

# Why Plant Native?

Gabriela Garrison

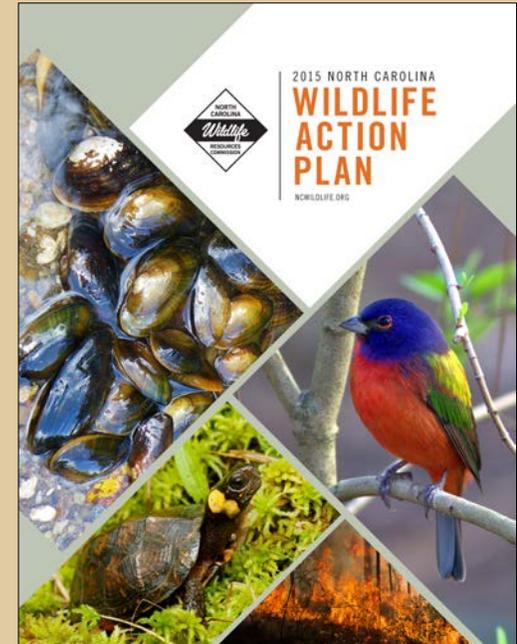


NC Wildlife Resources Commission

NC Pollinator Conservation Alliance

# North Carolina State Wildlife Action Plan

- A comprehensive planning tool developed to conserve and enhance wildlife species and habitat in North Carolina.
  - Developed in cooperation with numerous partners: [www.ncwildlife.org/plan](http://www.ncwildlife.org/plan).
  - Identifies Species of Greatest Conservation Need (SGCN), imperiled habitats, threats and conservation actions.
- Insect SGCNs: 7 species of bumble bees and 18 species of butterflies.



# North Carolina State Wildlife Action Plan

- Bumble Bees in decline.
  - Rusty-patched bumble bee (federally endangered)
  - Yellow-banded bumble bee (proposed for listing)
- Butterfly species imperiled due to loss of plant host.
  - Frosted elfin (proposed for listing) – habitat management issues? Need more information.
  - Monarch butterfly (proposed for listing)
- Primary threats are habitat loss and fragmentation.



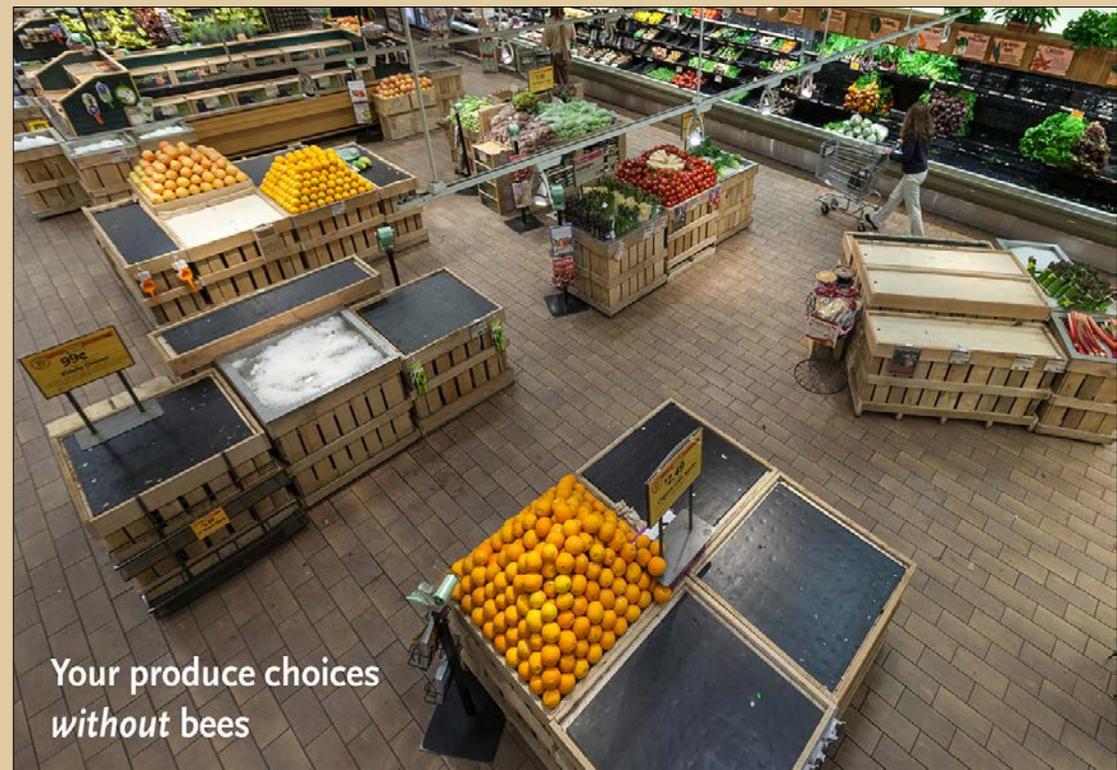
# Importance of Pollinators



Your produce choices  
with bees



# Importance of Pollinators





# List of Removed Products

- Apples
- Onions
- Avocados
- Carrots
- Mangos
- Lemons
- Limes
- Honeydew
- Canteloupe
- Zucchini
- Summer Squash
- Eggplant
- Cucumbers
- Celery
- Green Onions
- Cauliflower
- Leeks
- Bok choy
- Kale
- Broccoli
- Broccoli rabe
- Mustard greens

# Benefit of Native Plants for Wildlife

- Provide habitat – bunch grasses, host plants.
  - Unmowed and unmanicured is preferable and also allows for lower maintenance costs.
- Provide travel corridors – aids in movement across larger landscape.
  - May provide connectivity – increased access to other forage areas, aids in reproduction and increases genetic diversity.
- Provide forage – some nectar/fruits/seeds from non-native, invasive plants are non-edible or poisonous.



# Benefit of Native Plants for Ecosystem Services

- Soil Stabilization – deep-rooted native vegetation maintains soil and ground structure.
  - Caution on using erosion control blankets for establishment – recommend biodegradable with loose-weave netting to avoid trapping wildlife.
- Storm Water Filtration – plant communities slow water movement, as well as reduce the amount entering streams; minimizes turbidity.
  - Rain gardens can be a good alternative in urban areas.

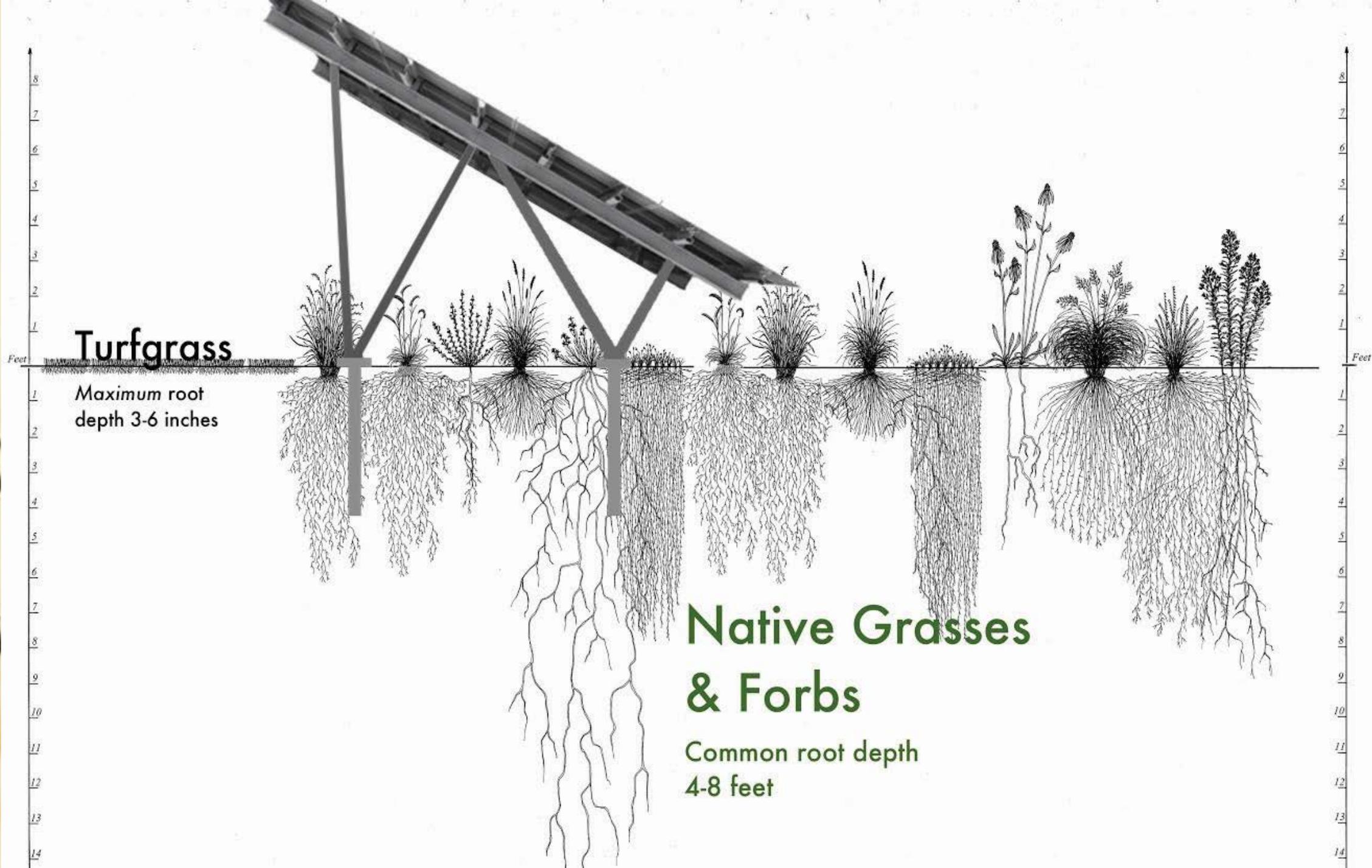


# Benefit of Native Plants for Ecosystem Services

- Pollinator Services for Agriculture – native bees are specialized (=more efficient pollination) and provide free pollination services. Greater than 70% of crops require insect pollination.
  - In the US, pollination of crops is valued at 10 billion dollars, at least!
- Decreased Herbicide/Pesticide Use – native plants are adapted to the local climate and often need minimal (if any) pesticides/fertilizers.
  - native habitat attracts beneficial insects that can be predators of crop pests.
- Carbon Sequestration – native habitat acts as ‘carbon sinks’, with most of carbon absorption happening below ground in deep root systems.



Debbie Roos



## Turfgrass

Maximum root depth 3-6 inches

## Native Grasses & Forbs

Common root depth 4-8 feet

# Invasive Species

- Invasive species are a major contributor to species depletion, second only to habitat loss.
  - Approximately \$130 billion/year to control.
- While there are short-term benefits for soil stabilization, invasive plants often prevent (re)establishment of many native species.
  - Invasive plant species can also spread to nearby natural communities and displace native species.



**Stanly County**

**March 29, 2018**

**Cover Crop Terminated With 1 Quart Glyphosate And 4-5 Ounces Imazapic Per Acre**



April 11, 2018  
 Seed Mixture Planted Using A Truax Drill



Forb Seed Mix	
Species	Weight For 20 Acres
Lanceleaf coreopsis, <i>Coreopsis lanceolata</i>	6 lbs
Plains coreopsis, <i>Coreopsis tinctoria</i>	6 lb., 12oz.
Purple coneflower, <i>Echinacea purpurea</i>	3 lbs.
Goldenmane tickseed, <i>Coreopsis basalis</i>	5 lb., 14oz.
Black-eyed Susan, <i>Rudbeckia hirta</i>	14oz.
Bearded beggarticks, <i>Bidens aristosa</i>	9 lbs., 4 oz.
Sensitive partridge pea, <i>Chamaecrista nictitans</i>	9 lbs., 4 oz.
Blanket flower, <i>Gaillardia aristata</i>	5 lbs.
Dense blazing star, <i>Liatris spicata</i>	2 lbs.
Roundhead lespedeza, <i>Lepedeza capitata</i>	2 lbs
Spotted Bee Balm, <i>Monarda punctata</i>	5 lbs., 1 oz.
Narrowleaf sunflower, <i>Helianthus angustifolius</i>	5 lbs., 1 oz.
Showy Aster, <i>Aster spectabilis</i>	12 oz
Common Yarrow, <i>Achillea millefolium</i>	1 lb
New York Ironweed, <i>Vernonia noveboracensis</i>	8 oz.
Crimsoneyed Rosemallow, <i>Hibiscus moscheutos</i>	8 oz.
Butterfly Milkweed, <i>Asclepias tuberosa</i>	1 lb
Showy Ticktrefoil, <i>Desmodium canadense</i>	1 lb, 8 oz.
Maximillian Sunflower, <i>Helianthus maximilianii</i>	2 lbs., 8 oz.
<b>Native Grasses</b>	
Little Bluestem	60 lbs
Indiangrass	34 lbs
Tridens Flavus	18 lbs
Panicum Anceps	20 lbs



**May 26, 2018  
Grasses And Forbs Germinating; Faint Rows Of Seedlings Are Visible**

**June 7, 2018**  
**Rows Are More Evident And First Blooms Appear**



June 22, 2018



June 28, 2018



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***Highlighted species ID as germinated	
<b>Native Grasses</b>	
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# Case Study: Virginia

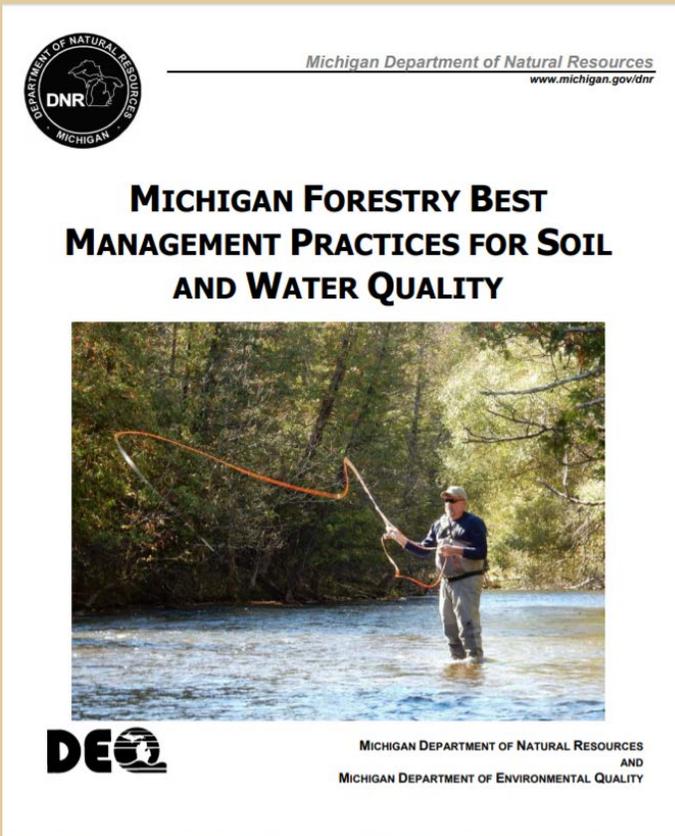
- Criteria to use native species:
  - Slopes < 15% slope gradient.
  - Soils with K factors < 0.36 (soils are not highly erodible).
  - For use on storm water conveyance channels and streambanks, species must have proven effectiveness at the expected maximum storm water flow volume and velocity.





<i>Invasive Non-Native Species</i>	<i>Alternative Virginia Native</i>	
<i>Common Name</i>	<i>Common Name</i>	<i>Scientific Name</i>
<b>Common Reed</b>	Great bulrush	<i>Schoenoplectus tabernaemontani</i>
	Common Cattail	<i>Typha latifolia</i>
<b>Chinese Lespedeza</b> <b>Birdsfoot Trefoil</b> <b>Orchard Grass</b> <b>Redtop</b> <b>Weeping Lovegrass</b>	Roundheaded bushclover	<i>Lespedeza capitata</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>
	Butterflyweed	<i>Asclepias tuberosa</i>
	Joe-pye weed	<i>Eutrochium dubium</i>
	Black-eyed Susan	<i>Rudbeckia fulgida</i>
	Big blue stem	<i>Andropogon gerardii</i>
	Indian grass	<i>Sorghastrum nutans</i>
	Side oats grama	<i>Bouteloua curtipendula</i>
<b>Crownvetch</b>	Roundheaded bushclover	<i>Lespedeza capitata</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>
	Big blue stem	<i>Andropogon gerardii</i>
	Little blue stem	<i>Schizachyrium scoparium</i>
	Indian grass	<i>Sorghastrum nutans</i>
	Switchgrass	<i>Panicum virgatum</i>
<b>Tall Fescue</b>	Big blue stem	<i>Andropogon gerardii</i>
	Little blue stem	<i>Schizachyrium scoparium</i>
	Indian grass	<i>Sorghastrum nutans</i>
	Switchgrass	<i>Panicum virgatum</i>
	Broomsedge	<i>Andropogon virginicus</i>
	Deertongue	<i>Dichanthelium clandestinum</i>
	Side oats grama	<i>Bouteloua curtipendula</i>
	Canadian wildrye	<i>Elymus canadensis</i>
	Bottlebrush grass	<i>Elymus hystrix</i>
	Virginia wildrye	<i>Elymus virginicus</i>

# Case Study: Michigan



- Published by Michigan DEQ.
- “To meet legal requirements and prevent soil from eroding in a water body, certain introduced species may be used, especially if quick establishment is needed. However, this document only recommends those non-native species that are not considered to be invasive, which are most likely to promote the natural succession of the site to native ground cover or are not likely to interfere with the native seed applied at a later date.”



<b>Common (Latin)</b>	<b>SOIL</b>	<b>MOISTURE</b>	<b>LIGHT</b>	<b>REGION</b>	<b>Comments</b>
Big bluestem ( <i>Andropogon gerardii</i> )	S-L-C	D-M-W	S	SW	Native perennial, warm season grass*
Creeping red fescue ( <i>Festuca rubra</i> )	S-L-C	D-M-W	S , P	SW	Non-native perennial
Indian grass ( <i>Sorghastrum nutans</i> )	S-L-C	D-M-W	S-P	NLP, SLP	Native perennial, warm season grass*
June grass ( <i>Koeleria micrantha</i> )	S-L-C	D-M	S, P	SW	Native perennial, cool season grass**
Little bluestem ( <i>Schizachyrium scoparius</i> )	S-L	D-M	S, P	SW	Native perennial, warm season grass*, dune stabilization
Oats ( <i>Avena sativa</i> )	S-L-C	D-M	S, P	SW	Non-native annual, temporary cover
Redtop ( <i>Agrostis gigantea</i> )	L, C, M	M-W	S	SW	Non-native perennial, cool season grass**
Switchgrass ( <i>Panicum virgatum</i> )	S-L-C	D-W	S	SW	Native perennial, warm season grass*
Wild-rye, Canada ( <i>Elymus canadensis</i> )	S-L	D-M-W	S, P, Sh	SW	Native perennial, cool season grass**
Wild-rye, Virginia ( <i>Elymus virginicus</i> )	L-C	M-W	S, P, Sh	SW	Native perennial, cool season grass**
<b>Forbs (Wildflowers)</b>					
<b>Legumes:</b>					
Alsike Clover ( <i>Trifolium hybridum</i> )	L-M	D-M-W	S, P	SW	Non-native, perennial, good for forest roads in northern hardwoods
Lupine ( <i>Lupinus perennis</i> )	S-L	D-M	S - P	SLP + Newaygo Co.	Native perennial, butterfly host, nectar source
Medium Red Clover ( <i>Trifolium pratense</i> )	S-L-C	D-M-W	S, P	SW	Non-native, perennial legume, good for forest roads in northern hardwoods
Round-headed bush clover ( <i>Lespedeza capitata</i> )	S-L	D-M	S	SLP + Newaygo Co.	Native perennial legume, wildlife food
White Dutch Clover ( <i>Trifolium repens</i> )	L-C-M	D-M-W	S, P	SW	Non-native, perennial legume, good for forest roads in northern hardwoods

# Resources for North Carolina

1.

RECOMMENDED NATIVE ALTERNATIVES FOR NON-NATIVE GRASSES IN NORTH CAROLINA\*\*  
(Species are appropriate for all geographic regions unless otherwise indicated)

NON-NATIVE SPECIES	NATIVE SPECIES	
Crownvetch Centipede Bermuda	Big bluestem	<i>Andropogon gerardii</i>
	Little bluestem	<i>Schizachyrium scoparium</i>
	Indiangrass	<i>Sorghastrum nutans</i>
	Switchgrass	<i>Panicum virgatum</i>
	Beaked panicgrass	<i>Panicum anceps</i>
	Purpletop	<i>Tridens flavus</i>
	Roundheaded bushclover	<i>Lespedeza capitata</i>
	Deer tongue	<i>Dicanthelium clandestinum</i>
	Sensitive partridge pea	<i>Chamaecrista nictitans</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>
Kentucky bluegrass Tall fescue Sudangrass	Big bluestem	<i>Andropogon gerardii</i>
	Little bluestem	<i>Schizachyrium scoparium</i>
	Indiangrass	<i>Sorghastrum nutans</i>
	Switchgrass	<i>Panicum virgatum</i>
	Beaked panicgrass	<i>Panicum anceps</i>
	Purpletop	<i>Tridens flavus</i>
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Sensitive partridge pea	<i>Chamaecrista nictitans</i>	
Partridge pea	<i>Chamaecrista fasciculata</i>	
Sericea lespedeza Kobe lespedeza	Switchgrass	<i>Panicum virgatum</i>
	Splitbeard bluestem	<i>Andropogon ternarius</i>
	Beggarlice	<i>Desmodium spp.</i>
	Deer tongue	<i>Dicanthelium clandestinum</i>
	Sensitive partridge pea	<i>Chamaecrista nictitans</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>
<b>SANDHILLS</b>	Little bluestem	<i>Schizachyrium scoparium</i>
	Purple lovegrass	<i>Eragrostis spectabilis</i>
	Muhly Grass	<i>Muhlenbergia capillaris</i>
	Wiregrass	<i>Aristida stricta</i>
	Prairie threeawn	<i>Aristida oligantha</i>
	Sensitive partridge pea	<i>Chamaecrista nictitans</i>
	Partridge pea	<i>Chamaecrista fasciculata</i>

\*\*A recommended revegetation/stabilization mix would ideally include a combination of the species listed in this table. In addition, please note that additional consideration may be needed in areas that are (highly) erodible and/or have sloped terrain. The following species could be included in all regions for additional stabilization and wildlife benefit:

Black-eyed susan: *Rudbeckia hirta*  
 Plains coreopsis: *Coreopsis tinctoria*  
 Lance-leaved coreopsis: *Coreopsis lanceolata*  
 Narrow-leaved sunflower: *Helianthus angustifolius*

Created October 2018

## Alternative Species Table for North Carolina

2. <https://projects.ncsu.edu/goingnative/howto/mapping/inverse/>



# “Prohibited Species” List

- Create a list of plants that should not be used in any case.
- Plants on the list are the most invasive and detrimental to native plants and habitats or could inhibit establishment of native species.
  - Example species: Sericea Lespedeza, Sudangrass, Korean Lespedeza, Kobe Lespedeza, Bermuda Grass.
- Annual Rye vs. Perennial Rye – Perennial Rye species can be allelopathic to some native species.
  - Tall Fescue, Sudangrass and Kentucky Bluegrass are also considered allelopathic to many native plant species.

# North Carolina Pollinator Conservation Alliance

- Partnership of more than 25 agencies and organizations with interests in pollinator conservation.
- Within this partnership, there are six committees, including Plant Resources, Outreach, Habitat Assessment, Research, Energy and Pesticide Stewardship.
  - Plant Resources: create plant lists for various audiences.
  - Habitat Assessment: create site prep and planting guidance.
  - Solar: created technical guidance document for installing native habitat on solar farms.
- [www.ncpollinatoralliance.org](http://www.ncpollinatoralliance.org)



Debbie Roos

# QUESTIONS?



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