

FIRE

Prescription for a Healthy Environment



United States Department of Agriculture
 Forest Service
 Intermountain Region
 Uinta and Wasatch-Cache National Forests

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FIRE REGIMES

A fire regime is a description of fire's role in an ecosystem based on its frequency of occurrence, intensity, severity and size (Heinselman, 1973). Fire regimes are sorted into broad categories ranging from frequent, non-lethal fires to infrequent, stand-replacing fires. More than one type of fire may occur within a vegetation type. For example a lodgepole pine stand that experiences non-lethal surface fires about every 30 years, may experience a high intensity, severe fire approximately every 150 years. Listed below are general fire regimes for local vegetation, based on studies done for common types in Utah. The numbers represent the average frequency for each type of fire, non-lethal to stand-replacing, occurring in the vegetation type. The values are for fires that historically occurred, before the advent of European settlement and fire suppression.

Oak roots survived a stand-replacing fire to sprout new growth just six weeks later.



OAKBRUSH - 10-30 years, stand replacing

SAGE/GRASS - 15-30 years, short return interval crown/severe surface fires

PONDEROSA PINE - 6-20 years, infrequent light surface fires

DOUGLAS FIR - 15-150 years, mixed fire regime, non-lethal to stand replacement

JUNIPER - 15-50 years, stand replacement

LOGEPOLE PINE - 30-150 years, mixed fire regime, infrequent non-lethal fires to stand replacement

ASPEN - 70-200 years, stand replacement

SPRUCE-FIR - 250-300 years, long return interval crown fires and severe surface fires

Fire regime information based on – Heinselman, M.L. 1973. Fire in the virgin forests of the Boundary Waters Canoe Area, Minnesota. Quat. Res. 3:329-82.



Even a stand-replacing fire leaves islands of unburned vegetation that creates a mosaic of age classes as the burned areas regenerate.

FIRE TERMS

WILDLAND FIRE SUPPRESSION - An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

WILDLAND FIRE USE - The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in FMP's.

WILDLAND FIRE MANAGEMENT PROGRAM - The full range of activities and functions necessary for planning, preparedness, emergency suppression operations, and emergency rehabilitation of wildland fires, and prescribed fire operations, including nonactivity fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

PRESCRIPTION - Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

PRESCRIBED FIRE - Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

APPROPRIATE MANAGEMENT RESPONSE - Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

INITIAL ATTACK - An aggressive suppression action consistent with firefighter and public safety and values to be protected.

WILDFIRE - An unwanted wildland fire.

FIRE

Prescription for a Healthy Environment

For thousands of years, natural fires have played a major role in grassland, brush and forest ecosystems for as long as they have existed. Many ecosystems have evolved with fire and depend on it for renewal. A burned area may seem devoid of life, but many species survive, giving rise to a new forest. Fire also creates openings in the forest. Sunlight penetrates these gaps, warming the soil and stimulating new growth from seeds and roots.



Lightning-caused fires are an important part of forest ecosystems. Without these periodic fires to recycle forest debris, and regenerate new growth, fuels build up and unnatural catastrophic fires may occur.

Over time, periodic fires create a vegetation mosaic of different ages and types. This provides a rich variety of habitats that supports many species of insects, mammals, and birds. This diversity indicates a thriving ecosystem.

The science of ecology tells us that natural fire is an essential part of nature. Humans have attempted to exclude all types of fire, not distinguishing between natural and human-caused fire.

In many of our wildlands fire specialists have grappled with the issue of fire for over 100 years. An for most of that time society has viewed fire as a destructive force.

The result of a century of extensive fire suppression, coupled with the growth in urban wildland areas, has caused a fire environment prone to catastrophic fire. To deal with this issue, the Forest Service is restoring fire into ecosystems.



Frequent understory burns historically cleansed ponderosa pine and Douglas fir forests of dead and down fuel, preventing catastrophic fires.



Wildlife may move into a burned area before the smoke clears. Burns provide a variety of habitat for wildlife by rejuvenated vegetation.



Can you tell how many years ago this aspen stand burned? Aspen are able to renew themselves after a fire by sprouting from their unburned roots. This aspen forest is sprouting a new aspen forest just one year after it burned.

What is the best way to restore fire? In some areas of the forests we simply let nature take its course. In some predetermined areas, when lightning strikes and starts a fire, the fire would be monitored and trained specialists would decide when, where, and under what limits a fire would be permitted to burn. Another solution is prescribed burning. Fire management, along with wildlife, timber and other resource specialists, plan, and ignite fires in areas when they are in prescription. Fire can play its role in the forests safely and provide for:

-  **RECYCLING OF NUTRIENTS**
-  **RESTORING AND REGULATING PLANT SUCCESSION AND WILDLIFE HABITAT**
-  **MAINTAINING BIOLOGICAL DIVERSITY**
-  **REDUCING HAZARDOUS FUEL, THUS DECREASING FIRE DANGER**
-  **CONTROLLING INSECTS AND DISEASE POPULATIONS**

Some fire must always be extinguished that threaten people, property and rare natural resources. Careful planning, using fire as a management tool, and increasing education and awareness will provide an environment for healthy forests. For years, the accepted story about fire was that it destroyed the landscape. The reality is, fire is essential to forest health. Research shows that many ecosystems depend on fire to renew the ecosystems by releasing nutrients and stimulating new life. In time, fire creates a healthy diversity of plant and wildlife species, which benefits the public and the land.