


Valerie Gremillion, Ph.D


Acting Supervisor of the Santa Fe National Forest James Duran or other
Email: objections-southwestern-regional-office@usda.gov
Re: Santa Fe Mountains Landscape Resiliency Project (SFMLRP) Project 55088, SFNF

Dear SFNF Supervisor Duran or New Supervisor:

Thank you for hearing my comments on this Plan. Please consider my last three missives to you in my role with you as an Objector, as well as this missive; you have certainly heard from me on these issues sufficiently that I ask you to accept this statement as definitively both me, and that these statements indeed relate to my previous objections to this plan. Please so note: I am unpaid for this. I work for no one. I have NO agenda, except the actual health of our ecosystems as we head into this Climate Transition. Apologies for any errors, and please know that while I have no time to document them here, I have additional ecological strategies and system-derived insights that are available to help you in your work on this forest.

Before beginning I wish to state that it is imperative that the USFS do an *outside* investigation of the Hermit's Peak/Calf Canyon Fire. The 14 things – at least- they were major procedural, technique, and judgement errors indicate far more than one problem in the execution of prescribed fire plans. I therefore **object** to any further burning on the SFNF until a true understanding is reached by an outside investigative force – one that is published on the USFS website, rather than a hidden report. (Try finding it if you don't know "Las Dispensas"!

The framing of the USFS is arguably as wrong for our climate change times as it was when they stopped fire during the wettest 70 years in recent southwest history. USFS attribution – that it is a lack of fire, rather than fire weather, increasing temperatures, drought and concomitant dry soil, air and vegetation – can be understood if yes, that lack of fire happened to accompany very wet southwestern decades.

Indeed the last real Forest Plan (as opposed to the myriad of projects across forests) was written in 1987, at a time when the daily weather pattern of monsoon rain and temperature changes predictably dominated summer, and a 10-foot snowpack was common on the SFNF mountaintops. 1987, whose precipitation differed by almost 100% at 14-15" a year from current and falling precipitation rates (currently 7-8" a year). Those new rates were already happening in 2014, with the first real effort toward a new forest plan – but they are nowhere considered, same as the oncoming drought .¹

¹ I need assistance getting numbers from SFNF on all of it – including rainfall etc

I urge you not repeat the slow turn you made in returning fire to the forest, in seeing that careful approaches are critical now, and there is NO all-or-none approach that will work without catastrophe.

Currently, the entire current plan of the USFS is aimed in the wrong direction regarding the Santa Fe National Forest. This plan – both the SFLMRP and whatever variation of it is being used for the entire SFNF – should be an overview to how to maintain and build this Forest – as in its forest, its trees – to adapt to climate change.

This is not in question: if management of the SFNF is drastically altered, we will continue to lost water-production capacity until it is degraded to nothing. The economic impacts of this, while ignored by the USFS, would be severe for this region.

Removing trees by whatever manner is deforestation- and that is NOT our priority in this new era. Cutting and burning des NOT reduce risk to the ecosystems and communities surrounding the Santa Fe Forest, except in the very short time window of acute reduced risk due to fuel removal. For all other times, and even after piles have been made but before they are burned, and when the fine fuels of thinning are drying on the ground for months – the USFS is *increasing* the risk of fire. The fine fuels that are most dangerous, are in fact *created* by the USFS; only because of this increased risk is it necessary to then burn fine fuels.

This hidden risk, and associated hidden costs generated by it, are the root of risky fire on this forest. The facts, parameters, and context of the Santa Fe National Forest indicates a strong necessity to completely switch OPERATIONAL MINDSET, formal goals and aims, and philosophical and theoretical underpinnings. It is time to discuss extraction, economics, and an enhanced role for the USFS that allows it to engage with its roles through cutting edge science, tools, and technology, to enhance a forest ecosystem that benefits us all.

I **object** to the entire forest plan in its thin-and-burn provisions, for a myriad of reasons including, briefly, that it explicitly plans to open up canopy and increase distance between the few remaining trees; that it removes by cutting or burning, organic debris that forms groundcover and prevents loss of water through solar heating of soils. While this is a great plan for merely grazing allotments, the almost 40,000 acres surrounding Santa Fe that you plan for this cutting and burning has far more significant ecological functions than creating grass or rangeland out of actual treed forest.

The primary issue with the USFS approach is that it is completely ignoring the region's need for trees, not grazing, to maintain both this forest as ecological forest, and to continue the massive cooling assist our forested mountains bring the region.

The approach of the USFS in the SFMLRP is to explicitly open up canopy, inducing large-scale solar heating which dries out forest, soils, and aquifers – the exact opposite of our objectives in New Mexico to foster, gather, and engender water production, because we cannot maintain living here without it.

I therefore **object** to the thin/cut and burn provisions in the large-scale, non-specific way it is used. The very large-scale nature of it means the USFS is directly impacting water capacity and reserves of the region by directly decreasing evapotranspiration through tree

removal. This is neither wise nor sustainable, and it directly costs the citizens and governments of this region. How will you restore the water whose generative infrastructure you are removing? How will you pay us for water, or bring us the water that only a forest can provide?

Objection: no explicit window on burns for “forest health”. If thinning and burning is truly about “forest health” – and not about simply a forest that is best as allotments for grazing animals – then, like any other tools or techniques, it has optimal and negative or mediocre uses. Given its risks, this indicates a quite certain risk management position in which entire classes of windy days, high temperatures, no snowpack, not during a drought days – should clearly be eliminated by their riskiness in a risk matrix. Decimating 341,000 acres of forest was apparently not in the risk assessment, and USFS should have been alerted by the severe drought, low precipitation, windiness, and locals begging them not to do the burn, to not even ATTEMPT such a fire on such a day.

There is little if any real effort to make definite these decisions – at least through absolutely ruling them out under certain conditions. Even with your meagre weather metrics, risk assessment was sufficient – if the Burn Boss had not assumed that barely being within parameters was sufficient, not thinking two or more on the edge changed the equation. This may be a difficult call, but additional existing metrics like vapor pressure deficit, soil max temperature and soil dryness would have eliminated this doubt and prevented this fire.

This is just one **reason I formally object to the out of date science, technology, and metrics used by USFS**, especially in their forestry. These few examples should be added to the fact that an uncontrollable megafire - the Hermit’s Peak-Calf Canyon Fire – was predicted by me in earlier letters with USFS, as well as other Objectors. That these predictions were considered silly by USFS only illustrates why it is USFS that must update its understanding, not we the protesters of USFS technique and application : we were right, and USFS was wrong, in its insights and assumptions on this forest.

It has only cost you a billion dollars or so to find out – so far.

A few specific examples of USFS deficiencies in keeping up with 21st century science and technology:

Metrics: vapor pressure deficit, max soil temperature and soil moisture are shown to be definitive metrics for USFS use in starting fires or analyzing forest status; you use relative humidity. I therefore object to your use of outdated weather metrics and analytics; please update them!

Risk assessment: Your latest tools, now available, are not being used by active personnel.

Regeneration failure: one of my last major **objections** was to the likelihood of USFS actions inducing regeneration failure of our ponderosa, pinon, and other tree stocks here. This was rejected by your staff, yet the science I have been quoting to you (see my previous letters for references) was summarized by your own experts at Rocky Mountain Research Station, in

“Resilience Test: Can Ponderosa Pine Bounce Back after High-Severity Fire?” Mike Battaglia and others document that these are very real likelihoods that you have been ignoring.

Hydrological modeling: USFS has multiple new forest hydrology tools for watershed and other management, please use them! For example, Sun et al, 2023, reviews them for you.²

I still **object** to the combination of cutting and burning, especially removing older, larger trees that serve as ecosystem anchors, due to its likely inducement of regeneration failure here.

Forest rehabilitation: please look into the application fields of regenerative agroforestry, regenerative ecology, and permaculture. They are demonstrating large-scale rehabilitation is more easily possible with specific techniques for hydrogeographical repair and rehydrating forest zones, and preventing desertification. As the SFNF USFS must address all these, a rapid upgrade on available techniques is not only warranted but necessary.

I object to the RISK analysis and approach used by the USFS: it does not even sufficiently use or attend to your own science on this. Before addressing fire risk, however please note: your risk analysis is about USFS risk in starting a fire, and does not apparently count the catastrophic risks to *others* in their assessment.¹ USFS has not assessed risks to: the health of residents, tourists, wildlife; local cities or communities; to ecological assets, like water or the watersheds of the forest; to climate stability for this region; to the economy, of local communities, Santa Fe, northern New Mexico, in their real estate prices, tourism and forest economy; to the economy and reputation of New Mexico; to the forest and its sustainability itself.

USFS cutting-and-burning strategy in northern NM *increases* risk of fire across the forest. The latest overview of southwestern forest mortality (Bradley et al.³) finds that the less human intervention in the forest, the more resilient to fire it is. This is true for cutting, burning, roads cut, and all negative forest treatments which disrupt the ecological integrity of the forest. Fire also requires one thing beyond oxygen-heat-fuel, and that is ignition: there is no ‘spontaneous’ fire.

Specific risks usually ignored by the Forest Service:

- Prescribed fire starts hundreds of fires at dozens of locations a year. Their scale and geometry are inherently more risky than natural fire: a point-source lightning-caused fire expands around a point, a line of fire laid out for prescribed burns enables larger and more dangerous escapes along all perimeter (for a 1000-acre fire, escapes are possible along each 33-acre edge).
- Thinning/cutting involves additional fire risk due to chainsaws, macerators, heavy machinery, vehicles that spark. It also leaves huge slash piles to dry and shield embers, across that 1000 thinned patch. They often cause fires, as in Cerro Grande Fire, and now in the Forest Service’s Calf Canyon Fire.
- Thinning/burning, the combination planned for Santa Fe’s 40,000 acres (Figure 1), introduces risk due to fuels growth resulting not from tree growth, but to undergrowth’s explosive growth

² Sun et al, Forest hydrology modeling tools for watershed management: a Review.
<https://doi.org/10.1016/j.foreco.2022.120755>

³ Bradley, C. M., Hanson, C. T., & DellaSala, D. A. (2016). Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States?. *Ecosphere*, 7(10), e01492.

response to fire (removing the “reduce fuels” argument for prescribed fire). If these 40,000 burned acres aren’t **re-burned** every 3-5 years, risk due to enhanced fuels is increased. This commits us to further risk while pretending repeated burning across a massive landscape is risk-free (this per the Forest Service, not *our* analysis!)

- Destruction of forest integrity by thinning/burning increases risk of pests, pathogens, and invasive species. It also damages the soil’s water-holding capacity, tree symbiotic relationships, and microbial and other soil ecosystem structure – all of which decreases the forest system’s resilience to fire
- Destruction of forest structure, hydrogeography, and ecological integrity through 90% thinning and burning produces wind tunnels through disrupted forest, generating high winds where embers can be dispersed along miles of forest (e.g., the Camp Fire in Paradise, CA).
- Prescribed burning risks **loss of the forest**. While forests 20+ years ago used to regrow themselves post-fire, increasing temperatures and drought make this currently unlikely after fire (for example, much of the Jemez will not regenerate). More specifically, the most recent research shows 100% loss of ponderosa seedlings in even a light-intensity fire (Partelli-Feltrin, 2020). This is **counter to Forest Service assumptions** and is likely to result in *regeneration failure* – failure to procreate- of ponderosa, pinon, conifer. This regeneration failure is likely to be the death knell for these forests, and the likely extinction of these tree species in New Mexico.

I further **object** to your use of fire science to impose structure on the forest.

The fire science it relies on is not applicable to forests during climate change, because the stressors imposed by fires in earlier times were not in alignment, and adding to climate-induced stressors. The forest structure – a grazing structure within the forest, that is - will result in more escaped fires and megafires. You, USFS, are creating the conditions for them, as fuels are not the primary drivers during our climate transition, but fire weather and winds are. By removing the bulk of the ecological forest in these thinning/burns, you open up the forest to driving winds that spread embers and amplify winds. This is a known correlate of USFS prescribed burning, specifically seen in the Camp/Paradise CA fire. It results in increased spread of embers throughout the forest, and through the excessive winds now induced, more rapid expansion in any fire.

Perhaps exactly like what was seen in the Hermit’s Peak Fire.

Fire science has known issues that now become especially relevant because of climate change. The Fire Return Interval should be called “fire return interval including human burning” as it includes how previous human settlements and culture have shaped the forest with fire, in addition to natural fire, assumed to shape ecology correctly. Aside from other technical issues which undercount tree mortality, human perception and liking about “what works for us” “what we prefer” have little or nothing to do with the natural, resilience, adaptive ecology of ecosystems themselves.

That we confuse **our** desire and liking for a ponderosa “parkland” with the behavior or natural ecosystems and the fire that shapes them, means actions using this as a base are confusing their ecological science with human bias. This includes our bias to promote our animals – like cattle – over the rest of the natural ecosystem, for instance by insisting, as this plan does, on cutting and burning almost 40,000 acres to optimize range habitat for cattle (see pages 1-133/134 of the SFLMRP for description).

The “forest health” being maximized by prescribed fire is not, as most would believe, to increase the health of trees, their ecosystems and partners, or even the biodiversity and habitat of the forest as a whole. In this case, the “forest restoration” that is assisted by the fire is primarily in restoring the **structure** of the forest, as it was shaped by fire.

However, when our estimates of FRI include human burning over time as part of the natural pattern, we merely use this as a bias to reconstruct forest structure that was **already** managed by humans and probably does not reflect “forest health” and healthy forest structure due to natural fire, but merely repeats our earlier management.

That is, humans desire and often used fire to create, forest in an open character that makes it accessible to cattle, foraging elk and deer that we hunt, and humans. The “parkland” forest so appreciated by the USFS was not natural, but a condition shaped by humans for the needs at the moment. Not natural, not to be mitigated as natural.

And now **all** our needs are different : to maximize carbon storage and cooling. These **MUST** be added to the primary multi-use factors and justification the USFS uses to metric and decide all things – and it is an actual **solution** I propose to the dilemma and conflicting requirements the USFS now faces.

Under climate change conditions, the federal government and yes, the USFS, must change its approach to both extraction from, and maintenance of the forest, or it will neither be forest, nor yield an extractable resource.

CONCLUSIONS

This is the critical phase of climate change: the time when its trajectory can most easily be moved. That time is swiftly moving away – all though we have missed the best and easiest times. Now we must conserve our forest in all domains until it can be assessed for its ecosystem services, its watershed capacity, its forest product, its many uses by people – now including communities that rely on its integrity for their water, their pastures, the forest’s economic and mental health effects.

Please do not forget that your mission is NOT short term, but for future generations. That means switching forest for grazing, depleting water and evapotranspiration on the forest, and removing all the trees we need to be actively sequestering carbon, are far too short term to take precedence over maintenance of forest ecosystems that we need for the future we face. Yet your negative treatments and constant removals of biomass and trees from the forest are far from restorative, indeed they are *depleting* the forest, of the capacity it needs for regeneration. Please understand – to rebuild and restore this forest requires inputs of positive treatment; even ecosystems can be depleted to death.

A new type of Forest Plan is imperative, and why and how the Forest Service can address new mandates not to deforest, to count all carbon emissions against budget, to massively invest in diversity, in soil quality, in water capture and stacking, from ecosystem to aquifer; in once-considered approaches – goats to Alan Savoury.

A new kind of Forest Plan that addresses the integrated needs of communities as well as forest ecosystems and multi-use policies is needed for this climate transition era. It is critical that the USFS engage in real partnerships that bring new and innovative ideas to the table, help supply the needs of USFS and firefighting, and help generate a new vision of how to protect our valuable ecological assets – as well as truly protect them, now.

A new kind of Plan could lay a path for how USFS can gracefully enter the new era of enhanced local interactions that will be necessary in this stressful era, and could assist SFNF USFS in grasping that reversals in policy for some regions may be necessary where there are new conditions, or new understanding. I put this on the table as a Solution to get it into your pipeline, but I am raising this issue with USFS bureaucracy as well as the executive administration.

I would like you, the SFNF Forest Service, to think about what **should** be in such a plan, that is currently missing, and how a different kind of Plan could be better used to stabilize and enhance our ecosystems.

Thank you for your attention.



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