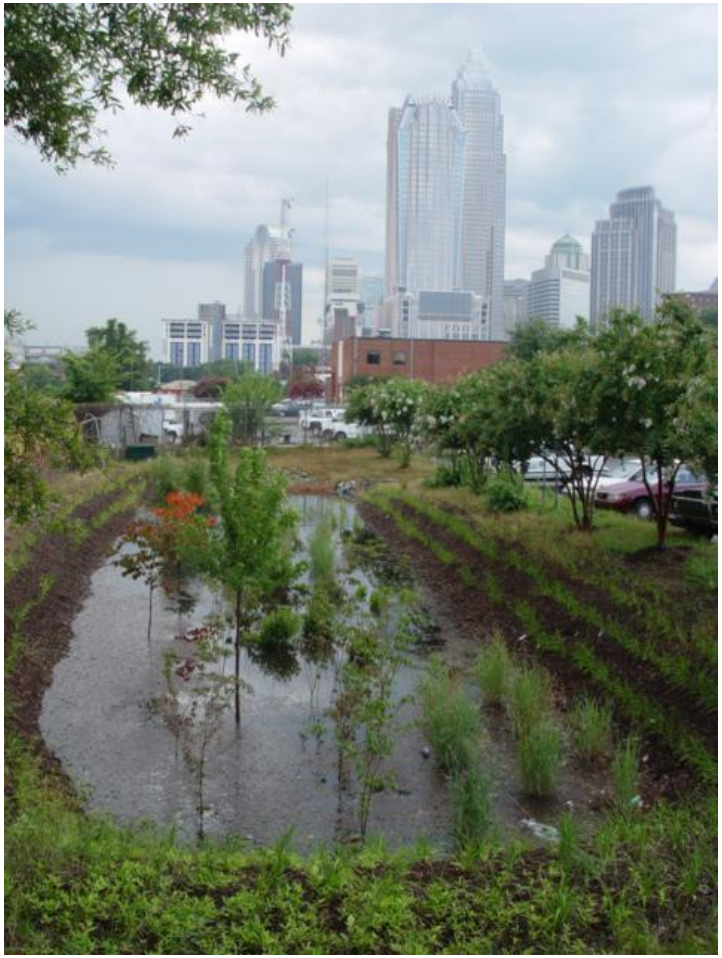
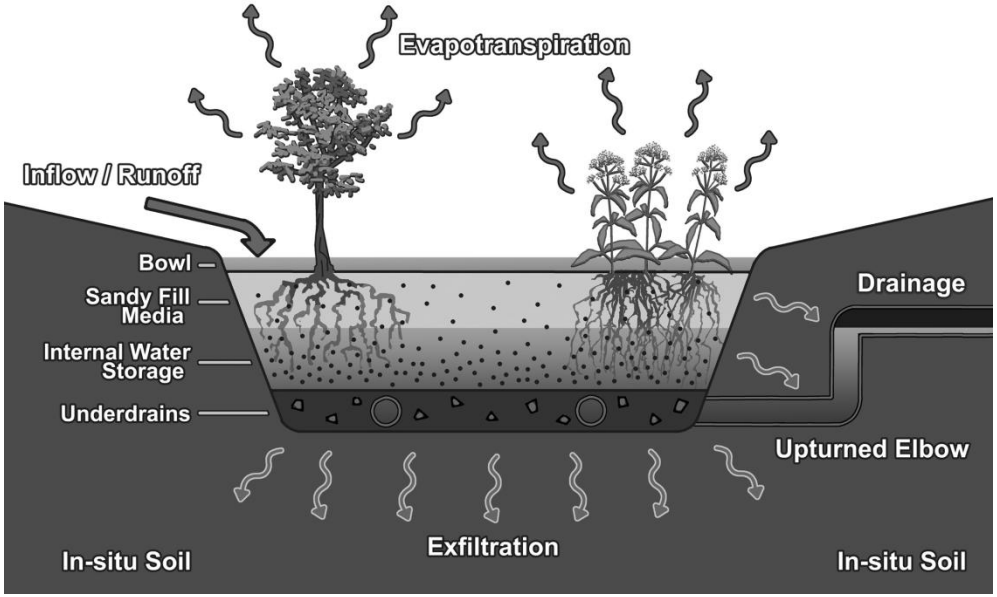
Bioretention



Bioretention (Rain Gardens)



Bioretention Cells

Large Parking Lot

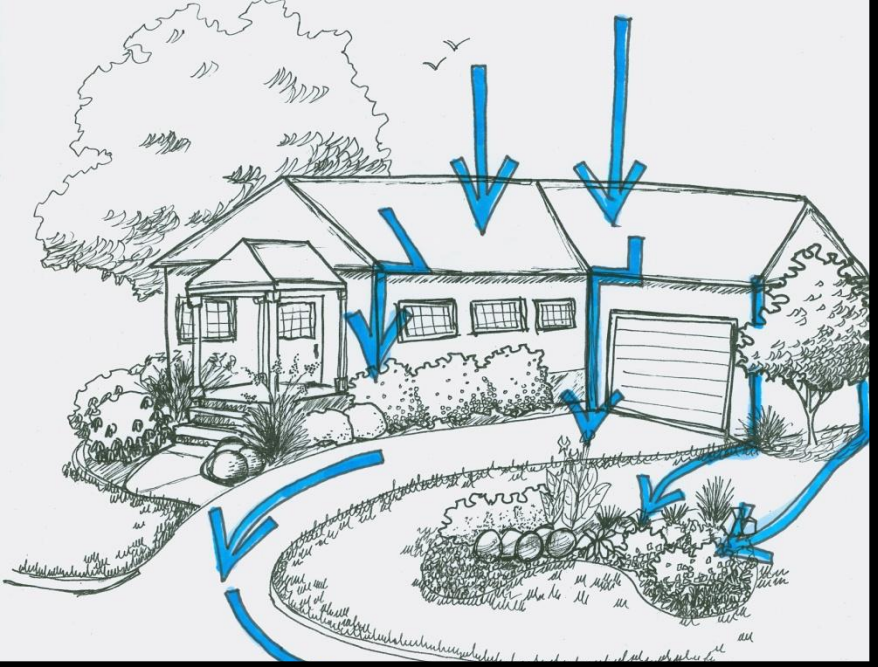
Grassed Bioretention

Transportation Bioretention

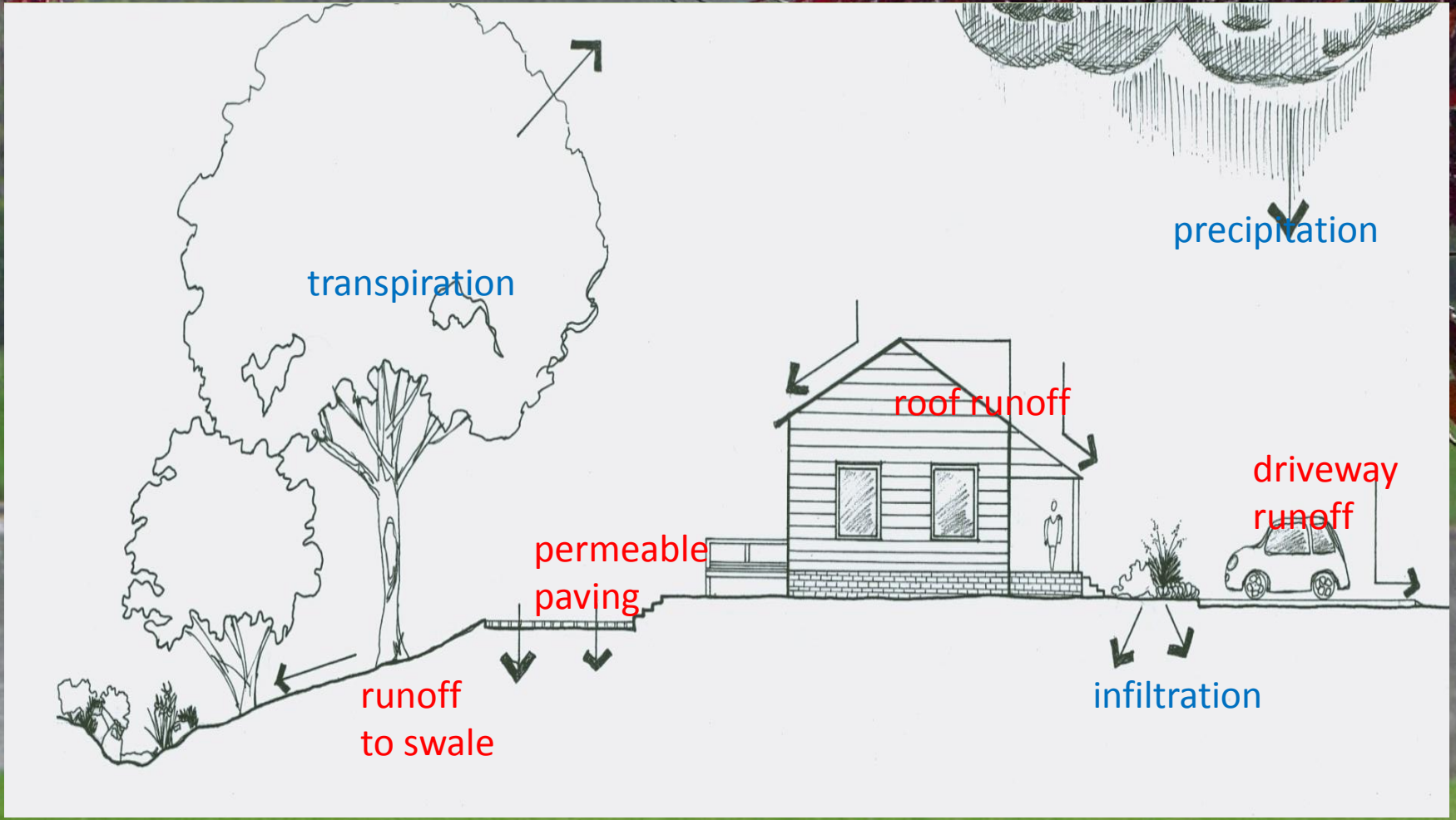
Backyard Rain Gardens

Rain Gardens – Not about Rain

Helen Kraus
Department of Horticultural Science
North Carolina State University



Rain Gardens & The Water Cycle

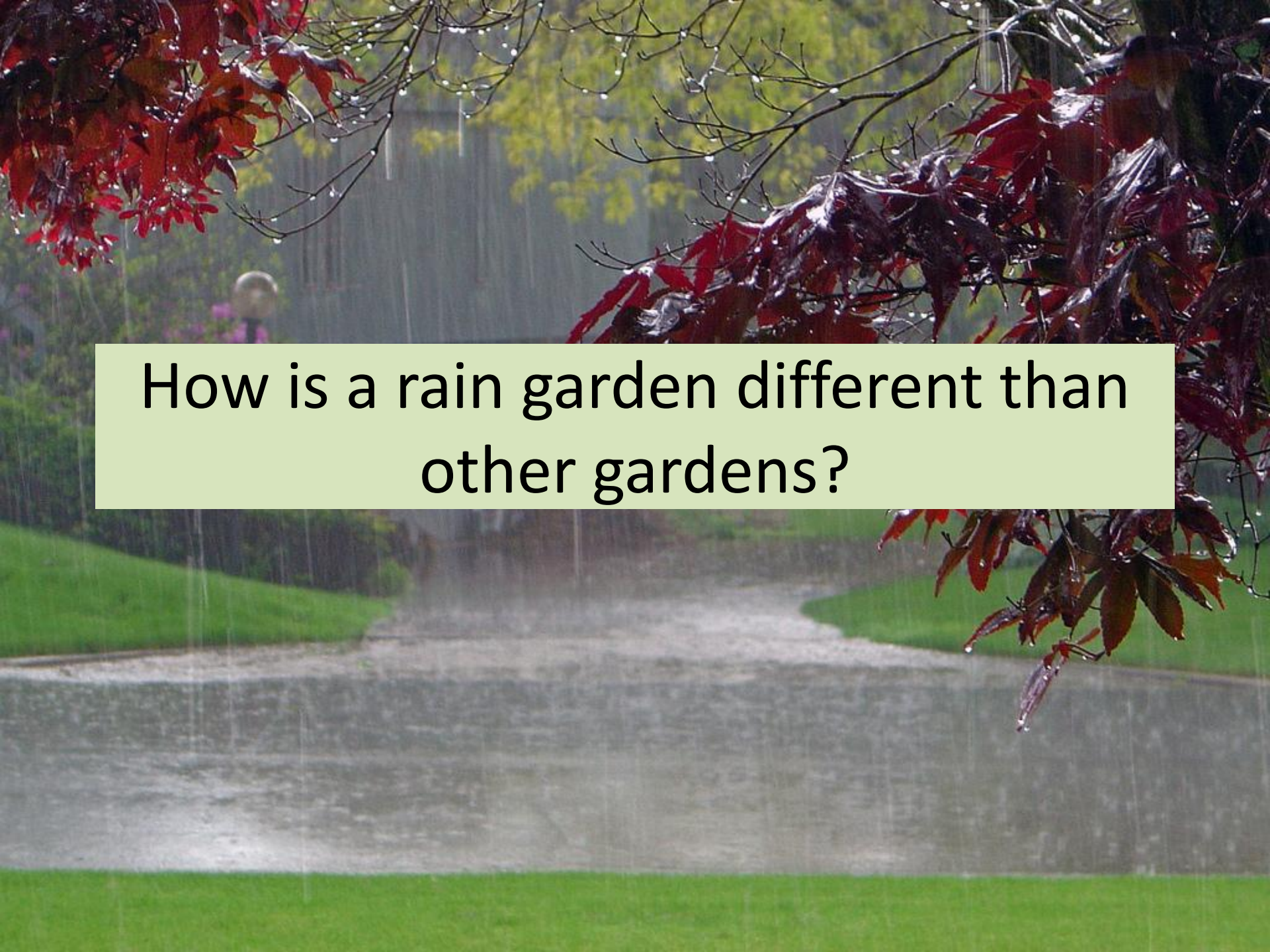


What is a Rain Garden?

Pollutants Filtered by a Rain Garden

Pollutant	Source	Removal
Metals	Roof shingles, oil, grease, soil	43-97%
Phosphorus	Detergents, fertilizers, pet wastes	65-87%
Nitrogen	Fertilizer, pet waste, organic matter	15-92%

What is a Rain Garden?



How is a rain garden different than other gardens?

Wetland

Bog

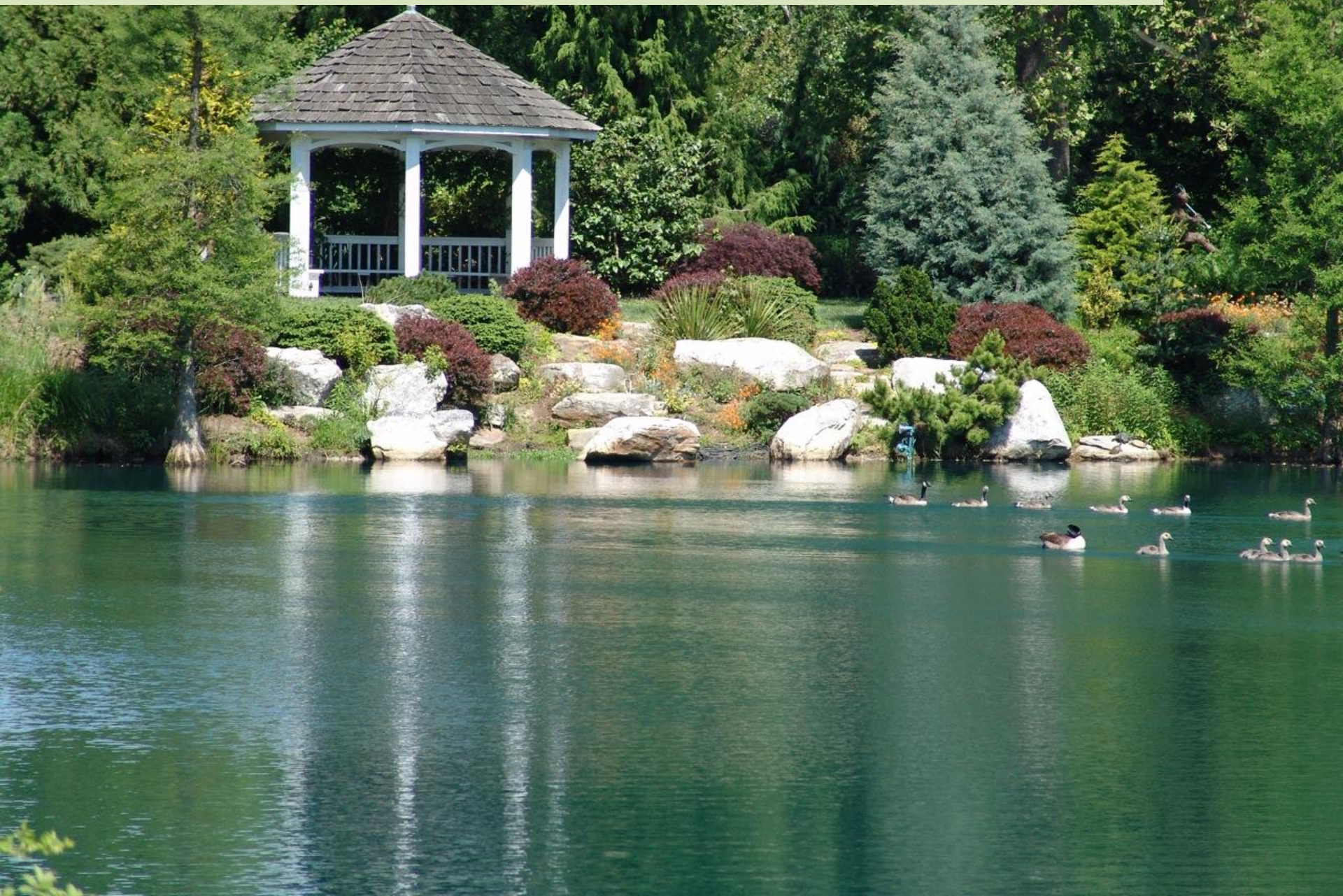
Rain Garden

Dry Garden

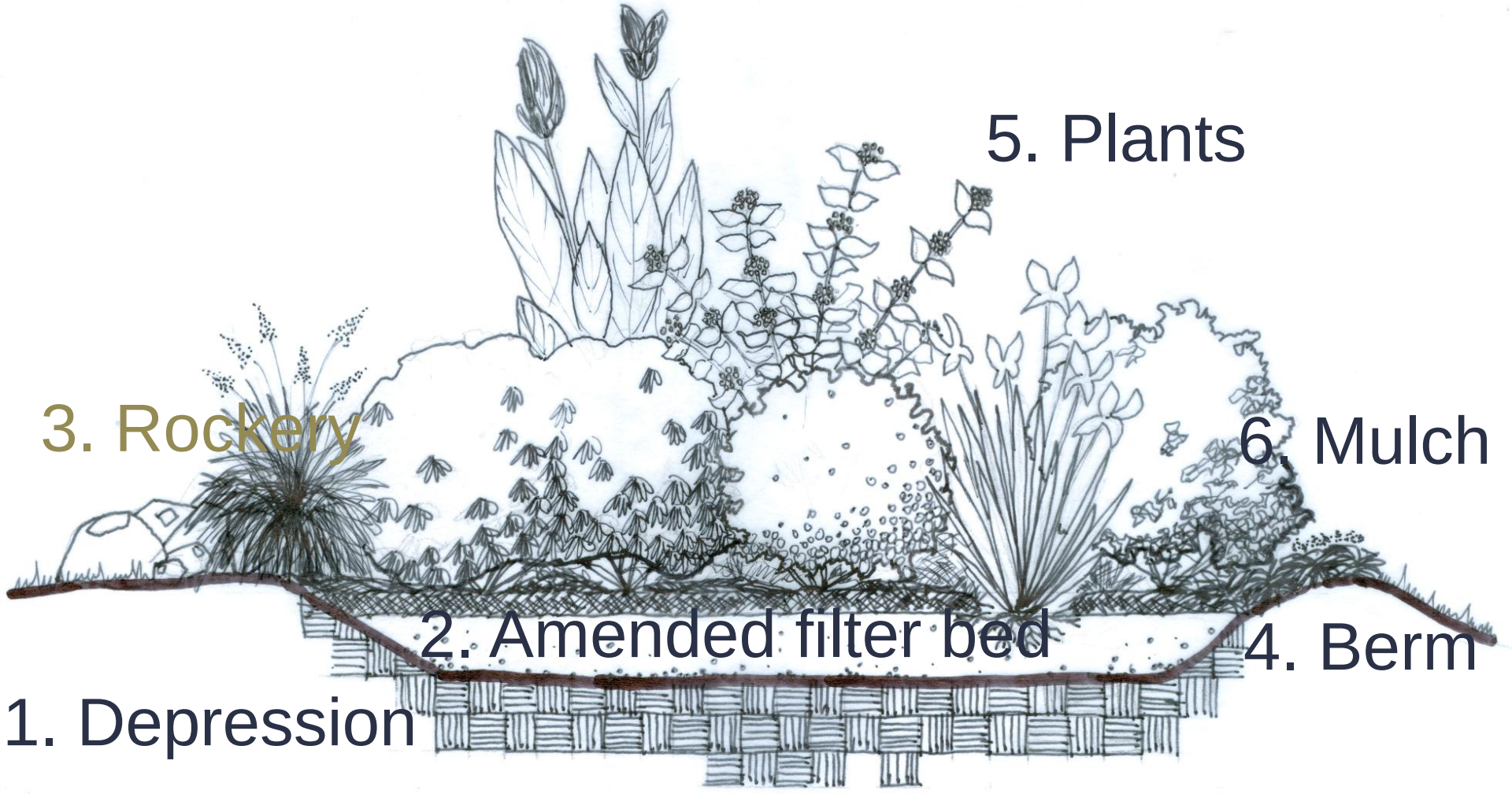
What a rain garden is NOT!!!

Retention Basin

Water Garden



Success with Rain Gardens - Rain Garden Components



Key to Plant Selection

- "normal" rainfall for this area is about 40"/year…
- Typically when we have a rain event, it's common to receive a lot at once—Then long periods of dryness…

SO…appropriate plants are those that can withstand a lot of water AND periods of no water at all!!!

Newly installed rain garden in Rockville, MD

At Planting

After a Rain Event

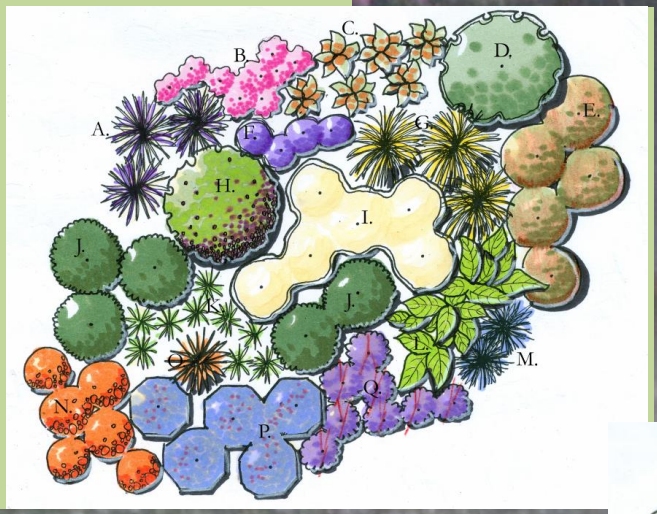
Plant Architecture

Deciduous / Evergreen

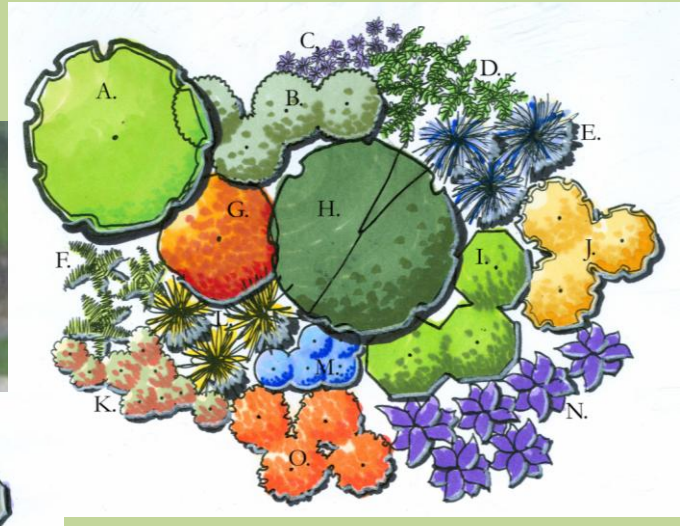
Fibrous Root System

Garden Style and Environment

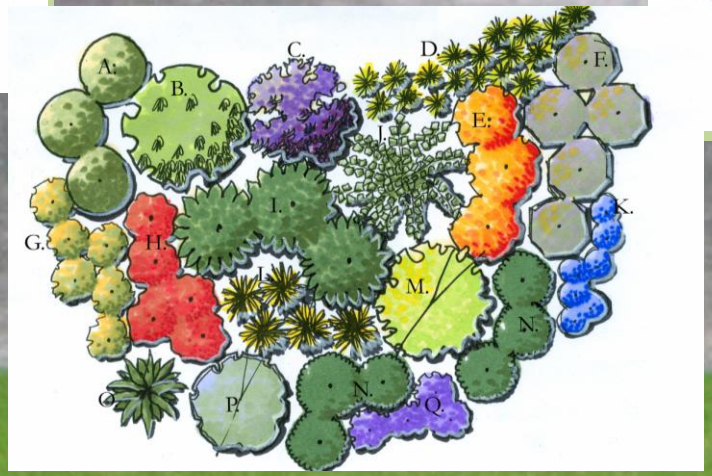
Sunny



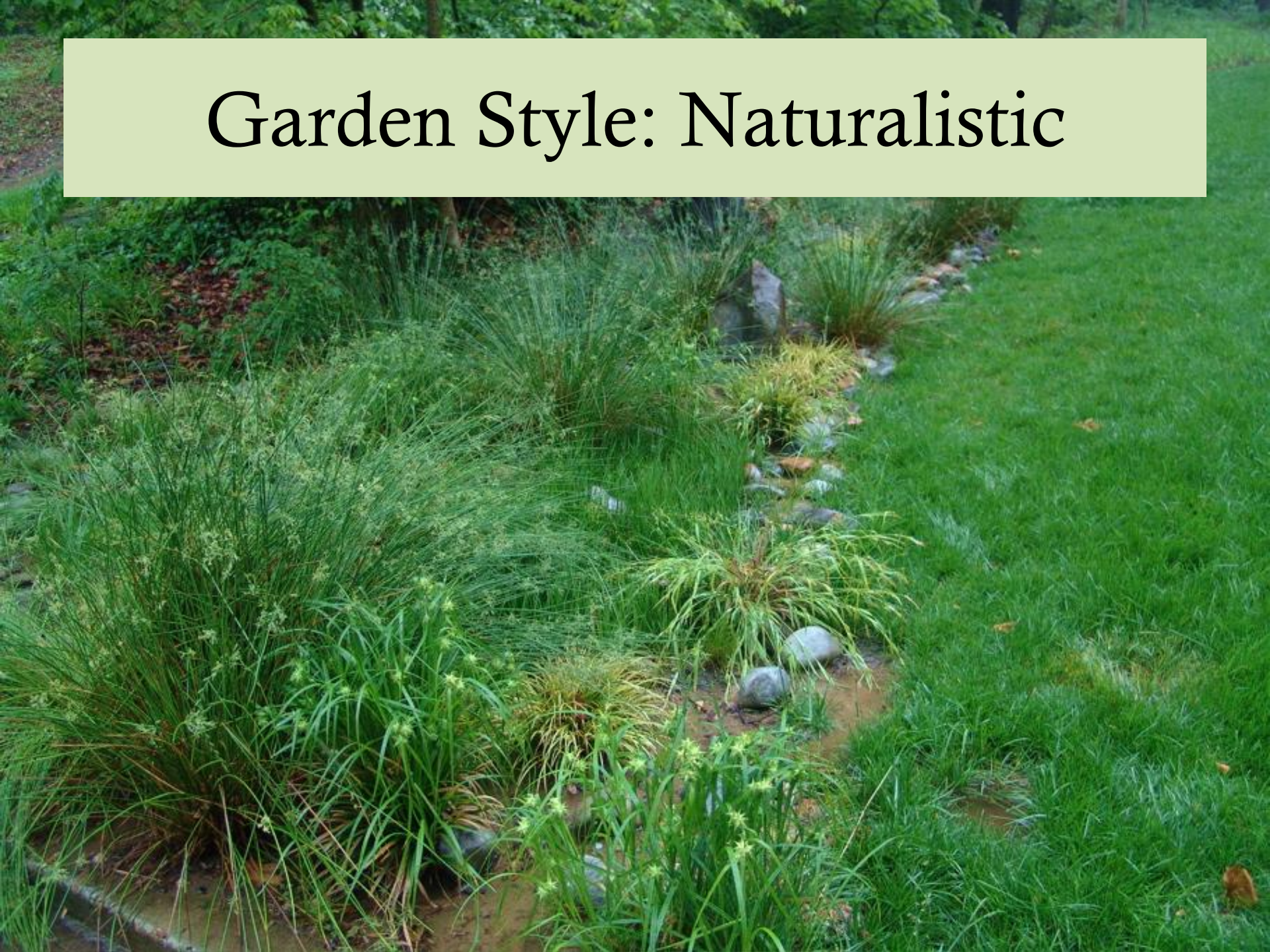
Part-Sun



Shady



Garden Style: Naturalistic



Garden Style: Informal

Garden Style: Formal

Plant Recommendations

Native Species	Cultivars
Betula nigra	*Betula nigra* 'Duraheat'
Magnolia virginiana	*Magnolia virginiana* 'Sweet Thing'
Itea virginica	*Itea virginica* 'Henry's Garnet'
Viburnum nudum	*Viburnum nudum* 'Winterthur'
Juncus effusus	*Juncus effusus* 'Frenzy'
Panicum virgatum	*Panicum virgatum* 'Shenandoah'
Helianthus angustifolius	*Helianthus angustifolius* 'First Light'
Eupatorium purpureum subsp. *maculatum*	*Eupatorium purpureum* subsp. *maculatum* 'Gateway'

Plant Recommendations

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