

A dense field of yellow Black-eyed Susans (Rudbeckia hirta) flowers with dark brown centers. The flowers are in various stages of bloom, and the background is a soft-focus field of more of the same flowers. The text "Native Plants and Pollinators" is overlaid in the center in a bold, white, sans-serif font.

# Native Plants and Pollinators

# About Pinelands Nursery





# Two main markets for native plants...



OR



# Aesthetics are key to ornamental landscaping



# While restoring natural functions is the goal of ecological restorations



# A fundamental tenet of ecology...

**is that plants from a given region are better adapted to those environmental conditions...**

**...more so than plants from outside the region.**



# The Twin Pillars of Ecological Restoration for Plant Material



**Provenance**



**Genetic Diversity**



# Genetic Diversity isn't a fad or a "buzz-word"



# Genetic Diversity is...

**...the natural expression of the variability within your plants.**

**Characteristics like leaf color are plainly visible, others like resistance to insects, disease and environmental stress are not.**



# Ornamental Horticulture

- **Vegetatively propagated cultivars**
- **Uniform size and ornamental characteristics**



# Ecological Restoration

- **Seed production for genetic diversity**
- **Uniformity of size and form are less important**



# Cultivars of native plants are becoming more popular....



**... but are they appropriate for ecological restoration?**

# Cultivars lack two critical traits for ecological restoration:

- local provenance
- genetic diversity

**Basically, cultivars lack genetic richness or integrity.**



# Selection is...



**...a horticultural tool that deliberately removes plants from their evolutionary context.**

Here is a stand of wild  
*Viburnum dentatum* in  
Central NJ.

They were in full flower.





# Viburnum dentatum

“Blue Muffin”

“Chicago Lustre”

There appears to be a 3-4 week variation in flowering time of *Viburnum dentatum* cultivars at a local nursery.



# Viburnum dentatum



**V. dentatum "Blue Muffin"**



**V. Dentatum "Wild"**

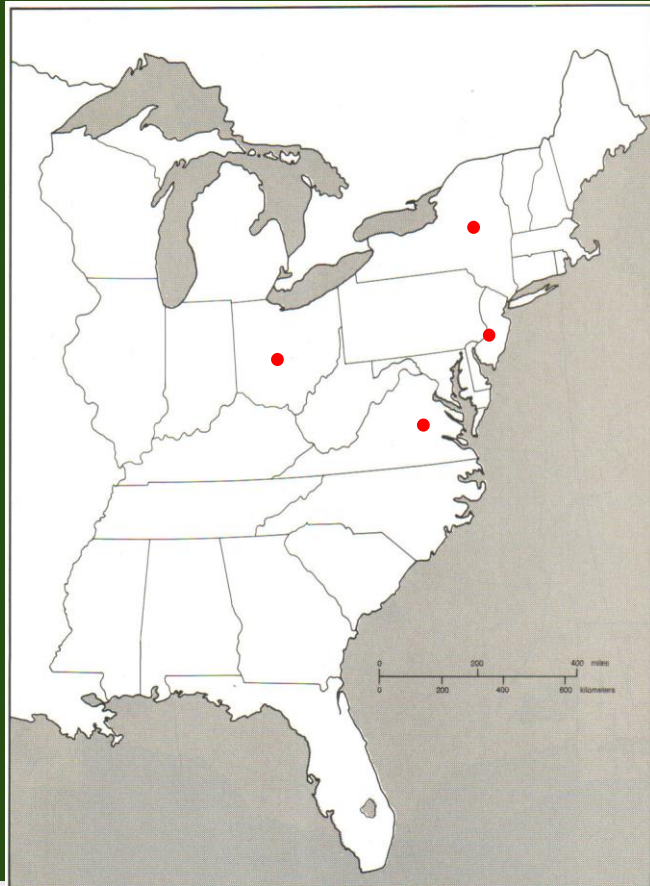


**V. dentatum "Chicago Lustre"**

# What is a "local" provenance????



# Is a local provenance ...



a certain radius around the job site?

determined by state boundaries?  
a geographic region, i.e.

Adirondacks?

determined by cold hardiness zones?

restricted to the job site itself?

**At Pinelands, we address provenance by collecting seed from various locations.**

**FYI, the provenance is where the seed came from, not the location of where it was grown!**

Seed transfer zones:  
geographical regions  
within which  
individuals (seeds,  
seedlings, or adults)  
of native species can be  
transferred with no  
detrimental effects on  
population mean  
fitness.



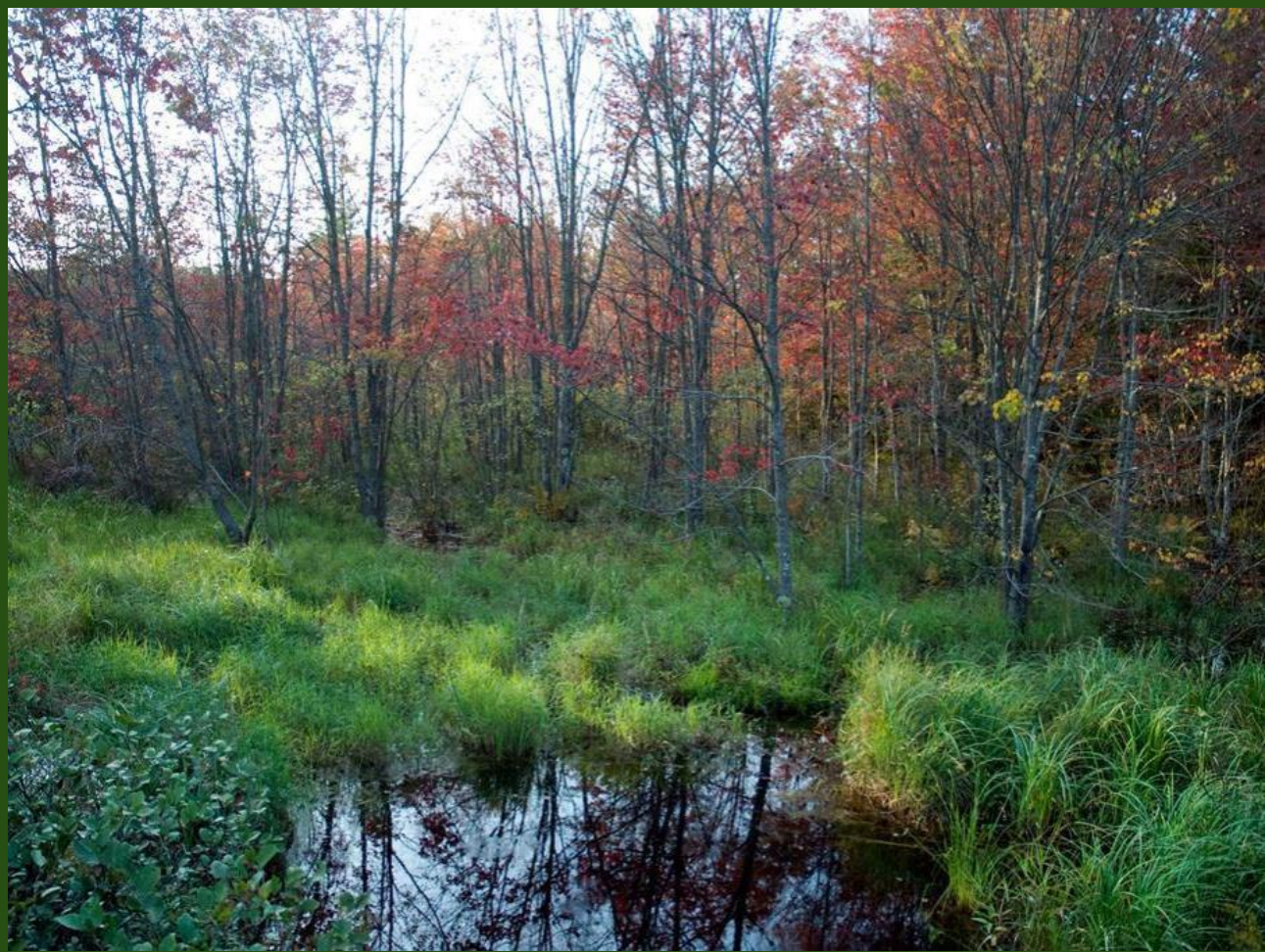
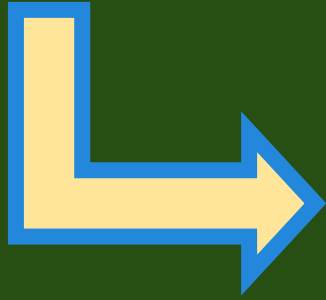
*Seed must be  
collected within  
one zone up or  
down of target site.*  
**National Park Service.**

Level II Ecoregions - Bailey

# Why genetic integrity matters.



This is typical  
red maple  
habitat.



Like many species it has a wide native range.





**You certainly  
wouldn't want to  
use a Florida  
source of red  
maple on this  
site in the  
Catskill  
Mountains of  
NY State.**



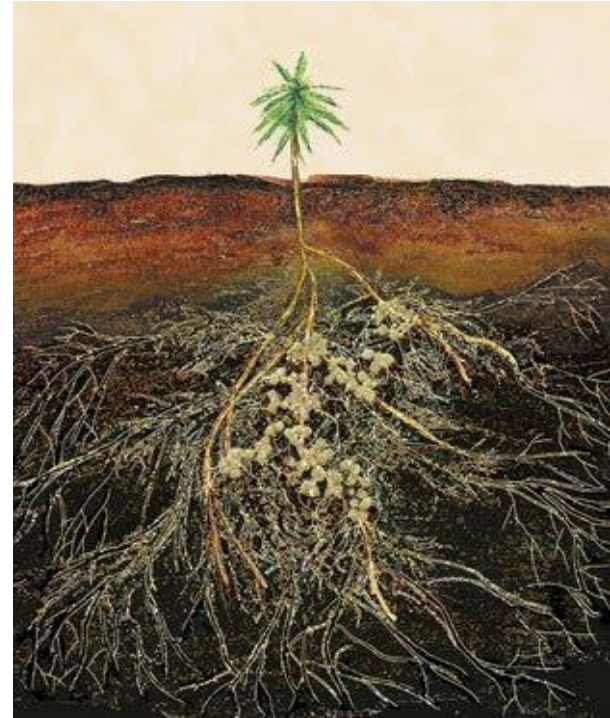
# Provenance may affect...

**Disease resistance**



# Fruit Production

# Mycorrhizal Associations



# Insect Resistance

# Senescence



# Bud Break

# Flowering Time



# Insects and Native Plants



**Studies have shown that some insects time their hatching period very closely with the bud break of their host plants.**





**Although tent caterpillars may temporarily defoliate species like black cherry...**

**Frogs, skunks and over 60 species of birds (some migratory) feed on the larvae and moths.**



# “A Chickadee’s Guide to Gardening”

by Doug Tallamy

NY Times March 11th, 2015



# Monarch butterfly caterpillars depend on milkweed foliage.

In your backyard, could a provenance that leafs out 2 weeks later have an influence on monarch populations?



**Monarch butterflies also depend on nectar as they migrate south.**

**Plants from a local provenance installed on a restoration site should produce flowers that coincide with the migration.**



# How Do Insects See Flowers



Rudbeckia hirta



An Insects View of a Flower - EisnerThomas

Other native pollinators may also be affected if plants from distant seed sources flower out of sequence.





Selecting the wrong provenance can also lead to "timing" problems for migratory birds as they search for ripe seeds and berries on their way south.

**Hummingbirds feed on cardinal flower nectar as they migrate south in the fall.**

**What if the flowers were out of sequence with the migration?**



# Selecting the wrong provenance can affect:

**Cold hardiness**

**Bud break**

**Insect and disease resistance**

**Flower production**

**Fruit production**

**Growth rate**

**Senescence**

**and other factors**





# But how much does it really matter?



Probably not much when it comes to small projects









Connect    Ask an Expert  Search 

Threats to Bays & Rivers ▾ Create a Jersey-Friendly Yard ▾ Jersey-Friendly Plants ▾ Additional Resources ▾

## The Interactive Yard

The Interactive Yard is a tool to help learn about the basic concepts behind transforming your yard into a Jersey-Friendly Yard.



### Building a Better Yard

The Interactive Yard is designed to help you learn how to **convert a yard from a lawn-dominated landscape** into one that features beds with "Jersey-Friendly" plants.

As you transform the yard, you will be **removing high-maintenance lawn areas** and reduce the need for fertilizers, add beds with **native plants**, **reduce stormwater runoff** and create **habitat for wildlife** and pollinators.



Click below to get started.

# Hometown Habitat

By Catherine Zimmerman

ft. Doug Tallamy

[www.themeadowproject.com](http://www.themeadowproject.com)



[www.pinelandsdirect.com](http://www.pinelandsdirect.com)

***P*inelands  
**DIRECT****

[www.pinelandsnursery.com](http://www.pinelandsnursery.com)



# Pinelands

## Nursery & Supply





# CLIMATE SUMMIT

WHAT IF IT'S  
A BIG HOAX AND  
WE CREATE A BETTER  
WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.



12/19 USA TODAY  
DAN RITT