Bee Friendly Gardening

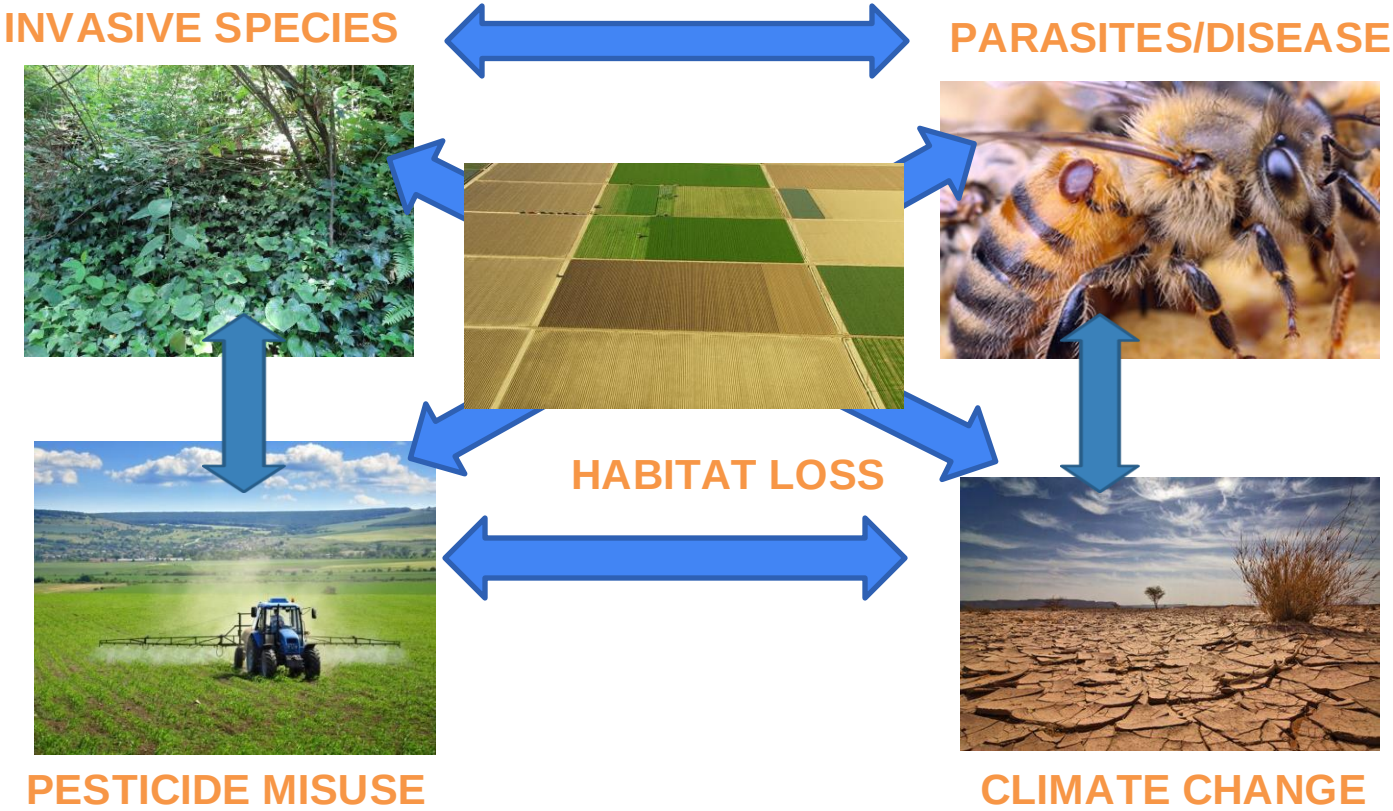
Sara Wittenberg, Pollinator Partnership

POLLINATOR PARTNERSHIP

Protect their lives. Preserve ours.

Why are our pollinators in trouble?

Pressures on Pollinators



Why are our pollinators in trouble?

Pressures on Pollinators

HABITAT LOSS

We can bring them back!

Why are our pollinators in trouble?

Pressures on Pollinators

HABITAT LOSS

CREATE HABITAT! ⟹

So… what can you do?

1. **Keep** the natural habitat you already have
2. **Create/enhance** habitat in other areas of your yard or garden
3. **Reduce** the use of pesticides

POLLINATOR PARTNERSHIP

Keep the Habitat You Have

- Non-invasive + native plants
- Hedgerows + evergreens
- Dead + downed wood
- Brush + rock piles
- Leaf litter
- Hollow/pithy stems
- Bare patches of ground

Consider changing your management practices:

- Limit mowing
- Limit tilling

POLLINATOR PARTNERSHIP

Create the Habitat You Want

(1)Food/Floral Resources

(2)Nesting Habitat (bare ground for bees, hollow stems for bees, host plants for butterflies/moths)

(3)Protection from Pesticides

POLLINATOR PARTNERSHIP

Create the Habitat You Want

Pollinator habitat can also mitigate other environmental concerns (control erosion, mitigate nutrient loss, phytoremediate soils, improve water quality)

Rain gardens, bioswales, detention pond retrofits could be the foundation for pollinator gardens

Rain Dog Designs, Gig Harbor, WA

Native Plants

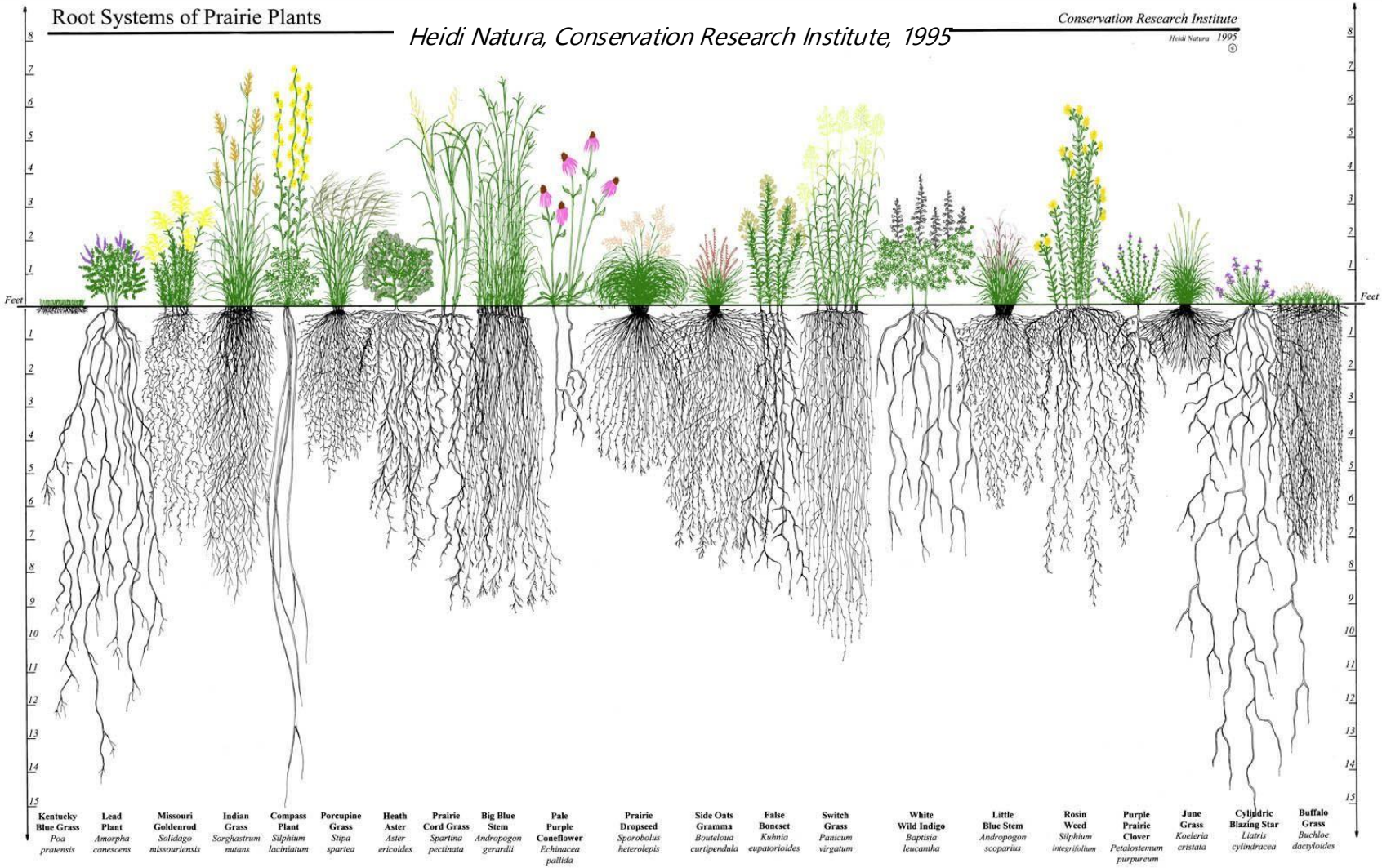
Eleanor Schumacher

Amber Barnes

POLLINATOR PARTNERSHIP

Root Systems of Prairie Plants

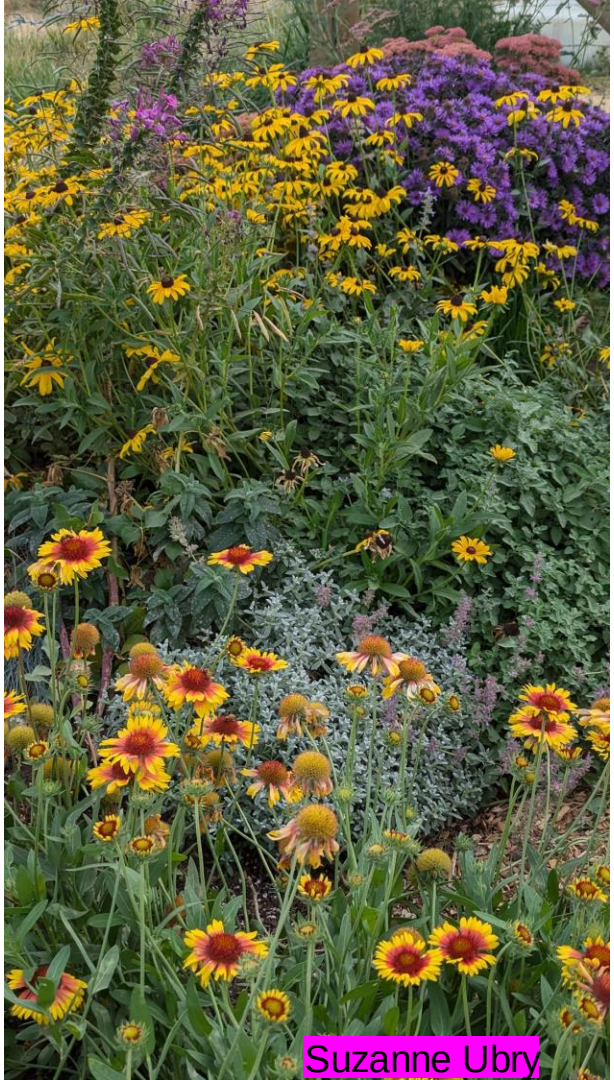
Heidi Natura, Conservation Research Institute, 1995



Exposed: The Secret Life of Roots - US Botanic Garden

POLLINATOR PARTNERSHIP


Kristen Landis


Suzanne Ubry

Anne Cheng

Tino Fernandez

Ildiko Oravecz

Connie Hughes


Antony John

Pre-Planting: Site Preparation

SITE PREP
SO
IMPORTANT!!!

- Don’t skimp here
- It’s all about the soil
- Prepare your canvas
- Weed/invasives removal (sod)
- Bare dirt (= seed to soil contact)

Site Prep Methods

Sheet mulching

Lasagna gardening

Solarization

Sod removal

Herbicide

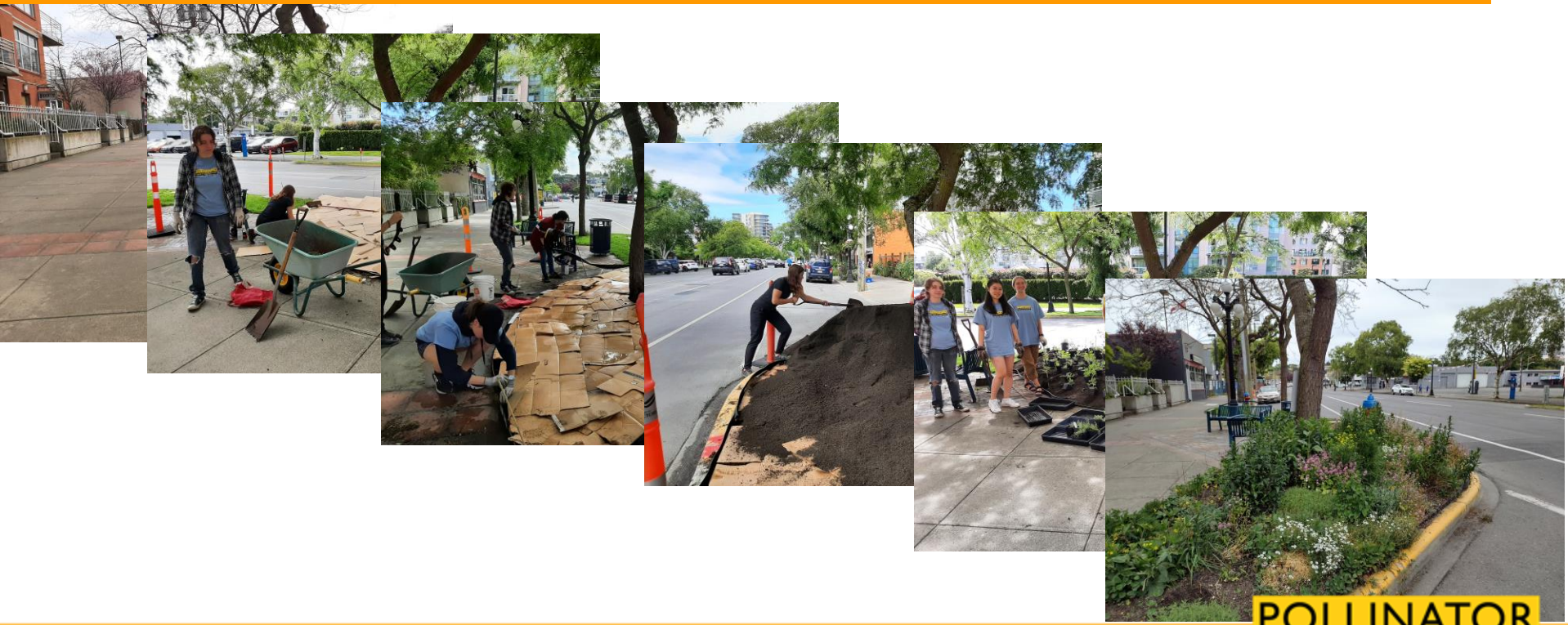
Tilling

POLLINATOR PARTNERSHIP

Site Prep: Sheet Mulching

POLLINATOR PARTNERSHIP

Site Prep: Sheet Mulching



POLLINATOR PARTNERSHIP

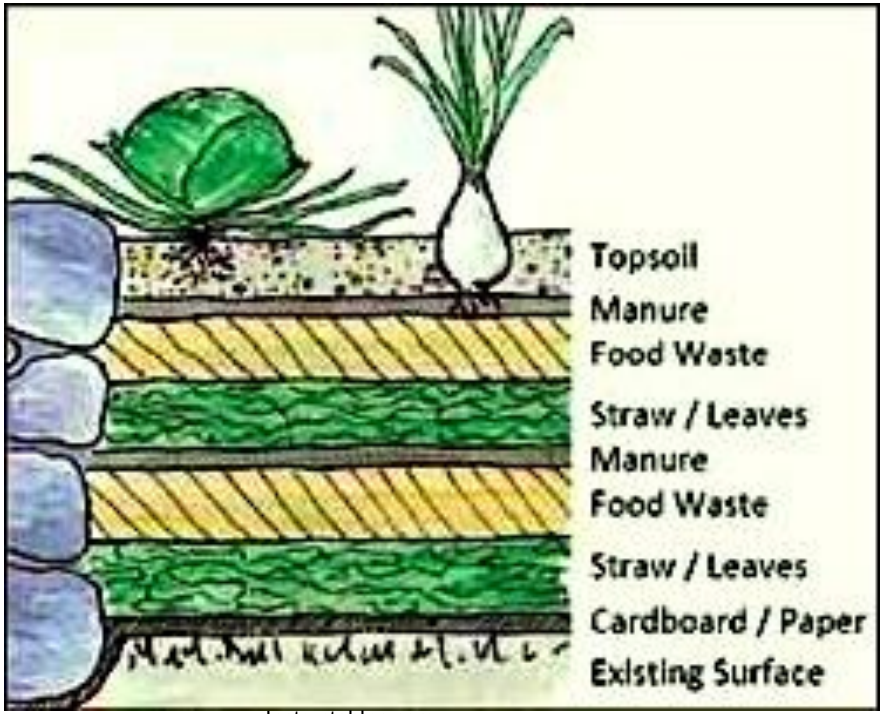
Site Prep: Lasagna Gardening

Loveandlemons.com

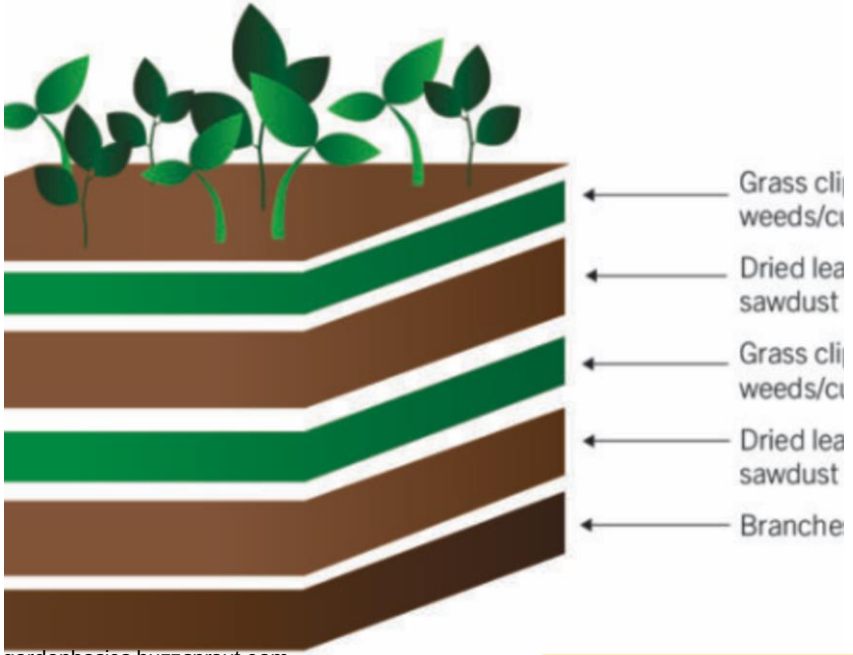
Thespruceeats.com

POLLINATOR PARTNERSHIP

Site Prep: Lasagna Gardening



Instructables.com



gardenbasics.buzzsprout.com

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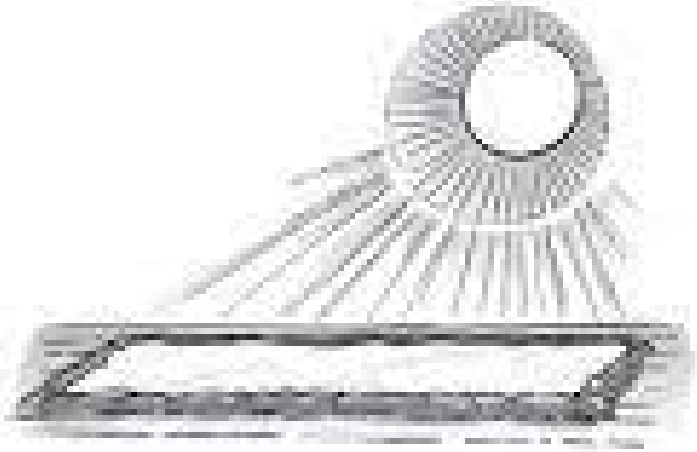
Site Prep: Lasagna Gardening

Rootsnursery.com

Site Prep: Solarization



landscapeontario.com

Site Prep: Solarization

WINNER:
6 week treatment with clear plastic

EXCEPTION:
Dandelions

Site Prep: Sod Removal

POLLINATOR PARTNERSHIP

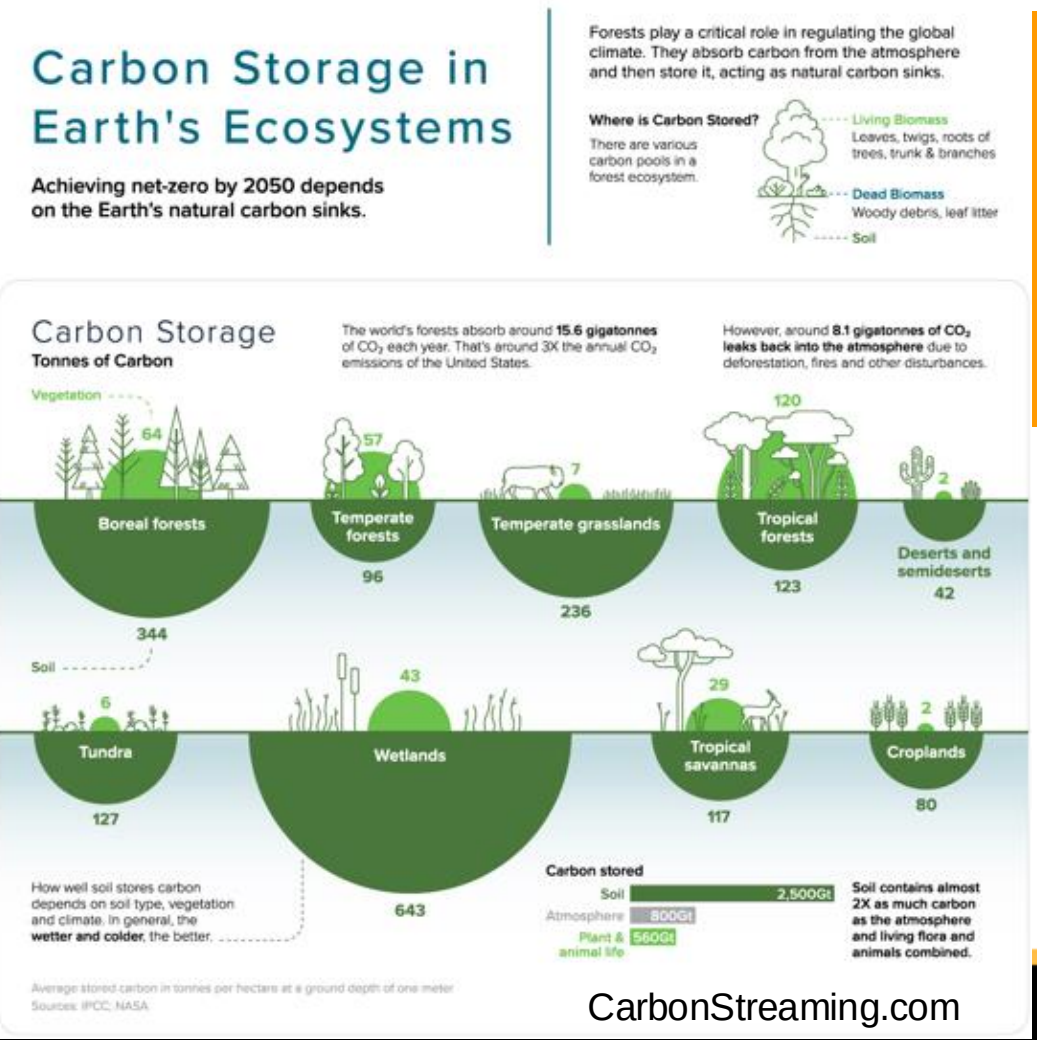
Site Prep: Herbicide

POLLINATOR PARTNERSHIP

Site Prep: Tilling

Lawrencetoolrental.com

Site Prep: Tilling



CarbonStreaming.com

Soil contains almost 2X as much carbon as the atmosphere and living flora and animals combined.

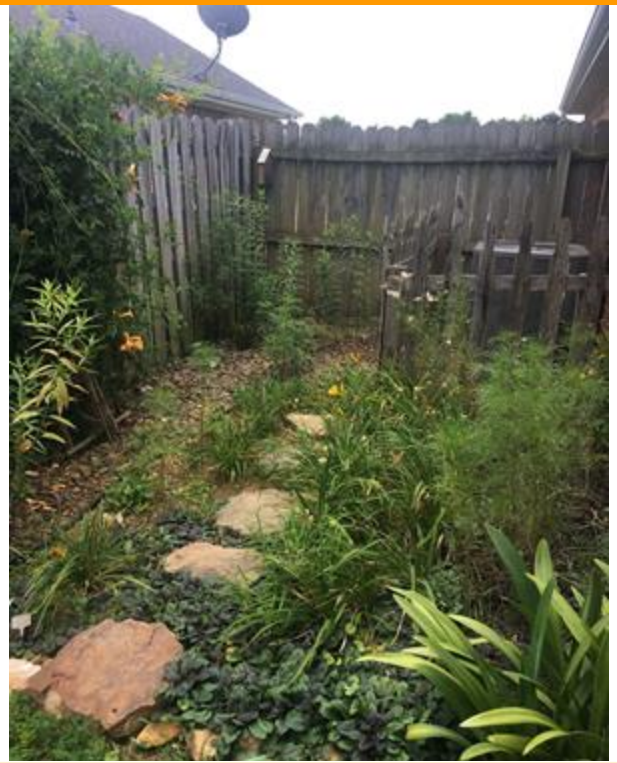
POLLINATOR PARTNERSHIP

Pre-Planting: Site Prep

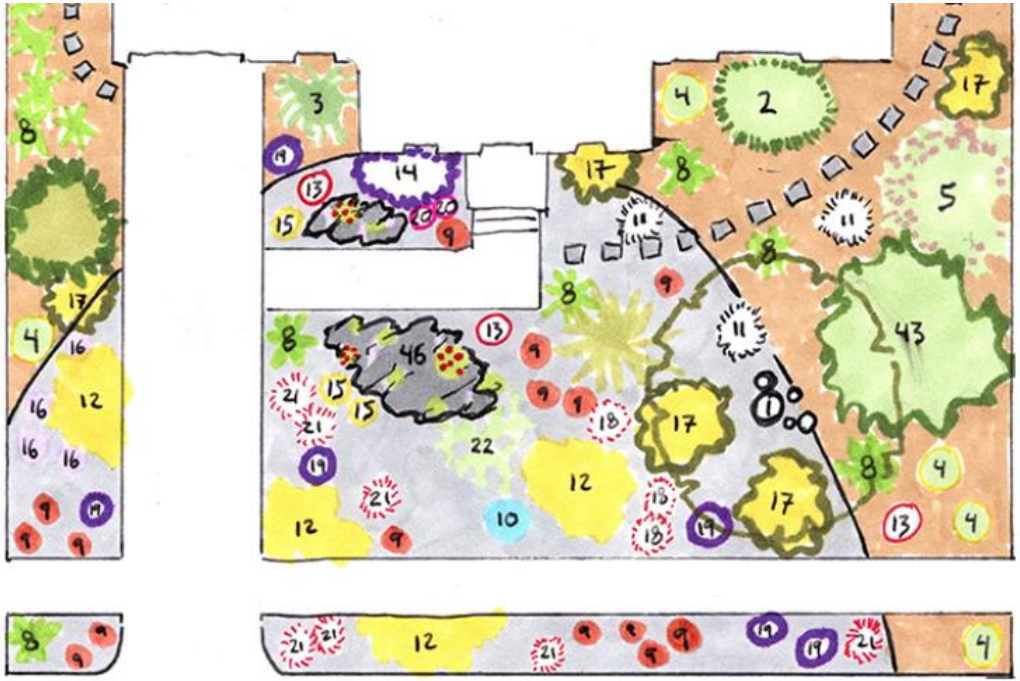
RAISED BEDS/CONTAINER GARDENING

ACCESS TO WATER

Pre-Planting: Layout



Pre-Planting: Layout



POLLINATOR PARTNERSHIP

Pre-Planting: Layout

Pre-Planting: Layout

POLLINATOR PARTNERSHIP

Pre-Planting: Supplies

Alfo Medeiros - pexels.com

Vecteezy.com

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Pre-Planting: Supplies

Compost versus Mulch

Pre-Planting: Plants

Pre-Planting: Plants

Pre-Planting: Arrangement

Planting

Post-Planting Maintenance

freepik.com

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Post-Planting Maintenance

Andrea Badke

POLLINATOR PARTNERSHIP

Post-Planting Maintenance

- ✓ Implement IPM strategies in your garden
  - understand your system
  - beneficial insects
  - redefine “pests”
  - monitoring
- ✓ Be mindful of/minimize the use of pesticides

Integrated Pest Management: Science-based **process** to solve pest problems while minimizing risks to people and the environment

Seasonal Maintenance (or not!)

Let Logs Lie

Chop and Drop

SAVE THE STEMS

Celebrate Snags

Sleep, Creep, Leap

Leave the Leaves

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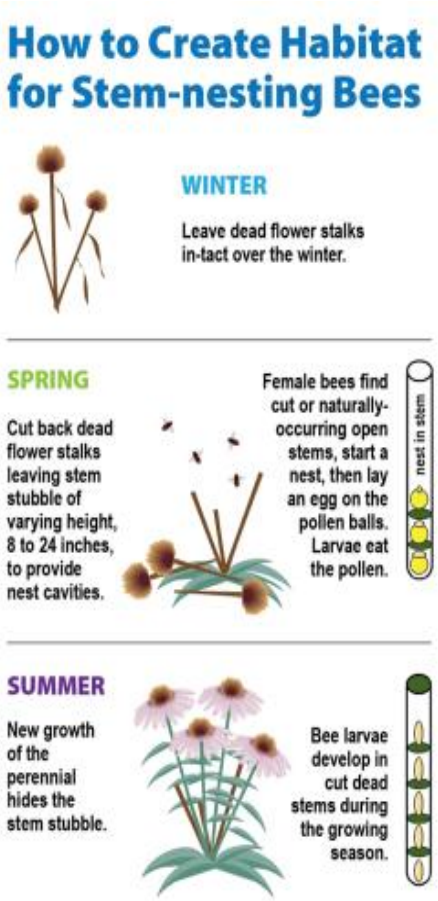
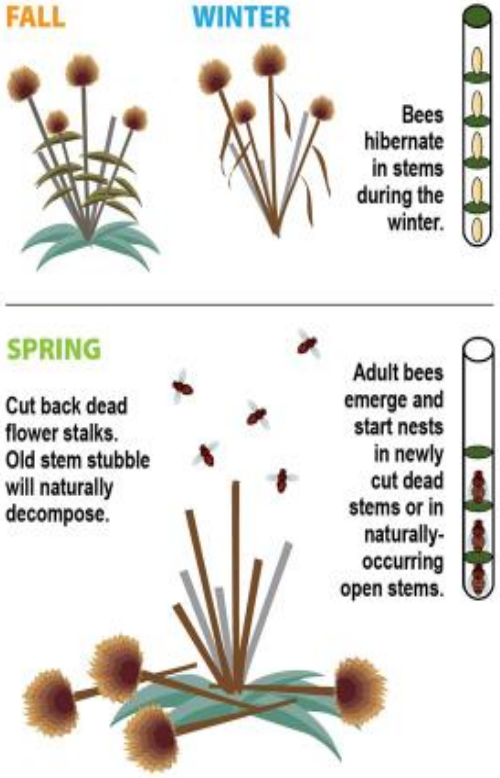
Plants used for nesting

Scientific name	Common name
Agastache	hyssop
Andropogon gerardii	big blue stem
Arnoglossum atriplicifolium	pale Indian plantain
Artemisia	native sages
Asclepias incarnata	swamp milkweed
Baptisia australis	blue wild indigo
Echinacea	cone flowers
Eupatorium perfoliatum	common boneset
Cirsium	native thistles
Eutrochium	Joe Pye weeds
Helianthus	sunflower
Heliopsis helianthoides	smooth oxeye, early sunflower
Liatris	blazing stars
Monarda fistulosa	wild bergamot, bee balm
Panicum virgatum	switchgrass
Pycnanthemum	mountain mints
Ratibida pinnata	pinnate prairie coneflower
Rhus	sumacs
Rosa	roses
Rubus	raspberries
Sambucus	elderberry
Silphium perfoliatum	cup plant
Solidago	goldenrods
Sorghastrum nutans	indiangrass
Symphyotrichum	asters
Thalictrum	meadow rues
Vernonia fasciculata	prairie ironweed
Veronicastrum virginicum	Culver's root
Zizia aurea	golden Alexander





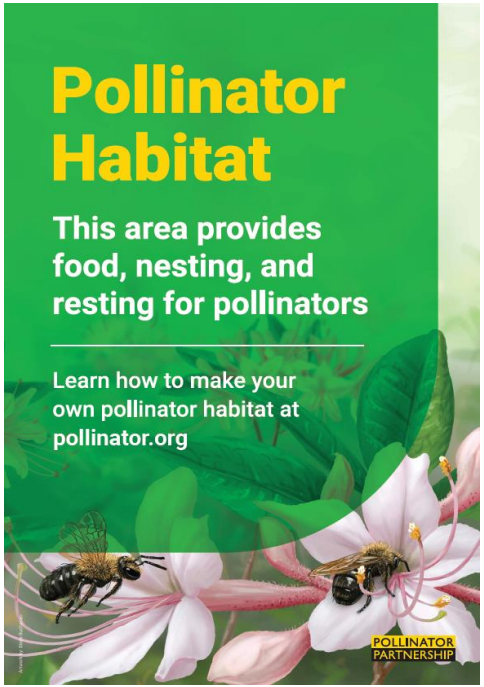
Courtesy of Heather Holm

UMN Bee Lab

The “Why”

POLLINATOR PARTNERSHIP

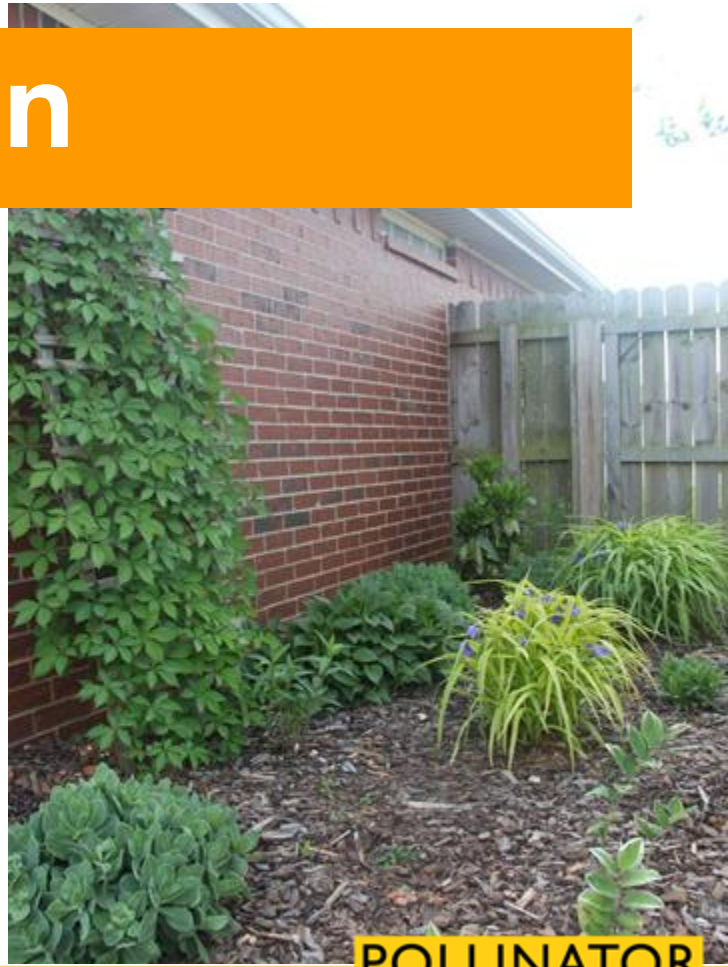
The “Why” Explained



My Garden

POLLINATOR PARTNERSHIP

My Garden Evolution



POLLINATOR PARTNERSHIP

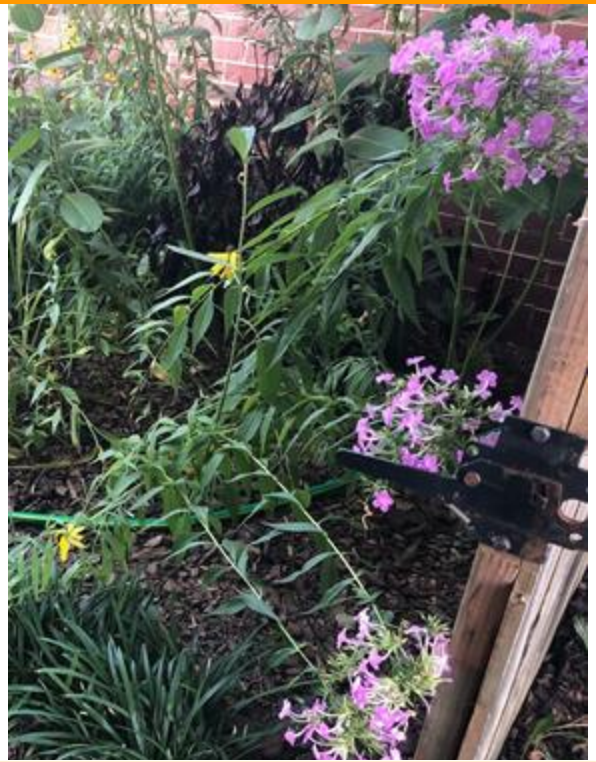
My Garden Evolution

POLLINATOR PARTNERSHIP

My Garden Evolution

POLLINATOR PARTNERSHIP

My Garden



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My Garden - Host Plants

Dutchman's Pipevine - NCState Extension

Passionflower

3 milkweed species

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My Garden - Food

My Garden - Food

POLLINATOR PARTNERSHIP

Growing Food

GARDEN PLANT	NATIVE POLLINATORS	NATIVE COMPANION PLANTS
strawberries	**small-medium sized bees** *Augochlorella, Augochlora, Lasioglossum, Halictus, Osmia, Ceratina, Andrena*	New Jersey tea, ragworts (*Packera* spp.), *Phacelia* spp., pale beard-tongue, wild hyacinth, common cinquefoil, golden alexanders
blackberries and raspberries	**small-medium-large bees** *Andrena, Halictus, Lasioglossum, Augochlorella, Augochlora, Hoplitis, Osmia, Ceratina*, bumblebees	New Jersey tea, indigo bush, hawthorns, wild hyacinth, Jacob's Ladder, pale beard-tongue
blueberries	**medium-large bees** *Andrena*, bumblebees, *Colletes, Augochlora, Augochloropsis, Lasioglossum, Osmia, Habropoda, Eucera, Anthophora*	redbud, plums, blue star, blue-eyed Mary, wood betony, Virginia bluebells, wild hyacinth, wild geranium, horsemint
apples, peaches, pears, and plums	**medium-large bees** *Andrena, Colletes, Halictus, Lasioglossum, Augochlora, Augochlorella*	major attractions on their own because of their size and conspicuousness

This list was created by native bee specialist Mike Arduser for the Grow Native! program

POLLINATOR PARTNERSHIP

All Sizes Matter

Container Garden

K. Miskelly

Home Garden

Demonstration Site/
Community Garden

Restoration Site

POLLINATOR PARTNERSHIP

Your Yard Matters!

Amber Barnes

No landscape is too small! Even a container garden/window box provides valuable food resources to, say, a migrating butterfly.

By adding pollinator habitat to your space you are increasing connectivity and helping wildlife!

POLLINATOR PARTNERSHIP

YOUR YARD = BIG IMPACT
YOUR YARD + NEIGHBOR'S YARD = BIGGER IMPACT

Amber Barnes

Lora Morandin

Can they find:

* Food?

* A place to raise their young?

* A pesticide-free environment?

POLLINATOR PARTNERSHIP

NEIGHBORHOODS CAN CREATE CONNECTIVITY

Wildlife corridors are defined as **narrow strips of land that differs, usually in terms of dominant vegetation, from the surrounding area**. They serve as traveling avenues for wildlife species between two similar yet fragmented habitat areas, and provide important sources of food and cover for many species.

BEE FRIENDLY GARDEN

This garden is managed to promote bees and other pollinators.

BeeFriendlyGardening.org

POLLINATOR PARTNERSHIP

BEE FRIENDLY GARDENING™ IS FOR EVERY LANDSCAPE!

GARDENERS
Add pollinator plantings in gardens or containers and forego pesticides at home

NEIGHBORHOODS
Work with HOAs to turn common areas into pollinator meadows

COMMUNITY FOOD GARDENS
Help alleviate food insecurity and increase yields by adding pollinator plantings

CITIES AND PARK DEPARTMENTS
Reduce microclimate extremes and heat-related deaths by incorporating green spaces

LANDSCAPERS
Alter practices to incorporate BFG techniques into landscape designs

PUBLIC GARDENS AND PARKS
Replace exotic plants with beneficial natives and install interpretive signs

SCHOOLS AND COLLEGE CAMPUSES
Be a platform for change by using green space to educate others about habitat

PLACES OF WORSHIP
Engage congregations in outreach and missions through community and pollinator gardens

RIGHTS OF WAY
Transportation/Utility/Communication industries can turn barren corridors into rich native plant oases

BUSINESSES
Adopt pesticide-free strategies and transform public-facing outdoor spaces into BFG demonstration areas

SCAN ME

BEE FRIENDLY GARDENING

Pollinators need us and we need pollinators. Help us make a difference!

Bee Friendly Gardening (BFG) helps people play a bigger role in the health of pollinators and the planet. More than 85% of U.S. households have an outdoor living space; by converting these areas to much-needed habitat, together we can have a big impact. Your space can provide support to pollinators and other wildlife - no lawn, garden, balcony, or window box is too small!

GARDEN REGISTRATION

MEMBER BENEFITS

EARN BADGES

Not Sure What To Plant?

PLANTING GUIDES

Have A Smaller Space?

GARDEN CARDS


SELECTING
PLANTS
FOR
POLLINATORS
A REGIONAL GUIDE FOR FARMERS, LAND MANAGERS, AND GARDENERS IN THE
ADIRONDACK
NEW ENGLAND
MIXED FOREST
CONIFEROUS
FOREST
ALPINE MEADOW
PROVINCE
INCLUDING THE STATES OF
MAINE, NEW HAMPSHIRE,
VERMONT, NEW YORK,
MASSACHUSETTS,
AND CONNECTICUT
POLLINATOR PARTNERSHIP
and
NAPPC


Planting Guide for your native pollinator garden
Use the arrangement below to have a continuous garden - spring, summer, & fall
ALASKA
6′
3′
American pasqueflower
woolly geranium
tall bluebells
chives
alpine sweetvetch
fireweed
broadleaf arnica
Jacob's ladder
bunchberry
BLOOM SEASON
Spring
Summer
Fall
For best results, use multiple plants of each species.
NATIONAL MUSEUM of NATURAL HISTORY
POLLINATOR PARTNERSHIP

JOIN ME

beefriendlygardening.org

BEE FRIENDLY GARDENING MEMBER

BEE FRIENDLY GARDENING™

MEMBER NAME

This certificate recognizes a commitment to the health of pollinators and the planet.

Membership Number:
BFG-2023XXXXXX

Member Since:
DATE

POLLINATOR PARTNERSHIP
Protect their lives. Preserve ours.

Kelly Bills
Executive Director
Pollinator Partnership

Sara Wittenberg
Bee Friendly Gardening Coordinator
Pollinator Partnership

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APRIL XX,2023

Bee Friendly Gardening – Registered Garden – pollinator.org

Bee Friendly Gardening – iNaturalist – pollinator.org

Bee Friendly Gardening – Pollinator Steward Certified – pollinator.org

Bee Friendly Gardening – iNaturalist Star – pollinator.org

Bee Friendly Gardening – Ambassador – pollinator.org

POLLINATOR PARTNERSHIP
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Pollinator Partnership

MEMBER BENEFITS

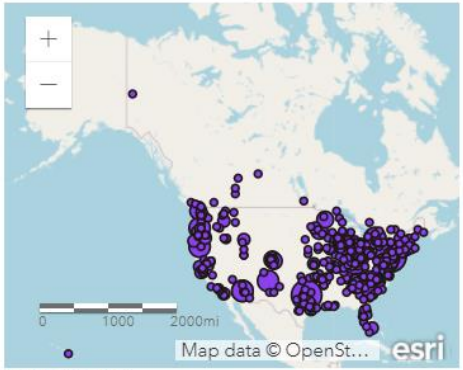
MEMBERS-ONLY PASSWORD PROTECTED WEBPAGE

QUARTERLY WEBINARS

MONTHLY E-NEWSLETTER

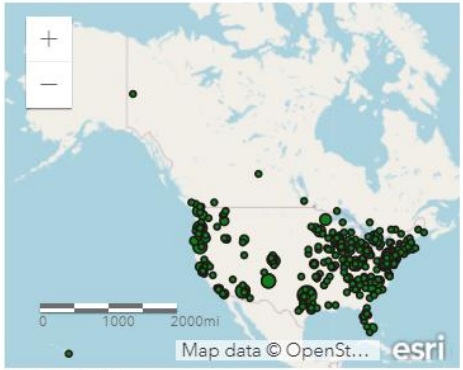
ACCESS TO BFG STORE = MERCH!

Bee Friendly Gardening Members

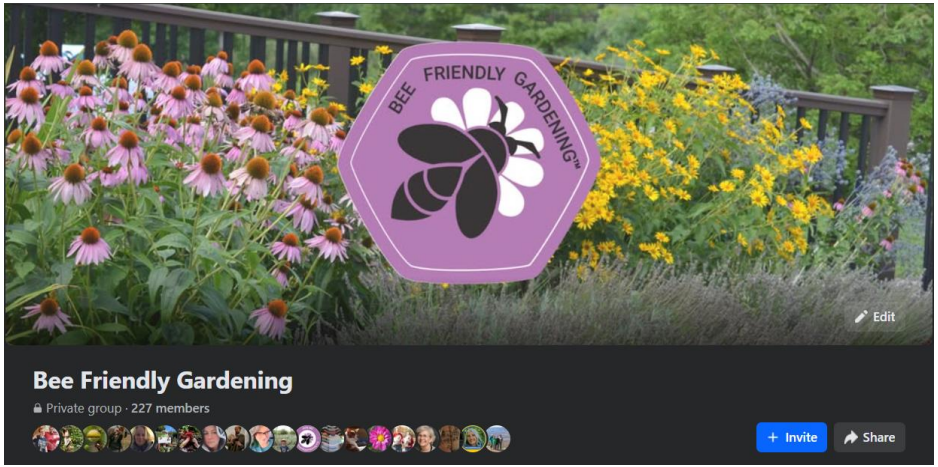


VIEW LARGER MAP

Bee Friendly Gardens



VIEW LARGER MAP



POLLINATOR PARTNERSHIP
QUICK REFERENCE GUIDE

POLLINATOR PARTNERSHIP
Protect their lives. Preserve ours.

CREATING A POLLINATOR GARDEN


Site preparation is important for successful wildflower establishment.

Wildflowers are beautiful, ecologically valuable additions to any garden. Their colors span the rainbow, and their varying heights, forms, and flower shapes offer endless possibilities. Wildflowers native to your area will provide the most benefit to pollinator communities, but garden plants can help too. Whether you have a small garden, a lawn space, or a few planters, with a little know-how, any area can be used to support pollinators.

SITE SELECTION AND PREPARATION

Look for an area in your yard that is underutilized - bare garden patches, lawn that you don't need, or scrubby areas. Sunny areas are best but shade areas can support pollinators, too, with the right plants. To prepare the site you'll need to remove weeds or grass, thin out existing plants, or, if using seed, remove mulch (soil coverings such as wood chips or leaves). You have many options to prepare your site for wildflowers; hand pulling weeds, smothering, and solarizing are a few options. If you are planning to create habitat in planters, make sure you have some pots with soil and good drainage, and you are ready to go!


Smothering a sod area before layering soil and planting.

SELECTING PLANTS

Native plants use less water, are adapted to local weather patterns, and support locally native pollinators. Non-native but non-invasive plant species can also provide benefits. Wildflowers, grasses, shrubs, vines, and trees can all be beneficial, so choose what fits your site best. If possible, aim for a mix of plant structures, a range in bloom times, and diverse flower shapes/colors. See the list of native pollinator plants for your region to start you on your plant selection journey.

Bee Friendly Gardening

Stats

Totals

6356
Observations »

1208
Species »

32
People »

Most Observations


clsstreett
2288 observations


mellok
813 observations


jill100
783 ob


c_ahui
375 ob


grnmtr
314 ob

Most Species


mellok
481 species


jill1004
309 species

t
cies

cies

d
cies

Most Observed Species


Common Eastern Bumble Bee
408 observations


Monarch
221 observations


Two-spotted Bumble Bee
102 observations


Western Honey Bee
94 observations


Brown-belted Bumble Bee
84 observations

Kristin Wyatt

Billy Synk

Jose Carlos Garfias


POLLINATOR
PARTNERSHIP

Scholl Community Garden

Stephanie Lewis

POLLINATOR PARTNERSHIP

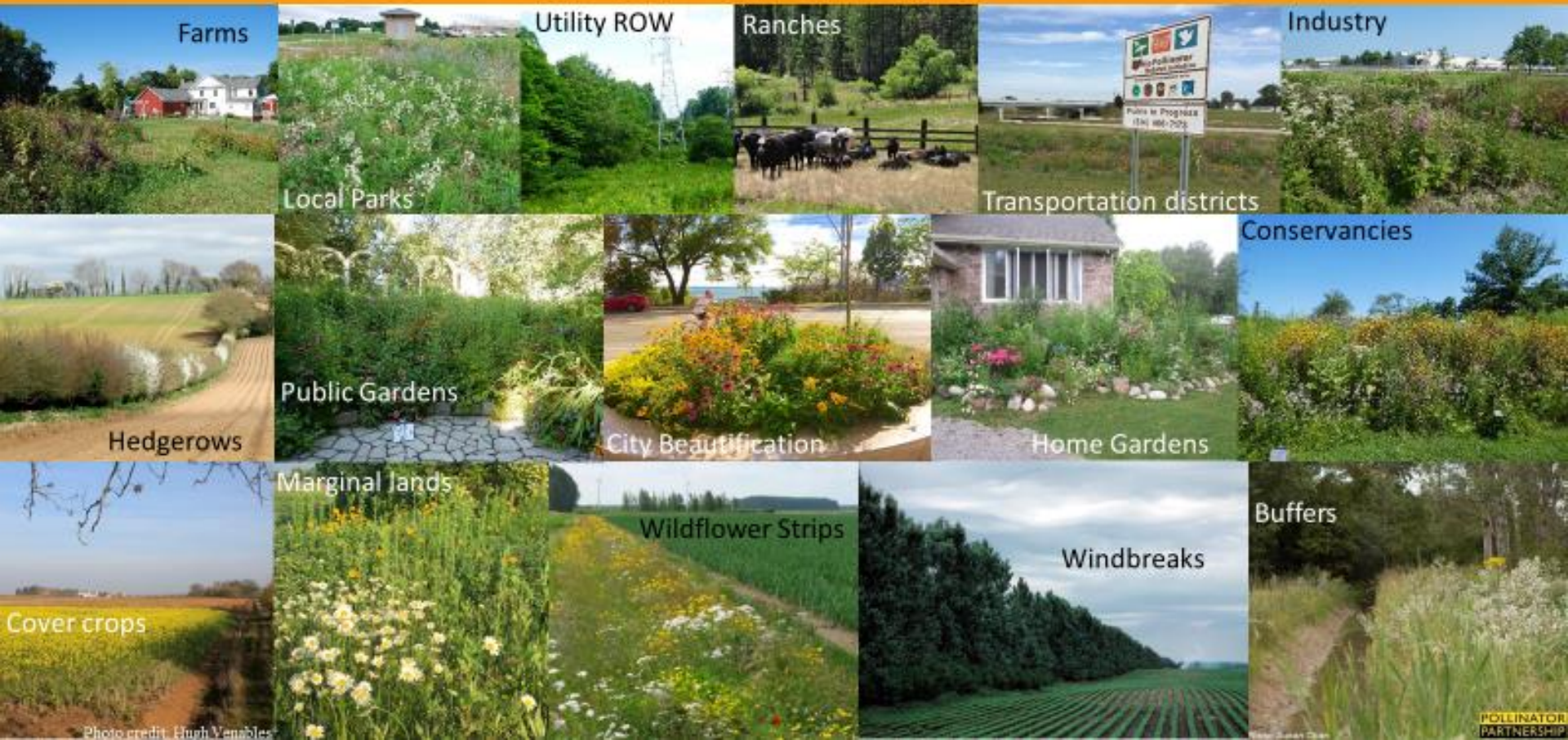
Katie Bliss

POLLINATOR PARTNERSHIP

Tiffani Harrison

POLLINATOR PARTNERSHIP

Together, we can enhance and reconnect the landscape



Partner Programs & Resources

NRCS
Natural Resources Conservation Service

Arkansas Game & Fish Commission

Arkansas Monarch Conservation Partnership

The Diana Project

Beaver Watershed Alliance

H2Ozarks
Cleaner Water Together!
formerly known as Ozarks Water Watch

Watershed Conservation Resource Center

Illinois River Watershed Partnership
irwp.org

Wild Ones
Native Plants, Natural Landscapes

OUR FUTURE FLIES WITH POLLINATORS

Nutrient cycling

Pollination

Biodiversity support

Carbon sequestration

Erosion control

Resources for wildlife

Food security

Resilient ecosystems

Raw material production

Recreation

Soil health

Water filtration

Pollinators provide many ecosystem services that support the health of plants, people, and the planet.
Get involved at www.pollinator.org.

Meet these plants and pollinators, and learn how you can help them at https://www.pollinator.org/poster-2020.
Art by Fiorella Ikeue

POLLINATOR PARTNERSHIP

Los polinizadores proveen de los servicios ecosistémicos que mantienen la salud de las plantas, la gente y el planeta. Involucrate a www.pollinator.org.

Les pollinisateurs assurent plusieurs services écosystémiques qui contribuent à la santé des plantes, des personnes et de la planète. Impliquez-vous en visitant www.pollinator.org.


POLLINATOR
PARTNERSHIP

Thank you!
Questions?

Sara Wittenberg
sw@pollinator.org

CHECK OUT BFG

PRESENTATION EVALUATION