

# Weeds in High Desert

Because of the lovely wet fall and winter we will see lots of weed seeds germinating. Expect a bumper crop of weeds this spring. Weed seeds like moist soil, light, and bare ground or newly disturbed soil. If you want to reduce the number of seeds germinating, then you need to manage these variables by reducing the light reaching the soil, reducing the moisture to the location, not turning over soil, or filling bare spots with other more desirable plants. Note that if the variables aren't changed in a location where weeds flourish, weeds will continue to grow there.

Weeds are the pioneer plants appearing early in the natural succession of plant growth from lichen to mature forest. Their function is to break up the soil so the next stage of plant growth can occur, usually grasses and soft stemmed plants. As weeds grow they provide shade and wind protection for the followers and even some organic matter as they die. Over time the next stage plants will shade out the weeds and weeds will move on.

Weeds also typically generate huge amounts of seed each year (e.g. 70,000 for tumbleweed) and most of that seed is viable, meaning it **will** germinate. The period of viability may be decades so they are very difficult to eradicate. In fact, the new word is to "manage" not "control" or "eradicate" weeds - which makes sense because they do have an important function.

Weeds may be annual meaning they go from seed to plant to seed in one season. The game with annuals is to keep them from going to seed. If you let them go to seed, they form a bank of seed over time that increases yearly. Also, seeds have coatings or other slowing mechanisms so they don't all germinate in one year. If all seeds of a plant were set to germinate in one year, then an unfavorable event could wipe out the plant. And weeds are survivors! Biennials take two years to develop and generate seed. Perennials last almost indefinitely putting out seed every year, but also often spreading by other means such as runners above or below ground, bunching, air layering, etc. To manage perennials, you need to keep them from going to seed and you need to physically remove them to keep them from spreading.

There are a number of ways to reduce your weed population. Mulch, an above ground layer like gravel or bark, keeps light from reaching the soil. You can also use a pre-emergent (before the seedling emerges) herbicide, the most organic of which is corn gluten meal. Note that a pre-emergent herbicide doesn't kill existing weeds, it just keeps seed from germinating. For that reason, don't use a pre-emergent in a vegetable bed unless you intend to use only transplants. Newspaper or cardboard can also be used under bark and will decompose over time. Another way to reduce your population is to pull the weeds. This is done most easily right after a rain. I would suggest torching them, but this can be dangerous and for weed seeds that like to germinate after a fire it encourages rather than discourages them.

If you have acres of weeds, you might want to consider solarization during summer. Water the area, cover it with clear plastic and then let the sun's heat help germinate the seed. After germination the continued heat dehydrates and kills the plants. The downside of solarization is that some deep seated weeds like bindweed are too deep to kill all the roots, and soil microorganisms (the life in the soil) are killed as well. The use of weed block fabric is prevalent, but doesn't always work the way you think. Weed block prevents the seeds under the fabric from germinating (no light); weed seeds above the

fabric germinate easily. Gravel in particular acts as a seeding medium collecting fine dust/soil then providing nooks and crannies for the weed seeds. Condensation off the rocks helps provide some moisture. My thoughts are that if you like lots of plants you'll spend a lot of time cutting holes in the fabric for them and then increasing the hole size as they grow. I use weed block under my dry stream or under pathways only.

The most important part of weed management is plant ID. You need to know what the plant is, whether it's annual or perennial, and how it spreads. There are some really creative ways plants spread e.g. alfalfa creates little pillows that explode throwing the seed away from the parent so they don't compete for resources, seeds with wings that fly away, seeds that catch on animal fur or clothing or shoes to be transported elsewhere. Alfalfa is a nitrogen fixer so it provides additional benefits to surrounding plants that absorb the nitrogen.

Since we first moved to High Desert in 1999 I've noticed the weeds have changed over time. The early weeds, right after construction when the soil was disturbed, included primarily tumbleweed and kochia. Later in time hairy golden aster became invasive and London Rocket, a mustard, showed up in winter. The next weed/grass to appear included cheat grass, foxtail, and purple three awn. More recently I've seen spurge, black medoc, silver nightshade, and purslane. Spurge and purslane are opportunistic weeds that appear in a wet area so allowing the area to dry out should help reduce their number.

Andreas Birk, the supervisor for HeadsUp, also includes in his weed list buffalo gourd, pepper weed, goose grass, wild onion, yellow sweet clover, wild licorice, prickly lettuce, and horse weed.

Color photos of a number of the weeds mentioned above can be found on the High Desert website in the presentation on Weeds. If you are hand pulling, learn to recognize weeds when they're small. It's less effort and sometimes the prickly parts (tumbleweed) haven't developed yet.