Native Plants and Pollinators
About Pinelands Nursery
Two main markets for native plants...

- Ornamental Horticulture
- Ecological Restoration
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.
There appears to be a 3-4 week variation in flowering time of Viburnum dentatum cultivars at a local nursery.
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.
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
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
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
www.pinelandsdirect.com
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.