

A Look at Nature “Amber Waves of Grain”

The words from the song *America the Beautiful* provide a pastoral image of the American landscape: spacious skies, waves of grain, majestic mountains, and fruitful plains. In Eldora we live with the mountains and skies on a daily basis. And while one may not consider our grasslands to resemble waves of grain, they should not be overlooked. At first sight, grasses may not catch your eye like many of our wildflowers. But in the larger picture of things, grasses make much of the world go around. And, as one trains his senses to look at the finer details of our landscape (sometimes with the help of a hand lens), you may see a more subtle beauty in the form and shape of some of our most important ground covering plants.

How are grasses important to nature and people? Grasses are the source of most human food; corn, wheat, rice, oats, barley, and millet are all members of the grass family. Even if you eat lots of beef, the critter you are eating probably fattened itself up on some member of the grass family. Grasses are a major source of wildlife forage; buffalo, elk, bighorn sheep, bear, antelope and deer will all eat grass for most or a portion of their diet. Many small mammals eat plants, including grasses. Many bird species eat the seeds of grass and will utilize the stems for their nests. And grasses are the plants most responsible for holding the world's soil in place.

Where are grasses found? On a continental scale, grasslands are found in places with low precipitation, cold climates, and fine-textured soils. In Boulder County we find grasslands in its eastern third, where low precipitation favors grasses over trees; this is the western edge of the Great Plains (sometimes referred to as the Great American Desert). Grasses are also the dominant vegetation above 11,400' in the Indian Peaks, where the cold alpine climate and short growing season favors tundra grasses and is inhospitable to Engelmann spruce, subalpine fir and limber pine trees found just below. Between these two continental features, grasses are found in smaller patches, generally called meadows, where soil texture (again, generally fine-textured), depth and moisture favor grasses over trees. Grasses may be mixed with trees, particularly where the trees have an open canopy allowing light to reach the forest floor. Environmental disturbances, such as fire, can also influence where grasses are found. A hillside of scattered trees will remain open with periodic ground fires, allowing grasses to cover much of the ground. A dense forest that burns may turn into a meadow for 20 or 30 years, until trees can regenerate and once again take the site over. Aspen groves will generally have a significant grass component to its groundcover. Meadows and grasslands are generally a mix of wildflowers and grasses. Disturbed sites are often colonized by wildflowers, while certain grasses will be dominant in a climax plant community. Various types of shrubs may also be a component of a meadow or grassland community.

Identifying individual grass species is an art unto itself. Tools of the trade include a hand lens, tweezers, and a field guide. Sometimes, having a microscope at home can be very helpful in grass identification. Also, it is necessary to learn a new vocabulary: rachis, spike, panicle, internode, lemma, awn, and glume are just a few of the terms encountered. But upon making the effort to learn about grasses, you enter a new world of beauty (especially when looking at plant parts through a hand lens) and gain new knowledge about our ecology.

Locally, some of our more common native grasses include mountain muhly (*Muhlenbergia montana*), Parry oatgrass (*Danthonia parryi*), Thurber fescue (*Festuca thurberi*), several types of needlegrass (*Stipa* species), several types of wheatgrass (*Agropyron* species),

junegrass (*Koeleria macrantha*), several types of bluegrass (*Poa* species), bluejoint reedgrass (*Calamagrostis canadensis*), and tufted hairgrass (*Deschampsia caespitosa*). The latter two species are generally found in wetter habitat than the others.

Sizeable meadows were some of the first places homesteaded in the mountains when the pioneers arrived in the 1860s. Arapaho Ranch, Barker Meadow, Caribou Ranch, Tucker Ranch, Scates Ranch, and Reynolds Ranch all had grass and either a stream or springs that made them prime sites for living and making a living. Grasses were the oil of that era; if you had enough grass to hay, you could sell it to the miners, liverymen, and freight haulers. Bluejoint reedgrass was often mentioned in early accounts as an important grass for haying. You also had range for horses and cattle, as well as fine enough soil for growing some crops.

But these land use activities brought changes to the range. Some of the native grasses, such as mountain muhly and Parry's oatgrass, did not fare well under intense grazing pressure. Now, both of these grass types are considered imperiled in the American West. And nonnative grasses began to be introduced to the land; some inadvertently and some intentionally. There was a major federal program in the early part of the 20th century that encouraged ranchers to plant several types of pasture grasses that originated in Europe: timothy (*Phleum pratense*), Kentucky bluegrass (*Poa pratensis*), orchard grass (*Dactylis glomerata*), and smooth brome (*Bromopsis enermis*). Today, European pasture grasses are prevalent in most of our local meadows. The pasture grasses, tending to favor slightly wetter or shady sites, also dominate the understory of many of our aspen groves. In more recent times, reclamation projects of disturbed lands, such as those done by the county and state road districts, still generally utilize nonnative grasses.

Locally, three sites really stand out in my mind as the best remaining examples of meadows dominated by native grasses. The first is the Arapaho Ranch. Its dry meadows contain one of the largest stands of Parry's oatgrass in western Boulder County. It is a grass of medium height (1/2 to 1 1/2 feet). When going by the ranch, Parry's oatgrass is the dominant grass of the meadows east and west of the entrance gate. Mountain muhly is also present in this meadow. A second significant site is the south side of Spencer Mountain overlooking Peterson Lake. If you hike to the top of Spencer from Eldora, head to the other side of the top and take a good look at the many tall bunchgrasses on the hillside that descends to the lake. These grasses are Thurber fescue, a fairly tall (2'-3') native grass. The third site is in the portion of Woodland Flats north of the creek, which is traversed by the Devil's Thumb Bypass Trail. This meadow is a mixture of Parry's oatgrass, mountain muhly and Thurber fescue.

So, while taking the time to smell the roses of life, don't forget to look at the amber waves of grain.

Dave Hallock