

Cloverdale Meadow Native Pollinators

75% of our flowering plants rely on pollinators, but many of our native pollinators are in decline



Bombus fervidus

- Pollinators include bees, butterflies, moths, wasps, flies and beetles
- New England has over 350 species of bees, including sweat bees, leaf cutter and mason bees, carpenter bees and bumblebees
- Metrowest has 2 at-risk bumblebees, the golden northern bumblebee and the half-black bumblebee

Check out *Littleton's Natural Resources* on the Conservation webpage
<https://www.littletonma.org/conservation>

Cloverdale Seed Mix

Vermont Wildflower

Native Perennial Pollinator Wildflower Seed Mix

Botanical Name	Common Name
<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis
<i>Asclepias tuberosa</i>	Butterfly Weed
<i>Echinacea purpurea</i>	Purple Coneflower
<i>Penstemon digitalis</i>	Tall White Beardtongue
<i>Rudbeckia hirta</i>	Blackeyed Susan
<i>Chamaecrista fasciculata</i>	Partridge Pea
<i>Verbena hastata</i>	Blue Vervain
<i>Aster laevis</i>	Smooth Blue Aster
<i>Liatris spicata</i>	Blazing Star
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Aster novae-angliae</i>	New England Aster
<i>Senna hebecarpa</i>	Wild Senna
<i>Tradescantia ohiensis</i>	Ohio Spiderwort
<i>Zizia aurea</i>	Golden Alexanders
<i>Monarda fistulosa</i>	Wild Bergamot
<i>Geum canadense</i>	White Avens
<i>Pycnanthemum tenuifolium</i>	Narrowleaf Mountain Mint
<i>Baptisia australis</i>	Blue False Indigo
<i>Lespedeza capitata</i>	Roundleaf Lespedeza
<i>Eupatorium perfoliatum</i>	Boneset
<i>Eupatorium fistulosum</i>	Joe Pye Weed
<i>Eupatorium rugosum</i>	White Snakeroot



Pollinator and others uses

The plants seeded at Reuben Hoar Library and Cloverdale provide resources for any number of species. Just a few examples:

Source: Holm, Heather. 2014. Pollinators of Native Plants. Pollination Press LLC

Asclepias tuberosa – Butterfly Milkweed

Monarch butterfly, Queen butterfly, Milkweed
Tussock moth – larval host plant
Sagebrush butterfly – nectar
Crescent butterfly – nectar
Great Spangled Fritillary butterfly – nectar
Great Spangled Fritillary butterfly – nectar
Green sweat bee – nectar
Small carpenter bee – nectar
Small resin bee – nectar
Paper wasp – nectar
Cuckoo bee – nectar
ANTS – nectar

Echinacea purpurea – Purple Coneflower

Eastern tiger swallowtail butterfly – nectar
Sagebrush butterfly – nectar
Red admiral – nectar
Sagebrush butterfly – nectar
Bumblebees – nectar and pollen
Lancaster bees – nectar and pollen
Small carpenter bees – nectar and pollen
Sweat bees – nectar and pollen
Digger bees – nectar and pollen
Mining bees – nectar and pollen
Banded long-horn beetle – nectar and pollen

Penstemon digitalis – Tall (smooth) beard tongue

Monarch bee, pollen-collecting wasp – sociobionts
Small carpenter bees – pollen
Digger bees – nectar
Sweat bees – nectar
Lancaster bees – nectar
Paper wasps – nectar
Syrphid flies – pollen

Rudbeckia hirta – Black-eyed Susan

Long-horned bees – nectar and pollen
Lancaster bees – pollen and nectar
Cuckoo bees – pollen and nectar
Bumblebees – pollen and nectar
Mining bees – pollen and nectar
Green sweat bees – pollen and nectar
Small carpenter bees – pollen and nectar
Violet carpenter bees – nectar
Common bluehead vireo – larval host plant
Southern lapid beetle – larval host plant
Silvery checkerspot butterfly – larval host plant

Symphoricarpos nivescens – New England Aster

Two moose bumblebee – nectar
Sand wasps – nectar
Monarch wasps – nectar
Thread-waisted wasps – nectar
Soldier bees – nectar
Bee flies – nectar and pollen
Syrphid flies – pollen and nectar

Verbena hastata – Blue Vervain

Northern moth – larval host plant
Syrphid flies – nectar
Sweat bees – nectar
Green sweat bees – nectar
Small carpenter bees – nectar
Bumblebees – nectar
Lancaster bees – nectar
Mining bees – nectar
Silver-spotted skipper – nectar

Monarda fistulosa – Wild Bergamot

Hemlock looper moth – larval host plant
Scout moths – larval host plant
Monarch wasp – nectar
Lancaster bees – nectar
Sweat bees – nectar
Green sweat bees – nectar
Bee flies – nectar
Syrphid flies – nectar
Soldier bees – nectar
Banded long-horned beetle – nectar
Eastern tiger swallowtail butterfly
Silver-spotted skipper butterfly – nectar
Monarch butterfly – nectar
Great spangled fritillary butterfly – nectar
Moths – nectar

Stachys recta – Red-top

Hummingbird clearing moths – nectar
Bumblebees – nectar
Long-horned bees – nectar
Cuckoo bees – nectar
Green sweat bees – pollen
Violet carpenter bees – nectar
Small resin bees – nectar
Lancaster bees – nectar

Pied crescent butterfly – larval host plant
Canadian scoli moth – larval host plant
Small carpenter bees – nectar and pollen
Bumblebees – nectar and pollen
Long-horned bees – nectar and pollen
Cuckoo bees – nectar and pollen
Common buckeye butterfly – nectar
Crescent butterfly – nectar
Bee flies – nectar and pollen
Syrphid flies – nectar and pollen
Soldier bees – nectar and pollen

Zizia aurea – Golden Alexanders

Black swallowtail – larval host plant
Black swallowtail – larval host plant
Black swallowtail – larval host plant
Asian bumblebee – nectar
Bee flies – nectar
Soldier bees – nectar
Mining bees – nectar
Monarch wasps – nectar and pollen
Bumblebees – nectar
Sweat bees – nectar
Paper wasps – nectar
Small carpenter bees – nectar
Paper wasps – nectar
Syrphid flies – nectar
Tachinid flies
Monarch wasps – nectar

Eupatorium perfoliatum – Boneset

Common bluehead vireo – larval host plant
Three-lined flower moth – larval host plant
Bee flies – nectar
Monarch butterfly – nectar
Yellow-faced bees – nectar
Mining bees – nectar and pollen
Sweat bees
Bumblebees – nectar
Paper wasps – nectar
Four-banded sand wasp – nectar
Hummingbird hawk – nectar and pollen
Cuckoo wasps – nectar

Desmodium canadense – Canada Tick Trefoil

Northern cloudwing butterfly – larval host plant
Southern cloudwing butterfly – larval host plant
Heavy edge – larval host plant
Common bluehead vireo – larval host plant
Small resin bees – nectar and pollen
Lancaster bees – nectar and pollen
Bumblebees – nectar
Long-horned bees – nectar

Hypericum pyramidatum – Great St. John's Wort

Black archer moth – larval host plant
Grey hairy-spot moth – larval host plant
Common bluehead vireo – larval host plant
Green sweat bees – nectar and pollen
Sweat bees – pollen

Syrphid flies – nectar and pollen
Common bluehead vireo – larval host plant
Banded long-horn beetle – pollen
Bee flies – nectar

Solidago flexilis – Zig Zag Goldenrod

White-bellied nighthawk – larval host plant
Brown hooded owl – larval host plant
Tussock moth – larval host plant
Sweat bees – nectar
Paper wasps – nectar
Green sweat bees – nectar
Mining bees – pollen and nectar
Bumblebees – nectar
Monarch wasps – nectar
Thread-waisted wasp – nectar
Carrot wasp – nectar
Syrphid flies – nectar and pollen
Common bluehead vireo

Tradescantia virginiana – Spiderwort

Sweet bees – nectar
Green sweat bees – pollen
Monarch wasps – pollen
Small carpenter bees – pollen
Bumblebees – pollen
Syrphid flies – pollen
Bee flies – pollen
Eastern tiger swallowtail – pollen

Pyronanthus virginicus – Virginia Mountain Mint

Long-horned bees – nectar
Green sweat bees – nectar
Yellow-faced bees – nectar
Small resin bees – nectar
Bumblebees – nectar
Paper wasps – nectar
Mining bees – nectar
Green sweat bees – nectar
Cuckoo wasp – nectar
Bee flies – nectar
Paper wasps – nectar
Grass-carrying wasps – nectar
Soldier flies – nectar
Syrphid flies – nectar
Banded hairytail butterfly – nectar
ANTS



Beardtongue



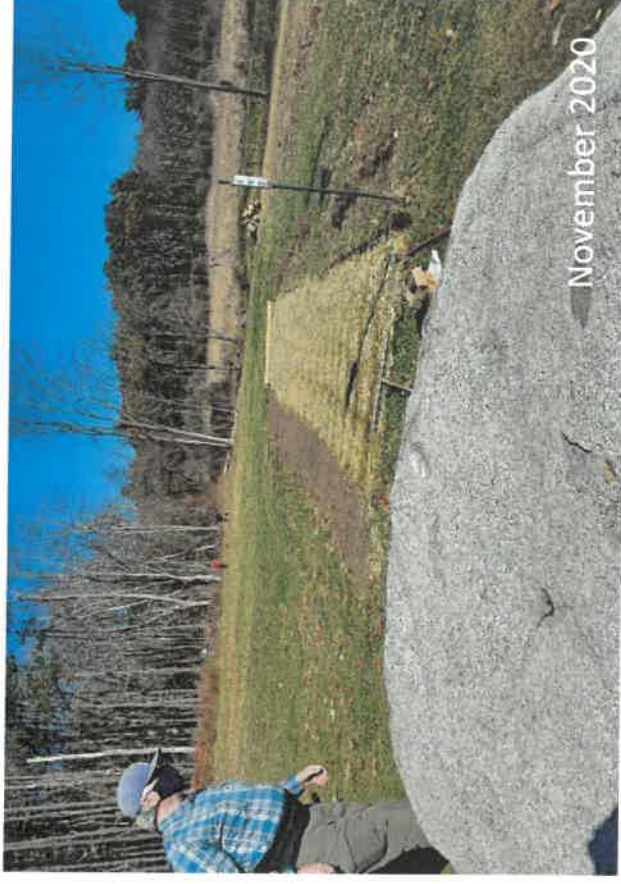
Sweat Bee

Process

Tarps laid down to solarize and kill grass



Dead grass raked out, seed spread and erosion control blanket laid down



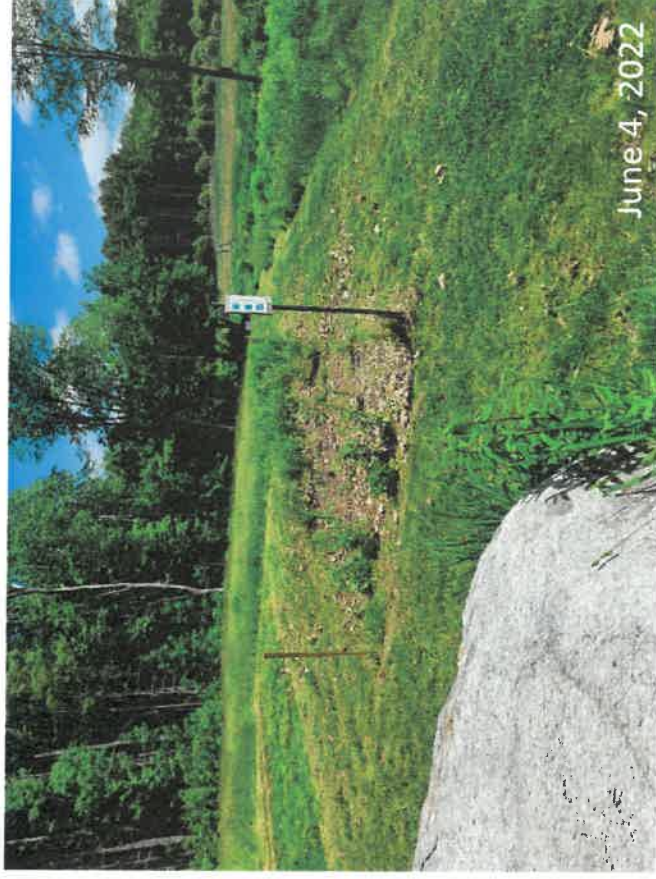
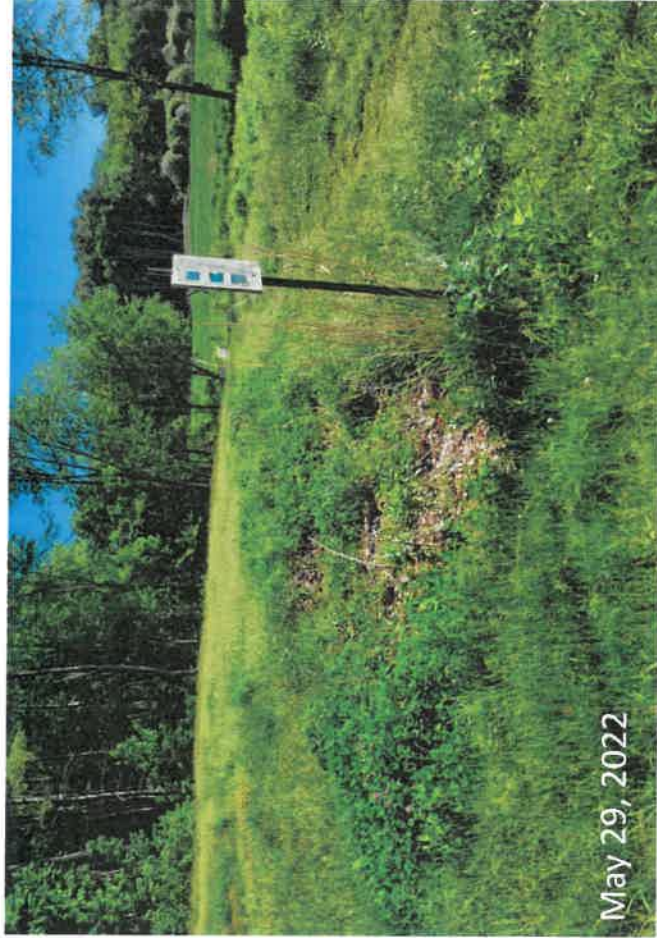


Hummingbird Moth

Challenges



Wild Bergamot



GEGEAR LAB AT UMASS DARTMOUTH

Welcome to the native plant finder for pollinator species at risk in Massachusetts!



B. affinis and *B. fervidus* visiting obedient plant. Photo by RJ Gegear

The plant recommendations for bumblebee species are based on 5 years of species-level field research by the Gegear lab. A species is considered to be at risk if it has shown a significant decline in abundance over the past few decades. It is important to note that pollinator species considered 'rare' or 'specialist' are not necessarily at risk - many rare species are stable and many specialist species have increased

in abundance.

The master chart is divided into four categories of plants: pollen sources (bumblebee focus), nectar sources (bumblebee focus), host plants (butterflies) and nectar/pollen sources for other (non bumblebee) bees. Pollen sources are critical because they enable bees to make more bees, nectar sources are critical because they provide fuel for adult bees and butterflies to be active, and host plants are critical because they give caterpillars (larval stage of butterflies) something to eat! Remember, including plants that provide all three functions to as many species as possible throughout the season is critical for developing an effective conservation plan for native pollination systems (the animal AND the plant side of the equation).

THINGS TO CONSIDER:

- Select nectar and pollen plants so that you have blooms in every season: Early (March-May), Mid (June-July) and Late (Aug-Sept).
- Spring floral resources are extremely important for all at risk pollinator types so give them a high priority.
- Be aware that in most cases, the species of a plant is far more beneficial to pollinators than named cultivars.
- Select plants that target as many species from the three pollinator groups as possible - a good habitat will support species at risk over the entire season.

Scroll down for a complete list of butterfly and other (non-bumblebee) bee species at risk present during each part of the season. For butterflies, charts are specific to each region of Massachusetts, with host plant and flight time information also provided for each species. Flight time is the part of the season when the adults are present and looking for nectar sources.

Together, we will keep biodiversity and ecosystem health humming for years to come!

--RJ Gegear

Research-based native plants to support MA bumblebee species at risk. Plants supporting butterfly and other bee species at risk are also indicated. List created by Dr. Robert J Gegear, UMASS Dartmouth (rgegear@umassd.edu).

Pollen Sources

'At risk' species

LATIN NAME	COMMON NAME	PLANT TYPE	SUN	SOIL	BLOOM TIME			BUMBLEBEES			BUTTER FLIES	OTHER BEES
					Early	Mid	Late	B. terricola	B. fervidus	B. vagans		
					M	A	M	J	J	A	S	O
<i>Hypericum ascyron</i>	Great St. John's-wort	Herb. perenn.	Full-Part	Med							NA	
<i>Hypericum majus</i>	Greater St. John's-wort	Herb. perenn.	Full-Part	Med, Wet							NA	
<i>Hypericum punctatum</i>	Spotted St. John's-wort	Herb. perenn.	Full-Part	Med, Dry							NA	
<i>Hypericum prolificum</i>	Shrubby St. John's-wort	Shrub	Full-Part	Med, Dry							NA	
<i>Rosa acicularis</i>	Bristly rose	Shrub	Full-Shade	Med, Dry							NA	
<i>Rosa blanda</i>	Smooth rose	Shrub	Full-Part	Med, Dry							NA	
<i>Rosa carolina</i>	Carolina rose	Shrub	Full-Part	Wet, Med, Dry							NA	
<i>Rosa nitida</i>	Shining rose	Shrub	Full-Part	Wet, Med							NA	
<i>Rosa palustris</i>	Swamp rose	Shrub	Full-Part	Med							NA	
<i>Rosa virginiana</i>	Virginia rose	Shrub	Full-Part	Med							NA	
<i>Rubus odoratus</i>	Flowering raspberry	Shrub	Full-Part	Med							NA	
<i>Salix discolor</i>	Pussy willow (male)	Shrub	Full	Med							NA	
<i>Salix humilis</i>	Prairie willow (male)	Shrub	Full-Part	Med, Dry							NA	
<i>Salix lucida</i>	Shining willow (male)	Shrub	Full-Part	Med, wet							NA	
<i>Salix occidentalis</i>	Dwarf prairie willow (male)	Shrub	Full-Part	Med, Dry							NA	
<i>Salix petiolaris</i>	Meadow willow (male)	Shrub/sm tree	Full-Part	Med							NA	
<i>Salix bebbiana</i>	Bebb willow (male)	Shrub	Full-Part	Dry, Med, Wet							NA	
<i>Spiraea alba</i>	White meadowsweet	Shrub	Full-Part	Wet, Med							NA	
<i>Spiraea tomentosa</i>	Steeplebush	Shrub	Full-Part	Wet							NA	
Nectar sources					BLOOM TIME			BUMBLEBEES			BUTTER FLIES	OTHER BEES
LATIN NAME	COMMON NAME	PLANT TYPE	SUN	SOIL	Early	Mid	Late	B. terricola	B. fervidus	B. vagans		
					M	A	M	J	J	A	S	O
<i>Blephilia hirta</i>	Hairy woodmint	Herb. perenn.	Part-Shade	Med, Dry								
<i>Blephilia ciliata</i>	Downy woodmint	Herb. perenn.	Part-Shade	Dry								
<i>Astragalus canadensis</i>	Canadian milkvetch	Herb. perenn.	Full-Part	Wet, Dry								
<i>Eupatorium perfoliatum</i>	Boneset Thoroughwort	Herb. perenn.	Full-Part	Wet, Med								
<i>Pycnanthemum tenuifolium</i>	Narrowleaf mountain mint	Herb. perenn.	Full-Part	Med, Dry								
<i>Asclepias amplexicaulis</i>	Climbing milkweed	Herb. perenn.	Full-Part	Dry								
<i>Asclepias exaltata</i>	Poke milkweed	Herb. perenn.	Part, Shade	Med, Dry								
<i>Asclepias incarnata</i>	Swamp milkweed	Herb. perenn.	Full-Part	Med, Dry								
<i>Asclepias purpurascens</i>	Purple milkweed	Herb. perenn.	Full-Part	Wet, Med, Dry								
<i>Asclepias quadrifolia</i>	Four-leaved milkweed	Herb. perenn.	Full-Part	Med, Dry								
<i>Asclepias syriaca</i>	Common milkweed	Herb. perenn.	Full	Wet, Med, Dry								
<i>Asclepias tuberosa</i>	Butterfly milkweed	Herb. perenn.	Full-Part	Dry								
<i>Asclepias verticillata</i>	Whorled milkweed	Herb. perenn.	Full-Part	Med, Dry								
<i>Cercis canadensis</i>	Eastern Redbud	Tree	Part	Med, Dry								
<i>Eutrochium dubium</i>	Coastal Plain Joe-Pye weed	Herb. perenn.	Full-Part	Wet, Med								
<i>Eutrochium fistulosum</i>	Hollow Joe-Pye weed	Herb. perenn.	Full-Part	Wet, Med								
<i>Eutrochium maculatum</i>	Spotted Joe-Pye weed	Herb. perenn.	Full-Part	Wet, Med								
<i>Eutrochium purpureum</i>	Purple Joe-Pye weed	Herb. perenn.	Part	Wet, Med, Dry								
<i>Ilex opaca</i>	American holly	Tree	Full-Shade	Med, Dry								
<i>Symphoricarpos lateriflorus</i>	Calico aster	Herb. perenn.	Full-Part	Med, Wet, Med dry								
<i>Salix discolor</i>	Pussy willow	Shrub	Full	Med								
<i>Salix humilis</i>	Prairie willow	Shrub	Full-Part	Med, Dry								
<i>Salix lucida</i>	Shining willow	Shrub	Full-Part	Med, wet								
<i>Salix occidentalis</i>	Dwarf prairie willow	Shrub	Full-Part	Med, Dry								
<i>Salix petiolaris</i>	Meadow willow	Shrub/sm tree	Full-Part	Med								
<i>Salix bebbiana</i>	Bebb willow	Shrub	Full-Part	Wet, Med, Dry								
<i>Solidago speciosa</i>	Showy goldenrod	Herb. perenn.	Part	Med								
<i>Baptisia tinctoria</i>	Yellow wild indigo	Herb. perenn.	Full-Part	Wet, Med, Dry								
<i>Cephalanthus occidentalis</i>	Common buttonbush	Shrub	Full-Part	Wet, Med								
<i>Chamerion angustifolium</i>	Narrow-leaved fireweed	Herb. perenn.	Full	Med, Dry								
<i>Chelone glabra</i>	White turtlehead	Herb. perenn.	Full-Part	Wet, Med								
<i>Cirsium discolor</i>	Field thistle	Herb. perenn.	Full-Part	Med, Dry								

Nectar/pollen - butterflies and other bees at risk					BLOOM TIME			BUMBLEBEES			BUTTER FLIES	OTHER BEES		
LATIN NAME	COMMON NAME	PLANT TYPE	SUN	SOIL	Early		Mid	Late	B. terricola	B. fervidus			B. vagans	
					M	A	M	J						J
Zizia aurea	Golden alexander	Herb. perenn.	Full-Part	Med										
Zizia aptera	Meadow zizia	Herb. perenn.	Full-Part	Med										
Geranium maculatum	Wild geranium	Herb. perenn.	Full-Part	Med										
Lysimachia spp.	Loosestrife	Herb. perenn.	Part-Shade	Wet- Med										
Cardamine spp.	Bitter-cress	Herb. perenn.	Part	Wet- Med										
Solidago altissima	Tall goldenrod	Herb. perenn.	Full-Part	Med, Dry										
Solidago arguta	Forest goldenrod	Herb. perenn.	Part	Med, Dry										
Solidago gigantea	Smooth goldenrod	Herb. perenn.	Full-Part	Wet, Med										
Solidago juncea	Early goldenrod	Herb. perenn.	Full-Part	Med, Dry										
Solidago odora	Sweet goldenrod	Herb. perenn.	Full-Part	Med, Dry										
Solidago rugosa	Rough-stemmed goldenrod	Herb. perenn.	Full-Part	Med										
Rubus allegheniensis	Common blackberry	Shrub	Full-Part	Med										
Rubus canadensis	Smooth blackberry	Shrub	Full-Part	Med, Dry										
Rubus flagellaris	Northern blackberry	Shrub	Full-Part	Med, Dry										
Rubus pensilvanicus	Pennsylvania blackberry	Shrub	Full-Part	Med, Dry										
Hydrophyllum virginianum	Virginia waterleaf	Herb. perenn.	Part-Shade	Med										
Thank you to Amy Meltzer for help with compiling plant information!														

Thank you to Amy Meltzer for help with compiling plant information!

Gardening for Native Pollinators



...it differs from traditional gardening

Plant Selection

Some native plants help declining pollinators better than others, because they have co-evolved over millennia.

Choose an assortment of native plants that vary in color and shape and that collectively bloom all season long. Include native, early-blooming shrubs in your yard to give pollinators the best start when they emerge in spring.

Make sure to choose straight species and not cultivars. Cultivars do not provide the necessary nutrients for pollinators. How can you tell if a plant is a cultivar? Cultivars typically have an additional pretty name in quotation marks after the Latin name.

Do not purchase plants that have been treated with neonicotinoids. The only way to know is to ask the nursery staff.



Carolina rose



White turtlehead



Butterfly milkweed



Pussy willow

For guidance, plant lists, and additional information, visit:
www.svtweb.org/gardens

Maintenance

Pollinators need more than flowers.

They also need shelter, which they find in places you might not expect, such as holes in the ground, garden debris, and hollow stems.

To promote essential habitat for pollinators, allow some areas of your garden to be less formal and a little "messy." Leave the leaves, don't remove dead stems, and don't clean up in the spring until after mid-May.

Eliminate or reduce the use of pesticides.



Dead wood



Hollow stems



Bare ground



Leaf litter



www.svtweb.org/mca-nptf

The NPTF seeks to conserve native pollination systems by providing specific habitat requirements and by reducing threats for at-risk pollinators in the 36 communities of the Metrowest Conservation Alliance (MCA).



www.svtweb.org

Sudbury Valley Trustees is a nonprofit land trust that conserves natural areas and farmland in the 36 communities surrounding the Sudbury, Assabet, and Concord Rivers. SVT is the coordinator for the MCA.

Why Save Native Pollinators?

Plants need pollination to reproduce, and their successful pollination relies upon a group of animals known as “pollinators.”

While gathering nectar and pollen, insects transfer the male parts of one flower to the female parts of another of the same species. Then, a fertilized seed can grow into a new plant.

This process keeps the environment healthy. In Massachusetts, about 75% of flowering plants rely on animals for pollination. Imagine what missing 75% of our flowering plants would look like, and imagine how many birds, deer, and other animals use these plants as food and habitat.

Nature is like a web where everything is connected. If pollinators disappear, almost everything else will follow suit.

Despite the important service pollinators provide, they have not received the protection they deserve. Over the last two decades, pollinator populations have been dropping. The primary reason? Loss of habitat. The plants where insects eat, shelter, and lay their eggs have been crowded out by development and non-native invasive plants.

But all it takes to turn this trend around is a little yard space and some gardening tools.

Any garden has the potential to be a haven for declining pollinators like the golden northern and the half-black bumble bee.

The opposite side of this sheet offers tips for how you can turn your garden into healthy habitat for pollinators.



Honeybees Are Not Native Pollinators

Honeybees, which are often used to pollinate agricultural crops, are not native to North America. They were imported from Europe and are not part of our environment's natural web.

The job of pollinating the wild plants that sustain our natural environment falls to native bees and other native insects.

Some research has shown that honeybees can harm our native bees because they are aggressive and can spread diseases. Other research has shown that native bees can pollinate food crops more efficiently than honeybees.

The NPTF encourages you to take steps to help our native bees, many of which are declining in population.



Brown-Belted Bumble Bee
(native)



Honey Bee
(non native)