



Moapa The desert we do not see

Spring in this desert is gorgeous. The breezes are fresh, and plants are full of surprises. New leaves appear on mesquites and desert willows, which were barren through the winter. In the mountains, evergreens show new growth. Barrel cactus display claret cups or golden yellow flowers; Joshua trees put on caps of creamy white; and ephemeral wildflowers pop out showy blooms that last an instant. It calls us to appreciate the glorious environment that surrounds a sprawling city.

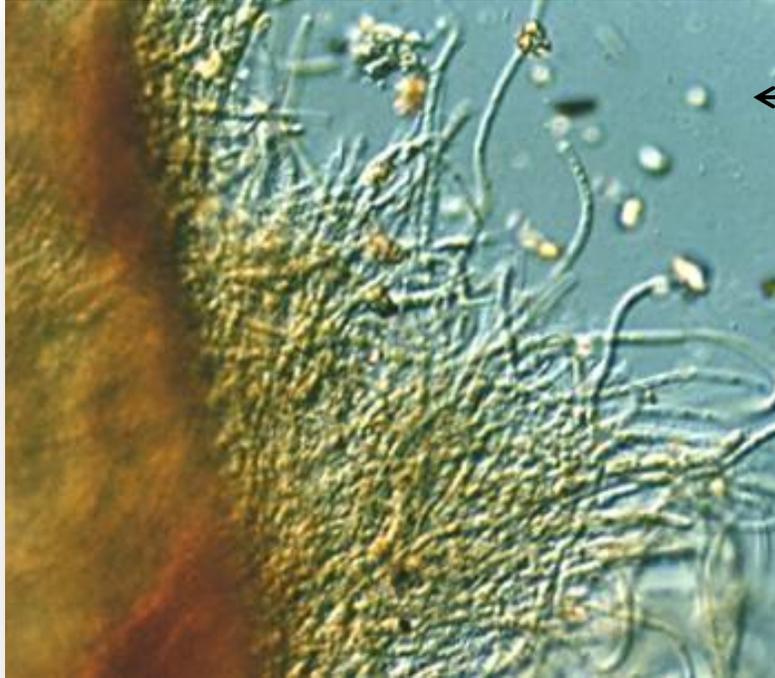
Another world is less visible: not curmudgeonly burros, nor skittish mustangs, not even elevated big horn sheep, although they are often hard to find. No, most desert life is “out of sight, out of mind.”

It is a microscopic world, a universe existing just beneath the soil surface. It has several names, but I like the term ‘cryptobiotic crust’, meaning ‘hidden life’. In this crust are millions upon millions of kinds of microorganisms, most of which have not yet been identified. Some are well known for their important functions. Who knows what benefits we receive from the unknown ones? What is well known is they work together to form the crust.

Underground life forms are varied – and perform different essential activities. Because desert life is harsh, with infertile soils and limited water supplies, plants require assistance survive, and microbial life provides this aid.

People often only think of disease-causing bacteria. Those are only a very small portion of this enormous group. Most bacteria live in hidden spaces, having nothing to do with humankind. There are important bacteria that form associations with plant roots. These specialized bacteria take nitrogen from the air and transform it into compounds that plants require.

Bacteria are one part of this subterranean galaxy. We are familiar with fungi as edible mushrooms, or as problematic molds. There are thousands of different fungi, and some play a critical role in desert life. Trying to find water and nutrients in desert soils is a huge challenge, and left on their own, plants would find it impossible. Most desert plants associate with certain fungi that create something akin to a secondary root system. This enables plants to reach into a larger area, and obtain essential nutrients and water.



Among the most critical organisms are “cyanobacteria”. These may be the oldest form of life. Not only do they fix nitrogen into usable forms, they take carbon dioxide and water and convert into sugar and oxygen.

All these microorganisms knit together a crust that keeps soil in place. Desert winds could turn the soil into a dust cloud, but this happens in construction zones, not native areas because of microbial interactions.

Driving all-terrain or four-wheel drives vehicles on

untouched spots could not be more damaging to our delicate desert soil crust. The Department of Air Quality warns that breaking the crust raises dust. That is only part of the devastation. Fracturing the crust kills the ecosystem keeping the desert alive, and it takes them decades to revive. This spring, remember the beautiful visible desert world depends on the one beneath.

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