

The Role of Nongovernmental Organizations in Fire Education, Fuels Reduction, and Forest Restoration: A Call for Collaboration¹

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Abstract

Successfully educating homeowners and communities about wildland fire ecology and management, reducing hazardous fuels, and restoring fire-adapted forest ecosystems will place enormous demands on the budgets, resources, and staff of federal agencies for several decades to come. This work can be aided by collaboration with non-governmental organizations (NGOs) that are capable of mobilizing grants, donations, local practitioner expertise and indigenous knowledge, as well as volunteer labor from the private sector and local communities. NGOs can also utilize federal funding and resources to work on private residential properties, where federal agencies face many cultural and institutional challenges. This paper features some innovative programs in community-based fire education and fuels reduction currently being conducted by NGOs and argues for the vital role of NGOs in collaborative fire management planning and management as a means of furthering the long-term goals of the National Fire Plan and Federal Wildland Fire Policy.

Introduction

Conservationist non-governmental organizations (NGOs) provide a natural constituency supporting long-term ecosystem protection and ecological restoration; however, federal agencies are wary of working with NGOs, who have long been among the agencies' most ardent critics, often appealing and litigating forest management projects that involve commodity timber extraction. Bush Administration officials and certain members of Congress have recently claimed that appeals and lawsuits by NGOs have unduly delayed or thwarted fuels reduction projects designed to prevent catastrophic wildfires. Countering charges of "environmentalist obstructionism," conservationists have responded that they only challenge projects that propose commercial logging of large-diameter trees, but generally do not oppose projects using non-commercial small-diameter tree cutting or prescribed burning. Fortunately, the National Fire Plan (NFP) provides the political incentive and budgetary means for erstwhile adversaries in conservation organizations and government agencies to become newfound allies collaborating on fire-related projects and programs. This paper provides some brief examples of innovative fire-related programs being conducted by conservationist NGOs in collaboration with federal

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agencies. These programs provide a framework for implementing good projects with broad conservationist and community support, and minimum controversy or conflict.

The Lands Council's Homeowner Wildfire Education Program

The Lands Council (TLC) is a non-profit conservation organization founded in 1983 and based in Spokane, Washington. They are a local grassroots partnership dedicated to protecting the quality of life and natural environment in the Inland Northwest by engaging in scientific research, document analysis, field monitoring, and public education projects. TLC regularly participates in Forest Service NEPA processes and occasionally appeals and litigates commercial logging projects; nevertheless, TLC saw opportunities for doing homeowner fire education by working in collaboration with the U.S. Forest Service (USFS). In 2001, TLC's Wildfire Education Project began with funding from a NFP grant that was administered by the Colville National Forest. Occasionally, circumstances caused TLC and the USFS to be adversaries, but to their mutual credit this did not inhibit each organization from becoming cooperators in addressing homeowner fire education and community wildfire protection. Common ground was forged between the two parties by taking a common sense approach to protecting private property from wildfire destruction: the sensibility that fire prevention begins at home.

Geographic and Social Context

TLC's Wildfire Education Program works with rural communities in Stevens and Pend Oreille counties in northeastern Washington. The landscape is dominated by dry forests composed mainly of ponderosa pine (*Pinus ponderosa*). Fire was once frequent in these forests, but that has been altered by past fire exclusion and suppression. The area is not composed of urbanized communities of small towns or subdivisions that fit the classic wildland/urban interface (WUI) concept; rather, it is more inhabited by dispersed residents living on large lots and disconnected small clusters of homes better described as the intermix zone. TLC has dubbed the area the "wildland/rural interface zone." A strong anti-government and anti-environmentalist sentiment prevails among area residents, who cherish their privacy and guard their properties against all trespassers.

Methodology of Wildfire Education Program

In order to educate residents about fire prevention issues, TLC originally attempted to meet with homeowner associations and host seminars in a town hall format, but attendance was very low at these meetings. At the same time, residents' fear and concern about wildfires was growing. Consequently, TLC devised a new strategy: going door-to-door for one-on-one sessions with individual homeowners. Because personal meetings are conducted with homeowners on their own properties, TLC fire educators have the ability to immediately assess the level of comprehension of the hazard awareness curriculum and directly clear up any questions or confusion in a non-threatening atmosphere. A beneficial outcome of the home visits, however, is that it raised homeowners' interest and stakes in utilizing the free fire risk assessments and subsequent fire prevention plans.

TLC believes that the key to their program's success is "a mixture of honest salesmanship and scientific backing." The honest salesmanship centers on an offer that homeowners find hard to refuse: free assessments of the homeowner's fire risks and fuel hazards. The scientific support is based on the FIREWISE program and the

research of Jack Cohen at the USFS Fire Sciences Lab in Missoula, Montana. For each homeowner, the assessment includes an overview of building design and materials, vegetation, and other flammables within a 200 foot radius “home ignition zone” (Cohen, 1999) surrounding their house and associated structures.

Following the assessment, homeowners can opt for a free fire prevention and fuel reduction plan created between TLC and the homeowner that will help mitigate the risks and hazards identified by the assessment. In addition to the home protection information, some education in basic fire ecology processes is added, but there is no anti-logging message provided—nor is any required, for in general, nearly all homeowners are interested in keeping their big trees standing.

Another collaborator and component of the program’s success is the Washington State Department of Natural Resources (WDNR). The WDNR will send small brush cutting crews to implement the homeowners’ fire plans and develop defensible space around homes. The WDNR offers this service for free using grant money from the NFP. The program focuses on removing flammable brush and increasing the spacing of small-diameter trees. Only brush and small-diameter trees six inches DBH or less are removed, and these are often chipped and spread out on the property.

Summary

TLC and other conservationist NGOs believe that if private homes and rural communities are effectively protected from wildfire destruction, then both social and ecological benefits are realized. Reducing fuels on private lands and protecting homes might expand opportunities for reintroducing fire in forested areas adjacent to communities. The basic idea is that the sooner homes are protected from wildfire, the sooner forests can be restored with prescribed and wildland fire.

In the first year of the Wildfire Education Project, TLC completed over 2,000 free fire assessments and 80 fire plans, with 60 residents opting for the full package of fire assessments, fire plans, and fuels reduction. The ongoing collaboration of TLC, USFS, WDNR, and private homeowners is forging a fruitful partnership. Also, TLC is willing to work on private residential lands where federal agencies face many cultural and institutional challenges. The personal homeowner visits provide a useful model for doing collaborative fire prevention education and outreach in the rural intermix zone and are a role well-suited to conservationist and community service NGOs.

The Lomakatsi Restoration Project’s Ecological Fuels Reduction Program

The Lomakatsi Restoration Project (LRP) is a non-profit conservation organization founded in 1995 and based in Ashland, Oregon. Lomakatsi is the Hopi word for “life in balance.” The LRP provides environmental education and outreach, ecoforestry workforce training programs, and community-based watershed restoration projects. LRP is particularly focused on creating job opportunities in hazardous fuels reduction and ecological restoration for displaced forest workers and local residents. The founders of the LRP wanted to work on ecologically-oriented and community-based restoration projects, and discovered opportunities for doing ecological restoration via hazardous fuels reduction on private lands. When working on private lands, many bureaucratic regulations governing federal land management do not apply, and the LRP believes there is more room for developing ecological

objectives and applying innovative techniques for fuels reduction. The LRP is mindful that fuels reduction for home protection is not the same thing as ecosystem restoration; nevertheless, the LRP attempts to develop and apply ecological principles and restoration objectives in its fuels reduction projects.

Geographic and Social Context

The LRP works in Josephine and Jackson Counties near the communities of Williams and Ashland in southern Oregon. The area is comprised of mixed conifer forests in an ecosystem that historically had a frequent fire return interval. Due to fire exclusion, flammable small trees, brush, and invasive weeds have increased, especially in previously logged and grazed areas. There are several wealthy landowners living in Ashland's interface and intermix zones. They cherish all of their remaining big trees, love the wildlife that inhabits their lands, and do not want to see them removed by fuels reduction efforts. But these homeowners also love their homes and are fearful of wildfire. The LRP's wealthy clients are willing to pay for the kind of relatively expensive manual fuels reduction treatments that can improve protection of their homes and resilience of their forests in case of wildfire, but do so in a sensitive, restoration-oriented manner.

Methodology of Ecological Fuels Reduction Projects

In the Ashland interface and intermix zones, dense thickets of flammable manzanita (*Arctostaphylos viscida* and *A. nevadensis*) and "chaparral" brush (*Ceanothus leucodermis*), and small pole-sized incense cedar (*Calocedrus decurrens*) and white fir (*Abies concolor*) trees, have grown in sites altered by past logging, grazing, and fire exclusion. In sites the LRP has been working, a typical stand contains an average of 80 big stumps that are smothered by up to 2,000 small-diameter stems per acre. When confronted by a contiguous field of manzanita or dense dog-hair fir thickets, part of the initial treatment is simply opening up stands enough for crews to walk through and assess the ecological needs of the site.

Workers are encouraged to first walk the ground and develop a relationship with the site before ever starting up their saws. This involves not only assessing the fuel loads, but identifying the native plants, learning the location of the large trees and riparian zones, and other notable natural features. The process is similar to sizing up a wildfire during initial attack, and workers may spend a whole day sizing-up a fuels reduction or restoration project. A key priority for LRP and their clients is to identify and protect all remaining large standing trees—especially snags—and protect water sources.

Thinning is done in a mosaic pattern, expanding all existing openings, and leaving some thickets behind. The LRP's thinning philosophy is to work in a circular, irregular, patchy fashion rather than a linear, grid-like system with uniform spacing between trees. To help protect remaining large, old trees, crews first thin around the large trees at least to the drip line of the outer canopy. Lower dead limbs and live ladder fuels are cut, piled and burned or swamper-burned. Crews do not eradicate all brush or small-diameter trees; rather, they try to retain some patch thickets in corridors for the sake of wildlife cover and species diversity. Additionally, some brush piles are not burned but are built around large relic stumps and preserved for use as wildlife habitat, primarily shelter for rodents. This helps build up the prey base for raptors and other carnivores, and mitigates the reduction in vegetative cover.

The objective of the LRP's ecological fuels reduction program is to perform multiple light entries, with monitored results guiding any subsequent activities.

Crews first lightly thin a stand; then step back and look at it; then come back in a couple hours or days to work more. Their intent is to return every few years to monitor and re-examine the site to determine whether or not it needs more thinning. The primary directive is to act conservatively: don't change a site too much or too quickly. The LRP believes that crews can always come back and cut more trees, if necessary, but if they cut too many trees too quickly, they cannot put those trees back living on the stump.

Workforce Training and Development

In addition to ecological concerns, the LRP has strong socioeconomic objectives with their fuels reduction work. The LRP is working to develop the kind of educated, skilled, and motivated workforce that is going to implement fuels treatments on the ground, as well as monitor and steward the land's restoration needs over the long term. The LRP's ecological fuels reduction projects are labor intensive and the hand-cutting and pile-burning is intensely hard work. The LRP considers their fuels reduction treatments to be a form of landscape artistry and desires to make ecological fuels reduction and restoration a high-wage, high-skill, high-status form of craft labor, as opposed to the low-wage, low-skill, and low-status industrial form of labor that characterizes traditional slash and brush disposal work.

The LRP conducts free public workshops, recruits interns, and tries to involve the community in its work for private clients. Field crews are organized like worker-owned cooperatives, and decisions are made collectively by consensus. The workers fully participate in each step of a project: pre-treatment biological surveys and environmental assessments, planning and design of prescriptions, implementation of treatments, and post-treatment monitoring. There is no division of labor between planners, implementers, and monitors of projects. Finally, the client landowners also go through training to understand the ecological and restoration objectives that are part of the fuels reduction work and to become an integrated part of the projects. After a project is completed, landowners are given a list of future recommended actions and are trained for some monitoring tasks. Assuming that most landowners will continue to reside on their properties for some period of time, they will become the primary monitors for the fuels reduction and restoration treatments.

Summary

The local community affectionately calls the LRP "the environmentalists with chainsaws." Their ecological fuels reduction program is being used in collaboration with other conservationists and ecoforestry professionals and put into practice. The LRP considers itself to be fortunate to have a relatively wealthy clientele that values their property and is willing to pay for this kind of work. Total costs per acre of the complete fuels reduction package depend on fuel loading and ranged from \$800 to \$1,600 per acre. However, work for private landowners does not fully cover all of the organization's educational and outreach activities; consequently, the LRP applies for grants from private foundations and has received a grant from the NFP. The LRP has organized three multi-regional fuels reduction field workshops in high risk, high hazard areas near the rural communities of southern Oregon. The Bureau of Land Management (BLM) administers the grant and oversees their work, and a very positive, mutually-beneficial relationship has developed between the LRP and BLM. The LRP hopes that the innovative and experimental techniques it is developing with private landowners will influence federal and state land management agencies in designing fuels reduction and restoration projects on public lands.

The Center for Biological Diversity’s Mill Forest Restoration Demonstration Project

The Center for Biological Diversity (CBD) is a non-profit conservation organization based in the southwestern U.S. The CBD has a reputation for waging successful administrative and legal challenges against USFS logging and grazing projects. However, less well known is the fact that CBD also supports active forest management for ecological restoration and creation of local community-based wood products industries to utilize small-diameter trees that are by-products of forest restoration projects.

In the summer of 2000, CBD initiated the Mill Forest Restoration Demonstration Project in collaboration with Gila WoodNet and the Gila National Forest. Gila WoodNet is a nonprofit research and development corporation dedicated to developing new techniques and equipment for making value-added wood products from small-diameter trees removed specifically from forest restoration projects. The Gila National Forest has seen dramatic declines in commercial logging volume at the same time that unprecedented stand densities of previously sub-merchantable small-diameter trees are posing threats to forest ecosystem health. The aim of the Mill Forest Restoration Demonstration Project is to test treatment prescriptions and techniques for doing ecologically-based forest restoration that reduces wildfire hazards, produces jobs for local communities and resources for value-added wood products industries, but does not let pressures for commercial timber extraction become the economic or institutional driver for restoration projects.

Geographic and Social Context

The Mill Forest Restoration Demonstration Project is located in Grant County in southwestern New Mexico. According to the CBD, the area is home to over 30,000 people, of which more than half of the population is Mexican American, and many families live below the poverty level. Mining, ranching, logging, and farming have historically been the major industries in the area; however, approximately 700 local jobs have been lost in recent years when the mines were abandoned and two sawmills closed down. Unemployment levels currently exceed 12 percent in Grant County.

The Gila National Forest, like most of the interior West, is comprised mainly of dry forest types with historically frequent fire return interval. However, according to the USFS Forest Inventory Assessment, forests are uncharacteristically dense with approximately 90 percent of the trees being less than 12 inches DBH, making them susceptible to fire-caused mortality and posing a high risk of unnatural stand-replacing wildfires. In many cases in the Gila National Forest, tree density conditions are so far outside the historic range of variability that neither a passive or preservationist approach (e.g., “zero cut”) nor a prescribed fire only method for restoration may be possible. Consequently, for both ecological and economic reasons, there is agreement among conservationists, local communities, and federal agencies on the need for some kind of forest restoration projects that will facilitate the creation of local wood products industries utilizing small-diameter trees.

Methodology for the Restoration Demonstration Project

Treatment prescriptions for the Mill Forest Restoration Demonstration Project were based on the “Natural Processes Restoration Principles” developed by the Bandelier Working Group, a collaborative effort among conservationists and scientists from a number of universities and agencies. According to these principles,

ecological objectives rather than economic imperatives must guide the restoration prescriptions, and the primary objective must be to move existing forest structures towards conditions that will enable the restoration of natural processes. Existing native forest patterns are used as a guide for treatments, rather than trying to force human preconceptions of historic structures onto the contemporary landscape. Consequently, thinning efforts expand the existing openings between clusters of trees rather than create artificial uniform spacing between individual trees. No trees larger than 16 inches DBH are cut, with the majority of thinning targeted towards trees 9 inches DBH or less. The basis for this diameter limit came from the CBD's analysis that compared historic forest structures with current forest conditions and discovered that region-wide there is a deficit of trees greater than 16 inches DBH.

A conservative approach towards thinning and an integrative approach towards restoration is employed; thus, ecological restoration includes more than tree thinning, but also road closures and obliteration, grazing deferments, erosion control, invasive weeds eradication, and native seed planting. By ensuring that ecological objectives rather than economic interests guide project designs, the Natural Processes Restoration Principles addresses many of the concerns of the conservation community.

Rigorous multi-party monitoring protocols have also been established between the CBD, the Ecological Restoration Institute at Northern Arizona University, and the USFS Rocky Mountain Research Station. Plots have been established and data is collected before, during, and after treatments are implemented. Equally important, the socioeconomic effects of forest restoration efforts on local rural communities are also being monitored and evaluated. The Mill Project serves as the main supplier of small trees for the Gila WoodNet project, which sorts the trees into larger stems suitable for *vigas* (wood beams used in adobe house construction) and furniture, as well as those suitable for conversion into woodstove pellets, wood fiber composite building materials, and other value-added wood products. Gila WoodNet intends to achieve 100 percent utilization of restoration by-products through conversion of removed material into stove pellets, wood composite building materials, and other conventional wood products.

Summary

The CBD, Gila WoodNet, Gila National Forest, and area universities have joined together to craft a creative approach towards implementing forest restoration treatments and creating restoration forestry jobs. On test plots in the Mill Forest Restoration Demonstration Project, coalition members are formulating agreements on the kind of treatments that area forests need in order to restore natural processes and functions, while at the same time creating sustainable jobs and environmentally-sound commercial products from removal of small-diameter woody materials. Use of the Natural Processes Restoration Principles and multi-party monitoring provides the accountability needed to attract conservationist support for restoration products that yield some commercial utilization of small tree and biomass removal.

Conclusion

Assuming that fire education, fuels reduction, and forest restoration programs and projects will not be able to pay for themselves fully with commodity resource outputs, and thus assuming that they will rely to some degree on Congressional

appropriations, it is in the interest of federal land management agencies to cultivate collaborative relationships with conservationist NGOs. Unlike federal employees, NGOs can lobby Congress for more appropriated tax dollars for projects, and they can also leverage those appropriated funds with donations, volunteer labor, and resources from private sources. Additionally, NGOs can bring innovative community-based approaches for doing this vital work. Collaboration among federal, state, and local agencies, and private stakeholders is not only a good idea, it is a principle articulated in the Appropriations Acts which fund the NFP. Hopefully, the example of The Lands Council, the Lomakatsi Restoration Project, the Center for Biological Diversity, and their federal partners will inspire others to emulate their model and engage in innovative collaborative programs and projects for the sake of educating fire-wise communities and restoring fire-adapted ecosystems.

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