

# Native Plant Rain Gardens



*A Grow Native! guide for homeowners, teachers and landscape designers*



Turn your  
roof runoff  
into a refuge  
for birds,  
butterflies and  
dragonflies

David Besenger

## Miniature wetlands reduce stormwater problems and create wildlife habitat

Ever watch your gutter's downspout gush during a heavy rain? The average Missouri roof sheds tens of thousands of gallons of water a year. Where does all the rainwater go? In urban areas, roof runoff flows into the local stormwater system, which often is stressed already by road and parking lot runoff.

You can ease the stress by channeling your roof's runoff into a rain garden, which is a miniature wetland.

If you've been to a natural Missouri wetland, such as Lowry Marsh Natural Area in Mercer County near Princeton, you know that wetlands are beautiful, moist landscapes

rich with native wildflowers, grasses, birds, reptiles and dragonflies. Aside from providing beauty and natural diversity, wetlands perform a vital landscape function. Their densely rooted native plants capture, filter, store and slowly release stormwater. Wetlands also trap and use nutrients such as nitrates and phosphates that otherwise would run off and pollute nearby streams.

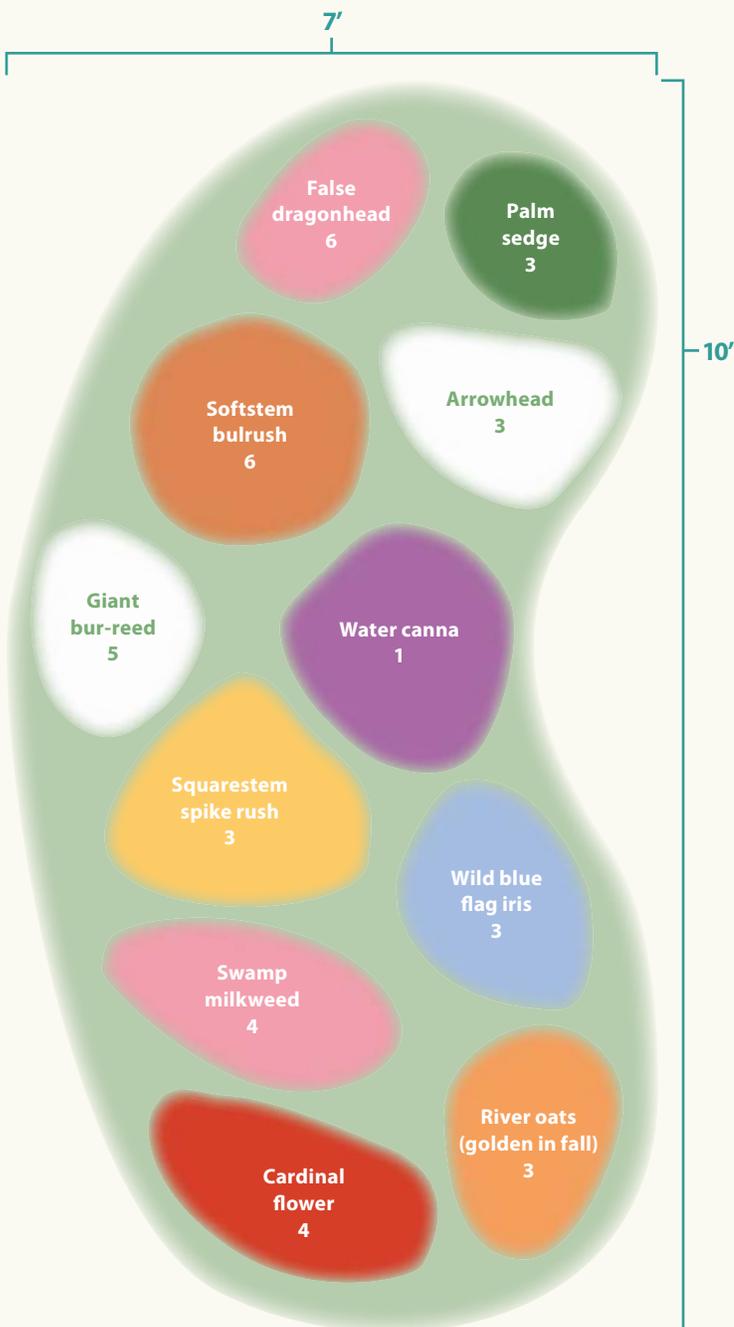
As a tiny wetland, your rain garden will reduce drainage and flooding problems, keep pollutants out of your local stormwater system, and bring beauty and wildlife to your landscape. The rain garden designs on the following pages will help you provide habitat for some of Missouri's most colorful, fun-to-watch and water-dependent wildlife species.

## Choose a rain garden design that's right for your soil type

To ensure the success of your rain garden, determine your soil type and choose native wetland plant species that are right for it. Clay soil is sticky and feels like plastic. Well-drained, sandy soil is rough and gritty and breaks up easily. Here are two rain garden layouts—one for clay soils and one for well-drained-to-sandy soils. Please use these designs as guidelines. It's great to strive for maximum diversity, but you don't need all the plants listed to have a beautiful, absorbent, wildlife-friendly rain garden.

### Clay soils

Color spots indicate flower or seasonal color and recommended number of plants for a 7-by-10 foot rain garden

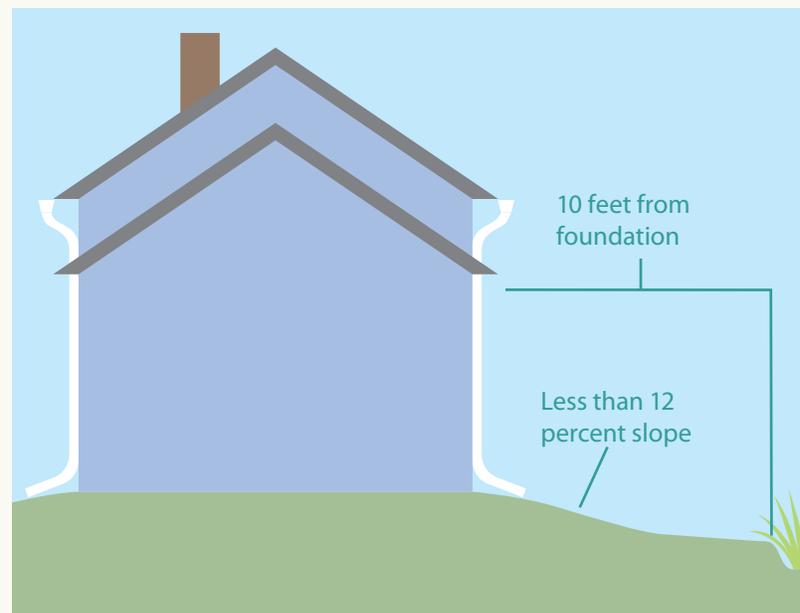


## How do I make a rain garden?

It's not complicated. Just follow these easy steps:

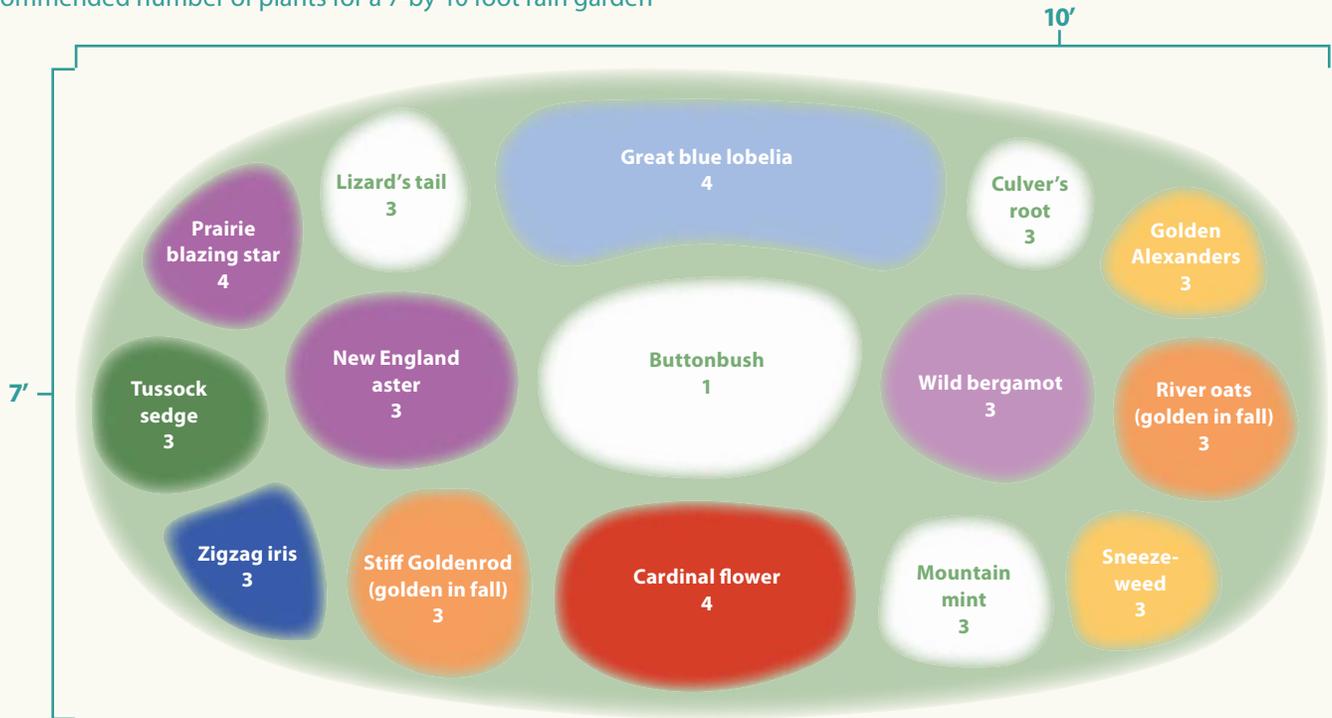
1. Determine the size of your rain garden by estimating your roof's square footage. Your rain garden should be about one third the size of the area providing runoff. The 70-foot-square gardens in this guide are based on a roof area of 200 square feet. If your roof area is smaller or larger, you will need to adjust the garden size accordingly.
2. Choose a spot at least 10 feet from your house and down slope from your downspout or sump-pump outlets.
3. Before digging, make sure you won't encounter any utility lines. Contact (800) DIG-RITE so utility lines can be marked.
4. For a 200-square-foot roof area, dig a shallow depression 6-to-8 inches deep and 10-feet long by 7-feet wide. Slope the sides toward the center. Adjust the square-footage measurements if your roof area is larger or smaller.
5. Test the overflow pattern to be sure it runs away from your house. Do this by filling the depression with water and watching the overflow. If necessary, dig a shallow channel to direct water away from buildings and toward the street.
6. Direct your downspout or sump-pump outlet to your rain garden depression, either by digging a shallow channel or by piping runoff through a buried 4-inch, black-plastic drainpipe.
7. Now you are ready to plant the native plants recommended in this design sheet. The designs place taller plants in the center and shorter ones along the edges. Adjust plant numbers if your garden is larger or smaller.
8. Put a 3-inch layer of untreated shredded hardwood mulch on the bare soil around the plants to conserve moisture and keep your design looking neat.
9. Water your planting every other day for the first few weeks or until it shows growth and good establishment.

### Rain garden location



## Well-drained-to-sandy soils

Color spots indicate flower or seasonal color and recommended number of plants for a 7-by-10 foot rain garden



### What tools and materials will I need?

- A shovel
- A mattock for digging a shallow trench
- Trowel
- Garden hose
- Wheelbarrow for transporting mulch
- A length of 4-inch, black-plastic drain pipe, if you need to channel water from your downspout into your rain garden
- Stones, logs, statuary

### Tips for success

- Don't spread or spray lawn fertilizers too close to your rain garden. Fertilizers stimulate weeds and create competition for the native plants.
- Like all gardens, rain gardens need periodic maintenance. To keep your rain garden looking neat, maintain your design boundary by clipping and mowing.
- Come spring, mow and remove dead vegetation to stimulate new growth.
- To attract birds, place a birdhouse nearby.
- Add a comfortable bench so you can enjoy watching birds and butterflies.
- Place rocks or garden ornaments in and around your rain garden—be creative!

Rain gardens should be located at least 10 feet from the house on a gentle slope that catches downspout water.



### What about mosquitoes?

When some people think "wetland," they automatically think "mosquitoes." Truth is, mosquitoes need at least a week of standing water to complete their life cycle. Unless you design your rain garden to hold water, its densely rooted plants will absorb water, preventing the formation of mosquito-friendly puddles. Poorly maintained birdbaths and rain gutters are more likely to serve as mosquito breeding grounds than a rain garden, which attracts mosquito-hungry bats and dragonflies.



Dragonflies eat mosquitoes in both nymph and adult stages.

# Wetland plant photo gallery

(Listed in alphabetical order by common name. Numerals indicate plant height; months indicate bloom time.)



**Arrowhead**  
*Sagittaria graminea*  
1-2' • June-September



**Buttonbush**  
*Cephalanthus occidentalis*  
3-6' • July-August



**Cardinal flower**  
*Lobelia cardinalis*  
2-4' • July-September



**Culver's root**  
*Veronicastrum virginicum*  
3-5' • June-August



**False dragonhead**  
*Physostegia augustifolia*  
2-4' • July-September



**Golden Alexanders**  
*Zizia aurea*  
1-2' • May-June



**Great blue lobelia**  
*Lobelia siphilitica*  
2-4' • August-September



**Lizard's tail**  
*Saururus cernuus*  
2-5' • June-September



**Mountain mint**  
*Pycnanthemum virginianum*  
2-4' • July-September



**New England aster**  
*Aster novae-angliae*  
1-5' • August-October



**Palm sedge**  
*Carex muskingumensis*  
1-3' • August-October



**Prairie blazing star**  
*Liatris pycnostachya*  
2-4' • July-September



**River oats**  
*Chasmanthium latifolium*  
2-3' • fall color



**Sneezeweed**  
*Helenium autumnale*  
2-6' • August-October



**Softstem bulrush**  
*Schoenoplectus tabernaemontani*  
2-6' • May-July



**Squarestem spike rush**  
*Eleocharis quadrangulata*  
up to 4' • June-October



**Stiff goldenrod**  
*Solidago rigida*  
2-4' • July-October



**Swamp milkweed**  
*Asclepias incarnata*  
2-4' • July-August



**Tussock sedge**  
*Carex stricta*  
12-18" • May-June



**Water canna**  
*Thalia dealbata*  
4-6' • July-October



**Wild bergamot**  
*Monarda fistulosa*  
2-4' • July-August



**Southern blue flag**  
*Iris virginica shrevei*  
1-3' • May-July



**Zigzag iris**  
*Iris brevicaulis*  
9-12" • June

## Wildlife prefer locally grown native plants

If you plant a native rain garden to make a refuge for wildlife and increase natural diversity, be sure to buy plants native to Missouri. In addition, be sure they were grown in Missouri. Native plants from your region have a better chance of thriving in your yard than plants and seeds imported from a different part of the country. Also, cultivars developed from natives may not be as useful to wildlife or as adaptable to local conditions as true natives.

Visit [www.grownative.org](http://www.grownative.org) to find nurseries that specialize in Missouri-grown native plants. Just click on "Buyer's Guide," then "Find Suppliers" to locate the Grow Native! retail nursery nearest you. Grow Native! is a joint education and marketing program of the Missouri Departments of Conservation and Agriculture.



### Special thanks to Applied Ecological Services

Some of the information and designs in this brochure came from Applied Ecological Services, a native-plant landscape design service in Brodhead, Wis. [www.appliedeco.com](http://www.appliedeco.com)

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, nationality, sex, age or disability. Questions should be directed to the Department of Conservation, P.O. Box 180, Jefferson City, MO 65102, (573) 751-4115 (voice) or 1-800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax, Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

Copyright © 2004 by the Conservation Commission of the State of Missouri 4/2008 E00568