Native Landscape
Pioneers Tell Their Stories

Return of the Natives
Phil and Judy Allen, Orem, Utah—Semi-desert Zone

Personally, my choice to “go native” was as much about reconnecting with favorite childhood plants and memories as it was about art or philosophical ponderings related to environmental stewardship. Still, ripping out what remained of our front lawn in 2004 felt strangely awkward. (Every other front yard on our street had copious quantities of Kentucky bluegrass, and my PhD in horticulture focused on high-maintenance turfgrasses). That said, the journey from a solid carpet of lawn to the creation of a Wasatch Front canyon landscape has been worth it in every way.

We purchased our brick rambler in 1992. At that time, the completely flat landscape was dominated by lawn that reached from the house to all property lines. The trees included exactly one of each of the following, growing as “lollipops” in the grass: Norway maple, sycamore maple, quaking aspen, flowering plum, cherry, apple, and Douglas fir. The only shrubs in the yard included four dwarf Alberta spruces (located in the front yard at the corners of the house and sides of the porch), a single lilac, and a row of pfitzer junipers along the fence in the back yard. We immediately removed the flowering plum, which was located in the center of the back lawn and conflicted with soccer.

It took just over one year to complete the initial design for our yard. The idea was to use a combination of favorite Utah and Minnesota plants—Utah where
we were raised and Minnesota where I had attended graduate school. The design included large beds for trees, shrubs, and perennials. This, we felt, would allow plenty of room for the plants to grow without seriously competing with the lawn. In the front yard, planting beds were located both near the house and as a curvy island in the center of the yard. The entire perimeter of the back yard was converted to curvilinear beds, while the center of the yard was kept open for recreational lawn use.

I then designed and installed a sprinkler system to keep the grass happy. It was actually quite impressive to watch my well-designed system at work, efficiently watering the lawn while virtually eliminating runoff onto the sidewalk and driveway. And the new back-yard sprinklers no longer watered the cedar fencing. Over time, the arcs of hard water deposits gradually faded from the fence slats.
Functional design considerations for our yard called for a number of deciduous trees to shade the house during the summer, while allowing sunshine to warm the bricks and siding during the winter months. We accomplished this by choosing relatively small trees to use near the house (bigtooth maple, Gambel oak, staghorn sumac, and water birch) and large trees for farther away (bur oak and a temporary Norway maple). We achieved aesthetic appeal in three ways. First, we repeated native plant clusters in multiple locations. Second, we added white fir to the clusters in order to create strong winter interest and provide balance and contrast to the deciduous trees. Shrubs and perennials, generally planted in groups of three or five, were added to fill in the gaps while the trees grew, as well as for additional variety. The ground cover we used beneath tree clusters was creeping Oregon grape, which has attractive yellow flowers in the spring and reddish leaves in the winter.

Unfortunately, the two native trees (Douglas fir and quaking aspen) had been planted directly beneath overhead utility lines, so they were cut down within a few years. But the Douglas fir made a fine Christmas tree (at least the top six feet!), as did each of the dwarf Alberta spruces. Today, only three of the original trees remain. The two fruit trees located in the corner of the back yard were kept as much for the shade to my kids’ play area as for the fruit. Also, the Norway maple has been granted a temporary stay of execution because we need the shade until our new forest can replace this vital function.

As previously mentioned, the original design included several intermountain natives. Gambel oak and bigtooth maple were obtained from a friend as six-inch seedlings. Later, additional oaks were added as acorns. White fir and Douglas fir were purchased as tubelings, and western water birch and netleaf hackberry were purchased in one-gallon containers. Big sagebrush, fernbush, oakleaf sumac, curlleaf mountain mahogany, green Mormon tea, Rocky Mountain maple, basin wildrye, and western mountain ash were either purchased as seedlings or donated by friends from the Utah Native Plant Society. The Oregon grape starts were dug up on nearby Forest Service property, under a special removal permit obtained during a road-widening project.

We generally plant trees in early spring or autumn. Our soil is nearly filled with rocks, ranging from the size of your fist to that of a football. But my trees obviously love it! In contrast with numerous written and verbal claims that native
intermountain trees are inherently slow growing, my experience has been that they grow as quickly as many nearby non-native plants installed at around the same time. For example, oak seedlings planted in 1995 are approaching fifteen feet in height just twelve years later. The water birch and bigtooth maple are even taller, and one limb of the hackberry shot up to twenty feet before I pruned it. My personal view is that our native trees perform best when they have a large root system, especially at an early age. I once dug up a Gambel oak seedling to discover that, at the four-leaf stage (less than three inches in height) the taproot was already more than a foot deep! Nursery production practices are just beginning to incorporate an awareness that native plants from semi-arid habitats benefit from much larger root volumes than traditional containers allow. Because all our trees were planted at a small size, the problem of trying to transplant a tree with insufficient root volume was avoided.

In the front yard, the trees and lawn tolerated each other fairly well, at least for a few years. Eventually, tree roots reached the edges of the driveway and sidewalk, turning to run parallel to the concrete. It became increasingly difficult to apply enough water to keep the grass green next to the concrete, and I began to tire of the need to overwater most of the lawn in order to keep the one foot next to the concrete happy. But what was the alternative?

On my 40th birthday, my wife and I climbed a large talus slope in nearby Rock Canyon. I noticed that where the forest and talus met, rocks dominated the soil surface beneath the trees for several feet. Additional forays into the steeply sloped, tree-covered canyon faces confirmed that the forest floor on many sloped areas is indeed covered with rocks. So the idea for an alternative to lawn was born. Additional benefits were that weeds would virtually be eliminated, and in this context, at least, the rocks were aesthetically appealing. We obtained a permit from the Bureau of Land Management to harvest two tons of rock from a talus slope located twenty-five miles from our home. The last mile to the rock pile was on a marginal dirt road that might have deterred us, were it not for the fact that we had already severed the lawn sprinkler pipes in a few locations. We eventually purchased a total of three permits and hauled eight pickup and trailer loads of rock back to the yard. To contrast with the ground cover of rocks, we purchased yellowish river stones for the dry stream bed that now meanders through the forest. And the walking path that connects our front sidewalk to the porch was built by recycling sandstone from our living room fireplace, which was removed during a remodeling project.

As with other journeys into the unknown, we have learned a great deal from our landscaping experience. If we were starting over today, we would have passed on the bur oak. Gambel oaks are just as lovely and can be coaxed to grow quite tall through close spacing—you then thin some trunks as they mature. We
planted a few clusters of ginkgo around the front yard as a substitute for quaking aspen, and in retrospect I wonder if aspen wouldn’t have worked just as well. A healthy forest often includes trees of various ages, and we regularly remove trees that are growing too tall for the scale of our home. Each year we cut down a fir tree for Christmas. We spread a few new acorns and bigtooth maple seeds around the yard each year, and we plant new fir seedlings every few years as well, so there is a continual supply of new seedlings for the future forest. We could easily renew the quaking aspen by eliminating trunks as they become diseased or outgrow the yard.

After killing the lawn, we should have removed all the dead sod wherever we were going to plant native perennials. The high organic matter that was left over led to fertility levels that are too high for penstemons and gilia, and even the sagebrush appears too lush and needs pruning to keep it from lodging (flopping down).

While we purchased components for a drip irrigation system and have much of it plumbed already, we have never felt the need to actually finish and operate it. French drains originate wherever downspouts come down from the roof and lead to key tree clusters. While shoveling snow in the winter, I toss it onto areas where more water might be needed. In the summer, we water plants by dragging a hose a couple of times each year. We have learned, however, that watering the wildflowers occasionally (every few weeks when in flower) can significantly extend the blooming season. Some years we do, others we don’t. However, we specifically selected plants for our yard that could survive for two or three months without being watered.

We initially worried that our unconventional landscape would offend the neighbors. But the same views we enjoy from every window of our house are enjoyed by the neighbors in reverse. And children who walk or ride their bicycles down the sidewalk feel compelled to enter the yard, to walk across the bridge that crosses the stream bed, to feel the rocks. As a boy, I loved to picnic with my family in wild places. In the canyons I climbed trees, threw pine cones, and gathered acorns and painted them with faces. In the deserts I chased rabbits through sagebrush and green Mormon tea, and even today the fragrance of these wonderful plants takes me to a place where I feel free and playful. On those days when I don’t have time to actually go to a wild place, my yard works just fine.
Native plant landscaping at the western edge of the Great Basin is neither very difficult nor worthy of praise when much of our yard had not been significantly altered from the natural shrubland landscape. In 1990, I was thrilled when we stumbled on the mostly intact 1.25 acres in a rural area south of Reno—the house was nearing completion, and the local independent home builder had only disturbed the building and driveway footprint. The presence of an intact native plant community was among the chief reasons that we decided to buy the house, as I knew I was well on my way to having the kind of yard I wanted.

The property is at 5,500 feet in elevation, on a northeast-sloping alluvial fan adjacent to eastside foothills of the Sierra Nevada. The local shrubland is dominated by Wyoming big sagebrush and antelope bitterbrush, with desert peach, spineless horsebrush, and woolly mules-ears. In summer, spurred lupine, Anderson milkvetch, Bruneau mariposa lily, foothill deathcamas, tall woolly buckwheat, and dwarf purple monkeyflower adorn the shrubland. Yes, there is cheatgrass. It is a persistent problem requiring attentive weeding—especially in wetter years—but, at least it seems to have lessened its stronghold in the shrub interspaces, due to competition from perennial grasses (squirreltail and needlegrass) that I broadcast-seeded from a locally collected seed bank.

Planting trees was our initial priority, because we wanted shade and a vertical dimension added to the three- to five-foot-tall shrubland. I knew that the native trees I wanted would be slow growing, so I scoured a number of local nurseries for relatively large trees and had great fun on a rented bobcat digging holes for their planting. The soil is fertile though very rocky. I designed the tree layout to coincide, for the most part, with the larger ecological context of their natural distributions. That is, I planted eastside Sierran trees (Jeffrey pine, ponderosa pine, incense cedar, western white pine, and curlleaf mountain mahogany) on the west side of the property and Great Basin trees (singleleaf pinyon, Great Basin bristlecone pine, Rocky Mountain juniper, Rocky Mountain lodgepole pine, Engelmann spruce, and Rocky Mountain ponderosa pine) on the east side. For color among the Sierran trees I planted western mountain ash, western columbine, Sierra spirea, and firechalice as associates. Planted associates for the Great Basin trees and sagebrush included oakleaf sumac, creeping Oregon grape, Nevada buckwheat, Lewis flax, showy penstemon, and firecracker penstemon. In an effort to salute the Mojave Desert of southern Nevada, I planted Apache plume, Gambel oak, fernbush, and Bridges penstemon at the southwest corner near a Rocky Mountain ponderosa pine—
virtual Spring Mountains landscape in miniature. We installed drip irrigation lines throughout to water the trees, as the site averages only eight or nine inches of precipitation annually.

We chose to plant an aspen “grove” in lieu of lawn and located it centrally in the south part, where there was a natural opening in the shrubs. It is in our view through the front south-facing windows. The grove is modeled after eastside Sierran stands, and in addition to several quaking aspens, it includes mountain alder, two Sierran lodgepole pines, and a volunteer arroyo willow which came in just a year or two after we started drip-watering the grove. Because willow seed is short lived, I imagine it drifted in from one of the nearby streams, where it is abundant. I purposely kept the middle of the grove open so that we could have a small shady respite on hot summer days, and it is one of the yard’s delights to lie or read among the aspen gently trembling in the breeze.

Most of the aspen are healthy and suckering; however, one died about five years ago, and two more have been losing vigor for several years. I may not be watering some of them adequately to reduce their summertime transpiration stress, but since I obtained them from several sources, some appear to be genetically better adapted to their artificial home in the sagebrush. As with most of the other native plants that I have added to the yard, if they don’t survive with my minimal caregiving, I move on to less finicky options. Lately, the grove has had a
Cooper's hawk occasionally perched in it, which makes me feel like it's a pretty successful imitation of a natural stand.

Early on I brought in many cubic yards of decomposed granite. It took quite a while to shovel it along the several pathways winding through the property to different interest points. But the effect is a nice and easy natural path, and it doesn't take very much time to pluck out the sagebrush and bitterbrush seedlings that inevitably germinate each year. What takes more time is the annual removal of dead woody material in the spring, especially in years of higher snow loads. We keep it picked up to reduce the fire hazard and to open microsites for shrub regeneration. Initially, we removed several prize bitterbrush that were located within the defensible open space surrounding the house. Now, however, a neighboring housing development, which completely scraped off the shrubland, is likely our most effective fire deterrent.

I made a winding dry creek bed connecting the aspen grove to a dry meadow located much closer to the house. At the aspen end of the dry creek bed I planted coyote willow, Woods rose, and western thimbleberry. The dry meadow is a drip-irrigated construct giving us a sense of verdant herbaceous space that transitions to the gray-green shrubs. To create the dry meadow, I collected seeds of favorite plants from nearby meadows. In addition, I also received many seeds from the Nevada Native Plant Society (then known as Northern Nevada Native Plant Society), which at that time organized seed collectors and seed cleaners and mailed out seed to members upon request, all for the price of postage. I simply broadcast-seeded and initially protected the area with chicken wire to keep out the cottontails and jackrabbits during establishment. Plants that have successfully established in the meadow include mountain goldenrod, meadow penstemon, sticky cinquefoil, nettleleaf horsemint, spiked sidalcea, Lewis monkeyflower, and Hooker evening primrose. I transplanted plugs of Douglas sedge from a trail along a nearby stream, and it has filled in the bottom part of the dry creek bed. But the most prolific meadow plant is the rhizomatous Nuttall sunflower—it is the glory of the yard in August, with its seven-foot-tall wands, and is the object of desire of sparrows and finches in the fall when in seed. I originally dug up several clumps of it from the garden of Margaret Williams (a founder of NNPS), and she told me to plant it where I wouldn't mind it taking over. Well, it has taken over the meadow, but its summer bouquets are worth it, and I manage it by digging it up at the margins to supply my friends' gardens.

The abundance of rocks onsite provided source material for low dry rock walls and a scattering of focal boulders. Now there are a number of showy natives growing near the rocks that were either planted from nursery stock or seeded. Early bloomers among these natives include yellow currant, wax currant, and little-leaf mountain mahogany, all of which attract many pollinators, especially native
solitary bees. I initially wanted some large rocks in the decomposed granite that were unadorned with flowers and rather zenlike; however, I reneged on my intentions after western columbine and cardinal monkeyflower self-established from their original placement and now attract hummingbirds for much of summer.

I planted several Jeffrey and ponderosa pines as individuals or in threesomes in the southeast, southwest, and northwest areas, for interest among the shrubs. Two Fremont cottonwoods and a black cottonwood grow on the north side of the property to provide shade and screening (from neighborhood houses) in summer and color in autumn. Two garden-grown western virgin’s bowers are planted at the edge of the master bedroom deck. They annually create a 150-square-foot privacy screen—and that’s with pruning. These plants were grown by Margaret Williams, and I am honored to have her plants on our property as a tribute to the best-known native plant garden enthusiast in the Reno–Sparks area in her time.
My accidental journey into native plant landscaping began as a boy. I spent countless hours wandering the rolling prairies of southern Alberta, Canada, and the then-vacant foothills east of Provo, Utah. My parents, Dale and Norene Nish, introduced me to landscaping as we attempted to tame a difficult plot of ground around our new home in the Indian Hills subdivision of Provo. We used red sandstone gathered (with permission) from private land east of Heber City, Utah, to create a sculpted rock garden around the yard. As a child, I found the subject of western animals and birds to be approachable and familiar. However, the subject of native plants was cloaked in a confusing array of common names and unintelligible Latin.

Deer hunting in Hobble Creek Canyon, Utah, is an experience in close-quarters combat with plants. The steep terrain is covered with brush that tears at your clothing and scratches your skin. It was during one of these hunting trips in the early 1980s that it occurred to me that I could identify every mammal and bird in the area but could not name more than a couple of plants. I decided then that I could not claim to be an educated outdoorsman until I learned more about our native plants. I started a casual search for books about western plants in the gift shops of national park visitor centers and the local Utah State Extension Service. The books in the university and city libraries were useless to me because of their dense, technical language and the hated Latin words. The most helpful books were Ronald M. Lanner’s *Trees of the Great Basin* and Hugh N. Mozingo’s *Shrubs of the Great Basin*, along with a smattering of Utah State Extension Service booklets, including Sue Nordstrom’s *Creating Landscapes for Wildlife*.

Two things happened that changed my casual interest in native plants to one of heightened urgency. First, our oldest daughter was born with cerebral palsy and would have only limited access to the natural world. Second, in 1989 we bought an empty lot in the Edgemont area of Provo, Utah, and decided to build a home. The idea was to bring the outdoors to our back yard, so our handicapped daughter could learn about her western heritage. The biggest obstacle was a lack of knowledge about the use of Utah native plants in residential landscapes. The resistance of our neighbors and my long-suffering bride to the then-unfamiliar topic of native plant landscaping was another problem. A compromise was reached where I could use native plants in the back and side yards while planting conventional Kentucky bluegrass and ornamental plants in the front yard. Our back yard became a decades-long living laboratory that continues to educate and fascinate.
Our home is located on the Provo Bench in northeast Provo, at an elevation of 4,770 feet. The property is 0.37 acres (1,497 m²) and was originally the site of a fruit orchard and, later, a cow pasture. The topsoil consists of four to six inches of Bingham loam. The subsoil reaches ten to twenty inches deep, followed by a deposit of coarse sand, gravel, and river rock presumably hundreds of feet thick. Soil drainage is such that one can pour a five-gallon bucket of water onto the soil and it will disappear in less than a minute.

The first step in the back and side yards was to reduce the amount of lawn by creating large planters around the perimeter of the lot. Once the borders were established, we decided to plant trees for privacy and native fruit crops that would attract birds but could also be eaten by humans in an emergency. We also wanted different watering zones for three distinct plant communities. We relied on publications from the Colorado and Utah State Extension Services and occasional field trips to the local canyons and foothills to plan our landscape.

A breakthrough came when I heard a lecture at the newly created Utah County chapter of the Utah Native Plant Society, where the researcher taught that western landscapes are dominated by groves of small trees rather than large, single specimens. After this, we began to plant a large grove of Gambel oaks, sprouted from acorns gathered from a single surviving grove located next to Centennial Middle School. It is important to harvest the acorns from groves
at the same elevation where you intend to plant. It took us two years to work out a method for sprouting Gambel oak. The acorns were gathered in August and kept in a plastic jar filled with moist potting soil. The container was left in the refrigerator until the following February. Each sprouting acorn was transferred to a small pot and kept next to a south-facing window until it could be safely planted in the yard the following spring. We tried planting a few bigtooth maple and netleaf hackberry seedlings among the small oaks to simulate native Gambel oak groves in the area. The hackberries thrived, but the bigtooth maples had a 50 percent mortality rate. Creeping Oregon grape was used as an understory plant, due to its symbiotic relationship with Gambel oak. Examples of this plant community can be seen along the Provo River trail in Provo Canyon.

The southwest corner of the house was reserved for heat-loving trees, such as curlleaf mountain mahogany and Utah juniper. Attempts to grow singleleaf pinyon pine have been a complete failure. The trees were bought from a local nursery. Shrubs included green Mormon tea, winterfat, and sand, black, and big sagebrush. Perennials we used included Greek yarrow, scarlet globemallow, pineleaf penstemon, scarlet bugler penstemon, Palmer penstemon and scarlet hedgenettle. Scarlet globemallow was sown directly into the ground, using seed taken from an area east of US Highway 89 and south of Springville, Utah. The land was going to be bulldozed, so we also dug as many sego lily bulbs as we could use.
Over the next two years the sego lilies all died out, but the globemallow began to grow and continues to thrive almost twenty years later. The penstemons and scarlet hedgenettle are incredible hummingbird attractors, but the hedgenettle must be planted in areas where it will get water at least once a week.

The southeast corner of the home was planned as a bigtooth maple grove. This area is shaded in the morning by a large honey locust tree in the neighbor's yard. Unfortunately, the bigtooth maples have failed to thrive. The planter is slowly being turned into another Gambel oak grove by the scrub jays, who stash acorns in the bark mulch. When the scrub jays plant an oak in a good spot, we let it grow. Unwanted seedlings are removed with a shovel.

The remainder of the yard is devoted to edible shrubs, such as currants, gooseberry, elderberry, chokecherry, and Saskatoon serviceberry. The currants and gooseberries are generally unkempt looking and are of little interest to the birds. We planted elderberries and chokecherries in spite of being discouraged from doing so by local gardening experts. The elderberries are beautiful and are moderately useful to the birds. They require heavy pruning and thinning each year to keep them attractive. The chokecherry and serviceberry bushes are the star performers in our landscape. They reliably produce heavy crops of berries and are hugely popular with the native birds; they seem especially important for fledgling robins. The shrubs have deep green foliage all summer, with good spring and fall color. The chokecherries tend to sucker, and they will grow over twenty-five feet tall if given good soil and some summer water.

The biggest surprise about our yard has been how much we have enjoyed the experience of the last eighteen years. We have been amazed by how our yard has become a magnet for native birds. The Gambel oak grove is now twenty feet tall and is the preferred habitat for hummingbirds, robins, California quail, scrub jays, and blackheaded grosbeaks. Curiously, the non-native birds, such as starlings, avoid our yard. Another important lesson has been that all of our gardening problems are related to water. In the native plant areas, we find that we have few weeds and no pests. Weeding takes about an hour a month of light work. It is the water-intensive parts of the yard such as the bluegrass lawn and vegetable garden that require the most money and time.

If we were doing it over again, we would start out with even less lawn, both because of its high water requirements and because today’s children spend little time outside. We would also hire a landscape architect experienced in Utah native plant landscapes. This would have saved us time and money. But it would also have deprived us of the wonderful experience of trial and error. Prepare the best you can. Take your first, best shot at a natural landscape. Don’t worry about making a mistake, because nature will teach you how to sort things out if you are willing to learn.
Tabula Rasa
Carl Dede and Angie Evenden, Boulder, Utah—*Semi-desert Zone*

In the mid-1990s, we bought twenty acres just outside of Boulder, Utah, with the vision of living there someday. The parcel, located at the edge of a valley at 6,300 feet elevation, supports a mosaic of Navajo sandstone slickrock and sand dunes, with native pinyon pine and juniper woodland. Most of the land was undisturbed and in good condition—however, four acres of deep sand along one edge of the property had been scraped clear of pinyon, juniper, and sagebrush a number of years before, presumably in preparation for a hay field that was never planted. This disturbed area, which included our eventual house site, was covered with annual weeds dominated by tumble mustard, tansy mustard, and Russian thistle, with only an occasional clump of native sand dropseed or Indian ricegrass. No sagebrush, pinyon, juniper, or other woody species remained on this portion of the property, although some beautiful old-growth trees grew along the edge. Being plant lovers, we saw the possibility of landscaping and restoring the disturbed area with native plants. Our vision was to broadly mimic the species and patterns of the naturally occurring native sagebrush and bunchgrass communities and to augment these with other suitable and attractive natives. We wanted to create a landscape that would be beautiful as well as drought resistant. In anticipation of our project, we began collecting seed of local native grasses, wildflowers, and shrubs and identifying other sources of plants for our project.

We built our house in the late 1990s, and that is when our restoration project began. After construction was completed in the fall, the house sat in the middle of three-quarters of an acre of completely empty sand, contoured and bare. Our first act of landscaping was to hand-drill in small caches of Indian ricegrass seeds, two inches deep, every eighteen inches or so, covering the entire bare area. That effort took four days on our hands and knees, sometimes in the rain. The damp conditions that fall and winter were perfect for producing the moist pre-chill needed for germination. The supply of our hand-collected grass seed was insufficient for a project of this size, so we augmented it by purchasing several pounds of Indian ricegrass seed from a local seed supplier. We were able to find seed collected within a hundred-mile radius of our property. However, it took three years before an abundant stand of ricegrass was established. We learned that as the delicate young blades emerged, they were promptly eaten by a hungry population of cottontail rabbits. Eventually we countered this by installing plastic vexar tubes (typically used to protect tree seedlings) over each small ricegrass clump and leaving them there until the plants gained sufficient
volume to outpace the rabbit consumption. Now, several years later, we have a self-perpetuating stand of ricegrass that does not need protection. That first winter, we also broadcast-seeded a variety of native grasses, wildflowers, and shrubs that we collected in the vicinity of our property. These seeds also took their time in germinating, and it would be a surprise each year to see what came up.

In the first spring after construction, we began the second phase of our landscaping project—starting with the installation of a drip irrigation system. During this phase we planted a number of shrubs and trees, mostly acquired in one-gallon containers from local Colorado Plateau native plant nurseries. Our approach for reestablishing sagebrush, however, was to transplant small plants from elsewhere on our property. For the next five years, each spring, and sometimes in the fall, we would plant dozens of shrubs and trees each season and hook them up to the drip irrigation system. We selected a combination of local natives that we knew would have occurred on the site, as well as other natives that would be well-adapted and attractive in our new landscape. Some of the shrubs that we planted are cliffrose, littleleaf and alderleaf mountain mahogany, oakleaf sumac, Apache plume, big sagebrush, sand sagebrush, sand penstemon, fourwing saltbush, rubber rabbitbrush, fernbush, roundleaf buffaloberry, Utah serviceberry, and green Mormon tea. The variable foliage color and texture of these species provide a lot of visual interest. We were also able to purchase larger pinyon pine, Utah juniper, and ponderosa pine (four to six feet tall) from a local nursery for fall planting, giving us a head start on tree structure on the site. Because we have access to irrigation water from nearby Boulder Mountain, we also opted to plant a few fast-growing Fremont cottonwoods. For spots of color, we planted the brilliant magenta flowered desert four o’clock; datura, with its large, night-blooming,
tubular white flowers; yucca; and a variety of penstemons. In a shady corner by the deck, we fenced rabbits out of a small area for a blue grama lawn, presided over by alcove columbine, echinacea, Hooker evening primrose, coral bells, and blanketflower.

Due to the proximity of an alfalfa field, large numbers of mule deer browse their way across our property at night. In addition, there were occasional visits from stray cows, llamas, and even elk. It quickly became evident that most new shrubs and trees required protection (at least at first, when they were small). We made four- and five-foot-high cages from welded wire obtained from the farm supply store, or field fence reclaimed from the local dump, to protect plants and trees from browsing, trampling, and rubbing damage. Each cage was anchored to the sand by eight-inch-long, U-shaped wire stakes. As the plants prospered and outgrew them, the cages could be moved to smaller plants. Some species, gaining
sufficient size, no longer needed protection from deer; these included sagebrush, rabbitbrush, roundleaf buffaloberry, sumac, and Apache plume.

With the deep, loose sand on our site, small plants needed frequent watering to become established. The drip system provided this crucial early moisture, and battery-operated timers made it automatic. Some area sprinkling was done to help establish the bunchgrass at first—although this practice also encouraged the weeds. As some plants grew up, their emitters could be removed. As the plants around the house took off, they reproduced prolifically (especially sagebrush), resulting in numerous seedlings available for outplanting. In this way, we quickly had our own nursery and were able to transplant these seedlings in other areas, as well as sharing plants and seeds with others in the community.

Dealing with weeds has been an integral part of our project. We quickly learned that the “bare” sand was not entirely barren, but was well stocked with a seed bank of undesirable weeds as well as desirable natives. From the start of our project, we aggressively weeded the restoration area around the house. Fortunately, the weeding task has diminished each year as the native perennials became established and spread. We were very pleased that several native wildflowers and grasses volunteered, adding significant color and beauty to our landscaping project. These species included sand dropseed, pale evening primrose, purple aster, sunflower, and hairy golden aster. The latter species is a favorite fall food of the lesser goldfinch.

We succeeded beyond our wildest dreams and were amazed at how quickly we were able to establish a flourishing and beautiful native landscape. The combination of sand substrate and ample water resulted in ideal growing conditions and unbelievably rapid growth for the native shrubs. Littleleaf mountain mahogany planted at ten inches tall, with a few stems, grew within five years to a size five feet in height and four feet in circumference. Fourwing saltbush achieved heights and diameters of six feet in each direction within the same timeframe. Similarly, almost all of the shrub species we planted shared these dramatic gains in size.

Our project continues to evolve as the years go by. We now find ourselves removing plants from the landscape area around the house to maintain more openness. Since this area now needs little attention, we have shifted our efforts to restoring the remaining disturbed acres by planting grasses and sagebrush. Creating our native landscape has been an extremely gratifying undertaking, and we enjoy its beauty each day. Our project has attracted the interest of many local community members who are interested in establishing similar native landscapes, and our site is regularly visited by people for ideas and inspiration.
Starting Small, Becoming Emboldened
Ann DeBolt and Roger Rosentreter, Boise, Idaho—Semi-desert Zone

In 1990, as relatively new homeowners who also happened to be agency botanists, we decided to embark on establishing a small native garden in a non-landscaped portion of our yard. When we purchased this first home in 1988, it became apparent that this portion of the property had been used for parking cars and had received little attention, in spite of the fact that it served as the entry area into the back yard and to the back door of the house. Consequently, the silty clay loam soil was compacted and occupied by weedy, non-native species such as prostrate knotweed (*Polygonum aviculare*), bur buttercup (*Ranunculus testicularis*), spurge (*Euphorbia glyptosperma*), common mallow (*Malva neglecta*), and prostrate pigweed (*Amaranthus blitoides*). Because the area would continue to serve as an access corridor to the back portion of the house and yard, it was necessary to create pathways through it. And rather than rototill or churn up the entire 30 x 30 foot area and encourage additional weed seed germination, we decided to hand-pull the undesirable species in the spring, when the ground was moist, and plant around the edges of the area, leaving much of the middle open for walking. We used pea gravel as mulch for the unplanted areas and as our walking surface, because it was readily available, affordable, and would provide good drainage for our compacted site and the type of plants we wanted to grow.

Our project area was on the east side of the house and adjacent to the street. Unlike the rest of the yard, it had no automatic irrigation system. There was a silver maple to the north that did cast a small amount of shade onto a portion of the area for several hours of the day, but the site was generally open, hot, and sunny. It was the perfect place to start small with our native landscape, as this particular portion of the yard could only be improved.

At around this same time, Ann began coordinating a native plant sale for the Idaho Native Plant Society, and through the process of acquiring plants for the sale from native plant nurseries and the yards of fellow plant enthusiasts, we had access to a variety of species. While we wanted to emphasize native species in this garden, water conservation was also an objective, so we broadened our palette to include plants native to other regions of the country, in addition to several drought-tolerant cultivars.

Idaho natives:

*Achillea millefolium* (western yarrow)

*Erigeron pumilus* (shaggy fleabane)

*Eriophyllum lanatum* (Oregon sunshine, woolly sunflower)

*Lewisia rediviva* (bitterroot)
Linum lewisii (Lewis flax)
Opuntia polyacantha (Starvation prickly-pear cactus)
Penstemon deustus (hotrock penstemon)
Phlox hoodii (Hood phlox)
Salvia dorrii (desert sage)

Native to the United States but not to Idaho, or as otherwise indicated:

Echinacea purpurea (purple coneflower)
Festuca ovina Glaucu’ (blue fescue; ornamental cultivar)
Penstemon eatonii (firecracker penstemon)
Phlox subulata (low-growing phlox; ornamental)

The area was planted in stages, as species were acquired over a year-long period. We did not amend the planting holes (as is often recommended), but assumed that the pea gravel mulch throughout the open areas would work its way into the soil to improve drainage as time passed. Once planted, maintenance of this site required little effort. We irrigated those plants that seemed to need it, or would flower longer if they received water, once a week by hand. This included purple coneflower, Lewis flax, and the ornamental phlox. Others were watered approximately every other week, though we tried to withhold water from the pricklypear cactus and from the bitterroot once it became dormant in the summer. Other regular but infrequent maintenance included the following:

1. hand-weeding undesirable species that germinated in the gravel mulch
2. cutting back the Lewis flax after it flowered in the spring, thus reducing the seed production and spread of this species and promoting reflowering
3. removal of leaf litter that blew or fell into the area, as leaf litter promotes rotting during the winter if left on top of plants
4. cutting back the purple coneflower and firecracker penstemon flower stalks in late winter/early spring

We used local rocks to protect and highlight our plantings, and the area flourished and provided color and texture for us and passing motorists and pedestrians throughout most of the year.

Emboldened by our first success at incorporating native plants into our landscape, we decided to take on other sections of the yard. Modifying our landscape in sections worked perfectly for us, as we were on a corner and had built-in breaks in the existing landscape, such as a driveway, a sidewalk, and a concrete walkway. Our side yard was the next phase, with a portion of the front yard as phase three.

Both the side and front yard had a Kentucky bluegrass lawn, with shrubs and trees restricted to the edges, and an existing irrigation system. While there were several options for removing the lawn—rent a sod cutter, suffocate the grass with cardboard or newspaper followed by mulch to allow it to die in place, apply glyphosate (Round-Up) herbicide—we chose to use Round-Up herbicide in early summer and to withhold irrigation, so that by fall the lawn would be dead and ready for planting. This approach worked well for us and eliminated all risk of damaging the irrigation system, which we wanted to leave in place and functional for us as well as future homeowners.

The side yard (phase two) measured approximately twenty feet wide by seventy-five feet long. Here is a list of some of the species planted directly into the dead sod.

Idaho natives:

- **Artemisia cana** (silver sage)
- **Eriogonum heracleoides** (Hercules buckwheat)
- **Eriogonum umbellatum** (sulfurflower buckwheat)
- **Purshia tridentata** (bitterbrush)
- **Townsendia florifer** (dwarf aster)

Western United States natives:

- **Cercocarpus montanus** (alderleaf mountain mahogany)
- **Datura sp.** (sacred datura)
- **Penstemon palmeri** (Palmer penstemon)
- **Penstemon pinifolius** (pineleaf penstemon)

The plants came from a variety of sources, including native plant nurseries and as seedlings, from the yards of various other botanists. The area was mulched with large pine bark chips, which, once weathered, gave an appearance of rock mulch without the weightiness and permanence of rock. This area was irrigated by hand on an as-needed basis, which meant once every second or third week.
All the plants thrived except for pineleaf penstemon, which survived but would have flowered much more prolifically with weekly irrigation. Silver sage, which can spread by root sprouts, requires annual late-winter pruning to keep it from becoming too large and woody. Should it receive too much water, root sprouts can become a problem.

We chose to keep phase three—the 25 x 25 foot, north-facing front yard—simple, planting it to a ground cover of kinnikinnick (*Arctostaphylos uva-ursi*), with an intermittent scattering of non-native bulbs (crocus, hyacinth, miniature daffodils) for spring color. Kinnikinnick plants were placed at random with approximately two feet between them, knowing they would spread up to three feet wide, but that they would do so slowly. In the hot, dry, alkaline Treasure Valley where Boise is located, kinnikinnick grows best if it is given a moderated environment with partial shade or a north-facing aspect. It also requires twice-weekly irrigation in the heat of the summer, at least until the second year, when it is well established. This area was also mulched with pine bark, but mulch was kept away from the base of the plants to prevent rotting. This is generally required for most native plant species, particularly those with a herbaceous growth form.

We have since moved to a much larger property (1.8 acres) where we have planted a combination of traditional and native gardens. We continue to use many of the same species as listed above, but have become fond of a number of others for their ability to thrive and to beautify Treasure Valley landscapes: curlleaf mountain mahogany (*Cercocarpus ledifolius*), prairie smoke (*Geum triflorum*), sticky geranium (*Geranium viscosissimum*), Indian ricegrass (*Achnatherum hymenoides*), fernbush (*Chamaebatiaria millefolium*), shrubby penstemon (*Penstemon fruticosus*), maple mallow (*Iliamna rivularis*), and Munro globemallow (*Sphaeralcea munroana*). All are commercially available and are lovely examples of what our native habitats have to offer to those who wish to have a little bit of nature in their own back yard.
Learning by Trial and Error, or Life Is Change
Roger Kjelgren, Logan, Utah—Foothill Zone

I actually started with native plants in Illinois, where intermountain plants would be exotic, and hardwood forests native. I found Illinois natives much more interesting than your standard, run-of-the-mill landscape plants. Moving to Utah sixteen years ago, I was a bit taken aback with the apparently limited selection of plants to choose from. Very few trees, lots of strange shrubs, and all these funny perennial species, including so many DYC’s (damn yellow composites) that looked like mutant dandelions.

However, over time and with lots of hikes around the state, where I got up close and personal with the plants around the Intermountain West, my attitude changed. I began to appreciate how tough some of these plants are, growing out of rock with no water and no visible sources of fertility, how attractive so many are, and, particularly for low, slow-growing shrubs, how low-maintenance they are. The other, and more subtle, revelation was the sense of space that allowed me to see each plant as unique, something that is hard to do in the wetter parts of the country, where the native vegetation is usually a wall of green.

I also began to appreciate the diversity of color in the intermountain native perennials and the nice small size of many of the perennials and shrubs. Small size and tight growth meant less maintenance, which I really liked, because I’m not into recreational pruning. Finally, I began to realize that I really liked low-water-use landscaping, after dragging hoses to irrigate turf on our sloped front yard and watching the water run off onto the sidewalk. So, since life is change, it was time for a change to native plants.

I started with ripping out all bluegrass turf in my front yard, putting in rocks to maintain grade where the ground had sloped down next to the sidewalk. I then made two small patches of turf, in this case a warm-season, shortgrass prairie mixture of blue grama, sideoats grama, little bluestem, and buffalograss. The grass was surrounded by beds containing a mixture of non-native and native perennials and shrubs. I really learned what drought-intolerant indicator plants looked like, as I planted a lot of coneflowers that would wilt after several days without water, while all the other plants were fine. Right next to the coneflowers I planted cliffrose, which taught me about native plants that are intolerant of water, as it got the same frequent watering as the coneflowers, and died over a period of two years.

The biggest lesson from my willy-nilly mixture of natives and non-natives was the importance of space, a trademark feature of native plant landscapes. My landscape looked like a jumbled mess; without space between the plants, it was
impossible to make sense of the landscape. I knew something was amiss but couldn’t put my finger on it, until I asked my wife if she liked our native plant landscape, and she said flat out, “No, it’s a jumbled mess”—the first clue. So I pulled out all the plants that were even a little bit intolerant of drought, including the small prairie planting, because it was too small to look like anything other than an overgrown lawn.

To make the landscape more legible, I broke up the entire front yard with paths so no one bed was larger than about ten feet. Lo and behold, it worked, as my wife gave it her seal of semi-approval (the plants still looked a bit ragged, in her opinion), and I liked it better. I got rid of the smaller perennials and put in lots of penstemons (mostly *Penstemon strictus*, or Rocky Mountain penstemon), buckwheat, and evening primrose. I replaced the prairie with a native ground cover I was intrigued with, trailing daisy (*Erigeron flagellaris*), to see if it could be made to look like a lawn. I also set up an extensive drip irrigation system, using lots of spaghetti tubing where every plant had an emitter.

This new setup worked much better, in the sense that things didn’t need much water, I had lots of color in the spring, and I had two marvelous lawns of trailing daisy that turned snow white for several weeks in May. However, this setup also started to fray around the edges after a few years. Putting drip emitters at each perennial proved to be totally impractical, as many of them, particularly
the penstemons, are short-lived if they are overwatered—where they died I was irrigating empty ground. I also discovered that a large number of native perennials needed to be cut back (deadheaded) in order to look good, which was a lot of work, in my estimation. Finally, the trailing daisy was a bit more complicated than I realized. It was dense enough to be fairly competitive against many weeds—but those it couldn’t outcompete included many volunteer grasses from the former prairie and or some broadleaf weeds. Because both trailing daisy and the weeds are broadleaf perennials, there are no herbicides to control only the weeds. The only broadleaf weed to actually be a problem was field bindweed. A spot application of glyphosate and 2,4-D took care of that. I transplanted a few trailing daisy plants and watered them, and their phenomenal growth rate filled in the blank spot in a hurry. Another thing I learned about trailing daisy was that the runners can become so dense at the end of a season that they can shade out the leaves, so the plant cover thins out and lets in weeds.

While there is a bit more to learn about maintaining a trailing daisy lawn, it does appear that if I mow the runners in late summer, the leaves come out stronger the following spring.

After a few more years of pondering this arrangement, my current state of mind is to simplify my native landscape by going with one or two long-lived perennials that need minimal cutting back—such as pink smoke buckwheat (*Eriogonum racemosum*) and lacy buckwheatbrush (*E. corymbosum*)—and keep shrubs such as manzanita (*Arctostaphylos* hybrids), littleleaf mountain mahogany (*Cercocarpus intricatus*), and Utah holly (*Mahonia fremontii*). These are very drought-tolerant and need little or no supplemental water, require no pruning, and generally look good. We’ll see what happens next.
Designing on the Native Plant Frontier
Bettina Schultz, Elk Ridge, Utah—Foothill Zone

Prologue

I garden with Susan Meyer on a one-acre property in Elk Ridge, Utah, a few miles south of Provo. When we moved into the house in 1989, the front yard was a wasteland of ratty lawn, on a north-facing slope in the foothill zone. There were some irises and a few trees and shrubs next to the house, a small pine tree in the northwest corner, and lots of whitetop in the grass. The lawn area closest to the house was the most fertile and got the most shade. Then there was a fairly steep slope down to another flattish area at the bottom of the yard. Our soil was full of clay, but since there were plenty of rocks in it and we were on a hill, there was no problem with drainage.

Over the next twelve years, we reduced the lawn area by clearing out the edges and planting shrubs, trees, bulbs, and mountain wildflowers, and installing a drip system to cut down on the area that needed to be sprinkled. I was the principal lawn-mowing person, and I quickly tired of hauling the noisy gas mower up the steep part of the lawn. So we took the grass out of the steepest part first, replacing it with some big stepping stones. Then we cut a big circle out of the center of the steep area and planted it with flowers. I built an informal rock retaining wall above and below the circle. Eventually we cut away most of the rest of the steep part, extending the retaining wall and planting penstemons along the top and bottom. By this time we had removed about half the grass.

Taking the Plunge

In 2002, we decided to finally go all the way and kill the bluegrass. By this time I had some experience designing Utah Heritage public demonstration gardens, but I discovered that letting go of our very own lawn was a scary prospect. I mulled over the idea for a long time before we actually did the deed. In fact, there were several ideas that played into the eventual design.

I was stuck on the notion that we needed something low and flat to replace the lawn. Somehow, ground covers didn’t feel like the answer. Then one day I saw a little photo on the Internet, a small area, full of shrubs of varying heights, colors, and textures, with a walkway next to the planting. A light bulb went on in my head. While I still needed some low, flat areas to set off taller vegetation, I could use hardscape—walkways. That idea opened the door for the rest of the design process. The thing about lawn, after all, is that you can get to wherever you need to go in the yard by walking across the grass. So I started looking at the
yard in terms of destinations—where did my pathways need to go?

I measured the area and made a simple map of the existing features I knew we wanted to keep: the trees and shrubs around the edges, the circular bed, and the retaining wall with its penstemons. I made lots of copies of the base map, so I could scribble on one with abandon and always have another copy to try again. Then, by thinking about where we typically wanted to go in the yard (and actually walking around in it), I was able to plan the path system. The path system turned out to have another advantage: it broke up the vast area of the front yard into smaller chunks, which were easier to think about. I made the main paths wide enough to accommodate our garden cart, knowing that as the plants grow up, the paths will become less noticeable.

I started to think about what the yard would look like from two main vantage points: from the driveway, as you approached the house, and from the living room windows that looked out on the front yard.

When I thought about shrubs, I remembered something I had seen years before. We were driving through central Utah, and I looked off across a wide valley to the low hills beyond. The floor of the valley was covered with blue-green sagebrush, and as the land rose up the hillside, there were bands of different colors of vegetation—olive green, gray-green, pale gold, and the dark blackish green of distant junipers. The bands were fairly distinct, but the range of colors was subtle, and it gave me a feeling of peace. I decided to use this idea in the yard by making bands of different-colored shrubs. Since we already had a band of lavender and another of day lilies across the east side of the yard next to the driveway, I just repeated the bands, using shadscale, winterfat, spiny hopsage, lacy buckwheatbrush, green Mormon tea, and black sagebrush. Desert sage and Indian ricegrass filled the area between the main path and the existing bulb bed along the front walk, with another section going to low rabbitbrush and more Indian ricegrass.

Then there was the circle bed. I decided to put a spiral path through the circle and fill the area around it with the lowest-growing flowers. It was Susan’s idea to substitute sand for our clay soil in the spiral planting area. She hauled many loads of dirt away, and many loads of sand in, to make that happen. The flowers in the spiral were planted in a random mixed pattern, like a wildflower
meadow. They have been extremely happy with the drainage and low fertility.

I put some of the larger flowering plants in the areas adjacent to the spiral bed, keeping them grouped together as blocks of color. There were a few accent plants at focal points in the design: an alkali sacaton grass “fountain” at the tail end of the shrub area, an Apache plume in the flower area just east of the spiral, and some blue grama grass among the flowers around the outside of the spiral bed. Since the view from the driveway is toward the west, the grasses look great when backlit by the afternoon sun.

In the shadier, more fertile, drip-irrigated area closer to the house, I put plants that could take more water: a bank of firechalice, a row of little bluestem grasses, and a special spot for “foreign” penstemons—not native to Utah, but gifts from various friends. We also added some shrubs and another row of firechalice in the drip irrigation zone around the edges of the yard.

An Ongoing Process

Our yard is an experiment in progress. Many of these plants had not been used before in a home landscape, in a foothill setting. Could the desert shrubs handle
the snow load? Which plants would be the winners and which the losers? What would the maintenance be like? We’ve been learning from the yard over the past several years since we planted it.

So far, the shrubs have not had any real trouble with the snow or the amount of precipitation in our zone. Spiny hopsage turned out to be a mistake. It loses its leaves by late summer, so we interplanted a stand of “pink smoke” buckwheat, which blooms when the hopsage goes dormant. We’ll see how it works. The low rabbitbrush got too floppy in our soil, so we replaced it with a group of yellow-flowering lacy buckwheatbrush plants—that species has been very satisfying. Since we left the dead sod from the former lawn in place after killing it, some plants got surprisingly large because of the high fertility. We’re hoping that this effect will diminish over time.

Some of the real winners have been little beebalm, silver buckwheat, showy sandwort, desert sage, fragrant evening primrose, and all the grasses. An unexpected bonus has been the fascinating array of pollinators that visit our flowers, from native bees to butterflies, moths, bee-flies, and hummingbirds. As for maintenance, it’s been surprisingly easy. In the spring we get a carpet of seedlings around the shrubs. Weeding them out takes the two of us a few hours. We hand-water new plants through their first summer, and haven’t watered at all since then, except for the little beebalm and the areas on drip. Watering with drip irrigation involves turning the faucet handle on about an eighth of an inch in the morning and closing it several hours later. As the shrubs grow up, they need a bit of pruning to keep them from getting gangly. In the spring, I whack the bunchgrasses back to a few inches high, to tidy them up and let the new growth show itself. I definitely don’t miss the lawnmower.