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THE HISTORICAL ROLE OF FIRE AND ECOSYSTEM MANAGEMENT OF FIRES, GILA NATIONAL FOREST, NEW MEXICO: A POWERPOINT PRESENTATION

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INTRODUCTION

Prescribed natural fire has been a part of resource management on the Gila National Forest since 1975. The early management plan was conservative and allowed for fire only after the summer rains had become well established. Recently, in an effort to allow for more aggressive fuels reduction and habitat restoration, the plan was revised. The new plan takes into consideration the role of fire in ecosystem management and how past natural fires played a critical role maintaining habitats for the native flora and fauna over the 1,335,490 ha (3,300,000 acres) of the Gila National Forest. This new effort has involved working with groups that did not exist 20 years ago, including the State Environmental Division and laws

that were in their infancy including, but not limited to, the Endangered Species Act, Clean Air Act and Clean Water Act. The southwest will continue to have fire. It will be in the form of natural ignitions, managed fire or by default, wildfire.

Note: for an extensive discussion of this subject, see Paul F. Boucher and Ronald D. Moody, *The Historical Role of Fire and Ecosystem Management of Fires: Gila National Forest, New Mexico*, 20th Proceedings, Fire in Ecosystem Management: Shifting the Paradigm from Suppression to Prescription, Tall Timbers Fire Ecology Conference, 1998, Tall Timbers Research, Inc.



The Gila Wilderness was established in 1924 with a bit of help from Aldo Leopold.

The Gila has been occupied for the last ten-thousand years by several cultures including Europeans who arrived around 1880. The Mimbres culture inhabited the areas of the southern portions of the forest, and the northern portions of the forest were inhabited by the Mogollon cultures. Many of their etchings were left on rocks surrounding hunting sites, on spring areas that were sacred, and in areas where animals were harvested.



The bottom three photos, taken of the same area (northwest side of the San Francisco Peaks in Arizona) over a 100-year period, show the changes in the watershed. In the first photo, a wagon team, two horses, and a couple of cowboys stand near a large juniper tree. Fifty years later the picture was retaken and you will note that the vegetation including grass and forbs has come back in. Of particular concern, is the juniper trees that have started to come in. In 1994, the third photo was taken. The junipers are sucking the water from the area and now the surface is drying and we are losing the grass/forb community.



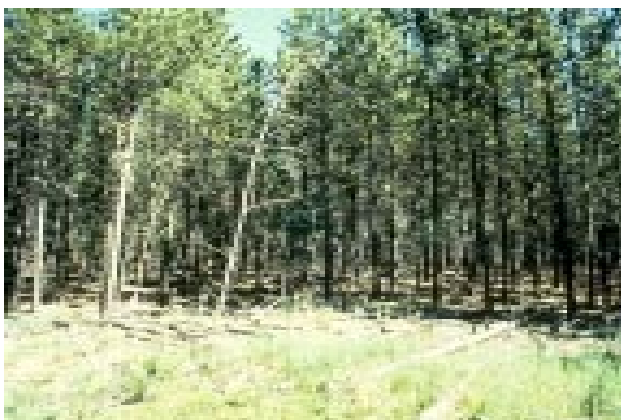
The Historical Role of Fire and Ecosystem Management of Fires, Gila National Forest, New Mexico



This photo was taken on Avalanche Peak outside Silver City. Avalanche Peak got its name when gullies were created during the drought-breaking rain events of 1905. This gentleman is standing at the bottom of one of the avalanche shoots.



I have deep concerns about the Ponderosa Pine. In this photo you can see the understory beneath large yellow pines, 250 to 300 years old. Substantial regeneration has taken place, particularly after 1919.



After the overstory is removed, you are left with an understory or a “dog hair thicket,” which is a term coined by foresters meaning that the trees are as thick as the hairs on a dog’s back. There are areas in the Southwest (before pre-commercial thins), where upward of 6,000 stems per acre of Ponderosa Pine thrive.



Early settlers brought a lot of grazing ungulates with them. They found a vast sea of grass in some areas. However, they didn't understand the drought cycles that are common to the Southwest. They didn't understand they were dealing with a finite resource and thought they had an inexhaustible supply of fodder for their animals, unlike in the Midwest where frequent prairie rains produce regeneration of grasses and forbs.



The European mentality at the time was that fires must be put out. One of the driving factors was that if your forage was burned, your livestock went hungry. Also, precious topsoil was lost during fires. Topsoil in the desert Southwest can take upwards of 1,000 years to regenerate one inch.

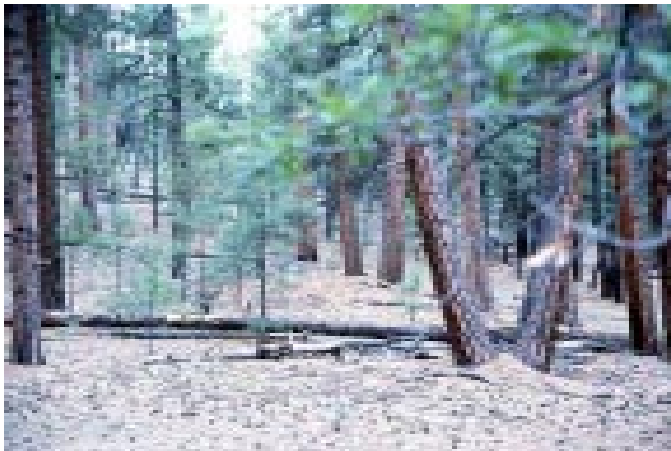


We now know that fire is a very important component of southwestern watersheds. The best type of fires are the moderate to light intensity understory burns, not the fires you see on the six o'clock news during the months of July and August that are typically high intensity fires.

The Historical Role of Fire and Ecosystem Management of Fires, Gila National Forest, New Mexico



In this photo you can see the pine bunch grass community in the understory. Obviously, no timber harvesting has occurred at this site.



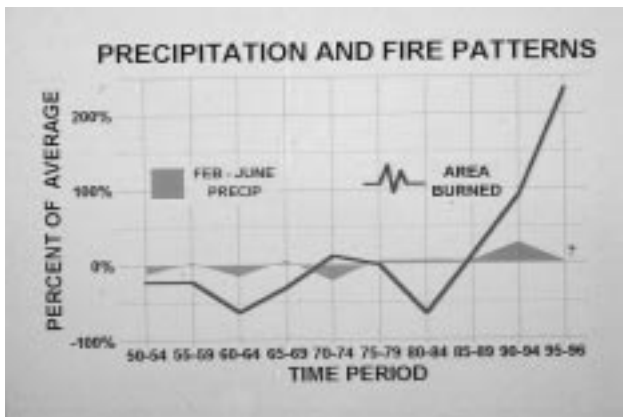
This photo also shows an area of old growth Ponderosa Pine, but the pine bunch grass community has been completely covered with leaf litter from the pine stand. You also have younger trees coming in. In the understory, you have ladder fuels, which can create a catastrophic situation in case of fire.



This is Rustler Park in the Chiricahua Mountains. The ridge in the background is 800 feet off the forest floor and the flame lengths are probably about 800 feet above that ridge.



This is the Rattlesnake fire from 1994. The smoke column tops 40,000 feet. A major fire event like this typically strips everything until you have nothing but black branches sticking up in the air.



Note the line in this graph. In the early 1970s when fire researchers first started working on Ponderosa Pine, we were warned that we had about 25 years to get our act together or the fires that we were going to experience in the Ponderosa Pines were going to be of such intensity and size that the only thing we would be able to do was to stand back, watch, and wait for a weather change. They were right on the mark.



Many people who come to the Southwest are used to cobalt skies and fluffy, white clouds. As we attempt to implement the National Fire Plan, we are going to have to educate people on the need for burns.

The Historical Role of Fire and Ecosystem Management of Fires, Gila National Forest, New Mexico



There are, of course, negative effects of fire. This is an ash flow event down the east fork of the Gila River. We are definitely in noncompliance with the Clean Water Act here. The most difficult part of implementing the National Fire Plan is staying in compliance with the Clean Air Act, and getting people to understand that smoke is a part of the natural environment.



Some fires leave a mosaic pattern. This photo shows areas where there were “hot burns” and where mountain meadows will develop. There are also scorched areas that will become home to thickets of raspberries. The unburned canopy will add to wildlife diversity on this particular watershed.



Implementing the National Fire Plan is not an easy task. We have to stay in compliance with many processes such as NEPA, public scoping, Clean Air Act, Clean Water Act, and the Endangered Species Act. Many of our native fish are ending up on the endangered species list or the threatened species list, like the spotted owl.



We need to be extremely careful about fires along our roads where many wildfires start due to public access and accidental ignitions. Along travel corridors, we must mitigate the smoke issue so we don't have a recurrence of the problem we had in Region 8 where a "smoke-out" occurred along Interstate 10 resulting in a pile-up of cars and fatalities.



We are going to have to work hard to educate the public and to bring our watershed back into a healthy state. It will take a diligent effort, as we found out with the Cerro Grande fire. I do not think we can ever return to the way it was in the 1800s, nor do we want to, but we can give nature a helping hand by moving in that direction.