



This presentation is a PDF version of a PowerPoint about landscaping and what makes native plants so important in the garden design. As this presentation uses Virginia—specifically, Northern Virginia—for the geographical native range, the general concepts herein can be applied anywhere in the world.

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## What is a “native” species?

A native organism is one that evolved and naturally migrated to its current range and is biologically recognized by other species within this region.

### Virginia Native Plant



### Non-Native to Virginia



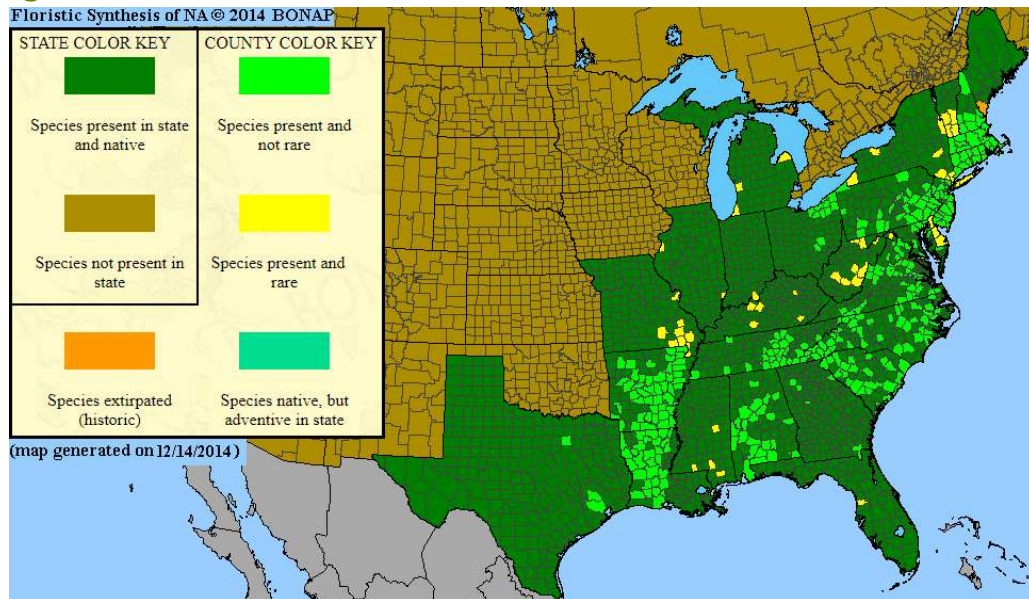
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Native plants that benefit pollinators can have small blossoms, as seen in this mountain mint. The butterfly is *Junonia coenia* (buckeye butterfly).

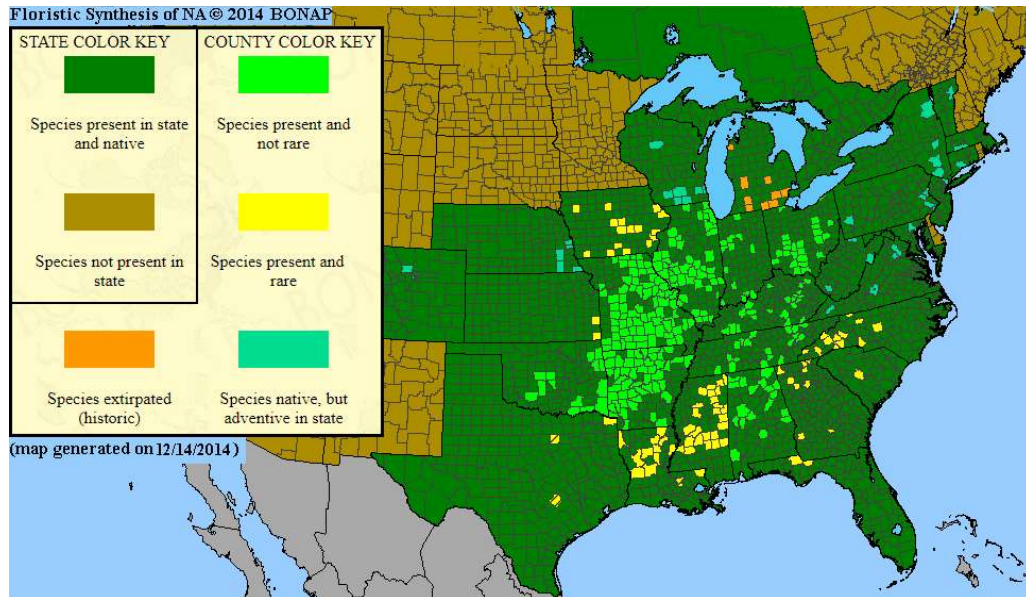
Though held by many gardeners as the quintessential “native flower,” purple coneflowers are Mid-West natives (the next slides have mapped ranges). Photographed in Virginia, a syrphid fly, possibly *Eristalis tenax*, still recognizes the coneflower as a food source. However, the further away a plant is from its home range, the fewer organisms will utilize it.

## Range of *P. muticum* (short-toothed mountain mint)



If a plant is native anywhere in the U.S. or Canada and occurs in a state or province, that state or province appears in dark green. A more accurate assessment of the mountain mint's range is at the county level (light green, yellow, and orange). Multiple Virginian counties are in light green showing that mountain mint is a Virginia native.

## Range of *E. purpurea* (purple coneflower)



Again, the dark green means that the species is native somewhere in the U.S. and/or Canada. The light green and yellow counties show that the purple coneflower is a Mid-West native. Virginia is in dark green, but its highlighted counties are teal, meaning the coneflowers likely escaped gardens or were planted in wild areas instead of occurring naturally.



## What is an “invasive” species?

An organism that humans moved to a new location where its population now grows without natural controls.

*Pyrus calleryana* (Bradford pear)

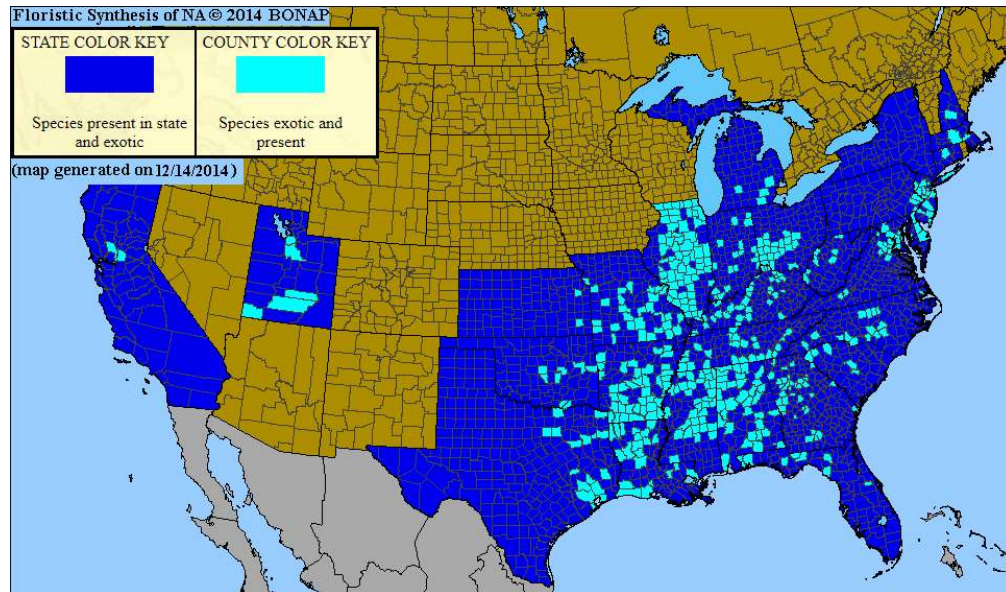


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Bradford pears, aka Callery pears, are originally from Asia and are one of the most invasive trees in Northern Virginia. It is most conspicuous in the spring by its white flowers that reek like cat pee. This image shows it growing along a landfill, specifically the I66 Transfer Station.

## Invasive Range of *Pyrus calleryana* (Bradford pear)



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Since Bradford pear is not a native anywhere in the U.S. or Canada, states where it appears are in dark blue. Counties where it is invasive are in light blue. Notice how much of the light blue congregates around urban areas, where Bradford pears are frequently planted. The distribution reporting is likely incomplete: all northern Illinois counties list it as present, yet Wisconsin does not list any occurrences.



Naturalize is a nice way of saying invasive just like one nation's colonizer is another nation's conqueror. *Vinca minor* (lesser periwinkle or dwarf periwinkle) is an example of a weed that insidiously creeps through the yard and becomes difficult to control. When asking an employee at a garden center for a good native groundcover, he recommended periwinkle. When I said it wasn't a native, he said, "it will naturalize."

Bottom line is species like periwinkle are invasive and will often take over plots and even expand into natural areas when left unchecked, much like the periwinkle picture took over this slide!



## What is a “wildflower?” – part 1

A flowering plant growing in natural areas or low-maintenance landscapes.



A wildflower is any plant blooming in what appears to be a natural setting. That plant species could be native, a well-behaved exotic, or an invasive weed, such as this pink monoculture, *Coronilla varia* (crown vetch), pictured here. Often, but not always, the plant is uncultivated, i.e., has a genotype found in natural populations as opposed to artificially selected cultivars (addressed in a later slide).



## What is a “wildflower?” – part 2

A flowering plant growing in natural areas or low-maintenance landscape.

### Common Non-Natives:

- Calendula
- Cosmos
- Daisies
- Poppies
- Forget-me-nots

### Common Natives:

- Asters\* & relatives
  - Black-eyed Susans
  - Coreopsis
  - Sunflowers
- Milkweeds



\*Globally, there are 24,000-30,000 species in the family, Asteraceae!

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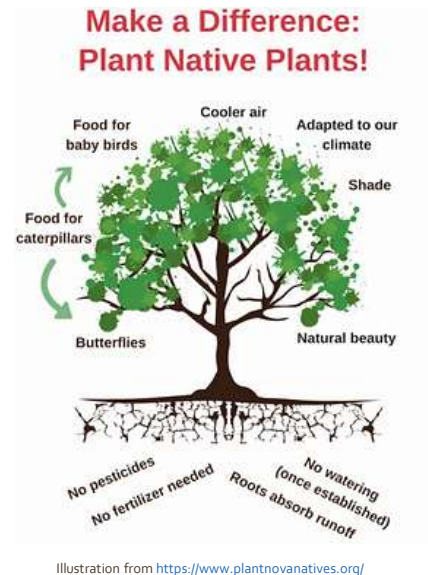
Reference: [https://repository.si.edu/bitstream/handle/10088/11397/bot\\_2005\\_pr\\_Funk\\_et\\_al\\_Supertree.pdf](https://repository.si.edu/bitstream/handle/10088/11397/bot_2005_pr_Funk_et_al_Supertree.pdf)

Pictured here is a wildflower garden featuring Calendula and other western European and Mediterranean plants. The gray-green plant in the center is a Eucalyptus. These plants are considered well-behaved non-natives. The only natives are the background trees.

The common plants mentioned here are very general. Asters also include joe-pye weeds, New York ironweed, and goldenrods. Black-eyed Susans, another type of aster, are part of the broader coneflowers. Large, annual sunflowers (*Helianthus annuus*) are native to western states and northern Mexico, but Virginia has woodland sunflowers and false sunflowers, such as oxeyes. Calendula, cosmos, and daisies are also in the aster family. Before purchasing or acquiring a plant for a native garden, make sure the species is native to your area.

## Reasons to Plant with Natives

- Low Maintenance
- Promote Biodiversity
- Food, Habitat, and Shelter for Wildlife
- Already Evolved for the Area
- Healthy Places for People
- Helping the Climate
- Saving Water Usage
- Improve Soil Conservation
- Filter Pollutants Before They Reach Waterways
- Beauty



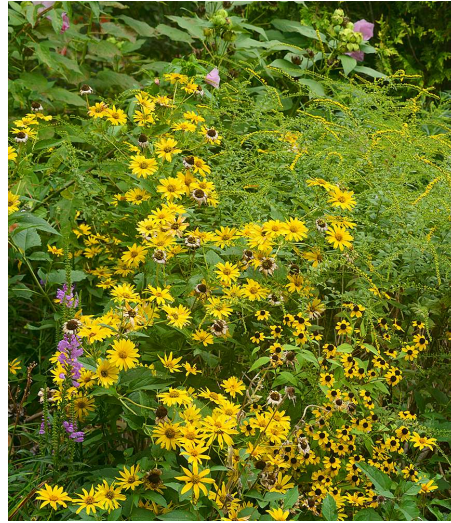
Bottom line: there are many reasons to plant native species in the landscapes and gardens!

## How might a native landscape appear?

Mid-Spring Shade



Late Summer Sun



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These two gardens, seen in different seasons and growing areas, mimic a natural setting. All plants seen here are Virginia natives growing in 100% organic gardens. Native plants can just as easily be used in formal gardens by planting them in geometric arrangements. Vegetable crops can be incorporated into the landscape in a practice called “foodscaping.” Good landscaping design has successional blooms, meaning as one plant finishes flowering, another’s buds open.

Species blooming in the Spring image: *Phlox divaricata* (woodland phlox), *Tiarella cordifolia* (foamflower), *Rhododendron periclymenoides* (pinxterbloom azalea)

Species blooming in the Late Summer image: *Heliopsis helianthoides* (oxeye false sunflower), *Rudbeckia triloba* (brown-eyed Susan), *Solidago rugosa* (wrinkleleaf goldenrod), *Physostegia virginiana* (obedient plant), *Hibiscus moschuetos* (swamp or marsh rose mallow)



Spotlight: *Symphyotrichum novae-angliae* (New England aster) – part 1



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Aster species of all blossom sizes and colors are pollinator powerhouses. This slide features some of the butterflies and bees that visit *Symphyotrichum novae-angliae* (New England aster): *Junonia coenia* (common buckeye butterfly), *Euptoieta claudia* (variegated fritillary), *Agapostemon viriscens* (bicolored sweat bee), and *Bombus* species (bumble bee). All these insects pictured here are adults. Unfortunately, too many gardeners only focus on attracting only the **adult** pollinators. People even kill the larval stages of the adult insects they admire, such as marveling at sphinx moths, such as *Manduca quinquemaculatus* (five-spotted hawk moth), while killing tomato horn worms—the same insect at different life stages.

Spotlight: *Symphyotrichum novae-angliae* (New England aster) – part 2

Always include  
host plants.  
Good native  
landscaping  
supports wildlife  
at all life stages.



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Having host plants for larval development is crucial for a real pollinator garden. Doing otherwise is akin to expecting a newborn human baby to eat a steak and potato dinner for its first meal. New England asters also serve as a host plant for species like *Chloridea virescens* (tobacco budworm moth). Many other larval host plants, such as oaks, lack flamboyant flowers. Good native landscaping supports wildlife at all life stages.

Plants are plants. Why can't herbivores eat any plants, native or exotic?



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Imagine having a salad that fulfills your daily nutritional and caloric requirements. You receive this salad every day and all is well. One day, a salad item, maybe a lettuce leaf, is substituted with something undigestible, such as an oak leaf. After removing that oak leaf, the remaining salad is consumed. The next day, two undigestible are substituted, and the following day finds three items replaced. Soon, you will either remain here and starve or move someplace else where the food is better.

The same applies to wildlife. Many animals evolved to eat certain native foods—including ones not eaten by humans. Wildlife that munch from a large buffet are generalists and those that dine on few to one specific species are specialists.



## Are native cultivars good for wildlife? Example: Winterberry

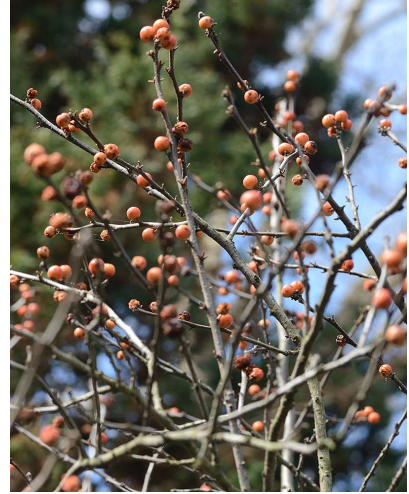
'Winter Red,' Winter



'Winter Red,' Spring



'Winter Gold,' Spring



Species name: *Ilex verticillata*

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Cultivars are plants that are artificially selected and propagated for certain features, such as color, height, or disease resistance. Due to propagation techniques, cultivars have low to no genetic diversity and are often clones. Cultivars that retain many wildtype features might still be a wildlife benefit. The 'Winter Red' winterberries produce more berries than an average wild type while looking very similar to the original fruits. Robins, mockingbirds, and cedar waxwings eat these berries, leaving bare branches in the spring. However, the 'Winter Gold' berries are orange and many birds do not recognize these berries as a food source. The result: come spring, 'Winter Gold' berries are left rotting on the branches.

Side note: The spring photos were taken minutes apart. Shortly after photographing the 'Winter Gold' berries, this cultivar experiment was over after 15 years and the 'Winter Gold' shrubs were removed.

## Additional Plant Resources

- Plant NOVA Natives <https://www.plantnovanatives.org/>
- Virginia Native Plant Society <https://vnps.org/>
- Invasive and Exotic Species of North America <https://www.invasive.org/>
- Biota of North America Program (BONAP) <http://www.bonap.org/>
- Digital Atlas of the Virginia Flora <https://vaplantatlas.org/>

Listed are some of the plant and distribution map references used in this presentation.