Right Plant, Right Place

Reading the Landscape of Your Yard

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What Does a Plant See?

ECOREGIONS: The big picture

An ecoregion shows more than a plant hardiness zone: it includes soils, landforms, climate, and plant community information. All of which are critical to choosing the right plants for your place.

- For example: Denver, Golden, and Colorado Springs are all in Zone 5 of the USDA maps. But they're not the same environments!
- Denver is in the High Plains ecoregion/ Moderate Relief subregion, characterized by shortgrass prairie plant communities dominated by blue grama and buffalograss, silty and clay loam soils, and moderate slopes and ridges formed by Front Range streams eroding the formerly level prairie surface. The climate is windy, annual precipitation is 12 to 15 inches.
- Golden sits on the boundary between the Southern Rockies and High Plains ecoregions, and its plant communities and environments are thus more diverse, with shortgrass prairie fingering into Foothills Shrubland communities dominated by Gambel oak and mountain mahogany, steep slopes along stream valleys, and varied soils ranging from gravely to clayey. Again, wind is an important factor in the climate, but precipitation is higher, averaging 15-18 inches.
- Colorado Springs lies in the Southwestern Tablelands ecoregion/ Foothills Grasslands subregion, with landforms characterized by buttes and mesas capped by red or ivory sandstone formations over shales, and plant communities ranging from remnant tall grass prairies and pine woodlands to shrublands dominated by Gambel oak and shortgrass prairie on the most exposed sites. Plants characteristic to the Southwest reach their northern limits here, wind is a factor, temperatures are slightly higher than Denver and Golden, and annual precipitation is 15-18 inches.

TIP: *Downloadable ecoregions poster from EPA*: ftp://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/co/co_front.pdf

THE DETAILS

It's important to know your ecoregion, but it's equally important to map the details of your yard or landscape, including landform, soils, aspect, microclimate, and air and water flow. Sketch a simple map of your site that shows the built environment (buildings, walls and fences, and impermeable areas like driveways, sidewalks, and patios. Add the orientation (North arrow), and then draw in landforms, drainage (both air and water). Note what types of soils you have, and the microclimates.

TIP: *Spend time sitting in different parts of your yard at different times of day to get a sense of how a plant experiences sun angles, wind patterns, and exposure. Remember that your plants are rooted in place and can't pick up and move when conditions are too intense for them.*

LANDFORM

- Is your site flat? Sloping? Are there low spots that will collect runoff water and also cold air? Not sure? Try this simple test: Use a hose to flood an area of the yard with water and watch where it flows and collects. Map the slopes and low spots.

SOILS

- Use a simple test to determine soil texture: Take a generous clump of soil (the size of a large marble) in your hand. Pour a bit of water on the soil. Now squeeze it together. Does the clump feel grainy and fall apart? If so, you've got gravely or sandy soil. Does it hold together? That's loam. If you can squeeze the clump into a ribbon, you've got clay.

ASPECT

- Aspect is simply the direction your site faces. Which way do any sloping areas face? Southwest is the hottest aspect, receiving sun all winter, and the hottest sun spring through fall. Northeast is the coolest aspect, receiving little or no direct sun in winter, and the least-hot direct sun spring through fall.

MICROCLIMATE

- Every site has microclimates, pockets that are hotter and drier, or cooler and wetter than the rest of the site. Walls that face south or west create hot spots perfect for desert gardens. Shady spots on the north or east sides of buildings, fences, or tall trees create cooler, moister microclimates idea for mountain plants.

DRAINAGE: Air and Water

- AIR: Buildings and walls or fences can amplify natural air currents, creating wind "streams" that stress plants, and also scour soil. Low spots with no physical way for air to drain out accumulate cold air in winter, creating frost pockets.
- WATER: Turn drainage problems to your advantage by channeling water from impervious surfaces like roofs, driveways, and patios to areas of your yard that can use extra irrigation. *Tip:* A great way to move water away from problem areas and to opportunity spots, and also add interesting design elements to your landscape is to construct dry stream channels. Dig a trough (make sure it slants downhill) to collect and channel the water. Line the sides with larger rocks or blocks, and fill the bottom with small rounded gravel. At the downstream end, the water can simply spread out, or you can collect it in a swale (depression) to soak in.

What Do Plants Want?

- Sunlight (Know how much or how little)

- Water (Same goes)
- Soil (But what kind?)
- Space (How much?)

SUNLIGHT

Most plants use sunlight to make their food through the process of photosynthesis. No sunlight means they starve and die. Too much sunlight can be a problem though, as plants sunburn just the way people do: UV light can damage their cells. Know how much is enough, and how much is too much.

Tip: Learn your site through the "eyes" of a plant, observing where the light falls throughout the day and throughout the year. Don't put a forest understory species in full sun, or plant a desert species in heavy shade.

WATER

"Drought tolerant" on a plant label isn't very precise. It might mean the plant doesn't need water every week, or it might mean the plant won't ever need watering once established. Learn each species/variety's water needs from the plant label, the grower's website, or resources like the Native Plant Information Network on the Lady Bird Johnson Wildflower Center's website.

Tip: Group plants of like watering needs together.

SOIL

Plants are often "picky" about soils, and native species are no different. Many native plants prefer particular soil textures, whether sand or clay or loamy soils; almost all do not prefer enriched garden soils. They grow faster and bigger in enriched soils, but they also often die sooner.

Tip: Mulch is critical too, especially with perennials adapted to drought. Gravel mulch is best for retaining soil moisture without causing crown rot in winter. Avoid organic mulches except for use with natives adapted to wetland or moist mountain habitats.

SPACE

Plants are like babies and puppies: they may arrive small, but they grow! Planning for sufficient space means knowing how big a plant can get and designing accordingly. Some plants tolerate crowding, but often crowding means they are more susceptible to disease or other problems.

Resources

EPA Ecoregion Map: ftp://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/co/co_eco_lg.pdf

Native Plant Information Network from The Lady Bird Johnson Wildflower Center: https://www.wildflower.org/plants-main (As the website says: The most comprehensive database for native plants of North America. Photos, descriptions, horticultural information, pollinator info)