

Garden for Wildlife:

*NATIVE PLANT
SELECTION*



NEW JERSEY
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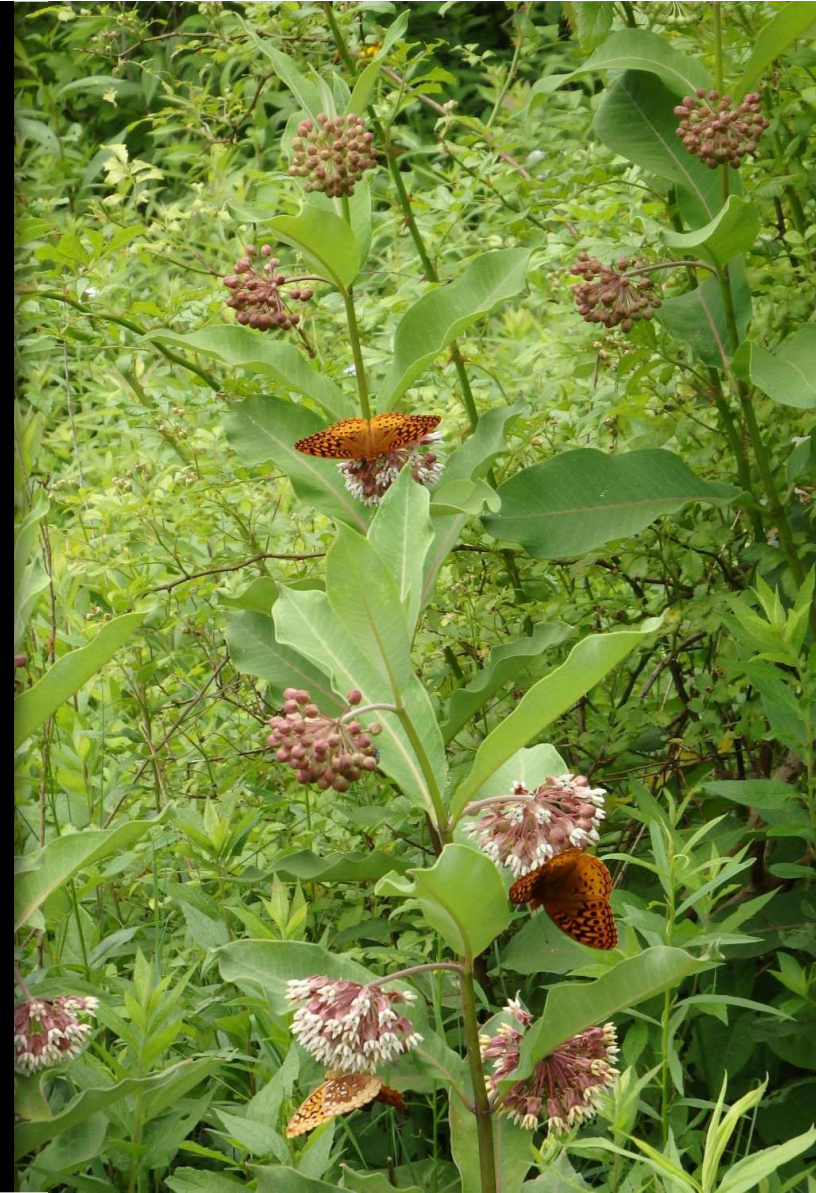
Program Director



- Stephanie Punnett
- (908) 396-6594
- Stephanie.punnett@njudubon.org
- www.njudubon.org
- Environmental Education
- Wildlife Gardening
- Wildlife Biology

What is covered in this Webinar:

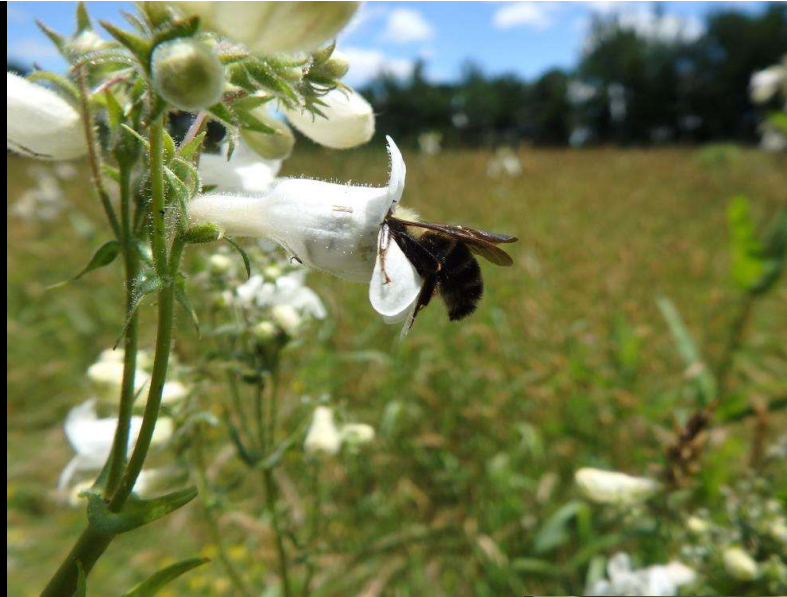
- What is a Native Plant?
- Planting Strategy
- Our Top Picks:
 - Trees
 - Shrubs
 - Flowers
 - Grasses
 - Ground Covers
- Bonus Plants!
- Additional Resources



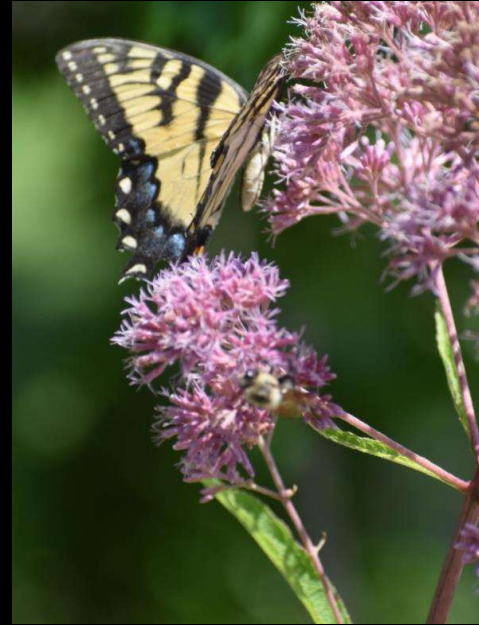
What is a Native Plant?

Native Plant - A plant that has occurred naturally in a particular region, ecosystem, or habitat without human introduction.

Plants native to North America were here ***before*** the arrival of European settlers.



Why plant native species?



Quick Reminder...

To attract colorful birds, you need to
create a food source!

*Attract birds (and other wildlife) through
focusing on their food source. Berries and
seeds are great, but insects, especially
caterpillars, are important.*



But won't caterpillars
defoliate my trees?

*Native caterpillars
evolved with the
native plants and birds
too. They have
adapted to surviving in
the appropriate
numbers.*

*To raise one clutch of
eggs from chick to
fledgling, birds need
6,000–10,000
caterpillars.*



Important to note...

Berries and seeds are good so long as they are plants we would like to spread. Watch out for invasive plants. Birds will spread those seeds as well.



Planting Strategy

- **Start Small** (*consider leaving a portion of yard uncut to see what is in the seedbank*)
- **Be Patient**
- **Consider wildlife** forage, cover, nesting needs (*what species are you trying to attract?*)
- Consider **maintenance needs** of the plants you select.
- Consider mature plant size.
- Consider impacts to other yard items (septic, overhead lines, foundations, roof leaders/run-off, etc.)
- Know your local ordinances as well as homeowner association or apartment maintenance agreements/limitations.
- Consider wildlife damage potential (Deer, Groundhogs, Rabbits, etc.)



The 70 Percent Rule

- Strive for 70% of your vegetation to be comprised of native plants
- A study published in 2018 found that urban yards that had 70% (or more) native plants resulted in the greatest reproductive success for Carolina chickadees
- "As nonnative plants increased within the territory, the rate of population growth (r) declined"

Nonnative plants reduce population growth of an insectivorous bird

Desirée L. Narango^{a,b,1,2}, Douglas W. Tallamy^a, and Peter P. Marra^b

^aDepartment of Entomology and Wildlife Ecology, University of Delaware, Newark, DE 19716; and ^bMigratory Bird Center, Smithsonian Conservation Biology Institute, Washington, DC 20008

Edited by May R. Berenbaum, University of Illinois at Urbana–Champaign, Urbana, IL, and approved August 31, 2018 (received for review May 29, 2018)

Human-dominated landscapes represent one of the most rapidly expanding and least-understood ecosystems on earth. Yet, we know little about which features in these landscapes promote sustainable wildlife populations. Historically, in urban areas, landowners have converted native plant communities into habitats dominated by nonnative species that are not susceptible to pest damage and require little maintenance. However, nonnative plants are also poor at supporting insects that are critical food resources for higher order consumers. Despite the logical connection, no study has examined the impact of nonnative plants on subsequent population responses of vertebrate consumers. Here, we demonstrate that residential yards dominated by nonnative plants have lower arthropod abundance, forcing resident Carolina chickadees (*Poecile carolinensis*) to switch diets to less preferred prey and produce fewer young, or forgo reproduction in nonnative sites altogether. This leads to lower reproductive success and unsustainable population growth in these yards compared with those with >70% native plant biomass. Our results reveal that properties landscaped with nonnative plants function as population sinks for insectivorous birds. To promote sustainable food webs, urban planners and private landowners should prioritize native plant species.

conservation | urban ecology | food webs | plant–animal interactions | native plants

Wilson (1) has called insects “the little things that rule the world,” underscoring their contribution to the maintenance of ecosystem function. Unfortunately, recent studies have documented drastic declines in insect abundance following decades of human land use (2–4)—declines that may also compromise higher-order trophic levels. One probable cause of insect declines in human-modified landscapes is the shift from native plant communities to those dominated by nonnative

which may or may not include nonnative species. Considering that nonnative plants tend to dominate residential landscapes (12), it is imperative that we evaluate their contribution to ecosystems relative to the native species they displace (16).

Here, we measure how nonnative plants influence insectivorous birds by quantifying arthropod abundance, avian diet, reproductive success, and adult and juvenile survival of Carolina chickadees (*Poecile carolinensis*) in private yards across a metropolitan area that varied in proportion of nonnative plant biomass (*SI Appendix, Fig. S1*). We then incorporate our reproductive and survival confidence intervals (CIs) into an iterative population-growth equation to examine how population growth (r) varies with proportion of nonnative plant biomass.

Results

Arthropod Availability and Diet. Arthropod sampling showed that mean abundance of both caterpillars and spiders declined as nonnative plant biomass increased across sites [$n = 110$, generalized linear model (GLM) with quasi-Poisson regression: $\beta = -1.33 \pm 0.40$, $P = 0.001$, CI: $-2.11, -0.56$; Fig. 1]. Concurrently, $\delta^{15}\text{N}$ within chickadee blood plasma revealed that the proportion of predatory arthropods (e.g., spiders) in chickadee diets increased as nonnative plants became more dominant ($n = 60$, GLM: $\beta = 2.14 \pm 0.69$, $P = 0.002$, CI: $0.79, 3.49$; Fig. 1). There

Significance

Nonnative plants lack an evolutionary history with native fauna and support insect communities that are less abundant and diverse, and this may change food availability for vertebrate consumers. Most insectivorous birds are absent or declining in urban areas, yet no study has tested whether nonnative plants impact



AVOID PLANTING:

CULTIVAR species name followed by cultivar name in quotes .
Echinacea purpurea 'Avalanche'

HYBRID indicated by an X in its name
Hebe × franciscana (H. elliptica × H. speciosa)

VARIETY species name followed by "var." and variety name
Gleditsia triacanthos var. inermis.

SAVE THE DATE! NJA SPRING NATIVE PLANT SALE!

May 4th 2024
10am - 4pm

Your garden and the bees and the
birds and the butterflies and the
environment with thank you!



NEW JERSEY
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SCHERMAN HOFFMAN WILDLIFE SANCTUARY
11 HARDCRABBLE ROAD
BERNARDSVILLE, NJ 07924
SHWS@NJAUDUBON.ORG
908-396-6386



Top Picks for New Jersey Yards

Top 5: Trees



Flowering Dogwood
(*Cornus florida*)

berries food source for 37 different birds and variety of other wildlife in Sept



American Holly
(*Ilex opaca*)

berries an important winter food source for 13 different songbird species.



Staghorn Sumac
(*Rhus typhina*)

fruits are consistently available as a late winter survival food to 31 bird species, beautiful fall color



Eastern Red Cedar
(*Juniperus virginiana*)

cover throughout year, nesting for birds, host plant for butterflies & moths, 30 species of birds eat fruits in midwinter



Black Cherry
(*Prunus serotina*)

pollen source in spring; fruit source in late summer and early fall to 52 species of birds; host plant to over 450 butterflies & moths



Black Gum
Nyssa sylvatica

Oaks!

Bonus Plant!

Oaks
Quercus spp.

20+ species of oaks are
native to New Jersey!

Oaks are Keystone species!



OAKS

Acorns: 29 species of birds
Insects: especially in spring

Butterflies: at least 6 species
Mammals: at least 27 species

Over 530 species of caterpillars in the mid-Atlantic states feed on various parts of oak trees.

Caterpillars = food for predators and parasitoids

Turkeys LOVE Acorns



When our beautiful warblers (36 species for NJ) return in May, look for them in the tops of OAK trees where the buds attract an abundance of insects — the food that most of our migrating birds require!

Top 5: Shrubs



Spicebush
(*Lindera benzoin*)

valuable food source in later summer and early fall to 9 bird species, larval and nectar source for lepidopterans, disease resistant



Elderberry
(*Sambucus canadensis*)

fruits in midsummer when few other fruits available to 46 species of birds



Buttonbush
(*Cephalanthus occidentalis*)

hummingbirds use attractive summer flowers for nectar, ducks eat seeds, larval and nectar source for lepidopterans



High-bush Blueberry
(*Vaccinium corymbosum*)

very important pollen source and berries used by over 30 birds and numerous mammals.



Serviceberry
(*Amelanchier canadensis*)

berries provide good early summer food source for 26 birds and 9 mammals; pollinators benefit from attractive spring flowers

Spicebush Swallowtail





**WINTERBERRY
HOLLY**
Ilex verticillata

Bonus Shrubs: Viburnums

- Pollinators love it!
- Host plant for 104 species of caterpillars.
- Rabbit & deer resistant
- Beautiful
- Easy maintenance



Top 5 Perennial Flowers



Blazing Star
(*Liatris spicata*)

nectar plant for
pollinators, easy to
grow, stems good for
overwintering insects



Cardinal Flower
(*Lobelia cardinalis*)

food source for
pollinators including
hummingbirds



New England Aster
(*Symphyotrichum*
novae-angliae)

nectar source for
butterflies, occasional
seed source for
cardinals, goldfinches,
sparrows, chickadees,
nuthatches, towhees,
indigo bunting



Joe Pye Weed
(*Eutrochium*
purpureum)

great for a variety of
butterflies and bees,
grows up to 7 feet tall!



**Bergamots & Bee
Balms**
(*Monarda spp.*)

great for
hummingbirds,
butterflies and bees

Summer



Scarlet Beebalm
Monarda didyma



Hummingbird Moth

Wild Bergamot
Monarda fistulosa

Spring Ephemerals – early spring



Red Trillium
Trillium erectum



Virginia Bluebells
Mertensia virginica



Eastern Shooting Star
Primula meadia

Freebies!



Bloodroot
Sanguinaria canadensis



Spring Beauty
Claytonia virginica



Yellow Trout Lily
Erythronium americanum



Jack-in-the-Pulpit
Arisaema triphyllum
Deer resistant



Mayapple
Podophyllum
Peltatum
Deer resistant

Spring Flowering



Eastern Bluestar
Amsonia tabernaemontana



Hairy Beardtongue
Penstemon hirsutus



Wild Geranium
Geranium maculatum



Eastern Columbine
Aquilegia canadensis

Summer Flowering



Coneflowers
Rudbeckia



Purple Coneflower
Echinacea purpurea

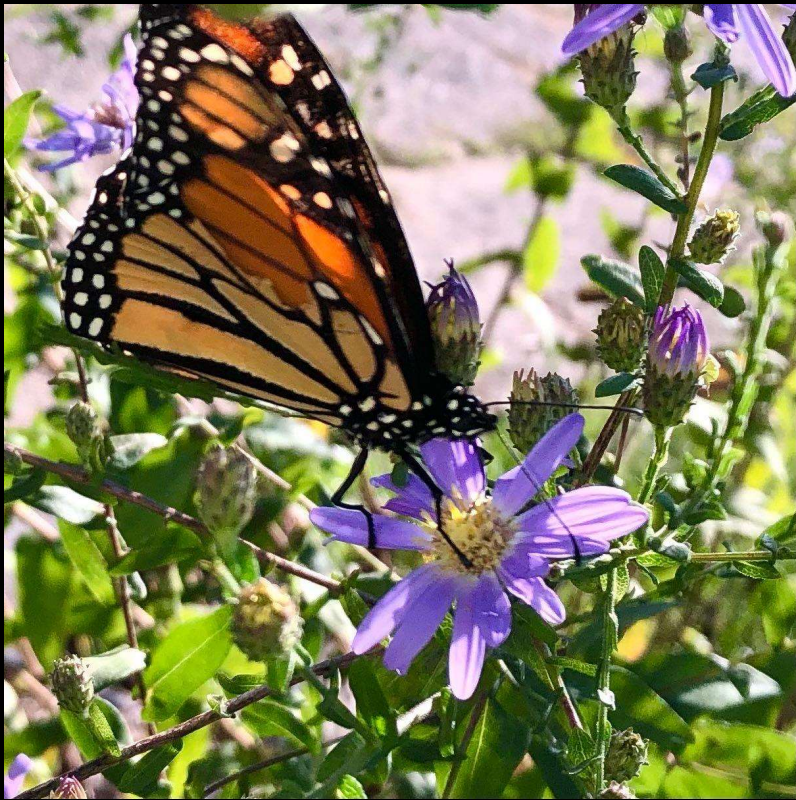
Milkweeds

butterfly (*Asclepias tuberosa*),
common (*Asclepias syriaca*),
swamp (*Asclepias incarnata*)

- Pollinators love it!
- Host plant for Monarchs.
- Rabbit & Deer Resistant
- Beautiful
- Easy maintenance



Monarch Butterfly





Purple Giant Hyssop
Agastache scrophulariifolia
Deer resistant



Mountain Mints
Pycnanthemum spp.
Deer resistant



Foxglove
Beardtongue
Penstemon digitalis
Deer resistant



Great Blue Lobelia
Lobelia siphilitica



White Turtlehead
Chelone glabra



Cardinal Flower
Lobelia cardinalis

**Summer into Fall
Flowering**

New York Ironweed
Vernonia noveboracensis





Blue Mistflower
Conoclinium coelestinum



Bottle Gentian
Gentiana andrewsii



Common Sneezeweed
Helenium autumnale

Goldenrod is a SUPERPLANT!

- ✓ Pollinators love it!
- ✓ Rabbit & Deer Resistant
- ✓ Gets a bad reputation; mistaken for ragweed
- ✓ 'Monarch Magnet'
- ✓ 51 Native species of *Solidago* in NJ (NPSNJ)



Goldenrod vs. Ragweed

(example of pollination strategies)



Insects

Wind



Top 4: Warm Season Grasses



Little Bluestem

(Schizachyrium scoparium)

good cover for wildlife throughout year; stabilizes soils; drought tolerant; sparrows, finches, juncos, etc. occasionally eat seeds (3'-5')



Switchgrass

(Panicum virgatum)

good cover for wildlife throughout year; stabilizes soils; drought tolerant; sparrows, finches, juncos, etc. occasionally eat seeds (3'-5')



Indian Grass

(Sorghastrum nutans)

good cover for wildlife throughout year; stabilizes soils; drought tolerant; sparrows, finches, juncos, etc. occasionally eat seeds (3'-7')



Big Bluestem

(Andropogon gerardii)

good cover for wildlife throughout year; stabilizes soils; drought tolerant; sparrows, finches, juncos, etc. occasionally eat seeds (6'-8')

Ground Covers



Canada Anemone
Anemone canadensis

Deer resistant



Plantain-leaved Pussytoes
Antennaria plantaginifolia



Golden Ragwort
Packera aurea



Foamflower
Tiarella cordifolia



Wild Ginger
Asarum canadense



American Coralbells
Heuchera americana



Dwarf Crested Iris
Iris cristata



Creeping Phlox
Phlox stolonifera

SANDY SOILS

Shrubs



Highbush Blueberry
Vaccinium corymbosum



Black Chokeberry
Aronia melanocarpa



Beach Plum
Prunus maritima





Bearberry
Arctostaphylos uva-ursi



New Jersey Tea
Ceanothus americanus

Perennial Flowers

Hairy Beardtongue

Goldenrods – *S. rigida*, *S. sempervirens*

Rudbeckia

Hyssop – Blue Giant *Agastache foeniculum*

Big Bluestem

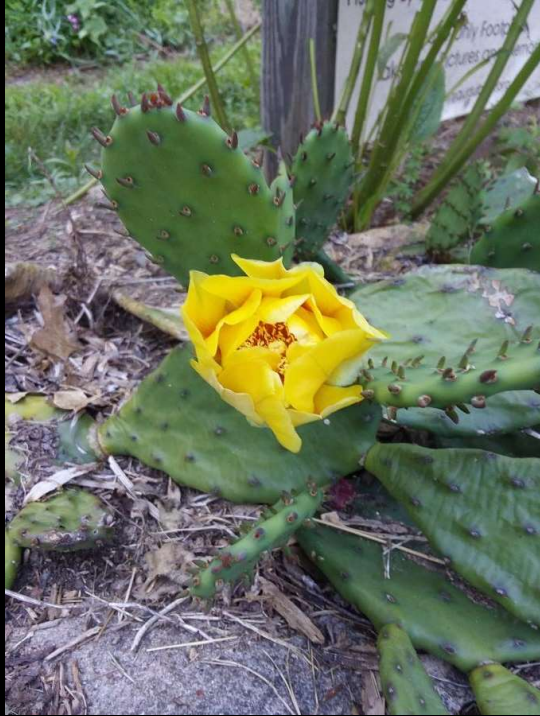
Monarda

Milkweeds

Pussytoes

Little Bluestem

Indian Grass



Eastern Prickly Pear Cactus
Opuntia humifusa



Wild Lupine
Lupinus perennis



Hoary Vervain
Verbena stricta



Heartleaf Aster
Symphyotrichum cordifolium



Harebell
Campanula rotundifolia



Wild Nodding Onion
Allium cernuum

Free Plants, if you let them grow!



Violets



Wild Grape



Virginia Creeper



Pokeweed



White Snakeroot



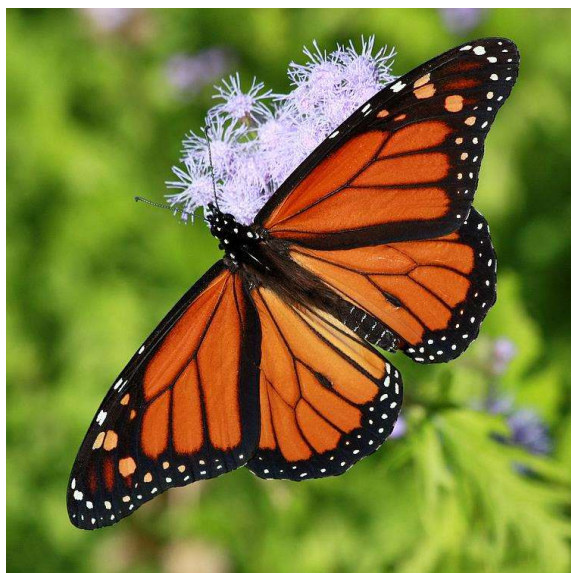
Dogbane



White Wood Aster



NJ Audubon Scherman Hoffman Monarch Waystation plant list



BLOOM	SUN	PART SHADE
SPRING April/May	Summersweet Golden Alexander 2.5'	Pinxter Azalea Eastern Columbine 1.5' Wild Geranium 1.5'
SUMMER June-Aug	Virginia Sweetspire NJ Tea Butterflyweed 2.5' Purple Milkweed 3' Whorled Milkweed 2.5' Common Milkweed 4' Green Milkweed 2' Swamp Milkweed 2' Wild Bergamot 3' Blazing-star 4' Oxeye Sunflower Purple Coneflower 2' Mountain Mint 3' Blue Vervain 6' Beebalm 2.5'	Rosebay Rhododendron Mountain Laurel Foxglove beardtongue 1.5' Purple Giant Hyssop 5' Boneset 5' Whorled Milkweed 2.5' Mistflower 2' Poke Milkweed 3'
FALL Sept - Nov	NE Aster 3' NY Ironweed 6' Smooth Aster 4' NY Aster 3' Sneezeweed 5'	Mistflower 2' NY Aster 3'

Pollinator	Shape	Color	Scent	Examples of Flowers
Beetles	Large, shallow Bowl shaped	Dull green/white	Strong, fruity	Magnolia Water lily
Carrion Flies	Often funnel-shaped	Dark reddish brown	Decaying flesh	Skunk cabbage Purple Trillium
Bees	Not tubular, with a landing platform	Yellow, blue, pink, purple, white	sweet	Clovers, violets, mints, goldenrods, etc
Butterflies	Tubes with rims	Vivid colors	weak	Mints, milkweeds, Monarda, NY Ironweed, Lobelia
Moths	Tubes without rims, open at night	White or pale yellow	strong	Morning glory, phlox, evening primrose
Birds	Deep wide tubes	red	none	Cardinal flower, Trumpet creeper

Other Resources

- Native Plant Society of New Jersey
(<http://www.npsnj.org/>)
- Jersey Friendly Yards
(<https://www.jerseyyards.org/>)
- National Wildlife Federation Plant Finder Tool
(<https://www.nwf.org/nativeplantfinder/>)
- Soil Jar Test
(<https://www.azlca.com/uploads/documents/jar-soil-test-activity-sheet.pdf>)

