The Destructive Face of Fire

Land managers and scientists now understand that controlling all wildland fires does not preserve natural landscapes. Fire suppression changes them unnaturally, and its consequences are much more far-reaching than imagined before.

When fires are suppressed, trees, grasses, needles, leaves, brush and other natural fuels build up. Fuels don't simply vanish. Eventually, they burn, and when they've accumulated over years and even decades, the fires are inevitably larger, more intense, dangerous, and costly to fight. Catastrophic fires can devastate large portions of entire ecosystems, burning everything from roots to tree tops. On rangelands, they open the door for opportunistic annual weeds to move in, crowding out native vegetation. Rather than providing the benefits of natural or low-intensity fires, catastrophic fires often scorch everything in their paths: habitat for plants and animals; soils; watersheds; homes and property.

Fast-moving, intense flames of catastrophic fires are dangerous for firefighters and the public. Smoke can turn a blue sky into a yellow-gray haze, and make breathing difficult for people.

Wildlands are always changing, sometimes dramatically, sometimes subtly. Fire is one of the important natural agents of change. The kind of change – whether good or bad, healthy or catastrophic – often depends on the kind of fire that burns.

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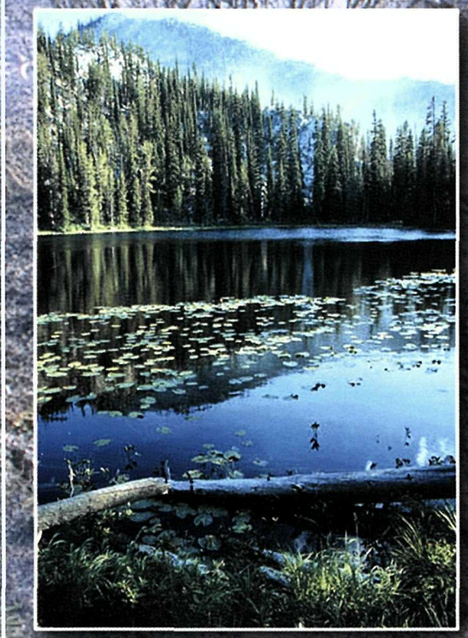
WILDLAND FIRE IN THE UNITED STATES



Managing Wildland Fire:

Balancing America's Natural Heritage and the Public Interest

Firefighters say it's more than a hiss, more than a crackle. They say that wildland fire roars and rumbles and sounds more like a freight train than anything else. On big fires, they say you can feel the heat from more than a half-mile away. They say fire is a contrast: few things on earth are more frightening and more awe-inspiring, more dangerous and more fascinating than a wildland fire.

And few things can so devastate or benefit natural resources as fire can.

The Good Face of Fire

Fire is an important and inevitable part of what takes place on America's wildlands. It actually restarts critical natural processes vital to life itself. Fire helped shape much of North America for thousands of years and continues to do so today – sometimes dramatically, sometimes subtly, for better and for worse.

In places, fire breaks down organic matter into soil nutrients. Soil, rejuvenated with nitrogen from ash, provides a fertile seedbed for plants. With less competition and more sunlight, seedlings grow quickly. Many plant species depend on fire. They have adapted to fire and must experience it to survive, regenerate, and thrive. For example, cones of jack and lodgepole pines in the northern forests of the United States are sealed with pitch. Fire melts the pitch and the seed releases. Aspen, birch, and willow sprout from their roots after fire. Without fire, seeds of certain plants can lie dormant in the soil for decades – waiting for fire.

Fire creates a variety, or mosaic, of habitats for animals. It burns intensely in some areas, cooler in others, and leaves scattered unburned areas.

Fire – A Friend or Foe?

Nobody escapes the effects of wildland fire. No matter how close or far people live from an evergreen forest or grassy rangelands, whether they are a frontline firefighter or have only seen wildfire flames on the six o'clock news, fire will influence their lives at some time, in some way. How wildland fire is managed also affects the public. Fire management can be categorized in three ways:

- Prevention includes education and other activities aimed at stopping unwanted fires before they ignite.
- Control is action taken on unwanted wildland fires to protect life and reduce damage to natural resources and property.
- Use is when wildland fire is allowed to burn, while being carefully monitored, to help improve the land and its resources.

It is through these means that managers and firefighters can either direct the raw power of fire to benefit natural resources or take the necessary steps to limit damages and danger caused by fire.

Wildland fire that poses a threat to humans or destroys property is fought with the latest in technology and equipment, by committed, well-trained, profes-sional firefighters. But these same firefighters may also ignite "prescribed" fires under carefully controlled conditions to produce the benefits that a low-intensity, naturally occurring wildland fire provides.

So what is the true nature of fire? Is it a fierce and formidable enemy or a potent and powerful ally? The answer: Fire is both.

Fire – Reducing the Risks

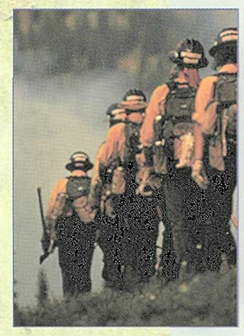
Part of reducing the risk of wildland fire takes place long before the first plume of smoke rises. For natural areas that have the potential to burn, land managers develop fire management plans. Decisions about fire – for example, whether to introduce prescribed fire, suppress a fire, or allow a naturally occurring fire to burn while being closely monitored – are based on fire management plans. The plans take the guesswork out of how a fire should be managed.

Fire in the Right Places at the Right Times

Prescribed fire is an old concept with new uses. Native Americans and early settlers purposely set fires to achieve desirable conditions such as better game habitat or land cleared for farming. But fire's image changed in the 1800s. In places as dissimilar as Wisconsin and Idaho, entire towns were obliterated by wildland fire. Smoke from fires in the Rocky Mountains obscured the sun on the East Coast. The public demand was clear: wildland fire must be stopped, no matter the cost. And in most cases, it was, for the better part of the 20th century.

Today, the thinking is changing again. Scientists and managers now understand the benefits of fire's natural role.

Prescribed fire gives managers the choice of burning under the right conditions, allowing protection of critical natural and cultural resources, and reducing the danger to the public and firefighters. Prescribed fire can eliminate years of dangerous fuel accumulation, and thereby reduce the risk of devastating wildfires. Prescribed fire in the right places at the right times makes sense – for natural resources and the people who care for and protect them.



Fire crews extinguish unwanted fires and manage prescribed fires. Firefighters often use a Pulaski, a tool that is part ax and part hoe.

Fire Can Benefit Everyone

When wildland fire is properly managed, it benefits the environment and society in many ways, some obvious, some less noticeable.
Wildland fire can:

- Increase safety for firefighters and the public. Wildland firefighters say the most dangerous fires of all are those where fuels have been allowed to build up for years. These fires can be explosive, erratic and highly dangerous to fight.
- Reduce the effects of smoke. Thick smoke that hangs in the air for days is produced by unwanted fire. The effects of smoke from a planned fire are usually minimal by comparison.
- Decrease damage from fire. Fewer, unplanned and uncontrolled wildland fires will cause less damage to natural resources and private property. The overall cost of wildland fire management drops, too.
- Protect plants and animals that depend on fire.

Fire shaped much of what is natural in America today. Restoring fire to its proper role in nature will help reclaim part of our natural heritage. It will also improve the health of watersheds, among the most important of all natural resources.

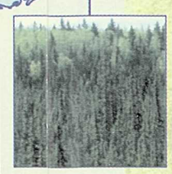
The Story of Fire

The firefighters are right. Fire is both fascinating and dangerous. It is both awe-inspiring and frightening. It is capable of causing death and, at the same time, preparing the earth for new life. Humans likely never will be able to completely control fire, and perhaps that's not a bad thing. The story of fire is a story of change. What kind of changes fire brings – beneficial, catastrophic or something between – may depend on how much we understand and respect this ancient, eternal force.

A firefighter uses a drip torch, a can filled with diesel fuel and gasoline, to ignite a prescribed fire.

Tundra
Wet sedgegrass meadows, thickets of low shrubs, and dry areas vegetated with mat-forming plants. Fires naturally occur in some tundra regions. Fire is one of the greatest forces of change in tundra.

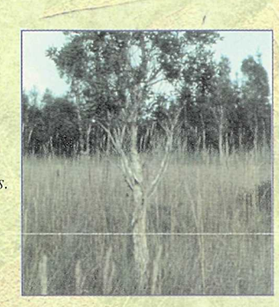
Lodgepole pine
This pine tree grows in dense stands. Sections burn wholly every 200 to 400 years.



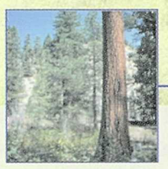
Boreal forest
Spruce, pine, or fir dominate northern areas all the way to the tree line. Large, intense fires recur every 25 to 150 years in boreal forests.

Major Ecosystems

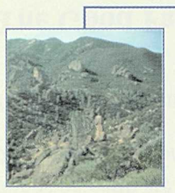
Land management agencies and fire departments protect a variety of ecosystems. This map highlights a selection of vegetation types and representative areas.



Saw grass needs fire to kill competing vegetation. Small patches burn to the waterline every 1 to 25 years.

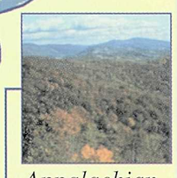


Ponderosa Pine
Spacious forests of trees hundreds of years old. Frequent fires (5 to 25 years) clear ground but seldom kill large trees.



Chaparral
Mixed shrubs and low trees grow in dense masses. Explosive fires scour the hillsides bare every 12 to 50 years.

Tallgrass praire
Surviving flames better than invasive brush, the grass is renewed by frequent large fires that can out-run a horse.



Appalachian mixed forest
Conifers and deciduous trees mingle in shifting ratios as determined by climate and a mosaic of fires.

Longleaf and loblolly pines
Southern pines grow in grassy park-like stands. Mild surface fires clear debris every 3 to 5 years.

Partners – Now and Always

The public is a partner with the firefighting agencies in many ways – in reporting fires, constructing fire-safe homes and other buildings in areas susceptible to burning, being careful with fire, and participating in developing fire management plans. Just as fire affects everyone in some way, virtually everyone can also help reduce the risk of unwanted wildland fire.

For More Fire Information

Visit the National Wildfire Coordinating Group and its links to federal, state, local, and tribal fire and land management agencies on the worldwide web at:
www.nwcg.gov
www.symbols.gov