Commitment to Sustainability, Part 3: Soil: NOT a dirty word!

In the last article we defined "infrastructure" as *the resources required for an activity*. When speaking of parks, trees and grass are obviously pretty important requirements. They are, in fact, components of our "green infrastructure." Important components, of course, but they are wholly dependent upon another, usually out of sight and mostly ignored. As a matter of fact, almost every living thing on earth is ultimately dependent upon this single resource: SOIL.

SOIL, not DIRT. Try to think of soil as a resource, and dirt as what gets on your carpet. A productive, healthy soil is very much a living thing, a biological system composed of minerals, such as sand and clay; water; gases, including oxygen, nitrogen, and carbon dioxide; and living organisms. LOTS of living organisms. What lives in the soil? Earthworms, of course, but they are perhaps just the most obvious, though certainly an important, example. Other inhabitants are ants, pillworms, centipedes, earwigs, and other critters that you have probably seen. Not to mention larger animals: gophers, moles, and the like. Yet, when it comes to biological mass in the soil, the unseen life amongst the minerals is by far the more important to life as we know it.

The unseen life is abundant and occupies about 1/3 the volume of healthy soils. It is made up primarily of bacteria and fungi, billions of individuals in a single teaspoon. These little critters are busy either eating each other and returning organic matter to the soil, or taking in the raw minerals and gases and converting them into organic matter. The actual science behind all this is horribly complex, but the end result is that it is the action of these microorganisms in converting the components of the soil into nutrients that can be absorbed by plant roots that underlies our civilization.

At Mission Oaks we are intent upon improving the health of our soil. We have converted to organic management practices and reducing our dependence upon chemical pesticides, which kill beneficial insects and soil organisms along with the pests. We have eliminated petroleum-derived chemical fertilizers, which are basically salts which deplete the soil biology. One result of this change in management practices will be to increase the water holding capacity of our soils, which lowers our irrigation requirements, saving water for other uses.

Did you know that the largest organism on earth is a fungus? The Blue Mountains of eastern Oregon are home to a gigantic fungus, the honey mushroom, that covers an area of at least 2,200 acres, or about 1665 football fields. And a recent discovery in Finland indicates that there is a fungal mass there that may be even larger: approximately 8 square miles at last measurement!

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