



## PEOPLE, PARKS, AND FIRE

Fire is a force of nature that has shaped the vegetation and ecosystems of the national parks. Fire is also a cultural tool used by people for heating, cooking, clearing land for crops, and hunting. Whether started by lightning, lava flows, or humans, fire plays a vital role in our national parks.

The first national parks were created in the late 1800s. At the time, wildfires were put out because they were seen as a threat to the grand scenery. Over the years we’ve learned that when all fire is suppressed, fuels build up making larger and damaging fires unavoidable.

Under certain conditions, fires threaten public health and safety, destroy property, damage natural and cultural resources, and become dangerous and expensive to manage. In other conditions, fire can be used to achieve important objectives, such as maintaining and improving habitat and removing hazardous amounts of vegetation.

The National Park Service manages fire safely and effectively with the assistance of partners and neighbors. A successful fire management program includes many different people including you. Working together, we can make fire management safe and successful in our national parks and surrounding communities.



### FIRE AS A NATURAL PROCESS

Fire is one way nature maintains an ecosystem. Without fire, many ecosystems become stagnant and unhealthy. Each fire is unique and dependent upon conditions like weather, topography, and vegetation. Fires create diverse habitats by burning intensely in some areas and less so in others.

The wide variety of plant and animal life people enjoy in national parks is partially the result of fire. After a fire, a landscape may appear to be damaged; however, it is the beginning of a new stage of life on the land and a result of plants’ and animals’ adaptation to fire.

#### Living with Fire

All of us must learn how to live safely with wildfire. Use of non-flammable building materials, maintaining safe clearances around homes, and following prevention programs to reduce the possibility of igniting accidental fires is critical. Using proper fire-safe materials and practices can stop wildfires from burning homes and spreading to or from private property.

#### Wildlife and Fire

Wild animals evolved with fire and most survive all but the fastest moving fires. Birds and many larger animals leave the immediate area. Some animals escape to streams or ponds, and rodents burrow into the ground. Many wildlife species also depend on fire to create post-fire conditions in which they flourish.

#### Maintaining Landscapes

Fire managers may use fire to maintain a battlefield landscape so it appears as it did during a historic time period. Natural landscapes like a ponderosa pine forest become more open after a fire, creating conditions that ensure the success of the next generation of pines.

#### Reproduction and Regeneration

Willow, aspen, and birch are several types of trees that sprout from their roots after a fire. Other trees require fire to release seeds to reproduce.

#### Fire Dependent Ecosystems

Tallgrass prairie is just one example of an ecosystem that needs fire to exist. Historically, tallgrass prairies covered parts of Nebraska, Illinois, Iowa and Kansas and some of the eastern states of the Midwest. Without fire, the tallgrass prairie would vanish and shrubs, trees and non-native grasses would take its place.

#### Invasive Species

Non-native invasive species respond to fires in different ways. Fire is used as a tool to slow down the spread of some types of invasive plants. In other cases, if a wildfire is severe it can open up the opportunity for non-native plants to invade.

#### Post Fire Response

Some fires, such as those that severely burn vegetation, can cause hazardous situations afterward. Landslides, increased runoff into streams, and erosion can pose threats to community water supplies, people, and animals. Teams of specialists evaluate an area and create plans for agencies and communities to apply and reduce the threat after a wildfire.



### NATIONAL PARK SERVICE COMMITMENTS

#### Safety

For all of the people on the ground, in the air, on the road and in surrounding communities, safety is the primary concern and the highest priority in all fire management activities. Fire staffs are constantly training, communicating and receiving briefings on the best strategies and tactics to operate safely. They are prepared for action should an emergency arise.

#### Science

Wildland fire programs are managed using the best available science-based knowledge. Park scientists work in partnership with others to study various aspects of wildfire including its pattern, frequency, behavior, and effects. Equipped with this knowledge, fire managers can be better prepared to suppress fire when necessary and apply fire where useful to maintain natural ecosystems and cultural landscapes.

#### Stewardship

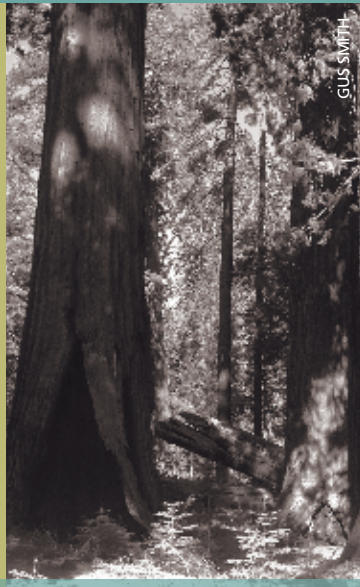
The National Park Service utilizes wildland fire when appropriate to maintain natural and cultural landscapes as well as to restore fire adapted ecosystems.



1890  
Before fire suppression



1970  
After 80 years of suppression and ingrowth



2013  
Fire's natural role restored following 30+ years of active fire restoration



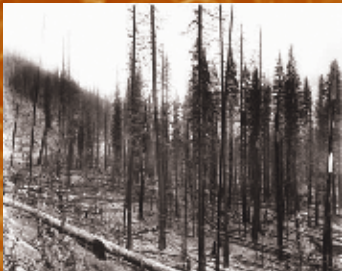
### YOU MAY BE VISITING A PARK DURING FIRE SEASON

In any given month, a fire will be burning in a national park. Ask about fire updates before and during your visit. Attend ranger talks about wildland fire to learn more about fire in the national parks.



# Wildland Fire in National Parks

*The National Park Service Wildland Fire Management Program is committed to safety, science, and stewardship.*



1886

## The First Park Wildland Firefighters

Captain Moses Harris, Company M, First United States Cavalry, became superintendent of Yellowstone National Park. For the next 32 years, one of the duties of the military was to fight wildfires throughout the park.

1910

## August 20–21: The Big Blowup

In two days, over three million acres burned, destroying numerous towns and killing 85 people across northern Idaho and western Montana. After this event, suppressing wildfires became a national concern.

1916

## National Park Service Established

The Organic Act in 1916 established the basis for the mission, philosophy, and policies of the National Park Service. The new civilian agency relieved the military of their responsibility for parks.

1926

## First Managed Burns in the West

Although against NPS policy of the time, Sequoia National Park Superintendent, Colonel John White, ordered his rangers to conduct a number of successful controlled burns, now known as prescribed fires, to reduce surface fuels.

1933

## Civilian Conservation Corps (CCC)

The CCC was established to "...work for the prevention of forest fires and for soil erosion, flood control, removal of undesirable plants, insect control, and construction or maintenance of paths, tracks, and fire lanes on public lands."

1958

## First Managed Burns in the East

In the late 1950s Everglades National Park began using prescribed fire to maintain natural vegetation. (pictured above)

1963

## Reintroducing Fire

Wildlife Management in the National Parks: The Leopold Report recommended "...each park be maintained... in the condition that prevailed when the area was first visited by the white man. A national park should represent a vignette of primitive America." This set the course for future management by reintroducing fire as a natural process.

1968

## Managing Naturally Ignited Fires

Sequoia National Park began to allow some lightning fires to burn in high elevations to restore the role of fire in the ecosystem. Many parks followed suit in subsequent years.

1988

## Greater Yellowstone Fires

Yellowstone National Park experienced the driest summer on record in 1988. Across the Greater Yellowstone Ecosystem, seven major fires burned 1.2 million acres. Five of the fires started outside the park and burned into it, and three of the seven fires were human-caused. At the time, it appeared to the public and media as destructive to the park, however as a result, the fire-adapted ecosystem was renewed.

2000

## Fire Season of 2000

The fire season of 2000 was unusually active with an above average numbers of fires and acres burning. Mobilization of firefighters and equipment started in late April and escalated through the rest of the summer with record fire activity. The season reinforced the need for good planning and coordination.

2009+

## Managing across Landscapes

Wildfire management has become more complex as rural populations have increased along park boundaries. Today, wildfire management policy takes into account the Wildland Urban Interface, managing fire across landscapes and boundaries, and using fire as a resource management tool.

### HISTORY OF FIRE IN THE PARKS

Over the years, National Park Service fire managers have developed and used effective tactics, technology, and policy to enhance public and firefighter safety, and preserve natural and cultural landscapes.

### TOOLS OF THE TRADE

The National Park Service wildland fire program applies traditional fire management tools as well as new technology to provide better public safety and resource protection before, during, and after fire.

#### Knowledge!

A firefighter's most important tool is their brain. Knowledge of leadership principles, fire operations, fire behavior, planning, safety, effective communications, and fire ecology are essential 'tools' in the fire management toolkit. Knowledge is as important as technology, machinery, and hand tools in managing fire.



#### Hand tools

Firefighters have many tools they use to communicate, gather data, and actively manage a wildland fire. While technology enhances firefighters' effectiveness, firefighters still use basic tools on the fireline.



1] Hoses and pumps are used to spray water or foam to prevent fire spread or to extinguish flames and burning material. 2] Hand tools, like shovels, rakes and the pulaski are carried by every firefighter and used to create fuel breaks. 3] Hand carried drip torches are used to ignite prescribed fires and conduct burnouts of the vegetation between a control line and the rest of the fire. Using fire to fight fire is very effective. 4] Weather readings on the fireline are taken frequently throughout the day. Knowing the temperature, wind speed, wind direction, and humidity are crucial in anticipating the fire's behavior.

#### Machinery and Large Equipment

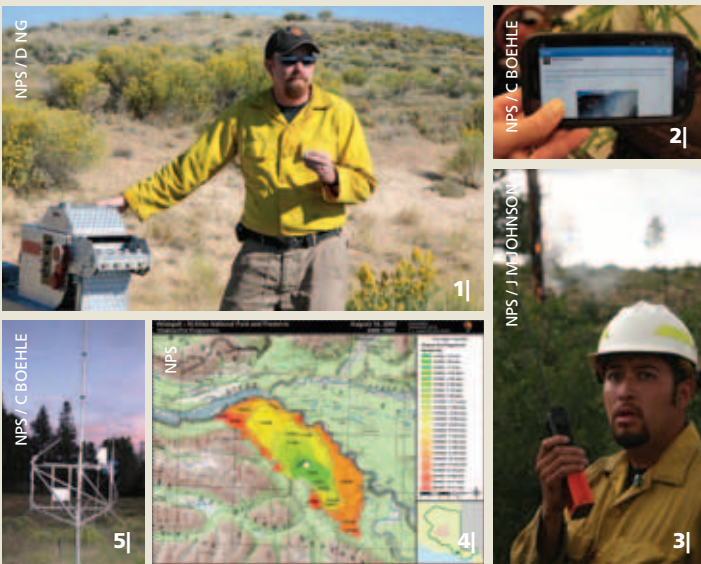
Fire management operations are supported by large machinery that transport and assist firefighters in daily and emergency duties.



1] ATVs and trucks transport tools and people quickly. 2] Helicopters and airplanes are critical in fire operations. They transport people, gear, and food, as well as drop water or retardant that can slow fire growth. Helicopters with aerial drip torches or other ignition devices can be used to fight fire with fire. 3] Engines and water tenders provide much-needed water to cool a fire and protect structures. 4] GyroTracs and other types of large machinery make the job of a firefighter easier and safer by treating fuels, preparing for, and cleaning up after a fire.

#### Technology

Fire managers use leading edge technology and equipment to predict, prepare for, and respond to wildland fires.



1] The plastic sphere dispenser is one device used to ignite prescribed fires or burnout operations. Firefighters drop them from a helicopter, covering a large area quickly. Upon reaching the ground, the plastic sphere heats up due to a chemical reaction and bursts into flame. 2] Social media has enhanced our ability to talk with the public about fire. 3] Radios are commonly used to communicate. 4] Computer programs allow for predictive modeling and accurate fire mapping, assisting fire managers in making well informed decisions. 5] Remote Automated Weather Stations (RAWS) take measurements like wind speed and direction, relative humidity, temperature, and fuel moisture. The readings are transmitted to fire managers via radio signals and satellite links and are used to model and predict fire behavior.

