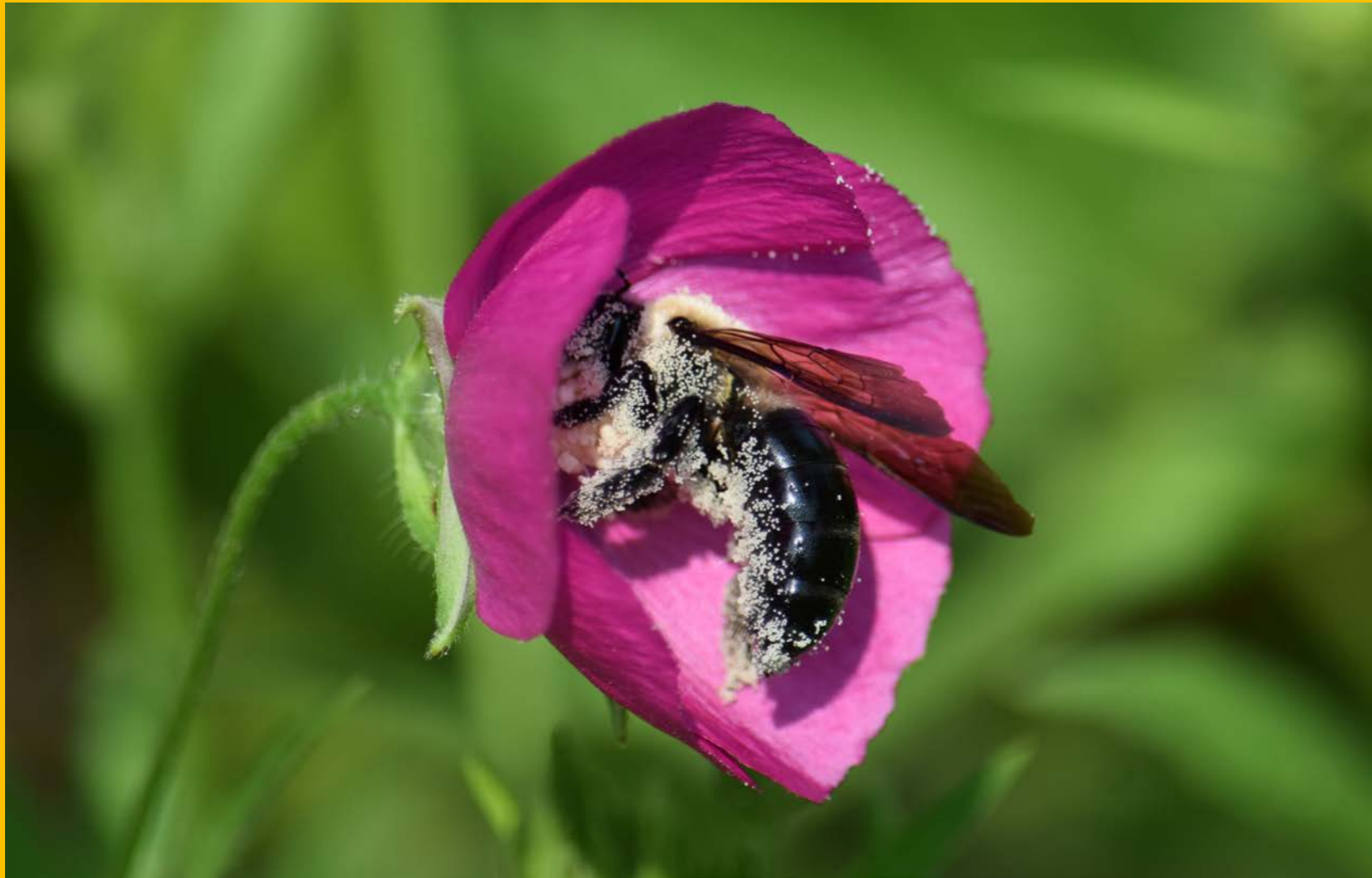


Pollinators & Native Plants

What's A Gardener Supposed To Do?



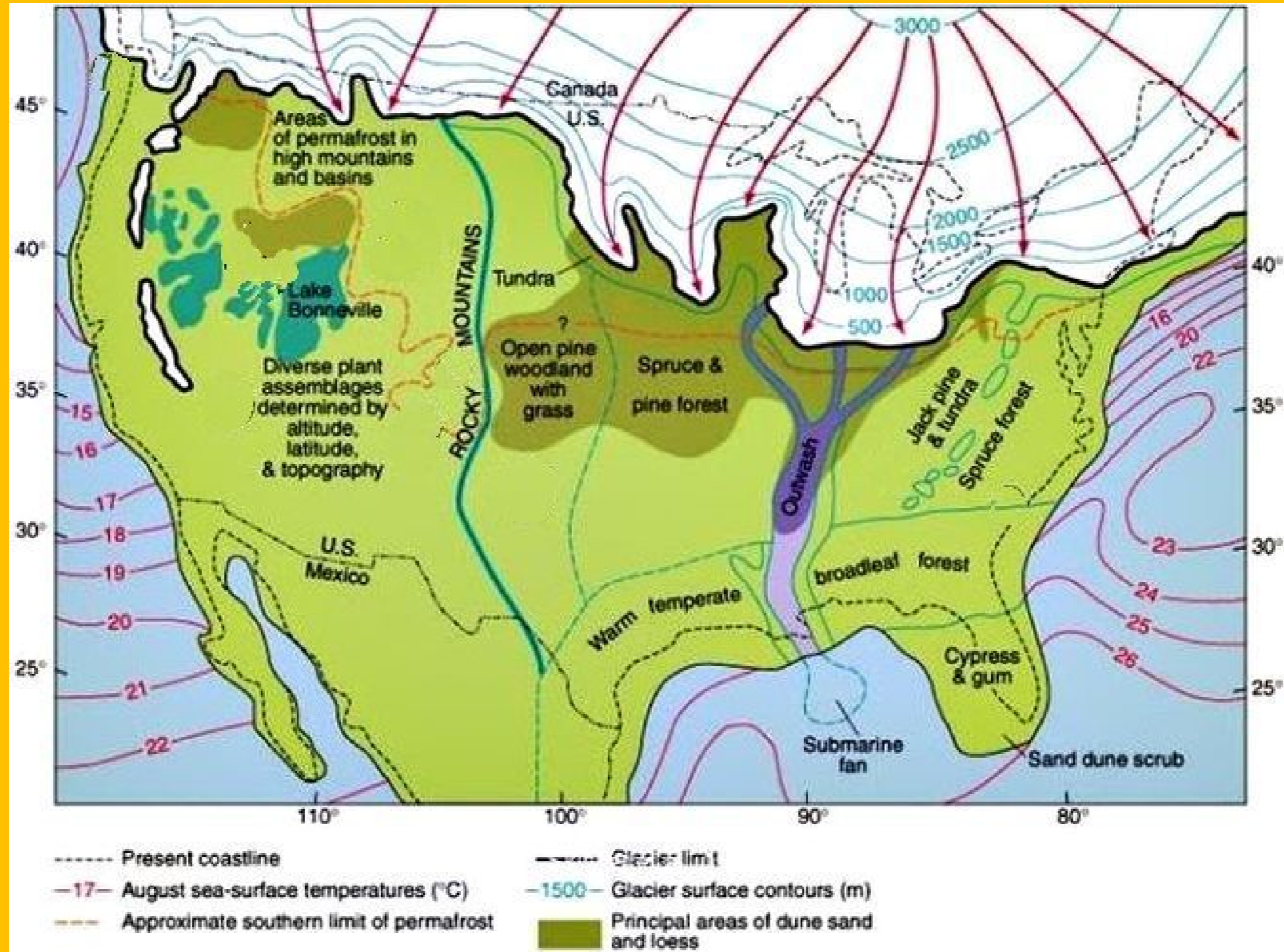
What is Pollination?

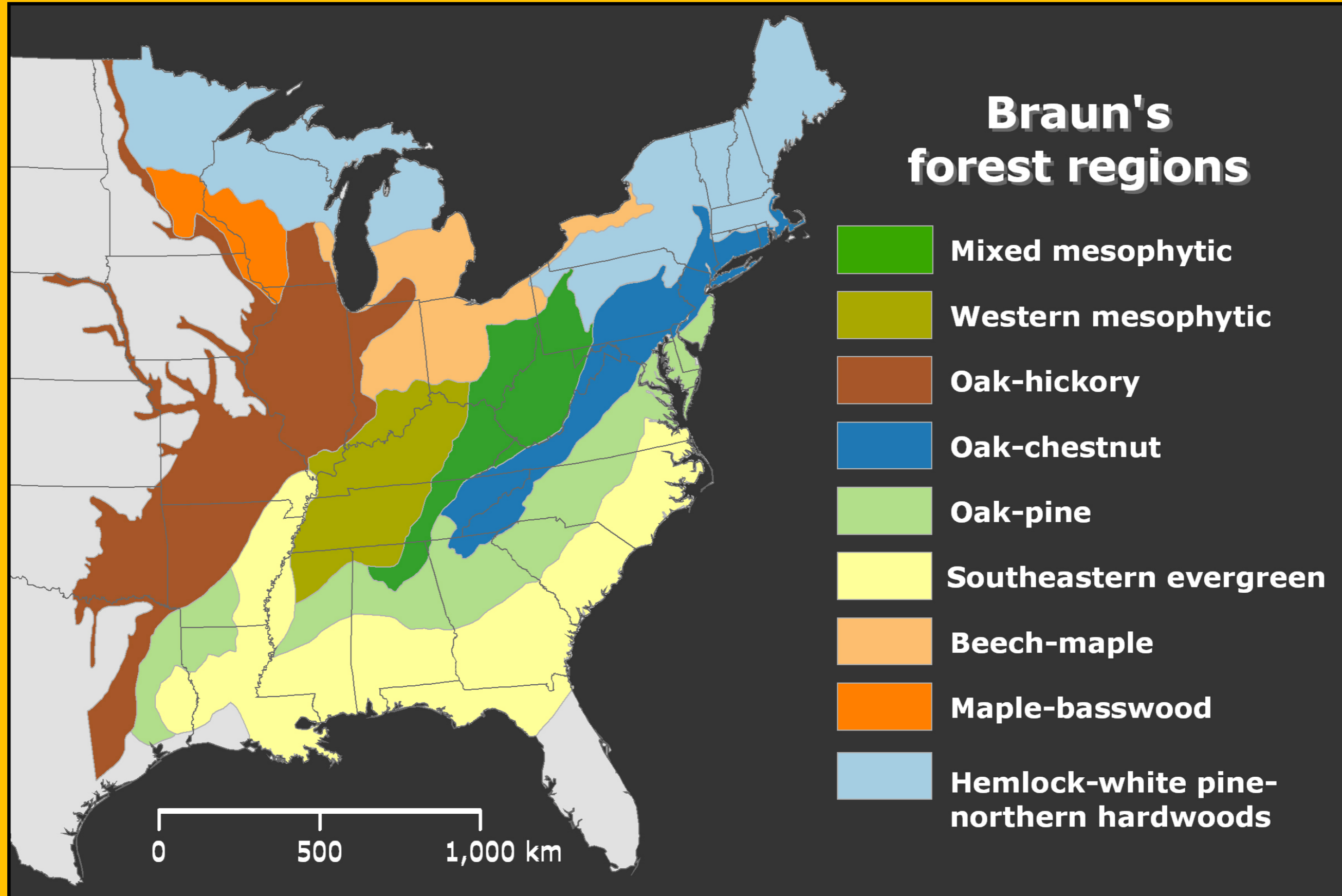
Pollination is the process of moving pollen from one flower to another of the same species, which produces fertile seeds. Almost all flowering plants need to be pollinated. Some plants are pollinated by wind, water, and some are self-pollinating. However, the majority of flowering plants depend on bees, wasps, flies, butterflies, and moths.

What is a Native Plant?

It depends on who you ask!

1. It is a native plant if it grows in North America.
2. It is a native plant if it grows east of the 100th meridian.
3. It is a native plant if it grows in the eastern deciduous forest.
4. It is native if it grows in the mixed mesophytic forest of the Appalachian Mountains.
5. It is native if it grows within 5 miles of where you are sitting.
6. At the end of the day a plant that is native is what you decide (within reason).
7. In 2008 the USDA Forest Service issued FSM 2070 Vegetation Ecology. It defined “***Native plant species. A plant species which occurs naturally in a particular region, state, ecosystem or habitat without direct or indirect human actions.***”





Central Appalachian Broadleaf Forest Coniferous Forest Meadow Province



- 68,100 square miles within 9 states.
- Primarily forested and mountainous.
- Elevations range from 300 feet to 6,000 feet.
- Average annual temperature range 50° to 64° F.
- Average year round precipitation between 35-80 inches.
- USDA Hardiness Zones 5b-8a (2023 version).
- Dominated by vertical zonation, with lower limits of each forest belt rising in elevation toward the south.
- Common tree species include oak, pine, birch, beech, maple, elm, basswood, hemlock, and spruce.
- Chestnut was once abundant, but has been greatly reduced because of chestnut blight.



So how do the previous three maps contribute to defining what a native plant is?

- The last Laurentide ice sheet began to retreat 50,000 years ago and the retreat of the Late Wisconsin ended 11,000 years ago. The Pleistocene came to an end and the Holocene began
- Species of the broadleaf ecosystems began to move north, each species at its own pace, with constantly changing species composition of their plant, pollinator and wildlife communities.
- Forward to European settlement in the eastern deciduous forest. At the time of settlement there was 988,421.5 square miles of EDF.
- Today, less than five percent of the eastern deciduous forest remains and it is highly fragmented and contains many invasive species!

Who are the Pollinators in Berkeley, Jefferson, & Morgan counties, WV and Washington county, MD?

- ❖ Ruby-throated hummingbird***
- ❖ Butterflies***
- ❖ Moths***
- ❖ Beetles***
- ❖ Flies***
- ❖ Wasps***
- ❖ Native bees and honeybees.***



Ruby-throated Humming Bird



Question Mark



Eight-spotted Forester moth



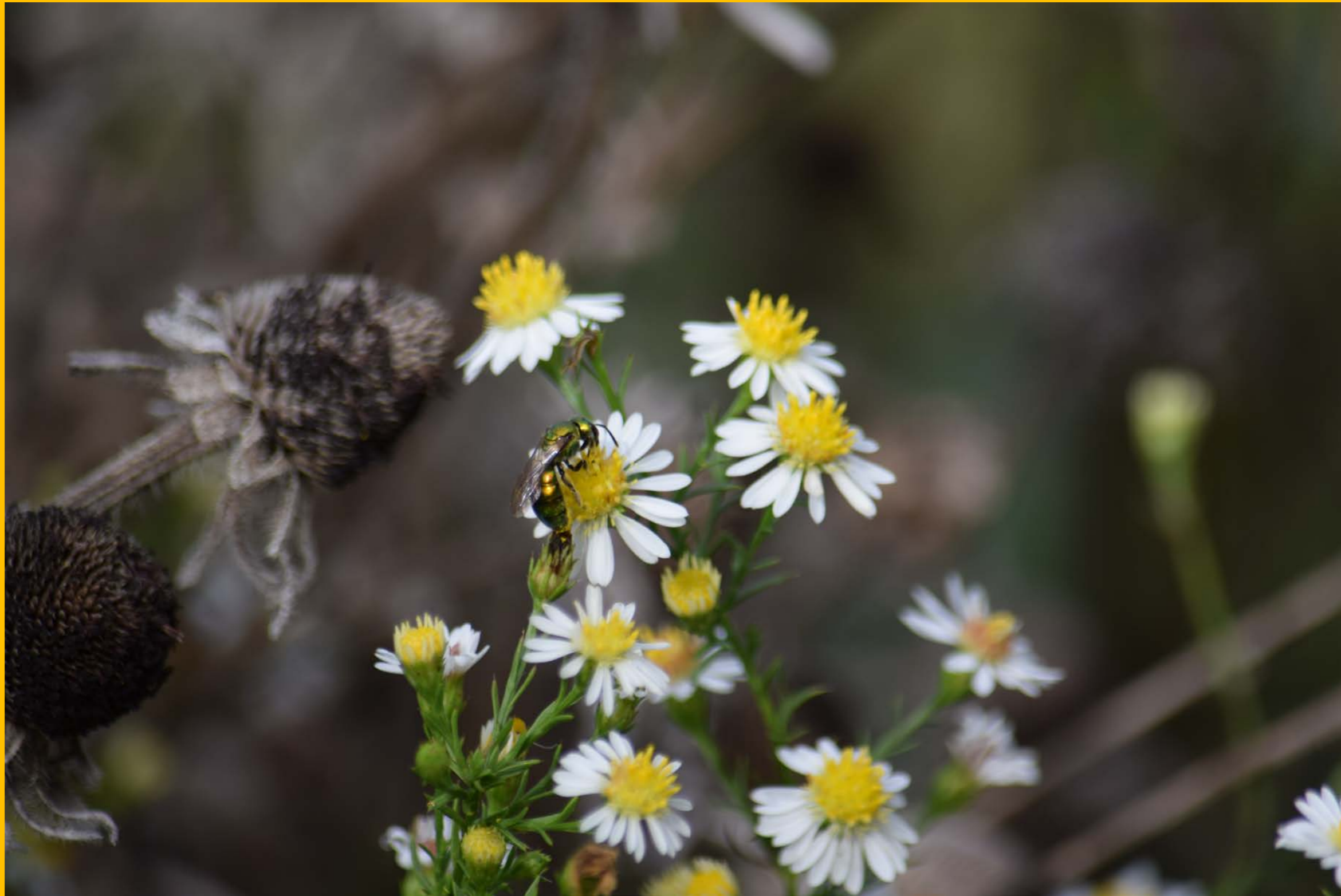
June Beetle



Tachinid Fly



Two-spotted Blue-winged Scoliid Wasp



Metallic Green Sweat Bee

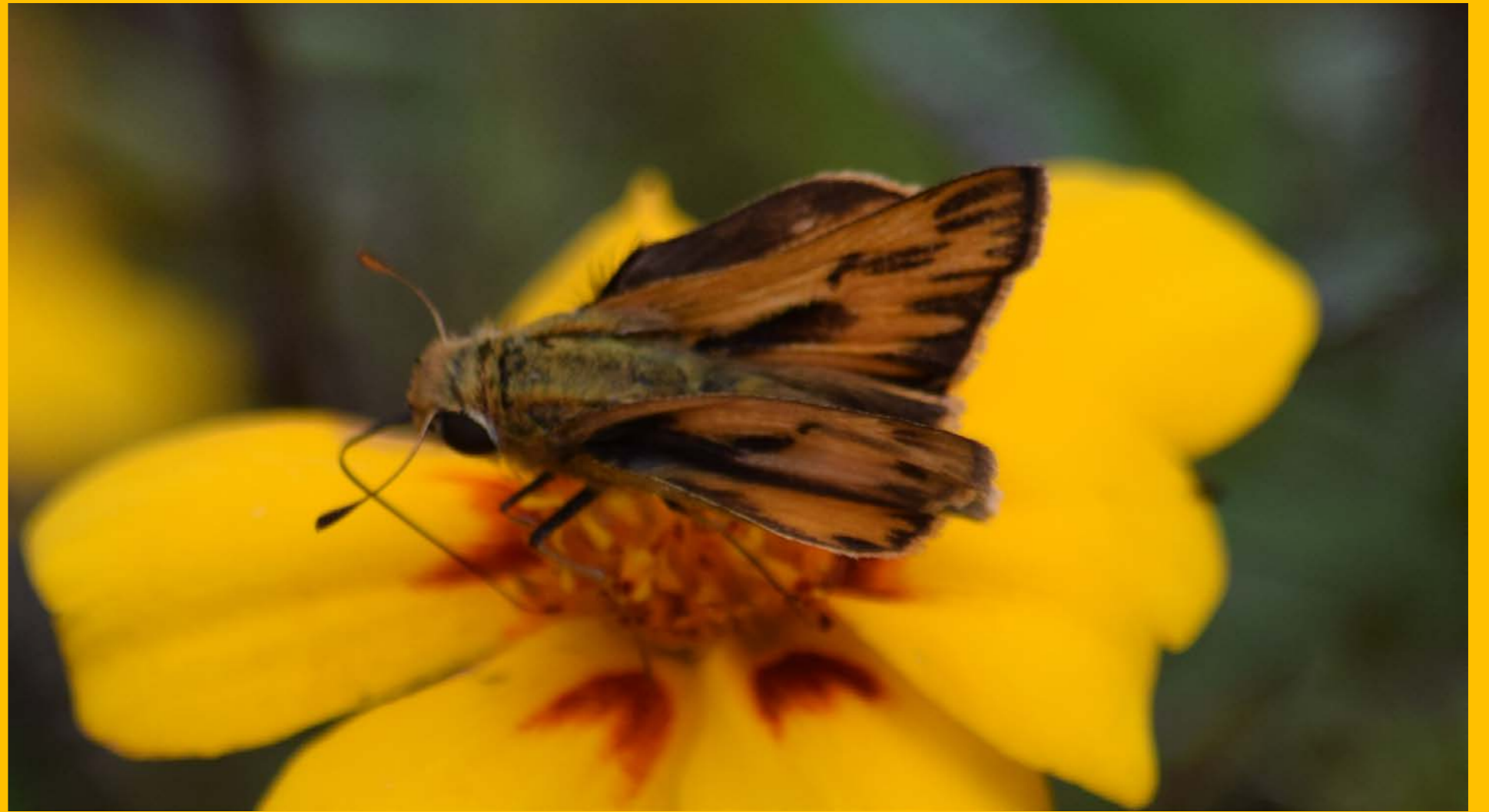
Native Plants do Many Things for Pollinators

- ❖ Gardens and meadows with a variety of flowers, with a variety of shapes, & colors, with a diversity of native plants that provide floral resources throughout the growing season. A constant supply of pollen and nectar will attract more pollinators.
- ❖ Gardens planted with a diversity of native plants will have more abundant and diverse populations of bees & wasps, butterflies & moths, beetles, flies and other insects.
- ❖ Diverse native wildflower gardens & meadows provide pollinators with nectar, pollen and many nesting opportunities.

- ❖ Plant gardens and meadows with a variety of flowers, with a variety of shapes, and with a variety of colors. Native plants that flower throughout the growing season will and do attract more pollinators.



- ❖ Gardens planted with a diversity of native plants will have more abundant and diverse populations of bees & wasps, butterflies & moths, beetles, flies and other insects.



- ❖ Diverse native wildflower gardens & meadows provide pollinators with nectar, pollen and many nesting opportunities from April to late October – early November.



And, *please* don't forget native flowering trees, shrubs, and vines.

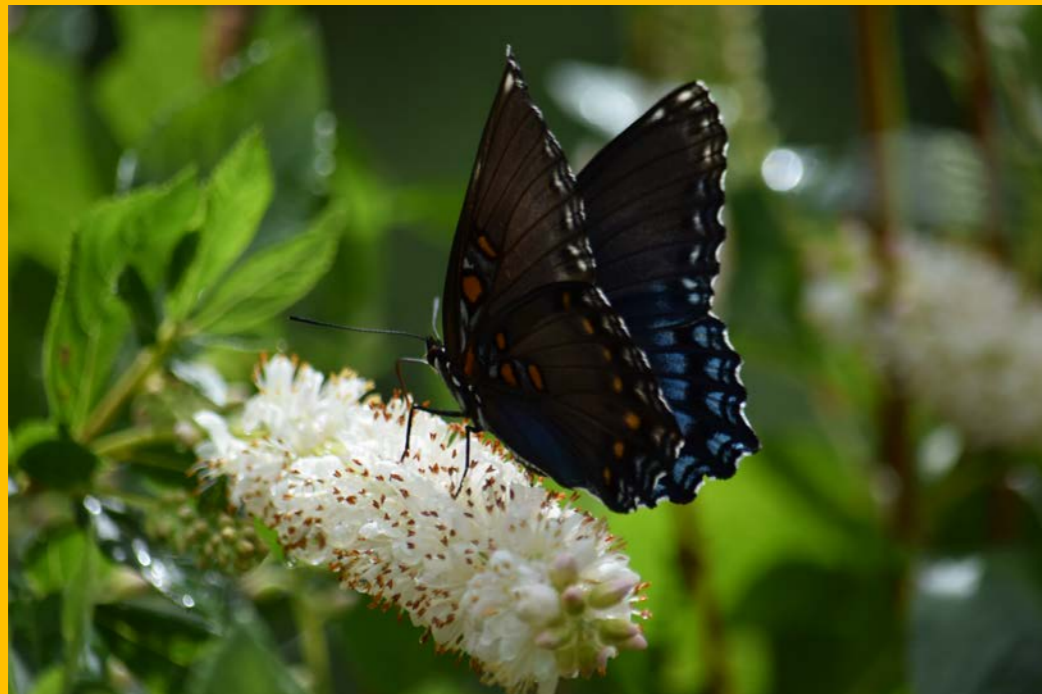
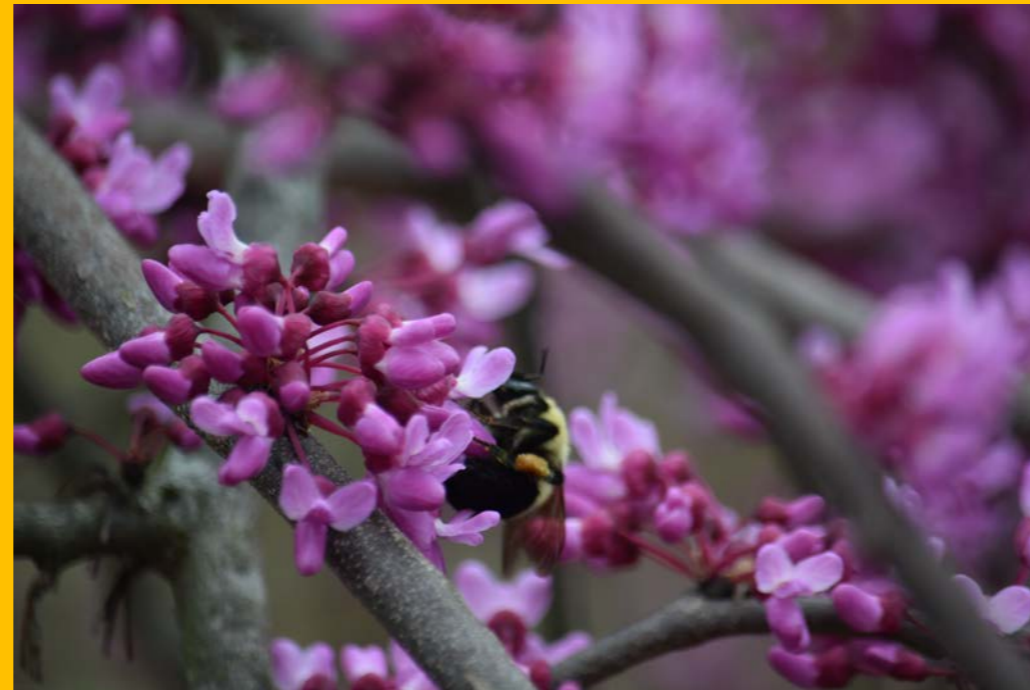


Photo by Smith, R.W.;
[LBJ Wildflower Center Digital Library](#)



Native flowering trees, shrubs, vines, grasses, & wildflowers can be planted in endless combinations to create welcoming gardens and meadows that will support pollinators and other wildlife in welcoming habitats.



Let's ~~Start~~ Plan A Native Plant Garden

- 1. What is your vision for your native plant garden or meadow?**
- 2. What information is needed to begin planning your native plant garden or meadow?**
- 3. What USDA Hardiness Zone do you live in?**
- 4. What is the available sunlight; full, partly sunny/shaded, or shaded?**
- 5. What is the soil type; sandy soils, loam soils, or clay soils?**
- 6. What type of soil moisture is available: dry soils, medium soils or moist soils?**
- 7. What or who benefits, birds, butterflies, pollinators, hummingbirds, host plant, deer resistant or even a garden favorite? And to make it complex; it can be any combination thereof.**
- 8. What native plants will you choose? What time of year does it bloom; what is the flower's shape, color, and is it appealing to pollinators and other wildlife.**
- 9. Finally, is it appealing to you? Does it make you happy? if not change the plan!**



1. What is your vision for your native plant garden or meadow? I will share Penny's and Larry's vision of we wanted our meadow to be.



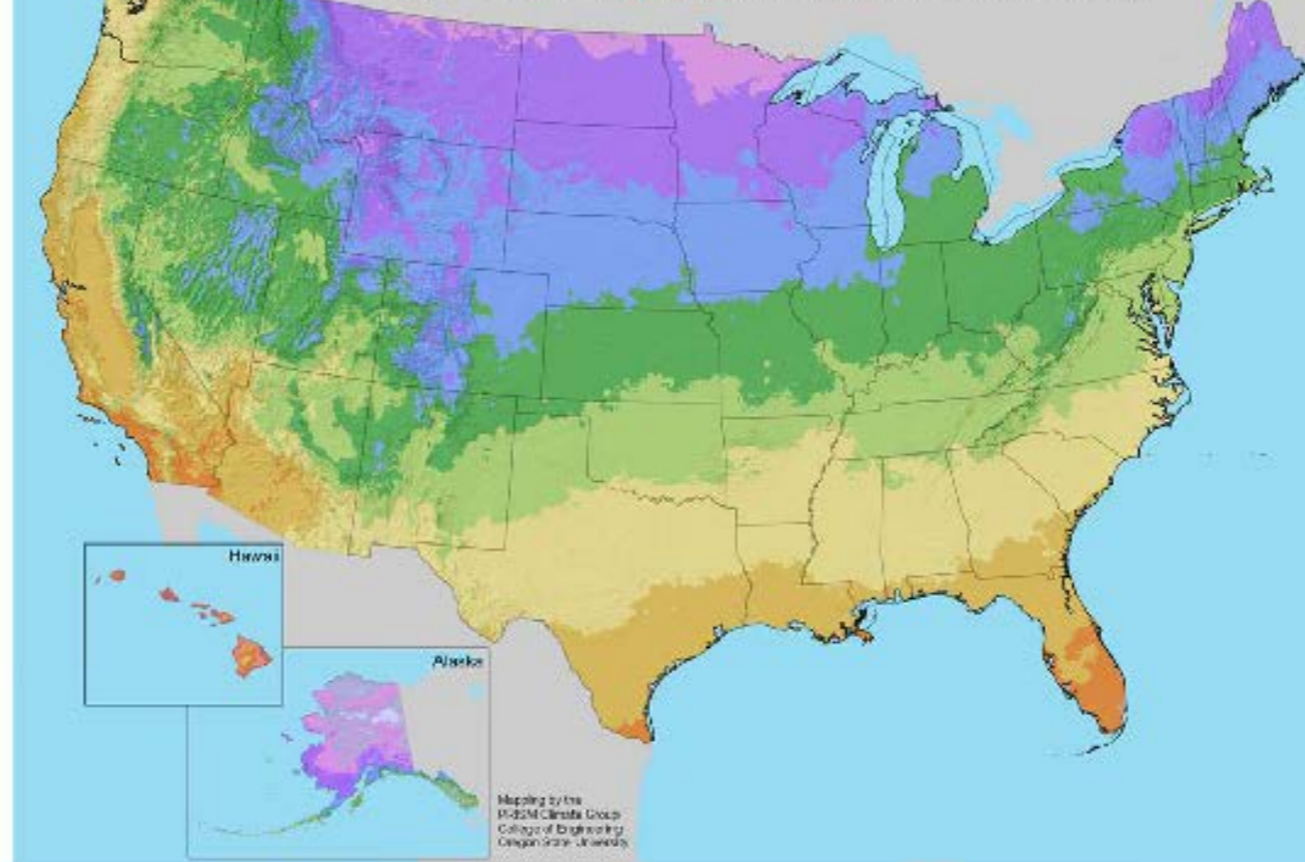
We wanted an aesthetically pleasing meadow with lots of native wildflowers, grasses and sedges with a thriving pollinator habitat that would support butterflies, moths, bees, wasps, birds, and other wildlife.



And at the end of the day Penny and I are very pleased and enjoy it very much!



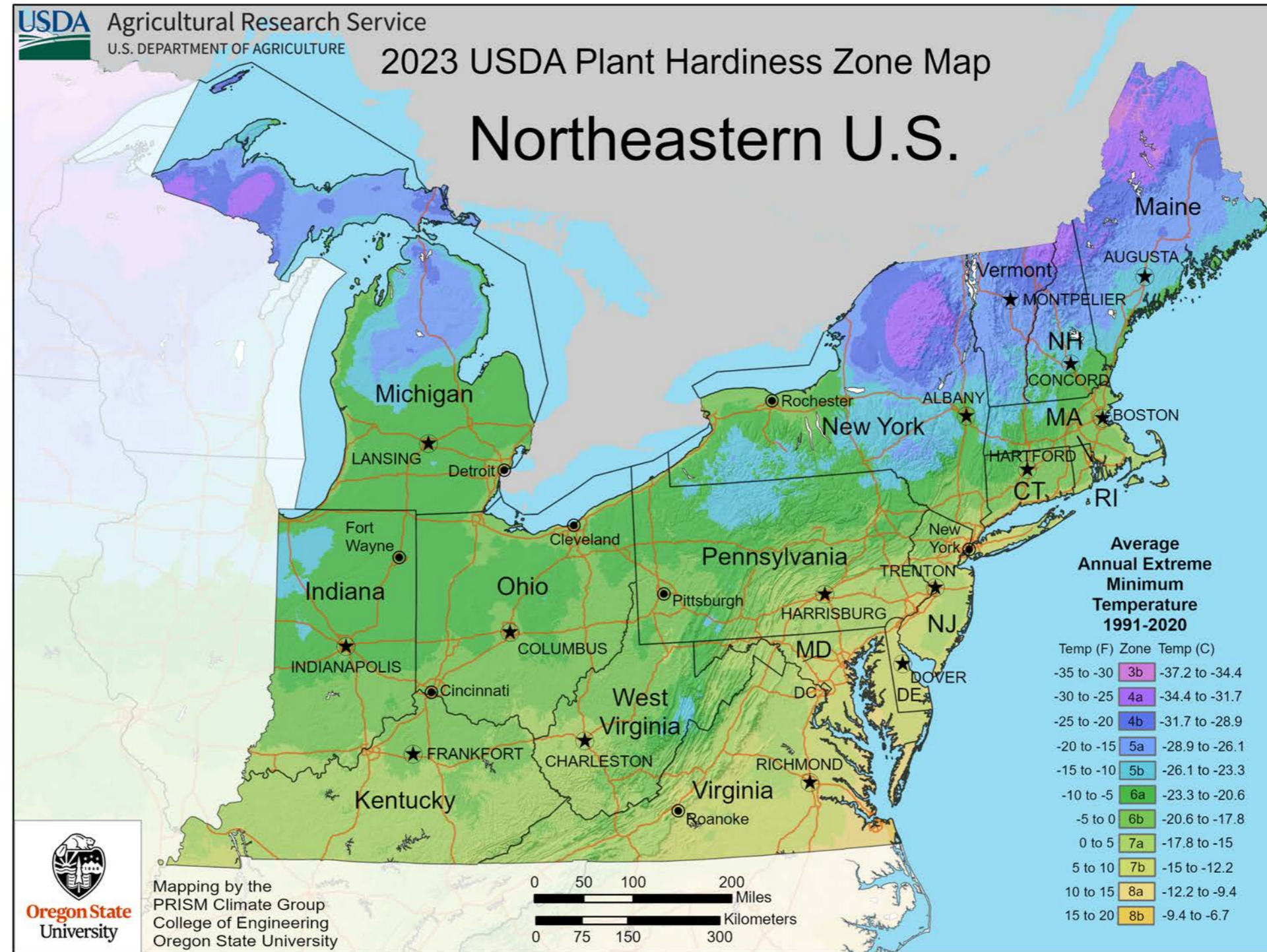
2023 USDA Plant Hardiness Zone Map



Average Annual Extreme Minimum Temperature

Temp (F)	Zone	Temp (C)	Temp (F)	Zone	Temp (C)	Temp (F)	Zone	Temp (C)
-60 to -50	1	-51.1 to -45.6	-20 to -10	5	-28.9 to -23.3	30 to 40	10	-1.1 to 4.4
-50 to -40	2	-45.6 to -40	-10 to 0	6	-23.3 to -17.8	40 to 50	11	4.4 to 10
-40 to -30	3	-40 to -34.4	0 to 10	7	-17.8 to -12.2	50 to 60	12	10 to 15.6
-30 to -20	4	-34.4 to -28.9	10 to 20	8	-12.2 to -6.7	60 to 70	13	15.6 to 21.1
			20 to 30	9	-6.7 to -1.1			

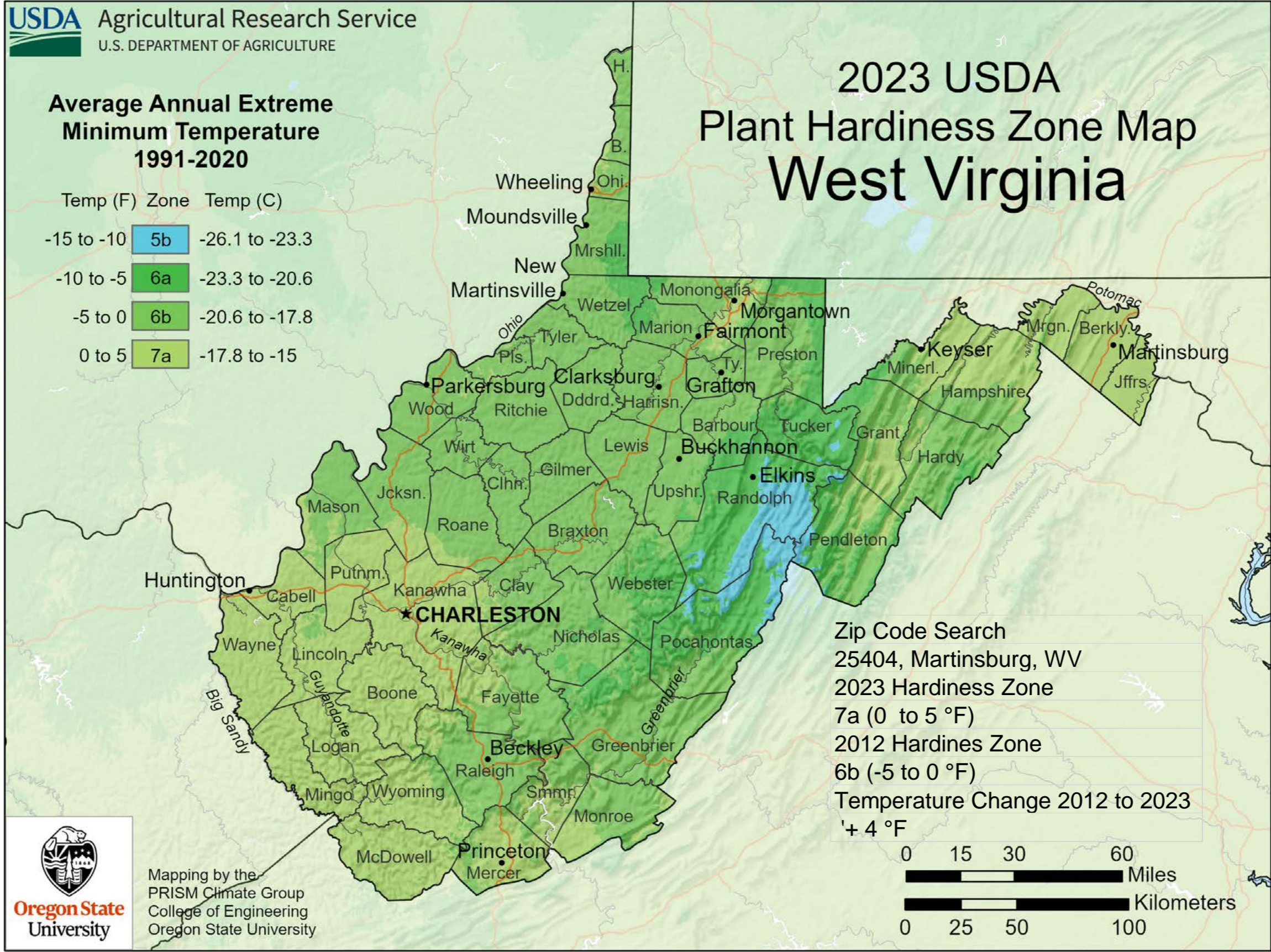
What USDA Hardiness Zone do you live in?



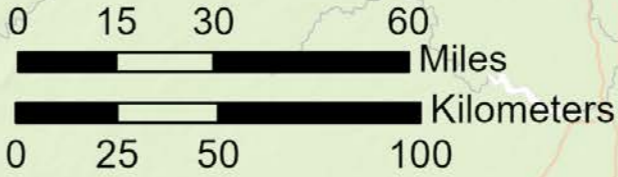
2023 USDA Plant Hardiness Zone Map West Virginia

Average Annual Extreme Minimum Temperature 1991-2020

Temp (F)	Zone	Temp (C)
-15 to -10	5b	-26.1 to -23.3
-10 to -5	6a	-23.3 to -20.6
-5 to 0	6b	-20.6 to -17.8
0 to 5	7a	-17.8 to -15

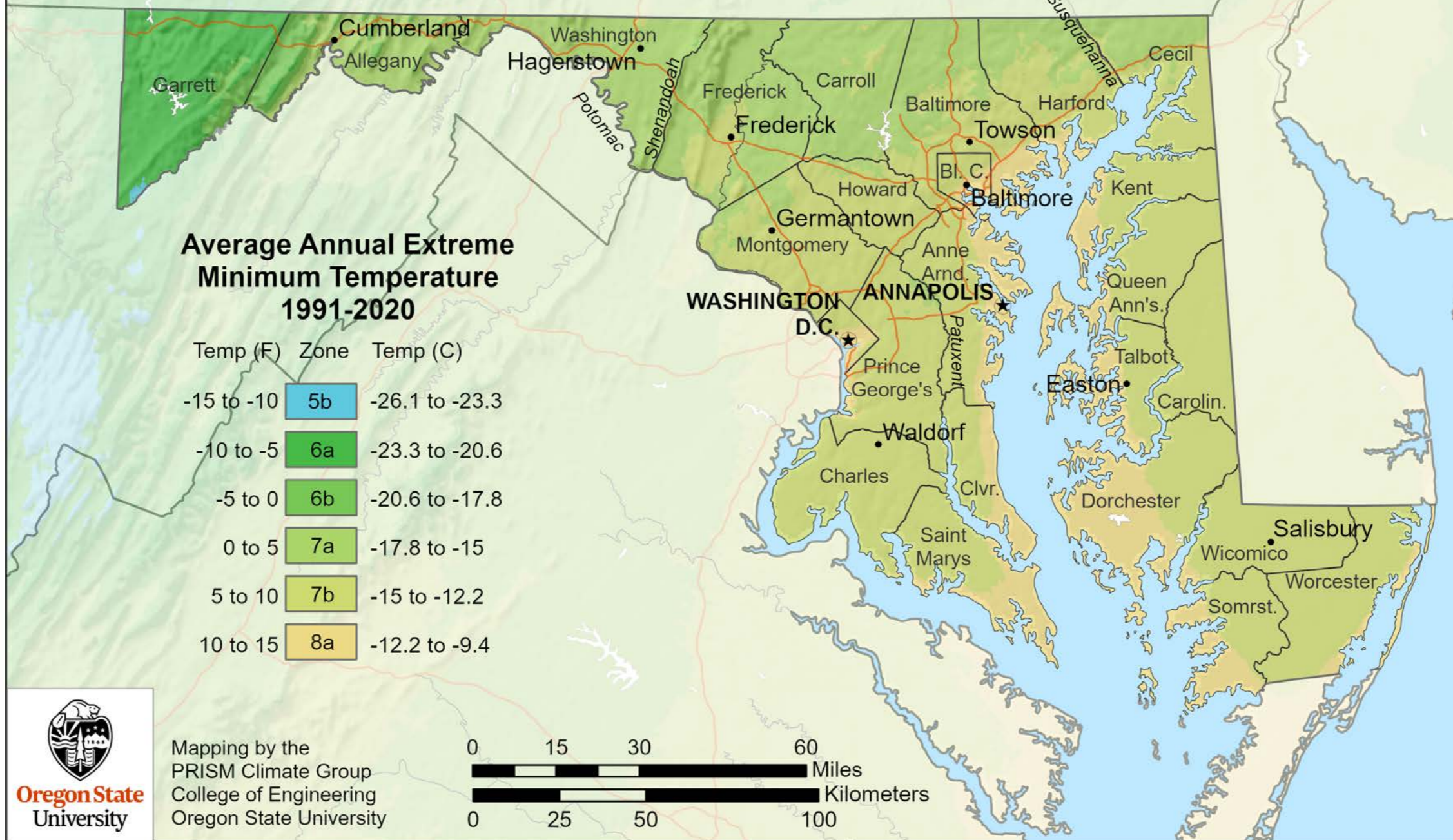


Zip Code Search
25404, Martinsburg, WV
2023 Hardiness Zone
7a (0 to 5 °F)
2012 Hardiness Zone
6b (-5 to 0 °F)
Temperature Change 2012 to 2023
+ 4 °F



Mapping by the
PRISM Climate Group
College of Engineering
Oregon State University

2023 USDA Plant Hardiness Zone Map Maryland & District of Columbia



You have your vision for a pollinator garden/meadow
& you have the information you need.
Now Think Like a Pollinator

Go Native: Pollinators are “best” adapted to local, native plants, which often need less water than cultivars.

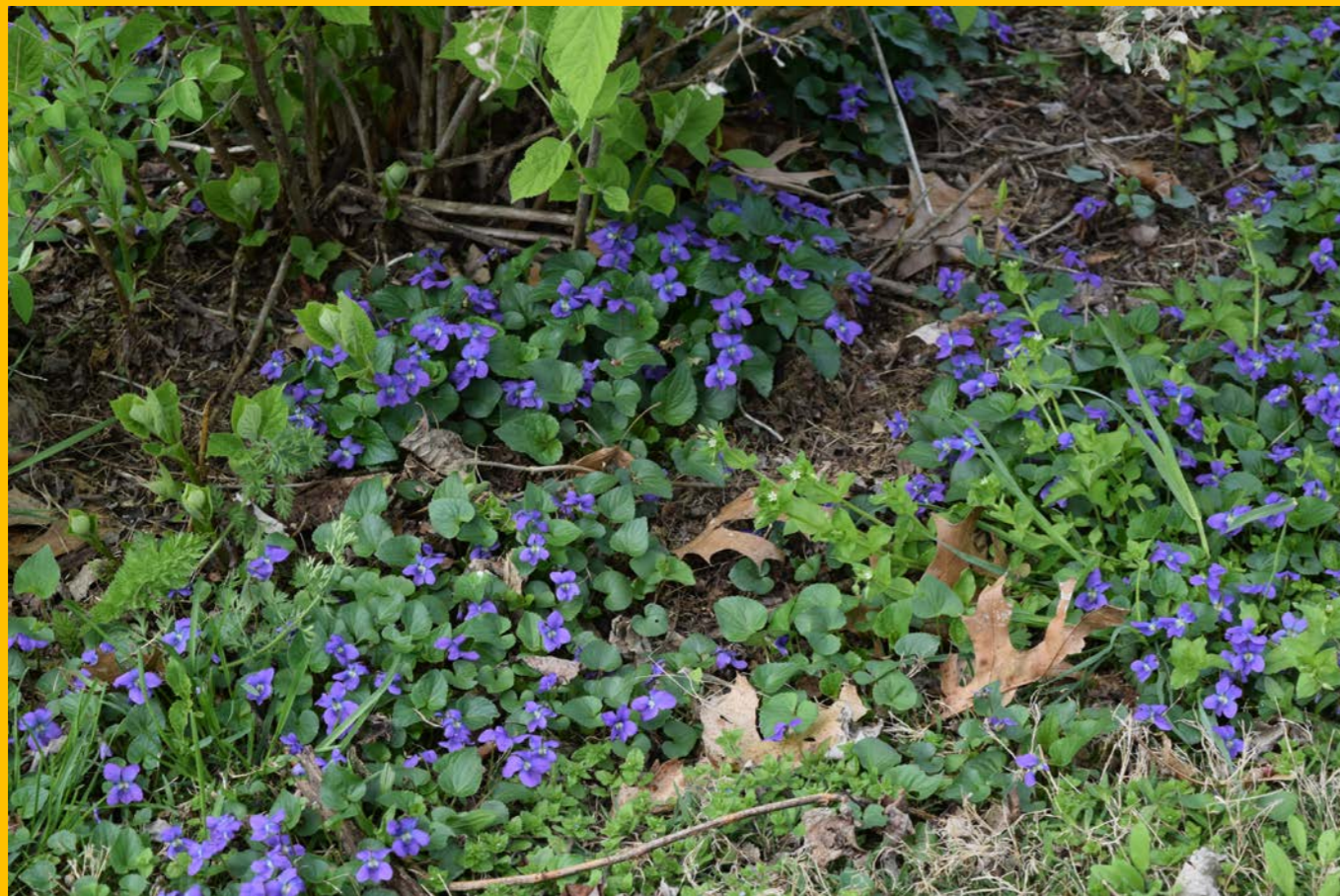


‘PenLar Meadow in May 2021’



Variegated Fritillaries on Heath Aster

Bee Showy: Flowers should bloom in your garden throughout the growing season. Plant pussy willow, Serviceberry, violets, and wild hyacinths for spring, and aster, joe-pye-weed, and goldenrod for fall.



Common Blue Violet



Metallic Green Sweat Bee on Calico Aster

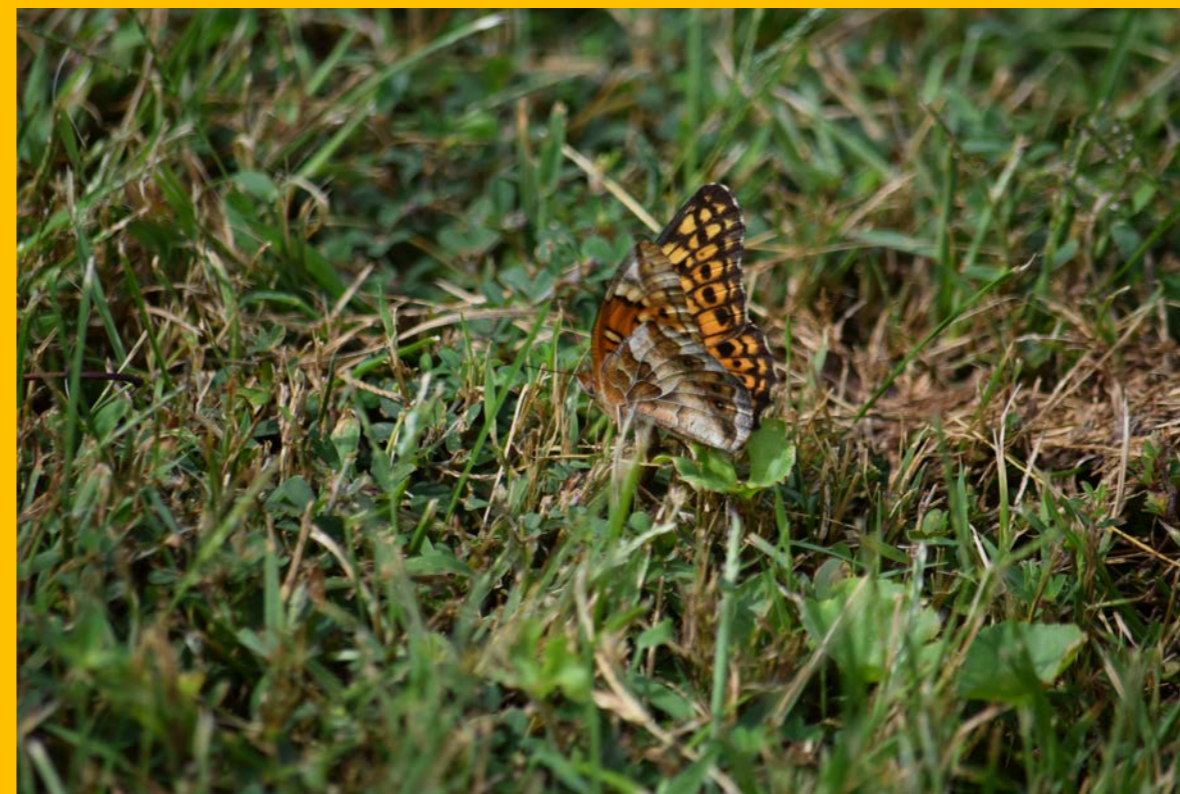
Bee Diverse: Plant a diversity of flowering species with abundant pollen and nectar and specific native plants for feeding butterfly and moth caterpillars.



White-lined Sphinx Moth on Heartleaf Four O'clock



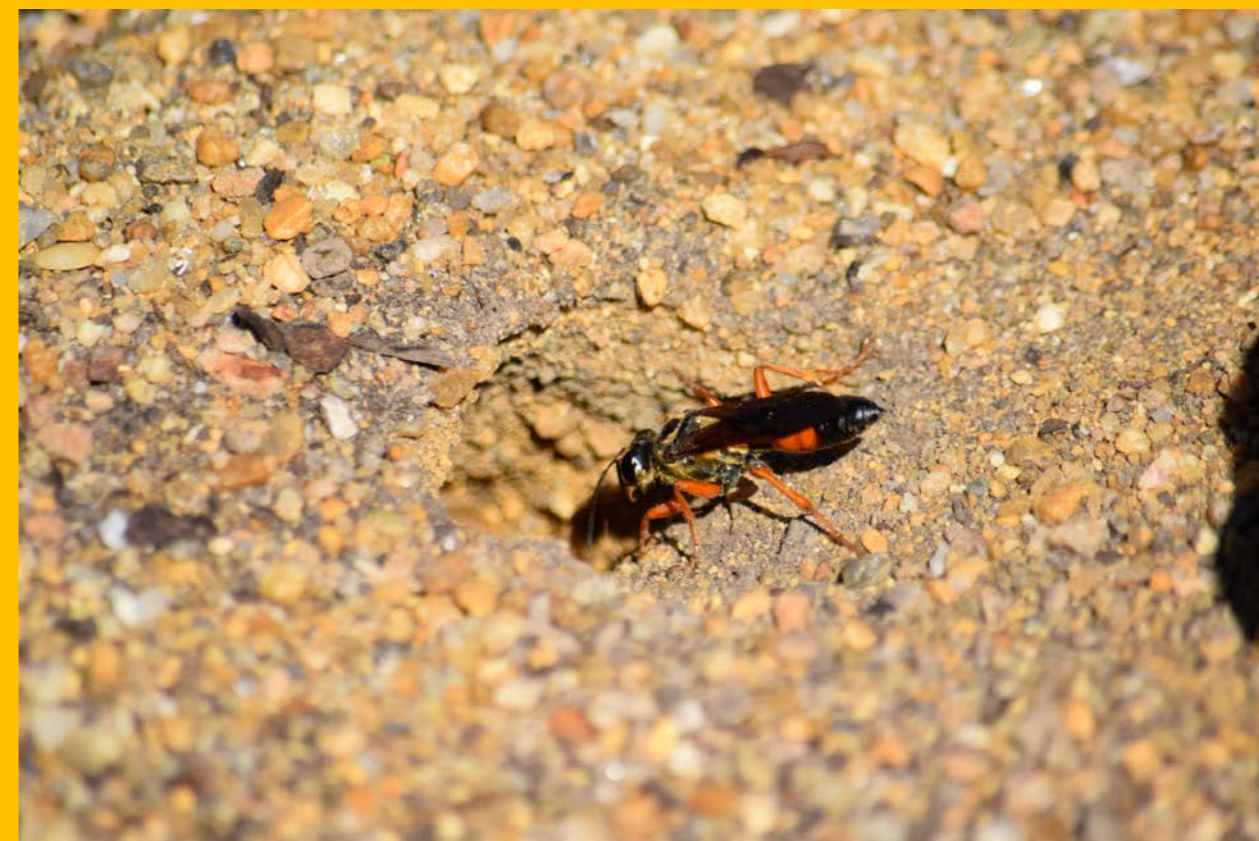
Variegated Fritillary Ovipositing and larva eating Common Blue Violet



Bee Aware: Observe pollinators and other fascinating insects when you walk outside in nature. Notice which native wildflowers attract bumble bees or solitary bees, moths, wasps and beetles.



Leafcutter bee on Azure Blue Sage
Note pollen on abdomen



Great Golden Digger Wasp entering a nesting tunnel

Bee a little messy: Most of our native bee species (70%) nest underground so avoid using weed cloth or heavy mulch.



'PenLar Meadow' November 2016

Bee Sunny: Provide areas with sunny, bare soil that's dry and well drained, preferably with south-facing slopes.



**Final Build of Sand Garden for
Ground Nesting Insects**



**Angle Square-headed Wasp's Nest
in Sand Garden**

Bee Patient: It takes time for native plants to grow and for pollinators to find your garden, especially if you live far from wild lands.



**2014 the Meadow Begins
In January 2015 native plants seed
is thrown on the snow so as to be
stratified.**



**2016 Plugs of Perennials Flowers
Are Installed.**

June 2017, Patience is Rewarded.

Bee Homey: Make small piles of branches to attract butterflies and moths. Provide hollow twigs, rotten logs with wood-boring beetle holes and bunch grasses and leave stumps, old rodent burrows, and fallen plant material for nesting bees. And let it stay where you put it and allow it to decompose over winter. That decomposing organic material will replenish your native plants' soils and be ready for next spring and it is free.

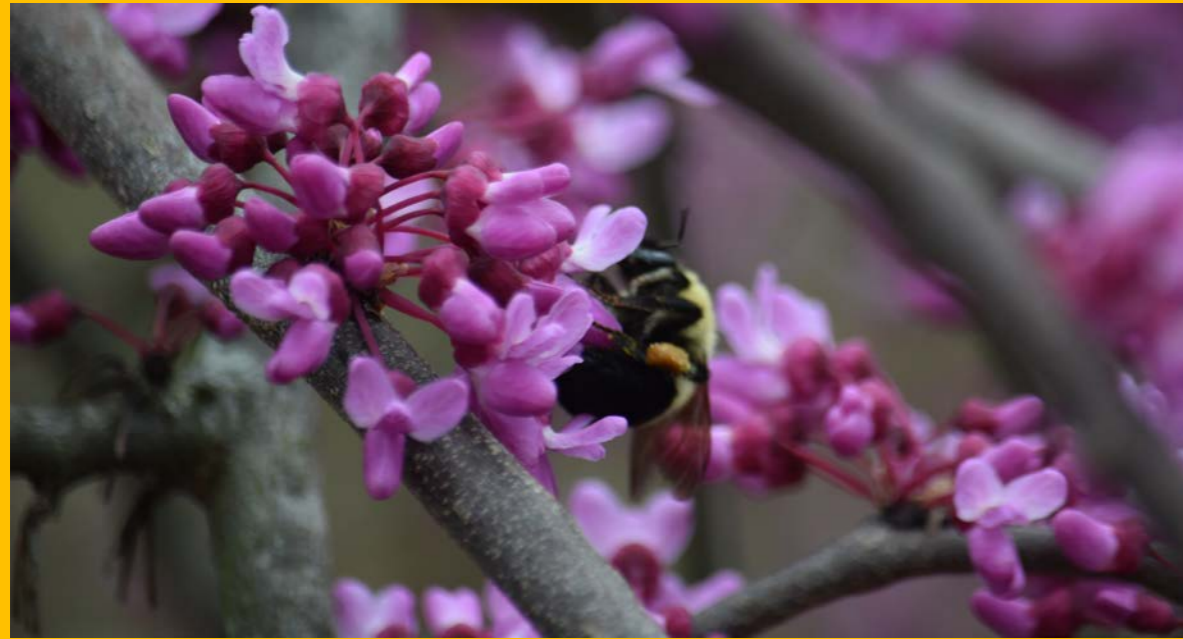
Additional Flower Beds Are Constructed & Good Things Come to Those Who Wait.



Butterfly Arrival & Departure

	April	May	June	July	August	September	October
Azure	Yellow						
Zebra Swallowtail	Blue						
Clouded Sulphur	Yellow						
Common Buckeye				Pink			
Banded Hairstreak			Light Green				
Hackberry Emperor			Brown				
Zabulon Skipper		Dark Green					
Tawny-edged Skipper				Magenta			
Great Spangled Fritillary				Cyan			
Monarch			Yellow				
Ocola Skipper							Orange
Fiery Skipper						Light Green	

Ensure there is an adequate supply of pollen and nectar through the entire growing season.



**Queen Bumble Bee on Redbud
April 8, 2020**



**Common Blue Violet
April 17, 2021**



**Hoverfly on Possumhaw
June 6, 2018**



**Oblique Longhorn Bee on Gaillardia
August 6, 2014**



**Ruby-throated Hummingbird on
Royal Catchfly July 29, 2016**



**American Witch Hazel
November 6, 2018**

Common Name	Latin Name	Light				Soil Moisture				Height		Habit	Bloom Color	Spring			Summer			Fall			Pollinators				Notes	More Information						
		Full Sun	Part Shade	Shade		Wet	Wet/Mesic	Mesic	Dry/Mesic	Dry	Min			Max	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Bee	Beetle	Butterfly/Moth			Hummingbird	Wasp	Pollinator Magnet			
Red Buckeye	<i>Aesculus pavia</i>									12'	15'	T	Red/Yellow	x									x										https://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=28	
Nodding Wild Onion	<i>Allium cernuum</i>									1'	2'	W	Pink		x								x										http://www.indiananativeplants.org/images/speciespages/Nodding_onion.html	
Serviceberry	<i>Amelanchier arborea</i>									10'	25'	S	White	x									x	x		x						Striped Hairstreak host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=h290	
Serviceberry	<i>Amelanchier laevis</i>									10'	25'	S	White	x									x	x		x						Striped Hairstreak host	http://www.indiananativeplants.org/images/speciespages/Serviceberry.html	
Leadplant	<i>Amorpha canescens</i>									1'	3'	S	Purple		x								x						y		Southern Dogface host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b260		
Blue star	<i>Amsonia tabernaemontana</i>									2'	3'	W	Blue	x									x		x								http://www.indiananativeplants.org/images/speciespages/Blue_star_willow.html	
Big Bluestem	<i>Andropogon gerardii</i>									5'	8'	G	Green		x	x																Byssus Skipper host	http://www.indiananativeplants.org/images/speciespages/Big_bluestem.html	
Red Columbine	<i>Aquilegia canadensis</i>									1'	3'	W	Red/Yellow	x									x	x		x							http://www.indiananativeplants.org/images/speciespages/Columbine.html	
Dutchman's pipe	<i>Aristolochia tomentosa</i>									20'	30'	V	Green	x	x									x								Hard to find	http://www.indiananativeplants.org/images/speciespages/Woolly_dutchmans_pipe.html	
Black Chokeberry	<i>Aronia melanocarpa</i>									2'	4'	S	White		x								x			x						Coral Hairstreak host	http://www.indiananativeplants.org/images/speciespages/Black_chokeberry.html	
Goat's Beard	<i>Aruncus dioicus</i>									4'	6'	W	White	x									x	x	x				y		Dusky Azure host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=j430		
Wild Ginger	<i>Asarum canadense</i>									<1'		W	Maroon	x											x							http://www.indiananativeplants.org/images/speciespages/Wild_ginger.html		
Marsh Milkweed	<i>Asclepias incarnata</i>									3'	4'	W	Pink		x								x	x	x				y		Monarch host	http://www.indiananativeplants.org/images/speciespages/Marsh_milkweed.html		
Sullivant's Milkweed	<i>Asclepias sullivantii</i>									3'	4'	W	Pink		x								x	x	x							Monarch host	http://illinoiswildflowers.info/prairie/plantx/pr_milkweedx.htm	
Common Milkweed	<i>Asclepias syriaca</i>									3'	5'	W	Pink		x								x	x	x							Monarch host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b480	
Butterflyweed	<i>Asclepias tuberosa</i>									1'	2'	W	Orange		x								x		x							Monarch host	http://www.indiananativeplants.org/images/speciespages/Butterfly_weed.html	
Whorled Milkweed	<i>Asclepias verticillata</i>									1'	2'	W	White		x								x		x							Monarch host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=276793	
Pawpaw	<i>Asimina triloba</i>									10'	40'	S	Purple	x										x		x						Zebra Swallowtail host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b500	
Sky-Blue Aster	<i>Aster azureus</i>									1'	2'	W	Blue										x		x	x						Pearl Crescent host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=d209	
Heart-Leaved Blue Wood Aster	<i>Aster cordifolius</i>									1'	3'	W	Blue										x		x	x						Pearl Crescent host	http://illinoiswildflowers.info/woodland/plants/bl_woodaster.htm	
Heath Aster	<i>Aster ericoides</i>									1'	2'	W	White										x		x	x	x	x		y		Pearl Crescent host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=j480	
Shining Aster	<i>Aster firmus</i>									3'	4'	W	Lavender										x		x	x							Pearl Crescent host	
Smooth Aster	<i>Aster laevis</i>									3'	5'	W	Blue										x		x	x						Pearl Crescent host	http://www.illinoiswildflowers.info/prairie/plantx/sm_asterx.htm	
Calico Aster	<i>Aster lateriflorus</i>									1'	3'	W	White										x		x	x	x	x				Pearl Crescent host	http://www.illinoiswildflowers.info/savanna/plants/calico_aster.htm	
New England Aster	<i>Aster novae-angliae</i>									3'	5'	W	Purple										x		x	x	x					Pearl Crescent host	http://www.indiananativeplants.org/images/speciespages/New_England_aster.html	
Swamp Aster	<i>Aster puniceus</i>									3'	6'	W	Lavender										x		x	x						Pearl Crescent host	http://illinoiswildflowers.info/wetland/plants/sw_aster.htm	
Short's Aster	<i>Aster shortii</i>									2'	3'	W	Purple										x		x	x						Pearl Crescent host	http://www.illinoiswildflowers.info/woodland/plants/short_aster.htm	
Flat-Topped Aster	<i>Aster umbellatus</i>									3'	5'	W	White										x		x	x						Pearl Crescent host	https://plants.usda.gov/core/profile?symbol=DOUMU	

Courtesy: Plant Finder Missouri Botanical Garden
 Accessed: January 8, 2024



MISSOURI BOTANICAL GARDEN

Plant Finder

Common Name	Latin Name	Light		Soil Moisture			Height		Habit	Bloom	Color	Spring	Summer	Fall	Pollinators					Notes	More Information					
		Full Sun	Part Shade	Shade	Wet	Wet Mesic	Dry Mesic	Dry							Min	Max	Bee	Beetle	Butterfly/Moth			Hummingbird	Wasp	Pollinator Magnet		
Red Buckeye	<i>Aesculus pavia</i>	Full Sun	Part Shade	Shade	Wet	Wet Mesic	Dry Mesic	Dry	12'	15'	T	Red/Yellow	x			x					x					https://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=28
Nodding Wild Onion	<i>Allium cernuum</i>	Full Sun	Part Shade	Shade	Wet	Wet Mesic	Dry Mesic	Dry	1'	2'	W	Pink		x		x										http://www.indiananativeplants.org/images/speciespages/Nodding_onion.html
Serviceberry	<i>Amelanchier arborea</i>	Full Sun	Part Shade	Shade	Wet	Wet Mesic	Dry Mesic	Dry	10'	25'	S	White	x			x	x		x					Striped Hairstreak host	http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=h290	

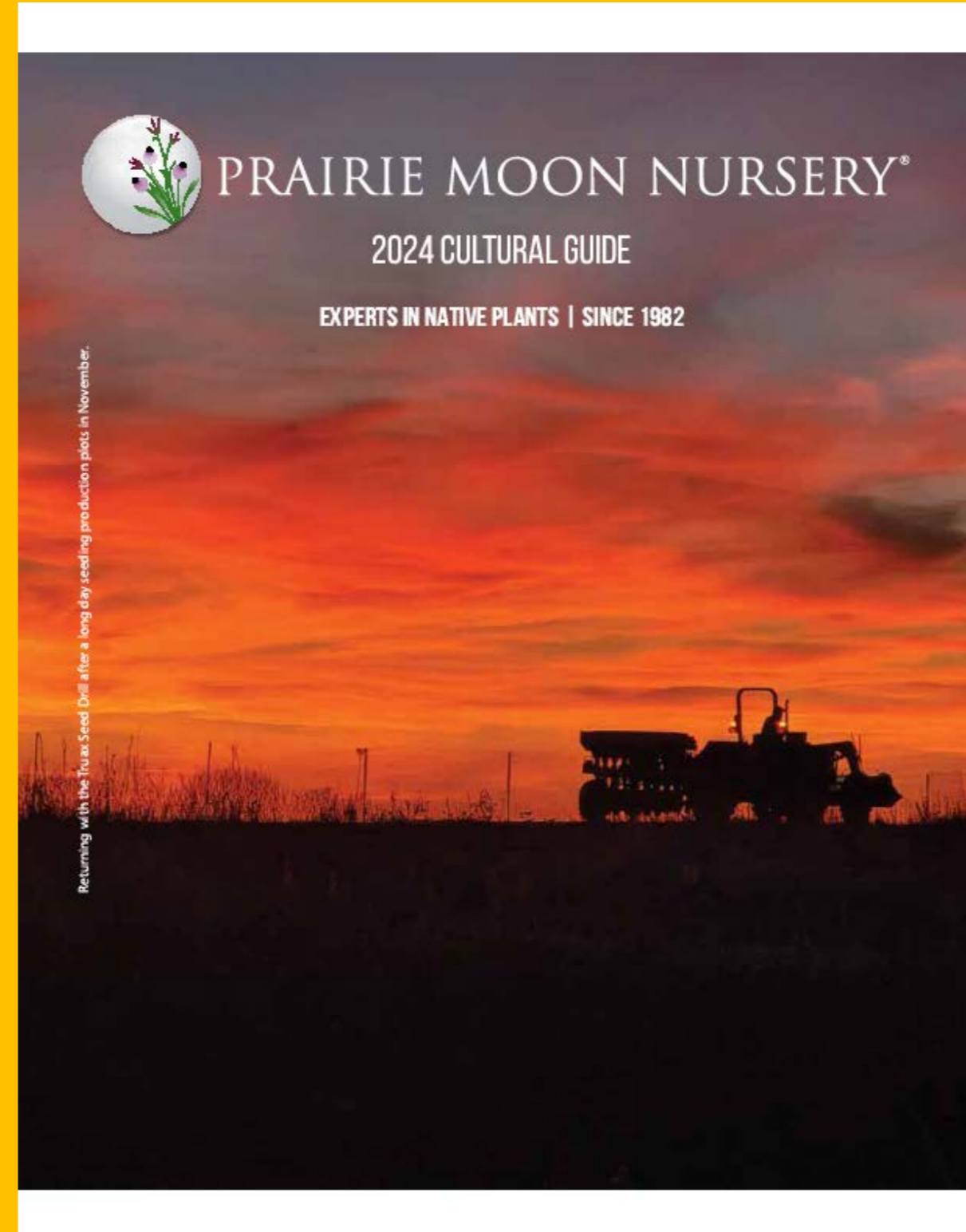
Courtesy: Plant Finder, Missouri Botanical Garden
 Accessed: January 8, 2024

The End of the Growing Season Is Actually the Beginning of Conserving Pollinators and Other Native Insects

1. Please hesitate and give thought before gathering all the native wildflower, grass, sedge stems, their seed heads and leaves from them, and disposing of them.
2. Germinating seed from the native plants in your garden or meadow will provide extra new plants the following spring.
3. As the spent vegetation decomposes it replenishes the soil while providing an excellent organic mulch.
4. Our winter birds will eat seed from the spent flower heads.
5. Insectivorous birds will find over-wintering insects among the dead vegetation to consume.
6. Native bees and other insects over-winter in the spent stems.
7. The single queen bumblebee over-winters in the base of grasses and sedges.
8. Mourning cloaks, question marks, and commas over-winter as adult butterflies under the scaly bark of native trees.

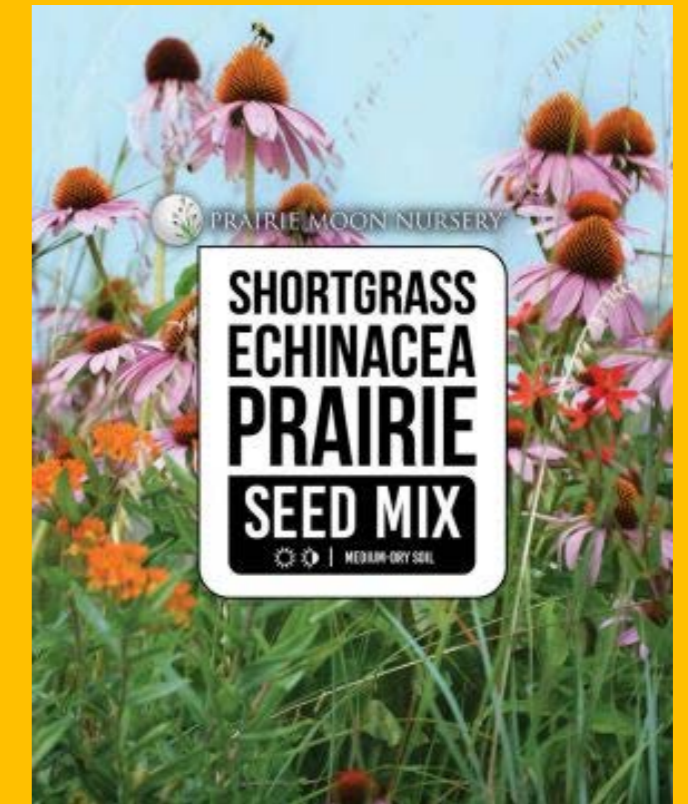
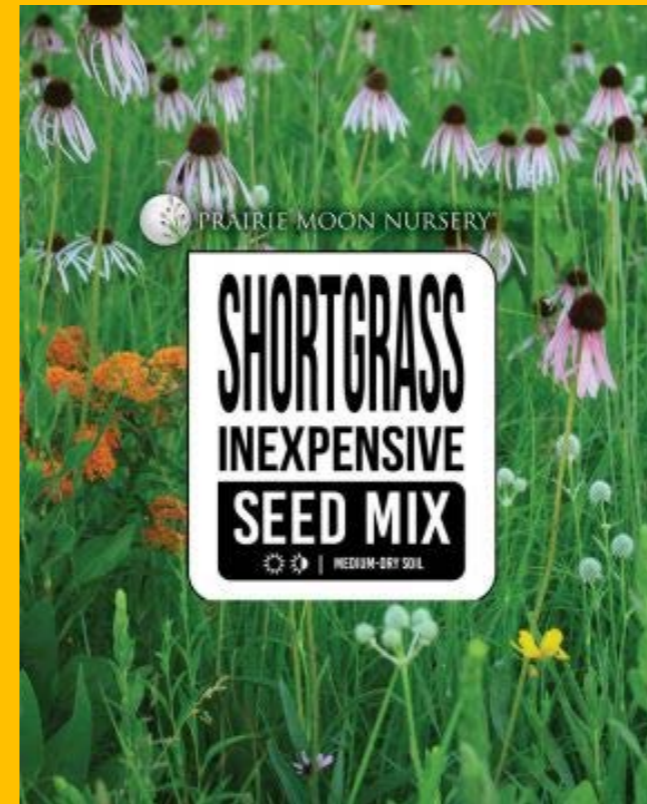
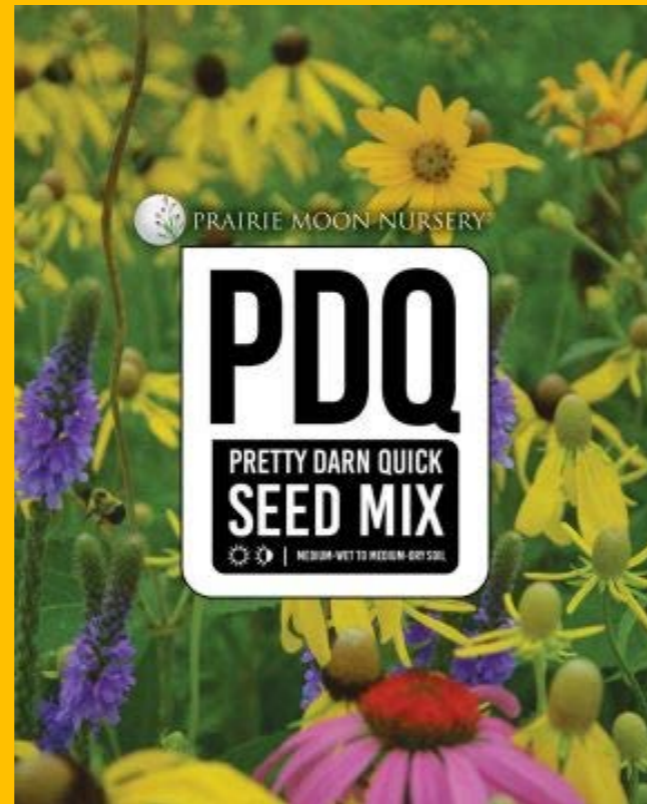
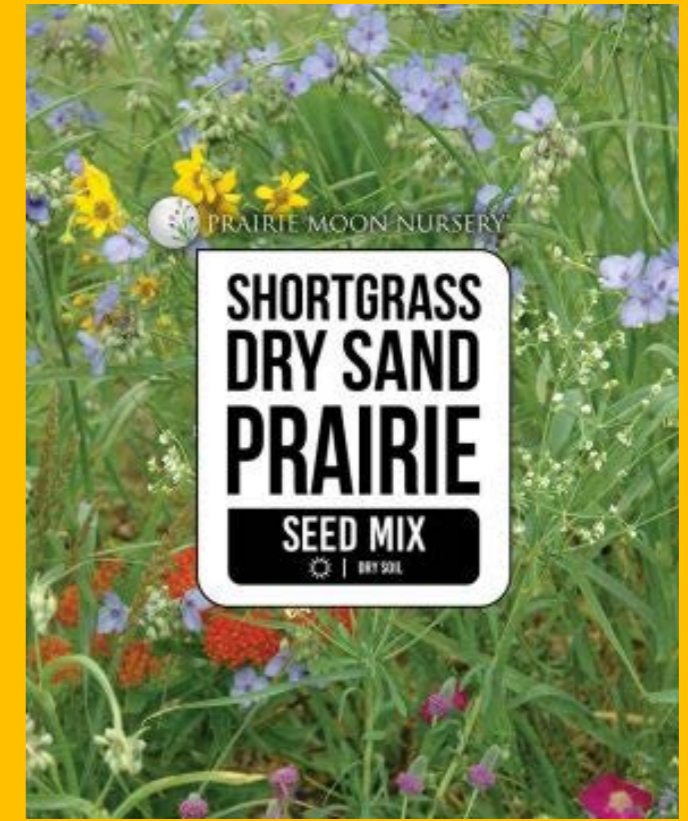
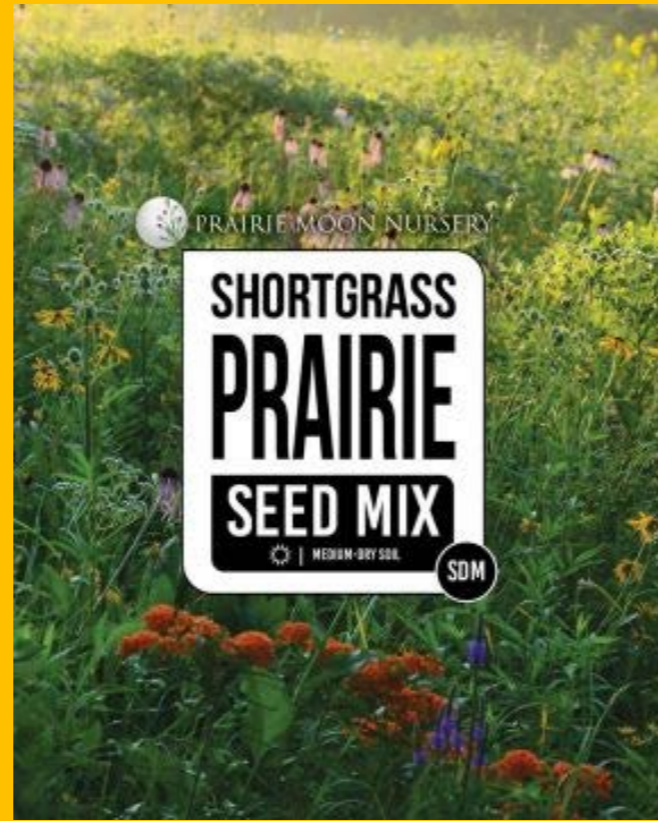


PRAIRIE MOON
NURSERY®





PRAIRIE MOON
NURSERY®



PLANTING FOR POLLINATORS

*Native plant selection guide for
season-long pollinator support in
the landscape.*



PRAIRIE NURSERY

Plant a Pollinator Seed Mix to help "Bring Back the Pollinators." Designed in collaboration with the Xerces Society this mix supports an array of native pollinators. Long tongued bees, solitary bees, butterflies, moths and others will benefit from the diverse bloom shapes & colors, offering nectar and pollen throughout the growing season.



Quantity Price Ea.

1/4 Lb \$95.00

1/2 Lb \$190.00

1-2 Lb \$265.00

3-4 Lb \$208.33

5-9 Lb \$187.00

10+ Lb \$169.50



Plant Finder

Diervilla lonicera



More Images

Common Name: bush honeysuckle
Type: Deciduous shrub
Family: Caprifoliaceae
Native Range: Eastern North America
Zone: 3 to 7
Height: 2.00 to 3.00 feet
Spread: 2.00 to 4.00 feet
Bloom Time: June to July
Bloom Description: Yellow
Sun: Full sun to part shade
Water: Dry to medium
Maintenance: Low
Suggested Use: Hedge, Naturalize
Flower: Showy
Leaf: Good Fall
Attracts: Hummingbirds, Butterflies

Culture

Easily grown in average, dry to medium moisture, well-drained soils in full sun to part shade. Tolerates drought. Freely suckers. Plants may be propagated by transplanting suckers. Prune as needed immediately after flowering. Plants grow best in cool summer climates.

Noteworthy Characteristics

Diervilla lonicera, commonly known as bush honeysuckle, is a suckering, densely branched, deciduous shrub that typically grows to 3' tall and to 4' wide. It is native to dry rocky open woodland areas and thickets from Newfoundland to Saskatchewan south to North Carolina, Tennessee and Iowa. It is noted for its small shrubby form, yellow trumpet-shaped flowers, dark green leaves and fall color. Tube-like flowers (each to 1/2" across), resembling the flowers of true honeysuckle (genus *Lonicera*), bloom in panicles (cymes) in late spring to early summer (June-July). In order to taste the sweet nectar, the tubular flower must be suckled, hence the name honeysuckle. Plants are self-sterile (seed set requires pollination from a nearby plant). Flowers give rise to fruits (dry woody dehiscent capsules). Ovate to oblong-lanceolate, pointed, opposite, glossy green leaves (to 2-5" long) with fine marginal teeth turn interesting shades of yellow to orange sometimes changing to red in fall.

Genus name honors a French surgeon named Dierville or Diereville who observed with great interest a North American native bush-honeysuckle growing in Canada during an extensive trip he took to that country in 1699-1700. Upon his return to France, he introduced the shrub to European culture, with the bush-honeysuckle genus eventually being named in memory of him. Linnaeus subsequently listed the observed Canadian plant as *Diervilla lonicera*.

Specific epithet comes from the genus name for honeysuckle (*Lonicera*).

The honey-like taste of the flower nectar can be enjoyed by suckling the flower, hence the common name of honeysuckle. This species should not be confused with *Lonicera japonica*, which shares the common name bush honeysuckle and is an exotic invasive species to Missouri and the Midwest.

Problems

No serious insect or disease problems. Leaf spot and powdery mildew may occur.

Uses

Small hedge. Shrub borders. Naturalize in woodland gardens or on slopes in areas where plants can spread to form colonies.

USDA NRCS Plants Database Accessed February 10, 2024



Plant Guide

DOWNY SERVICEBERRY *Amelanchier arborea* (Michx. f.) Fern. Plant Symbol = AMAR3

Contributed By: USDA NRCS National Plant Data Center & Biota of North America Program



© William S. Justice
Botany Dept., NMNH, Smithsonian Institution
@ PLANTS

Alternate common names

Sarvis-berry, shadblow, shadbush, juneberry, sugarplum, Indian cherry

Uses

Trees of downy serviceberry are generally not large enough for sawtimber but they have been used for pulpwood. The wood is extremely heavy and hard and is occasionally made into tool handles. Cree Indians prized it for making arrows.

At least 40 bird species (for example, mockingbirds, cardinals, cedar waxwings, towhees, Baltimore orioles) eat the fruit of *Amelanchier* species. Mammals that either eat the fruit or browse the twigs and leaves of downy serviceberry include squirrels, rabbits, chipmunks, mice, voles, foxes, black bears, deer, and elk. The fruits taste similar to blueberry – they are eaten fresh or cooked in pastries or puddings.

The trees are used as ornamentals and many cultivars have been selected for variation in growth habit, flower size and color, and leaf color. The fall foliage

Plant Materials <<http://plant-materials.nrcs.usda.gov/>>
Plant Fact Sheet/Guide Coordination Page <<http://plant-materials.nrcs.usda.gov/intranet/pfs.html>>
National Plant Data Center <<http://nwdc.usda.gov/>>

blends orange and gold with red and green. It grows in partial shade to full sun, preferring moist but well-drained soil but will also grow in dry sites.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state status and wetland indicator values.

Description

Rose Family (Rosaceae). Native shrubs or small trees to 10 meters tall, with a narrow, rounded crown, the twigs often red-brown to purplish, becoming gray, bark smooth, grayish, "striped" with vertical fissures and very ornamental. Leaves: deciduous, alternate, simple, oval to oblong, 5-13 cm long, glabrous above, pubescent and paler beneath, the base rounded or heart-shaped, acute or acuminate at the tip, with finely toothed margins. Flowers: 3-15 in elongate clusters at the branch tips, before the leaves appear; petals 5, white, 10-14 mm long and strap-like. Fruits 6-12 mm wide, on long stalks, red-purple at maturity; seed 5-10 per fruit. The common name: in some regions, the flowers are gathered for church services, hence serviceberry or sarvis-berry; or "service" from "sarvis," in turn a modification of the older name "Sorbus," a closely related genus.

Variation within the species: Three varieties have been recognized: var. *alabamensis* (Britt.) G.N. Jones; var. *arborea*; and var. *austroripariensis* (Ashe) Ahles.

Distribution

Downy serviceberry is widespread in the eastern US and southeastern Canada (New Brunswick and southern Newfoundland to Quebec and Ontario); south to the northern tip of the Florida Panhandle and west to Alabama, southern Mississippi, Louisiana and Texas (rare), Oklahoma, Kansas, Nebraska, and Minnesota.

Adaptation

Downy serviceberry grows in a variety of habitats – swampy lowlands, dry woods, sandy bluffs, rocky ridges, forest edges, and open woodlands and fields. It is a late successional to climax species in mixed-hardwood forests of the central U.S., commonly as an understory species. In the southern Appalachians, downy serviceberry grows in red spruce-Fraser fir forests at elevations of 1500-2000 meters with yellow



Plant Fact Sheet

SWAMP MILKWEED *Asclepias incarnata* L. Plant Symbol = ASIN

Contributed by: USDA NRCS, Norman A. Berg National Plant Materials Center, Beltsville, MD



Jennifer Anderson. IA, Scott Co., Davenport, Nahant Marsh. January 2, 2002

Alternate Names

Rose milkweed
Pleurisy Root
White Indian hemp

Warning: Swamp milkweed may be toxic when taken internally without sufficient preparation.

Uses

Conservation: Swamp milkweed is a native, colonizing, perennial wildflower useful for wetland rehabilitation. It is a good component of a wildlife seed mixture when seeded with native grasses and wildflowers. It prefers moisture retentive to damp soils in full sun to partial shade.

Wildlife: Swamp milkweed is a favored food of monarch butterfly (*Danaus plexippus*) larva (shown in the picture above). Swamp milkweed is also an important food source for the queen butterfly (*Danaus giippus*) larva. Various other butterflies and hummingbirds consume nectar from the flowers.

Ethnobotanical: The Chippewa and Iroquois have used an infusion of the roots externally to strengthen the body and heal babies' navels. The Iroquois and Meskwaki have also used a decoction of the roots and/or aerial portions of the plant as an emetic, diuretic, and anthelmintic (de-worming agent). The common name, *Pleurisy Root*, comes from its once common use to treat lung problems. Swamp milkweed is toxic when taken in large doses. The tough stringy stem fibers have been used to make twine, rope and rough textiles.

The downy parachutes (comas) that are attached to each seed are six times more buoyant than cork and five times warmer than wool. Large quantities of milkweed were grown for use as stuffing in pillows and lifejackets during World War II.

Landscape: Swamp milkweed is a tall plant with fragrant, showy clusters of pink and light purple flowers. It does well in landscape plantings with moist soil and in plantings near bodies of water. Unlike many ornamentals, swamp milkweed tolerates heavy clay soils and is very deer-resistant. It is a more cultivated alternative to common milkweed that is also attractive to egg-laying Monarchs.

Livestock: The bitter leaves of swamp milkweed do not appeal to livestock; sheep are especially susceptible to the poisonous compounds in swamp milkweed, and sheep fatalities have been reported after consuming the plant.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Description and Adaptation



Swamp milkweed distribution from USDA-NRCS PLANTS Database.



Plant Guide

BLUE WILD INDIGO *Baptisia australis* (L.) R. Br. ex Ait. f. Plant Symbol = BAAU

Contributed by: USDA NRCS Kansas Plant Materials Center



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Courtesy of Smithsonian Institution
Dept. of Systematic Biology-Botany

Alternate Names

blue false indigo, wild indigo, plains wild indigo, false indigo, baptisia, plains baptisia, rattiepod, rattiebush, rattiebush wild indigo.

Uses

Conservation: It makes good ground cover in sunny locations because of its bushy habit, extensive root systems and perennial life form. It is a native legume, fixes nitrogen in the soil, and can be part of a good wildlife seed mixture when native grasses and forbs are seeded.

Cultural: Presently, *Baptisia australis*, is grown by many as an ornamental in outdoor flower gardens or as a decorative border. It has become popular because it grows well in many areas outside its native range when planted, does well without watering, requires no fertilizer or pesticide treatments and needs no pruning. The pods have been used in dried flower arrangements. When in bloom the brightly colored blue flowers arranged in spikes make it very attractive. However, a bouquet of fresh cut flowers does not last very long. The flowers and stems turn black as soon as they begin to dry.

The Cherokees used the plant as a source of blue dye for their clothes. Early pioneer settlers copied this practice. A common name, *false indigo*, indicates it is not the true indigo plant (*Indigofera tinctoria* L.) which was introduced from the India subcontinent and cultivated for blue dye by many landowners during the early settlement of America. Some Indian tribes used it for medicinal purposes. The Osage made eyewash from the plant. The Cherokees would make a tea from it. A hot tea was taken as a purgative and a cold tea to prevent vomiting. A pulverized root or hot tea was held over a sore tooth to relieve the pain. Indian children would use the dried pods with the loose seeds inside as rattles.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values). This plant is considered threatened in several states.

Description

General: Blue wild indigo is a native, perennial, deep rooted warm season legume which reproduces by seed or rhizomes. The leaves are alternate and trifoliate. The plant is erect, rising from a branched root system which has root tubercles. It branches at the top with the flowers in an erect short terminal raceme at the pinnacle. The stems are stout and glabrous. It may grow up to 5 feet tall and 3 feet wide. Normally, it is about 3 feet tall and 3 feet wide. The flowers are hermaphroditic, about 1 inch long and may range in color from light blue to deep purple. The fruit is an inflated hardened pod from 1 to 3 inches long and from 1/2 to 1 inch in diameter. When mature the pods contain a number of small seeds, which are loose. Depending on the region it may flower from April (in the south) through August

Plant Materials <<http://plant-materials.nrcs.usda.gov/>>
Plant Fact Sheet/Guide Coordination Page <<http://plant-materials.nrcs.usda.gov/intranet/pfs.html>>
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Aquilegia canadensis Wild or Eastern Red Columbine

Tried and True
Native Plant Selections
for the Mid-Atlantic

This lovely wildflower is native to woodlands and rocky slopes through much of the eastern half of North America.* Its nodding, bell-like flowers on delicate foliage attract hummingbirds and butterflies. The Virginia Native Plant Society honored Wild Columbine as Wildflower of the Year in 1998.



Perennial	Bud to Blossom, Flowers En Masse, Fruit																		
Height: ½–3 feet																			
Spread: 1–1 ½ feet																			
Bloom Color: Red and yellow																			
Characteristics																			
Erect, branching, herbaceous perennial	 																		
Compound green- to blue-green leaves with round lobes in groups of three																			
Nodding flowers sport red sepals, red spurs, with yellow petals and hanging stamens April to July																			
Shiny black seeds in an etaerio of follicles																			
Self-seeds to form large colonies but not thuggish																			
Attributes																			
Tolerates dry soil, drought, and rabbits	<table border="1"> <thead> <tr> <th>Growing and Maintenance Tips</th> <th>Excellent Replacement for</th> </tr> </thead> <tbody> <tr> <td>Soil Requirements: Average, well-drained</td> <td><i>Alliaria petiolata</i> - Garlic Mustard</td> </tr> <tr> <td>Light Requirements: Sun, Partial Shade</td> <td><i>Aquilegia vulgaris</i> - European Columbine**</td> </tr> <tr> <td>Water Requirements: Dry, Moist</td> <td></td> </tr> <tr> <td>Continuous full sun/extreme temperatures may affect growth; foliage may go dormant for a time</td> <td></td> </tr> <tr> <td>Prune empty seed follicles in summer to keep tidy</td> <td></td> </tr> <tr> <td>Generally lives 3–5 years and needs no dividing</td> <td>*In the Mid-Atlantic Region, it is native to DC, is rare in DE, and occurs throughout PA. In VA, it is common in the mountains, frequent in the Piedmont, and infrequent in the Coastal Plain.</td> </tr> <tr> <td>Use in borders or in rain or woodland gardens</td> <td>**Different columbine species grown in close proximity may freely hybridize.</td> </tr> <tr> <td>Hardiness: USDA Zones 3–8</td> <td></td> </tr> </tbody> </table>	Growing and Maintenance Tips	Excellent Replacement for	Soil Requirements: Average, well-drained	<i>Alliaria petiolata</i> - Garlic Mustard	Light Requirements: Sun, Partial Shade	<i>Aquilegia vulgaris</i> - European Columbine**	Water Requirements: Dry, Moist		Continuous full sun/extreme temperatures may affect growth; foliage may go dormant for a time		Prune empty seed follicles in summer to keep tidy		Generally lives 3–5 years and needs no dividing	*In the Mid-Atlantic Region, it is native to DC, is rare in DE, and occurs throughout PA. In VA, it is common in the mountains, frequent in the Piedmont, and infrequent in the Coastal Plain.	Use in borders or in rain or woodland gardens	**Different columbine species grown in close proximity may freely hybridize.	Hardiness: USDA Zones 3–8	
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Hardiness: USDA Zones 3–8																			
Deer seldom severely damage																			
Ethnobotanic uses; may be harmful if ingested																			
Attracts hummingbirds, bees, butterflies, moths																			
developed by Master Gardeners of Northern Virginia, serving Arlington and Alexandria																			

Images by Mary Free, Quarry Shade Garden and by Elaine Mills (bottom left), U.S. National Arboretum



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Asclepias tuberosa Butterfly weed



Native to North America

New Moon Nursery

FIRST IMPRESSIONS: *Asclepias tuberosa* is an upright perennial with oblong leaves. In summer large clusters of bright orange flowers grace the plant. Flowers attract a bevy of nectar seeking butterflies. Plants are best adapted to sunny sites with well drained or dry soil.

HABITAT & HARDINESS: *Asclepias tuberosa* occurs in prairies, open woods or on roadsides in eastern and central North America. Range extends from Canada to Florida and west to Arizona often on deep sandy soils.

Plants are hardy from USDA Zones 3-9.

PLANT DESCRIPTION: *Asclepias tuberosa* is a bushy warm season perennial with many branched pubescent stems emerging from a sturdy tap root. Unlike other milkweeds, this one does not contain milky latex sap.

The leaves are bright green and lance shaped. Summer flowers are arranged in flat topped clusters and are composed of many small star shaped florets in shades of orange and scarlet. This milkweed is a repeat bloomer that attracts butterflies, moths, bees and hummingbirds.

Young gray-green seed pods are covered in short silky hairs. The pods split when ripe and release brown seed with silken parachutes that drift away on the wind.

Plants grow 3' tall with 3' spread.

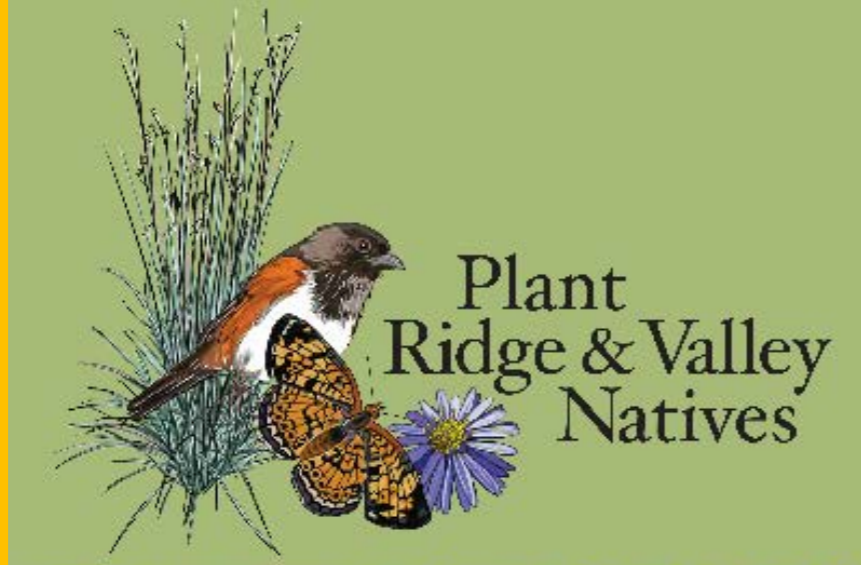
CULTURAL & MAINTENANCE NEEDS: *Asclepias tuberosa* is an easily cultivated sun loving plant for well drained or dry soils. Mistakes made in cultivation can usually be attributed to pampering the plant. Successful culture requires that the gardener duplicate the harshness of the natural ecosystems where this milkweed occurs.

Established plants are very drought tolerant but are difficult to transplant due to the taproot. They also tolerate harsh winds and controlled burns.

Recently planted plugs may need mulch to protect them from frost heaving. *Asclepias tuberosa* emerges from dormancy later than many so planting locations should be marked to avoid disturbance.

Asclepias tuberosa is not palatable to deer and other herbivores but all sorts of insects love it. In fact, it is almost impossible to grow milkweed without a throng of oleander aphids in residence. These tiny orange plant lice suck the plant's sap and exude sticky honeydew that is the perfect cultural medium for black sooty mold. If this is an issue, conventional pesticides should be avoided because they often kill the highly desirable Monarch Butterfly caterpillar.

LANDSCAPE USES: This is a great choice for a Wildlife Garden, Dry Meadow or Prairie. Plants are also used as an Accent, Butterfly Nectar Plant, Butterfly Host Plant or as part of a Grouping or Mass Planting. *Asclepias tuberosa* provides Showy Blooms and can be used



A Gardener's Guide to Virginia's
Ridge & Valley Native Plants

Native Plants for Northern Virginia

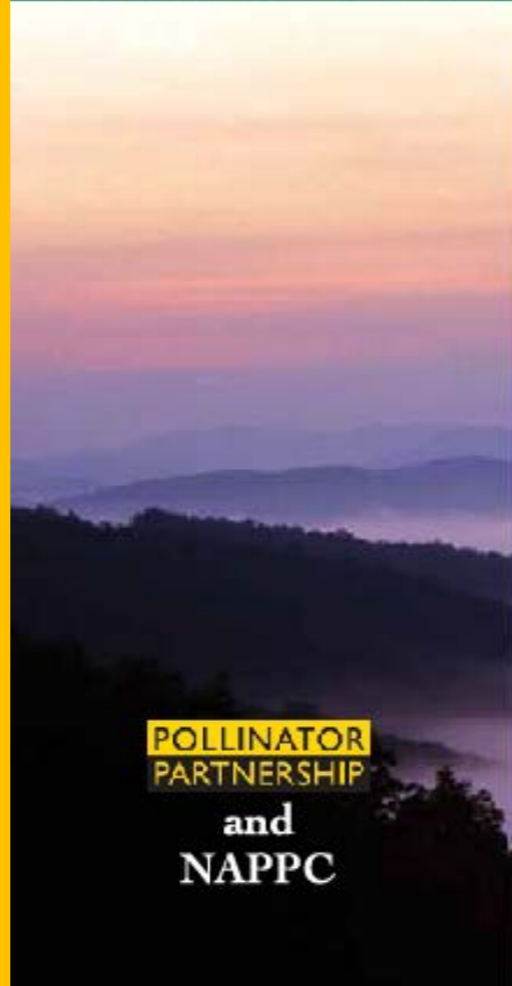




SELECTING
PLANTS
FOR
POLLINATORS



A REGIONAL GUIDE FOR FARMERS, LAND MANAGERS, AND GARDENERS IN THE



**CENTRAL
APPALACHIAN
BROADLEAF
FOREST**
**CONIFEROUS
FOREST**
**MEADOW
PROVINCE**

INCLUDING THE STATES OF:
MARYLAND, PENNSYLVANIA,
VIRGINIA, WEST VIRGINIA

AND PARTS OF:
GEORGIA, KENTUCKY,
NORTH CAROLINA,
SOUTH CAROLINA, TENNESSEE



**POLLINATOR
PARTNERSHIP**
and
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