



Photos (L to R): Chad Harder, Barbara Ullian and Jamie Lennox

WILDFIRE:

A natural part of life in the American West

Residents of the western United States know that wildfires are as much a part of the western landscape as snow, wind, sun and rain. While wildfires are essential and natural processes that have shaped the forests of America for thousands of years, they are increasingly affecting communities as more and more homes are built in and near forested areas.

While some people advocate that we protect homes and communities from wildfire by increasing logging on National Forest lands, such claims are not backed

up by sound science. In fact, fire scientists and researchers have found that by taking simple actions immediately around homes and communities – not out in remote forests – we can save homes and lives.

This publication explores the important role of wildfire in our forests and outlines steps that homeowners and communities should take to prepare for the inevitability of wildfire. It also examines the relationship between logging and wildfires, issues surrounding post-fire logging, and historical forest conditions.



Black-backed woodpeckers are uniquely adapted to thrive in recently burned forests and favor areas which are not logged following a fire. They feed on the larvae of wood-boring beetles and may consume over 13,000 annually, helping to naturally control insect populations.

Putting Wildfires in Perspective

Recent wildfire seasons have received a huge amount of media and political attention calling them some of the worst fire seasons ever. These wildfires are often referred to as *catastrophic* or *devastating*, contributing to the general public's fear and misunderstanding of fire's natural and beneficial role in our forests. In order to develop common sense policies regarding fire, it's important to let the facts guide our decision-making.

Wildfire by the numbers

- According to the National Interagency Fire Center (www.nifc.gov), since 2000 an average of 5.5 million acres of forests and grasslands have burned annually nationwide. This is only 40% of the annual average of 13.9 million acres burned from 1919 to 1999.
- While some call recent wildfire seasons the worst ever, the fact is that in 1930 and 1931 over 50 million acres burned nationally and during the decade from the late 1920s to the late 1930s at least 30 million acres burned annually.
- Since 2000, the NIFC also reports that a third of the acres burned nationally have been in Alaska (primarily patchy, stunted forests and tundra) or east of the Mississippi.

Record heat and drought

- According to the NIFC, 2003 was "one of the hottest and driest summers in the West." Specifically, the NIFC reported that 2003 was the hottest summer ever in Nevada,

second hottest in Oregon, third hottest in Idaho and that much of western Montana had the third hottest July since 1892. Washington saw their driest summer on record and New Mexico reported their driest July on record.

- The *Washington Post* reported in 2002 that 40% of the country was experiencing drought conditions (compared with 15% in a typical year), making the current drought conditions the worst the nation has faced since the Dust Bowl of the 1930s.

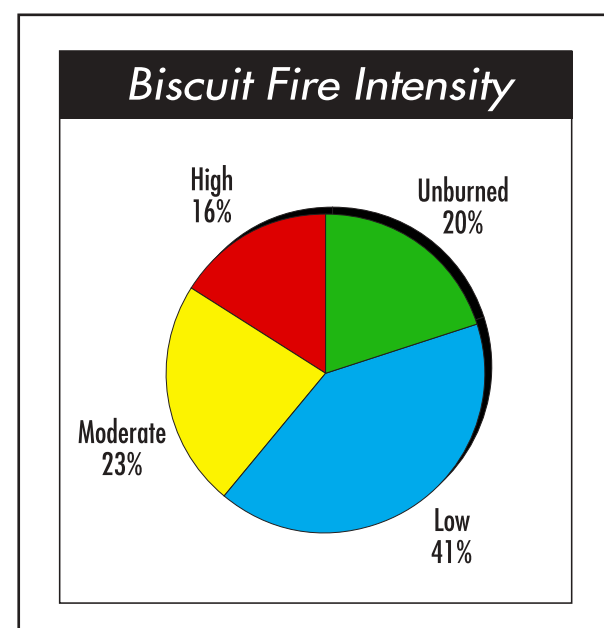
Fire facts or fire hysteria?

Listening to some people, you might be led to believe that recent large wildfires have laid waste to everything in their path. A look at some of the largest wildfires from recent years sheds some light on this myth.

- The Biscuit fire that burned on the Siskiyou National Forest in southern Oregon during 2002 has repeatedly been referred to as *catastrophic*, *devastating* and *unnatural*. However, according to the Forest Service, 84% of the Biscuit fire area was either unburned or burned at low to moderate intensity (*see chart at right*), and much of the high intensity burn areas were actually back-burns intentionally set by firefighters.
- Tom Atzet, a Forest Service ecologist, told the *Oregonian* "that "If you look at what's happening this year on the Florence fire and the Biscuit fire, they're really not out of the range of normal events....In the long

run the Biscuit fire maintained the well-being of individual species and the forest as a whole. It's important that part of the system be burned at high severity."

- After touring the B & B fire near Sisters, Oregon last summer, President Bush had this to say about the fire area, "It's the holocaust – it's devastating." The Forest Service later reported that 90% of the fire area actually was unburned or burned at low to moderate intensity.
- The Forest Service referred to the 2002 McNally fire on the Sequoia National Forest in California as a "catastrophic fire event" despite the fact that, according to the Forest Service, only 8% of the fire area was severely burned.



There is growing recognition that the forests and wildlife of the western U.S. evolved with wildfire and that wildfire is crucial to the overall health of our forests. According to scientific research, active restoration both before and after a wildfire is generally only needed where past management activities have damaged or interrupted natural processes.

Recently, over 120 conservation groups and restoration practitioners released a set of Restoration Principles that establishes a common sense, scientifically-based framework for restoring our nation's forests.

When considering how best to restore our public forests before and after a wildfire, the Forest Service and other federal agencies should

implement policies based on the best available science that meet the following purposes and needs:

- Provide clean drinking water, healthy watersheds and thriving fisheries.
- Provide jobs and economic opportunities for local communities through restoration.
- Provide for and aid the natural recovery of burned areas.

- Improve the protection and adaptation of homes from wildfire.
- Help remove and reduce non-native plants.
- Help restore the natural role of fire in the forest.

To obtain a copy of the Restoration Principles visit: www.nativeforest.org/pdf/Restoration_Principles.pdf

Logging and Wildfires:

Science finds that logging increases fire risk

"The removal of large, merchantable trees from forests does not reduce fire risk and may, in fact, increase such risk."

- U.S. Dept. of Agriculture and U.S. Dept. of Interior: Report to the President (September 2000)

"Timber harvesting removes the relatively large diameter wood that can be converted into wood products, but leaves behind the small material, especially twigs and needles. The concentration of these 'fine fuels' on the forest floor increases the rate of spread of wildfires."

- Congressional Research Service: Timber Harvesting and Forest Fires (August 2000)

"Timber harvest, through its effects on forest structure, local microclimate, and - fuels accumulation, has increased fire severity more than any other recent human activity."

- Sierra Nevada Ecosystem Project: Final Report to Congress (1996)

"Logged areas generally showed a strong association with increased rate of spread and flame length, thereby suggesting that tree harvesting could affect the potential fire behavior within landscapes."

- U.S. Department of Agriculture Pacific Northwest Research Station: Historical and current forest landscapes in eastern Oregon and Washington (1995)



Plum Creek Timber Company lands near Missoula, Montana that burned in the 2003 Mineral Primm fire clearly demonstrate that years of logging and roadbuilding did absolutely nothing to slow the spread of fire. You can see why firefighters who fought this fire dubbed Plum Creek's lands the "Black Desert." If logging reduces the risk and intensity of wildfires, as some claim, why do Plum Creek's lands look like this? Photo by Matthew Koehler.

Logging Does Not 'Fire Proof' Our Forests

There are some that say that more commercial logging in our National Forests can prevent future wildfires. However, this belief is not supported by science. In fact, the nation's leading forest ecologists conclude that past commercial logging, roadbuilding, livestock grazing and aggressive fire fighting are major sources for increased insect infestations, disease outbreaks and severe wildfires.

Logging leaves behind fuels that intensify wildfire

Commercial logging removes the least flammable portion of trees – their trunks – while leaving the most flammable parts – the needles and limbs – directly on the ground. This debris, known as logging slash, can adversely affect fire behavior for up to 30 years following a logging operation, increasing the spread, intensity and severity of wildfires.

Grasses, shrubs and saplings feed fire and allow it to spread more quickly. However, commercial logging operations remove larger diameter trees, which are naturally fire resistant, and leave behind an increased amount of these smaller, highly flammable fuels.

In fact, in 2003 the Southwest Community Forestry Research Center reviewed 250 of the most current scientific studies that evaluate methods for treating hazardous fuels in western forests and found that "The proposal that commercial

logging can reduce the incidence of canopy fire was untested in the scientific literature. Commercial logging, with its focus on large diameter trees, does not remove the ladder fuels that contribute to fire spread."

Logging dries out the forest floor

Commercial logging opens up the forest canopy, which moderates the local forest climate. This exposes the forest floor to increased sun and wind, causing higher temperatures and decreased humidity and moisture. Surface fuels – such as bushes, branches and small trees – become hotter and drier, resulting in faster rates of fire spread, greater flame lengths and more erratic shifts in the speed and direction of fires.

Logging spreads flammable invasive weeds

Commercial logging operations spread invasive weeds, which are often more flammable than the original forest cover. Once the commercially valuable trees have been removed, federal agencies and logging companies have no economic incentives to manage the invasive weeds that colonize sites disturbed by logging operations.

The bottom line:

Watersheds and forests that have experienced extensive commercial logging and roadbuilding experience greater fire severity than unlogged and unroaded watersheds and forests.



Photo: Chuck Pezeshki

The Dangers of Slash:

What logging leaves behind is what burns

Several fires that burned during 2003 were started in recently logged areas, and firefighting efforts were hampered due to the accumulation of logging slash (huge piles of dry branches and twigs left behind during logging operations).

- In September 2003, the human-caused Myrtle Creek Fire was started in logging slash shortly after the 700 acre Mama Cascade timber sale on the Idaho Panhandle National Forest was logged. The fire burned 3,600 acres within the municipal watershed of Bonners Ferry, Idaho. It cost \$4.5 million to fight the fire, another \$1.5 million was spent in burned area emergency rehabilitation costs and the town of Bonners Ferry spent nearly \$300,000 to secure an alternative drinking water source. To view photos from this fire visit www.landscouncil.org/fwatch/myrtlecreekfire.html.

- The 590 acre Hunt Creek Fire was ignited from a skyline logging operation on an Idaho Department of Lands logging project in the Priest Lake area of northern Idaho. According to the Incident Investigation Report for the July 2003 fire, "The mainline cable, passing over a large rock generated sparks which in turn ignited a fire in the logging slash."

Burned trees are an essential part of a healthy forest

Post-fire logging harms the natural recovery process

Fire is an essential natural process that has shaped the forests of America for millennia. In fact, fire is a critical ingredient of a healthy forest ecosystem that provides renewal and rejuvenation for fisheries, wildlife and forests. However, following a fire, forests are highly sensitive and need time to recover naturally – as they have done successfully for thousands and thousands of years.

While some may claim that post-fire "salvage" logging benefits a forest following a fire, the best available science informs us that post-fire logging is one of the most ecologically-destructive forms of commercial logging because burned, dead and dying trees play a vital role in forest recovery.

Forests are not destroyed or lifeless following fire. Burned trees play an essential role in healthy forest ecosystems.

- Standing dead trees and fallen logs – which post-fire logging removes – provide critical habitat for species including lynx, marten and fisher.
- Cavity nesting birds thrive in post-fire forests including northern goshawks, boreal owls and pileated and black backed woodpeckers, which help to naturally control insect populations.
- Standing dead trees and fallen logs provide shade, stabilize slopes



As this mosaic burn illustrates, forests are not destroyed or lifeless following a fire. Burned, dead and dying trees play an essential role in forest recovery after a fire, and scientific research has demonstrated that logging of burned trees harms the natural recovery process.

Photo by Matthew Koehler.

and help regulate water flows on post-fire soils.

- The eventual decay of dead trees recycles important nutrients that enhance forest productivity.

Most scientists agree that post-fire logging can severely damage soils, streams, vegetation, and wildlife and has no ecological benefit.

- A recent report, *Wildfire and Salvage Logging*, authored by eight scientists states that while "There is little reason to believe that post-fire salvage logging has any positive ecological benefits, particularly for aquatic ecosystems. There is

considerable evidence that persistent, significant adverse environmental impacts are likely to result from salvage logging."

- In their report, *Environmental Effects of Postfire Logging*, Forest Service researchers reviewed results of 21 studies of post-fire logging and concluded that "We know enough about both logging activity and structural change to recommend caution" in post-fire logging.

While some claim that post-fire logging reduces the intensity of future fires, credible scientific evidence does not support this claim.

- In *Environmental Effects of Postfire Logging* Forest Service researchers report that "we found no studies documenting a reduction in fire intensity in a stand that had previously burned and then been logged."
- The *Wildfire and Salvage Logging* report states we "are aware of no evidence supporting the contention that leaving large dead wood material significantly increases the probability of reburn."

Post-fire logging has few, if any, economic benefits.

- Burned wood sells at low "fire sale" prices and the need to protect the fragile post-fire forest from the impacts of logging results in high costs, meaning that U.S. taxpayers ultimately foot the bill for post-fire logging projects on public lands.
- Post-fire logging may destroy economically valuable ecosystem services such as air and water purification, soil retention and wildlife habitat.
- Prioritizing ecologically-based restoration activities following a wildfire, such as watershed restoration and road removal, will produce numerous job opportunities in rural communities and will help restore the health of our national forests.



Forest conditions in the Lick Creek area of Montana's Bitterroot National Forest, shown in 1909 immediately before logging.



Cleanup operations on the Bitterroot National Forest's Lick Creek timber sale in 1909, falsely presented by the Forest Service as showing historic forest conditions.

Ponderosa Pine Forests:

What was their historic condition?

The historic condition of ponderosa pine forests have been misrepresented and oversimplified by the Forest Service in order to justify logging large, commercially valuable trees.

The photos above were taken in the Lick Creek area of Montana's Bitterroot National Forest in 1909. The photo at left shows a dense stand of ponderosa pine just before being logged. The photo at right shows a nearby forest after it was

logged in the same year (notice the stumps and slash piles).

In its widely distributed poster *88 Years of Change in Ponderosa Pine Forest* – and numerous studies – the Forest Service uses the post-logging photo at right to falsely represent the historic forest conditions.

In fact, Forest Service studies claim outright that the post-logging photo at right "serves as the baseline reference of forest stand conditions that

evolved from regularly occurring, low-intensity surface burning."

However, claims that ponderosa pine forests are "meant" to be park-like – with widely spaced trees and open canopies – neglect the reality of variation within these forests. Ponderosa pine forests in riparian areas, on north-facing slopes or in areas with strong winds have vastly different fire regimes than the low-intensity, high frequency fire regime commonly touted by foresters.

In addition to the variation within these forests, ponderosa pine forests comprise only 7% of our National Forests, meaning that low-intensity, cool-burning fires are the exception, not the rule. In fact, in many forest types – such as lodgepole pine, spruce and subalpine fir – intense, stand-replacing fires are natural and essential to the overall health of the forest.

For more information, visit www.wildrockies.org/swanview/ponderosa.html

WILDFIRE PROTECTION BEGINS AT HOME

Is Your Home Firewise?

As many of us are acutely aware, new home construction and development is increasing in the forested areas surrounding many of our communities. The area where homes and forests intersect is commonly known as the wildland-urban interface (W-UI).

As more people choose to live in the wildland-urban interface, the potential for wildfire to affect our homes increases. Fortunately, fire scientists and researchers know exactly what people can do to effectively protect and adapt our homes to wildfire.

Jack Cohen, a research scientist with the Forest Service's Fire Sciences Lab and the nation's leading expert on home ignitions, explains that "The W-UI fire loss problem primarily depends on the home and its immediate site....My research indicates that modifying the home

ignition zone (the home and its immediate surroundings within 200 feet) can perform the necessary and sufficient changes that effectively reduce home ignitability during extreme wildfire conditions."

The simple precautions depicted in the graphic below will greatly increase the probability that a home can withstand wildfire. These precautions increase the chance that the house can withstand fire if the fire department can not reach the house during a fire, as well as increasing the success of the fire department in protecting the house if they do reach it.

Home Protection: Who is Responsible?

Since the protection of a home depends on treatment of the home itself and its immediate surroundings, homeowners that chose to live in the

wildland-urban interface must take responsibility for protecting their own home and property. At the same time, local communities must take responsibility for managing growth and development that extends into the surrounding forest.

In a *Journal of Forestry* article, "The wildland-urban interface: paradise or battleground?" researcher James Davis suggests that, "The interface fire problem is not just the responsibility of land managers. Many other groups must share responsibility for solving the problem – fire protection agencies; homeowners; local and regional planners and governing bodies; builders, contractors, and building and landscape architects; and insurance carriers and mortgage bankers."

Will Logging the Backcountry Protect Homes?

Some people are advocating that we

protect homes and communities from wildfire by increasing logging on National Forest lands far from homes and communities. Unfortunately, such claims are not backed up by the best available science.

For starters, according to a Forest Service analysis, Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management, only 8% of the land presenting a risk to communities is National Forest and other federal lands.

And Forest Service researcher Jack Cohen notes that "The evidence suggests that wildland fuel reduction for reducing home losses may be inefficient and ineffective. Inefficient because wildland fuel reduction for several hundred meters or more around homes is greater than necessary for reducing ignitions from flames. Ineffective because it does not sufficiently reduce firebrand ignitions."

In summary, effectively protecting homes from wildfire requires treating the home itself and its immediate surroundings within 200 feet – not increasing logging in our National Forests. Proper treatment will not only allow firefighters to more safely and easily defend the house, but also increases the chance that the house can survive wildfire on its own.

To learn more about what you and your neighbors can do to effectively protect your homes from wildfire, visit www.firewise.org.

Additional Wildfire Resources:

www.firewise.org

Information on how to prepare your home for wildfire. Find out about workshops and events in your area.

www.fire-ecology.org

Contains a wealth of information about fire ecology.

www.nifc.gov

Wildfire updates and statistics, fire potential assessments, information about past fire years.

www.nativeforest.org

Visit the Wildfire Info Center for information about wildfires, logging and fire ecology.

This publication was made possible by the following organizations:

Native Forest Network
The Lands Council
National Forest Protection Alliance
Friends of the Bitterroot
The Ecology Center
Western Fire Ecology Center
Idaho Conservation League
Friends of the Clearwater

For more information, please call 406.542.7343 or email nfn@wildrockies.org

Creating Safescapes: *Preparing for wildfire*

While wildfires are essential and natural processes that have shaped the forests of America for thousands of years, they are increasingly affecting homes and communities as more people choose to live in and near forested areas.

Fortunately, fire scientists and researchers know exactly what people can do to effectively protect their homes from the threat of wildfires. Within 200 feet of the home, experts recommend taking the following simple actions.

To learn more about what you and your neighbors can do to effectively protect your homes from wildfire, visit www.firewise.org.

