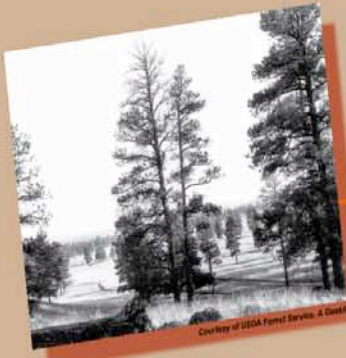


Ponderosa Forests of Yesterday



Yesterday...
The park-like ponderosa forest east of the San Francisco Peaks. October 18, 1903.



... and Today.
Today's forests are overgrown and unhealthy.

Park-like Vistas

Over a century ago, our landscape looked much different than it does today. Forests had an open park-like feel where an acre might contain 20-40 large healthy trees and only a few scattered smaller trees. Trees grew in clumps interspersed with expanses of thick bunches of native grasses.

Fire: Nature's Clean-up Crew

In the past, ponderosa pine forests evolved with fire. Frequent, low-intensity fires burned through the grassy understory every 2-14 years. These fires helped maintain the openness of the forests by clearing away small, unhealthy trees and brush. Larger trees, protected with thick, insulating bark, escaped serious harm.



Courtesy of Ecological Restoration Institute/Northern Arizona University



Courtesy of Ecological Restoration Institute/Northern Arizona University



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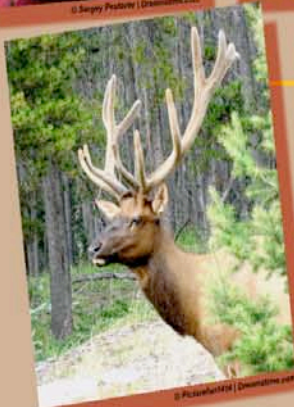
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Sustainable Healthy Ecosystem

Early forests had healthy ecosystems. Ash produced by frequent, low-intensity fires helped recycle nutrients into the ground. Plants and soil organisms flourished providing habitat and food for small mammals such as squirrels and mice; large animals like deer, elk and antelope; and many bird species.

What Happened to Our Forests?

Humans Happened!

Grazing

Poor grazing practices by early sheep and cattle ranchers greatly reduced the amount of native grasses, breaking the cycle of frequent, low-intensity fires. Reduced competition from native grasses allowed pine seedlings to grow in thick patches.



Courtesy of USDA Forest Service



Courtesy of Arizona Historical Society - Pioneer Museum

Logging

Past logging activities removed large, fire resistant trees and left understory brush, small trees and logging waste to fuel large fires.

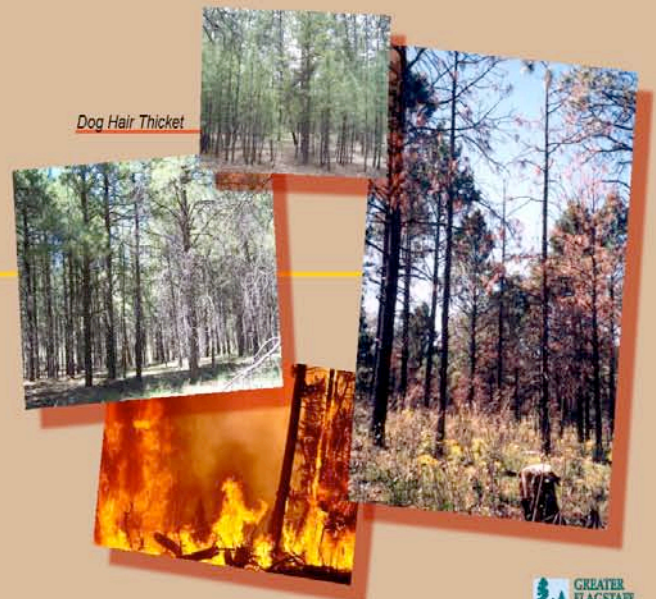


Fire Suppression

Fire suppression allowed thick seedling patches to grow into dense stands of small trees, known as *dog hair thickets*, which lead to an accumulation of flammable forest debris.

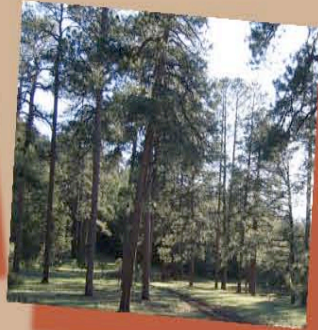
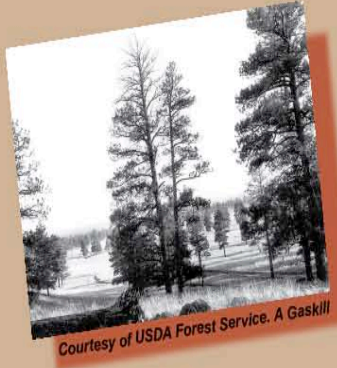
The Result: A Decline in Forest Health

Arizona's forests have been overwhelmed by the growth of small trees that would have been removed by fire. The once prevalent openings have been nearly eliminated. Trees compete for water, light and nutrients which makes them susceptible to the effects of drought, insects, disease and wildfire.



Dog Hair Thicket

What Should the Forest Look Like?



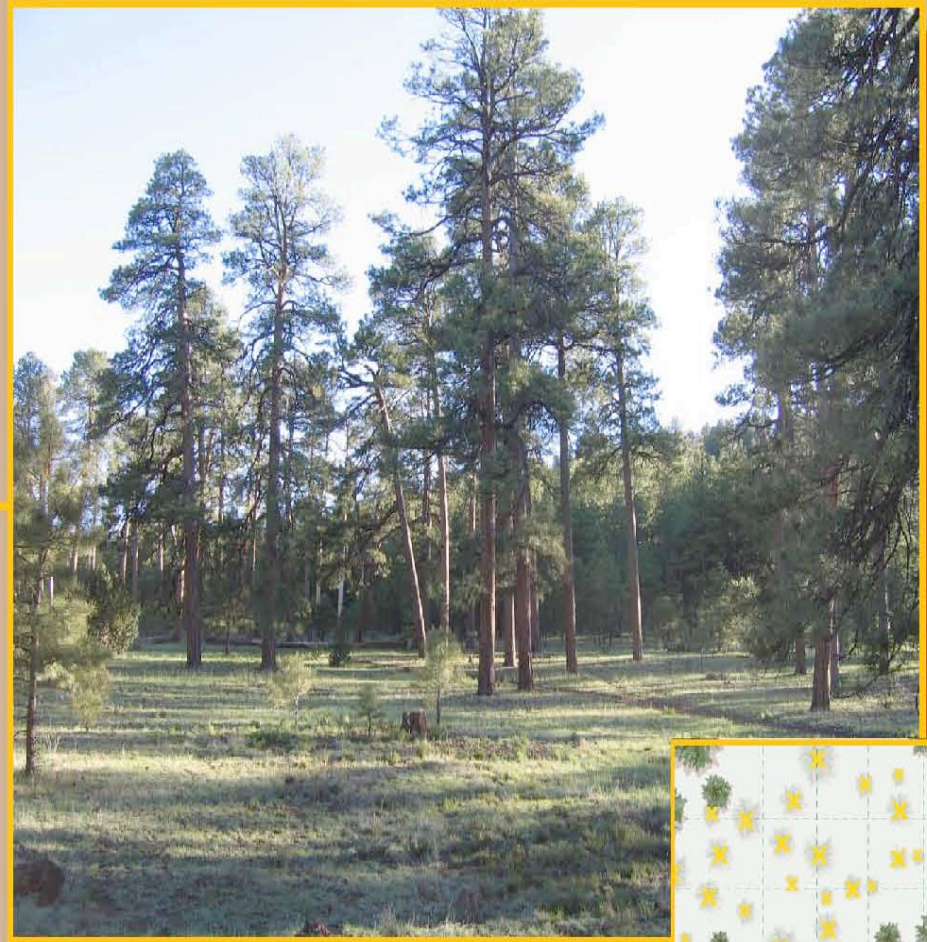
Park-like

Before logging, grazing and fire suppression, local forests contained large grassy openings with fewer—but larger—trees and were described as *park-like*. The grassy openings sustained frequent, low intensity fires which maintained a healthy and balanced ecosystem.



Ponderosa Forest Vista

In some areas, forest treatments are designed to roughly mimic the open park-like appearance of earlier forests.



Bird's eye view
of a park-like treatment



How Do We Repair the Damage?



What's Being Done?

To reduce the threat of wildfire and restore forest health, forest managers cut and remove trees and perform *controlled burns*. Removing a portion of the forest reduces plant competition for light, water and nutrients, which allows the forest to grow healthier.

Which Trees Go?

Trees that are diseased, damaged, or unhealthy are cut and removed in order to improve forest health. Different areas of the forest require different methods, or *treatments*, for how the trees are removed. You can see examples of forest treatments as you walk along the *Charles O. Minor Nature Trail*.



Fighting Fire with Fire

Land managers often use fire as a tool to restore forest health. Known as controlled burns, these fires are conducted under specific conditions to minimize the risk of wildfire. Controlled burns eliminate unwanted forest debris and reintroduce fire in its natural role.

Thinning

Tree removal, or thinning, is a treatment used to improve forest health.



Broadcast Burn at The Arboretum at Flagstaff

Broadcast Burns

After forests have been opened up by tree removal, broadcast burns are ignited to reduce the accumulation of pine needles, twigs and branches that could fuel a larger fire.



Courtesy of Ecological Restoration Institute/Northern Arizona University

Slash Piles

Slash is unusable material consisting of branches and tree tops. Slash results from tree removal and is often piled and burned.

Forest Thinning to Prevent Crown Fire



Crown Fire



Forest Before Thinning

Forest After Thinning



How Does Fire Reach the Tree Tops?

Small trees and woody debris that extend from the forest floor to a tree top, or *crown*, can act as “ladders” allowing fire to climb up into the *forest canopy* (many tree tops). This treatment utilizes tree thinning techniques to eliminate small trees and other *ladder fuels* to reduce the likelihood of a fire moving up into the forest canopy.



Ladder Fuels



Thinning Treatments

Thinning treatments create safer work areas for firefighters. The results are smaller, less-damaging fires.

Bird's eye view of a thinning treatment



What is Unusual About These Trees?



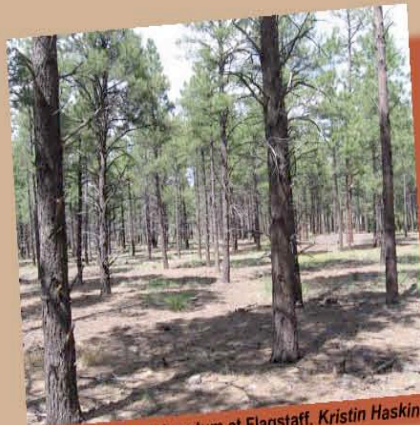
Unusual Appearance

An even age—even spacing type of forest management ensures a continuous supply of timber and fiber products.

Their Even Age and Spacing!

Trees and brush are often removed to create optimal conditions for tree growth and harvesting.

This kind of treatment can result in an orchard-like appearance where trees are of a similar size and spacing.

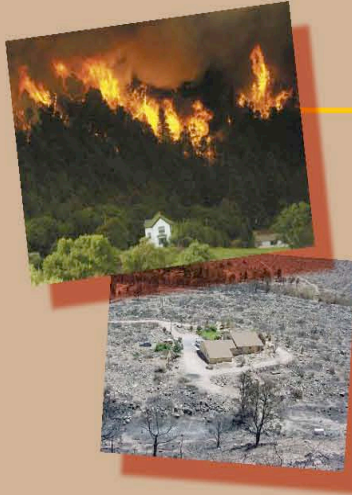


The Arboretum at Flagstaff. Kristin Haskins

An example of even age—even spacing at The Arboretum at Flagstaff.

Bird's eye view
of an even age—even spacing treatment.

Firewise Places are Survivable Spaces



Living on the Edge

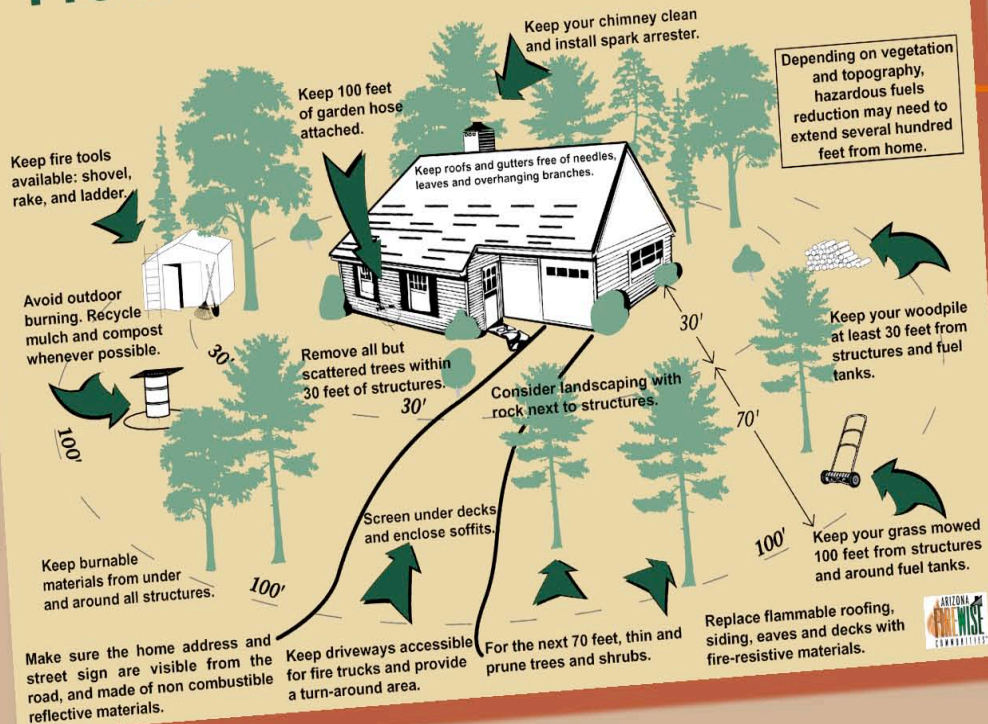
Increasing population sizes and urban expansion into forested areas have complicated efforts to protect communities from wildfire. Despite management practices, some wildfires continue to threaten personal property and forest health. Creating survivable space around your home is one of the most important steps you can take to protect your property and family from wildfire.

Are You Firewise?

The *Arizona Firewise Communities Program* is part of a national grass-roots movement that assists communities with planning, building, and maintaining safer neighborhoods. It encourages neighbors to work together to reduce the risk of severe wildfire. If Firewise actions are implemented, then the probability that homes and communities will survive is much higher. Contact your local Fire Department for information regarding your wildfire risk and your Firewise Communities Program.



Protect Your Home From Wildfire



What Can You Do?

- Keep your property *Lean and Clean*. Rake up leaves, pine needles and litter before and during fire season.
- Prune trees and shrubs as necessary.
- Add gravel, pathways and non-flammable features to your landscaping.
- Replace fire prone plants, like evergreens, with fire resistant plants, such as deciduous trees and shrubs.
- Move fuels and combustibles at least 30 feet away from structures.
- Use fire resistant materials for roofing, siding, decking and vents.

