

Fire in Mind: The Sandhill at Wekiwa Springs State Park

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As you enter Wekiwa Springs State Park, keeping to your left along the main park road, you can't help but notice a landscape that looks quite different from much of the surrounding region. Rolling hills with hundreds of widely-spaced longleaf pine trees and a continuous blanket of tall, golden wiregrass are punctuated by elevated mounds of brilliant white sand. This is the Wekiwa Sandhill, a roughly 1800-acre remnant of an ecosystem that once covered much of the southeastern United States (Figure 1).

In 24 years as an environmental studies professor at Rollins College, I've led more than 60 field-study trips through the Wekiwa Sandhill across every season. These trips have introduced some 1200 students (from a wide range of majors) to the wonders of this special place. Many of the most interesting elements of Florida's geography are well represented here: fire, longleaf pine, sinkholes, quartz sand, and ancient marine shorelines, making this landscape an ideal laboratory for outdoor learning.

Covering many of the highest elevations in the region, the Wekiwa Sandhill is a xeric landscape, despite receiving roughly 50 inches of annual rainfall. Sandy quartz soils, reflecting Florida's dynamic marine history, lead to high rates of infiltration, recharging local aquifers and forcing plants and animals to adapt to dry surface conditions. It's not uncommon to see drought-adapted cacti, gopher tortoises, and longleaf pines sharing the same space in this habitat.

The Wekiwa Sandhill encapsulates nearly everything that is interesting about fire ecology in Florida. Towering fire-scarred pines, colorful clusters of wildflowers mixing with new plant growth, charred wood against a backdrop of white quartz sand – the Sandhill landscape is a shifting mosaic of successional habitats in a near constant state of fire recovery. The beauty of this habitat lies in its dynamic geography.

Early summer lightning strikes that once drove the 2 to 3-year fire cycle in this landscape have largely been replaced by prescribed burning; however, many of the most interesting ecological processes continue to play out as they have for millions of years. The staggered timing and variable extent of the fires generate spatial variations in habitat conditions, while long-lived pines and burrowing gopher tortoises expand the vertical dimensions of available ecological niches. These factors combine to make Florida's Sandhill one of the most biodiverse landscapes in North America, with some areas supporting hundreds of plant and animal species in a single hectare of habitat.

After more than two decades of field-study trips in this landscape observing and documenting subtle changes from season to season, I carry sharp images of the Wekiwa Sandhill in my mind – an early morning hike with students through a still-smoldering landscape, with rattlesnakes and tortoises easily spotted against the charred surface; a cool fall afternoon, listening to the arresting sounds of a Sherman's Fox squirrel demolishing a giant longleaf pine cone; the faces of students on a late spring field trip, astonished by dozens of tiny lime-green tree frogs erupting from the pine straw at the base of a tree.

Years of experience provide a detailed mental map of the spaces shaped by fire in this landscape – burn zones from past seasons; an old longleaf pine scarred by lightning during Hurricane Matthew; the dome of oak trees that fires never fully penetrate; and a beautiful section of wiregrass and juvenile pines that has burned and recovered at least a half-dozen times that I can recall.

When I'm teaching, these spatial memories serve a practical purpose, bringing depth to the experience of sharing this place with my students. At other times, I simply enjoy reflecting on the idea that so much of the immense beauty and wonder of this landscape is inextricably tied to fire. This is my favorite Florida place.



Figure 1. Healthy, fire-maintained Sandhill habitat in a rounded sinkhole depression, the largest of eleven known sinkholes in Wekiwa Springs State Park. Photo by author.