Facts about Fire in the Native Landscape: Part I

Questions from FNPS members with answers by Andrea N. Christman, Maria Minno, and Steven "Torch" Miller

Last year's fires were a frightening wake-up call to many residents and government officials throughout Florida. Readers of The Palmetto sent news clippings from around the state, with examples of both good and bad information being provided to the public. Most FNPS members know that Florida's ecology has evolved with fire, and that wildfires are a natural and necessary component of life in wild Florida. But the wild lands that are left have become surrounded by urban and suburban development, where fire is a hazard.

What do we tell our friends and neighbors? Below is the first of a two-part response provided by Andrea Christman, an ecologist with the Florida Division of Forestry, and Steven "Torch" Miller, Director of the Division of Land Management, St. Johns River Water Management District. Some additional commentary is also provided by Maria Minno, FNPS Communications Committee Chair and owner of Eco-Cognizant, Inc., and environmental consulting firm. Part II will be published in the Spring 99 issue of The Palmetto.

Christman: Let's start with an introduction. The State of Florida is considered the lightening capital of the United States, and receives more lightening strikes annually than any place in the world with the exception of a mountain range in Indonesia. Prior to European settlement, wildfires ignited by lightening would have burned for days or weeks, crossing vast landscapes before reaching a natural barrier or being extinguished by rain. Plant and animal communities have actually evolved with fire over many thousands of years, and over 70% of the vegetation in Florida has an associated fire history. Much of the vegetation in Florida is considered to be in a *fire sub-climax community*. These communities (e.g., scrub, flatwoods, sandhill) have evolved to burn and often must burn for regeneration to occur. Human lack of understanding of fire, and intolerance for it, created more than half a century of complete fire suppression, allowing dead and downed vegetation to accumulate to dangerous levels, and altering natural community structure. Now, rather than the regular low-intensity fires which might have occurred naturally, we see numerous sudden high-intensity fires which exceed the ability of our infrastructure to deal with the problem effectively. While Florida leads the nation in the study and use of prescribed fire as a management tool, there are still many fire-dependent acres which have yet to burn. One key to the prevention of another summer of 1998 is to increase public awareness and support of prescribed fire in and around their communities and public lands.

Question: Some people say that land use and development policies contribute to the fire problem. What do they mean?

Christman: This can be interpreted in a few different ways. Many people argue that wildland fire protection has not been considered sufficiently in the process of development of subdivisions in the wildland-urban interface. The process of placing developments and subdivisions in the middle of fire-dependent communities, without providing sufficient access to the houses, rights-of-way along the roads, accessible driveways, roads with clear identification, public water systems, and primary fuel-breaks around the developments may reduce the response time of local fire crews, or limit access to properties, potentially resulting in losses of structures or lives in a wildfire situation. Additionally, some land use and development practices on private land affect the ability of adjacent landowners to manage their lands by creating smoke-sensitive areas adjacent to wildlands, or by simply increasing the level and proximity of interaction between humans and wildlands.

Miller: Development policies or regulations that encourage green space are great; however, some of them can contribute to wildfire problems. Those development policies that require large lots (e.g. five-acre minimums) create situations where individual ownerships are too small to be managed commercially for either timber or agriculture. They are also too large to maintain as a yard. In the absence of management, vegetation on these large lots continues to accumulate, creating heavy beds of potential fuel for wildfires immediately adjacent to homes. A better alternative to requiring open space is to allow clustered housing with larger (40 acres or more) undeveloped areas adjacent. These larger undeveloped areas can be managed through harvesting or prescribed fire.

Other development policies such as those in Hidden Creek (near St. Augustine on 206 and US 1) require that 90% of the surface area of the lot remain in native vegetation. In the case of Hidden Creek, the native vegetation is scrub, a natural community maintained by catastrophic (stand replacing) fires every 20-60 years. Clearly, catastrophic fires and homes are not well suited for one another. When homes are built in an area dependent upon catastrophic fires for its existence, one of two outcomes is likely: 1) wildfire will threaten the homes, requiring significant resources to defend the homes (thereby reducing resources available for other fires and other homes) or 2) degradation and loss of the natural habitat as fire is suppressed.

Additionally, roads and driveways in neighborhoods like Hidden Creek are designed to aesthetically pleasing. This generally means narrow, winding, and sometimes canopy covered. While beautiful, these driveways and roads either prevent fire equipment from entering the area or create firetrap situations that make it unsafe for fire

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equipment to enter. In such cases, the management strategy employed by fire supervisors is to protect the fighters and equipment by evacuating the neighborhood and defending the perimeters. This becomes a triage management situation. Under triage conditions, limited rescue resources are directed toward the houses that have the greatest potential for survival. Homes that do not have good access have low potential for survival.

Question: Does the draining and destruction of wetlands have anything to do with these fires?

Christman: Draw-down of wetlands for well-field use, and alteration of hydrologic flow have for the past 30 or so years altered the hydrology and nutrient cycling of many Florida wetlands. The reduction in available water and/or water storage capacity in wetlands has resulted in the drying of heavy organic material known as *muck*, which will burn in drought conditions. A visible result of these (and other) impacts has been the apparent increase in the number of muck fires occurring in these wetlands during dry periods. Muck fires are extremely difficult to contain, or extinguish, and produce extensive amounts of acrid black smoke.

Miller: Yes, undoubtedly the draining that has been completed over the past hundred years contributes to fire hazard. This contribution is probably too complex to quantify. In the case of the 1998 fires, drought (more than nine weeks without rain) was significant enough that fires were going to be a problem with or without increased drainage.

Minno: Yes. Canals and ditches in wetlands as well as upland communities lower the water tables and make areas more susceptible to fire. Palm Coast in Flagler County is a good example. This development has been hit by two large-scale fires in the last twenty years. The development was made possible because of the extensive system of canals that drains half of Flagler County.

Look for Part II of Facts about Fire in the Native Landscape in our Spring 1999 issue of The Palmetto.