



A surface fire burns in ponderosa pine forests in Turkey Springs near Pagosa Springs. These fires are an integral part of ponderosa pine ecology and are stunning to witness.

Shaped by Flames

How fire has molded our forests

WORDS & PHOTOS BY MIKE REMKE

FLAMES

There was the distinct sound of crackling, as if the largest imaginable campfire was creeping through the forest. I felt the warmth of flames on any area of exposed skin as a strong radiant heat. Fire season. The most direct way to experience fire in a forest is to work wildland fire and put in the hours — hiking in the forests, cutting lines, dragging a drip torch ahead of a wildfire to consume fuel before the flames get closer. The second way to experience a wildfire is to live in a community surrounded by forests long enough to experience this natural phenomenon. It can be terrifying to experience flames rip across a beloved landscape toward homes and places we know and value — though fire is a natural part of the forests we live and adventure in.

FLAMMABILITY

As melting snow seeps into soils and is carried away by rivers, the green leaves of plants become a vibrant, decorative sign of spring. All these organic materials, during most years, are filled with water as plants thrive and carry through their way of life, producing carbon from the sun. During droughts, however, these green plants are

desiccated and highly flammable. The same flammability can be said for the evergreen conifers that drape the mountains, from the ponderosa pine to the spruce-fir. As you go up the mountain, it takes more and more of a drought to dry out the fuels enough for them to be flammable, meaning fire happens more frequently at lower elevations, and less frequently at higher elevations.

It's this innate flammability that makes these forests not merely adapted to fire, but to some extent, dependent on fire. In the ponderosa pine, the adult trees have thick bark that helps them survive fires that burn frequently, every 5 to 30 years, killing the slowest growing trees, creating small openings and maintaining the overstory trees. In higher elevations, single trees may burn from time to time, but fires only carry through considerable swaths of forest every 300 years or longer. These fires only happen during the worst of droughts, and tend to kill whole forests while prompting the growth of the next generation of forests.

For much of Colorado, the last several years have been precisely that — extreme drought. Consequently, the forests have been ignitable,

dry enough to burn in a nearly explosive nature. While it can be dramatic to experience the change brought about by these flammable forests, it's evident that fire has always shaped these forests.

LEGACIES OF FIRE

Going for a hike at lower elevations, ponderosa pine forest may at first seem like walking in an unburned forest with abundant large old trees. Truth be told, the majestic trees in these forests have survived many, if not dozens, of fires in their life.

A careful examination of the base of ponderosas would likely reveal obvious signs of fire — blackened bark and hollowed out scars, or “cat faces.” The uphill sides of trees tend to smolder during low intensity fire from bits of ash and charcoal rolling downslope and resting up against the base of the trees. The result is a portion of the trunk that burns until it hollows out a portion of the tree. In most cases, these events hardly impact the health of the tree, and the tree simply heals around its wound and continues to grow. Other evidence of fire in these forests include meadows of various sizes.

Moving into higher elevation forests, the signs of fire may be less obvious. Pay careful attention to the dense trees, and you may spot an old burnt and twisted tree that was struck by lightning and burnt without spreading fire to the surrounding trees; but zooming out and looking at bigger landscapes reveals more obvious patterns of fire. In the San Juan Mountains, naturally gladed areas — like those on Molas Pass — are often the result of a fire.

Other obvious signs of fire are represented by the vibrant and delightful quaking leaves of aspens. Aspens sprout quickly following a disturbance such as wildfire, and thus often become the dominant overstory tree after significant fires. The mid elevation valleys along the Dolores River, the Hermosa Cliffs and the high elevations of Lime Creek and Molas Pass down to the Animas River represent landscapes where fire blazed through conifers, bringing aspens to life. These aspen forests are slowly shifting back to conifer dominated forests over time.

The legacy of fire is a powerful visualization to the role fire always has and will always play in these landscapes. Evidence shows that fires up to 125,000 acres in size have occurred several times in the last 1,200 years on Missionary Ridge — and with each fire there are post-fire debris flow events that bring soils and sediments racing to the Animas River below. When we are trained to look for the fingerprint of fire, we appreciate that we must learn to live with fire.

LIFE WITH FIRE

People have occupied the greater southern Colorado and northern New

Mexico landscapes for thousands of years. These lands are the ancestral lands of Nuchu (Ute), Apache, Pueblos, Hopi, Zuni, Jemez and Diné (Navajo) peoples, all who also lived with fire. Traditional knowledge and compelling scientific evidence demonstrate that peoples living in these geographies burned forests differently based on proximity to their communities.

Close to their homes, they maintained a fire-free space where fire was only a tool for ceremonies and cooking. Adjacent to homes, they burned to maintain fields and agriculture. Further away from homes, in the forests and woodlands, fire was used to keep fuels lower and promote the establishment of native medicinal plants, the result of this use of fire was an area surrounding a community that was more resilient to drought, climate extremes and fires.

In the modern world, encroachment of Western civilization into forested landscapes has resulted in a steep learning curve with fire. Homes built with flammable materials quickly burn from airborne embers and ash when a fire edges close to towns. Furthermore, humans are unintentionally starting more, and larger, fires. These fires tend to burn in the hottest, driest parts of the year near human infrastructure, resulting in costly fire suppression and structure protection efforts.

These problems are compounded by a long history of reactionary policies; after over a million acres of forest burned in a single fire in 1910, the United States Forest Service deemed it necessary that all fires be put out by 10 a.m. the day after they were reported. The result has been over a century of not letting fires shape landscapes, which

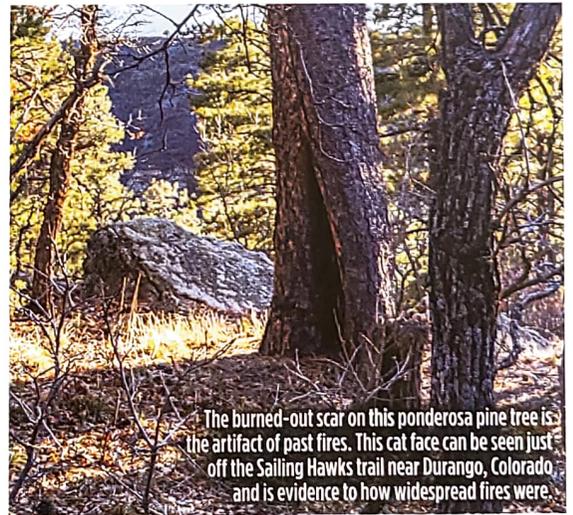
means we now have an over dense forest that is ready to burn hotter than ever before.

The wisdom of the people who have lived here for centuries presents obvious solutions for how Western civilization can begin to adapt to living here in these fire prone forests; the answer is fire. We need to bring fire back to our forests in ways that allow us to live in the forest safely. This means using prescribed fire and letting unplanned fires burn when conditions are favorable.

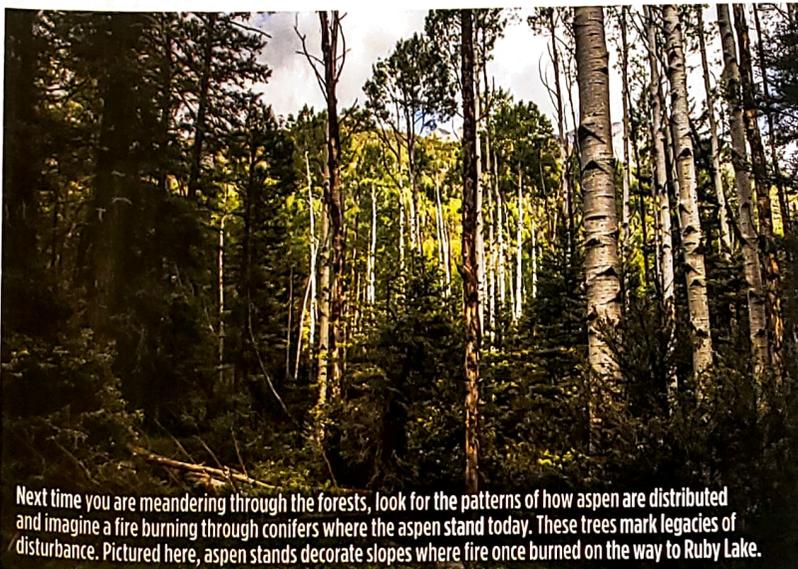
FLAMING BEAUTY

The idea that fire is a destructive component of ecosystems is smoke and mirrors. In reality, virtually every aspect of the forests we hike through and experience has a story rooted in flames. These forests are resilient and intimately linked to the complex behavior and dynamics of fire. Ask those who lived here before you, and they will tell you: fire is integral to living in the Southwest. ☺

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The burned-out scar on this ponderosa pine tree is the artifact of past fires. This cat face can be seen just off the Sailing Hawks trail near Durango, Colorado, and is evidence to how widespread fires were.



Next time you are meandering through the forests, look for the patterns of how aspen are distributed and imagine a fire burning through conifers where the aspen stand today. These trees mark legacies of disturbance. Pictured here, aspen stands decorate slopes where fire once burned on the way to Ruby Lake.

TIPS FOR HOMES IN THE PATH OF A WILDFIRE

Living in an area with high fire danger requires additional awareness of one's surroundings; it is important to know what to do should a wildfire occur.

- Be prepared with fire evacuation routes.
- Remove fuels from around the outside of homes, such as vines and shrubs.
- Be ready to mobilize with key belongings. Being aware of this simple reality and having a plan for when fire arrives can help keep our communities and forests resilient to fire.