

## Site Preparation for Conservation Landscaping

Undesirable plants on the site (weeds, other plants, and turf) should be smothered or removed by one of these methods:

- Smothering weeds and turf with newspaper, plastic/tarp, woodchips/mulch, etc.
- Removal by digging with shovels or sod-cutter using a string-trimmer to severely “scalp” undesirable plants down to bare ground.
- Use one or two treatments of a low-percentage solution of Round-up (3%-5%), being sure to carefully follow the label’s instructions and never apply herbicide on a windy or rainy day
- Good seed-to-soil contact is essential, so be sure to clear away all debris (turf/grass, leaves, thatch, etc.) until you have *exposed* soil (if using plants - do same prep, then mulch). Use rake to loosen and break up soil (no shovels/roto-tillers, as they expose dormant weed seeds)

### Mix and Apply seeds (if using plants - install in fall, plant in clumps, water & mulch):

- Best time for installing a native seed meadow (i.e., best germination results) is Oct. thru December, but it can be done *anytime* of the year – February thru April is also very good
- Mix seeds *thoroughly* with peat moss (the best) or with vermiculite, potting soil or sawdust
- Use approx. 1 part seeds to 5-10 parts mixing medium (peat moss, potting soil, etc.)
- Spread/scatter seed mixture by hand or spreader evenly over your prepared site
- Mix/scratch seed mix into soil with rake – do not turn soil or bury seeds (no digging)
- Press seed mix into soil by stomping with feet, tires, rollers, etc.
- Spread/sprinkle very light layer (1/2” or less) of straw (not hay), mulch or woodchips over your site – this light, scattered layer helps to trap moisture and protects seeds from extreme weather.
- Water until germination. Plants will grow at their own pace, when they get enough rain

### Manage and Augment your meadow:

- Remove invasive exotic plants as necessary
- Mow once a year, 11/01-3/07, every *two* years, if there are no invasive exotics, briars, vines, etc. Mowing 2/1-3/07 is best – this leaves winter cover for wildlife. Try to leave bottom 3”-5” of plant stems *uncut* – many beneficial insects hibernate and/or lay eggs in lower portions of stems; also, many plants have basal leaves that don’t need to be cut. Rake off the cut/mowed stems to release new growth and scatter them on the edges of your meadow, woodland or on your *stone/brush piles* - those stems are full of beneficial insect eggs/pupae and wildflower seeds.
- Add stone, log and/or brush shelters to the edges of you meadow to attract reptiles, amphibians, birds, mammals and hibernating insects (you can also use old pipes).
- Add a small water feature; a low birdbath or preferably, a shallow pool/puddle on the edge of your meadow will attract more wildlife, especially frogs, dragonflies and thirsty birds.
- Take a soil test of this area and measurement of square footage for a realistic size following the 2/2/18 site visit.

### \*Include at least one species from each of these eight important meadow plant groups:

1. Goldenrods (*Solidago* sp.) – deer resistant
2. Asters (*Aster* sp.) – deer resistant
3. Milkweeds (*Asclepias* sp.) – deer resistant
4. Mints (*Penstemon* sp. – spring bloomer, *Monarda* sp., *Scutellaria* sp., *Salvia* sp., *Pycnanthemum* sp., *Blephilia* sp., *Agastache* sp.) – deer resistant



5. Eupatoriums (Eupatorium sp.)
6. Ray-flower Composites, Sunflowers, Susans, Sneezeweeds and Coneflowers (Helianthus sp., Heliopsis sp. Rudbeckia sp., Helenium sp., Echinacea sp., Ratibida sp.)
7. Evening Primroses and Sundrops (Oenothera sp.)
8. Legumes/Pea Family (Cassia/Senna sp., Desmodium sp., Chamaecrista sp., Baptisia sp.)

**If space and site-conditions allow, adding a few of the following unique species will greatly increase your meadow's wildlife value and variety of bloom times:**

- Cup Plant (Silphium perfoliatum)
- Blazing Stars (Liatris sp.)
- New York Ironweed (Vernonia noveboracensis)
- Pasture Rose (Rosa carolina) & Virginia Rose (Rosa virginiana)
- Turtlehead (Chelone glabra)
- Downy Phlox (Phlox pilosa) & Wild Sweet William (Phlox maculata)
- Wild Strawberry (Fragaria virginiana)
- Common Dogbane (*Apocynum cannabinum*) – deer resistant
- Nodding Onion (Allium cernuum) or Meadow Garlic (Allium canadense) – spring bloomer, deer resistant
- Wild Columbine (Aquilegia canadensis) – spring bloomer
- Violets (Viola sp.) – spring bloomer
- Wild Geranium (Geranium maculatum) – spring bloomer
- Golden Alexanders (Zizia aurea)– spring bloomer
- Golden Ragwort/Golden Groundsel (Packera aureus) – spring bloomer

**Use at least 4 species of the following Native Grasses; select several from each season group to ensure the essential structure, shelter & food grasses provide on a year-round basis:**

#### **Warm-season species**

- Little Bluestem (Schizachyrium scoparium)
- Big Bluestem (Andropogon gerardii & furcatus)
- Side-oats Grama (Bouteloua curtipendula)
- Indian Grass ( Sorghastrum nutans)
- Purple Top Grass (Tridens flavus)

#### **Cool-season species**

- Deer Tongue (Panicum/Dichanthelium clandestinum)
- Bottle Brush Grass (Hystrix patula)
- River Oats (Chasmanthium latifolia)
- Wild (native) Ryes (Elymus sp.)
- Sedges (Carex sp.)

For more plant suggestions, see *NRCS Virginia Plant Establishment Guide* for Northern Piedmont

## Rain gardens

Once you have identified possible locations for your rain garden, test the soil. The success of your rain garden depends heavily on the infiltration rate of the soil. You can determine the rate with a simple procedure.

- Dig a 12-inch deep hole at the proposed site of your rain garden and fill it completely with water.
- Allow the water to sit for at least an hour so that the soil can saturate.
- Refill the hole so it is full. From this point on, observe to see if the water drains into the soil.
  - If the water drains within 48 hours, the site is suitable for a rain garden, however it is highly recommended that the soil be amended with some compost and sand
  - If the water does not drain in 48 hours, select a different location or amend or replace the soil and install an underdrain. It may be easier to choose another location
- You may choose to run the infiltration test more than once, in the same hole or in different holes, to ensure an accurate result.

Herbaceous plant (h), shrub (s) and tree (t) selections for different areas of rain garden:

**Basin** - This area will be the deepest and hold the most water for the most amount of time. The plants listed below are tolerant of inundated (flooded) conditions upwards of six inches, meaning that they can tolerate standing water for a period of time. Ideally, the rain garden and amended soil should allow infiltration of rainwater within 24 hours.

**Slope** - This area will hold water but will drain much sooner than the Basic. This zone is likely to hold several inches of water during and immediately after a rain event, depending on construction of the raingarden.

**Border** - The upper or transition zone between the rain garden and the non-garden area. This area will receive water infrequently; during very heavy rain events and will drain the fastest. It will be the most similar to typical garden areas, depending on the individual's watering practices. Almost any typical garden plant will work in this zone. Just be sure to use native plants to enhance wildlife habitat.

<b>Basin (lowest point)</b>	<b>Slope</b>	<b>Border (transition between landscape and bio retention)</b>
<i>Monarda fistulosa (h)</i>	<i>Clethra ainifolia (s)</i>	<i>Viburnum prunifolium (s)</i>
<i>Mornarda didyma (h)</i>	<i>Elymus virginicus (h)</i>	<i>Viburnum dentatum (s)</i>
<i>Eupatorium purpureum (h)</i>	<i>Panicum virgatum (h)</i>	<i>Viburnum trilobum (s)</i>
<i>Vernonia (h)</i>	<i>Sorghastrum nutans (h)</i>	<i>Potentilla fruticose (s)</i>
<i>Cephalanthus occidentalis (s)</i>	<i>Cornus sericea (s)</i>	<i>Rhus aromatic (s)</i>
<i>Lobelia cardinalis (s)</i>	<i>C a licarpa Americana (s)</i>	<i>Cornus racemose (s)</i>
<i>Amorpha fruticose (s)</i>	<i>I t e a virginica (s)</i>	<i>Ceanothus americanus (s)</i>
<i>Asclepias incarnata (h)</i>	<i>Baptisia australis (h)</i>	<i>Hypericum densiflorum (s)</i>
<i>Ilex verticillata (s) male and female</i>	<i>Hypericum (s)</i>	<i>Hammamelis virginiana (t)</i>
<i>Asclepias tuberosa (h)</i>	<i>Hystrix patula (h)</i>	<i>Agastache foeniculum (h)</i>
<i>Sambucus Canadensis (s)</i>	<i>Physotegia virginiana (h)</i>	<i>Liatris spicata (h)</i>
<i>Cornus amomum (t)</i>		<i>Oenothera speciose (h)</i>
<i>Lobelia siphilitica (h)</i>		<i>Chrysopsis mariana (h)</i>
<i>Solidago sp. (h)</i>		<i>Coreopsis verticillata (h)</i>
<i>Chelone glabra (h)</i>		<i>Coreopsis tinctoria (h)</i>



# Virginia Cooperative Extension

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The perennials and grasses selected for this list are able to withstand drought and deluge, with fluctuating water levels in primarily sun to partial sun exposure.