

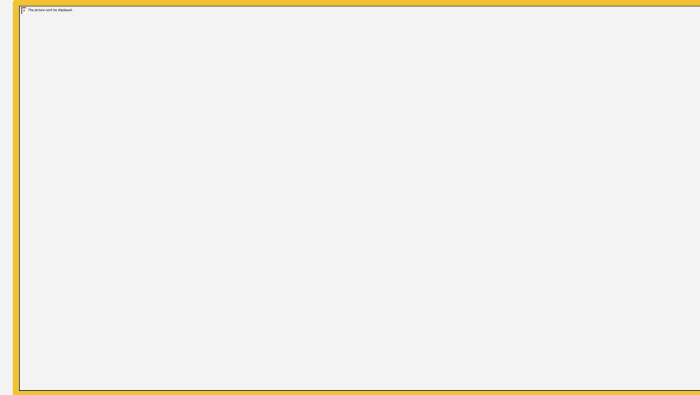


THE UNIVERSITY OF VERMONT
EXTENSION
MASTER GARDENER

Let's Plant for Pollinators!



I helped install a few
school gardens...





My Pollinator Paradise



Spring 2019



Quinlan's Covered Bridge
Charlotte, Vermont

Things that didn't work:

- *Digging up the grass wasn't going to work*
- *Putting compost and soil on top of the grass only encouraged it (even if it's 6 inches deep!)*
- *Self-doubt: Am I crazy?*
- *Trying to do this by myself*

Later that spring of
2019,
I didn't get very far...



Summer 2019

Some early plantings, seeds, and some stepping stones





zinnias

cosmos and
marigolds

A few perennials from my garden
including: Mint, lemon balm, artemisia,
hostas and more

Fall 2019



The garden began to feed butterflies, bees, hummingbirds, robins, and more.



Things that worked to establish the garden:

- ✍ *Covering the grass with layers of cardboard*
 - *Remove tape and staples first*
- ✍ *Moving 6-8 inches of compost and soil on top of the cardboard provided enough nutrients and soil depth*
- ✍ *Break through the cardboard when planting plants with roots, even if the plant was going to be placed level*
- ✍ *Spreading seeds was cost efficient and satisfying*
- ✍ *I planted what I had to share from my own garden*
- ✍ *I learned I couldn't do this by myself so I started talking to my neighbors And posted on Front Porch Forum to ask for plant divides*
- ✍ *The more I talked about it, the more people wanted to help so friends and Red Wagon Plants started to fill the back of my truck with plants*



Spring 2020

It was time to expand with the help of Ward Preston and his daughters.



Two dump trucks full of composted manure was dumped at the garden. I had to place cardboard before spreading these piles.

Troubleshooting:

- ✍ *Composted manure was dumped without thoroughly covering the area with cardboard and newspaper*
- ✍ *I began to move manure in key spots, add the cardboard and push the manure back (this was exhausting work!)*
- ✍ *Adding some mulch was important to mitigate the issues cause by not putting down enough material to block the weeds*
- ✍ *Pulling poison parsnip and other invasive weeds early on was critical*
- ✍ *I marked areas where I saw milkweed coming up to preserve those host plants*



Site preparation continues...



It's easy and motivating to create a huge garden when you have plants.



Early Summer 2020





Thoughts behind planting:

- ✍ *Planting groups of plants together (e.g. bee balm, hyssop)*
- ✍ *Allowing “wild” plants to seed themselves and grow*
 - *Milkweed*
 - *Aster*
 - *Chicory*
- ✍ *Plantings were placed close together (closer than the tags suggest) some provided shade to others*
- ✍ *I planted groundcovers to provide sustenance to pollinators, while providing a “living weedblock”*
- ✍ *Leaving “spent” plants up-even through the winter*

Planting and hoping for the best...

Will these plants get run over?

Will butterflies and insects come?

Do I have host plants? The “right” plants to feed pollinators?

What do I have in my own garden that I can contribute?

Will one of my neighbors really hate this?

Will I be able to supply enough water to this site?

What if I end up spending my entire life down here at this garden?



Early Summer 2020



Watering is starting to become
an issue...



Summer 2020

Watering during the hot summer

- ✍ *I purchased a water tank, filling it at neighbors houses*
- ✍ *I used a watering can in the beginning, later hooking a hose to the water tank*
- ✍ *Plantings were placed close together (closer than the tags suggest) some provided shade to others*
- ✍ *I planted groundcovers to provide sustenance to pollinators, while providing a "living weedblock"*





Middle to late
summer
2020

Features of the Butterfly Garden

- Designed to support butterflies throughout their lifecycle
 - ◆ Host plants like milkweed support butterfly eggs
 - ◆ Perennials that bloom at varied times throughout the season
 - ◆ Planting sunflowers, zinnias, and cosmos support adult butterflies and birds
- Plantings are mostly perennials and a few shrubs
- The butterfly garden is near a plentiful water source for insects and wildlife
- Placing a bench at the garden site gives people a chance to sit and enjoy the garden
- The garden is now a Master Gardener site, which makes maintenance a little easier!
- Connecting to this garden is easy through Instagram!



Plant List:

**Perennials: Listed
alphabetically by latin name**

Agastache Scrophulariaefolia
(Giant Purple Hyssop) E

Anise Hyssop

Artemisia 'Absinthium'

Alcea rosea (hollyhock)

Asclepias Incarnata (swamp
milkweed)

Asclepias Incarnata 'Ice Ballet'
(swamp milkweed)

Asclepias syriaca (Common
Milkweed)

Asclepias Tuberosa (Butterfly
Weed) E

Asclepias verticillata (Whorled
Milkweed) E

Belamcanda chinensis (Blackberry Lily)

Baptisia Australis (False Indigo)

Cranesbill 'Biokovo karmima"

Diathus (Cheddar Pink)

Echinacea purpurea (purple coneflower)

Gentiana Lutea (Gentian)

Iris germanica (bearded iris)

Lobelia cardinalis (cardinal flower)

Nepeta (catmint)

Mentha spicata (spearmint)

Monarda didyma (bee balm)

Paeonia var. unknown (Peony)

Phlox paniculata 'david'
(summer phlox)

Physotegia virginiana (Obedient
Plant) E

Perovskia atriplicifolia (Russian
sage)

Paeonia var. unknown (Peony)

Pycnanthemum pilosum
(Mountain Mint)

Penstemon digitalis

Rudbeckia hirta (black-eyed
susan)

Rudbeckia triloba 'prairie glow'
(brown-eyed susan)

Stachys byzantina (lamb's ear)

Verbena rigida 'Santos'

Vernonia noveboracensis (ironweed)

Veronicastrum virginicum (Culver's
Root) E

Wild Senna

Shrubs:

Cephananthus occidentalis
(buttonbush)

Clethra alnifolia 'hummingbird'
(hummingbird summersweet)

Itea x 'Scentlandia' (Sweetspire)

Annuals for 2021:

Zinnias

Cosmos

Sunflowers

Marigolds

AND THEN SOME....



The Butterfly
Garden at the
Quinlan Bridge

Charlotte, VT



And then I noticed this
intersection...

I talked to my neighbors and
we did this...





Spring 2020



Summer 2020



Fall 2020

And there is another location
here...

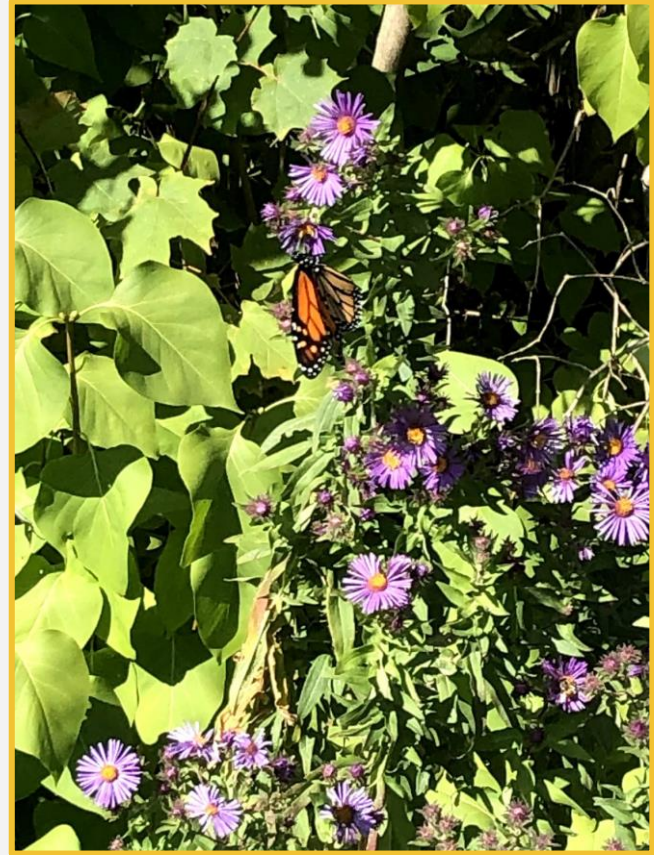
So I'm talking to my
neighbors...



Why Plant Pollinator Gardens?

The Thorns:

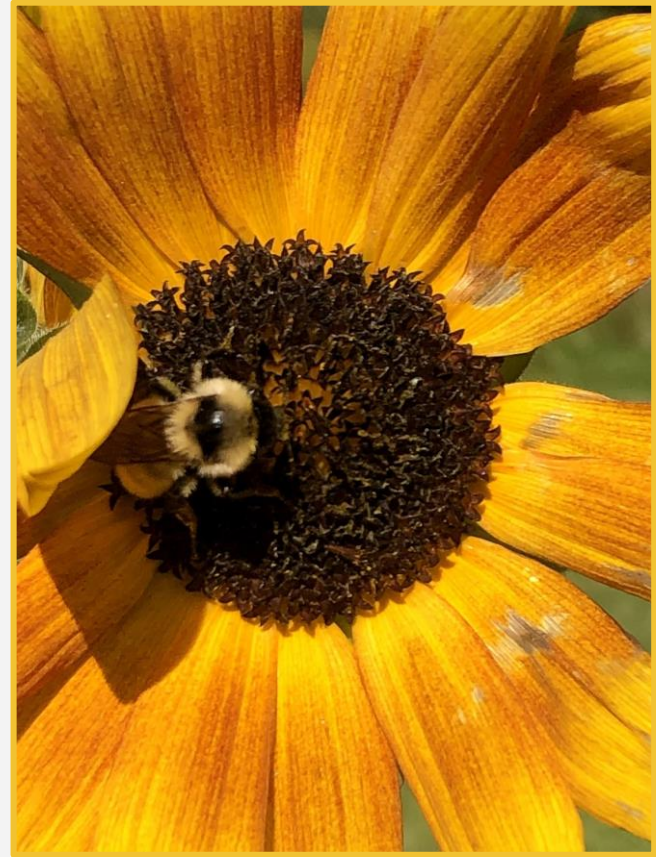
- ✍ *More than 25% of our NE native bee populations have disappeared or are threatened*
- ✍ *The iconic Monarch butterfly is on the threshold of collapse, with an 80% decline in just two decades and a 53% decline from 2019 numbers*
- ✍ *We could lose up to $\frac{1}{3}$ of insect in two decades without immediate action*
- ✍ *75% of the food WE eat is produced by pollinators*
- ✍ *Plants that benefit insects, especially native plants are disappearing from our “wild landscape” due to climate change and development*
- ✍ *Habitats are becoming increasingly fragmented leading to increased challenges for wildlife to find resources and shelter for survival*



Why Plant Pollinator Gardens?

The Rose:

- ✍ *Backyard habitats work! You can create a thriving ecosystem in your own backyard*
- ✍ *Planting perennials gardens will help cool down the planet*
- ✍ *Don't stop with perennials and seeds: Planting trees support pollinators.*
 - *Oaks support can support over 500 species including insects, pollinators, and wildlife*
- ✍ *Planting for pollinators will help with greater yields in your veg garden*
- ✍ *I am not an expert or a trained horticulturist, anyone can do this*



↗ *Who are the pollinators?*

↗ *Planting for Pollinators*

↗ *Hosting Pollinators*

↗ *Habitat Management*



So many pollinators...let's learn to identify them

Resources:

- ✍ Inaturalist: <https://www.inaturalist.org>
- ✍ National Wildlife Federation: <https://www.nwf.org/nativeplantfinder/>
- ✍ Audubon: <https://www.audubon.org>
- ✍ Free Field Guides: [VT Fish and Wildlife](#)
 - Building backyard habitats

Art that Inspires:

- ✍ The Caterpillar Lab: <https://www.thecaterpillarlab.org>
- ✍ The Little Nuthatch: <https://shop.katedolamore.com/collections/>



So many pollinators...let's learn their names

Bees, Hymenoptera

- ❖ Honey bees
- ❖ Bumblebees
- ❖ Carpenter bees (pests)
- ❖ Miner bees
- ❖ Leafcutter bees
- ❖ Mason bees
- ❖ Halictid bees

Wasps, Hymenoptera

- ❖ Yellowjackets/hornets (pests)
- ❖ Paper wasps/mud daubers
- ❖ Sphecids wasps
- ❖ Potter wasps

Flies, Diptera

- ❖ Hover/Syrphid flies
- ❖ Bee flies
- ❖ Tachinids
- ❖ Mosquitoes
- ❖ Blowflies

Butterflies + Moths, Lepidoptera

- ❖ Swallowtails
- ❖ Hawk moths (night fliers)
- ❖ Fritillaries
- ❖ Skippers
- ❖ Monarchs
- ❖ Sulfurs



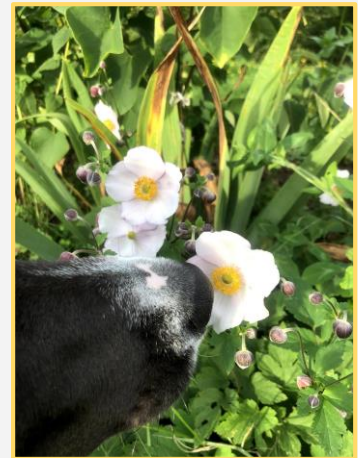
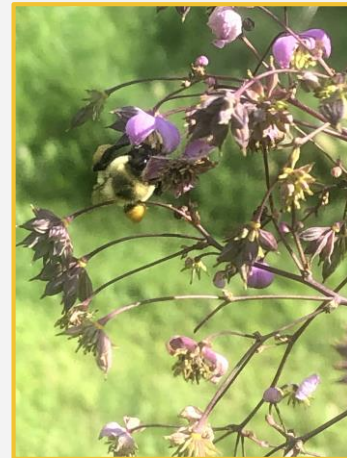
Beetles, Coleoptera, True bugs, Hemiptera, Lacewings, Neuroptera

- ❖ Long-horned beetles

Lady beetles

Tumbling flower beetles

- ❖ Scarabs
- ❖ Orius bugs
- ❖ Lacewings



So many pollinators...let's learn about them

Hymenoptera: Sawflies, Wasps, Bees, Ants

- ❖ Membranous hind wing attached to fore legs with hook
- ❖ Wide size range.
- ❖ Some active throughout season
- ❖ Adapted to different shape flowers
- ❖ Furry body to catch pollen
- ❖ Buzz pollination
- ❖ Some grab anthers and shake off pollen
- ❖ Need nectar

Honey bees (*Apis mellifera*)

- ❖ Social
- ❖ Queen 4-5 years
- ❖ Nest in managed hives or tree cavities or in walls
- ❖ Active early spring to late fall
- ❖ Fly up to 2 miles.
- ❖ Very efficient pollinators

Bumble Bees (Family Apidae)

- ❖ Colony, not aggressive. In rodent holes in ground
- ❖ 250 species world
- ❖ Queen lives 9-12 months (live through winter)
- ❖ ½ -1 ", Black, yellow, white, orange, very hairy
- ❖ Active spring to late fall
- ❖ Fly up to 1 mile
- ❖ Very efficient pollinators; critical to tomatoes

Carpenter bees (Family Apidae)

- ❖ Solitary, not aggressive
- ❖ Queen lives 3 years, 1-2 generations/year
- ❖ ½- 1 ¼"; Black, yellow, white, orange; shiny black abdomen
- ❖ Nest in wood or stems
- ❖ Active mid summer- fall
- ❖ Fly up to 1 mile

Mason Bees (Megachilidae)

- ❖ Solitary, not aggressive
- ❖ 1 generation/year
- ❖ Nest in cavities in wood or rock; use mud to line nest
- ❖ < ½", metallic blue, green, black, somewhat hairy
- ❖ Fly up to 300 feet.
- ❖ Very efficient pollinators

Leafcutter Bees (Megachilidae)

- ❖ Solitary, not aggressive
- ❖ Build nest with pieces of leaves in cavities in wood and in stems
- ❖ < ½", dark gray to black
- ❖ Active early –late summer
- ❖ Fly up to 170 feet

Planting for Pollinators: Choosing Nectar Plants

VT Pollinator Habitat Plant Palette

updated 11 Dec 18

Jane Sorensen Northeast Pollinator Plants, VT

Plant Name	May	June	July	Aug.	Sept.	Sun/Sh	Value	Notes
GC=Ground Cover	Info. Source: Xerces, Lady Bird Johnson Wildflower Center, USDA Plants					Bee Butt Hum Host		
PERENNIALS for Gardens long-lasting, minimal spreading and reseeding								
Fragaria virginiana GC	4"-6"		fruit	wild strawberry		sun/part	X X X	tasty ground cov.
Penstemon digitalis	3'-5'		beardtongue			sun	X X X	clump, butt mag.
Geranium maculatum		1'-1.5'	cranesbill			sun/part	X X	some self-seeding
Aruncus dioicus		3'-6'	goatsberad			sha/part	X X	statuesque
Tradescantia ohienis		2'-3'		Ohio spiderwort		par/sha	X X	moist, shade
Actea racemosa		4'-6'		black cohosh		sha/part	X X	sweet scent
Coreopsis lanceolata		1'-2'	coreopsis			sun	X X	a bit short-lived
Oenothera pilosella		1'-2'	meadow evening primrose			sun	X	mat-form, spread
Penstemon hirsutus		1.5'-2'	hairy beardtongue			sun/sha	X X X X	some self-seeding
Ratibida pinnata		3'-5'	yellow coneflower			sun	X X	some self-seeding
Echinacea purpurea		2'-5'	purple coneflower			sun/part	X X X	a bit short-lived
Baptisia australis		4.5'-5.5'	blue wild indigo			sun/part	X	love this
Eryngium yuccifolium		4'-5'	rttlnsnake mst			sun	X X	excellent for pollins
Allium cernuum		1'-1.5'	nodding onion			sun/part	X	some self-seeding
Dalea purpurea			1'-3'	prairie clover		sun	X	some self-seeding
Liatris spicata	blazing star		2'-4'			sun	X X X	nice cut too
Monarda didyma	scarlet beebalm		2'-4'			sun/part	X X X	spreads but value
Eupatiadelphus maculatum	joe-pye weed		3'-6'			sun/part	X X	common, valuable
Eutrochium purpureum	sweet joe-pye weed		5'-7'			sun/part	X X	tolerates moister
Agastache foeniculum	anise hyssop		3'-5'			sun/part	X X X	great plant
Salvia azurea	blue sage		3'-5'			sun	X X	borderline hardy
Monarda fistulosa	wild bergamot		2'-4'			sun/part	X X X	spreads but value
Monarda media	purple bergamot		2'-3'			sun/part	X X X	deep purple
Pycnanthemum tenuifolium	slender mountain mint		2'-3'			sun/part	X X	spreads but value
Senna hebecarpa	wild senna		3'-7'			sun/part	X X X X	some self-seeding
Solidago caesia	blue-stemmed goldenrod		1.5'-3'			sun/part	X	well-behaved
Helenium autumnale	sneezeweed		3'-5'			sun	X X	statuesque
Helianthus giganteus	giant sunflower		5'-10'			sun	X	loose, tall
Liatris aspera	rough blazing star		2'-3'			sun	X X X X	slow spreading
Vernonia noveboracensis	new york ironweed		4'-6'			sun	X X	borderline hardy
Chelone glabra	white turtlehead		2'-3'			sun/sha	X X X	can do shade
Eupatorium perfoliatum	common boneset		4'-6'			sun/part	X X	common, valuable
Symphotrichum novae-angliae	new england aster		3'-6'			sun	X X X	great late color
Symphotrichum cordifolium	blue wood aster		2'-5'			sun/sha	X X	can do shade
Symphotrichum ericoides	heath aster		1'-3'			sun	X X X	delicate
Symphotrichum laeve	smooth blue aster			2'-4'		sun	X X	great late color
Symphotrichum novi-belgii	new york aster			3'-4'		sun	X X	great late color

VT Pollinator Habitat Plant Palette

updated 11 Dec 18

Jane Sorensen Northeast Pollinator Plants, VT

Plant Name	May	June	July	Aug.	Sept.	Sun/Sh	Value	Notes
GC=Ground Cover		Info. Source: Xerces, Lady Bird Johnson Wildflower Center, USDA Plants						
						Bee	Butt Hum Host	
PERENNIALS for Cottage Gardens and/or Meadows short-lived, vigorous spreading and/or reseeding								
Dicentra cucullaria	.5'-1'	dutchman's breeches				part/sha	X	white bleeding hrt
Baptisia tinctoria	2'-3'	yellow wild indigo				sun/part	X	hard to germinate
Polemonium reptans	1'-1.5'	creeping jacob's ladder				sun	X	prolific reseeder
Prunella vulgaris GC	.5'-1.5'	self-heal				sun/part	X	nice, low, early/flow.
Erigeron pulchellus	1.5'-2'	Robin's Plantain				sun/part	X	avoid rich soils
Zizia aurea	1.5'-3'	golden zizia				sun	X	prolific reseeder
Aquilegia canadensis	2'-3'	canada columbine				sun/part	X	short-lived/reseeds
Echinacea pallida	2'-3'	pale purple coneflower				sun/part	X	narrow petals, reseed
Asclepias purpurascens	2'-3'	purple milkweed				sun	X	deep rose flowers
Verbena stricta	wooly verber	1.5'-4'				sun	X	prolific reseeder
Achillea millefolium	yarrow	2'-3'				sun	X	tends to flop
Rudbeckia hirta	black-eyed s	2'-3'				sun	X	short-lived/reseeds
Anaphalis margaritacea	pearly everlasting	1'-3'				sun/part	X	grey foliage
Asclepias syriaca	common milkweed	2'-3'				sun/part	X	host to Monarchs
Asclepias exaltata	poke milkweed	3'-5'				sha/part	X	dappled light
Asclepias incarnata	swamp milkweed	2'-4'				sun/part	X	host to Monarchs
Drymalis [Potentilla] arguta	tall cinquefoil	2'-3'				sun/part	X	great for pest contr.
Chamerion angustifolium	fireweed	2'-3.5'				sun/part	X	prolific reseeder
Glycyrrhiza lepidota	wild licorice	1'-3.5'				sha/part	X	deer like, not candy
Desmodium canadense	showy tick trefoil	3'-5'				sun/part	X	prolific reseeder
Euthamia graminifolia	flat-top goldenrod	2'-3.5'				sun	X	a billowy goldenrod
Lysimachia ciliata	fringe loosestrife	1'-2'				sun/part	X	wet, aggressive spr
Mentha arvensis	wild mint	.5'-2'				part sha	X	moist. toxic fruit
Artemisia ludoviciana	silver wormwood	2'-3'				sun	X	nesting for bees
Helianthus strumosus	pale-leaved sunflower	5'-8'				sun/part	X	aggressive spread
Rudbeckia laciniata	green-headed coneflower	2'-9'				sun/part	X	aggressive spread
Symphyotrichum punideum	swamp aster	6'-8'				sun	X	moist-wet
Collinsonia canadensis	horsebalm	2'-4'				part sha	X	glossy leaves
Verbena hastata	blue verberna	2'-6'				sun	X	self-seed/spread
Solidago speciosa	showy goldenrod	2'-3'				sun	X	showiest gldnrod
Helianthus x laetiflorus	cheerful sunflower	2'-8'				sun	X	aggressive spread
Eurybia macrophylla	big-leaf aster	2'-4'				sun/sha	X	a woodland beauty
Solidago canadensis	canadian goldenrod	3'-6'				sun/part	X	self-seed/spread

VT Pollinator Habitat Plant Palette

updated 11 Dec 18

Jane Sorensen Northeast Pollinator Plants, VT

Plant Name	May	June	July	Aug.	Sept.	Sun/Sh	Value				Notes
Info. Source: Xerces, Lady Bird Johnson Wildflower Center, USDA Plants							Bee	Butt	Hum	Host	
TREES for Pollinator Habitat Enhancement											
Acer rubrum	40'-60'	red maple				sun/part	X	X		X	great tree
Betula species	20'-70'	birch				sun		X		X	high larval host
Celtis occidentalis	40'-60'	hackberry				sun		X		X	see Main Street
Fagus grandiflora	50'-100'	beech				sun/part		X		X	high larval host
Populus tremuloides	40'-50'	aspen				sun/part		X		X	nice in groves
Prunus americana	15'-25'	american plum				sun/part	X	X		X	woods edge
Prunus serotina	50'-60'	black cherry				sun/part	X	X		X	woods edge
Prunus virginiana	20'-30'	chokecherry				sun/part	X	X		X	woods edge
Quercus alba	50'-100'	white oak				sun		X		X	high larval host
Quercus rubra	60'-75'	red oak				sun		X		X	high larval host
Sassafras albidum	35'-50'	common sassafras				sun/part		X		X	root beer
Tilia americana	60'-80'	linden				sun/part	X	X		X	good honey tree
Amelanchier species	12'-36'	juneberry				sun/sha	X	X			my favorite
Cercis canadensis	20'-30'	redbud				sun/sha	X				wow color
Cornus florida	20'-40'	flowering dogwood				sun/sha	X	X		X	warm microclimate.
Crataegus species	12'-36'	native hawthorn				sun/sha	X	X		X	watch those thorns
Liriodendron tulipifera		70'-90'	tulip tree			sun		X		X	big, but weak
Robinia pseudoacacia		30'-50'	black locust			sun	X	X	X		bees love
Sorbus americana		15'-25'	american mountain ash			sun	X				Birds love fruit
Oxydendron arboreum			25'-30'	sourwood		sun/part	X				warm microclimate.

HERBS for Gardens, Containers and Beds - need to let flower for pollinators, generally native to Europe.

Allium schoenoprasum		1"-1.5'	chives		sun/part	X	X		perennial, long last
Thymus vulgaris (Zone 5-9)		2'-2.5'	english thyme		sun/part	X	X		in warm microclim.
Symphytum officinale	comfrey	3'-5'			sun/part	X	X		Tap root, spreading
Nepeta faassenii	catmint	1'-2'			sun	X	X	X	great mass, showy
Salvia officinalis	common sage	2'-2.5'			sun/part	X	X		bees love
Origanum majorana	sweet marjoram	1'-2'			sun/part	X	X		grow as an annual
Anethum graveolens	dill	1'-3'			sun/part	X	X		grow as an annual
Borago officinalis	borage	2'-3'			sun	X	X		reseeds readily
Foeniculum vulgare	fennel	4'-6'			sun	X	X		reseeds readily
Lavandula spp. (Zone 5-7)	lavender	1'-3'			sun/part	X	X		in warm microclim.
Melissa officinalis	lemon balm	1.5'-3'			sun/part	X	X		spreads, contain it
Mentha spp.	mints	.5'-3'			sun/part	X	X		spreads, contain it
Origanum vulgare	wild oregano	1'			sun/part	X	X		spreads, contain it
Allium tuberosum	garlic chives			1'-2'	sun/part	X	X		garlicky , bees love.
Angelica archangelica	garden angelica			4'-6'	sun/part	X	X		biennial, moist,

VT Pollinator Habitat Plant Palette

updated 11 Dec 18

Jane Sorensen Northeast Pollinator Plants, VT

Plant Name	May	June	July	Aug.	Sept.	Sun/Sh	Value	Bee	Butt	Hum	Host	Notes
Info. Source: Xerces, Lady Bird Johnson Wildflower Center, USDA Plants												
Annuals for Gardens, Containers and Beds - non-native, but plentiful pollen or nectar to provide extra foraging.												
Lobularia maritima	.25'-.75'		alyssum			sun/part	X					sweet odor, bee mag
Salvia coccinea	1'-2'		salvia			sun/part	X	X	X			reseeds, nice plant
Lantana camara	1'-2'		lantana			sun		X				butterflies will flock!
Zinnia spp.	.5'-2'		zinnia			sun	X	X				all colors, bees love
Cuphea spp.	.5'-2'		wi			sun/part	X	X	X			hummingbirds!!!
Dianthus spp.	.25'-1.5'		garden pinks			sun/part	X	X	X			beauty!, all attracts all
Dimorphotheca (Osteospermum) sp	1'-1.5'		african daisy			sun/part	X	X				cool season flowers
Centaurea cyanus	1'-3'		batchelor's buttons			sun	X	X				avoid invas.per.
Calendula officinalis	.5'-1.5'		calendula			sun	X	X				attracts beneficials
Portulaca oleracea	.25'-.5'		portulaca			sun	X	X				hot dry sun,
Cleome hassleriana	1'-4'		cleome			sun	X	X	X			hot, dry sun,
Dahlia spp.	1'-4'		dahlia			sun/part	X	X	X			lots colors, easy
Tagetes	.5'-4'		marigold			sun		X	X			butters/hum
Helianthus (NO treated seeds)	.5'-8'		sunflowers			sun	X	X				hot, dry, sun, bees
Amaranthus spp.	1'-7'		amaranthus			sun	X	X				back of border
Tithonia rotundifolia	4'-6'		mexican sunflower			sun	X	X				
NATIVE ANNUALS - tend to be very aggressive reseeder, plant one to have a colony, good for meadows.												
Collinsia parviflora	.5'-1'		maiden blue-eyed mary			prt/shd	X					dainty, early flowers
Clarkia pulchella		.5'-1.5'	deerhorn clarkia			sun	X					for cottage garden
Gaillardia pulchella	indian blanket	1'-1.5'				sun	X	X				Great annual
Imptatiens capensis		jewelweed	2'-5'			sun/part	X	X	X	X		Wild annual, wet!
Cleome [Peritoma] serrulata	rocky mtn beeplant	3'-6'				sun/part	X	X	X			showy, reseeds
Chamaecrista fasciculata		partidge pea	1'-3'			sun	X	X		X		great as cover crop.
Oenothera biennis		common evening primrose	2'-6'			sun/shd	X	X				short-lived, reseeds
Bidens frondosa		common beggarticks			1'-3'	sun	X					bees, reseeds

Hosting Pollinators

Supporting Bumble Bees

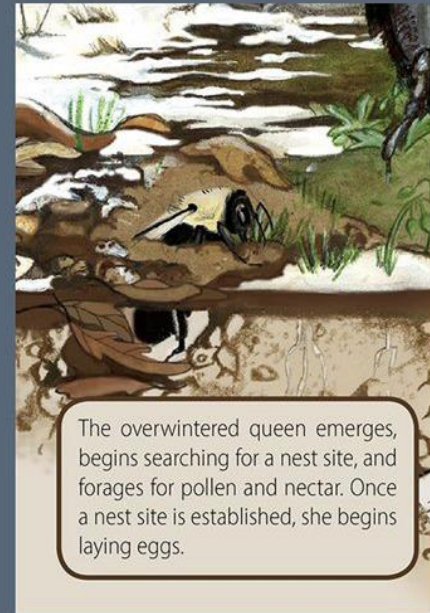
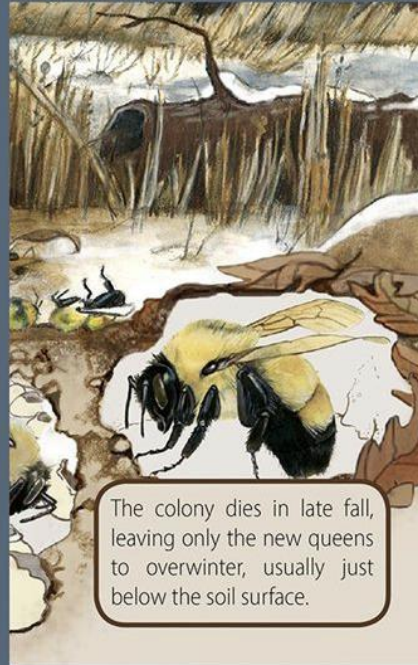
- ✍ In the past 100 years more than half of Vermont's bumble bees have either vanished or are in severe decline
- ✍ 4 of 17 bumble bee species have gone extinct

How to help:

- ✍ Mulch with compost or leaf litter so bumble bees can emerge successfully from the garden
- ✍ Leave a messy garden
- ✍ Leave up hollow stalks for a variety of bees to nest and emerge in spring

Resources:

- Vermont Center for EcoStudies: Vermont Atlas of Life, Bumble Bee ID
- Xerces.org
- Gund Center (UVM)



Details from the life-cycle illustration in our brochure, *Bumble Bee Conservation: A Guide to Protecting Our Vital Pollinators*. (Artwork by Alix Lukas).

Hosting Pollinators

Bumble Bees:

Nectar for Bumble Bees

- ❖ Early bulbs
 - Crocus
 - Glory of the snow



- ❖ Summer
 - Milkweed
 - Culver's Root
 - Wild Senna
 - Mints



- ❖ Fall
 - Goldenrod
 - Aster
 - Ironweed



And so much more...

Hosting Pollinators: Monarchs

Supporting Monarchs

How to help:

- ✍️ Grow milkweed
 - **Monarch caterpillars only eat milkweed**
- ✍️ Leave up goldenrod and aster
- ✍️ Support and report sightings to organizations like Journey North

Resources:

- Vermont Center for Ecological Studies
- Bumble Bee ID
- Xerces.org



Hosting Pollinators: Great Spangled Fritillary

Conservation Status

✍ *Common*

What to grow to host:

✍ *Wild and cultivated violets*

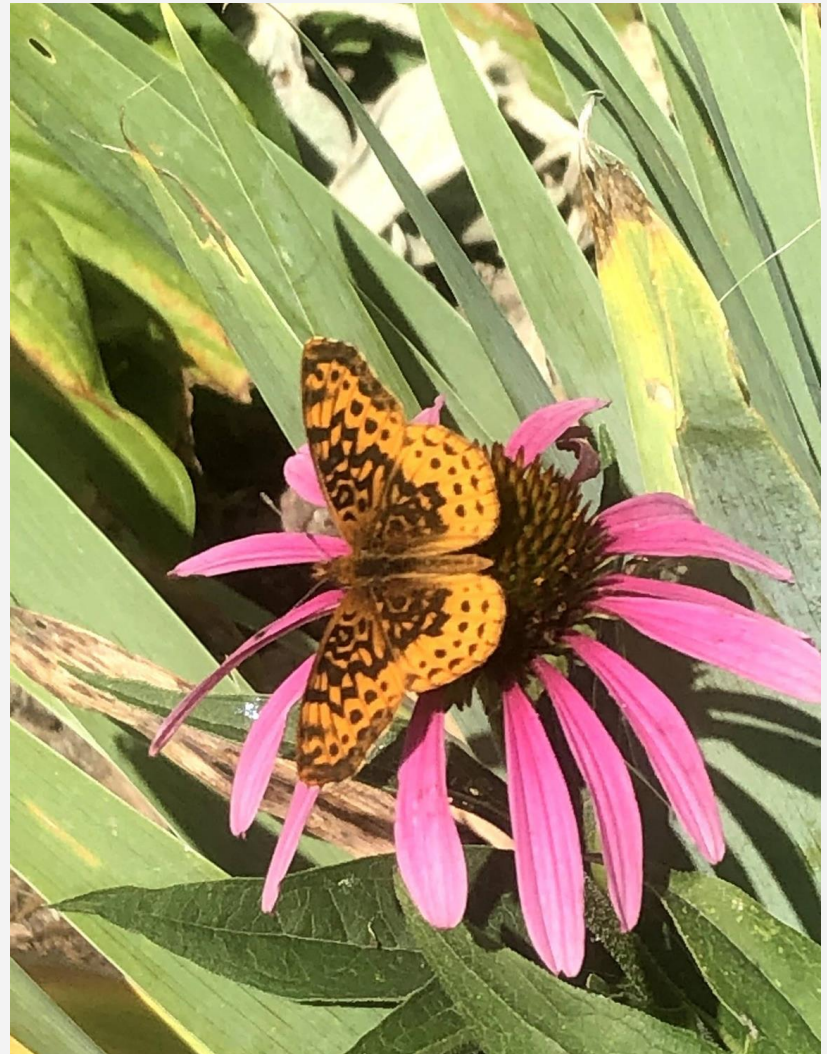
Nectar Sources:

✍ *Joe pye weed*

✍ *Echinacea*

Resources:

- *Vermont Center for Ecostudies*



Hosting Pollinators: Swallowtails

Conservation Status

- ✍ Increasing numbers of Eastern Giant Swallowtails due to climate change, the host plant and caterpillars are “overwintering”
Eastern Tiger is uncommon, but has been documented in Vermont
- ✍ Spicebush Swallowtail is rare as is the pipevine
- ✍ Black Swallowtails are common

What to grow to host:

- ✍ Eastern Giant Swallowtail: [Northern Prickly-ash](#),
- ✍ Eastern Tiger Swallowtail: Birch, ash, cottonwood, willow
- ✍ Pipevine Swallowtail: Dutchman’s pipe
 - This is a very rare butterfly
- ✍ Spicebush Swallowtail: Spicebush
- ✍ Black Swallowtails: Wild and cultivated members of the parsley family, angelica, zizia

Nectar Sources:

- ✍ Eastern Giant Swallowtail: tends to be generalists
- ✍ Eastern Tiger Swallowtail: tends to be generalists
- ✍ Pipevine Swallowtail: nectar from flowers, including thistles (*Cirsium*), bergamot, lilac, viper’s bugloss, common azaleas, phlox, teasel, dame’s rocket, lantana, petunias, verbenas, lupines
- ✍ Spicebush Swallowtail: Honeysuckle, clover, thistle, however tend to be generalists
- ✍ Black Swallowtails: Milkweed, thistle, clovers

Resources:

- Vermont Center for Ecostudies
- Doug Tallamy
- National Wildlife Federation



Hosting Pollinators: Mourning Cloak

Conservation Status

✍ Common

What to grow to host:

✍ Hackberry
✍ Birch
✍ Poplars
✍ Nettles
✍ Willow
✍ Elm

Nectar Sources:

✍ Various nectar sources, mud, fruit

Resources:

- Vermont Center for Ecostudies



Hosting Pollinators: Cloudless Sulphur

Conservation Status

 *Common*

What to grow to host:

 *Wild senna*

 *Cassia*

Nectar Sources:

 *Prefer red, orange, and purple flowers*

Resources:

- *U.S. Forest Service*



We Can Do This

You are part of the solution

- ✍ Building pollinator gardens is similar to creating a food shelf for some of our planet's most vulnerable and important species: They need us right now, before it's too late*
- ✍ As you build compost piles, your compost can translate directly to a garden resource*
- ✍ Planting trees, specifically oaks that can support over 500 species (over $\frac{1}{3}$ of oaks are endangered)*
- ✍ You may find you clean up garbage and recycling in your local environment*
- ✍ You might find yourself purchasing products that contribute to your compost pile, not your landfill*
- ✍ You might plant pollinator gardens in public places and/or help and inspire your neighbors to plant pollinator-centric gardens*

Once you have created your garden get it listed:

This is a movement and you are among friends:

✍ *Homegrown National Park*

✍ *Pollinator Pathways*



Pollinator Pathways

Establishing pollinator-friendly habitats and food sources for bees, butterflies, hummingbirds and other pollinating insects and wildlife

[Home](#) [About](#) [Pollinator Pathways](#) [Pesticides](#) [Your Backyard](#) [Invasive Threats](#) [Resources](#) [Get Involved](#) [Upcoming Events](#)



How to Join

- include native plants on your property and manage invasive species
- avoid using pesticides and herbicides
- consider leaving some bare ground and dead wood for nesting native bees, leaving some

Register your Property on the Pollinator Pathway



4857 MAP ENTRIES - ON THE MAP-PLANT NATIVE!



[ABOUT](#) [TEAM](#) [MAP HUB](#) [TALLAMY'S HUB](#) [GET STARTED](#) [EVENTS](#) [PARTNER](#) [RESOURCES](#)

MAP

DONATE

WE CAN DO THIS!

ONE PERSON AT A TIME

RESTORE BIODIVERSITY



"In the past, we have asked one thing of our gardens: that they be pretty. Now they have to support life, sequester carbon, feed pollinators and manage water."

“This other Eden, demi-paradise, This fortress built by Nature for herself Against infection and the hand of war, This happy breed of men, this little world, This precious stone set in the silver sea, Which serves it in the office of a wall Or as a moat defensive to a house, Against the envy of less happier lands,--This blessed plot, this earth, this realm...Vermont.”

~William Shakespeare

