Fire In The Central Hardwoods: Why Are We Concerned?

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Abstract

For several decades, land managers in the Central Hardwood Region have watched their oak-dominated forests change in the absence of fire. Stand structure has changed as a dense understory of shade-tolerant, fire-intolerant species developed. The forests were not sustaining themselves.

This same phenomenon was occurring in many parts of the United States, resulting in forest health concerns. Severe wildfires erupted in places like Yellowstone National Park and Florida.

Evidence is accumulating that the oak, chestnut, and yellow pine plant communities in the Central Hardwood Region are the result of centuries of burning by Native Americans. To maintain the diversity of our forests, fire must be restored to its vital role.

There are a number of myths relating to the forests that are widely held by the public that present obstacles to reintroducing fire. These myths must be dispelled if we are to restore fire to its rightful role and thus sustain our forests.

Introduction

For years, land managers throughout the Central Hardwood Region have noted definite changes occurring throughout the historically oak-dominated forests under their care. The oaks, which are valued because of their usefulness as wildlife food sources and for a variety of wood products, are being replaced with maple, hemlock, white pine, and other species. Oak seedlings are simply not surviving in the dense understory shade beneath the oak stands. In the absence of fire, the maple, hemlock, white pine, and other species have come to dominate the understories and are posed to capture the overstory.

Indeed, the only way we could regenerate the oak forest was to harvest it and manage the coppice growth. About the only place acorns were germinating and growing to mighty oak trees was at the edge of the forest, where sunlight was abundant. In addition, an ever-increasing number of plants and animals were being listed as endangered or threatened. Something was missing here. Yet, in view of the amazing recovery our Eastern forests made from the massive timbering that occurred during the early 1900's, we were not terribly concerned until fairly recently.

Throughout many other parts of the country, similar challenges have emerged—challenges to restore fire-dependent forest ecosystems that are being replaced in the absence of fire. These conditions are a result of more than 75 years of fire suppression and in some areas have been labeled as forest health problems.

For those of us who serve as firefighters, we have had numerous opportunities to witness the day of reckoning that eventually comes to fire-dependent ecosystems when historic fire is suppressed for long periods of time. Yellowstone in 1988, and more recently the Florida fires of 1998, were classic examples of forest succession in the absence of "normal" fire. Fuel loads and more volatile undergrowth in some areas of the country have increased in the absence of fire to a point where even carefully applied, controlled burns cannot be ignited without disastrous results. Indeed, there will be plenty of gainful employment for wildland firefighters as these past-due bills continue to come due in the years and decades ahead.

Closer to home, in the Central Hardwood Region, evidence is accumulating that our forests are also fire-dependent communities. Consensus is emerging that Native American's fire was responsible for the dominance of the oaks, American chestnut, and yellow pine plant communities we have enjoyed in recent history. Even though wildfire hazards in this region are not nearly as severe as those in the coastal plains or in the West, the exclusion of fire has greatly altered the future of oak and pine-dominated ecosystems. The oak and pine forests are not sustaining themselves in the absence of frequent surface fires except where land managers have interjected silvicultural manipulation.

As we continue to learn more about the ecosystems that make up the Central Hardwood Region, and as we continue to sort out the relationships between individual species of plants and animals and their ecosystems, there appears to be a common thread linking many of these problems we face—the exclusion of frequent surface fires.

As we learn more about these forests and how they came to be, we are dispelling more and more the myths that we as a people have come to believe. For example,

- There is the myth of the pristine wilderness that existed at the time of European settlement, where a squirrel could theoretically travel through the unbroken treetops of an old-growth climax forest from the Atlantic coast to the Mississippi River.

- There is the myth that Native Americans were few in number and had little impact on the land.

- And there is the myth that the forest was very stable, that disturbances were small in scope and natural in origin, and that a great balance existed.

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Now we know that the Central hardwood landscape at the time of European settlement was very diverse with many treeless openings. The pristine wilderness and unbroken canopies existed only in the myth. It is also generally agreed that Native Americans were far greater in numbers than we have been led to believe, until European diseases decimated them. We also know that the tremendous landscape diversity we inherited was a result of their land use, primarily through their use of fire. And finally, we now know that the great "balance of nature" did not exist, that change was the norm rather than stability.

As the land-managing agencies and land owners enter this new millennium, we are challenged to look into and understand the past in order to be able to craft strategies for the future.

Hopefully, during the next two days:

1. We can continue to dispel myths. Myths, which can be the greatest enemy of science; and

2. We can increase our knowledge and understanding of the ROLE OF FIRE IN THE CENTRAL HARDWOODS.