STEWARDING THE FIRESHED

Protecting Our Forest, Community, and Health

The Greater Santa Fe Fireshed Coalition

FIREADAPTEDNM learning network

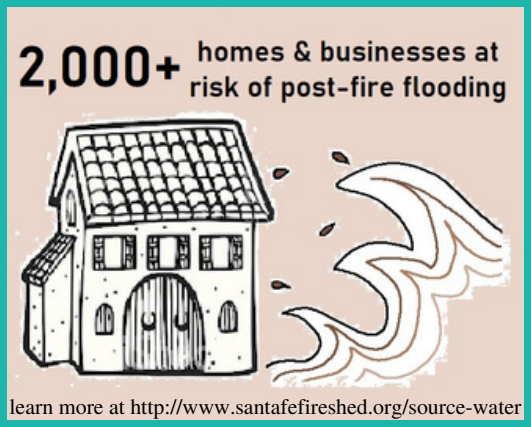
EXECUTIVE SUMMARY

The Greater Santa Fe Fireshed is an area of 107,626 acres surrounding Santa Fe which includes the Santa Fe National Forest, tribal and state land, county open space, and residential areas. These areas are the current and ancestral lands of the Pueblo of Nambe, Pueblo of Tesuque, and other indigenous and traditional communities. The term "Fireshed" recognizes the interdependent social and ecological concerns related to wildfire on the landscape.

Past management practices and the effects of climate change have left both human and natural communities within the Greater Santa Fe Fireshed vulnerable to destructive fast-moving wildfire. Forest and fire managers are using the best available science and public involvement to improve forest resiliency through stream restoration, thinning, and prescribed fire. This work reduces fire risk and reinvigorates the forest while preserving resources such as homes, recreation, water, businesses, and roads.

Please read on to learn more.

Photo courtesy of Stephen Guerin, Simtable



learn more at http://www.santafefireshed.org/source-water

HOW DID OUR FORESTS GET HERE? WHAT MAKES THEIR CURRENT STATE UNHEALTHY?

Many of the tree species in the forests surrounding Santa Fe reflect a deep relationship with wildfire. Ponderosa pine trees, for example, have thick deeply grooved bark that insulates their living tissue from heat and can shed their lower branches, preventing fire from climbing into their crowns. Historically, these fire-adapted forests experienced widespread low-severity surface fire mixed with small patches of high-severity fire.

While it is essential that we put out some fires to protect our homes and communities, our efficacy in suppressing them over the last 100+ years has largely removed fire from these forests. Without fire, flammable woody material called fuel has built up for more than a century, which leads to more intense fires when the forests do burn. Plentiful scientific and anecdotal documentation provides evidence for this unnatural increase in forest fuel loading, including: research on tree rings from northern New Mexico[1, 2, 3, 4], aerial photos, historical descriptions, and accounts from local pueblos[5, 6]. As UNM Professor Matt Hurteau puts it:

> ***"Past land-use and fire suppression have increased tree density and the amount of vegetation available to fuel a fire... (With) warming temperatures and more drought (these) conditions support the types of large, hot wildfires that are becoming increasingly common."***

Scientists have studied fire scars preserved in growth rings of trees in the Fireshed going back hundreds of years. This record shows that low-severity fire burned through the forest every 3-5 years on average, consuming vegetative fuels on the forest floor and killing crops of young-growth brush and tree saplings. Repeated burning ensured that mature trees, capable of surviving the fires, had plenty of nutrients, water, and sunlight to remain healthy and strong. There were not as many trees on the landscape yet greater diversity in tree species and age. Ancestors of Jemez Pueblo thrived in an ancient Wildland-Urban Interface (WUI) for more than 500 years, harvesting fuel off the surrounding landscape for domestic and architectural use and intentionally setting abundant, small, patchy fires that reduced the potential for high-severity fire[7]. Evidence suggests these practices were widespread among Puebloan communities.

[1] Touchan et al. 1996, [2] Allen et al. 2002, [3] Margolis and Balmat 2009, [4] Margolis et al. 2011, [5] Swetnam et al. 1999, [6] Allen 2002, [7] Roos et al. 2021

WHAT CAN BE DONE:
FOREST STEWARDSHIP FOR FUTURE RESILIENCY

The scientific consensus is: *the only long-term solution to reduce the likelihood of high-severity fire is fire*. The potential for large wildfires burning under extreme weather conditions can be moderated by utilizing prescribed fire, including burning piles of woody debris. This diminishes surface fuels that contribute to intense wildfires while also recycling and releasing soil nutrients essential for plant growth. It is often necessary to cut some trees in a process called forest thinning to reduce live fuel loads before reintroducing fire into these dry and overgrown forests so that prescribed fires remain less intense[8,9]. The primary objectives in planning and carrying out forest treatments such as thinning and burning are to increase forest resiliency, improve forest health, and create conditions where fire can resume its natural role in these fire-adapted forests[10].

CURRENT WORK TO INCREASE RESILIENCE

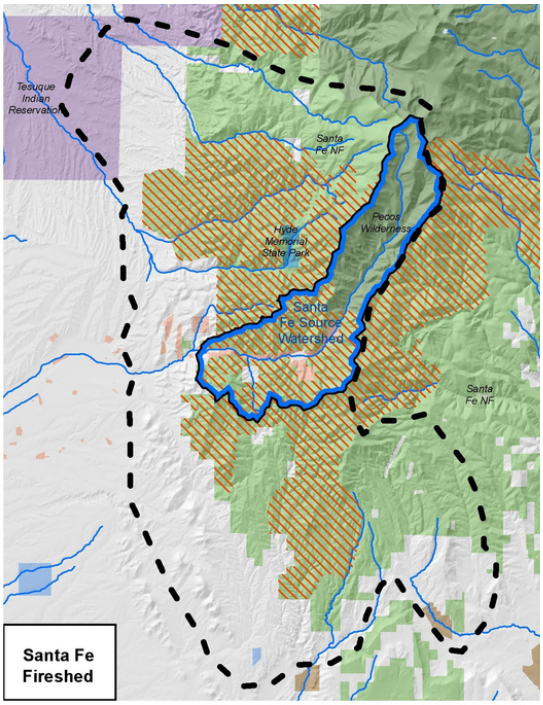
Over the past 20 years the City, County, and Santa Fe National Forest have worked to restore resiliency to the forests in the municipal watershed, protecting 40% of the City's water supply. Tesuque Pueblo, landowners, and individual residents have also taken action to mitigate risk ahead of a wildfire. The Pacheco Canyon Forest Resiliency Project treatments, for example, stopped the forward progress of the August 2020 Medio Wildfire burning toward the Santa Fe Ski Basin.

The Greater Santa Fe Fireshed Coalition, a collaborative group of federal, state, city, tribal, and local representatives, conservation organizations, and individual stakeholders, is using the best science to:

1. safely and effectively respond to wildfire,
2. restore and maintain fire resilient landscapes, and
3. promote fire-adapted communities across boundaries and jurisdictions.

The Coalition puts these three tenets into practice by engaging the public and facilitating collaborative cross-boundary actions that address wildfire preparation, response and recovery.

Since the inception of the Fireshed in 2016, collaborators have been working to implement on-the-ground forest restoration treatments and expand planning of future management projects. As the largest steward of public lands within the Fireshed boundaries, the Santa Fe National Forest has proposed treatment of 38,680 acres over 10 years through the Santa Fe Mountains Landscape Resiliency project. This innovative project aims to take a big leap forward in increasing the pace and scale at which we are restoring healthy forest conditions in this high priority landscape. Now is the time to think bigger, build on this good work, and continue improving the health of our forests for generations to come.



[8] Hunter et al. 2007, [9] Evans et al. 2011, [10] Krofcheck et al. 2019

TERMINOLOGY

- **Fire severity** - Areas of relatively homogenous burn effects related as low, moderate, or high severity.
- **WUI** - Wildland Urban Interface, or the area directly adjacent to homes and communities.
- **Fireshed** - a logical landscape, unconfined by jurisdiction or ownership, whose boundaries encompass an area with shared threats and values at risk from wildland fire.
- **Fire adapted ecosystem** - Forests, grasslands, and other ecosystems historically composed of species of plants that evolved with and are maintained by fire regimes.
- **Forest fuel** - Plants, both living and dead, and woody vegetative materials capable of burning.

Forest Stewards Guild

This informational paper was produced by staff members of the Forest Stewards Guild, a founding partner of the Greater Santa Fe Fireshed Coalition. We work to build resilient ecosystems, protect watersheds, and reduce wildfire risk to the forests and communities in and around Santa Fe.

For more information and to see all publications referenced in this paper, visit:
http://www.santafefireshed.org/briefing-papers