September 12, 2011
KUFM / KGPR
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Whom to Blame for Wildfires and Smoke?

As Western Montana valleys have become clogged with smoke from wildfires, and we collectively cough, gag, and rub our eyes, a familiar cry has been heard that these fires and their consequences are largely avoidable if only the federal government would do its job instead of perversely facilitating these wildfires.

The assertions about what federal forest managers could have done to prevent the smoke and burned trees are many. The most current one is that several of the fires whose smoke is plaguing the Bitterroot and other Western Montana valleys were caused by the Forest Service allowing those fires to burn instead of putting them out. Of course, we often watch wildfires burn despite millions of dollars of expenditures and the efforts of hundreds of fire fighters. Larger fires in hot, dry, and windy years are often extinguished by rain and snow at the end of the fire season, not by human efforts.

Wildfires are a natural force which, when the weather is right, burn beyond our ability to control them. That is one of the reasons that the Forest Service allows fires to burn in remote locations where they do not directly threaten human life and property. Besides the cost and difficulty, if not impossibility, of controlling all wildfires, wildfires also serve important natural functions such as reducing accumulating fuels, opening up the forest for wildlife habitat, and building biodiversity.

Others blame the wildfires on the opposite actions by the Forest Service: Its century-long fight against wildfire that, it is claimed, has allowed hazardous fuels to accumulate in unnaturally dense stands of trees that easily burn. A variation on this

theme blames the Forest Service for its failure to maintain a high level of timber harvest. Such commercial timber harvests or, at least, forest thinning, we are told, simulates the same sort of disturbance a wildfire would provide without the smoke associated with burning valuable timber.

The problem with this set of assertions is that what evidence we have does not support the idea that logging or thinning reduces the long term wildfire danger compared to leaving the forest alone or intervening only to control wildfire. Forest biologists here in Montana recently studied lands on which there had been no wildfires during most of the 20th century and compared those forestlands that had been logged with those that had not been logged.[1] Those that had been logged were much more crowded with trees of similar age and species and had a higher abundance of trees that were not resistant to wildfire. That is, logging increased the long-term hazardous fuel situation rather than reducing it. The researchers concluded that entering unlogged areas to harvest commercial timber or thin the forest would likely make the fire danger worse and that such vegetative manipulation should focus on previously logged and roaded lands closer to human habitation where we would get more bang for our buck both in terms of human protection from fire and reduced damage to natural systems.

Others have blamed the wildfires and smoke on the failure of the Forest Service to aggressively cut and remove the beetle-killed trees across much of the Western Montana forested landscape. Others do not blame the Forest Service for this but the law suits that environmental groups have brought against such "forest restoration" work, especially that far removed from human habitation.

[1] "Interactive effects of historical logging and fire exclusion on ponderosa pine forest structure in the northern Rockies," Cameron Naficy et al., ***Ecological Applications***, 20(7): 1851-1864, 2010.

These claims, too, have little scientific support, at least in terms of longer term risk of wildfire. Recent studies of Northern Rockies' lodge pole pine forests covering almost a 70-year period found that past infestations of forest lands by pine bark beetles did **not** increase the likelihood of those forestlands burning.[2] What did dramatically increase the likelihood of high severity wildfires were drought, low humidity, and high temperatures. Beetle infestations had no impact on the likelihood of such wildfires.

Simulation of wildfires by forest scientists also have come to similar conclusions: In very dry conditions, green forests are as likely to burn as beetle-killed forests.[3] However, in "intermediate" weather conditions, beetle-killed forest are **less** likely to burn, not more likely to burn, than green forests because there is less fuel available in the form of resin-filled pine needles to burn.

What the available research suggests is that ambitious proposals to engage in vegetative manipulation of the forest lands of the Northern Rockies would be impossibly costly given the landscape-scale of such a project, the need to remove or destroy the vegetation cut down, and the need to repeatedly reenter those lands every decade or so to control the growth of both natural forest fuels as well as the unnatural forest fuels created by previous tree cutting.

In addition, that research raises serious questions about almost all of the justifications for roading and harvesting trees in natural forests far removed from human

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[2] "The influence of mountain pine beetle outbreaks and drought on severe wildfires in northwestern Colorado and southern Wyoming: A look at the past century, Dominik Kulakowski and Daniel Jarvisa, ***Forest Ecology and Management***, 262(9):1686-1696, 2011.

[3]"Do mountain pine beetle outbreaks change the probability of active crown fire in lodgepole pine forests?", M. Simard, W.H. Romme, J.M. Griffin and M.G. Turner, ***Ecological Monographs*** 81:3-15 (http://esa.org/papers/), 2011.

habitation. Such active manipulation of forest vegetation may do nothing to reduce wildfire damage and may make it worse.

That does not mean that we can do nothing to protect ourselves. It just means that we need to be a bit more humble in how we look at wildfires. We need to see them more as a natural risk associated with living in a forested landscape. Like floods, hurricanes, tornados, and earthquakes, we cannot stop all or most wildfires. But we can protect ourselves from the consequences of those natural threats by changing how and where we build and live and being prepared for the ultimately unavoidable risk of a wildfire threatening our lives and property.

Intelligently accommodating natural forces is neither impossible nor defeatist. It is what human beings have been doing for thousands upon thousands of years. Our naïve confidence in our technological prowess and our ignorance of the complexity of natural systems throughout the 20th century have simply tempted us into ignoring the need to live **with** nature rather than do battle against nature. It is time to turn away from that ultimately arrogant and destructive, but very familiar, Faustian temptation.