The Warm Fire: Silt in Streams,

Throughout the nation, environmental groups and various government agencies are using silt released by timber harvesting as a means to restrict the practice. They demand outrageous bonds be posted in advance. They demand years of expensive water quality monitoring of dubious diagnostic accuracy. Here in our County, logging roads are required to be virtually paved, with 12" of compacted rock (County roads are often a tenth of that). They want every stream, even if it is only seasonal, to have a buffer zone. Even the smallest private timber harvest plan in our County now involves some $60,000 in planning and paperwork, most of it now involving water quality. In these project assessments, the characteristically minuscule amount of silt produced by a harvest is NEVER compared to the aftermath of a fire resulting from the "no action alternative."

We saw in the Cone Fire what thinning can do to protect a forest. It should be intuitively obvious how much less post-fire erosion there might be if forests are thinned in advance. So, what does happen to water quality if there is no logging and a fire grows to catastrophic proportion? How much erosion is there under those circumstances?

As to how this happened, I will quote Chief NEPA Planner (National Environmental Policy Act), Ariel Leonard, in **The Warm Fire Assessment**. From the Introduction,

"Many of the forested stands on the North Kaibab Ranger District have had unnaturally high live and dead fuel loading for some time, particularly in the ponderosa pine and mixed conifer vegetation types. Thousands of acres are in need of treatment. Methods to achieve desired conditions include mechanical thinning, prescribed burning, and wildland fire use. ***The high costs associated with planning and implementation of prescribed burns and thinning projects*** *have made wildland fire use a desirable option."*

Allow me to translate**:** 'Activist lawsuits cost a fortune... We can't be sued for a "Natural" fire.'

To continue: *“The Warm Fire was started by lightning on June 8, 2006. The fire met the criteria for wildland fire use, and was consistent with the Kaibab National Forest Plan, Kaibab Fire Management Plan, and the Federal Wildland Fire Management Policy.”* (In other words, ‘Don’t blame us’) *“The Warm Fire was managed as a wildland fire use fire for approximately 2 ½ weeks, during which time, approximately 19,000 acres were treated.”*

The Forest Service allowed it to progress as a “management fire” because it was their only chance to thin it. After all, fire is “Natural,” even when the fuel load is not.

Unfortunately, what they don’t say in the “Assessment,” is that they made the decision to let it go based upon the strength of a computer model of a forest that was out of state, which compares rather unfavorably with the amount of planning that goes into a typical private timber harvest.

So, how did they do as far as “management” goes? Did the fire “cleanse” the forest?

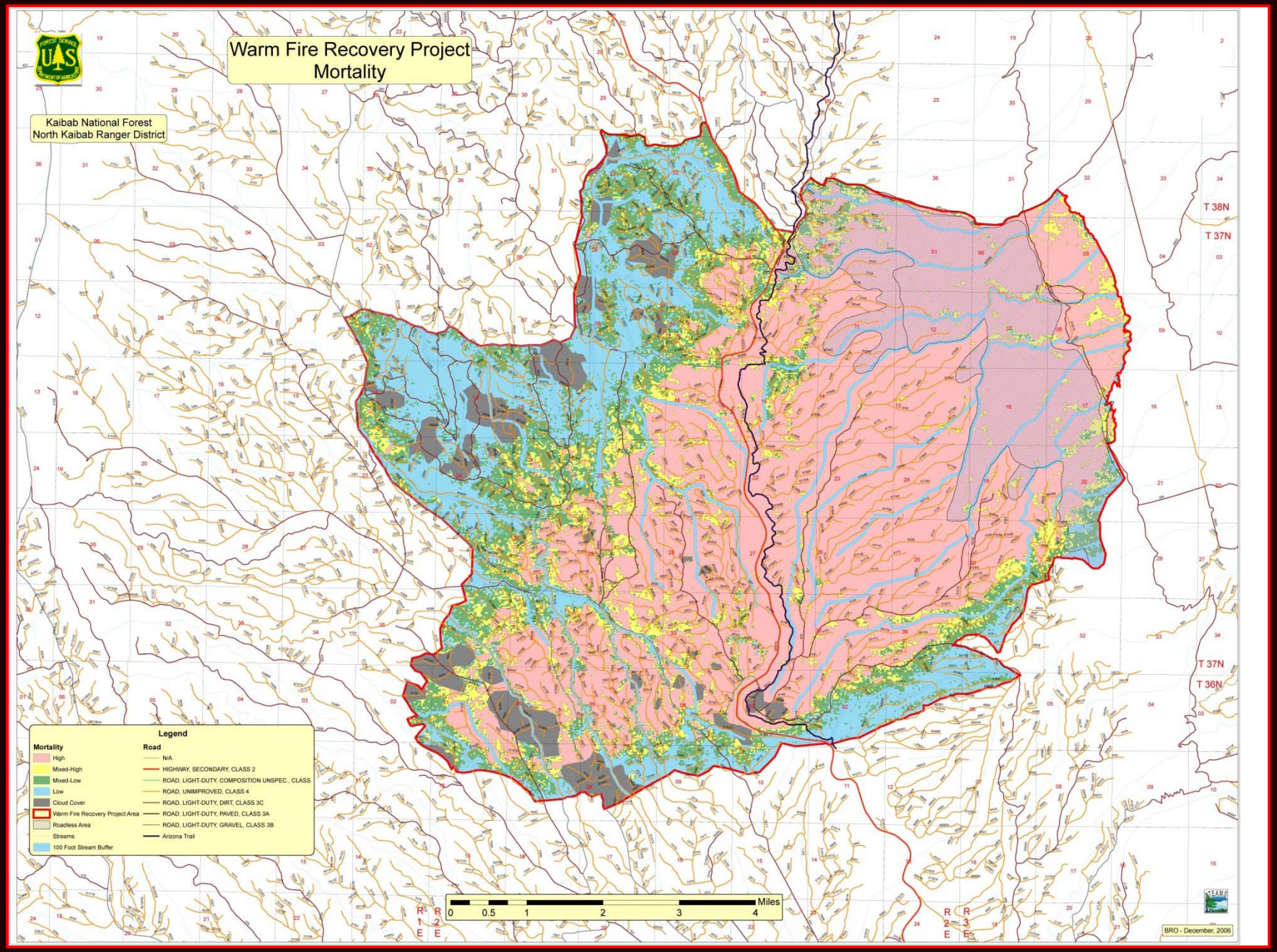
“However, on June 25, winds pushed the fire south, outside the Maximum Manageable Area (MMA). Approximately 39,000 acres burned between June 25 and July 4 while the fire was managed under a wildfire suppression strategy, much of which burned at high intensity and resulted in severe fire effects.”

Once it gets out of control, they can have all the money they want to fight it.

I am told the smoke column reached 30,000 feet.

So, how bad was it, really?

After all, fire brings back post response species that feed wildlife.



This image is a link to the source. The pink area depicts “high mortality” over about fifteen square miles, of which some of the highest severity was in the “roadless area” on the upper right.

“High mortality” looks like this.

It was a catastrophic crown fire.

Scientists like to call it “an event.”

The heat burns the organic component of the surface and removes vegetation that would keep the raindrops from impinging the mineral soil directly, allowing them to loosen soil particles. The ash easily forms very small particles which then clog the pores in the soil that would normally absorb rain. It's called, "hydrophobic soil."

So when it rains after a fire, you get a LOT more runoff. As the sheet wash comes down the slope the erosive process begins, and the flow gathers…

and goes downhill from there.

When it finds a road, the “debris flow” is often sufficient to plug the culverts.

When the culverts get plugged, the flow goes somewhere else.
You can see from the banks how much it was. Let's follow it!

Eventually, it crosses the road. The enviros will tell you, ‘It’s the road’s fault.’ As the line of ash in the back confirms, this was not merely ponding. It takes a heck of a flow to cover an area that wide, depositing so much material you can barely see the original stream channel. Yet a rain of only 1-2” caused a mess like this.

Eventually, the water finds a way back into the channel (the road is on the left).
Environmentalists consider stream channels like this to be so sensitive they require 100’ protective “buffer zones.”

While we are waiting for that caustic mud flow to get down the hill, one has to ponder:

Is massive erosion after a wild fire unusual?

Not a bit.

Here are a few photos from the US Geological Survey. I apologize to Mr. Moody for using them here, for he may well suffer for doing his job by releasing them without a FOIA (Freedom Of Information Act) request.

There are many public servants in these agencies who just do not understand why things go this way.

Hopefully, by the time we are done, you will.

Different fires, same policy, same results.

This erosion of a drainage created an incised channel after the Cerro Grande Fire near Los Alamos, NM in 2000. The view is upstream and the blue backpack is about 1 meter tall. The maximum 30-minute rainfall intensity was about 0.8”/hr. The incision seen in this photo was after the wildfire and rain storm; prior to the storm this drainage had no definite banks.

Photo by John A. Moody US Geological Survey (with conversion to English units by the author)

This is a deposition zone just downstream of the prior slide.
Looks familiar now, doesn't it?

Alluvial Fan, Buffalo Creek Fire, May 1996 burned 10,500 acres in mountains southwest of Denver, Colorado. This wildfire lowered the erosion threshold of the watershed. Thereafter, a 100-year rainstorm in July 1996 caused erosion upstream and deposition of this alluvial fan at the mouth of a tributary to Buffalo Creek. Buffalo Creek is flowing to the right at the bottom of the photograph.

Organic debris and sediment deposited in Strontia Springs Res., which supplies drinking water to the cities of Denver and Aurora. This debris came from two watersheds (Buffalo Creek and Spring Creek) burned by the 1996 Buffalo Creek Fire. Associated with this debris was an increase in manganese, which increased the chlorine demand of water treated for municipal usage.

A consequence of wildfire is the increased probability of flash floods. This flash flood occurred in Spring Creek on 29 July 1997 within the area burned by the Buffalo Creek Fire. The view is upstream and the discharge is about 6 cubic yards per second from a maximum 30-minute rainfall intensity of about 0.8 in/hr. Rainfall-runoff relations suggest a rainfall threshold at about ½ in/hr, above which much larger flash floods occur.

Rill erosion on a burned hillside after the Buffalo Creek Fire.
One often hears the activists say that the only erosion after a fire is on the surface.

The deposition on the left is sheet erosion, after the Power Fire, El Dorado National Forest, Amador County, California, October 2004. There had been no logging or disturbance on this site.

Photo credit: name withheld by request

Another view of the Power Fire aftermath.

If they retain this material, it might make a nice swale instead of an incised (cut) channel. Prior to a fire, it would take thinning the trees to get enough light to grow sedges in the channel. Now it will take logs to slow the water down.

The “stair stepping” you see can actually reduce erosion by slowing the forward momentum of the stream and killing gravitational energy with vertical drops.

So, it could become a good thing, or a bad thing for riparian life downstream, depending upon where they go from here.

To leave it alone would virtually assure that as the woody debris rots the flow will cut through the material and move it downstream.

Sorry for the length of this diversion from the Warm Fire, but it takes a while, even for a flash flood, to go **26 miles** as the flow from the Warm Fire did.

Let’s head back.

The deposition in this eddy is at least a foot thick. It is likely to be so concentrated with nutrient that little will grow in it for a long time, except weeds. The level of the tree in the middle of the drainage shows what was deposited as the flow subsided. Note the size of the cobbles on such a shallow slope. It was a heck of a flow.

Notice that the scouring on the far side was sufficient to expose the roots until the flow took down the trees. The channel was deeper, but now it is filled with deposited cobbles. This stream will not have a late season flow until it is sealed with sediment; the water will be under the surface. Wildlife will have to leave for lack of water.

Look around.

Sometimes a problem doesn’t sink in unless one spends the time to comprehend the scale of it.

This view of the Warm Fire reminds me of the Long Meadow Fire at Mesa Verde National Park (which you'll see in the next picture book). Although unlike Mesa Verde, I've heard they're getting pig weed here on the Kaibab; instead of musk thistle and cheat grass like they are at Mesa Verde.

Even in a channel that is not usually a stream bed, the flow was sufficient to move boulders of this size.

If this was your land, wouldn't you feel overwhelmed trying to restore even a few acres of this? Planting trees, weeding, feeding wildlife so that it wouldn't starve but would still retain their survival habits. How much time, money, and expertise would that take?

To most people, this landscape looks huge. To a bureaucrat charged with managing tens of thousands of acres, it's not such a big deal in the grand scheme of things. And that just illustrates part of this problem**:**

Are we going to get detailed land management optimized for both humans and wildlife that way?

Methinks the answer is obvious.

So is the alternative, which is more of the same**:**

1. A nation impoverished by regulation of its basic natural resources,
2. increasingly fragile with regard to interrupted supply,
3. forced to defend the integrity of those supply lines with the lives of its children,
4. and losing the productive integrity of its natural systems.

It is happening right before your eyes.

Sure, “it will come back,” eventually (although if it gets hit with weeds, maybe not).
More importantly, was this in any way optimal?

Once the slope flattens out sufficiently, you get deposition.
With this much standing fuel, it could burn again, but hotter, enough to fire the ground into a ceramic.
There are places where the Forest Service has needed jack hammers to plant trees after similar “events.”

If this had been caused by a timber harvest, the activists would call this water “**polluted!!!**”
But since it’s a lightning fire, we can call it “Natural.” You wouldn’t want to drink it.
Yet even after passing these settlement ponds, it went on…

It left the forest on the Kaibab Plateau...

and headed for the desert below, still leaving a six-inch cake of material wherever it went…

and went...

…for a total of over 26 miles.

Yes, this is “Natural”

But anything with stumps is not.

So maybe now you can see why some of us think stumps can be pretty!

We can get to work cleaning out junky overstocked trees, improve the range,

…and don’t get me wrong, there is a lot of it that isn’t good for much more than bugs and fuel pellets. Some will argue that we need these snags for birds, but there are so many here there isn’t even a decent flyway.

While there is a lot that really is worth improvement, (nice stand, but it still needs thinning, badly).

and the blessing of pleasant surprises when we do the work, OR…

Fire can be a wonderful management tool, but to manage the consequences requires managing the fuel.
If we don’t, we pay the price of negligence, which can go on for a very long time.
Your choice.

Because there is a lot more decadent overgrown forest at risk than what was lost in the Warm Fire
By Forest Service estimates, 140 million acres of it.
Timber, watershed, weeds, wildlife, raw materials, energy, and money, all at risk.

A great deal is at stake.

More Picture Books by Mark Edward Vande Pol

Quick Reads

Range Management

Zion National Park

Canyonlands National Park

Deseret Ranch

Fuels Management, Succession Run Amok

The Cone Fire (the benefits of active forestry)

The Warm Fire (what happens without it)

Fire Aftermath: Mesa Verde National Park

The Croy and Summit Fires

Socio-Ecological Paradigms
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Predation management is not an option

Sustained Development
Cities are becoming prisons

Katrina: What Did You Expect?
Environmental bureaucracy can be deadly

Meaty, But More Rewarding

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This is 30 chapters introducing the 28-year native plant restoration project on our property. Here you will learn what was discovered, what I did about it, and how. It also presents newly discovered ecological principles underlying why I chose to do what I did. This gets technical. This book will explain why restoration land management should be a major industry, one that could transform our society and possibly save our country both militarily, socially, and economically. Here you will learn how environmental “protection” is inducing the mass-extinction of the native seed bank. Here you will read the most intensive biological history of coastal California you will ever find, anywhere. Here you will learn newly discovered principles of soils management, that may be widely applicable.

Other Writings by Mark Edward Vande Pol:

Natural Process: That Environmental Laws May Serve the Laws of Nature,

©Wildergarten Press, 2001, 454pp, ISBN: 0-9711793-0-1, LOC Control #2001092201.
http://www.naturalprocess.net

***Shemitta: For the Land is Mine*,**

©Wildergarten Press, 2009. Contains**:** 217pp text, 980pp overall, 14 picture books, 2 tables, 963 photographs, 9 maps, 2 drawings, 2 charts, 145 footnotes, 358 citations, and 216 other source references, not including external Internet links. ISBN 978-0-9711793-1-8. **http://www.shemitta.com**

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