

## CHASE Jeri

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**From:** BIRCH Kevin R  
**Sent:** Friday, February 16, 2007 8:10 AM  
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**Subject:** FW: Federal fire suppression costs  
**Attachments:** Open letter to US Senate 020707.doc



Open letter to US  
Senate 02070...

Attached is public input from the website contact option.

-----Original Message-----

From: Mike D [mailto:mike@sosforests.com]  
Sent: Thursday, February 15, 2007 8:00 PM  
To: Kevin Birch  
Subject: Federal fire suppression costs

Mr. Birch,

Would you be so kind as to forward this e-mail and attachment to the Federal Forestland Advisory Committee?

Attached is the Final Draft of my testimony to the US Senate Energy and Natural Resources Committee regarding Federal fire suppression costs. The issues I raise are of vital importance to the mission of your committee. I would appreciate your review and advice.

Thank you.

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In light of our growing crisis of mega forest fires, it is appropriate for the US Senate to examine the associated costs. Your efforts to uncover root causes and effective solutions are consistent with your responsibilities, and are deeply appreciated by this citizen. As an American forester, I wish to aid you in your efforts to save our American forests from catastrophic incineration and to reduce burgeoning Federal fire suppression expenditures.

Therefore it is incumbent on me to point out to you that the USDA OIG **Audit** Report: Forest Service Large Fire Suppression Costs (Report No. 08601-44-SF) is seriously flawed and fiducially incompetent. The methodology and conclusions of the **Audit** are inconsistent with the accepted standards and fundamentals of fire cost accounting. As a result, the recommendations in the **Audit** are horrifically bad, and implementation will increase (catastrophically) fire acreage and fire suppression costs.

The **Audit** fails in three important ways:

- 1) The **Audit** fails to consider *total costs per fire*, and instead focuses analysis on fire suppression costs per acre.
- 2) The **Audit** fails to consider economic *cost-plus-loss*.
- 3) The **Audit** fails to consider the economic *utility* of fire suppression.

The errors and omissions of the **Audit** extend to its recommendations, which are tremendously counter-productive. If applied, the recommendations in the **Audit** will increase fire acreage and costs exponentially, and could initiate a region-wide firestorm that will be an unprecedented national disaster.

Proper analysis of fire suppression costs, using the standards and fundamentals developed over many decades of econometric study and practice world-wide, would lead to much different conclusions and recommendations. Qualified and fiducially competent analyses would lead to rational recommendations that could save billions of dollars, millions of acres, thousands of homes, and dozens of lives every year.

Therefore it is necessary that you revisit this issue. You can save America from expanding fire seasons, exploding suppression costs, and the horrors of forest holocausts, but only if you examine the issue with the appropriate analytical tools. To continue on the present course, based on the improper **Audit**, will result in major national disasters that are otherwise completely preventable.

## The Three Flaws in the Audit

The three fundamental fire cost accounting flaws in the **Audit** are technical, and require further explanation.

**Total costs per fire** – The **Audit** focuses analysis on fire suppression costs per acre, not total costs per fire. This is illogical and incompetent in the accounting sense. Total costs, not costs per acre, are the problem. A small fire may be expensive to suppress per acre, and megafire suppression costs may be much less per acre, but overall megafires cost magnitudes more money from taxpayers and the Federal Treasury.

For example, the Warm Fire of 2006 (North Kaibab District, Kaibab National Forest), could have been suppressed when it was one acre in size at a cost of approximately \$5,000. If that had happened, suppression costs would have been \$5,000 per acre. Instead, the Warm Fire was allowed to burn as a Wildland Fire Use fire (WFU). It eventually reached nearly 60,000 acres in size and cost over \$7 million to suppress. This works out to a little over \$100 per acre.

According to the defective logic of the **Audit**, the \$7 million dollar price tag was preferable to the \$5,000 price tag because of much reduced costs per acre. Yet the preferred option proved to cost an additional \$6,995,000 total!

You don't need to be a CPA to see the irrationality in the **Audit's** approach.

**Cost-plus-loss** – Almost since the founding of the US Forest Service in 1905, analysts have evaluated fire costs as suppression expenses **plus** the capital value of the resources destroyed. The cost of firefighting plus the lost value of whatever burned down is known as *cost-plus-loss* and is the standard parameter of forest fire cost accounting.

During the last two decades, the US Forest Service and other federal fire management agencies have focused on planning approaches that combined variants of the 90-year-old paradigm of cost-plus-loss minimization on simple deterministic models of initial attack on wildland fires (Donovan et al. 1999, Lungren 1999).

-- From Fried, Gilliss, and Spero. 2006. *Analysing initial attack on wildland fires using stochastic simulation*. International Journal of Wildland Fire, 2006, **15**, 137-146.

Federal fire suppression expenses were nearly \$2 billion in 2006, but I estimate losses at 48 billion board feet of merchantable timber with an economic value of \$24 billion. Therefore total federal forest fire cost-plus-loss was approximately **\$26 billion** in 2006 alone. (Sidenote: For comparative purposes, the entire 2006 timber harvest in Oregon, the largest timber-producing state, was 4 billion board feet, or one-twelfth of the timber destroyed by fire nationally in the same year.)

That valuation does not account for the loss of habitat, wildlife, watershed, and esthetic values. In many locations the US Congress has deemed that those non-commodity values exceed the timber values. Therefore the 2006 losses in non-commodities exceeded \$24 billion, because those forests that were catastrophically incinerated also suffered huge degradation of habitat, wildlife populations, water quality and quantity, and attractiveness for recreation.

Nor does that valuation include the losses incurred on private property in the form of tree farms, ranches, rural homes, and other rural private property destroyed by federal fires emanating from federal lands.

Nor does that valuation include the lives of 20 forest firefighters lost in the line of duty last year.

Thus the \$26 billion cost-plus-loss figure underestimates the true losses, which were priceless and irreplaceable.

Using the Warm Fire example, approximately 17,300 acres experienced the loss, on average, of \$2,400 per acre in timber value. That represents a total loss of \$41.5 million. Added to the \$7 million in fire suppression expenses, the total cost-plus-loss of the Warm Fire was close to \$50 million. That does not include the irreplaceable loss of a heritage old-growth ponderosa pine forest and the habitat it provided to rare and protected species such as the Kaibab squirrel.

The **Audit** totally ignores cost-plus-loss and thus fails to provide the critical information that Congress and federal forest agencies need to evaluate true fire costs.

**Utility** – For the last fifty years, or more, fire cost analysis has focused on calculations of the economic *utility* of fire suppression.

Particularly significant are the contributions of: Bratten (1970) on the use of non-linear mathematical programming utility maximization models under constrained resource availability; ... (Ibid).

We fight fire to prevent fire from destroying valuable resources. The prevention of destruction is what is useful about firefighting. In every fire there is some potential destruction that could happen, so we seek to prevent it by controlling and extinguishing the fire.

The potential destruction can be accounted for as *probable cost-plus-loss* should firefighting fail to stop the fire. That is, should the fire not be contained within a given perimeter, how much bigger could it get and how much additional firefighting expenses and resource destruction would likely occur?

The mathematical calculation of probable cost-plus-loss (if suppression had failed) minus the actual cost-plus-loss (assuming suppression was successful) represents the economic utility of firefighting.

In short, the dollar usefulness of firefighting is the value of what was saved (plus probable expenses) minus the total sum value of what was lost plus actual expenses. The result of that computation is called the economic utility of firefighting. The general goal of firefighting expenditures is to maximize the utility.

No rational discussion of fire suppression costs can happen without reference to the economic utility of firefighting. Maximizing utility is the only rational reason we spend any money on firefighting at all.

Using the Warm Fire example, the fire could have been extinguished at one acre for a cost-plus-loss of  $\$5,000 + \$2,400 = \$7,400$ . Instead the agency chose to let it burn for an eventual cost-plus-loss of \$48.5 million. The difference between these two figures is \$48,492,600. In other words, the decision to Let It Burn had a **negative utility** of \$48,492,600!

The **Audit** completely ignores utility. It is a very dangerous omission. The logic of the **Audit** is fiducially incompetent and wrong, and following it will lead to steadily increasing catastrophic forest fire acreage and exponentially greater cost-plus-losses in the future.

### **The Horrendously Bad Recommendations in the Audit**

The **Audit** methodology and logic is flawed. So too are the recommendations, which will increase, not decrease, fire acreage and fire costs.

1. The **Audit** calls for sanctions and penalties against fire managers who “overspend” on a cost per acre basis. The **Audit** goes so far as to call for a national investigation of a USFS Forest Supervisor who, the **Audit** alleges, ran up costs of a fire to \$3,000 per acre. Yet there is no analysis of the value of the resources, homes, communities, and lives saved by the actions of that Forest Supervisor.

In another case, a regional cost-containment review was conducted on a wildfire with total suppression costs of about \$9 million. The fire’s wildland fire situation analysis (WFSA) estimated suppression costs of \$200 per acre. According to the regional review, the fire brought a significant amount of political pressure on the forest supervisor and the incident commander to suppress the fire as quickly as possible due to the presence of State timber, giant sequoias, and the perceived threat to a number of small communities. In response to this pressure, the regional forester issued a letter emphasizing the need to throw “everything but the kitchen sink” at the fire. Accordingly, the fire was fought with much more intense

tactics that involved larger and more aggressive use of suppression resources. As a result, FS spent about \$3,000 per acre to contain it, or about 15 times the per acre cost estimated in the WFSA.

The regional team reviewed the IMT's decisions and concluded that the high costs "were justified." The team did not, however, explain how or why the costs were justified, or address the effectiveness of the team's tactics. Further, since the regional forester's involvement in this incident impacted the team's objectivity, a national review should have been conducted. However, we found no evidence that it was. – From USDA/OIG-A/08601-44-SF, page 31.

The positive economic utility of the Forest Supervisor's decision-making was in the billions of dollars. The authors of the **Audit** wish to see him investigated and sanctioned for that, and to send that message to all fire managers in the future. Fire managers are being told that their efforts to reduce total fire cost, cost-plus-lost, and potential cost-plus-loss will not be tolerated and punishments will ensue. Instead, fire managers are to let fires grow as large as possible to minimize costs per acre of fire suppression.

That policy will lead directly to larger fires, increased total fire suppression expenses, and increased resource losses. That is the opposite of what Congress and the Nation desire. At the root of that irrational policy are the fiducially incompetent methods of the **Audit**.

2. The **Audit** calls for an increase in Wildland Fire Use fires (WFU's), yet WFU's have large negative utility. A WFU is a wildfire started by lightning, in an accidental spot, on an accidental day, usually in the middle of fire season. In every single case, the choice made to let a WFU burn has resulted in inflated fire suppression costs and extensive resource losses.

The **Audit** claims that WFU's have resource benefits, but they do not. WFU's do not reduce the fire hazard; they actualize it, which often results in more dead fuels than were on the site before the fire. WFU's do not select which trees to kill, but kill old-growth and young-growth trees indiscriminately. Beetle-caused mortality often follows WFU's, killing the few trees that survive the fires. Wildlife habitat for forest-dwelling animals is often destroyed or severely damaged beyond recovery by WFU's.

WFU is a new name for an old practice formerly called prescribed natural fire. It was a prescribed natural fire that burned over a million acres in Yellowstone, our flagship national park, in 1988. Let It Burn policies led to the Biscuit Fire of 2003 and the Tripod Fire of 2006, among many others. Both were de facto WFU's that blew up. Both megafires destroyed vast tracts of forests containing T&E species populations and habitat.

The Warm Fire of 2006 started out as a declared WFU, and resulted in \$48.5 million in cost-plus-loss. The attendant loss of a heritage forest that had stood for millennia is incalculable.

That our American forests are heritage cultural artifacts is well understood:

[*Of the sampled trees*]... about 16 percent of all ponderosa pine had died within a year after the fires, many from secondary effects—possibly bark beetle attacks. Another 18 percent are dying and will probably be dead within a year or two. Thus we estimate that at least 34 percent of the mature ponderosa pine trees will be dead within a few years of the 2003 fires.

About 42 percent of all scarred trees were dead and dying as a result of the 2003 fires compared to 31 percent of the unscarred trees. The fire commonly burned into old scars inflicting heat damage to the cambium or consuming wood needed for structural support, causing the tree to eventually fall. We estimate that about half of living trees with historic bark-peeling scars will die within two years of the 2003 fires.

... [*The*] bark-peeling scars [*were*] made when Native Americans harvested the cambium for food. In the South Fork valley, bark-peeling scars on living trees date back as far as 1665, and **any accelerated mortality of these trees would represent an unprecedented loss of living artifacts of a former culture.** [*emphasis added*] – From Keane, Arno, and Dickinson, *The complexity of managing fire-dependent ecosystems in wilderness: relic ponderosa pine in the Bob Marshall Wilderness*, Ecological Restoration, Vol. 24, No. 2, 2006.

Congress has never authorized WFU's, nor investigated them. The time for that is long overdue. **The WFU Program should be suspended immediately and investigated by Congress to eliminate huge and unnecessary fire suppression costs and resource losses next summer!**

3. The **Audit** calls for a three-fold increase in WFU teams (modules). These are 7-person teams that hike out into forests in front of WFU's and attempt to predict fire behavior. However, the **Audit** makes no mention of the fact that a WFU team was involved in a burn-over event last summer where fire shelters were deployed.

Shelter deployment is a last gasp life-saving technique used when all others have failed. Fire shelters do not guarantee safety, and often fail to save the lives of the firefighters within them. Shelter deployments are of critical concern to the firefighting community. Yet Congress may be unaware of the Little Venus Fire incident:

Tuesday, the leader of the Unaweep Fire Use Module, Lathan Johnson, made a presentation to fire managers and forest administrators at the Middle Fork ICP. The presentation detailed the fire shelter deployment they were involved in July 17 on the Little Venus Fire, Shoshone National Forest. While hiking into their assignment, they were overrun by fire causing the emergency deployment. They were in their protective shelters over an hour until the fire passed. "It's not easy talking about this incident, but I'm hoping firefighters will gain something from our experience and maybe it will help others if they ever find themselves in a similar situation. This is a stark reminder to all of us about the dangers we face in our jobs and the importance of working together to make it through difficult situations." -- From InciWeb, National Interagency Fire Center, July 24, 2006.

**You may rest assured that if those WFU team members had died in their fire shelters, that would have been the end of the WFU Program right then and there.**

Now that Congress, via this testimony, has been informed of this incident, and you realize that the information regarding this incident has previously been withheld from you by the USDA and the USFS, Congress must undertake a full investigation of the Little Venus Fire WFU team fire shelter deployment. Congress and the public have a right to know what happened, and we must learn from the incident.

The expansion of the WFU program called for by the **Audit** will result in firefighter fatalities some day. When that happens, those responsible may find themselves on trial for premeditated manslaughter. As you should know, this is not idle speculation. Last year Federal prosecutors filed manslaughter and other criminal charges against a former fire commander, Ellreese Daniels, the fire boss in the 2001 Thirtymile Fire in north-central Washington that claimed the lives of four firefighters.

**4. The Audit** recommends that the Federal Government reduce expenditures by forcing state agencies to bear the cost of fighting fires that originate on Federal property and spread to private property. Their excuse includes reference to the imaginary “wildland-urban interface” or WUI:

Federal agencies do not have the power to regulate WUI development. Zoning and planning authority rests with State and local government. Unregulated WUI development increases FS wildfire suppression costs. Under the terms of current protection agreements, FS and Federal taxpayers bear the wildfire cost implications of development decisions made by local governments about where and how structures will be built in the WUI.

The inequity of this situation is further exacerbated by the fact that only a small portion of the WUI is in FS or Federal ownership. – From USDA/OIG-A/08601-44-SF, page 8.

The diminution of rights in private property is not an equity or fairness owed to the Federal government by private landowners or the states! That statement is absurd and exactly backwards. The fires that start on unkempt Federal land and spread to private property are irresponsible spillovers perpetrated upon American citizens by their own government!

The **Audit** seeks to blame the victims of horrendously bad Federal land management policies, and to harm rural residents by withholding firefighting funds to fight escaped fires from Federal lands. This is more than inequity; it is tantamount to a wholesale attack waged by the government upon the citizenry. No one in America, Federal Government included, has the right to burn down their neighbor’s property, regardless of who owns it.

In many Western US counties the Federal Government owns two-thirds or more of the land base. In those counties no private property is safe from Federal holocausts, regardless of arbitrary mapping by government regulators of undefined zones. Zoning is not the problem; catastrophic holocausts raging down on rural homes and communities from Federal land are.

Please don't blame the victims. Instead, protect us from misguided and hazardous Federal policies and the wildfires those policies encourage.

Last summer the Black Crater Fire (Sisters District, Deschutes National Forest) caused home evacuations 12 miles away from the ignition point and six miles from the US Forest Service boundary. The USFS delayed in suppression efforts on Federal land because the fire was near a Wilderness Area. Then the fire blew up. Forty percent of the acreage that eventually burned was on private land miles away from the ignition point.

During the Black Crater Fire, Leslie Weldon, Supervisor of the Deschutes NF, made a stunning public statement to the effect that if lightning ignites a fire again this coming summer, she will declare the fire a WFU and Let It Burn. When and if she does, that WFU will likely explode and require tens of millions of dollars to suppress. A Type I IMT (Incident Management Team) will have to be called to the Deschutes NF for the third time in five years!

That level of irresponsibility coupled with in-your-face threats made by public servants is simply not tolerable to Oregon citizens, or to the citizens of any state, and Congress needs to correct this situation, preferably before next summer!

5. Flirting with WFU's may lead to a regional firestorm destructive beyond any disaster in U.S. History. If dozens of WFU's are burning uncontrolled across the West during an upcoming fire season, and concurrently a large windstorm arises, the wind-driven embers from those WFU's could set the entire western United States on fire in a matter of hours.

Such an event occurred in 1910 when 3 million acres burned in 36 hours. The Great Fires of 1910 burned mainly in sparsely populated Idaho and Montana but still destroyed six towns and killed 78 firefighters in a matter of hours.

Windstorms are damaging enough to forests. When they carry fire, they can devastate whole regions: forests, towns and all.

The Audit recommends larger fires and more WFU's that burn for extended periods. That policy is an invitation to regional holocaust.

Unless Federal fire policies are altered now, next summer could be the most disastrous in American history.

## Conclusions

The methods and conclusions of the **Audit** Report: Forest Service Large Fire Suppression Costs do not follow standard and accepted fire cost accounting fundamentals. As a result, the **Audit** recommendations are misguided and incredibly destructive and dangerous.

Congress needs to reexamine fire suppression issues using qualified experts in the fields of forest fire economics, forest fire suppression, and forest management.

A reexamination using proper methods applied by qualified experts will yield much improved recommendations, which if implemented could cut forest fire cost-plus-losses in half. That is, the economic utility of proper analysis could be \$13 billion per year or more, not to mention the protection of habitat, homes, and humanity.

The issues I raise in this testimony have magnitude and urgency. I beg you to give them their due consideration.

Thank you for your service to America.

Sincerely,

Michael E Dubrasich  
Forest Analytics

PS I am ready, willing, and able to help you to save America \$13 billion, millions of acres of forest, thousands of homes, and dozens of lives, every year, now and into the future, plus avert a potential regional holocaust.

Please contact me for more information.