Raking (Or Is It Raping?) the Desert

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WHY NOT TIDY UP THE DESERT?

photos: Dave Mills

l-r: Desert Broom, Flat-top Buckwheat, Shrubby Deervetch

I am the first to admit that I am a tidy freak. In my home everything has a place where it is supposed to be. And if a "thing" has somehow strayed away from its proper place, I am compulsively quick to put it back where it belongs. That is the way it is inside the house, but outside is a different story. The natural Upper Sonoran Desert that accounts for about 80 percent of my one-acre lot is not tidy, and I leave it that way because messy is the way it is supposed to be.

But why not tidy up the desert? Why not get rid of all those little rather nondescript shrubs and prickly cacti that, to folks used to other parts of the country, may appear to be "not all that attractive." That "mess" is what ecologists refer to as organic matter. Organic matter can either be live or dead plant material. Both are essential components of the Upper Sonoran Desert.

Native cacti, shrubs and trees that constitute live organic matter are superbly adapted to our harsh climatic conditions. On a hot August day, most of us are inside our air-conditioned dwellings. The local fauna is in the coolest place it can find, but a plant is rooted to the spot where as a seed it started to grow. One has to

admire the ability of native plants to survive the 110° F days of summer and the below freezing nights of winter, with a minimal supply of rain and none of the commercial fertilizer that some of us lavish on our nonnative, but hopefully desert adapted, gardens.

Live plants in undisturbed desert around our homes shade the surface of the ground and reflect infrared irradiance which helps to reduce the heat island effect (and perhaps your summer electric bill). Native plants, and especially those nondescript little shrubs, also reduce erosion potential by decreasing the impact of driving rain which is characteristic of our summer convectional storms. When rain dislodges soil particles, they are picked up in the moving flow of water and carried down washes, scouring and deepening the washes as they pass by. Erosion is a natural process, but increasing the erosion potential of your lot by removing the native plants is not at all natural. In fact, the Carefree Town Planning and Zoning Code prohibits grubbing (digging out), thinning, or trimming native vegetation outside of approved building envelopes. The use of pre-emergent sprays outside building envelopes is also not allowed.

Natural ecosystems are a randomly organized jumble of plant species, some of which are obviously alive and green throughout the year, like the much maligned native broom (*Baccharis sarothroides*). Many other species look dead for part of the year and then almost miraculously spring to life and flower when conditions are favorable. These species include buckwheat (*Erigonum* species) with its pink flowers, white ratany (*Krameria grayi*) with its surprising purple flowers, and lotus (*Lotus* species) which dresses up in yellow. You may have to look closely, but when each of these species bloom it adds a dash of color to the Upper Sonoran Desert. Our native species do not usually produce large flowers, because most flowers are not adapted to conserve water. Desert plants cannot afford to lose excessive amounts of water through a lavish floral display; that is also why many cacti flowers are only open at night when the relative humidity is higher and water loss is reduced.

Native Upper Sonoran Desert vegetation is tough, but the prolonged drought of the last few years has exceeded the tolerance of even these hardy plants. Many individuals may be dead. The normal reaction to a dead plant is to remove it. But

before you get out that rake consider the role that dead plants play in the Upper Sonoran Desert. The value of dead organic matter initially may be a little hard to comprehend. Those dead leaves, branches, and even whole plants contain stored nutrients that slowly become available to living plants through processes of decomposition. When this material is removed, the nutrient capital of the system is depleted. In addition to providing nitrogen, potassium, phosphorus and all of the other essential macro and micro nutrients required for plant growth, dead organic matter also absorbs water and facilitates its infiltration. Seeds germinate and seedlings become established under live and dead shrubs because shrubs accumulate dead organic matter, which increases nutrient and water availability for young plants. Even when dead, plants provide thermal protection for seedlings and cacti.

All that may be well and good, but there is a concern about dead plants as fuel source and therefore a potential fire hazard. Wildfires need fuel, oxygen and an ignition source. Ignition sources can be greatly reduced by properly extinguishing smoking materials, but lightning cannot be so easily controlled. Fire protection agencies recommend creating a 30-foot protection zone around each home by trimming up and removing the dead material from native plants. This recommendation does not include removing whole plants from the 30-foot protection zone.

Standing dead plant material burns readily because of the oxygen that surrounds all of the vertical branches. One can reduce the supply of oxygen needed to support a fire by breaking up dead plants and leaving the material on the ground surface.

Stomp on that dead shrub, break it into pieces, flatten it out, but do not rake it up. You will reduce the fire hazard, while preserving the nutrient capital of the Upper Sonoran Desert, increasing water infiltration and decreasing erosion potential. The take-home message is, “don’t rake the desert.” The desert does not need it, and you are really doing more harm than good.