

Plan a Habitat Hero Garden for Pollinators

Build a new garden bed or assess a current bed

What does a Habitat Hero wildscape include? A water-wise garden that:

- *Includes diverse planting layers through the use of native and regionally adapted plants*
- *Provides shelter and nesting opportunities*
- *Offers natural food and water sources*
- *Does not spread invasive species of plants*
- *Does not rely on the use of chemical fertilizers and pesticides*

Note: For more information about the Audubon Rockies *Habitat Hero* program, visit <http://rockies.audubon.org/habitat-heroes>. For more detailed information on landscaping, go to the Wyoming Extension website, <http://www.wyoextension.org/publications/>, and do a keyword search for “landscaping.” Many bulletins are free, downloadable and printable.

1. Draw a diagram of your property or find a map from Google maps or the courthouse

- Indicate property boundaries.
- Indicate all current hardscapes: buildings and other structures, sidewalk, driveway, patio, deck, fence, sprinkler system, pond, utility corridor, septic field.
- Indicate current trees, shrubs and garden and turf spaces.
- Indicate areas with dedicated uses—play area, clotheslines, entertainment areas, dog runs etc...

2. Analyze site

- Draw an arrow at the edge of the map indicating north.
- Based on the arrow, sketch in angles of sun in summer and in winter.
- Sketch in shady areas based on angle of sun and obstacles—house, trees, etc., or based on your experience.
- Indicate the predominant wind direction.
- Indicate views from house windows.
- Indicate any views beyond your property boundaries you want to either enhance or obstruct.
- Are there any areas that have characteristics making it hard to make a garden bed? Very sandy soil? Hard-packed clay soil? Hillside?
- Are there any routes on the property that are not already paved or marked that should be avoided? Such as where the mail carrier walks across to the next house? Or the dog runs along the fence barking at passersby?
- Plan for turf-grass only as a ‘walkway’ to navigate around your property. Any areas that aren’t used for walking, entertaining, play areas for kids or dogs should be dedicated to a diversity of plants (perennials, shrubs, wildflowers, trees, etc...)

3. Find the right location and micro-climate

For all kinds of microclimates make sure:

- A water source is nearby. Water is required while plants are being established and whenever precipitation is not adequate.
- The garden is close to where you spend time.
- The new garden can be appreciated by:
 - You, from inside the house and while out in the yard
 - People visiting or passing by
- a. *Sunny microclimate*: Based on the information above, sketch in an area that would make a good location for plants that require at least 6 hours of sunlight during the growing season. Many pollinator-preferred species require full sun, as do vegetables.
 - i. Number of sunny hours doesn't have to be continuous.
 - ii. Morning sun is preferable to afternoon sun which can be much hotter.
- b. *Partly sunny microclimate*: If your yard does not have an area with at least 6 hours of direct sunlight, look for an area that is partly shaded, either in dappled light from trees or gets at least a couple hours of sun. There are plant species that can live in part shade.
- c. *Hot microclimate*: If your yard has an extremely hot area—next to a brick wall that gets afternoon sun, or between the street and the sidewalk (what's been called a "hell strip"), there are plants for that.
- d. *Windy microclimate*: If your potential garden gets a lot of wind, you can incorporate sturdy plants on the west edge that make a windbreak for the others, or install something that will slow the wind long enough to get plants established.
- e. *Vegetable garden*: If you grow vegetables, integrate pollinator plants, especially annuals, or grow perennials nearby to attract bees. Even self-pollinating vegetables appreciate bees and will be more productive.

4. Decide on type, size and shape of garden

- a. Raised beds are essential if your location's soil is hard clay or compacted from vehicles. Ground level is better if your location is near trees. Their roots extend beyond the tree canopy area and a raised bed would slow the flow of water and nutrients to the roots.
- b. Design any size you like, but don't feel obligated to install it all in one growing season. If you are converting lawn into flower beds, especially in your front yard, it might be better to start with a small part of your overall design and let it grow each year. It's also easier on you if you are having to dig up the turf.
- c. While a long, 3 or 4-foot-wide vegetable garden bed makes harvesting easy, a pollinator garden does not have the same need for constant access. Once it is established, there will be little weeding and pruning necessary. A blocky shape has fewer linear feet of edge to keep up (keeping turf from reinvading) than a long, narrow shape. Plus, pollinators and other wildlife will be less disturbed.

5. Select plants

See Habitat Hero Garden Plant Wish List chart

- a. Are you incorporating shrubs as a windbreak or a visual backdrop? Select them first.
 - i. Flowering shrubs
 - ii. Evergreen shrubs

- b. Make a chart of all the native perennials and self-seeding annuals you find attractive. Use an appropriate catalog to get ideas. For each one, note these characteristics:
- i. *Native*: What's best for native bees, butterflies and beneficial insects is a plant native to our area. There are several species in the genus *Rudbeckia* (Black-eyed Susan), but see if you can find *Rudbeckia hirta* or *Rudbeckia laciniata*, native to our area. However, horticulturists are fond of tinkering with native species, coming up with varieties that are bigger and better, like *Rudbeckia hirta* "Tiger Eye Gold," but the improvements may make it less beneficial to native bees, butterflies and beneficials. Stick with the plain Janes—or Susans.
 - ii. *Zone*: Cheyenne is in Zone 5, but savvy local gardeners usually look for colder Zone 3 and 4 perennials, leaving Zone 5 plants for warmer microclimates in their yards. The U.S. is divided into plant hardiness zones based on the average annual minimum winter temperatures. Perennials are rated by which zones they can survive in. See map: <http://planthardiness.ars.usda.gov/PHZMWeb/>.
 - iii. *Sun requirement*: shade, part-shade, part-sun, sun.
 - iv. *Water requirement*: drought resistant, moderate, requires constant moisture. Some plants need drier sites (cactus, succulents) because too much water will cause them to rot. Most perennials are somewhere in the middle and adapt to the amount of water they get. Plants on the extreme ends of the spectrum should be located in different microclimates/garden beds.
 - v. *Wind resistance*: look for sturdy plants and flowers if you have a windy site.
 - vi. *Height and width*: Many species now come in varieties that are different sizes.
 - vii. *Pollinator attractiveness*: Some catalogs will indicate attractiveness to bees, hummingbirds, butterflies with symbols. Double-flowered varieties are harder for pollinators to access so look for the "old-fashioned" or native type flowers.
 - viii. *Color*: Bees like blue, hummingbirds like red, but look for a variety of colors and flower shapes.
 - ix. *Bloom time*: early spring (don't forget tulips, crocus, squill, etc.), spring, late spring, early summer, mid-summer, late summer, early fall, fall. Exactly when the flowers you plant will bloom will depend on your site's microclimate and the particular season. Bloom time can differ by three weeks in the same garden from one year to the next.
 - x. *Number*: It's best to have a grouping of the same plant—not only for visual impact, but also to make it easier for the pollinators to find. Three is a nice number for larger plants, and a dozen would be good for something small like alyssum.
 - xi. *Wildlife food source*: Does it provide berries, nectar, seeds, nuts, or is it a host plant for larvae, like milkweed is for monarchs?
- c. Check your list for variety. Look for what you might be lacking. Is there a season that needs more blooms? Do you need more variety in height, leaf texture and size, flower type (composite vs tubular) and other aesthetic elements? A variety of flower shapes and colors is important to bees.
- d. Check availability. Will you dig it up from elsewhere in your yard (plants dug from the wild rarely do well—and you have to have landowner permission), grow from seed, or buy a plant through a catalog or nursery? Is the plant easy to grow from seed or will it be better to buy a plant? Can you get it at a local nursery? If you resort to mail-ordered plants, look for companies along the Front Range or western Nebraska for best results.

6. Draw a diagram of your garden bed.

Indicate where you plan to put your selected species, even if you won't plant them all the first year. Don't leave big spaces. You can always thin plants years later.

Note: Some of us dig the new bed and then go shopping throughout the growing season, in either our other flower beds, the nursery or the catalog, or start plants from seed. We add plants as we find them. The next spring we see what survived and fill in as needed. Often we have to dig out more garden space to accommodate our new finds.

7. Prepare site

- a. Remove turf
 - i. Lasagna gardening (no digging, layering of compostable materials, best for sites that are not windy). Do an Internet search for the term or check <http://organicgardening.about.com/od/startinganorganicgarden/a/lasagnagarden.htm>.
 - ii. Digging top 6 inches, shake off dirt, compost what remains of turf elsewhere.
 - iii. Raised beds: Contain soil with untreated timbers, brick, etc. to any height.
- b. Rejuvenate old garden bed – remove unwanted plants.
- c. It is not necessary to add a lot of compost for most of our native perennials.

8. Plant

- a. *Spread roots:* A few perennials resent being transplanted, like milkweed, but most perennials, when removed from a pot, will benefit from having their roots gently uncoiled. If the roots form a solid mass, take a sharp knife or clippers and on all four sides, cut through about a half inch deep from top to bottom.
- b. *Water:* Remember, new plantings need water while getting established, even if they are classified as drought-tolerant. Water before plants wilt, but let soil dry a bit in between.
- c. *Mulch:* Add an inch or two of mulch to keep the soil from drying out so fast, but keep it away from plant stems.
 - i. *Leave some bare ground:* Some native bees are ground-nesters.
 - ii. *Best:* Organic materials, like leaves, shredded leaves and grass clippings, decompose and feed your plants, but avoid recycling diseased plants.
 - iii. *Next best:* Wood chips might stay in place better in windy sites.
 - iv. *Avoid:* Gravel mulch is better left for rock gardens. It can make the microclimate too hot and can be difficult to clean out when leaves accumulate.
 - v. *Never:* Weed-barrier cloth should not be used in your landscape. It impedes the flow of water and nutrients and is eventually infiltrated by weeds anyway.

9. Maintain

- a. *Do not spray pesticides* on your Habitat Hero garden or nearby. Insecticides especially, even rated as “organic” or “natural,” are lethal to bees and other beneficial insects.
- b. *Fertilizing:* Unlike vegetables and exotic ornamentals, our High Plains native plants don't need any commercial fertilizer. Most will be just fine with nutrients available from decomposing mulch. The less water a species requires, the fewer added nutrients it needs. However, you can have your garden soil analyzed to see if it has a problem.

- c. *Diseased plants*: If you have a lot of leaves turning yellow (not from transplant shock), wilting (even though you watered in a timely way), becoming transparent between veins (virus) or getting spots (fungal infection), first get a diagnosis from the Laramie County Extension horticulturist or Master Gardeners. Or try removing the diseased part. Or remove the whole plant before it spreads. Perennials, especially natives, are fairly disease-resistant, especially if they are grown in the right place for the right plant. Your plant may have come from the nursery with the disease, or it may have been planted in a place that is stressful for the particular species.
- d. *Insect damage*: Expect some insect damage—beneficial insects have to eat too. Leaf-cutter bees, which you want to encourage, will cut out circular pieces for making their nests. But if a plant is overrun, it may be an indication that it is stressed, maybe getting too much water or too much fertilizer—making it irresistible to insects.
- e. *Deadheading*: Flowers that are finished blooming can be removed to force a plant to produce more flowers, but also consider letting some or all go to seed. Seeds may give you more plants, whether you collect some to plant yourself or let them germinate in your garden.
- f. *Avoid fall cleanup urge*: After killing frost, leave plants standing. Some may be harboring beneficial insect eggs. Birds will enjoy finding some of the eggs and the seeds. Also, the stems will help collect snow for winter moisture. Late spring is a better time to clean up.
- g. *Water by hand*: Inspect plants to see if they need water, a great method is inserting a screwdriver into the soil – if it easily inserts, plants don't need water. This not only minimizes our water consumption but deters unwanted animals like deer and rabbits from eating our plants as they seek out more lush vegetation.

