

Rocky Mountain

National Park
Colorado

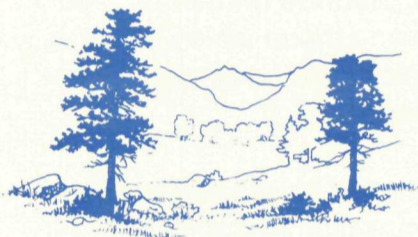
National Park Service
U.S. Department of the Interior

Fire

Wildland fire is one of the most awesome and powerful forces of nature. Each year, frequent lightning storms ignite hundreds of forest fires throughout the Rocky Mountains. For thousands of years, the plant communities of Rocky Mountain National Park have evolved with fire.

FORESTS SHAPED BY FIRE

Fire has a different role in each forest type that covers the park's mountain slopes.



From the foothills, at an elevation of 6,000 feet (1,829m), to as high as 9,000 feet (2,743m), montane forests of ponderosa pine and Douglas fir are found. Lightning-caused surface fires are a natural part of this ecosystem. Frequent surface fires burn grass, pine needles, and dead wood; but rarely kill the older thick-barked trees. By killing tree seedlings, ground fires maintain the natural openness of these woodlands decreasing the probability of hot crown fires. The grasses, shrubs and wildflowers, which grow in the openings between trees, make excellent forage for wildlife. Ponderosa pine in

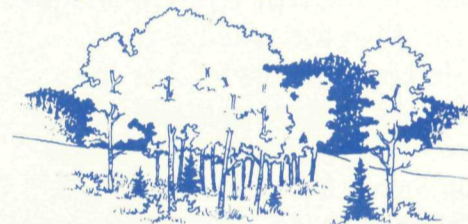
open stands are healthier and can resist the invasion of the wood-boring mountain pine beetle by forcing them out with sap.

Between about 8,500 and 10,500 feet (2,591 and 3,200m), lodgepole pine forests cover large areas of the park. These forests depend on fire. Sealed with a dense pitch, the closed cones may remain on the tree for decades. High temperatures are required to open most of these cones and release their seeds. The bare mineral soil and fresh ashes produced by a fire provide an excellent seedbed for lodgepole pine seedlings.



Below treeline, at an average elevation of 11,400 feet (3,475 m), subalpine forests of Englemann spruce and subalpine fir can reach 300 to 400 years of age. These cool, moist forests receive more snow than any other mountain

zone. Snow pack remains well into the summer. As the snow melts, water is stored in the soil. This moisture together with that from summer thunderstorms helps make spruce-fir forests fire resistant. Studies of tree rings indicate a fire only once every 300 years or more.



Fire affects other trees, such as aspen. After a fire, aspens sprout from their roots and spread more easily.

The vitality of the forests in Rocky Mountain National Park depends on fire. Fire removes the thick layer of decaying vegetation on the forest floor. Herbaceous plant growth is enhanced and the nutrients that were tied up in the litter are released. Fire also creates a mosaic of different types and ages of forest vegetation. This improves habitat and increases the diversity and abundance of wildlife.

FIRE HISTORY

During the early decades of mining and settlement, human-caused fires had a dramatic impact on the landscape. Many fires swept through what is now the national park between 1850 and the early 1900's. A walk around Bear Lake or a drive along Glacier Creek passes through forests that regenerated after large fires at the turn of the century.

Soon after Rocky Mountain National Park was established in 1915, a period of fire suppression began. Because all fires were thought to be harmful, they were put out. With fire suppression, montane forests became denser and more susceptible to severe crown fires. The health of the forests declined. Growing in dense stands, trees did not receive the nutrients, sun, or water necessary for vigorous

growth. Weakened trees became more susceptible to pests such as the spruce budworm and mountain pine beetle.

Under natural conditions, fires burn unevenly across the landscape. In all but the driest years, most fires are limited. Frequent small fires reduce the amount of dead wood and limit more hazardous fires from burning out of control.

CROWN FIRES



Most lodgepole pine forests in the park are of uniform age due to decades of fire suppression. The mosaic of different-aged trees is gone. As lodgepole pine forests grow older, their dense canopies become more flammable. Prolonged drought and high winds can then set the stage for catastrophic crown fires, with flames leaping from the tallest branches to over 100 feet (30m), sending burning embers into the air 1/4 mile (0.4km) ahead of the main fire.

During the summer of 1988, crown fires roared through Yellowstone National Park,

burning hundreds of thousands of acres of lodgepole pine forests. The summer of 1988 was the driest in Yellowstone's recorded history. It was also one of the windiest. Although over 10,000 firefighters were dispatched, autumn's rains and snows finally extinguished the inferno.

The lodgepole pine forests of Rocky Mountain National Park are very similar to those in Yellowstone. Because of past fire suppression, the park's forests are also ready for a major conflagration during a severe drought.

FIRE MANAGEMENT

For the health of Rocky Mountain National Park's forests and the safety of the park's neighbors, fire needs to be reinstated. The goals of the park's Fire Management Plan are to allow fire to achieve its natural role to the greatest degree possible and to protect life, property, and other resources from hazardous fire. Under this plan, two categories of allowable fires are employed - **Prescribed Natural Fire (PNF)**

and **Management Ignited Prescribed Fire (MIPF)**. These terms refer to different ignition sources.

PNFs are lightning-caused fires that are allowed to burn if they are within predetermined zones and meet specific prescription criteria. Some of the variables considered are projected fire behavior, current and forecasted weather, fuel moisture, smoke dispersal, and fire fighting readiness. Lightning fires that are allowed to burn will be continually monitored and evaluated to

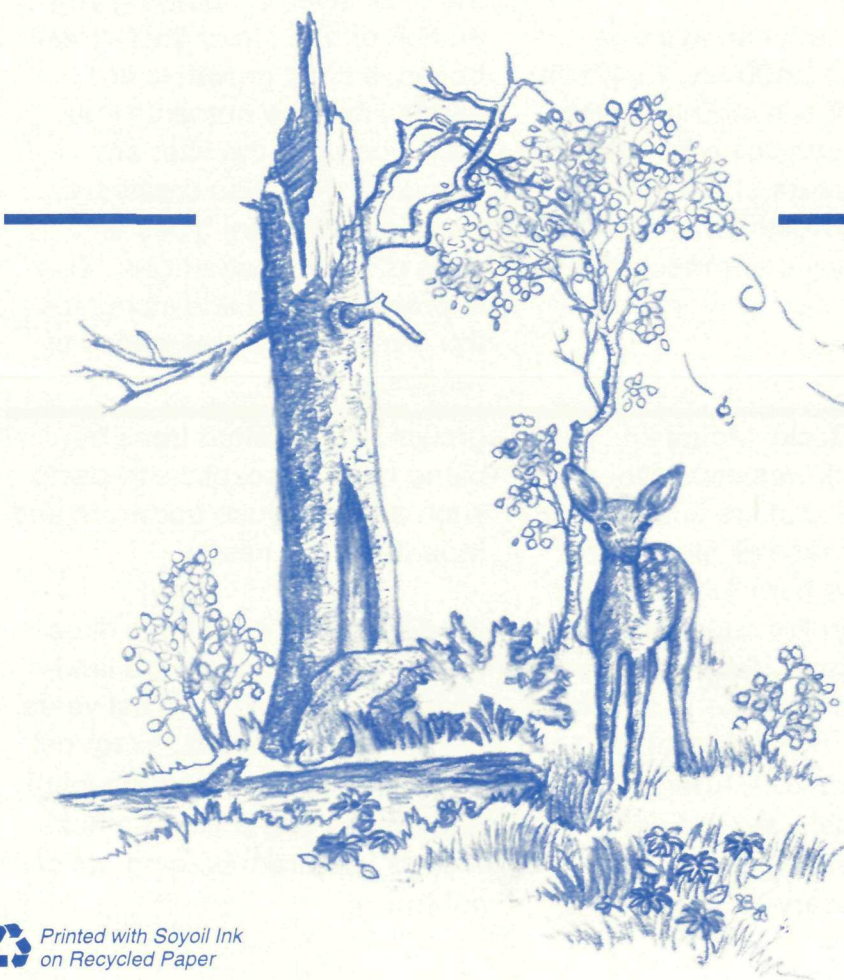
ensure they remain within prescription.

All unplanned human-caused fires and those which threaten people or property will be suppressed.

MIPFs will be started by Fire Management personnel to reduce ground fuels and create a more natural forest mosaic.

MIPFs will only be initiated under conditions that allow confinement of the fire to a predetermined area.

Another aspect of the fire plan is a **Fuels Reduction Program** on private and public lands bordering the national park. This involves removing dead limbs from the base of trees, burning slash piles, or clearing trees and ground cover to break up fuel continuity that can support potential wild fires.



A NEW BEGINNING

Fire, in concert with other natural forces such as floods, winds, precipitation, and drought, is a natural process. Fire gives plant communities opportunities for regrowth that did not exist prior to a burn. New growth improves habitat and food sources for wildlife. Fire management in Rocky Mountain National Park will restore fire to the forest and allow the ecosystem to return to a more natural state. Research has shown that fire is not the end, but the beginning of new life in the forest.