



Raingardens

Design and Plant List

This information is intended for use in Duval County. Florida is a very diverse state with different growing conditions. If you garden outside of Northeast Florida, check with your local UF/IFAS Extension agent for assistance.

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What's a Raingarden?

A raingarden is a planting bed in a strategic location to capture stormwater runoff before it leaves your property and gets to the storm drain. The bed is dug down several inches to create a low area for the rain to collect and be absorbed by the soil. The bed is planted with plant material that can take both wet and dry conditions and then mulched.

Why Install a Raingarden?

Stormwater runoff that flows from your downspouts has grit from shingles, organic material, and whatever else was on your roof. After that water hits your grass but before it gets to the storm drain, it picks up excess fertilizer, chemicals, pet waste, and other things on your lawn. The deposit of these materials into the storm drain that empties into the nearest creek or stream is called nonpoint source pollution. It's a big deal, too. Studies cited in the Florida Nonpoint Source Program Update by the Florida Department of Environmental Protection showed nonpoint source pollution was responsible for over half of the total pollution load entering Florida's surface waters and over 75% of the loading to lakes. That means that what we all do in our yards really adds up!

Where Should You Dig the Garden?

The bed should be placed in full sun at least 10 feet away from your house. You can use a low spot that already exists if it usually drains quickly after a heavy rain. Don't put a raingarden within

25 feet of a septic tank or well.

How Deep Should the Bed Be?

The depth depends on the slope of the site. If you have a slope of 4% or less, the garden should be 3-5" deep. Slopes between 5% and 7% need a raingarden depth of 6-7". Beds should be dug 8" deep for areas with 8%-12% slope. To figure out your slope, pound a stake at the uphill end of your raingarden site, and one at the downhill end. Tie a string to the bottom of the uphill stake at the ground and stretch it to the downhill stake. Tie it far enough up the downhill stake so that the string is level. Use a carpenter's level to make sure the string is horizontal. Now measure in inches the length of the string and the height off the ground where the downhill stake is tied. Divide the height by the distance and multiply the result by 100. This will give you the percentage of slope.

How Large Should the Bed Be?

How large to make the bed depends on the size of the roof area that drains to the downspout closest to the garden, how close the bed is to the downspout, how deep your bed will be, and what soil type you have. Please know that an imperfect raingarden is much better than no raingarden at all. In general, the garden should be dug no more than 8" deep and be 100-300 square feet in size.

1. Find the **drainage area** that will go into the garden. If your roof has four downspouts, you can usually assume that 25% of the area of your roof will drain into the garden. If you know the square footage of your house, you can multiply

that number by .25 to get the drainage area for your bed. If you have more or less than four downspouts, estimate what percentage of your roof drains to the downspout nearest the raingarden. Multiply that percentage by the square footage of your house. If you have a two-story home, you need to divide the square footage of your house by two to find the area of the roof. If your garden will be more than 30 feet away from the downspout, estimate the square footage of the lawn area that will drain to the garden and add it to the drainage area calculation you just did for the roof.

2. Determine your **size factor** based on your soil type and how deep your garden will be. Most Florida homes have sandy soil. See the chart below:

Soil Type	3-5" Deep	6-7" Deep	8" Deep
Sand	.19	.15	.08
Silt	.34	.25	.16
Clay	.43	.32	.20

If your garden will be more than 30' from the house, use this size factor chart instead.

Soil Type	Size Factor (regardless of depth)
Sand	.03
Silt	.06
Clay	.10

3. Multiply your **size factor** from the chart by the **drainage area** you calculated. The result is the recommended area of your raingarden in square feet. If you get a number greater than 300 square feet, divide it up into 2 or more smaller raingardens.

Constructing the Bed

Before you start digging, be sure to call Sunshine State One Call, 811, to get the underground utilities marked for free. To construct the bed, start at the uphill end and dig down until you reach your desired depth. Keep working your way digging across the bed area. The bottom of the bed should be flat when you are finished. Some of the excess soil that you dug from the uphill side is used to make a berm on the downhill side to keep the water in the mini retention pond you just made.

Planting the Bed

Choose a variety of plants and mix up the heights, textures, shapes, and colors. After planting, use a large chip hardwood mulch spread 2 to 3" deep. Finally, to make the bed look neat and purposeful, use a piece of garden decoration such as a boulder, a bench, or a sculpture. Keep your plants watered until they are established.

Plants for Raingardens

Choose plants that can take moist soil conditions as well as dry. The plant list below is a good place to start.

Perennials

- Blue flag iris *Iris virginica*
- Louisiana iris *Iris hexagonia*
- African iris *Dietes iridioides*
- Canna lily *Canna* spp.
- Goldenrod *Solidago* spp.
- Swamp sunflower *Helianthus angustifolius*
- White Spider lily *Hymenocallis latifolia*
- Milkweed *Asclepias* spp.
- Flamingo plant *Justicia carnea*
- Elephant Ears *Alocasia* spp.
- Swamp lily *Crinum americanum*
- Cardinal flower *Lobelia cardinalis*
- Ironweed *Vernonia gigantea*
- Bee Balm *Monarda didyma*
- Blazing star *Liatris* spp.
- Joe Pye Weed *Eutrochium* spp.

Ornamental Grasses

Florida gamma grass (Fakahatchee) *Tripsacum
floridana*
Muhly grass *Muhlenbergia capillaries*
Wiregrass *Sristida stricta* var. *beyrichiana*
Switchgrass *Panicum virgatum*
Papyrus grass *Cyperus papyrus*

Shrubs

Virginia willow *Itea virginica*
Buttonbush *Cephalanthus occidentalis*
Sweet pepperbush *Clethra alnifolia*
Winterberry *Ilex verticillate*
Beautyberry *Callicarpa americana*
Inkberry *Ilex glabra*
Swamp mallow *Hibiscus coccineus*
Rose Mallow *Hibiscus moschuetos*
Adam's Needle *Yucca Yucca filamentosa*
Spice bush *Lindera benzoin*

Groundcovers

Holly fern *Cyrtomimum falcatum*
Periwinkle *Vinca major*
Cinnamon Fern *Osmunda cinnamomea*
Frog Fruit *Phyla nodiflora*
Blue-eyed grass *Sisyrinchium angustifolium*