

CHAPTER 2

WHY WE BURN

OBJECTIVES

- 1) Explain the historical relationship between Florida and fire
- 2) Identify the needs for prescribed fire

HISTORY

Florida has been described as ‘The land from the Sea’. Indeed, across this relatively flat area, water has been a dominant force in shaping biotic communities. In its pristine condition nearly 60% of the state’s 35 million acres were wetlands (Fernald and Purdum 1996). Abundant rainfall averaging 57 inches annually and a mild climate encouraged plant growth. Natural plant mortality coupled with occasional freezes, frequent frost and annual dry seasons enhanced vegetative fuel characteristics across the landscape. Thunderstorms provided unlimited ignition opportunities with each ground strike of lightning. Under these conditions fires were common and widespread. Hydrology and the relatively flat terrain created an environment composed of a mixture of upland and wetland plant communities. Fire touched the entire landscape with many areas burning every one to five years. Other areas experienced fire on longer rotations which varied from five years to several decades. The remaining plant communities, which on first inspection may appear to be untouched by fire usually have a fire return intervals measured in centuries.

Humans have occupied Florida for more than 12,000 thousand years. Early Floridians developed increasingly complex social structures and created substantial structures which modified natural habitats. For example, recent discoveries near the settlement of Ortona on the Caloosahatchee River have documented that Native Americans created a series of ditches and canals near the river. The purpose of these structures was to raise and harvest fish. Elsewhere in America and throughout the world fire was used extensively to modify natural habitats (Pyne, 1995). Fires could protect villages, attract wildlife, produce succulent vegetation, and promote mast production. Robbins and Meyers, 1990, offer the opinion that fire was not used extensively in pre-European Florida. While the level of use and its impact on natural habitats may be debated, Floridians have long recognized and utilized the awesome power of fire. Early efforts to manage fire may not have been organized or extensive but there is little question that Florida’s first inhabitants made significant attempts to harness both fire and water.

FIRE ACROSS NORTH AMERICA

Throughout North America there is ample evidence that Native Americans changed the character of the landscape with fire (Botkin, 1990). Fires were set both accidentally and on purpose. Most primary or secondary accounts of intentional burning state the need to establish or keep “mosaics, resource diversity, environmental stability, predictability, and the maintenance of ecotones (Lewis, 1985).” Intentional fires set by Native Americans often differed from natural fires in their seasonality, frequency, and severity. These fires were set for a multitude of specific reasons which have been summarized into eleven basic categories (Williams, 2000). These categories are:

1. Hunting
2. Crop Management
3. Improved Growth and Yields
4. Fireproofing Selected Areas
5. Collection of Insects
6. Pest Management
7. Warfare & Signaling
8. Economic Extortion
9. Clearing Travel Routes
10. Felling Trees
11. Clearing Riparian Areas

Prior to European settlement *Native Americans* and *lightning* forged a landscape touched frequently by fire.

With the arrival of Europeans the North American landscape would be forever changed. While early settlers used fire for a many of the same reasons they also cleared large forest areas for farms and towns. Trees, an apparently infinite resource, fueled the birth of the industrial revolution in North America. Old growth forests provided wood for houses, factories, and transportation. Sadly, the logging slash left across the landscape also created dangerous fuel conditions. Devastating fires followed the widespread ‘clear cutting’ that spread across North America. In 1871, the Peshtigo, Wisconsin fire burned 1.2 million acres of forest land. Started by numerous lightning strikes in early October the fires burned for several days causing heavy smoke across the region. The fire climaxed on October 8 when it burned the entire town of Peshtigo killing over 800 residents. Before it was over 16 other towns were burned and the death toll reached 1200. In 1894, lightning struck again but this time in Minnesota. Following a dry summer, fires devastated the region between St. Paul and Duluth. On September 1st and 2nd 160,000 acres of forest burned. The town of Hinckley was completely burned along with 18 other towns. The death toll across the region reached 413. Organized fire fighting efforts were non-existent.

With the dawn of the 20th century came organized efforts to control wildfires. First the US Army and later the US Forest Service attempted to control and extinguish forest fires. In 1944 the US Forest Service started the Smokey Bear advertising campaign with his original message "Smokey Says – Care Will Prevent 9 out of 10 Forest Fires". This was changed in 1947 to the more well known “Only YOU Can Prevent Forest Fires”. The

slogan was changed again in 2001 to the preset message “Only You Can Prevent Wildfires”. One of the most successful advertising campaigns in history, Smoky Bear has had a major influence on public opinion and solidified the image that all forest fires were destructive and should be prevented at all costs. This opinion was reinforced by ‘professional’ contributions. Psychologist John P. Shea described prevailing ‘rural southern attitudes’ in his article “Our Pappies Burned the Woods,” American Forests Magazine, April, 1940. Shea interviewed hundreds of residents of the southernmost spur of the Blue Ridge mountains and offered the following quote as typical, “Woods burnin’ ’s right. We allus done it. Our pappies burned th’ woods an’ their pappies afore ‘em.”. Shea offered this quote as a summary explanation of the annual fires that for more than a century had characterized the land and social economy of the southern states. He described the reaction of visitors to the South with this statement, “Outsiders visiting or motoring in the South during burning seasons, however, are shocked and appalled by the miles of fire running free in the woodlands and the palls of smoke that dull the sun and often make motoring hazardous.”

Indeed, throughout the twentieth century forest agencies developed extensive programs to prevent and extinguish forest fires. Educational programs and destructive wildfires convinced the public that fire prevention and prompt suppression of wildfires were public safety mandates. With public support agencies at all levels upgraded fire control efforts. Funding, equipment, personnel, training and tactics were enhanced with each new catastrophe.

With a few notable exceptions the lessons of the past were ignored and discarded. These notable exceptions resulted in programs which continued to promote prescribed fire through scientific initiatives. Harold Biswell in California, Herbert Stoddard Sr. in the Southeast, and Harold Weaver in the Pacific Northwest all made significant contributions to these programs. As early as 1970, public agencies and professionals initiated efforts to reexamine the role of fire across North America.

However, even with improved suppression, destructive and costly wildfires continued to occur across North America. The awesome power unleashed by large destructive wild fires led to negative public sentiment and increased efforts to control all fires.

FIRE IN FLORIDA AND THE SOUTHEAST

Following statehood early settlers continued to use fire to manipulate vegetation and game resources in Florida. In 1889, Mrs. Ellen Call Long wrote the following statement. “The annual burning of the wooded regions of the South is the prime preserver of the grand forests of *Pinus Palustris* [longleaf pine] to be found there; but for the effects of these burnings.....the maritime pine belt would soon disappear and give place to a jungle of hardwood and deciduous trees.....The statute books of almost every southern state contain enactments prohibitory of setting fires to the woods, and severe penalties are attached to violation of the law. There may be sound reason for such legislation ... But viewed from a forestry standpoint we believe that total abolition of fire in the south would mean the annihilation of her grand lumbering pineries.”

Ranchers and hunters also frequently and regularly used fire to improve grazing lands and wildlife habitat. Another example may be found in the Central Florida region known as the “Lightning Capital of North America.” Much of this area, extending south to Lake Okeechobee, is dominated by Dry Prairie. Names like ‘Ninety Mile Prairie,’ ‘Kissimmee Prairie,’ and ‘Myakka Prairie’ describe large expanses of open landscape with scattered trees. These open vistas were shaped and maintained by frequent low intensity fires. Cattle, the primary focus of early agriculture, were well suited to this region and ranchers quickly adopted the practice of frequent burning of rangeland to improve grazing and cattle production.

One of the first scientific approaches to prescribed fire was initiated near Tallahassee, Florida in the 1920’s. In 1932 Herbert Stoddard published “The Bobwhite Quail; Its Life History and Management.” This publication and the founding of “Tall Timbers” in 1958 mark the beginning of organized efforts to promote and use fire wisely through a scientific approach to land management. Throughout the Southeast fire has been consistently used as a land management tool.

FLORIDA TODAY

Gradually, prescribed fire, a management tool never completely relinquished in the Southeast, has gained recognition as an effective and essential practice. Today, prescribed fire is a practical solution to numerous forest, range and wildlife resource management needs throughout North America (S. J. Pyne, 1982).

Fortunately, the state of Florida has recognized the importance of prescribed fire. Florida Statute Ch. 590.125(3) addresses “Certified Prescribed Burning.” The section dealing with legislative findings and purpose includes the following:

- “(a) The application of prescribed burning is a land management tool that benefits the safety of the public, the environment, and the economy of the state. The Legislature finds that:
 - 1. Prescribed burning reduces vegetative fuels within wild land areas. Reduction of the fuel load reduces the risk and severity of wildfire, thereby reducing the threat of loss of life and property, particularly in urban areas.
 - 2. Most of Florida’s natural communities require periodic fire for maintenance of their ecological integrity. Prescribed burning is essential to the perpetuation, restoration, and management of many plant and animal communities. Significant loss of the state’s biological diversity will occur if fire is excluded from fire dependent systems...”

Fire has been intentionally used to manipulate vegetation and game resources in Florida for thousands of years and continues to be the only practical solution to numerous forest, range and wildlife resource management needs. The continued use of fire at specified intervals, seasons, and intensity levels is the only known way to fully sustain the ecosystems Floridians depend upon for their livelihood and recreation.

Purposes of Prescribed Burning in Present Day Florida

1. Ecological
2. Wildlife
3. Protection
4. Forest Management
5. Range Management
6. Water Management
7. Access
8. Aesthetics
9. Exotic Control

Ecological processes in Florida have been shaped by a mild climate, abundant water, and a long growing season. These conditions create almost continuous plant growth and abundant fuel. Lightning and people provide frequent ignition opportunities. The result of abundant fuels and frequent ignitions was aptly described by an early rancher with the following statement to a modern day prescribed burner, “Sonny, what God didn’t get, we did.”

Prescribed fire is an important and required land management tool for maintaining healthy plant communities across Florida’s landscape. Both plants and animals have adapted strategies which allow them to flourish under natural fire regimes. When these cycles are disrupted, dramatic habitat changes occur. Without fire, fuel loads reach dangerous levels and desirable plant species are displaced. Subsequent wildfires further degrade these habitats.

When fire is maintained across large expanses of landscape (not by a single large fire but by a series of smaller fires over an extended time period) both plants and animals thrive.

People have long recognized that fire can benefit wildlife in many ways. Properly conducted burns can increase the abundance of food plants, increase flowering and seed production, and attract a variety of wildlife. Bob white quail, turkey and deer are popular game species that respond readily to fire. Likewise, scrub jays, gopher tortoise, sandhill cranes and caracara benefit when a consistent long term program is established.

Both prescribed and natural fires have always provided a benefit that has often been taken for granted. Areas that have been recently burned can protect livestock, people and property from devastating wildfires. In many cases these recently burned areas will act as effective fire break and the fire will simply go out. Even in cases where the fire continues to burn the intensity is reduced and the fire can be readily suppressed. Today, hazard fuel reduction is an important consideration throughout most of Florida. Prescribed burners, who have focused on other reasons for burning in the past, now recognize both the need and value of hazard fuel reduction. Hazard fuels are a risk to livestock, timber, people, and improved property. Prescribed burns which reduce fuels benefit the landowner, his neighbors, and the public.

Forest managers have relied on fire as a land management tool throughout much of the state. In some cases, fire is used on a regular basis to reduce fuel loads and control hardwoods. On other areas fire may be used to burn logging slash, for site preparation, and to promote natural regeneration. Fire can also be used to maintain a healthy forest and to control insects or diseases such as 'brown spot' in pines.

Early cattle operations in Florida relied on prescribed fire. Fires were used to remove shrubs and woody vegetation, and to increase forage production. These fires also released nutrients which are quickly recycled into new plant tissue. Both forage quantity and quality increase as a result of this process. Even as more cattle operations convert to improved pastures prescribed fires are still utilized when conditions permit.

Prescribed fire is also used to enhance access, facilitate harvest, improve aesthetics, and for vegetation removal. The Florida sugarcane harvest depends upon burning just prior to harvest. Many timber harvest operations also rely on fire during one or more phases. Most people do not enjoy the view of a blackened forest immediately after a wildfire. However people routinely stop to admire a field of wildflowers promoted by a recent burn or to admire a lush green marsh which has recently burned. When these areas 'green up' and attract deer, sandhill cranes, and wild turkey they are observed by people because fire has created and maintained an open vista.

SUMMARY

Prescribed fire has been used consistently throughout human occupation in Florida. While different cultures and different landowners have each had different specific reasons for burning a consistent theme has persevered. Fire has remained a viable management tool because people have recognized specific benefits. As people continue to move to Florida the art and science of prescribed burning must continue to improve. Prescribed burners must look to maximize the benefits of each burn. Burns that are conducted primarily for hazard fuel reduction should incorporate other values whenever possible. Aesthetics, wildlife, sound ecological principles, forest and range management can often be achieved simultaneously. Likewise prescribed burns for other reasons can usually provide some hazard fuel reduction benefits. Considering these values prior to the burn will allow burn managers the opportunity to provide a greater benefit for each burn.