

More Than Cool Swimming Holes

Florida's springs have all the qualities of living creatures. They are contiguous systems composed of plants and animals, working together in an organized fashion, and capable of reproduction, growth, response to stimuli, and long-term stability. They could be called "Super Organisms" - living beings with predictable patterns of organization and consistent responses to external factors.

Springs receive inputs of raw materials (chemical nutrients, light energy from the sun, and turbulence from inflowing waters) and build their physical structure, including basin size and shape, plant communities, and animal populations, through complex interactions that have been refined over millions of years. During daylight, springs breathe in carbon dioxide from the atmosphere and release oxygen. At night, springs consume oxygen in order to maintain their living parts. The daily rhythm of a spring's oxygen intake and release is comparable to a human's respiration and heartbeat.

Springs have component organisms that provide functions analogous to organs in animals, including a digestive system, kidneys, liver, lungs, and excretory system. Springs even have brains. Scientific research has found that various animals in springs direct the function of the whole ecosystem by controlling populations of their prey at levels that optimize the power of the Super Organism. Springs also communicate information with neighboring ecosystems through the exchange of chemical signatures and migrating organisms.

Like other living organisms, springs are mostly composed of water. For example, the total body weight of humans is approximately 60 percent water. Humans will die of dehydration after losing as little as 15 percent of their water mass. Not surprisingly, springs die when they lose their water, too. Significant impairments to springs' environmental health have been shown at an average flow reduction of 5 to 10 percent, yet Florida's springs have collectively lost an average of 32% of their historic flow.

Most of the 1,000 artesian springs in Florida are seriously endangered. The total area of all of these springs and the spring runs they nourish is only about 10,000 acres or 16 square miles, about 0.03 percent of the state's land area. The rarity and uniqueness of springs is on par with other endangered organisms in Florida, including the Florida panther and the whooping crane.

Florida's springs and other endangered life forms are a gift. They were here before modern human development. They are an endowment from Mother Nature that delivers economic and aesthetic dividends to human society. When presented with such valuable gifts, our responsibility is to be good stewards by protecting their lifeblood, the water quantity and quality of the Floridan Aquifer.

Human society is also a Super Organism, a life form with many interconnected parts that include the same functions as other living organisms. Nobody doubts that society has some type of consciousness. We know better than to kill or harm each other. We don't tolerate the pollution of our collective water and air, the two most important needs of living organisms. We understand the basic principles of sustainability and the finite nature of natural resources.

But human society is in no way a perfect organism. Improvements in how we live together are necessary to avoid the Tragedy of the Commons. A respect for others that outweighs our efforts to advance our own needs and wishes is needed. Care about healthy springs, like concern for other endangered organisms, is a valuable emotion. If individuals cannot share a vision for collective success, then their government must keep them in bounds, or society will come apart and ultimately fail.

In the current political environment, our springs and principal freshwater supply are collectively dying. This failure of government oversight must be overcome if we are to avoid losing our endangered springs and leaving a depleted future to those who follow us.

Robert Knight is Director of the Howard T. Odum Florida Springs Institute. He is also the author of *Silenced Springs: Moving from Tragedy to Hope* that can be purchased at the North Florida Springs Environmental Center in High Springs.