

9/17 What is Ecology? Why is it Important?

Recently, I was talking with someone about my new book, "Hill Country Ecology", and he asked a rather fundamental question. He said, "What do you mean by 'Ecology'?"

My dictionary defines "ecology" as: (1) "A branch of science concerned with the interrelationship of organisms and their environment." Or (2) "The totality or pattern of relations between organisms and their environment."

The definition I used in my book was more along the lines of...giving the average reader a better understanding of the ecology of Hill Country, meaning the plants, the animals, the hills, the water, and the soil, and all the interactions among them, and the issues of managing rural land and preserving and improving our native habitat

To paraphrase Wikipedia, Ecology is the scientific study of the distributions, abundance and relations of organisms and their interactions with the environment, and it includes the study of plant and animal populations, their and communities.

Some other terms one frequently hears along with ecology include: nature, ecosystems, habitat, and biodiversity. Here is the way I would define those terms, at least as I use them.

Nature encompasses everything in the world as it exists without human beings or our civilization, including the plants, animals, soil, and water.

A dictionary definition of ecosystem might be something like a community of living things plus the nonliving components of their environment, interacting collectively as a system.

Habitat is generally defined as where a particular organism lives or where it can be found, and usually means an area that can provide all the essential functions necessary for that organism to live and reproduce.

Biodiversity is a term first used by E.O. Wilson in the 1970s to indicate the number of species of plants or animals in a particular environment. The greater the number of species the greater the biodiversity of a given area. The biodiversity of most rain forests greatly exceeds that of a desert or an arctic tundra. Within a given area, say the Hill Country, a property with a greater biodiversity of plants and animals is generally considered more healthy and sustainable and productive.

Obviously there is a lot of overlap in definition of all of these terms and different people will use different words to describe essentially identical or very similar things. What is more important is not so much the use of the above terms, but an understanding of the issues and principle behind them. We need to understand the basics of our local ecology in order to appreciate the great place where we live and to be better stewards of the land.

Here are the basics of the Hill Country ecology. Most of the Hill Country would be described as an oak/juniper woodland or savanna, depending on how much open grassland there is. This distinguishes the Hill Country ecology from the thornscrub of South Texas, the piney woods of East Texas, the Chihuahuan Desert of the Trans-Pecos and the treeless High Plains.

Before Europeans arrived in Texas we believe the Hill Country would have been similar to what we see today except for more open grassland areas, especially on flatter highlands, fewer cedar brakes, and, of course migrating herds of herbivores. European settlement caused several changes in the ecology, including reduced open grasslands, smaller grassland species, more woody plant cover, no migrating herbivores, few large predators, and many more deer.

Even with all those changes, the Hill Country is less altered by European man than most other parts of the state, mainly because the steep hillsides and rocky surface are not suitable for plowing.

The most common problems most rural landowners face is (1) past overgrazing or continuous grazing resulting in less grass cover and poor quality grass species, (2) over browsing caused by better deer habitat, no more natural predators, and supplemental feeding, all resulting in browselines, reduced understory habitat, and fewer replacement hardwoods, and (3) cedar encroachment caused by lack of periodic range fires and overgrazing.

Understanding how the ecology has changed and the causes thereof enables us to become better stewards of the land and to manage the habitat to be healthy, sustainable, and more like it was prior to 1800. The more we know, the better job we do to preserve this great place for future generations.

Until next time...

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