GARDEN DESIGN

FOR POLLINATORS, SONGBIRDS & PEOPLE

CITY OF FORT COLLINS UTILITIES • APRIL 8, 2015

BASIC GARDEN DESIGN PRINCIPLES

- Know your garden/architecture style: formal, cottage, minimalist, wild or natural
- What colors, textures and forms speak to you and compliment your existing garden and structures? (Consider how the garden will look in different seasons, views, winter "architecture," color schemes….)
- How will you use your landscape? Imagine it as a series of "rooms," public, private, entertaining, play spaces, retreat areas….
- Start with hardscape: sketch in structures, paths, fences, berms, pergolas, and patios or decks.
  Tip: Use your smartphone to build a "library" of garden ideas: Shoot photos of features and plants you like, whether in gardens, nurseries or even the pages of magazines.

HARDSCAPE

- Hardscape—including patios, decks, fences, walls, berms, arbors, pergolas and other garden structures—provides the "built" architecture of the garden. Plants provide the biologic architecture.
- Start with the hardscape, and it will help define the different areas of the yard, creating different "rooms" or habitat. Then design plantings around your garden hardscape.
  Tip: Use spray paint (the water-soluble kind if you can find it) to outline garden areas and features on bare ground or lawn areas. You can "erase" the lines by scuffing the dirt or grass and re-draw them if they don't suit.

DESIGN HABITAT: Shelter + Food + Water + Relationships

- Shelter: layers both horizontally and vertically (upper canopy, mid-canopy, lower, shrubs, tall grasses, perennials and ground cover), plus windbreaks in the form of plants and more solid forms like boulders, walls, and fences.

- Structure also affects microclimate, making shade in winter and summer, catching snow and windblown detritus, and creating areas that may be much colder than the overall garden or much warmer. Understanding microclimate is key to knowing what to plant and how to create different kinds of habitat.

Tip: "Think" like a plant. Sit outside at different locations at different times to learn your garden microclimates. Where are the windy spots? Frost pockets? Hot spots?

- Food: Balanced meals versus snacks. Feeders are the snack-food of the bird world, lacking complete nutrition. Seeds, fruits, pollen and nectar on the plant come with the rest of the meal, including tiny insects for protein, pollen dusting fruits for extra fats and vitamins, and no agricultural pesticides and herbicides.

- Water: Drinking and bathing water can come in many forms, from mud or sand puddles for butterflies (and toddlers!) to simple shallow basins (trash can lids are ideal) to fancier cascades or fountains.
  Tip: Capture roof runoff and direct to garden areas with rock-lined dry stream beds.

- Relationships: Plants exude chemical compounds that "call in" insects, microbes, birds and other wildlife they depend on. Microbes and fungal threads help plants harvest minerals and water from the soil. Insects not only pollinate flowers, some predatory insects (especially parasitic wasps) act as controls on plant-munching caterpillars. The more kinds of plants, especially native species, in your landscape, the more likely your garden community will be healthy.
  Tip: Attract songbirds with nest habitat and nest boxes. Nesting songbirds feed their young a mouthful of insects about every ten minutes for twelve or so hours a day. One mouthful for each of four young X six mouthfuls an hour X twelve hours equals 288 mouthfuls a day—and efficient insect control!

"A habitat garden can be a pleasure, a sanctuary that nurtures you even as you nurture it…. A habitat garden can bring you home, reconnecting you to the intricate community of life that inhabits this planet."
—Susan J. Tweit, *The Rocky Mountain Garden Survival Guide*

GARDENING FOR WILDLIFE, part two

Fort Collins, Colorado, April 8, 2015

the law of attraction: flowers and fruits draw pollinators and eaters (and gardeners incidentally): shapes, colors, sizes, smells, tastes for specific clients

our gardens can help restore diversity and make up for lost wildlife habitat:
increase diversity of plant types (trees, shrubs, grasses, perennials) and species
plant many natives (OK to plant adapted well-behaved exotics too as many adult insect pollinators are generalists, larvae often need specific grasses, trees, natives)
exclude aggressively spreading plants, exotic and native
reduce lawn, hardscape, plant native bunchgrasses in a sunny open panel instead

create contrasts, layers, edges:
plant some trees and shrubs in groupings/hedges/rows
mix deciduous with evergreen species
layer plantings of varied heights to create multiple edges
edges create convergence of open vs. dense, low vs. tall, grassy vs. woody

create many habitats in a small area by varying plantings to suit the microclimates on your property
southfacing—plants from desert/dryland, (hot, drier)
northfacing—plants from woods, evergreen forest edge (cooler, moister)
westfacing—plants from dry prairie, chaparral (sunny, hot, often exposed)
eastfacing—plants from edge of woods, moister prairie, chaparral (most temperate)

provide varied food for insects and birds over as long a period as possible
early blooming plants feed hungry insects--insects feed hungry bird broods
some early flowers:
winter aconite (*Eranthis hyemalis*)
snow crocus (*Crocus ancyrensis, C. chrysanthus*)
snow iris (*Iris reticulata, Iris histrioides*)
cushion phlox (*Phlox subulata*)
green hedgehog (*Echinocereus viridiflorus*)
pasqueflowers (*Pulsatilla*)
Corydalis solida
sugarbowls (*Clematis hirsutissima*)
daffodils (*Narcissus*)
prairie smoke (*Geum triflorum*)
grape hyacinths (*Muscari, Bellevalia pycnantha*)
golden banner (*Thermopsis*)

in the early season non-native flowers are extra helpful to augment the regional native flora. When more is in bloom early on, more insects thrive and reproduce in

the spring, jumpstarting the year's food chain. Among the most beautiful and beloved flowers are non-native spring bloomers that attract bees--poppies, peonies, foxtail lilies (*Eremurus*), roses. Bees, beetles, ants are the main early pollinators.

from mid spring onward, offer flowers for butterflies, wasps, moths, hummers as well—the following lists of natives and non-natives feed many pollinators and some species also contribute edible seed for birds later:
catmint (*Nepeta*)
annual catchfly (*Silene armeria*)
lavender
sea hollies (*Eryngium*)
salvias
lemon drops (*Onosma*)
penstemons
Indian blanket (*Gaillardia*)
leadplant (*Amorpha canescens*)
fernbush (*Chamaebatiaria millefolium*)
Amur maackia (*Maackia amurensis* and *M. chinensis*)
purple prairie clover (*Dalea purpurea*)
alliums
wild quinine (*Parthenium integrifolium*)
veronicas
phloxes
sneezeweed (*Helenium*)
greenthread (*Thelesperma*)
coneflowers (*Echinacea*)
beebalm, horsemint (*Monarda*)
gayfeather (*Liatris*)
sunflowers (*Helianthus*)
black-eyed Susans (*Rudbeckia*)

super late floral food:
asters (*Symphyotrichum*)
calamint (*Calamintha nepeta*)
pitcher sage (*Salvia azurea*)
late torch lily (*Kniphofia triangularis*)
goldenrods (*Solidago*)
border sedum (*Hylotelephium*)
autumn crocus (*Crocus speciosus*)

our native plantings at Chatfield arboretum feed wildlife through the seasons

a few favorite moth plants:
pinks (*Dianthus*)
evening primrose (*Oenothera*)
fragrant stonecress (*Aethionema schistosum*)

desert four o'clock (*Mirabilis multiflora*)
angel's trumpet (*Datura wrightii*)

a few favorite hummingbird plants (hummers like warm, wind-free areas to feed)
penstemons (especially red, orange or deep pink species)
Dichelostemma `Pink Diamond'
autumn sage (*Salvia greggii*, `Ultra Violet')
pink and red coral bells (*Heuchera sanguinea* and hybrids)
columbine, especially red/orange species like *Aquilegia canadensis, A. desertorum*)
trumpet creeper (*Campsis radicans*)
hummingbird mint (*Agastache*)
torch lily (*Kniphofia*)

some berry, fruit, and seed plants for birds:
serviceberry (*Amelanchier*)
sand cherry (*Prunus besseyi*)
raspberries (*Rubus*, *R. deliciosus* too)
currants (*Ribes*)
Juniperus (female plants)
Engleman ivy (*Parthenocissus inserta*)

create safe havens and protected nesting spots:
shade from hot sun, shelter from wind, severe weather (trees, evergreens, dense twiggy large shrubs, semi-enclosed patio or covered trellis space, dense vines)
protection from predators (dense and/or thorny plants)

some thorny berry producers for protection from predators
hawthorns (*Crataegus*)
barberry (*Berberis)*
grape holly (*Mahonia*)
roses that make edible hips

some nice evergreens:
white fir (*Abies concolor*) dense yet soft alternative to spruce
bristlecone pine (*Pinus aristata*) extra dense and drought tolerant
lacebark pine (*Pinus bungeana*) very tough, beautiful bark, edible seeds
ponderosa pine (*Pinus ponderosa*) tall, drought tolerant, edible seeds
Colorado spruce (*Picea pungens*) tall dense prickly favorite of people and creatures

provide water & if desired, supplemental food in late fall, winter, early spring
become a Habitat Hero: learn more and apply at http://habhero.org

create a habitat garden to invite creatures, help them survive,
and reconnect with the natural world