



The Nature Conservancy's Fire Initiative

Fire is an essential force that has shaped ecosystems and life forms around the globe. But, in many ecosystems today, the role of fire is severely out of balance, threatening to devastate both human and natural communities.

The Nature Conservancy has launched the Fire Initiative to counter these threats that strike at the heart of global conservation efforts. The Fire Initiative promises to fulfill a leading role in restoring fire-altered ecosystems.

life with fire

the role of fire in ecosystems

Much of life on Earth evolved with fire—one of the four basic elements that comprise all matter, according to classical Greek philosophers. Like storms and floods, fire is a powerful physical disturbance that has the ability to give life or to smother it. Fire shaped many of the ecosystems and life forms we know today.

Fire-adapted ecosystems are resilient over time to repeated fire. When fire occurs in their midst, they thrive. Fire-adapted ecosystems are places like the pine forests of the American West and Mexico, and the vast savannas and shrublands of Brazil, Bolivia and Venezuela. Many species in these ecosystems depend on fire to reproduce; others have evolved to tolerate the regular sweep of flame.

In contrast, fire-sensitive ecosystems evolved without the influence of major fires. Many of these ecosystems are in tropical environments, such as the rain forests of Southeast Asia and the Amazon where the moisture content of both vegetation and the atmosphere is usually high. Fire can destroy or radically alter these ecosystems during times of drought.

Over time ecosystems evolved their own signature fire regime, an imprint of the role of fire in that system, characterized by fire frequency, intensity, duration, size and the season in which it occurs. Around the world today, many once-natural fire regimes are anything but natural, throwing into peril ecosystems and human communities alike.



Tropical forests, such as this Amazonian rain forest, can be destroyed by fire, which is a foreign element for this type of ecosystem.

altered states

the causes and consequences of altered fire regimes

Fire scars in fossilized trees tell ancient stories of wildfires sparked by lightning. Human beings as well have been changing the world around them through fire for millennia. In China and Europe, people long ago used fire to convert forests to agricultural fields. In Australia, the Americas and Africa, fire was an age-old tool used to flush game and cleanse grasslands. But only in the past

century have people so radically changed the role of fire in many ecosystems, both in terms of setting fire and suppressing it, that natural fire regimes are severely altered.

More than 90 percent of the fires that occur around the globe today are thought to be caused by people. Each year, worldwide, an area larger than half the size of China burns. In the past few years we have seen catastrophic fires like those in the tropical, fire-sensitive forests of Central America, China, Mexico and Indonesia, which began with agricultural burning but quickly exploded in dry con-

ditions brought on by drought. With recurring drought linked to more frequent El Niño cycles, the world will inevitably see more fire in the tropics in coming years.

Conversely, many fire-adapted ecosystems today are fire-starved. Beginning with Smokey Bear, people in the 20th century mastered the art of fire suppression. With an expanding population into the fire-prone American West, for instance, keeping fire at bay became a top objective. One serious result of this suppression has been the unnatural build up of fuel—dense stands of flammable trees and thick carpets of dead wood and leaves—that has led to

unnaturally intense fires like those in Colorado, Arizona and Oregon in 2002.

Such altered fire regimes—too much fire and too little, at the wrong time and in the wrong place—are a sign of ecosystems out of balance. The consequences for both people and nature are serious. The fires in Indonesia in 1997 affected the health of 100 million people. In 2000, more than \$10 billion worth of natural resources and personal property was lost to wildfires in the United States; the government spent more than \$2 billion to put out those fires. Altered fire regimes can have a severe impact on natural resources, from water supplies to forest products.

For nature, altered fire regimes can inflict devastating wounds, from the loss of a single fire-dependent species to wholesale ecosystem change. High-intensity “crown fires” fed by excessive fuel loads, like the Los Alamos, New Mexico, fire of 2000, pummel even fire-adapted ecosystems, killing native species and leveling forests. Outside Boise, Idaho, more frequent fires are destroying native sagebrush—and pushing out the sage grouse that depend on it—while opening the way for the spread of non-native cheatgrass, which in turn fuels more fire. A similar

invasion of non-native grasses is now occurring in scorched tropical forests around the world.

heated response the fire initiative

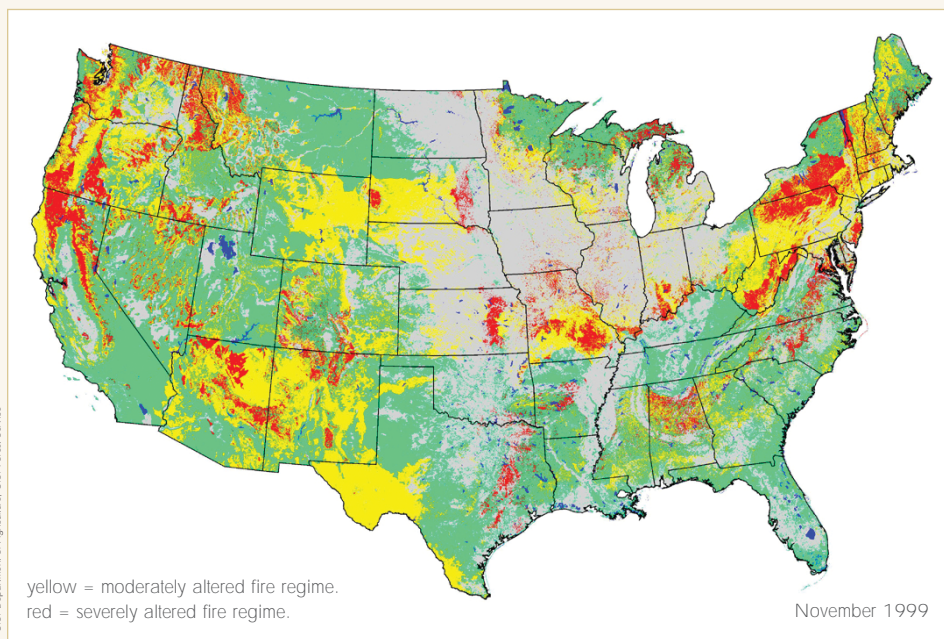
In developing the Conservation Blueprint—a map of the areas most critical for the long-term protection of ecosystems and wildlife—The Nature Conservancy has identified at least 107 million acres of important conservation areas, in the United States alone, that are threatened by altered fire regimes. More than half of the areas on the map are at stake. Around the world, hundreds of millions of acres more are at risk.

With altered fire regimes directly affecting our mission to protect the diversity of life on Earth, the Conservancy is responding in earnest. Building on three decades of experience in ecological fire management and a respected in-house cadre of fire professionals, we have launched the Fire Initiative to address the threat of altered fire regimes on both public and private lands. Over five years, the Fire Initiative will pursue five strategies:



Nature Conservancy experts help restore fire to fire-adapted ecosystems, such as this longleaf pine forest in Florida.

- 1) **Lead, Integrate and Collaborate**—Addressing fire-related ecological threats at the places where the Conservancy works and collaborating with other non-profit organizations and multilateral institutions, such as Conservation International, the United Nations and The World Bank, to set priorities and provide a voice for biodiversity concerns.
- 2) **Improve Government Policy**—Engaging policy makers to address policies, programs and funding sources that either hinder or advance action in fire-altered ecosystems.
- 3) **Catalyze Fire Learning Networks**—Bringing together land management partners, community leaders, landown-



Across the United States and around the world, alterations to the natural role of fire threaten the health of ecosystems and all inhabitants—plants, animals and people alike.

ers, experts, scientists, non-profit partners and policy makers to exchange information and expertise, find solutions to common problems, share best practices and provide a voice for fire management. To date, we have established networks in the United States, Mexico, Central America and the Caribbean representing more than 100 million acres of priority conservation areas.

- 4) **Build Partner Capacity**—Working with national government agencies and community-based organizations that have the greatest potential to address altered fire regimes at priority conservation areas, and building their capacity through resource sharing, networking, training and mentoring.
- 5) **Improve Science**—Applying the best available science to the threat of altered fire regimes and supporting best practices for adaptive management and restoration at sites. Because the lack of scientific information on the role of fire in ecosystems is a critical barrier to taking appropriate action in many places, we work with partners around the world to identify, prioritize and address gaps in knowledge.

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Cover photo: Fire-adapted ecosystems need the occasional sweep of the flame to survive.

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The use of management techniques such as prescribed fire (upper right) and manual thinning can keep fires from burning and spreading at abnormally high intensities (lower left). Colorado, 2002.

the fire initiative at work

United States: When more than 75 million acres of the United States burned in the 2000 fire season, the federal government enacted the National Fire Plan with the aim of fire-proofing vulnerable communities and addressing the threat of altered fire regimes. As an extension of the plan, The Nature Conservancy created a partnership with the U.S. Department of Agriculture and the U.S. Department of the Interior, through which we are working with communities to restore fire-adapted ecosystems across 38 million acres of public and private land. The partnership gives us a prominent seat at the table in the restoration of priority conservation areas around the country.

Mexico: After the destructive fires of 1998, the Mexican government began a campaign to increase its fire suppression capacity. To ward off the same mistakes in fire suppression made by the U.S. government during the 20th century, the Conservancy worked with several Mexican conservation partners to convene National Fire Management Forums. By bringing together government officials, land managers, scientists and fire experts, the forums generated an unprecedented national-level dialogue about the ecological costs and benefits of fire in Mexico. Now we are creating a network and mentoring program that teams U.S. fire experts with their Mexican counterparts to build ecologically sound and socially acceptable fire management programs at priority conservation areas.