

The Benefits of Fire

Certain ecosystems cannot survive without fire to keep them balanced. Some natural wildfires and other managed (prescribed) fires can have a number of benefits for the plants and animals within these natural systems. There are human benefits as well.

Benefits to Plants

Fires are beneficial to plants because they can open up the tree canopy, allowing more sunlight to reach the understory plants. Native plants benefit from fire because of their unique adaptations to survive fires which their invasive or exotic counterparts may not have. Fire will kill off many unwanted competitors of these native plant species, allowing Florida species to thrive.

Fires are also important for maintaining a particular ecosystem type. For example, pine flatwoods ecosystems, dominated by pine trees and saw palmettos need fire on a 2-5 year cycle to thrive and remain healthy. When fire is suppressed or removed from this ecosystem, other unrepresentative plants, such as oak trees, will start to take over. As oak trees mature, they slowly shade out the understory plants and over time will transform the ecosystem from pine flatwoods to an oak hammock. This transformation, while natural, is detrimental to the plants and animals that depend upon the pine flatwoods habitat.

While many plants are adapted to withstand fire, some actually need it to survive. Unlike most other pine trees, the sand pine (*Pinus clausa*) retains its lower branches which serve as a “fuel ladder” attracting fire up the entire tree to ensure it reaches all of the pine cones. The cones of the sand pine remain closed until

exposed to the heat of a fire. Following a fire, the parent tree may die, but all of the freshly opened cones will shed seeds on bare ground where they may germinate.



Succession of a small wetland habitat following a prescribed burn.
Photos: L. Miller)

Benefits to Wildlife

The Florida scrub-jay (*Aphelocoma coerulescens*), an endemic species (found only in Florida,) is a perfect example of an animal species that needs fire (indirectly) in order to survive. This bird is a habitat specialist, found only in scrub habitat; the most endangered ecosystem type in Florida. The key to maintaining scrub habitat is fire. Regular prescribed fires maintain the scrub oaks, bare patches of sand, and low growing vegetation such as palmettos which the Florida scrub-jays prefer. Without fire, the scrub habitat is lost and the Florida scrub-jay struggles to survive.

Most animals within fire-dependent ecosystems are well adapted to survive fires. For example, over 350 species find shelter in gopher tortoise burrows during a fire. For this reason the gopher tortoise is considered a keystone species, meaning its absence would result in many other species' failure to survive.

Following a fire event, the remaining nutrient-rich ashes are absorbed into the soil and become available for new plant and fungal growth, also beneficial to animals. The new growth is a favorite for a variety of wildlife including deer, turkey, gopher tortoises, bobwhite quail and many more. Fires also clear out densely vegetated areas to allow for easier movement of wildlife through the area.

Benefits to People

It might be difficult to consider how fire could be beneficial to humans when it is often portrayed as a natural disaster. However, there are many human benefits to natural and prescribed burns in natural areas. Prescribed fires help to burn off the buildup of dead and dry wood before

these fuels accumulate to a dangerous level and pose a serious threat in the face of a future wild fire. By conducting regular prescribed burns, the amount of fuel is kept low, preventing a future wild fire from becoming a major threat

Conclusion

While we may not directly connect the health of our ecosystems to the quality of our lives. In fact, we could not survive without healthy ecosystems maintained by fire. It is critically important for natural resource managers to maintain healthy ecosystems and wildfires are an extremely valuable tool which keep natural systems functioning in a way that benefits all life.

References:

Effects of Fire on Florida's Wildlife and Wildlife Habitat <http://edis.ifas.ufl.edu/uw132>

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