The Seed

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SUSTAINABLE LANDSCAPES FOR HEALTHY HOMES & COMMUNITIES

Trying to Define Sustainable Landscapes

Justin Evertson, Nebraska Statewide Arboretum, Inc.

Ask a dozen people to define sustainable landscapes and you'll likely get a dozen different answers. I know because, in a very unscientific survey, I asked several friends and relatives to describe what they thought a sustainable community or home landscape was. The people I asked ranged widely in age and philosophies—and were certainly not all tree-huggers. Their responses were revealing and often humorous:

A nurseryman from the Panhandle clearly sees a day in the not-too-distant future when the cost and scarcity of potable water will force a new way of landscaping that requires significantly less irrigation.

A couple from suburban Omaha wants desperately to create a more natural landscape, but feels pressured to continue to blend into their highly manicured neighborhood. They hope to see a day when native plantings and a bit of wildness are more accepted in affluent neighborhoods.

A neighbor who takes great pride in keeping his lawn lush, green and tightly-cropped rather enjoys the effort and says he wouldn't mind mowing every day. He even offered to come mow my yard.

A nine-year-old nephew is most interested in exploring the wet drainageway near his home for frogs, turtles and bugs—especially anything he can scare his sister with.

A brother from the Panhandle hopes people will return to growing more of their own food and start creating landscapes that better celebrate the subtle beauty of the western high plains.

A young woman and avid runner advocates for trails and pedestrian-oriented landscapes that offer diverse experiences.

A couple who is very conservative in their political beliefs is working hard to create a lasting, sustainable legacy with their home acreage. They've already planted prairie grasses, a buffalograss lawn and numerous trees and shrubs, both for their own pleasure and that of the wildlife they strive to attract. They help dispel a myth that sustainable landscapes are only for prairie-hugging liberals.

Almost everyone, regardless of socio-economic status, seems to recognize that we need to live more sustainably, to conserve fuel, reduce and recycle waste, cut down on pollution, conserve water, etc. The debate about sustainability seems to lie more in the details of how to achieve these common goals, rather than whether the goals themselves are valid.

This leads us to the topic at hand: sustainability of community landscapes. Three common themes seem to emerge. First, community landscapes are people-oriented and must be planted and managed with that primary purpose in mind. Second, sustainable landscapes should generally help conserve natural resources, especially water. And third, our planted landscapes should benefit the natural world around us. With these basic goals in mind, there are several topics and recommendations that deserve greater discussion and consideration as we strive for sustainability.

Water Use. Statistics show that municipal water use in Nebraska can increase by more than 200 percent during the growing season, with the bulk of this increase going to landscape irrigation. In Lincoln, there are days when more than 50 million gallons of water are pumped from the Platte River to meet this demand. Almost everyone agrees that water will not remain cheap and plentiful forever. Indeed, in recent years, both the Platte and Republican Rivers ran dry during the summer. Presently the state of Nebraska is embroiled in several highly emotional and expensive water-related issues, including a lawsuit filed by the state of Kansas over the lack of flow from the Republican River. It seems very obvious that we need to reduce the amount of irrigation used to maintain our planted landscapes.

Human life is dependent on a wide and healthy web of wildlife, including the insects within our own yards (*Bringing Nature Home,* Doug Tallamy).

Trying to Define continued inside

The Nebraska Statewide Arboretum's Next 30 Years—Sustainable Landscapes and You

Dick Meyers, NSA, Inc. Board President

What do the Nebraska Statewide Arboretum, sustainable landscapes, and you have in common? The future. If you've been a long-time member of the Arboretum, you know that our mission as an organization has evolved over time. We started out 30 years ago as an organization devoted primarily to the expansion of tree species diversity in communities across the state. NSA's unique vision of affiliate arboretum sites that spanned the diverse soil and climate landscape of the state was a vision focused initially on expanding tree species diversity through testing, demonstration, and education. It was and remains an innovative vision. But the organization's leadership early on recognized that vision was too narrow.

The organization's mission was expanded in a major way with the implementation of the Green Space Stewardship Initiative—a partnership between the Nebraska Statewide Arboretum and the Peter Kiewit Foundation. That partnership initiated a program of community landscape grants that in 20 short years transformed public landscapes in virtually every community of the state. The significantly revised mission, to fund the development of progressive community landscapes, has become the core mission of the Arboretum today. In that mission, the Nebraska Environmental Trust, the Nebraska Forest Service and The Peter Kiewit Foundation remain strong partners.

By now, most of you know that NSA lost its university funding. For 30 years, university funding has given it the luxury of a stable budgetary base from which to develop and refine the ideas and programs that have made it such an impressively transformative organization for Nebraska. We're sad about losing university funding, but our work is far from over, so keep on reading—

because that's where sustainable landscapes and you come in...

You don't need to own a crystal ball to predict that big changes are coming to your landscape in the very near future. Those of us in western Nebraska have just come through the longest and most severe drought in living memory. It has challenged agricultural irrigators, municipal water systems and urban homeowners alike to find ways to conserve the most precious substance in our state and on the planet—clean water. Those of us living at ground zero of the drought have seen firsthand how poorly prepared we are to create the sustainable landscapes of the no-longer-distant future. By "we" I mean garden center operators, landscape designers, landscape managers, and master gardeners, as well as the state's homeowners. Specifically, this collective we does not know the

NSA's Next 30 Years continued inside

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Perennial Perseverance

Karma Larsen, Nebraska Statewide Arboretum, Inc.

Borders with perennial geraniums, pasque flower, roses, lily and iris are long-lived and low-maintenance (photo courtesy Kit Dimon).

They just keep getting better: sedum, prairie dropseed, hardy hibiscus, daylily, butterfly bush and sumac (Jan Riggenbach's garden).

In asking gardeners about sustainable perennial beds, I turned up a spadeful of worms! "Gardens are incredibly complicated," said Harlan Hamernik, "even in the smallest, most protected environment, one plant grows and shades another, one is in bloom while another is dying back. A good gardener is aware of all those changes and keeps the focus on plants that are in their prime, cutting back and filling in as needed."

"Bomb-proof" is the word John Royster, landscape architect for Big Muddy Workshop, used for hostas, peonies, daylilies and roses—plants that remain in place and slowly expand over time. Still, he said "there's no such thing as a no-maintenance plant or landscape."

Steve Nosal believes it's the gardener and not the garden that makes the difference, "what makes a garden long-lived is the dedication of the gardener to keep it going." Nosal has overseen Lincoln parks for several decades and has come to define a perennial as a plant that survives 3-7 years rather than 10-15 years.

10-20-30 Years and Counting

For sustainability, it's hard to beat garden columnist Jan Riggenbach's front yard in Iowa's loess hills: "Requiring no mowing and no hoeing, my front yard attracts major interest with a minor plant—*Vinca minor*, that is. This lush, dark-green groundcover has virtually maintained itself for 30 years, providing four seasons of flowing foliage while concealing a spectacular springtime surprise: It's underplanted with hundreds of spring-flowering bulbs, such as daffodils and hyacinths. The bulbs, like the vinca, were chosen for their undemanding habits and resistance to pests. The flowers leap up through the vinca, whose dark leaves provide a handsome contrast. At the same time, the vinca itself is covered with dainty purple flowers. Soon, the bulbs' dying foliage fades into the vinca, as visitors continue to marvel at the yard that takes care of itself."

Riggenbach also recommends "slow-to-establish perennials that are there for the long haul and never need dividing. A few of my long-time favorites—gas plant, *Baptisia*, baby's breath and prairie dropseed—have sailed through all kinds of conditions, including both drought and heavy rains, year in and year out."

Gary Zimmer, curator of Gilman Park Arboretum in Pierce, cares for several perennial gardens planted 13 years ago: "Some things are very sustainable and others definitely are not! In the xeriscape garden, shrubs shaded out blanketflower, flax, prairie coneflower and blue fescue but a combination of May Night salvia, yarrow, false indigo, prairie dropseed, Blaze little bluestem and Indiangrass looks even better than in its second and third year. In the wildflower and ornamental grass garden, Indiangrass and maidengrass overtook everything but snowdrops, sedge, obedience plant, poppymallow and goldenrod. And Magnus coneflower took over most of the park entrance garden, but Goldsturm *Rudbeckia*, balloonflower, Fireworks goldenrod, candytuft and Blue Wonder catmint look better every year."

In Lincoln, Master Gardener Kit Dimon wrote: "We have several beds with ornamental grasses that have been in at least 10 years: Korean feather and Karl Foerster reed grass; *Miscanthus*, Hameln *Pennisetum*, little bluestem, switchgrass and blue oat grass—which works well against rocks and with *Rudbeckia* and *Echinacea*. Other long-lasting perennials include: catmint, Joe-pye weed, butterfly milkweed, perennial geraniums, pasque flower, lily, iris, aster, *Salvia, Heuchera, Boltonia* and *Coreopsis*. For shrubs, *Hydrangea* and shrub roses are long-lived, as are the grape and *Clematis* vines that hide lattice under our deck (Dick Campbell's idea). And most of my 10-20 year-old groundcovers are still going strong: *Vinca; Pyracantha; Epimedium; Ajuga;* plumbago; sweet woodruff; *Lamium; Cerastium* and thyme."

Another Lincoln gardener, Linda Hillegass, said her recommendations for long-lived shade plants include: hosta, *Epimedium*, variegated Solomon's seal, meadowsweet and a variety of ferns. For sun, Hillegass has roses that "trace back to a rose brought over by my great-grandmother when she immigrated to the U.S. from Germany" and peonies from another great-grandmother. She also recommends Siberian irises, "the tall bearded ones have to be divided every three or four years, but Siberians just go on and on," catmint, creeping veronica and daylilies ("Good luck killing them!")

In Omaha, the peony display at Joslyn Castle dates back to the early 1900s and the rose garden at Memorial Park's Rose Garden celebrated its 50th anniversary this year. Omaha Rose Society President Anita Eckley said the perennial plantings around the Presbyterian church and old bank in Bellevue are 10-15 years old. These historic landscapes include daylilies, coneflowers, peonies, columbine, salvia, malva, Russian sage, Joe pye weed, hibiscus, beebalm, garden phlox and self-seeding cosmos and cleome. While looking to old gardens to see what grows best, Eckley said, the focus in Omaha is on new gardens underway by the Gifford Park Association, Dundee-Memorial Park Association and Men's Garden Club.

Garden Heroes

From South Dakota, garden writer Cathie Draine wrote "Any plants that manage to stay alive for a decade or keep a semblance of the original planting here in South Dakota are TRUE GARDEN HEROES to me!"

Draine uses long-lived groundcovers to protect exposed, rocky slopes. For keeping grasses out, she recommends lamb's ear, prairie smoke, sedum and Queen Charlotte viola—"a perfectly shaped violet as lovely in form as a prize-winning African violet." She has high praise for her 20-year-old planting of Karl Foerster reed grass, loves Mongolian Gold shrub clematis and leadplant and finds the species *Penstemons—strictus, barbatus,* and *hirsutus*—"too wonderful for words." Along with perennial geraniums, pasque flower and buttercup, they've been in place in her yard for 10 years or more.

It's obvious there are some very old plants still going strong in gardens throughout the Great Plains. On the other hand, gardeners said, it can be helpful to have just enough temperamental, short-lived ones to make space for that next new plant on the wish list!

Riggenbach's "lawn" of Vinca minor underplanted with spring bulbs. Gilman Park Arboretum in Pierce has proven a good testing ground for long-lasting perennial combinations.

Editor's Note: Not what we do but why we do it

Karma Larsen, Nebraska Statewide Arboretum, Inc.

Every evening in mid-August, a barn spider spun its web on our arbor. With a flashlight I could watch the meticulous process, watch the glimmering filament move from abdomen to leg to existing structure. Thanks to Charlotte, the whole world slowed down and fell into place for a few minutes every night.

We decided to do this publication on sustainable landscapes several months ago and I've been mentally wrestling with it ever since. I knew all the problems, knew it was too big, full of conundrums, knew that what was sustainable to one person wasn't to another. I knew it couldn't be rightly looked at without examining ourselves, knew we couldn't talk about sustainability without being willing to give something up.

One of the primary questions sustainability poses is one of ownership, since that ultimately guides any decisions about a particular resource. Here at NSA, we've had to consider the sustainability of our own organization. We've also had to rethink ownership. We work with a lot of communities and many different individuals and organizations, so the issue of ownership gets a little blurry.

But one of the essential things sustainability reveals is that we truly "own" almost nothing and, more importantly, it reminds us that the value of all the things we cannot own—fresh air, sunlight, woodlands, prairie—are worth more than any words can express or any dollar amount can begin to reflect.

If we do our work well, the true "owners" of the work we do will be the generations to come who walk beneath the trees we planted, stop to pay attention to a flower they had never seen before, bring their children to a public garden they remember from their own childhood. If those of us in environmental organizations do our work well, no organization or individual will own any of it, but all of us will have had the privilege of holding that fragile filament in our hand for one brief moment before we pass it on.

Trying to Define continued from cover

The Turfgrass Lawn. When it comes to the landscape, the elephant in the room is the turfgrass lawn. It is the single most intensively managed component of the landscape and receives the bulk of all inputs: labor, water, fertilizer and pesticides. In the Great Plains, municipal water systems are often designed at three to four times the basic flow needed to supply drinking—primarily to keep our lawns green. Add to that the millions of pounds of fertilizer and pesticides applied to lawns along with the near constant mowing and it is clear that landscape sustainability will be derived in large part through changes in how the lawn is managed. Lawn is vital to the function of the community landscape but we can minimize our lawns and choose lower-input turfgrass—and researchers have developed new cultivars and management strategies to help us do just that.

Stormwater Management. Until recently, management of stormwater was an afterthought in the development of most landscapes. Landscapes were designed and graded to push stormwater as quickly as possible to nearby drainageways and streams—leading to drainageway erosion, overtaxed stormwater systems and significant non-point source pollution of local rivers and streams. Omaha is dealing with a $1.5 billion problem in trying to better manage its stormwater. Sustainable landscapes help manage stormwater by slowing, storing and filtering as much water as possible.

Use of Native Plants and Plant Communities. Many of our planted landscapes are created in pursuit of an aesthetic ideal aimed at "taming" the land. As a result, landscape plants are chosen primarily for ornamental characteristics rather than their broader role in the landscape. Do they provide food or habitat for wildlife? Help build soil? Help conserve water? Do they provide a sense of place? Plants introduced from other countries and regions often dominate our planted landscapes, making them surprisingly homogenous across the country. Some of these plants have become invasive pests. Using regionally native plants adapted to our soil and climate will help make landscapes more sustainable.

Biodiversity. Sustainable landscapes can and should be diverse and support a wide range of wildlife, especially insects. Many people see insects in the landscape as pests that need to be eliminated, but the vast majority are either benign or beneficial and they help support a wide range of other beneficial wildlife including birds, bats, reptiles and amphibians. Sustainable landscapes that are biologically diverse strike a more natural balance and minimize the impact of diseases and insect pests.

Rain gardens help filter and decrease runoff. Top: Staff from Fireworks and NSA install a rain garden behind the restaurant. Bottom: Newly-installed rain garden will help manage parking lot runoff near NSA display gardens.

Pesticide and Fertilizer Use. People regularly rely on chemical pesticides and fertilizers to help keep their lawns green and lush, and to treat for insects and diseases on other landscape plants. The safety and efficacy of many of these chemicals are being evaluated because they pose health concerns or can cause serious environmental damage when improperly used. The EPA has banned many common pesticides in recent years and will no doubt be banning more. It seems imperative that we use them as sparingly and carefully as possible.

Tree Selection and Planting. Trees are often selected for ornamental value with little thought to their broader function in the landscape. Shading, wind protection, longevity and climate tolerance take a back seat to spring flower and fall color. In addition, many communities have become dominated by only a few species of trees, thus increasing the potential for significant tree loss from newly emerging and fast-moving diseases, insects and weather events. New diseases and insects could claim millions of community and farmstead trees across the state in the coming years. Community forests that are more diverse and well-managed are much more sustainable.

Maintenance. There's no way around it—community landscapes require regular maintenance: mowing, trimming, pruning, brush clearing, tree trimming and removal, snow plowing, sweeping, raking, mulching, replanting, etc. Plants grow, it's what they do, and nearly all plants in the landscape eventually need to be controlled. However, there is no law that says all lawns have to be mowed at 3" or that every stray blade of grass needs to be trimmed or that leaves need to be blown off sidewalks. Gas-powered maintenance equipment, especially mowers, trimmers and blowers, are constantly at work during the growing season and they have become a major source of air and noise pollution. A goal of sustainable landscaping should be to reduce the use of gas-powered maintenance equipment. This can be done partly by de-emphasizing high-maintenance lawns and by using equipment that requires less fossil fuel.

Human Involvement. Although sustainable landscapes may require less lawn care, that does not mean they necessarily require less maintenance. Indeed, humans may actually need to become more involved with such things as weeding, direct watering of plants, sweeping (instead of blowing) debris from sidewalks, mechanical control of insect pests, cutting or burning of ornamental and natural grasses, and management of various types of groundcovers, from shrubs and perennials, to lawns and native grasses. More human contact in maintenance would have the added benefit of helping to reconnect more people to the natural world.

It seems fairly clear that there is a disconnect between our appreciation of the natural environment and awareness that our own landscapes are part of that environment. Most people find beauty and comfort in natural areas and many are attracted to such places for recreation and retreat. And yet the green spaces of our communities are primarily thought of as canvasses to be manipulated in any way we desire, often without regard for the broader natural context in which they reside. We work tirelessly and at great cost to impose our will on Mother Nature. The natural world is kept away, at least to the edge of town. We go days or weeks without really interacting with it. Many of us are less active, obesity rates are rising and many of our children seem to prefer staying inside and playing video games. Could it be that we need more nature in our lives?

Most community planners agree that to be more sustainable, community landscapes must convey a more natural form. Native plants and plant communities that attract a wide range of insects and other wildlife are an important part of the equation. A great book that helps convey this message is Doug Tallamy's *Bringing Nature Home*. In it, he describes how plants and animals are intimately connected to each other and how important they both are to our daily lives, even within our own backyards. Though we seem to reject it in much of what we do, Tallamy says our survival as a species is dependent on this interaction. I encourage anyone exploring sustainability to read this book and to welcome native plants and wildlife into their landscapes.

Sustainable landscapes mean different things to different people. One person might develop a prairie-inspired landscape, another a woodland, a third might take a more traditional approach, and someone else might let Mother Nature take its course and enable the wild side of things. Whatever the final look, our landscapes should be maintained in ways that benefit both humans and the natural world around us.

At the Nebraska Statewide Arboretum, we're working to show that sustainable landscapes can be a visually attractive source of pride and enjoyment—in the present and also far into the future. Developing sustainable landscapes is not a complicated endeavor; its basic principals are easily understood and relatively easily achieved. The hardest part may be to just relax and let a little more nature into the mix. What are we waiting for?

NSA's Next 30 Years continued from cover

plants needed to create sustainable landscapes, doesn't know their adaptive capacities, doesn't know how to combine them in ways that are aesthetically pleasing and also ecologically viable, and perhaps finally, doesn't know how to best build and maintain these landscapes.

So although a significant part of NSA's annual funding has been cut, the need for the Nebraska Statewide Arboretum, has never been greater—the need for its already established network of affiliate sites, for its vision, its accumulated plant knowledge and experience, its connection to community leaders, funding sources and landscape activistse. It will take all the organizational knowledge and capacity created over the first 30 years of the Arboretum's history to effectively address the immensity of the landscape issues our state is likely to face in the next 30 years—perhaps in the next 10 years. That's the reality the staff, board, and membership of NSA must be prepared to face. That's why we're excited about the future of the Arboretum.

Back to the crystal ball. What's going to force these dramatic changes in our landscapes? The list is truly daunting.

Try the potential loss of 50 percent less municipal water for lawn and landscape irrigation within 10 years. Try a relatively permanent change to a 5 or 10 degree warmer climate, how does even that small change affectswhich plants survive and thrive?. Try soaring costs to heat and cool homes, businesses and public buildings.

Three looming issues, one or more of which our state is almost certain to face in the very near future. Any one of which could force dramatic changes in the way we design our landscapes, the plants we use, the size of lawns and the types of grass we grow in those lawns, the construction and maintenance practices for lawns and landscape plants.

We could wait until these issues are upon us in three, or five, or ten years, and then figure out what to do.

—We could wait until then to apply for grants to test heat- and drought-tolerant plants at arboretum sites across the state's diverse climate and soil landscape.

—We could wait until then to develop an extensive database of plant experience from affiliates, from previously funded community landscape projects all across the state and from NSA member gardens and landscapes all across the state.

—We could wait until then to create demonstration sustainable landscapes in highly used public spaces in communities around the state.

—And we could wait until then to consult and collaborate with the managers of the state's large public landscapes like schools, city parks, cemeteries, manufacturing plants and shopping malls, to help them make the changes needed in these typically large, expensive—and often very unsustainable— public landscapes.

Or we can do it now. The Board of Directors of Nebraska Statewide Arboretum, Inc. has decided we should do it now.

Now for the fun part—sustainable landscapes and you...

I predict that Nebraska's sustainable landscapes of the not-so-distant future will be more diverse and colorful, have greater year-round interest than the turf-dominated landscapes of today, support healthier and more diverse wildlife, and actually be less work to develop and maintain. But there is much work to do as these major changes to our landscapes get underway and we find and test new plants and combinations and how to best manage them. Some of this work is already underway in arboretums across the state. A great deal more of that work will be getting underway in the next few years.

But it's likely that much of this work will take place in YOUR landscape or garden. If you are a member of NSA, Inc. there's a good chance you're the first one on your block to try new plants, to experiment with new plant combinations, to try new landscape design concepts. Your love of plants, your delight in trying new plants and new plant combinations, your willingness to have your home landscape look different from your neighbor's, will make a significant contribution to the collective process of creating Nebraska's new sustainable landscapes. In fact, the job can't be done without you. We need your love of plants, your willingness to try 10 potential new plants to find the two really good landscape plants even your neighbor can grow successfully, your willingness to share your experience with our staff, your friends and neighbors, and anyone else who will listen.

Thanks for being a part of the Nebraska Statewide Arboretum's first 30 years. I hope you'll continue to be a part of this great organization because the FUN part, in fact maybe the most important part, is just beginning!

Tips for Sustainable Landscapes

Water conservation

- Don't overwater! Use drip irrigation if possible, and carefully monitor any irrigation systems used. Frequent, shallow watering makes plants susceptible to wind, drought and temperature extremes and results in shallow roots that are vulnerable in dry periods.
- Reduce the amount of impermeable surfaces by using plants, porous pavement or other permeable surfaces for driveways, sidewalks and patios.
- Water early in the day to prevent moisture loss and avoid disease problems.
- Use rain gardens, bioretention cells, swales, vegetated filter strips, permeable surfaces, green roofs, underground tanks or rain barrels to conserve water wherever feasible.
- Redirect downspouts away from pavement and onto planted areas.
- Protect slopes with groundcovers.

Arboretums in Gering (above) and Chadron (top right) use prairie natives for drought-tolerant, low-maintenance landscapes.

- Install underground tanks to collect rainwater from rooftops and hardscaping and use for watering later.
- Mulch rain gardens with shredded hardwood or shredded bark mulch, which are less likely to wash away than lighter weight mulches.

Turfgrass and Lawn

- Lower your expectations; accept some mid-summer dormancy or drabness and apply only enough water to keep the lawn alive but not lush, realizing it will green up again in fall.
- Limit turfgrass lawn to where it is truly needed for play and activity. Trees, shrubs and perennials use approximately half as much water as turf.
- Avoid using turfgrass on slopes, in deep shade or in other difficult areas.
- Convert the lawn to more drought-tolerant species like fescue, buffalograss, blue grama or other warm season grasses that require only minimal watering once established.
- Reduce the use of fertilizers and consider using natural alternatives. Many turf professionals now recommend fertilizing only in the fall.
- Consider using non-grass plants as turf where foot traffic is not anticipated. Yarrow, sedum, clover, sedges and many other plants have shown great potential.
- Modify weed management strategies. Spot spray or hand-pull as many weeds as possible. Broadcast spray for perennial weeds only in fall when kill rate is better and there is significantly less harm to surrounding landscape. Never use ground sterilants or products containing dicamba that can move through the soil and harm non-target plants.
- Aerate lawn regularly to improve water infiltration.
- Use a hand-powered mower to decrease emissions—and get exercise!
- Leave grass clippings on the lawn and use mulching mowers to return residue to the soil (lawn clippings emit as much methane as manure in public landfills).
- Set mower higher in summer months and mow less frequently to protect grass from heat, conserve moisture and decrease stress of regrowth.

Landscape Plants

- Group woody plant materials. Trees are used to growing close together and protecting one another from extreme weather. You can create the same environment by massing plants together in large mulched areas to provide better growing conditions, protect from mower blight and minimize irrigation.
- Right tree, right place, right way. For maximum growth and vigor, select a good quality tree to match your site, avoid utility lines and plant it at the correct depth.
- Regularly inspect trees for potential insect and disease problems.
- Use 3" of mulch on planting beds to conserve water, decrease temperature fluctuations, reduce weeds and increase organic matter. For trees, keep mulch away from the trunk and mulch to the dripline .
- Only fertilize for known deficiencies. Excess nitrogen encourages top growth at the expense of root health.
- To minimize maintenance, use shrubs that look best unpruned.
- Compost garden waste and use it on-site to improve soil and save on disposal fees and transporting costs.
- Carefully prune trees while still young to develop good branch structure.
- Get a second opinion before attempting to control insects and disease problems that may have little impact on the health of the tree.

Landscape Design

- Use deciduous trees and shrubs south and east of buildings for summer shade and evergreens to decrease winter winds from north and northwest. Conifers are most effective for wind resistance planted away from buildings at a distance of 1-3 times the height of the trees. Correctly placed trees can lower air conditioning bills 15-50 percent and heating bills 25-40 percent.
- Include a diversity of plants, including native plants, for hardiness, pest and disease resistance and to provide food and shelter for wildlife.
- Include edible plants—vegetables, fruits, nuts—in the landscape.
- Plant groundcovers on hard-to-mow slopes to prevent soil erosion and decrease maintenance.
- Group plants with similar needs for moisture, care, exposure, soil type.
- Integrate designed/developed landscapes with the natural landscape.
- Landscape "vertically" to increase shade and create milder microclimate.
- Use recycled and/or local source hardscaping—wood, brick, stone,

What kind of a world are we leaving to our grandchildren... to their grandchildren? (photo courtesy Gerald Hopp)

Sustainable development—
"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

(World Commission on Environment and Development)

Sustainability—Think Grandchildren

Bill Ahlschwede, Animal Scientist, Gardener and Grandfather

For years, even decades, I have been frustrated by talk of sustainability. The word seemed like jargon with a wide range of meanings. A colleague used to say "The word is not the thing." To think about sustainability, I think we need to look beyond the word, beyond the jargon.

In this era of short-term gratification and short-term economic strategies, sustainability reminds us to take a longer look, to think about what things will be like for our grandchildren and their grandchildren. What will planet earth be like at the end of this century?

It is apparent to me that many in our community, state, and nation are working toward sustainability. I see rain barrels to retain water and reduce soil erosion; hybrid cars to reduce gasoline use; bicycles to save gas and car miles; reusable grocery bags; neighborhood recycling centers; urban gardens; farmers' markets; energy-saving appliances… the list is endless. Each entry in the list has its own name, its own following, its own impact, and its own vocabulary. Hence, my confusion about the word sustainability; or is it "green," the new word for some parts of sustainability?

Most of the efforts are interrelated. Efforts to save fossil fuels, for instance, usually also have an impact on air and soil. Reducing soil erosion serves as an example of this interrelationship and it's basic to meeting current and future food needs. Corn farmers have increasingly turned to minimum- and no-tillage systems that save fuel, reduce erosion, increase the amount of organic matter in the soil, increase moisture-retention and sequester s more carbon. The effect an individual homeowner can have on soil erosion is miniscule compared to that of farmers. Yet collectively, the efforts of city dwellers to reduce runoff from rain and melting snow, grow their own vegetables, plant shade trees, and buy locally grown produce can offer the same benefits. Many small steps together can lead to large strides.

Many of the efforts toward sustainability that I see and practice involve small reductions in the standard of living. Small, fuel-efficient cars are not as comfortable as larger, heavier vehicles, and if operated in ways to maximize fuel-efficiency, increase travel time. Though the resulting lettuce, tomatoes, peppers and eggplant are delicious, raising vegetables in my backyard takes time and work. Composting rather than sending household waste to the landfill takes time and effort. My buffalograss lawn is not as green as many lawns in the neighborhood, particularly in winter and early spring, but it requires little mowing and no water or fertilizer to maintain a dense sod.

I've decided not to worry about the word sustainability, but to live better rather than larger, and to think in terms of my grandchildren and even farther ahead to what the world will be like for their grandchildren.

Resources

NebGuide 1405A "Landscape Sustainability" by Steven Rodie and Anne Streich

Bringing Nature Home, Doug Tallamy

City Sprouts "sustain communities through gardening," omahasprouts.org

Green Omaha Coalition, greenomahacoalition.org

Joslyn Institute for Sustainable Communities, www.ecospheres.com

Lincoln Green by Design, www.lincolngreenbydesign.org

Nebraska Environmental Trust, www.environmentaltrust.org

Nebraska Rural Initiative, ruralinitiative.nebraska.edu

Omaha by Design, www.omahabydesign.org

Sustainable Sites Initiative, www.sustainablesites.org

Sustainable Urban Landscape Information Series, www.sustland.umn.edu

UNL College of Architecture, archweb.unl.edu

Mission Statements

Nebraska Forest Service, "Improving peoples' lives by protecting, utilizing and enhancing Nebraska's tree and forest resources," nfs.unl.edu

Nebraska Statewide Arboretum, Inc. "Sustainable landscapes for healthy homes & communities," arboretum.unl.edu