

WHAT IT WILL TAKE TO SUSTAIN FIRE-DEPENDENT ECOSYSTEMS?

RECONCILING FRICTIONS IN POLICY

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I am humbled to share the podium today with Major General Duncan Lewis and Dr. Fiona Wood. I feel privileged to be in the company of such remarkable individuals.

As a fireman, I am especially humbled to participate in your conference because the American public has come to know Australian and New Zealand firefighters as good friends, willing to help in a time of need. We in the Fire Services believe you to be among the most progressive and most innovative wildland fire managers in the world. I want to thank you, especially, for the study tours, the exchanges, and the firefighting support that you have provided. These experiences have helped build fire professionalism in my country's ranks.

On my last visit to Australia and New Zealand, as a member of the 1999 Study Tour, several of us found ourselves bouncing along in the back seat of a bus one day when we began talking about the future of wildland fire management. We concluded that, while we've come a long ways in "operationalizing" the physical sciences of fire; we've got a long ways to go with the social and political sciences of fire. At precisely the time when wildfire potential has never been greater, social expectations for protection have never been higher and political tolerance for failure has never been lower. It's not the physical science of fire that limits our progress as much as it is our lack of understanding the social and political perspectives that surround wildland fire management. It's been 5 years, now, since Gary Morgan, Buck Latapie, Murray Dudfield, Rick Gale, and I had that talk. The exchange was important because it got us thinking outside the discipline we know and challenged us with those we don't.

Within the Fire Services, we are practiced at the operational level. Our seasoned professionals are comfortably introspective when it comes to evaluating and learning wildfire's tactical or strategic decisions. In the United States, since the South Canyon wildfire (1994) where 14 firefighters lost their lives, and the Cerro Grande escaped prescribed burn (2000), where 235 homes were lost, there has been intense scrutiny on federal wildland fire policies. There needed to be.

However, in policy circles outside of fire management, we have paid little attention to the factors that may have set the stage for these kinds of tragedies.

In the Fire Services, we don't easily engage the social side of wildland fire policy, nor do we challenge the expectations for land management policies that may be setting the stage for high-risk, high-consequence wildfires. Until we do, modifying fire policies or building additional suppression capacity won't make us much better.

Until we do, we won't reverse the trends toward larger, more costly, more destructive, and more dangerous wildfires. And, we certainly won't restore the condition of these fire-dependent forests and grasslands that predispose those trends.

Somewhere between the freedoms of human judgment (where lapses can have terrible consequences) and "rule books," in the form of precise manual direction (where we can never write manuals thick enough to cover every contingency); somewhere between these two, lies good policy. Policies guide our decisions and actions. In broad terms, policies should help us deal with a pervasive, complex problem.

The fire problem on National Forest System lands is one of our Chief's Four Threats 1/. When we step back and look at today's wildland fire problem in context, in the United States Forest Service, the problem is clearly related to the condition of fire-dependent forests and grasslands. With few exceptions, the problem is most acute in the short-interval systems where missed fire cycles, past high-grading, and a history of over-grazing have put extensive areas of the arid West at risk. Despite the fact that we have reached a 99% initial attack success rate 2/, we are realizing record-setting costs, losses, and damages in fire regimes where severe, catastrophic fire should be rare. Ecologists will tell us that these forests are in decline. In my view, they are in crisis.

From Melbourne to Los Angeles, Canberra to Athens, Madrid to Missoula, Sydney to San Diego, and Banff to Boise, dangerous and damaging wildfires continue to capture national and, even, international headlines. Every year, we in the Fire Services answer with better trained firefighters, more modern equipment, and new technology. Every year, the scale and scope of catastrophic wildfires only grows.

- Chief Bosworth's Four Threats are fire and fuel conditions, invasive species, fragmentation, and un-regulated recreation.
- In the U.S. Forest Service, we deal with about 10,000 wildfires every year. Of these, only about 1% become large incidents. Within this one-percent, only a fraction become so-called "mega-fires." This one-percent of all incidents account for about 85% of our total suppression-related expenditures and close to 95% of our total burned acres (Schuster (un-published), 8/15/2002 memo).

As wildland fire professionals, it is time we ask if we are not inexorably drawn to a program policy that is attempting to match more extensive wildfires with a larger, yet, suppression force. We are at a crossroads where we have to look beyond our fire policies, if we hope to protect fire-dependent forests and grasslands that, owing to their high-hazard condition, are putting people, natural resources, and ecosystems at risk. Reducing wildfire costs, losses, and damages is going to require us to act on more than fire policies.

Let me draw on last fall's experience in Southern California to illustrate this point. Last October, in Southern California, in a 10-day period, firefighters were hammered with over 900 starts. Remarkably, only fourteen of them became large incidents, but those 14 wildfires burned close to three quarters of a million acres, destroyed 3,600 homes, and killed 24 people, including one firefighter. Suppression costs exceeded \$200 million. Disruption to commerce was estimated at hundreds of millions. Damage to watersheds, roads, transmission lines, community infrastructure, and private property were billions more.

These wildfires were significant for several reasons, but – from a policy perspective perhaps – they are especially important to evaluate because they occurred in California! I am not being glib. Let me explain with a few facts:

- The combined operating budgets for wildfire preparedness in California, between federal, tribal, state, and local jurisdictions, is over \$3 billion per year.
- The state is represented by some of the most volatile fuel types anywhere in the world (thanks in part to the introduction of eucalypt species from Australia!). Most are in a high-hazard condition.
- Over 35 million people live there....and more are moving in all of the time...putting tremendous pressure on development near the wildlands.

With a \$3 billion per year wildfire preparedness budget, California fields the largest fire department in the United States; arguably the largest fire department in the world. It has, by any measure, enormous firefighting capacity, but every few years, it is not near enough. As strong as the Fire Services are in California, there is a history of wildfires where firefighting force is overwhelmed by severe wildfires burning under extreme conditions (Bel Air, 1961; Laguna, 1970; Panorama, 1980; Oakland Hills, 1991; Malibu-Topanga, 1993...and, now, these wildfires from last fall).

Now, from a policy standpoint, this is where it gets interesting. Despite the fact that Southern California is represented by some of the most volatile fuel types anywhere in the world, little is proactively planned or accomplished --in policy -- to mitigate the hazard. Last fall's worst wildfires spread in areas where the land was being managed for everything but wildfire risk. We were managing these fire regimes for watershed values, endangered species habitat, visual quality, and homesites; but we were not managing these high-risk landscapes to mitigate wildfire risk.

From a policy perspective, we are putting enormous emphasis on managing the suppression response, but virtually no emphasis on managing the land's inherent wildfire risk. We rarely manage the land in ways that are consistent with the dynamics of these most volatile fire regimes. In fact, I would argue that, often, we are unintentionally managing the resource *for* catastrophic fire.

In virtually every case where losses were greatest, the land management strategy to ensure watershed values, endangered species habitat, visual quality, and homesites called for preserving older age-class chaparral or over-stocked forests. Strategies called for late-seral stand conditions where large amounts of biomass dominated the landscape. Is it any wonder, in a Mediterranean environment, where drought and Santa Anna winds are common, that the Fire Services would be overwhelmed?

In terms of land use behaviors and growth trends at the wildland-urban interface, the California wildfires reveal another important policy question. Nearly all of the homes that burned in California last October were homes that were meant to burn. They were vulnerable to wildfire. Homes that were lost were vulnerable because brush clearances were inadequate and construction materials were combustible. In many cases, homeowners wanted it that way!

Perhaps tragically, the very attributes that people wanted were the very factors that put them at risk. Unknowingly, the biomass that screened neighbors and provided a sense of privacy or seclusion were the very factors that put people at risk. In contrast, communities that were saved or spared, had enacted strict building codes and kept brush and fuel away from homes. In this sense, we have to ask, "Is the policy we need to focus on a policy that is "owned" by the Fire Services or is it a policy that requires the attention of our political leaders and the communities that they represent?"

The California wildfires from last fall were the worst in the state's history. But the California experience is not confined to California. Two years earlier, the states of Oregon, Colorado, Arizona, and New Mexico suffered their worst wildfires on record. In, both, 2000 and 2002, the states of Montana and Idaho were plagued with summer-long wildfires. The large-fire problem in the United States pervades the West.

You have to wonder why record-setting wildfires continue to occur. Despite enormous fire protection budgets, new technologies, a strong, well-trained workforce, and a very successful initial attack success rate, over-accumulated biomass continues to fuel larger and larger conflagrations. In terms of policy, it is more than fire policy that needs attention.

I believe that, fundamentally, the wildfire problem in many areas of the arid western United States, owes to the fact that our resource management policies and land use behaviors are commonly inconsistent with fire regime dynamics and, for that reason, set in motion the conditions that are fueling record-setting wildfires. It is more than fire policy that needs fixing. I'm afraid that, so long as this friction remains un-reconciled, we should anticipate ever larger, more destructive, more costly, and more dangerous wildfires. And, ironically, in the bargain, we may lose or damage the very values we are aiming to sustain.

The "headline wildfires" of the past decade, by virtue of the fire regimes that they are burning in and the fuel conditions that they are burning in, are telling us something. Of the factors that we can manage, the condition of these ecosystems is the single most important causal factor there is, in terms of wildfire potential. Our ability to protect the people that live in these fire regimes, sustain the natural resources that come from them, control the costs that are needed to manage fire in them, and ensure the safety of the firefighters that are called to work in them...all depend on their condition... and, too often, we are managing them in the wrong condition!

I'm afraid I find, instead of dealing with the underlying causal factors that predispose these catastrophic fires or limit the effectiveness of operations, political energy gets focused on fixing the Fire Services. I'm afraid, also, we in the Fire Services too often encourage the political behaviors that we see because the Fire Service "fix" often provides more money, more capacity, and more apparatus.

Contrary to widely held public opinion, though, we know in our dark hearts that suppression tools can have their limits. In fact, many of the perceived "best" tools are often the least effective because the factors that contribute to extreme fire behavior are defined by the kind of conditions that limit operational effectiveness. Wildfires simply outrun the best tools' best production.

Some time ago, a wise friend told me that our approach to problems and their solutions is often flawed. We usually fail to adequately define the problem needing solution or, perhaps more frequently, we fail to anticipate the problems that our solution will bring.

The wildfire problem in the United States is not for want of firefighting capacity. I won't argue that some could use more or better equipment, but, for the most part, most of our units are well equipped. No; the wildfire problem in the United States can be traced to the condition of fire-dependent forests.

The fact that only very few wildfires account for most of our losses and, knowing the conditions under which these few wildfires spread, it is time the Fire Services acknowledge that bigger forces and improved suppression is not the answer. No; in our high-hazard fire regimes, the large fire fight will be won or lost on the fuels front.

And, herein, is a policy issue, of a different sort... If we are going to get serious about reducing suppression costs, losses, and damages, we need to get more serious -- in policy -- about fuels reduction. But, that cannot happen so long as treatments are constrained by short-sighted or contrary regulatory policies.

So long as the rate of fuels accumulation remains greater than the rate of treatment, over-accumulated biomass will continue to fuel our most severe wildfires and exceed our best efforts at control.

Our fire suppression policies need to be predicated more directly on our fuels policies, and our fuels policies need to be more closely aligned with our utilization policies and, perhaps, our energy policies. We are prescribed burning more today than ever before. But, it is expensive, it is contentious, and it is pressing our organizational capacity to do more. If we are going to get serious about reducing wildfire losses, we need to treat fuels at scales much larger than we are today. In order to do that, we need to get to a place where someone wants biomass that we will, otherwise, spend a fortune trying to dispose of. We need to more coherently establish markets that will eagerly take biomass. Even if we have to support markets in the form of guaranteed supplies, tax incentives, and consumer credits, the notion has merit. Before we dismiss the thought of subsidies, think about the suppression costs we're incurring, the property losses we're sustaining, the resource damage that is occurring, and the fact that there seems no end in sight!

I mentioned regulatory policies. Don't get me wrong. I'm not against the Clean Air Act or the Endangered Species Act or other environmental laws, but our regulatory policies must become better aligned with the dynamics of these fire-prone ecosystems. Too many of our most severe wildfires can trace their underlying cause to the way we managed the vegetation. Ironically, in fire-dependent ecosystems, when we manage for clean air and habitat and other values by managing for stasis, we inevitably put the resource at risk.

Some might suggest that, if we just let these fires burn --- but protect the houses --- we would naturally reduce fuels and, in the bargain, be money ahead. In the short-interval fire regimes, though, this approach overlooks the ecologies involved. These fire regimes are adapted to low-intensity burning, where species were maintained; not replaced. They are adapted to burning conditions where nutrient cycles, energy cycles, and water

cycles depend – not on simply re-introducing fire --- but on re-introducing *the right kind of fire*, in terms of burning intensity, duration, and time of year.

Although we have reviewed countless wildfires and had endless debate on fire policy, we are only beginning the public lands policy debate that would sustain safe, resilient, and productive fire-dependent ecosystems.

Recently, the Forest Service began a new after-action wildfire review process that is going to further the resource management debates and land use debates that need to occur. It is revealing that many of our most problematic wildfires actually began incubating decades ago. The way the land has been managed has a lot to do with how it might burn, especially in the short interval fire regimes. The way the land has been developed has a lot to do with our ability to protect the communities that have grown there. Under extreme burning conditions, the way the land has been managed and the way it has been developed have *everything* to do with our chances of protecting resource values and people. Years ago, when, by design or by default, we began managing for stasis, dense, over-crowded forests developed. When we began building homes in the midst of over-stocked forests, we reduced our ability to protect, either, house or home. We put ourselves and the values we endear on the path for disaster.

We all love the land, but we don't always understand or respect the ecological dynamics that shape it, define it, and sustain it. Perhaps Aldo Leopold's Land Ethic needs, now, to be accompanied and complemented with a Fire Regime Imperative. We are beginning to understand the role of fire, but addressing the ecology of fire means more than simply re-introducing fire when the opportunity presents. It must, instead, mean that we tailor our expectations for the land to the dynamics of the land. It must mean that our objectives for the resource remain consistent with fire's role on the land. I am afraid that anything less and we will continue to suffer losses by way of ever-growing, more destructive wildfires. At these scales and these intensities, we simply cannot build a fire department large enough to realize anything else.