



A Tale Told Softly

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Some places speak to us clearly on ways that we can easily understand. Beaches speak to us of the interplay, gentle or ferocious, between land and sea, with crabs and sandpipers snapping up the fruits of strife. Tall forests tell us how slow, patient growth can transform the world, mountains shout of shocking forces rumpling the planet; deserts proclaim the victory of life over thirst. Florida scrub is not like these articulate places. Florida scrub crouches silently on its sandy ridges, an incoherent jumble of shrubs with random patches of bare sand. It lacks not only an obvious message, but it also lacks grandeur, grace, and even lacks the earthy *joie de vivre* of weeds over the septic tank. Florida scrub is not an easy place to get to know.

Florida scrub has a great deal to say, but it speaks an unusually low voice. You must actually be standing in the scrub for it to tell you anything. When you are blinded by the sun on sand, with sweat trickling down your back, surrounded by thickets of twiggy dwarf oaks, your left ankle menaced by a prickly pear, then the scrub is ready to whisper its fascinating secrets.

Florida scrub tells us first of sand. The deep sand loses its water so quickly that scrub species must be ready to adopt water conservation strategies any time there are more than a couple of rainless weeks. This means tough leathery, waxy, often hairy leaves for the plants. Animals must be able to find pockets of humidity, often by burrowing deep in the sand. When water drains quickly down through the sand on its way to the deep aquifers, it carries with it dissolved nutrients. Moreover, they cannot afford to have their leaves constantly nibbled away by herbivores, thus many scrub plants are not only tough, but also protected by defensive chemicals. Many animals, such as tortoises, mice, moles, lizards, and numerous insects and spiders find the sand a perfect place to excavate a home.

It is true that water may seep into their living rooms during rain storms, but it quickly drains away. For burrowing vertebrates and insects it is so easy to move about under the sand that many species never bother to come up. There is air and water, and there are insects or plant roots to eat. When you stand on the surface of the scrub, below you is all the activity of an underground shopping mall.

Florida scrub is also eloquent about the power of fire. The thick wax layer that protects leaves from water loss burns like a candle, and the defensive chemicals are often volatile and flammable. If lightning hits a scrub on a dry windy day after a period with no rain, the whole scrub can burn to the sand. This has happened innumerable times in the long history of Florida scrub, resulting in a group of plants that readily cope with fire-resistant seeds that germinate in response to heat. Others, such as scrub oaks, keep large reserves in massive underground root systems, allowing them to sprout quickly after a fire. These sprouting plants do not get their place in the sun by growing tall and shading their neighbors; instead, they grow out to the sides, shoving fiercely at their neighbors, who shove right back. Here again, much of the action is underground, where roots are constantly pushing outward from parent plants so they will be ready to expand their territory by sending up shoots after the next fire. Animals react to fire in more obvious ways; they wither, flee or dive into the basement of their burrow.

Florida scrub tells us about time. As we go from one scrub to another around the state, we see that the species look different in different scrubs. This is because scrubs, with their specialized flora and fauna, have often been isolated for long periods. The ancestors of some scrub species came from the West millions of years ago, and have been even more isolated from their relatives. As we look at the differences between these related organisms, Florida scrub tells us what time can do to change species.

Now that much of Florida's scrub has already disappeared, naturalists have just begun to listen to its story. Naturalists have caught a few of the most emphatically-uttered words, without any real narrative. Florida scrub has the dignity of an ancient place that has seen and persisted through great climatic changes that have transformed the younger environments that surround it. It still has an amazing story to tell, but it is not about to raise its voice.