Rain Gardens

To a Gardener, everything is a Flower Pot

Bob Howard

Master Gardener volunteer

Extension Volunteers

Alabama Master Gardeners
aces.edu

A little sweat and little money . . .

. . . Can turn a problem area into a landscape jewel!

What is a Rain Garden

- A rain garden is an area in the landscape where rain water from a roof, driveway or street can be captured and allowed to soak into the ground rather than runoff.
- Planted with grasses and flowering perennials, rain gardens can be a cost effective and beautiful way to reduce runoff from your property.
- Rain gardens can also help filter out pollutants in runoff and provide food and shelter for butterflies, song birds and other wildlife.
- More complex rain gardens with drainage systems and amended soils are often referred to as bioretention.

Take a Good Look at a problem area

We all have "that spot" in the yard

Maybe it's a natural depression

Maybe it's a stump hole -- where a large tree used to be

Maybe, it's just a slope where the storm water flashes thru

Remember:

Just like to a hammer, everything is a nail –

To a Gardener, everything is a flower pot

Make a Garden
come true

Too Much Water

The Mobile area is a wet zone

Rain and Tropical storms dump lots of water into this area

Our sandy soil drains quickly – and it can be washed away quickly

A rain garden is basically a plant basin – a garden bed that you plant with special deep-rooted native plants. These plants help the water rapidly seep into the soil, away from your house and out of your hair.

You can direct the rainwater from the downspouts to the garden by way of a stone lined channel called a swale or with plastic piping.

The garden captures the water and, when properly designed, allows it to soak into the soil within a day. Don't worry about creating a mosquito haven because the water should drain before mosquitoes have time to breed.

Environmental Protection
The EPA also promotes Rain Gardening

During our storms and heavy rain seasons, excess water may overflow the rain garden and run into the storm sewer system.

Even then the rain garden will have done its job:

- It will have channeled water away from your foundation and
- reduced the load on the sewer system.

Additionally, a rain garden also reduces the amount of lawn chemicals and pet wastes that may otherwise run off into local lakes and rivers.

Time, Talent, and Treasure

- Time – More than a morning
    - Probably a couple of days
- Talent – Beginner level
    - Basically, just digging and planting
    - Expect to do a little sweating and maybe a blister or two
- Treasure – Varies
    - The size of the Rain Garden determines a lot
    - Complexity and artistry of design adds expense
    - The number and types of plants you want to put in the Garden can add up

Remember the old maxims

- Less is more
- It's easier to add than to subtract

What do you need?

- **Tools Required**
  1. Level
  2. Spade
  3. Wheelbarrow
- **Materials Required**
  1. 1-1/2-in. river rock
  2. Decorative rocks and boulders
  3. Landscape fabric
  4. Native plants and grasses
  5. PVC pipe

Survey the situation

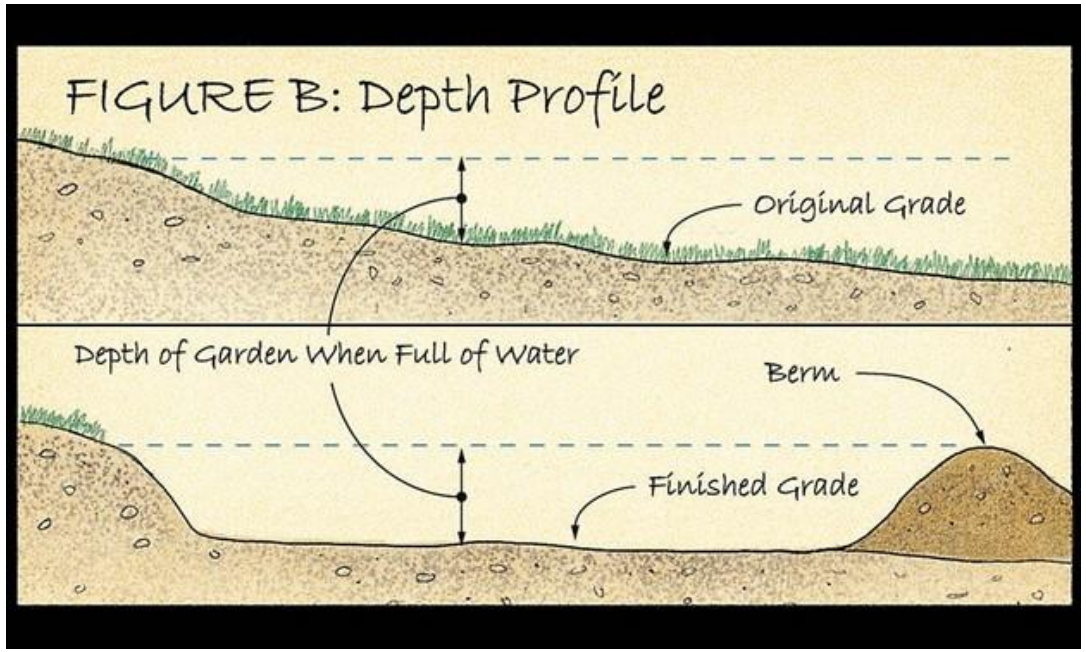
Take a look around the yard

Check the slope of your yard

You need a slope of at least 1 inch over every 4 feet for water to flow into your rain garden

Where is the source of the water flow – drainage from the roof, or from the driveway, or maybe from your neighbor's yard?

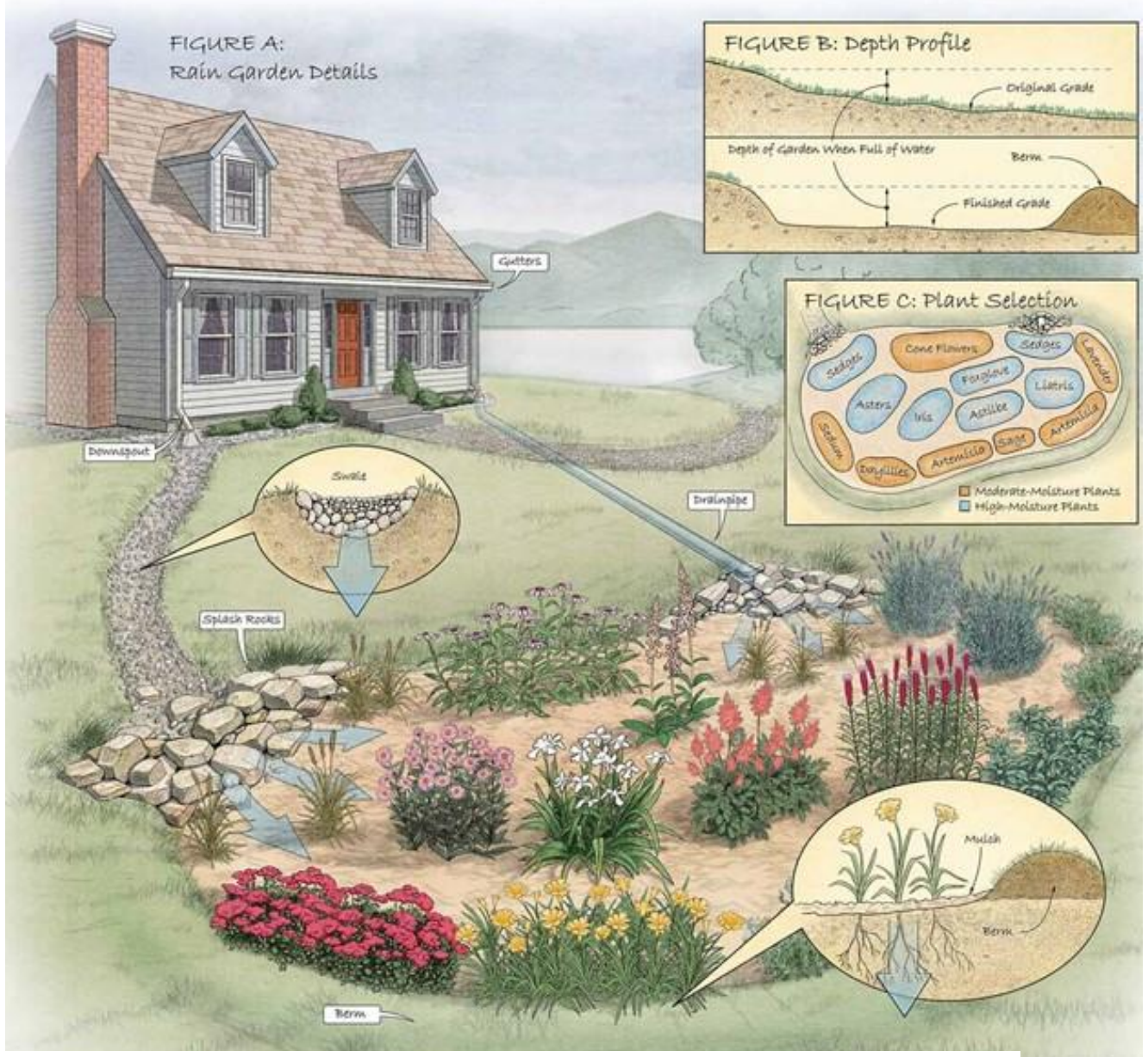
Do you need to create the depression by building a berm across to slope?



More planning questions

Do you need a short swale -- 5 to 10 feet -- to channel the water into the Garden? You can use 1½" river rocks, or larger, to set the course

Or, will you need to bury 4" PVC pipe for a longer run of 30 feet or more — or to go under sidewalks?



Location, Location, Location

Place your rain garden at least 10 ft. away from your home. Otherwise, water may saturate the soil close to the foundation or even back up against it.

If you already have water pooling close to your home, channel it away with an underground PVC pipe to the garden. This may mean tunneling under a walkway or other obstruction.

Keep in mind "the big rain" – that storm a couple of times a year that will overflow your garden.

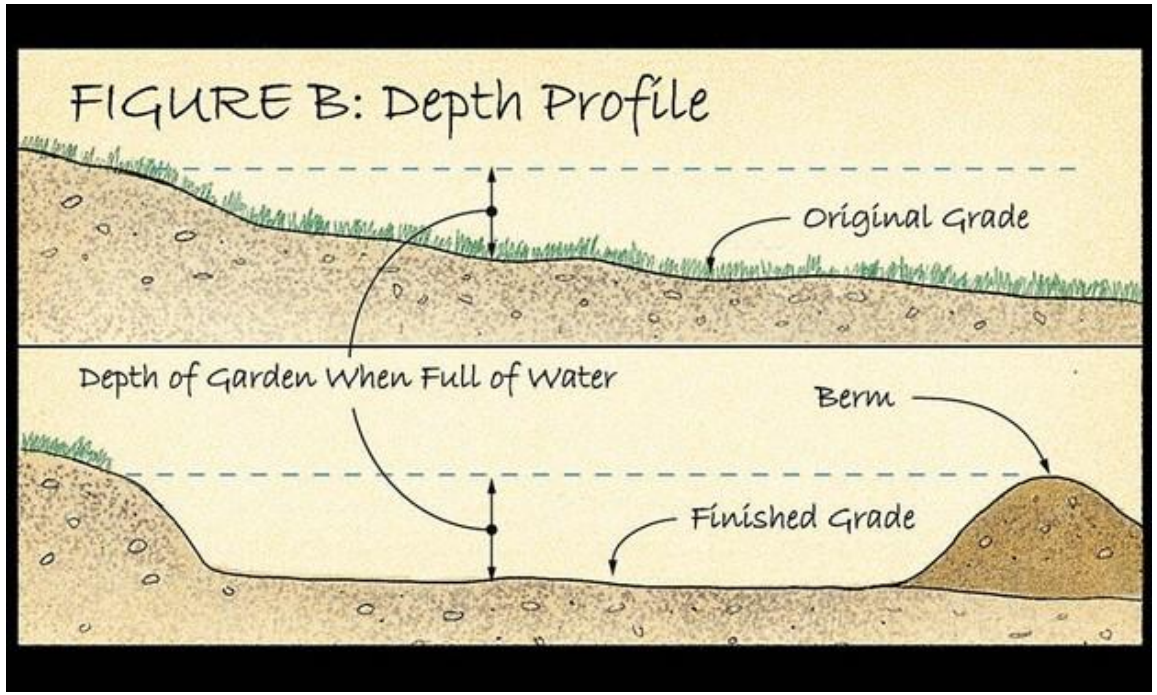
Create an overflow zone, a slightly lower area on one side with stones that will channel water away once the garden fills. Locate it away from your house and your neighbors' homes as well.

Do not locate the garden over a septic tank or underground utility lines.

Remember to call 811 (national number) to have your utilities marked before digging.

There is some math involved
How deep?

- How fast does your soil drain?
- Remove the grass and vegetation from the garden area and amend the soil for the garden
- Dig a hole in your garden area about the size and depth of a large coffee can – approximately 8” x 8” x 8”
- Fill it with water and then watch to see how long it takes for the water level to drop.
  - If in one hour the water level has dropped by ½”, you can figure the soil drains 1” in two hours.
  - At this rate, the garden soil will handle 12” of water in a 24-hour period, making the ideal depth of this garden 12”



More math – How big?

You need to have an idea about how much water your Garden needs to capture:

Your source of runoff is the roof of your 2,400 square foot home

but half of your roof drains to the opposite side of the house –

so a 1" rainfall would produce 1,200 sq ft of runoff at a depth of 1"

divide that 1,200 by 12 and you get

100 CUBIC feet of water for your Garden!

If your soil will drain 12" over 24 hours, you will need 100 SQUARE feet of Garden area to handle the runoff – If your soil only drains at 8" over 24 hours. You will need 150 Sq Ft of garden

However . . .

Yard Math -- not classroom math

It is OK to vary the size.

A smaller garden can still yield big benefits.

Rain gardens that are 30 percent smaller than ideal still handle nearly 75 percent of the storm watershed from a house.

Of course, you can also make it larger.

Most importantly, make sure the size of the garden fits your landscape and the shape is very much determined by the yard – whether it is square, oval, rectangular, round, bean shaped – whatever fits.

Some samples of Rain Gardens

Use of terrain is displayed in the top photo

The bottom left picture shows the use of large rocks to accent the Garden

The photo at the bottom right shows an overflow spill way using the river rock bed

Endless Possibilities

Whether you use regular shapes or irregular forms

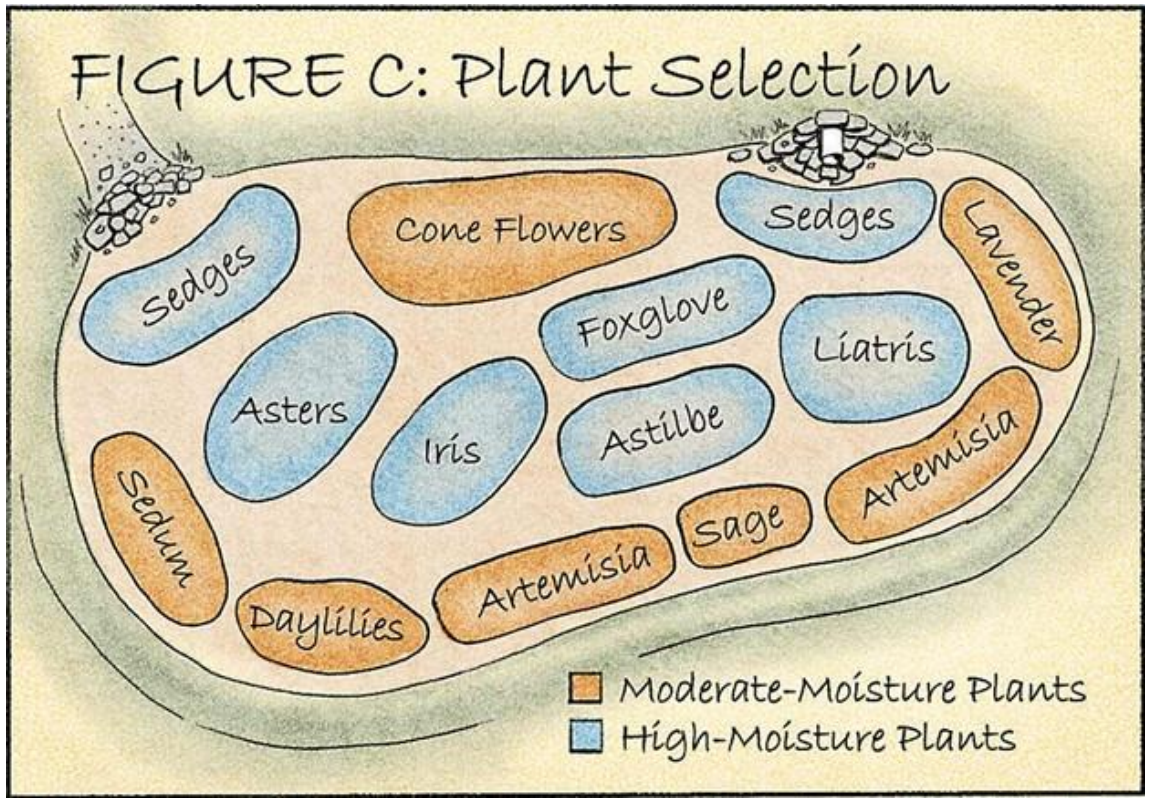
Defined borders or natural lines

The Rain Garden expresses your wishes and brings beauty into the world

What are you going to plant!

Once you know the size and shape of your garden, draw a diagram of
WHAT you want to plant
AND
WHERE in the Garden it is most pleasing

Guides for placement are really the subject of a presentation on garden design



https://www.aces.edu/blog/topics/lawn-garden/residential-landscape-design/

Go Native!
They are already acclimated

Aster, daylily, iris, sedum, coneflower, artemisia and sedge are examples of good rain garden specimens. Talk to your local university extension or other garden experts about other options for our area.

Choose plants that have "average to moist" water requirements listed on their tag. Position them in the deepest parts of your rain garden.

On the higher edges of the bed, position plants that thrive in "average to dry" water conditions.

While it may seem intuitive to purchase moisture-loving plants for your rain garden, don't do it. Since your garden is designed to drain in 24 hours, the moisture-loving plants will soon be left high and dry.

There are some good reasons to select native plants. Native grasses, wildflowers and shrubs generally have very deep root systems.

Plants for the Rain Garden

Iris

Asters

Astilbe (shade)

Plants for the Rain Garden

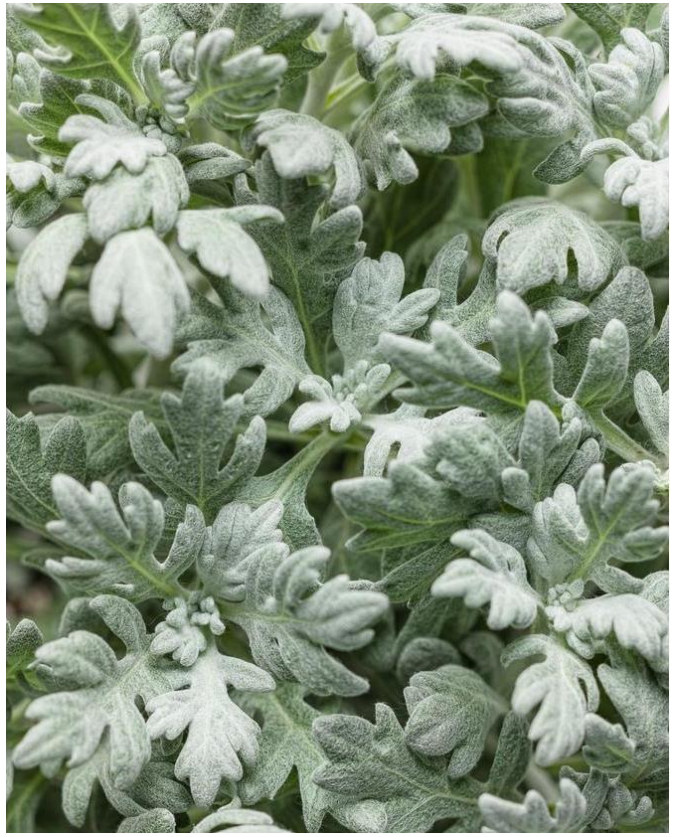
Liatris

Foxglove

Cone Flower

Plants for the Rain Garden

Artemisia



Lavender

Sedges and grasses

To a Gardener,
everything is a Flower Pot

Find a spot and make it bloom

Current Projects

A Rain Garden is basically –

a basin to capture excess rain to soak into the ground
rather than to runoff and carry soil and nutrients with it.

So Why not

A Rain Garden within a Flower Bed

There are several options to consider

Shape – Design variables

How many of you have rectangular flowerbeds?

What about a curved border?

What about an unattached extension?

maybe with steppingstones to pass thru

My front yard slopes down from Right to Left

It certainly won't stress you to walk it, but the water does flow downhill

I also have several depressions – the reminders of old trees

The dropoff

Just to the left of the brick border, the ground dropped off by almost 8” – an old stump depression from before we moved in back in 1992

During storms this area would puddle

New Design and amended soil

I realigned the brick border into a wider curve.
The sod and weeds had to be removed, and then I turned up the next 8-9 inches of the existing soil -- it took some digging.
The soil was amended by adding 9 cubic feet of garden soil, 2 cubic feet of sand, 2 cubic feet of mini pine bark nuggets, and about ½ cubic foot of worm castings.

I raked the surface smooth and contoured the basin.

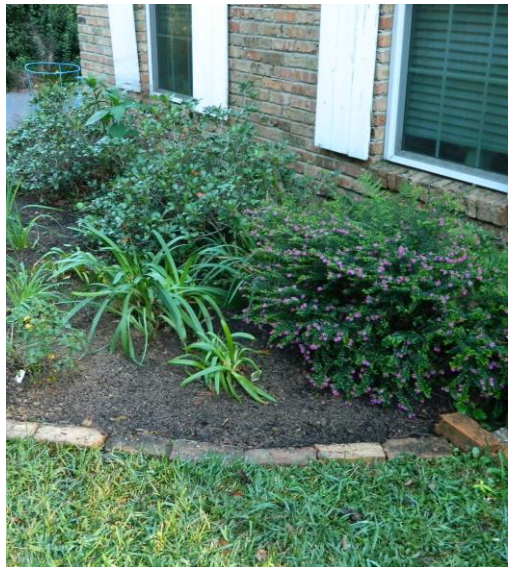
A Work in Progress

Started adding the plants for the upper level of the bed – Lily of the Nile, Lantana, and some Irises

And Pink Cloud grasses and Cone Flowers toward the lower end

Still some more plants to come and some river rock for accents

Maybe a Garden gnome or a sculpture



What's Next!

Well, there is this promising spot on the other side of the front yard . . .

Credits

- www.aces.edu
- www.familyhandyman.com/garden/how-to-build-a-rain-garden-in-your-yard/
- Rain Gardens, Green Infrastructure, U.S. EPA
- Water-Smart Landscape Design Tips, Water Sense
- Bioretention Illustrated: A Visual Guide for Constructing, Inspecting, Maintaining and Verifying the Bioretention Practice, 2013, Chesapeake Stormwater Network (PDF)

Make sure to take our survey!

- https://auburn.qualtrics.com/jfe/form/SV_eUJ0VZl6GtC4CpL