



Rain Gardens The What, Why and How's

Kathy Turner, Big Country Master Gardener, March 5, 2022

What is a Rain Garden?

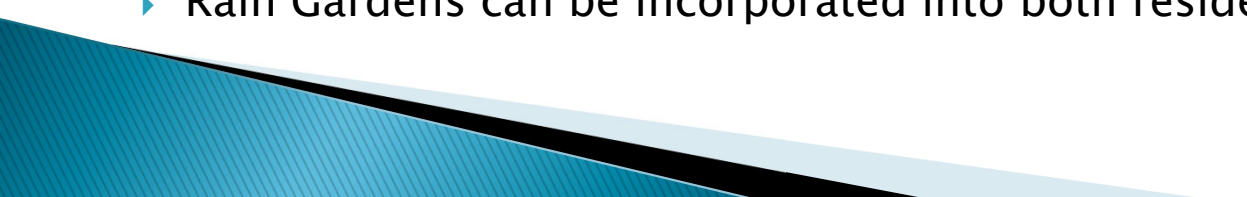
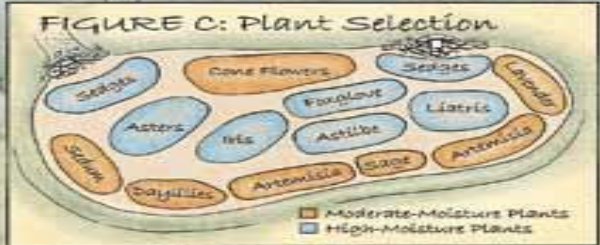
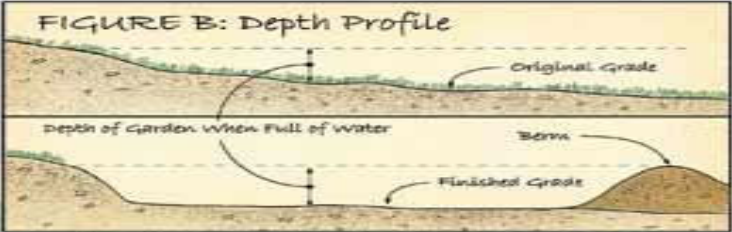
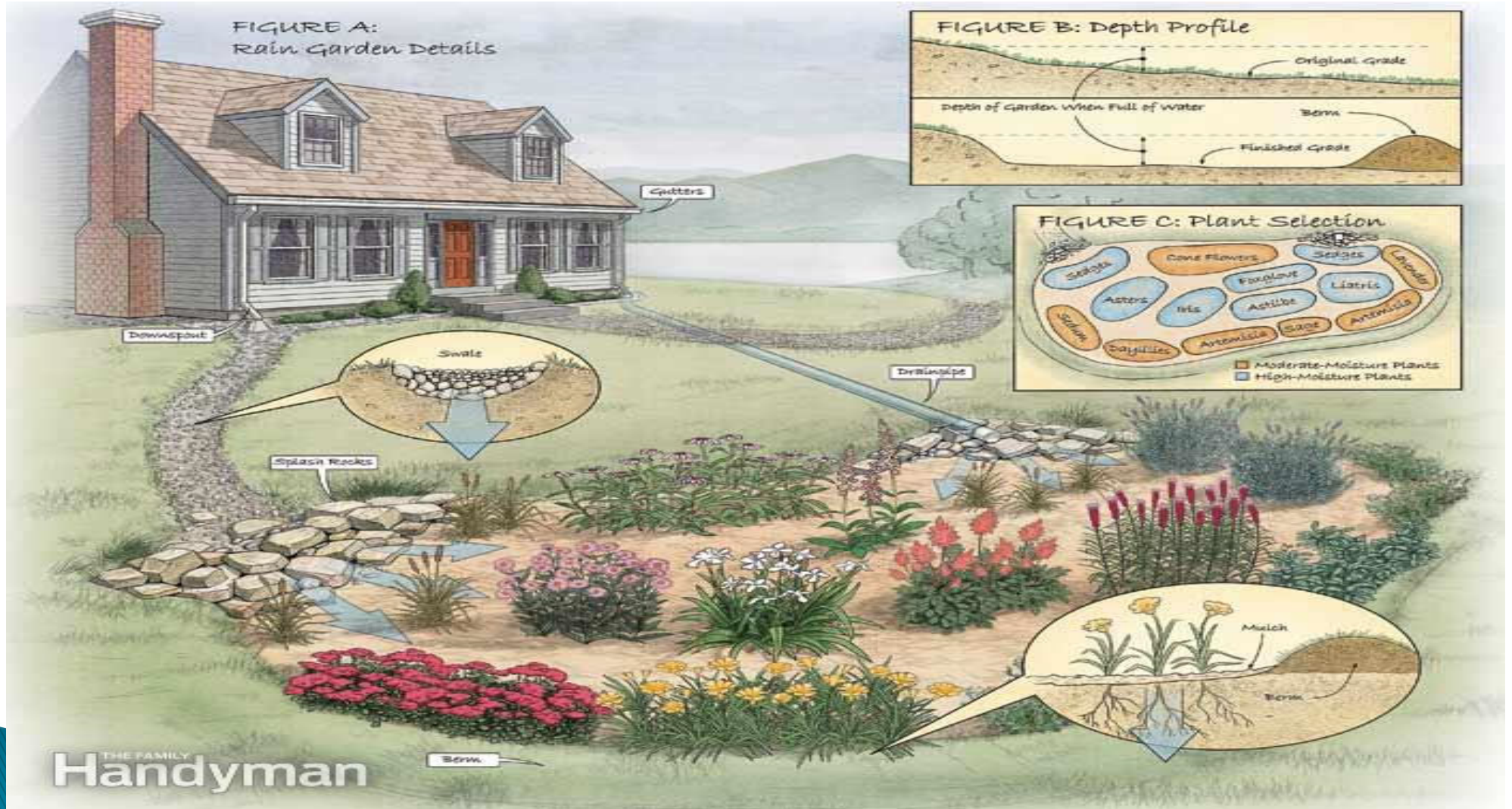
- ▶ Many landscape spots used to be covered in grass, scrub, and forest, but as metro areas have grown, those have been replaced by homes, patios, driveways, and other hard surfaces. Those hard surfaces prevent water from slowly seeping into streams and underground aquifers.
 - ▶ A Rain Garden is a shallow depression that collects rainwater runoff from:
 - Roofs
 - Parking Lots
 - Other surfaces
 - ▶ Rain Gardens, also known as bioretention areas, are bowl-shaped or surrounded by berms to retain water.
 - ▶ Construction can be a variety of soils, from sand to clay.
 - ▶ Size depends on the catchment area, which is the area the runoff ends up in.
 - ▶ Rain Gardens can be incorporated into both residential and public areas.
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FIGURE A:
Rain Garden Details



Why a Rain Garden:

Rain gardens are both beautiful and practical: They filter rainwater runoff and provide a home to birds and butterflies. Plus, they're easy to maintain. Use your rain garden to manage runoff in an urban garden


Benefits:

- ▶ Less Stormwater Runoff
- ▶ Slower Runoff
- ▶ Less Pollution in the Runoff
- ▶ More Water to Replenish Groundwater Supplies
- ▶ Improved Landscape


Kathy's Specific Benefit:

- ▶ Solution to eliminate a loss of topsoil in flowerbeds


How to Make a Rain Garden:

- ▶ A rain garden in five easy steps:
 1. Choose the Right Site
 2. Amend Your Soil as Needed
 3. Plant Native Flowers & Grasses
 4. Select Hardy Marginal Plants
 5. Plan & Plant Your Garden
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1: Choose the Right Site for Your Rain Garden

- ▶ You'll need a low spot or depression that's at least 10 feet from your house in order to make a rain garden.
 - ▶ Clay soils work best to make a rain garden because they slow the percolation of water, holding water while allowing it to slowly drain.
 - ▶ Test the area for drainage time. You'll want the water to seep into the water table within a 24 hr period.
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2: Amend Your Soil As Needed

- ▶ If you are unsure of the type of soil you have, complete a soil test*, which can usually be done for a small fee through your state's extension service.
 - ▶ If your test indicates sandy soil, you will need to add water-absorbing compost and topsoil to the rain-garden area.
 - ▶ *Check with your local Extension Office about soil testing.
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3: Plant Native Flowers & Grasses

- ▶ As you make a rain garden, stick to plants that can tolerate wet sites.
 - ▶ Many native plants work best, and seedlings are easier to establish than direct-sown seed when you are going to make a rain garden so you don't have to worry about the seed washing away. For that reason, native plant plugs work better than seeds.
 - ▶ Try to use native grasses, sedges, and rushes in at least one-third to one-half of the rain garden. Those plants possess extremely deep root systems.
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4: Select Hardy Marginal Plants


- ▶ To make a rain garden, other good plant choices include marginal plants. These plants typically grow near the margin, or edge, of a pond, and tolerate both extremes of moisture: They thrive in soggy soil but are content in dry spells too, bouncing back when water becomes available again.
 - ▶ Those plants include 'Bengal Tiger' canna, scarlet rose mallow, yellow flag iris or Siberian iris, cardinal flower, and obedient plant.
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5: Plan and Plant Your Garden

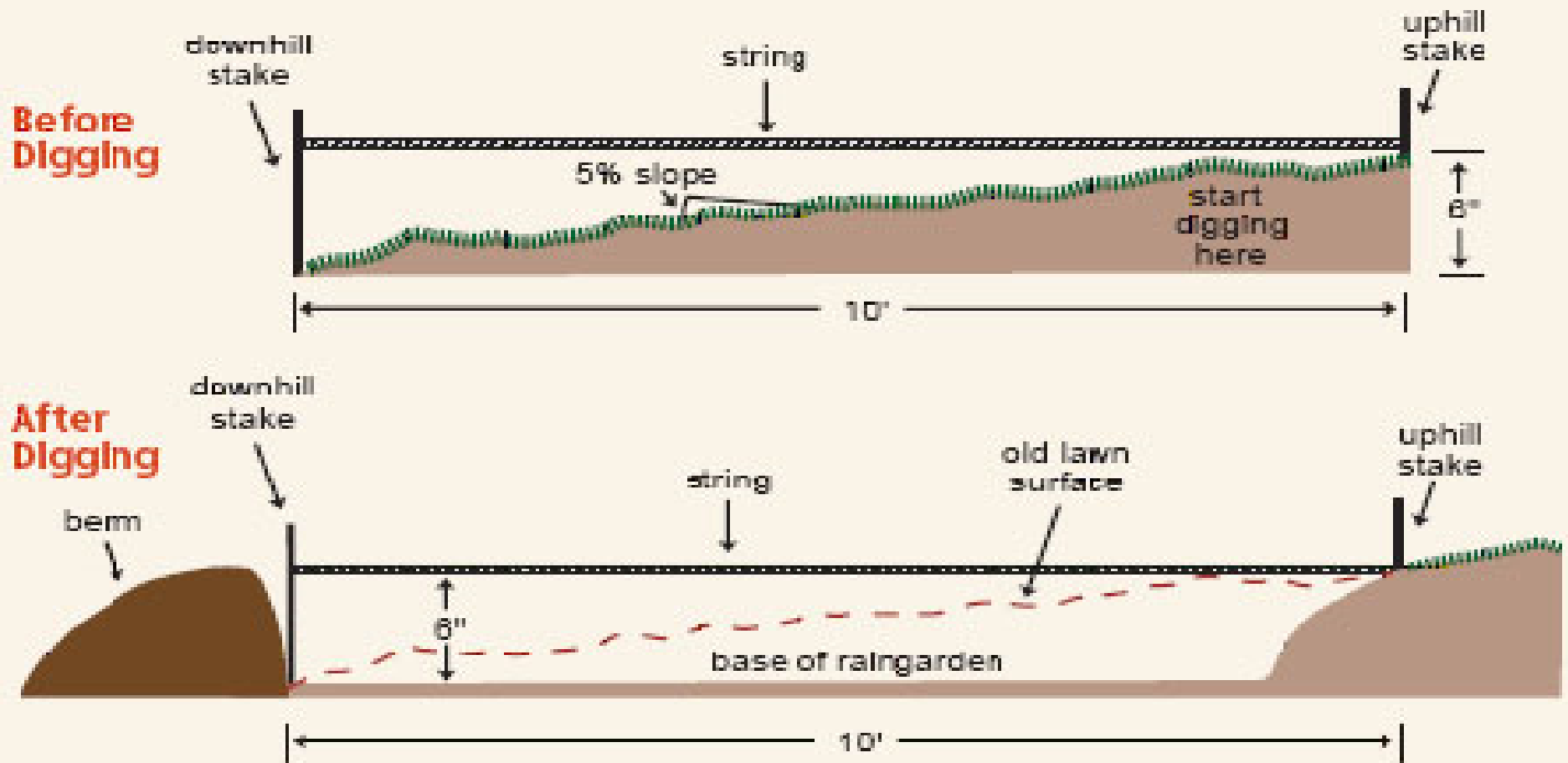
- ▶ In the final step to make a rain garden, arrange your plants, spacing according to label directions.
 - ▶ Water well and mulch. As you choose plants to make a rain garden, consider planting in larger drifts for best overall impact.
 - ▶ Provide different types of foliage and texture as well as color.
 - ▶ Mulch the area to keep weed growth down.
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Site prep. Step by step.

- ▶ You've picked the site for your rain garden and you're ready to grab a shovel. But before you break ground, you've got a little prep work to do.
- 1. Find out where the lines for water, sewer, electricity, natural gas, telephone, cable, and storm sewers are buried. You'll need to stay at least two feet from them. If in doubt, call 811.
- 2. Define the perimeter of your garden. You can put stakes, flags, rope, or a garden hose along the edge, or spray a non-toxic paint, such as the type used on soccer fields. While the shape is up to you, a good rule of thumb is to make the length about twice the width—consider a kidney or teardrop shape. The wider side should face uphill so it can catch as much water as possible.
- 3. Double check the size needed for your garden by using a rain garden calculator – <http://raingardenalliance.org/right/calculator>

4. Start digging at the uphill side until you've reached the depth you need.
 5. If working on a slope, soil removed from the uphill side of the garden may be added to the downhill side to create a berm. This will reduce the amount of digging you need to do. Give the berm gently sloping sides and compact the dirt so it won't erode. You can plant grass, add plants or additional flower, or cover it with mulch.
 6. Once you've prepared the depression, use a carpenter's level to make sure it's even. A level string across the entire garden site also works well as a gauge. The bottom (deepest portion) of the garden should be level in all directions. This increases the total area in which water will drain into the underlying soil.
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a. Between 3% and 8% slope lawn



7. Once the garden is dug to the proper depth and leveled, begin to loosen the soil to prepare for planting. If your location contains poor soil or higher amounts of clay, this is the appropriate time to make soil amendments. Tilling sand and compost into the existing soil will increase porosity and improve drainage.

8. Now you're ready to start planting. Make sure to plant from the center out so that you do not compact the soil you just loosened. If using a wheelbarrow, consider placing a plank down to distribute the weight from the wheel.

My first rain garden – my house
June 2014

May 2019





May 2015

- Berm is in place, plants are in.
- Rainfall is captured from roof to patio, via the concrete patio and the gravel path at the top of the picture.
 - Excess water goes through PVC pipe down a dug out bed, then out of the yard. ➤



May 2019

Plants that survived:

- Turks Cap
- Dwarf Ruellia
- Daylilies

Plants I Lost:

- Coneflowers
- BeeBalm
- Various Grasses



Extension Office Demo Bed – It begins...





Girl Power >>>

Design with rocks is down, amended the soil with expanded shell and mulch. Outer edges are planted with anchor plants – in this case Hardy Hibiscus trial



Testing drainage >>>

Filled the main depression with water to determine runoff when full, and how quickly the water seeps into the water table



A closer look >>>

The far left side is where we are expecting out water to flow out, based on how we dug out the depression

Adjustments made to impact overflow – lots of rocks!



April 21 – planted, mulched, ready for rain



Whoops! Adjustments to be made



May 21 to August 21 – 3 months of growth



Plants in the Demo Rain Garden

- Louisiana Iris*
- Coneflower*
- Eves Necklace (tree)*
- Turks Cap*
- Daylilies & Rainlilies*
- Spiderwort*
- Fall Aster**
- Coreopsis**
- Prairie Phlox**
- Yarrow***
- Salvia Greggii***
- Scabiosa***
- Strawberries***
- Rosemary***
- Hardy Hibiscus***
- Milkweed***
- Galena (Salvia Darcyi)Sage***

* Inside Depression areas ** Edges of Main Depression *** Outside of Depression areas

References & Resources:

- ▶ Texas A&M AgriLife Extension B-6247: Stormwater Management: Rain Gardens
 - ▶ Better Homes & Gardens: <https://www.bhg.com/gardening/landscaping-projects/landscape-basics/make-a-rain-garden/>
 - ▶ The Family Handyman: [How to Build a Rain Garden in Your Yard | The Family Handyman](https://www.familyhandyman.com/landscaping/yard/how-to-build-a-rain-garden-in-your-yard/)
 - ▶ <http://raingardenalliance.org/>
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