

Testimony Regarding Forest Restoration in Oregon

Date: December 14, 2007

To: The US Senate Subcommittee on Public Lands and Forests of the Senate Committee on Energy and Natural Resources, for inclusion in the Record of the Hearing regarding forest restoration and hazardous fuels reduction efforts in the forests of Oregon and Washington, held Thursday, December 13, 2007

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Introduction

My name is Michael E. Dubrasich. I reside in Linn County, Oregon. I am a professional consulting forester with 26 years experience in private practice, and am currently Executive Director of the Western Institute for Study of the Environment [<http://westinstenv.org>]. I am knowledgeable about and have professional expertise in restoration forestry.

I am in strong and substantial agreement with the testimony of Drs. K. Norman Johnson and Jerry F. Franklin regarding the pressing need to undertake immediate restoration forestry action in National Forests of Oregon. I quote for emphasis:

We will lose these forests to catastrophic disturbance events unless we undertake aggressive active management programs. - Johnson and Franklin

The Problem

National Forests in Oregon are at extreme risk from catastrophic fire. The Biscuit Fire of 2002 destroyed nearly 500,000 acres of heritage forests, principally in the Siskiyou N.F. The B&B Fire of 2003 and adjacent fires of the last ten years have destroyed nearly 150,000 acres of the Deschutes N.F.

These and numerous other fires of the past 15 years have decimated old-growth stands and converted priceless, heritage forests to brushfields. Multi-cohort old-growth stands are the preferred habitat of northern spotted owls and other old-growth associated species. Catastrophic fires destroy old-growth habitat and they have been implicated in the continuing decline of Threatened and Endangered species populations in Oregon -- plant and animal, vertebrate and invertebrate.

The fire hazard is increasing with each passing year, as new growth adds to burgeoning fuel loads. Catastrophic fire acreage, fire suppression costs, and resource losses to fires have been increasing nationwide.

The 2006 fire season was the worst in over fifty years. Nearly 10,000,000 acres burned in wildfires with suppression costs approaching \$1.85 billion.

With nearly 9.3 million acres burned nationally, the 2007 fire season was the second worst fire season in over fifty years and the fourth record-setter in eight years. Seven of the worst ten fire seasons since the 1950's have occurred in the last 12 years.

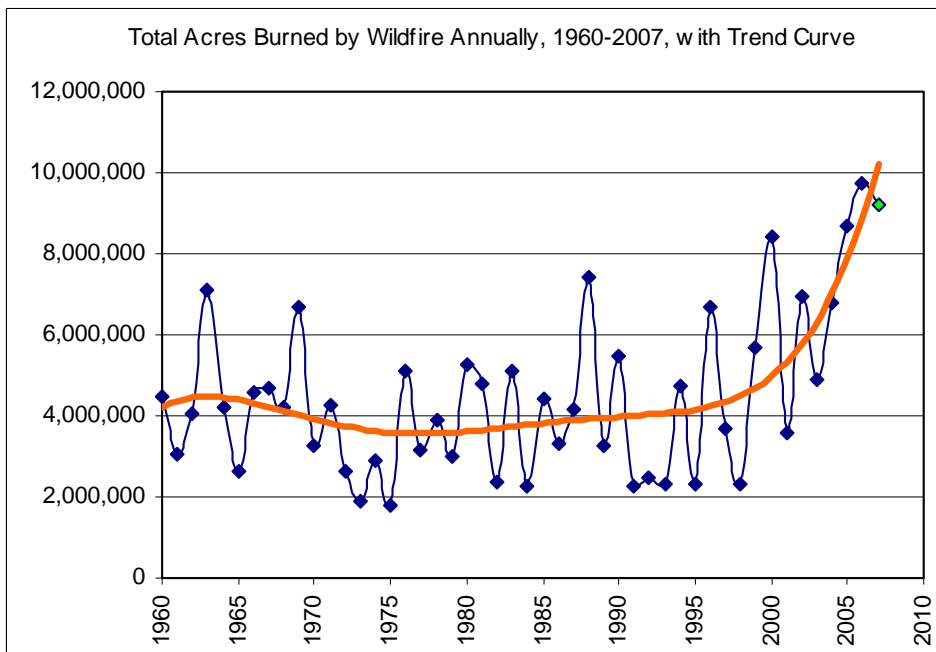


Fig. 1 Acres burned by wildfires nationally since 1960. Source: the National Interagency Fire Center, Boise, ID.

Fires that start in untended, fuel-laden federal forests occasionally escape beyond federal property lines. Such, often very large or *megafires*, threaten and burn private property. Thousands of homes are lost to escaped federal fires each year. Urban as well as rural homes are burned.

If we continue on the present course, we will lose many more millions of acres of heritage, old-growth forests and the habitat they provide to important wildlife species. We will continue to lose thousands of private homes each year to escaped federal fires.

National Forests across the state of Oregon are in a condition of unnatural density. Fires in forests overburdened by dense fuels tend to become stand-replacing. That is, most trees are killed by such fires, including old-growth trees.

Historical analyses based on pioneer journals, oral histories, and empirical investigations of stand age structures provide strong evidence that most forests in Oregon were open and park-like in prior centuries. Frequent, regular, seasonal fires maintained trees at wide spacing, overtopping grassy understories.

Historically, fires in such stands were NOT stand-replacing. Instead, regular, frequent, seasonal fires gave rise to conditions that allowed trees to grow to great ages. Without frequent light fires, trees do not grow very old. The actual historical development pathways for many (if not most) of our forests involved frequent light fires, not stand-replacing fire.

Nowhere is this more apparent than in the Biscuit Burn and in other burns of the last two decades in Oregon. Typically the forests that have been destroyed by catastrophic fire were strongly multi-cohort with older cohort trees of 150 to 600 years of age. Also typically, the vegetation that arises after the fires is sclerophyllous brush with a few, even-aged conifer germinants.

It is clear that the new forests will be nothing like the old forests. In fact, it is probable that the new forests will burn again after 15 to 50 years of new fuel development. We know from reburned areas such as the Silver Burn (1987) within the Biscuit Burn (2002) that the new "forest" is loaded with highly flammable brush. The few conifer germinants grow slowly and are killed in the subsequent fire. After reburns no conifer seed sources are left, and the new "forest" becomes a permanent, catastrophic fire-type shrubfield.

Historical analyses also provide strong evidence that the regular, frequent, seasonal fires of the past that sustained old-growth forests were anthropogenic (human-set). Indian burning for a variety of subsistence purposes gave rise to and maintained open, park-like forest structures. In the absence of Indian burning, or modern equivalents thereof, our forest structures have deviated from historically sustainable conditions.

Today's forest fires in dense fuels are catastrophic and stand-replacing. The historical forest development pathways of the past were different. They must have been different because they gave rise to open, park-like forests with old trees, not permanent fire-type brush.

In addition to inviting extreme, ecosystem-altering fires, overly dense stands are more prone to insect infestations and fungal epidemics. From the testimony of Drs. Johnson and Franklin:

This is not simply an issue of fuels and fire; because of the density of these forests, there is a high potential for drought stress and related insect outbreaks. Surviving old-growth pine trees are now at high risk of death to both fire and western pine beetle, the latter resulting from drought stress and competition. – Johnson and Franklin

The Solution

The solution is restoration forestry. Dr. Thomas M. Bonnicksen, the Father of Restoration Forestry, defines it thusly

Restoration forestry is a vision for the future rooted in respect for the past. Thus, restoration forestry uses the historic forest as a model for the future forest.

Restoration forestry aims to recover our nation's forest heritage while also restoring the productive and harmonious relationship between people and forests that existed in historic forests.

Restoration forestry is defined as restoring ecologically and economically sustainable forests that are representative of landscapes significant in America's history and culture.

The goal of restoration forestry is to restore and sustain, to the extent practical, a forest to a condition that resembles, but does not attempt to duplicate, the structure and function of a reference historic forest. The term "reference historic forest" means the way a whole forest appeared spreading over a landscape, with all of its diversity, at or about the time it was first seen by European explorers.

A reference historic forest does not represent a particular point in time. It represents a period and the variations in forest structure that characterized that period. – Bonnicksen, Restoration Forestry

The practice of preparing forests to accept fire without total incineration MUST include positive, scientific forestry goals of protecting heritage trees, meadows, and other ancient cultural landscape features by restoring historically-accurate and proven-to-be-sustainable open, park-like stand structures.

Trees have to be spaced fairly far apart to prevent crown-to-crown propagation of fire. Canopy fires plume into firestorms and do the most damage. Breaking up the continuity of the canopy is absolutely necessary to preclude crown-to-crown propagation and canopy fires.

We need more than "fuels management" however. We need silviculture that recreates historical development pathways leading to open, park-like forests, savannas, and meadows at their historically-accurate geographic locations within our National Forests. That means thinnings, clearings, and other aggressive active management actions, and maintaining the restored landscape conditions with anthropogenic fire.

Historically and ecologically, human beings administered the key partial disturbances that maintained sustainable forests: frequent, regular, seasonal, human-set fire. Human stewardship of the land was an important component in the development of our old-growth stands. We need human stewardship again, to protect and restore them.

History is a key element of restoration forestry. From the testimony of Drs. Johnson and Franklin:

Activities at the stand level need to focus on restoring ecosystems to sustainable composition and structure--not simply to acceptable fuel levels. Objectives of these treatments need to include: retention of existing old-growth tree populations; shifting stand densities, basal areas, diameter distributions, and proportions of drought- and fire-tolerant species (e.g., ponderosa pine and western larch) toward historical levels... Finally, restoring old-growth tree populations to, and maintaining them at, historical levels should be a goal of restoration management. – Johnson and Franklin

One-half to two-thirds (at least) of our public forests require restoration forestry to protect, maintain, and perpetuate old-growth forests. That means the Northwest Forest Plan must be revisited and a modified Plan developed. The NWFP set-aside 85 percent of the landscape in No Touch Zones. The NWFP is thus not compatible with old-growth forest protection, maintenance, and perpetuation, according to the experts who drafted it. Again, from the testimony of Drs. Johnson and Franklin:

Restoration programs must be planned and implemented at the landscape scale to be effective; management over the last century has altered entire landscapes and created the potential for very large wildfires and insect outbreaks. Treating isolated stands within these landscapes will not be effective...

Creating fuel treatment patches and strips is a useful first step to help control wildfire, but is not sufficient to save these forests or the important array of values that they provide, including owls and old-growth trees. Many of the intervening areas will eventually burn and, even if they do not, old-growth trees will succumb to insects during periodic drought, since they are surrounded by dense competing vegetation.

To conserve these forests, we need to modify stand structure (e.g., treat fuels) on one-half to two-thirds of the landscape. - Johnson and Franklin

The benefits of restoration forestry include:

- Prevention of megafires and reduction in emergency fire suppression costs
- Prevention of ecosystem conversion to high hazard brush
- Prevention of catastrophic fire damage to watersheds
- Preservation of historic features of our shared, heritage landscapes
- Sustaining old-growth trees and old-growth development pathways
- Sustaining wildlife habitat, including T&E species
- Reinvigoration of rural economies
- Local stewardship

In fact, across much of the publicly-owned landscape in Oregon (and other Western states as well), restoration forestry is the **ONLY** way to capture those benefits.

The need for restoration forestry on a landscape scale is well-recognized by the experts. The public demand for restoration forestry is also strong. Surveys of public attitudes have shown that as many as 85 percent of *urban* residents favor active management to prevent catastrophic forest fires. The percentage of rural residents in favor is undoubtedly higher.

Restoration forestry is more than “active management” just as it is more than “fuels management.” Our forests are living systems with numerous values to society. They are complex, they are precious, and they are at risk. That combination of factors demands intensive *science-based* stewardship to fulfill our shared responsibilities.

Past efforts to institute restoration forestry, including the Healthy Forests Restoration Act of 2003 (P.L. 108-148) (HFRA) are laudable but have not achieved the landscape scale necessary to either prevent catastrophic megafires, or to protect, maintain, and perpetuate old-growth forests.

Lack of action on restoration forestry also endangers the capacity of our National Forests to provide clean water in steady quantities. Catastrophic fires damage soils, decrease absorption and deep percolation, increase erosion, increase sedimentation, and debilitate watershed hydrologic functions.

An untenable economic burden has been imposed on rural counties and residents by the lack of restoration forestry. Congress is perennially asked to provide payments in lieu of timber receipts to economically distress counties in the West. Restoration forestry is self-funding and can provide the jobs and receipts, relieving the need for Congress to provide additional emergency allocations.

The US Forest Service does, however, need additional funds to employ professional forestry expertise. Congress must engage in rebuilding the agency's professional ability to manage our forests, which has diminished significantly in the past 15 years.

Much more must be done and soon. I offer the following specific recommendations for your evaluation and adoption.

Specific Recommendations

1. Conduct a US Forest Service mission review

The US Forest Service has not had a mission review since the Organic Act of 1897. The fundamental purposes of the USFS have changed since then. Landscape-scale forest restoration cannot be accomplished if the land management agency has lost its legal bearings.

The mission review should be followed by review of the governing laws and regulations to ensure that the restated mission can be met. Funding and staffing must also be appropriate to the restated mission.

And most especially, restoration forestry must be made central to the restated mission of the USFS. The scale of the problem, and of the solution set, require conformance to purpose in the agency and governing laws.

2. Revisit the Northwest Forest Plan

The Northwest Forest Plan is also out of accord with the pressing need to apply restoration forestry on a landscape-scale.

The NWFP has failed in all its goals: spotted owl populations have declined as much as 40 percent since inception of the NWFP; millions of acres of multi-cohort spotted owl habitat have been incinerated; the geographic continuity of owl habitat has been shredded, and regional economies, and especially rural economies, have suffered enormously.

The NWFP is an impediment to restoration forestry, and thus an impediment to saving owls, saving owl habitat, and protecting rural economies. After nearly 14 years of failure, the time has come to review the NWFP and to alter it so as to better achieve the original objectives, and to enable landscape-scale forest restoration.

3. Fund research and teaching in restoration forestry

The goal of restoration forestry is to recover and sustain the structure and function of historical forests. To do that we must first investigate historical forests and landscapes. We must understand history to envision the future. Second we must study the efficacy and efficiency of restoration forestry treatment options. New research and teaching is needed in:

- Forest and landscape history
- Ethno-ecology
- Traditional ecosystem management
- Historical landscape geography
- Historical forest development
- Restoration forestry principles and practices
- Fire management

Emphasis should be placed on *empirical* studies within those fields.

4. Conduct a forest-by-forest natural/cultural historical analysis

The US Forests must initiate a program to investigate, analyze, and report on the actual forest and landscape histories every National Forest and BLM District in Oregon, and preferably throughout the West. The histories should look back at least 10,000 calendar years Before Present, and must include analysis of the (reconstructed) historical forest and landscape development pathways.

The histories must refer to substantial evidence collected in the field, as well as ethnographic and anthropological research specific to each area. Forest-by-forest, empirical studies of pre-Columbian, pre-Contact, and pre-Euro-American settlement forests and landscapes will also provide a set of reference conditions for restoration forestry in each local landscape or watershed.

5. Apply landscape-scale restoration forestry treatments

The US Forests must initiate a program to plan and undertake landscape-scale restoration forestry treatments on every National Forest in Oregon to prevent catastrophic fires and protect, maintain, and perpetuate old-growth forests.

Locally designed forest-by-forest restoration plans must be created. Plans should be based on reference conditions but not be limited to exacting replications. The goal of restoration forestry is to enhance sustainable conditions that protect old-growth trees and old-growth development pathways, as well as to protect historical natural/cultural landscape features.

The process should include open, public, juried reviews of each plan at the local level. Publicly-empanelled juries should be made up of local experts who are familiar with the specific forest or landscape. Public participation should be encouraged in plan development as well as evaluation.

Approved plans should be implemented without delay. Landscape-scale restoration forestry treatments are needed now. The sooner treatments are applied the more acres of heritage forests will be saved from incineration by stand-replacement fires. As many have pointed out, restoration forestry treatments are self-funding through sales of removed fuels in various forms.

6. Utilize local private and public sector resources

The task before us is immense. Both public and private sector expertise and capabilities must be utilized in all phases of restoration forestry, including historical analyses, treatment planning and evaluation, and application of restoration forestry to every National Forest in Oregon.

Private/public partnerships, contracted arrangements, and community participation are required for restoration forestry to be successful. Wide application at landscape scales is necessary, and thus wide participation is too.

Local stewardship, the management of local forests, watersheds, and landscapes by local communities, is the best social strategy. Also, locally is where all the local knowledge, expertise, and management skills reside. Local residents bear the brunt of local forest management outcomes, and so wish to assume authority and responsibility for local stewardship practices.

Summary

I am in strong agreement with a broad spectrum of forest experts and expertise in America. I too call upon Congress to initiate landscape-scale restoration forestry in at-risk old-growth forests and natural/cultural landscapes within the National Forests of Oregon.

I have explained the problem and the solution, and given six specific recommendations for Congressional action, oversight, and leadership in restoration forestry.

Thank you for your consideration of these issues.

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Attached: useful references

Useful references pertaining to Restoration Forestry

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