. The Act gives us a national fuels reduction policy, but it does not provide a national restoration policy, that employs a full suite of restoration tools. In my testimony I will describe five key management issues. These are (1) the use of research to inform forest management; (2) federal land manager accountability for hazardous fuel reduction treatments; (3) maintaining low fuel loads in forest areas that have been treated; (4) managing in the face of extended drought and insect infestations; and (5) better utilizing the local workforce to carry out fuel reduction treatments.

**Forest Management Must Be Informed by Research**

Federal land management agencies are poised to make significant increases in their fuels reduction programs now that the Healthy Forests Restoration Act is law. Entering into this new phase of widespread forest treatments, managers need to remain cognizant of the fact the treatments are based on a relatively shallow foundation of research. The Forest Trust has examined more than 250 research papers about hazardous fuels reduction treatments -- including prescribed fire, mechanical thinning, a combination of thinning and fire, and commercial logging. We undertook this literature review so that we could describe the scientific underpinnings of the hypothesis that fuel reduction treatments will modify fire behavior in overstocked forests. Our primary findings were:

1. The current research is, in general, inconclusive with respect to the effectiveness of mechanical thinning in changing wildfire behavior. This is because study methods and research results vary greatly. Only one quantitative empirical study was completed as of early 2003.
2. The effectiveness of prescribed burning in changing post-treatment wildfire behavior is clearly demonstrated in many studies.

3. The limited number of studies that investigated the effectiveness of thinning and prescribed burning in combination produced equivocal results. More research is needed before firm conclusions can be reached.
4. We found no published scientific research on the positive effects of commercial logging on post-treatment fire behavior.

These and other findings from the literature review led us to conclude that a significant investment is needed in basic and applied research to provide a credible scientific basis for the design, implementation, and evaluation of alternative treatment methods. A survey we conducted of fuels reduction prescriptions used in southwestern forests revealed that most foresters focus on reducing tree density. However, the scientific literature indicates that tree density is only one of several factors affecting fire behavior. The distance from the ground to the base of the tree crown, and the amount and arrangement of surface vegetation and dead woody material, also play important roles. As more is learned about how these factors alter fire behavior, forest managers will need to adapt their treatments.

Our survey also found many excellent prescriptions from projects in places like Flagstaff, Arizona, where the Ecological Restoration Institute is located. Yet most public lands do not double as research forests, and most managers are not scientists and do not have experience applying research results to management. The simplicity and lack of variety in the prescriptions that managers use, coupled with the tenuous scientific support for tree density as a factor that significantly influences fire behavior, is therefore cause for concern.

What this Means for Forest Management: The current situation is that we have inconclusive evidence that thinning alone will reduce fire risk, but a new law that will expedite fuels treatments. Under these circumstances, forest managers should use the new authority to test specific combinations of thinning and prescribed fire treatments through rigorous experimentation that develops site- and weather-specific data. We need to require that managers integrate research, experimentation, and adaptive management into our national fuels reduction program. Only by doing so will we be able to determine which fuel treatments are effective and where they should be employed, and to identify, and cease, ineffective practices.

### **Accountability of Federal Land Management Agencies**

“Fire regime condition class” is a scientific classification system that is written into the Healthy Forests Restoration Act as the method for agencies to demonstrate changes in forest health as a result of fuels treatments. Fire regime condition class was developed by the Forest Service, Rocky Mountain Research Station, for the purpose of “providing national-level data on the current condition of fuel and vegetation,” such as summaries of the total acres at risk of wildfire. The scientists who developed the national-scale data did not expect the system to be used to measure agency accountability. But the GAO, and many others, have continually criticized the federal land management agencies for their lack of accountability, and condition class has now been codified as the system for measuring changes in forest ecosystems.

Most non-scientists do not understand what fire regime condition class is. Simply put, condition class is a relative ranking of the departure from normal fire cycles. A ranking of “3” means the unit under consideration has missed two or more natural cycles of fire, and implies that, in the absence of fire, fuels may have accumulated to dangerous levels.

The Healthy Forests Restoration Act will have managers measure their progress at reducing the national fire risk by reporting condition class before and after treatment. This measurement system is promising, because it is science-based, but is also fraught with peril.

The scientists who developed condition class created a national data set that is accurate at the scale of the nation, and inaccurate when examined at the scale of a state or land management unit. A more detailed and locally accurate version of condition class, called LandFire, is under development. But LandFire was only partially funded in the FY2004 budget. As a result, its development will be delayed and land managers won't be able to use LandFire for at least three or four years.

In the meantime, land managers have to report the condition class of acres treated in 2003, both before and after. A team of agency scientists is rushing around the country training managers to measure condition class. Condition class assessment follows a scientific method, but the method is time-consuming and is not generally recognized by managers as valuable. The push to use science-based condition class measures is highlighting a fundamental clash of cultures between scientists, on the one hand, who are thorough and precise in their measurements, and managers, on the other hand, who are not receiving enough funding to perform the condition class assessment, but are required to get the classification done before applying their forest treatments.

What this Means for Forest Management: Managers facing time and budget constraints will be tempted to cut corners on their condition class measurements. But the scientists who developed condition class have already learned that shortcuts produce unreliable measurements. As soon as enough measurements have been taken to generate reports of accountability, the bad numbers will be apparent. Yet if erroneous condition class measurements appear, the land management agencies will once again be accused of evading accountability. Careful steps now to ensure the reliability of field-level condition class assessments, will help the nation by laying a foundation for future measurement of progress.

### **Maintaining Low Fuel Loads in Treated Forests**

Scientists estimate that 15 years after Southwestern ponderosa pine forests are thinned, new forest growth will bring the fuels right back to the pre-thinned level. The implications for management are that a regular program of prescribed burning and wildfire use, coupled with thinning in some instances, is needed to maintain fuel loads at normal levels. However, the federal land management agencies have not previously

demonstrated that they have reliable systems for scheduling return visits to keep new fuels from accumulating.

What this Means for Forest Management: The monitoring section of the Healthy Forests Restoration Act suggests, but does not require, that the agencies develop systems to track and schedule maintenance treatments for areas where fuels have been reduced. This step is essential if we are to get the most out of the public investment in fuels reduction and to contain fire suppression costs over the long run. If federal managers do not figure out how to track, schedule and fund these maintenance treatments, then forest conditions will decline again in another 50 years.

### **Management of Insect Infestations and Wildfire Risks**

Southwestern forest management is complicated by the interaction of wildfire, drought and insects. Some scientists believe we are entering an extended cycle of drought. Beetle populations have reached epidemic proportions, a normal occurrence during natural cycles of drought. The current beetle epidemic is exacerbated by past management — the same practices that increased the risk of catastrophic wildfire.

As with thinning, managers need to use the best information available to them. Unfortunately, we know even less about beetle-wildfire interactions than we do about the effects of thinning on fire behavior. The correlation between beetle-kill and increased fire risk is not well quantified in the scientific literature, and the results of recent studies are equivocal. For example, a 2003 study in the journal *Ecology* noted that little quantitative research has been conducted to test the hypothesis that insect-killed trees, increases fire risk. The study looked at subalpine forests in Colorado and produced results that “do not support the long-standing notion that insect-caused mortality increases fire risk.” The study found no increase in the number of wildfire ignitions, but did not look at increases in fire severity because of the difficulty of controlling experimental variables such as weather.

Wildfire behavior in forests that have sustained insect-killed trees is also not well understood. For example, experienced foresters in the Southwest concur that the fire risk in insect-killed piñon pine trees decreases in 2-3 years, as soon as the needles have dropped, a phenomenon that is also true for Englemann spruce. In contrast, insect-killed ponderosa pine trees become more flammable, because the insects stimulate pitch to concentrate in the tree boles and flammability remains high until the pitch decomposes. The differences in fire behavior of various tree species affected by insect mortality are not well quantified. Forest managers need this information to know when and how to develop treatment plans and to anticipate areas of higher fire risk after insect outbreaks.

Field experience also tells us that thinning to reduce fuel loads could inadvertently spread bark beetles in areas with live trees. Thinning, to foresters, means the cutting of live trees to reduce forest density and to increase the resilience of the remaining forest. Thinning generates substantial slash, and the attraction of bark beetles to slash is well documented. The timing of thinning and the treatment of slash during a beetle epidemic are critical. As

a result, most federal managers have added controls on the timing of slash disposal to their contracts and prohibiting thinning during the insect breeding season.

What this Means for Forest Management: The Healthy Forests Restoration Act authorizes categorical exclusions for 1,000 acre research projects that will treat areas that are infested with insects or that are adjacent to infestations. The emphasis in this authority is research; yet it is so far an unfunded program and the mechanism for cooperation between research scientists and managers has not been determined. The emphasis in this research must be used to test three hypotheses that are as yet unproven: first, that the treatments slowed the spread of insects; second, that the treatments changed the behavior of subsequent fires; and third, that economic value was preserved by removing the wood before the infestation progressed further.

### **Forest Management Provides Economic Opportunities in Rural Communities**

New Mexico is a rural state where subsistence incomes that use products from the forest are common. Grazing, firewood cutting, and hunting are mainstays of many New Mexico family incomes. From this reliance on the land comes a desire to work in the woods, and a desire for direct involvement and employment restoring forest health.

The Healthy Forests Restoration Act includes incentives for forest industry to invest in value-added products made from the by-products of fuels reduction treatments. But these incentives are not aimed at the local workforce in New Mexico. The Forest Trust has worked in forest-based economic development for the last 15 years, and we have identified a host of barriers that keep small businesses from succeeding in the forestry sector. To address the needs of our local workforce, we need to break those barriers apart. We need forest managers to understand the needs and capacities of our workforce, and to become partners in enabling successful small businesses.

The responsibilities of federal land management agencies are not clear. On the one hand, the Small Business Administration provides authorities and programs to benefit minority owned businesses, and the National Fire Plan echoes these authorities with directions to use local workers wherever possible to accomplish fuels treatments. On the other hand, the Administration is promoting competitive outsourcing and the use of large, national contracts to reduce administrative costs. These conflicting mandates, and the lack of clarity in agency policy, hurts New Mexicans -- who have more to gain from small business development but face overwhelming obstacles.

The barriers to small businesses that employ local workers are wide ranging, and some do not fall under the jurisdiction of the land management agencies. For example, workers compensation insurance rates in New Mexico for thinning are extremely high. Contractors pay more for worker's compensation insurance than they do for labor. Therefore, contractors from other states, where worker's compensation rates for thinning are lower, can easily underbid New Mexico businesses.

Other barriers to employing local workers can be specifically addressed by the agencies. For example, the structure, size, and timing of contracts have a direct bearing on whether local contractors can offer competitive bids. Consider, for example, a project of 3,000 acres. If the work is offered in one solicitation that requires the treatment to be completed in 3 months, then only large contractors with equipment and crews to treat 1,000 acres a month will bid. Even if local workers are hired, after three months they will be unemployed. Alternatively, the treatment period could be extended, allowing a local crew of 8 people to be fully employed for 18 months, or several smaller, short-duration contracts could be issued, allowing small contractors to bid.

Federal land management agencies in the Pacific Northwest have made tremendous progress in their ability to offer restoration projects that create local employment opportunities. The controversies over the Northwest Forest Plan forced the agencies to examine their contracting authorities and to use them to put displaced loggers back to work in the woods. The lessons learned there can be applied to the Southwest so that local workers can benefit from the tremendous restoration effort that lies ahead.

What this Means for Forest Management: It is probably too late for the FY2004 budget to include funding for fuels reduction that is much more than the funding received in FY2003, but by FY2005, we may see significant funding appropriated, as authorized by the Healthy Forests Restoration Act. Thus, the agencies and rural development enterprises will have one year to seek and implement solutions to the barriers that inhibit small businesses and local employment. A systematic effort to recognize barriers, build local business capacity, and prepare for upcoming contracts, will make New Mexico's workers part of the solution for restoring our region's forests.

**Supplemental Testimony  
Following the Field Hearing  
Submitted on December 18, 2003**

Congressman Pearce stated in his opening remarks that the purpose of the field hearing was to clarify Congressional intent in implementing the Healthy Forests Restoration Act. In light of that objective, and in consideration of the remarks offered by the other witnesses at the hearing, I am submitting the following supplemental testimony to address two points. The first topic is changes in NEPA that are intended to expedite fuel reduction treatments, and the second topic is retention of large trees in fuel reduction and restoration projects. The second topic is in response to a question asked by Congressman Pearce during the field hearing.

Healthy Forests Restoration Act Could Create More Gridlock

I am concerned that the erosion of the public's right to provide input to federal land management projects could exacerbate gridlock and clog the courts. The erosions of public rights include the use of categorical exclusions for insect-related treatments, limiting the number of alternatives developed in environmental reviews of fuels reduction projects, and shortened appeal periods and limits on who has standing to file appeals.

These changes were developed in response to a small number of appeals that several studies by Northern Arizona University and the General Accounting Office have shown did not result in significant delays. Unfortunately, the erosion of public rights to input do not just impact the people who file appeals, they also affect forest-dependent community residents who also rely on the NEPA process to provide input to the agencies.

The community of Lama, NM provides an excellent example of how ordinary citizens use the NEPA process to negotiate with the Forest Service. A 10,000-acre fire burned half of the forest that surrounds Lama in 1996. The little forest that remains around the community is extremely important to residents, who want a say in how the forest is managed. The community has been negotiating with the Forest Service for two years over the type and extent of fuels reduction will be allowed in the community protection zone. The community and Forest Service do not agree about the best treatment plan, and the NEPA process has kept their dialogue going. In the absence of consensus about the treatment, dialogue is necessary to keep the community talking with the Forest Service and to keep the problem from being settled in court.

In another New Mexico community, a thinning contractor who is descended from a Spanish Land Grant, described his concerns about the erosion of public rights. This contractor was kept out of work for a year because of a last minute appeal to a thinning project in his community. Despite the person impact of that appeal on his livelihood, this contractor stated that NEPA had made such a difference in his community's ability to influence agency decisions, that he did not support giving up the community voice just to prevent a few last-minute appeals.

What this Means for Forest Management: In addition to limiting public review and input of proposed fuels reduction treatments, the Healthy Forests Restoration Act contains language about pre-decisional planning and collaboration with local communities. However, the Act does not specifically outline how the agencies are to include community input, leaving the individual units with responsibility for deciding how to collaborate and comply with Congressional intent. We urge forest managers to take this responsibility seriously and to make sure that community voices, values, and recommendations, are not lost in the rush to expedite thinning projects.

### Preserve Large Trees

The Healthy Forests Restoration Act includes limited protection for old growth forests but does not specify restrictions on the cutting of large trees. The size class distribution of trees in Southwestern forests is so dominated by small diameter trees that large trees need to be protected. A number of scientists in the southwest have stated that there are too few large trees left in the Southwest, and these remaining trees are so stressed by drought and overcrowding that we should thin around them, but not cut them down. Current agency guidelines for managing endangered species, such as Mexican spotted owl and northern goshawk, include standards for retaining large trees and are not affected by the new law. Therefore, while a restriction on cutting large trees (such as a diameter cap) may not have been appropriate for national policy, in the Southwest, the focus should be on treatments

that remove small diameter trees and on the development of markets for products that use woody debris.

The combined effect of the Healthy Forests Restoration Act and the stewardship contracting authority in the 2003 Interior and Related Agencies Appropriation Bill present a powerful incentive for cutting large trees to pay for fuel reduction projects. The cutting of large trees in the Southwest will be limited by the fact that only two mills, both owned by the Mescalero Apache Tribe, currently process large diameter timber. The last mill to close, Rio Grande Lumber in Espanola, NM, operated for several years with wood cut on private lands, but even the large trees from those lands did not make up a sustainable supply for the mill.

What this Means for Forest Management: New businesses that want to locate in New Mexico should focus on the utilization of small diameter wood. Until the size class distribution of trees in Southwestern forests is restored to include sufficient numbers of large trees, the region will not be able to support any industries that utilize big trees.