

Colorado Natives and Their Applications[®]

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A BRIEF HISTORY

There is an inevitable disconnect between the newcomer and the unfamiliar. The landscape of the “Great American Desert” was deemed hostile and worthless by early nineteenth-century pioneers. Its only potential was to be tamed, “reclaimed,” and civilized. Appreciation of native plants, understanding of established ecosystems, the inherent value of broad, unspoiled landscapes and all their components — these were matters understood by only a handful of people during that pivotal time when prairies were turned by the plow and city streets laid out in the dust.

Early in Colorado’s history, survival in a harsh land was paramount — there was little room for error. Farming here was a challenge even in good times and in the nineteenth and early twentieth centuries, settlers learned quickly that different approaches were necessary. During this period in the Mountain West, gardening for pleasure was secondary, at best, a luxury indulged primarily by the wealthy and steeped in the traditions of the East. In homage to cities like Boston and Chicago, grand tree-lined avenues bound affluent neighborhoods against the frontier rather than uniting them with the surrounding wild lands and vistas.

Even now, with only 100 or so years of “gardening” behind us, the patterns are set. For many, it still is difficult to see beyond tradition and to embrace the look and feel of the natural western landscape. Certainly we appreciate the wild landscape — in its place, out “there” somewhere beyond our cities and towns — but it has seldom been the inspiration for our own garden designs. Little if any clamor is heard when pristine prairies or foothill meadows are dozed away in an instant to make way for another brand-x mart or “single family unit.” And sadly, no landscape is more yielding than the fragile short-grass prairie. Self-sustaining natural gardens and priceless scenery are replaced in an instant with unsustainable landscapes that would perish in a matter of weeks without their life-support systems of poly pipe and valves and diverted water.

Much of Colorado’s early settlement flourished during the relatively wet years between 1905 and 1929. The 1930s brought the Dust Bowl and a rude awakening to a primarily agrarian population. Since then, agriculture has adapted greatly to the reality that drought is standard fare throughout the West. However, when the drought of 1976–1977 struck, a growing urban population and a burgeoning tourist and ski industry felt the impact in new ways. Economies were strained and lawns went brown. Suddenly the myth of endless and abundant water was dashed.

As so often happens, the crisis passed, and by the 1980s wetter weather had dulled the urgency felt by so many during the throes of drought. Savvy gardeners had taken notice, however.

THE CHALLENGE OF A BOTANIC GARDEN

In the early days of the 1980s, Denver Botanic Gardens (DBG) was already well respected for its vast collections and cutting-edge designs.

Yet even at DBG little residual evidence existed of the water crisis of the mid-seventies. Only a few scattered plots of native plants were sprinkled through the gardens and no large gardens were dedicated to the theme of water conservation. Traditional collections of roses and peonies and annual bedding plants held a powerful grip over most of the 23 acres.

The Laura Smith Porter Plains Garden came to fruition in 1983 as a tribute to one of Colorado's early settlers. Its purpose was to give city dwellers a sample of what Denver had been like a century ago: a wide open prairie where slight changes in topography, soil, and exposure fostered a subtle diversity in native drought-tolerant plant communities. It was an immediate success and, thanks to the forethought and early work in this effort, the essential elements of this garden still flourish with only occasional intervention.

The Laura Smith Porter Plains Garden has an untamed style that is hard for some to embrace. Occasionally, visitors can still be heard to mutter, "I wonder when they plan to do something with this area." Here, grasses and wildflowers run riot, presenting a vision quite incongruous with the concept most people still hold of what a garden "should" look like. Left largely to their own devices, plants move about the garden, seeding into their preferred niches and crowding up against their neighbors as they might in nature, with an ebb and flow dictated by the season at hand and the whims of weather. Seasonal highlights of lemon yellow or blazing red and purple broaden the color pallet, but the connotation is that of our natural landscapes. "Green" as most gardeners know it, is a fleeting experience in this garden as it is in nature.

Out of its success an effort arose to transform the basics of gardening in the arid West, with a degree of sensitivity to the demands of a high plains climate. Gardens were compartmentalized into wetter and drier zones. Plantings were modified to include more drought-tolerant plants. For the first time, the everyday gardener might consider the usefulness of native plants — a realm previously limited to a few eccentric gardeners on the fringe. Soil preparation and the use of mulches and efficient irrigation were encouraged and vast sweeps of thirsty lawn were scaled back to more conservative proportions.

Through the efforts of Denver Water and the landscape and gardening industry, a new word had been buzzing about. Xeriscape was born of the indisputable need to adjust our gardening style and habits to the reality of where we live. Denver Botanic Gardens expanded its efforts to provide the first real example of what a xeriscape could entail. With innovative use of western native plants, the world's first Xeriscape Demonstration Garden came into being in 1986. A unique garden began to take shape, based on the original "seven principles" of xeriscape design. From its inception this garden had an informal style drawn more from the dominant ecosystems of the interior West than from familiar garden tradition. Many dozens of unique western plants that had rarely been seen in public or private gardens before now thrived along its rock ledges and grassy glades.

New opportunities and a fresh awareness began to emerge from these efforts. Sunny, dry gardens with boulders, various aspects and well-drained soils provide an endless range of niches and microclimates, just as the same features in natural landscapes would.

With water conservation as a major goal, our focus turned more toward drought-loving desert and Mediterranean plants. Through the 1980s, such novelties were

often hard to locate and investment in such risky plants was attempted only by a few curious home-gardeners and botanic gardens. Now more and more nurseries and plant propagators began looking to native plants as a potential source of revenue and a way to capitalize on the burgeoning interest in drought-tolerant and native gardening.

With this improving availability and a renewed commitment to native plants from all parts of the arid West, our plant trials increased significantly. Nearly unknown in Colorado gardens, plants like New Mexico agave [*Agave mexicana* (syn. *parryi* subsp. *neomexicana*)], golden pricklypear [*Opuntia basilaris* (syn. *O. aurea*)], and sacahuista (*Nolina microcarpa*) thrived with no supplemental watering and added a bold sculptural element not achieved by most hardy perennials. The burnt orange and coral of sunset hyssop (*Agastache rupestris*) became a mainstay of regional landscaping. Hailing from the east slope of the Sierra Nevada, little-known Mojave sage (*Salvia pachyphylla*) with its pungent ever-silver leaves and dusky rose-purple flowers was first grown here in 1998. It sailed through the drought of 2002 without a drop of irrigation and has since been chosen as a fantastic new Plant Select® introduction.

As the Xeriscape Demonstration Garden has matured over the years, it has become a tribute to the durable plants and dry landscapes of the West. In fact, by 1997, the irrigation in this garden and the adjacent Plains Garden was suspended completely with the infrequent exception made for new plantings. Two years later the name of the Xeriscape Demonstration Garden was changed to the Dryland Mesa: a title more evocative of wild western terrain and its unique plant communities. Now, after 12 years of no irrigation, the plants have retained their compelling natural attributes and they continue to thrive and flower through all the vagaries of our changing weather.

A SMARTER GARDEN

In the meantime, homeowners and landscape designers often saw the concept of gardening with native plants as an “all or nothing” endeavor. They planted either an exclusively native garden or a traditional garden, with rarely any overlap. Such efforts usually took the form of a shapeless “meadow” mish-mash that confused the onlooker. These native gardens, often relegated to back alleys or waste areas that were seldom used, were frequently doomed to failure, as weeds and neglect left them no better off than any previous attempts. Even the most xeric native gardens need some care!

What was needed was the creation of a broad new garden style that focused almost entirely on plants known to have a similar and strong affinity for drier garden conditions: not just drought-tolerant, but drought-loving. Early images of xeriscape had become tainted with what some felt were negative stereotypes. The concept seemed rooted in deprivation, having to “go without” the lush green luxuriance people so often associate with a “real garden” and settling for only a tiny oasis of green while surrounding beds of gravel and cacti simmer in near-Saharan heat.

This new evolution in style required a smarter garden with more reasonable needs and no apologies for its lack of *Rhododendron* or *Astilbe*. These plants needed to thrive in dry conditions with every bit as much vigor and seasonal color as a conventional garden, and using the full range of characteristics of such plants: silvery foliage, succulent forms, spiked leaves and frothy, wiry textures. This garden need-

ed to live on only occasional supplemental water (or none at all!) and it needed the broadest palette of plants possible, drawn from nearly every continent. It needed to celebrate the look and feel of the arid West, and similar regions of the world, and find expression in the same palette of colors and textures that make the natural western landscapes so compelling. After all, newcomers were flocking to the arid West precisely because of its crisp air, its vast sun-drenched landscapes, and wide open sweeps of sage, gold, and tan under rainless skies. So why should people insist on changing the very nature of the place they claim to love? This garden celebrated a sense of place in a rich and welcoming way that had not been done at most botanic gardens up until then.

From the original Laura Smith Porter Plains Garden to the Xeriscape Demonstration Garden, and now to the Water-Smart Garden, each progressive endeavor represented a large forward shift in awareness, practicality, and experimentation. Dozens of plants thought to be too tender for our climate actually thrived in the drier conditions of our Water-Smart Garden. A cast of unknowns now rushed onto center stage. Gardens luminary Panayoti Kelaidis had brought us the hardy South African ice plants just a year or two earlier. The new garden helped convey them to millions of gardeners across the continent. *Salvia* from arid parts of Europe and Asia and grasses and *Hesperaloe* from Mexico grew side by side with Mediterranean thymes and lavenders. The garden exceeded expectations. It set a new standard and drew visitors in, giving them fresh options that reached out to embrace the aesthetics of our natural landscapes while also proffering a rich array of color and texture and adventure in cultivating unique new plants.

Our Water-Smart Garden stretches south-facing along the full length of the Boettcher Tropical Conservatory, where it bakes in the summer heat and endures wide swings in temperature all year, but its rugged water-wise troop of plants has proven itself over time. Unlike our Dryland Mesa and Plains Garden, which thrive without any supplemental water, this garden needs an occasional deep soaking, but these plants actually perform their best when kept on a leaner diet of water and fertilizer. Too much of either and they languish and flop under their own weight. Even through our recent drought in 2002, the Water-Smart Garden was only watered seven times all year, receiving about an inch and a half (or less) of water each time — far less than most conventional gardens require.

MAINSTREAMING OUR NATIVES

A new interest in mainstreaming native plants had opened the door to creating a natural style in the heart of DBG — a look that could be immediately distinguished from that of Philadelphia or Chicago or New York. Four borders surrounded the large amphitheater where so many of the Gardens' events and activities take place. At the north edge, the Water-Smart Garden was one of these and plants from the far corners of the world were thriving alongside a new infusion of western natives.

Flanking the other three sides of the amphitheater, three fresh borders were conceived, each highlighting one of Colorado's signature trees, with many of the natives that would accompany them in nature and in a casual style reminiscent of their natural habitats. Yet they are not strict "revegetations," or even replications of these habitats. We had already done that in the Plains Garden where the plants — a less select mix of natives — ran the show and moved about as they wished.

These gardens are composed entirely of western natives and, since our political borders do not reflect native ecosystems or plant communities, we did not restrict ourselves to Colorado natives alone, but used plants from the region surrounding us as well. Meandering paths and rock outcrops lend a relaxed, natural style. Wildflowers grow, not in a wild free-for-all, but gathered into large drifts with an eye toward more traditional garden border techniques. Simple layers of grass embrace swaths of color, short grasses in the foreground and tall plants in the back. A unique palette of plants makes each border distinct.

The plains cottonwood (*Populus deltoides* subsp. *monilifera*) was chosen to anchor the new border on the west side of the amphitheatre. As the only large trees actually native to Denver, they have long been a symbol of oasis and survival on the shortgrass prairie. Waves of blue grama grass (*Bouteloua gracilis*), desert four o'clock (*Mirabilis multiflora* var. *glandulosa*), and prairie winecups (*Callirhoe involucrata*) weave among the trees. As riparian natives, the cottonwoods require some supplemental irrigation, so this section receives an occasional deep watering.

Ponderosa pines (*Pinus ponderosa*) grace the foothill and montane zone of most of our western mountain ranges, from rugged canyon walls to open parklands. In the east border of the amphitheater, the dappled light beneath ponderosa pines shelters Oregon grape holly (*Mahonia repens*) and the delicate blue bells of rock clematis (*Clematis columbiana* var. *tenuiloba*), and penstemons in red, blue, and violet. Infrequent deep watering during the height of summer seems to serve them well.

Among the oldest living things on Earth, bristlecone pines (*Pinus aristata*) survive with tenacity on craggy wind-torn ridges. Though nowhere common, they are adaptable survivors, coping with intense sun and drought, even in lower elevation gardens. Our south border, with bristlecone pines scattered along a rocky ridge above well-drained slopes, features the most adaptable and colorful of subalpine wildflowers. Rocky Mountain columbines (*Aquilegia coerulea*) and Idaho fescue (*Festuca idahoensis*) cover open meadows and harebells (*Campanula rotundifolia*) nestle in rock crevices. Moisture runs deep alongside the boulders and careful planting helps to shade and cool the soil, so it requires only slightly more irrigation than the Ponderosa border. Though not irrigation-free, all these borders demand far less water than most conventional borders.

CONCLUSION

In Denver and its surrounding communities, well-watered landscapes, golf courses, and suburbs plod up and down along the edge of the desert steppe bathed year round in intense sunlight and catapulted from one season to the next in a matter of hours by wild swings in temperature and ferocious winds. Rainfall typically averages about 15 inches, but some years as little as 7 or as much as 24.

Colorado's predominantly dry steppe climate has more in common with the desert and Mediterranean climates to our south and west than with the soggy climates of the East and Northwest. Still, few of us have looked to this reality when searching for garden inspiration. Most want to emulate the leafy, moss-draped maritime climates of the east and west coasts, or look still further to Britain or Japan. In style and design much may be gained from the accumulated millennia of gardening experience in these regions, but our own backyard can supply something they cannot.

The vast and primal topography of our deserts and grasslands have a powerful simplicity of style and a complexity of composition. Left to itself, our natural land-

scape presents a palette of sage and rust, tan, green, and gold under a yawning dome of blue sky. While the grand landscapes can draw us in, it is this richness of detail that can bind us more seamlessly to our surroundings. With a tangible sense of place, our homes and gardens and parkways need not jar so with the gentle curve of prairie or the fragrant sweep of ponderosa parkland. One needn't abandon horticulture to be responsible and attuned to landscape and climate. There is an untapped wealth yet to savor in the garden.