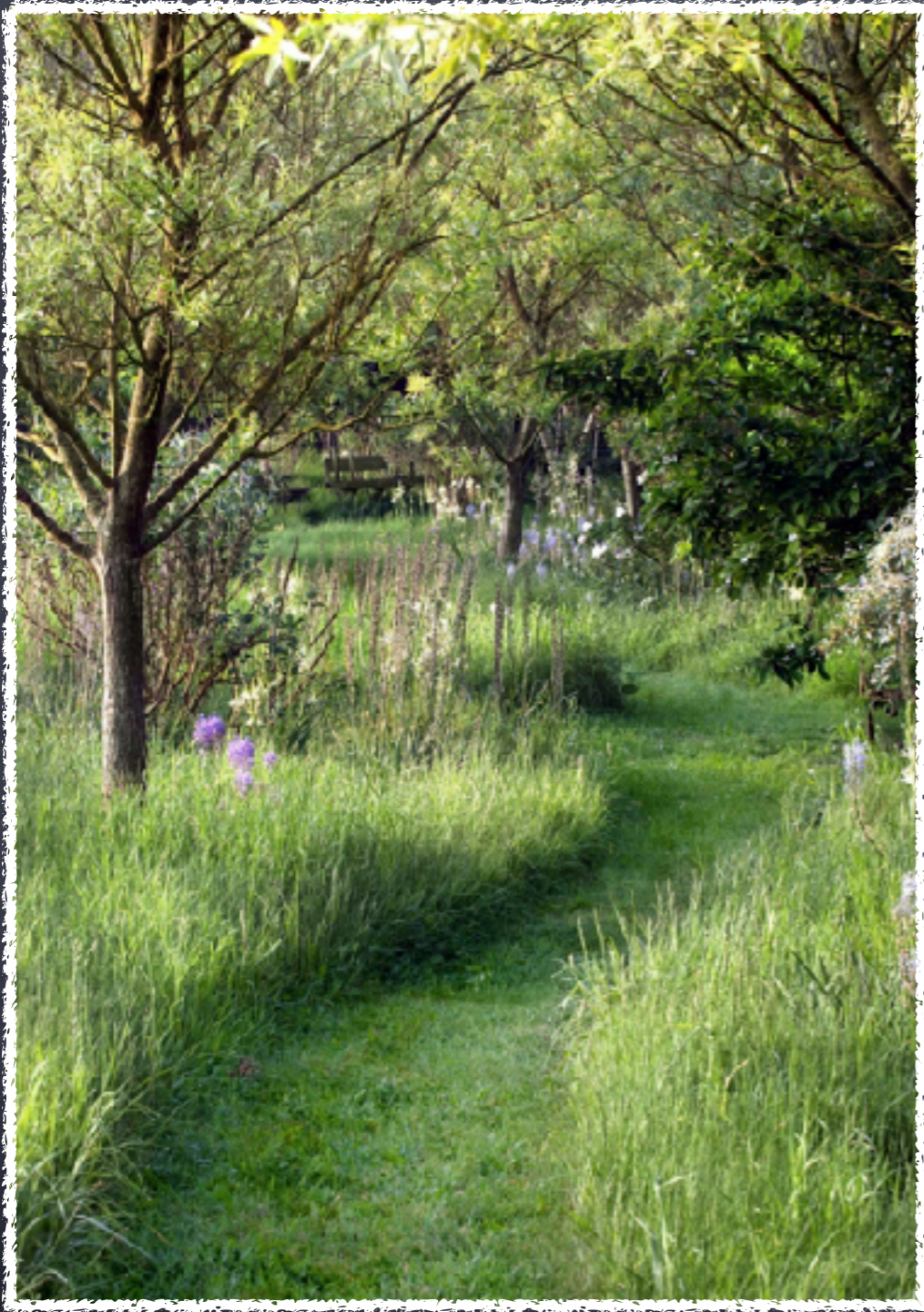


How to Create Natural Ecosystems in Your Yard



Peggy MacLeod
Massachusetts
Pollinator Network

May 11, 2023
South Hadley, MA



Our landscaping choices ...

**... have an impact on
improving biodiversity
and wildlife habitat**

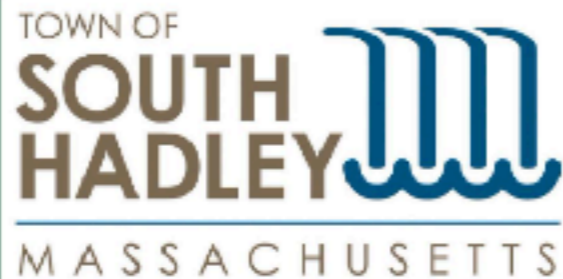
SOUTH HADLEY has been
TAKING ACTION . . .



ENTERING
INC.  1775
SOUTH HADLEY

. . . for Biodiversity
and Climate Resilience

In 2020 . . .



Plant 500 Trees in 2021!

South Hadley has received a grant to provide 500 trees to interested property owners to help mitigate the effects of climate change.

Order Your Trees Now

*All trees are FREE.

*Order online at www.southhadley.org/ordertrees

*Trees will be available for a pickup date in May.

*No limit on the number of trees per order.

*Planting assistance is available for those not physically able to plant a tree.

Tree Program Catalog

www.southhadley.org/treecatalog

Orders Due by December 1, 2020

www.southhadley.org/ordertrees

QUESTIONS?

conservation@southhadleyma.gov

(413) 538-5017 x6123

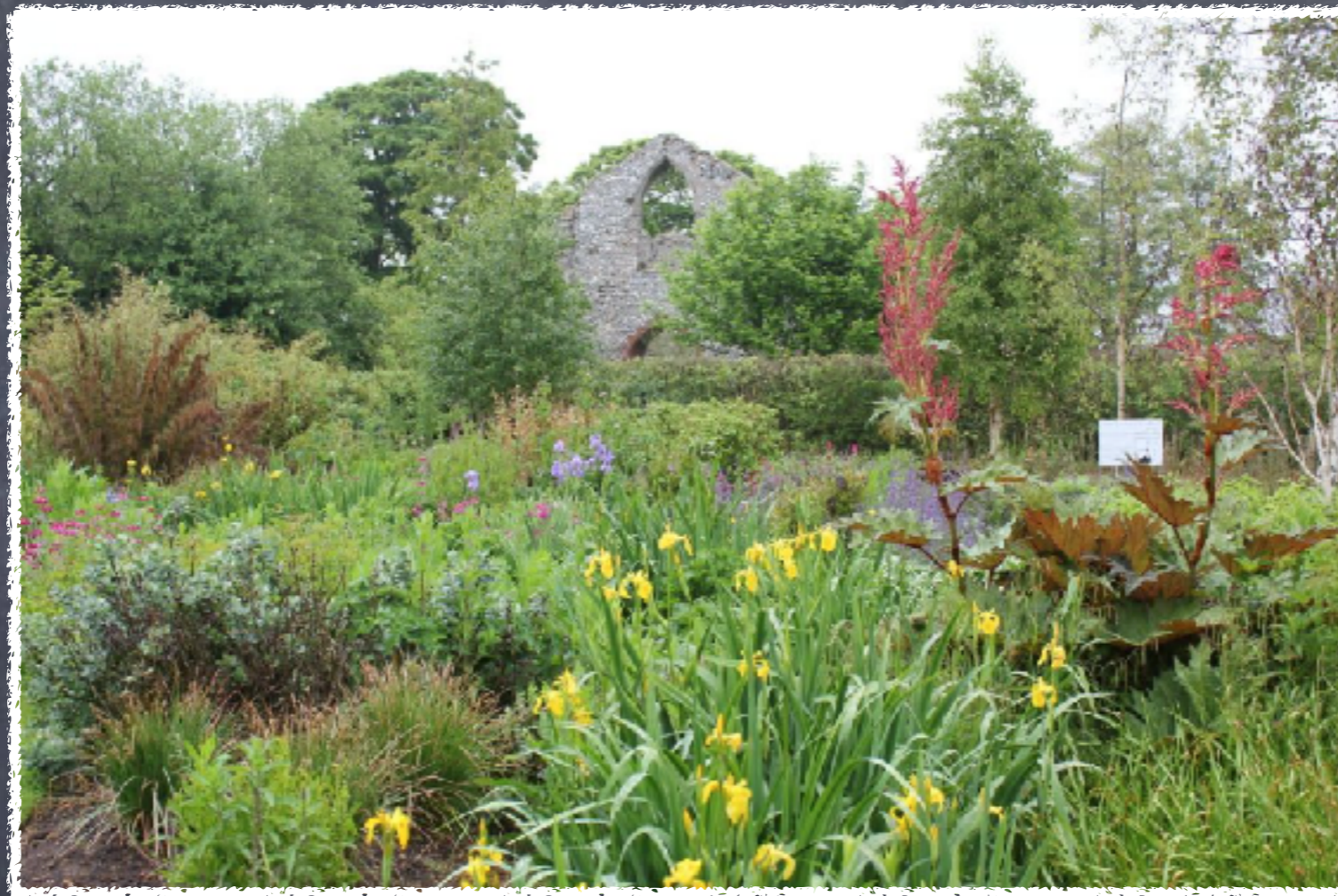
Residents planted 500 trees!

In 2022 . . .



**RoundUp (glyphosate)
was banned
on town-owned properties**

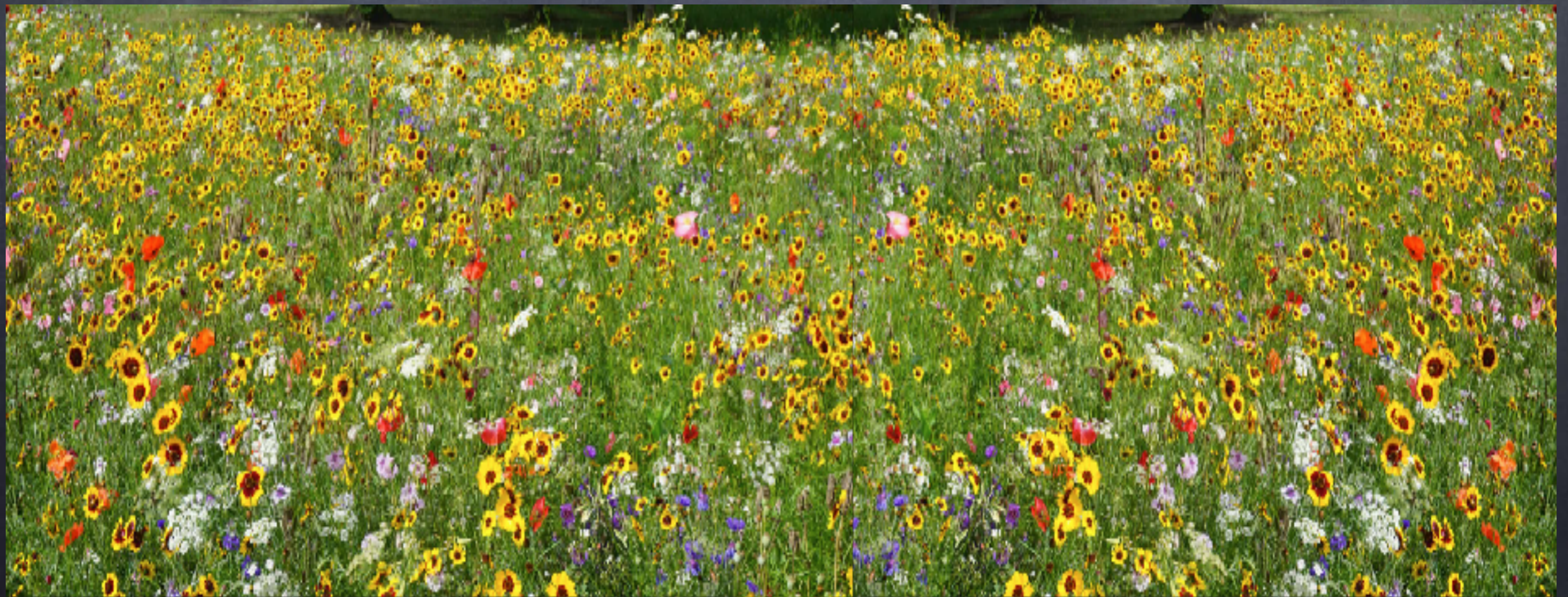
In 2023 . . .



"Growing Wild" initiative
To promote ecological landscaping

In tonight's talk I'll focus on

**the HUGE POTENTIAL
for improving biodiversity
using NATIVE trees, shrubs, and plants**



Biodiversity consists of:

Species
diversity

Genetic
diversity

Ecosystem
diversity



A vibrant field of tall green grasses and white flowers, with a person in a hat visible in the background. The scene is bright and sunny, with a dense forest of green trees in the background.

Nature is organized

***so that ALL LIVING
THINGS***

can get their needs met



CAUSES
diversity
SS

Did I leave anything out?



- Over consumption
- Pesticide Use
- Climate disruption
- Over-population
- Corporate farming

Enhancing biodiversity



Begins with
an appropriate mindset

"MY garden" mindset

I need some taller plants for fall.

What will bloom in spring?

What colors will look nice?

Which plants will spread?





We're hungry and thirsty!



My babies love these larvae!

See you next spring!

Focus on wildlife habitat



Great hiding place!



Yum, fennel!





Biodiversity-enhanced yards are:

- More resilient to changing climate
- Homes to native flowers, trees, and grasses
- Year-round *wildlife habitat*,
— > not "our property"
- Bird havens
(insects, shelter, + water source)

Ways to create sustainable wildlife habitats



- ⑥ Reduce lawn area
- ⑥ Keep hollow twigs & stems
- ⑥ Leave the leaves
- ⑥ Do less mulching
- ⑥ Build brush and rock piles
- ⑥ Leave rotting logs
- ⑥ Provide fresh water
- ⑥ Reduce night lighting

XERCES.ORG

Embrace "Scruffiness" to support creatures' lifecycles



What? Leaving leaf litter??

Butterfly and moth overwintering



Queen bee winter protection



Eastern box turtle



Carolina Wren



INSECTS . . .

pollinate billions of plants every year



180,000 plant species!

Over
1200+ crops!



Insects provide FREE ecological services

- Aerating and building topsoil
- Producing food crops
- Preserving biodiversity
- Providing food for many species
- Biological clean-up
- Capturing carbon



How the loss of insects affects wildlife & biodiversity

- Insects are disappearing at an alarming rate
- The loss of either a PLANT or an INSECT species would impact the balance of functioning in the ecosystem
- Insects are an **essential food source** for many amphibians, reptiles, birds, and mammals



HOW many acres of lawns??



The US contains over 40 million acres of lawn, A.K.A. "turf grass"

Manicured lawns = ECOLOGICAL DESERTS



Non-native species

No biodiversity

No available food/nectar

No wildlife habitat

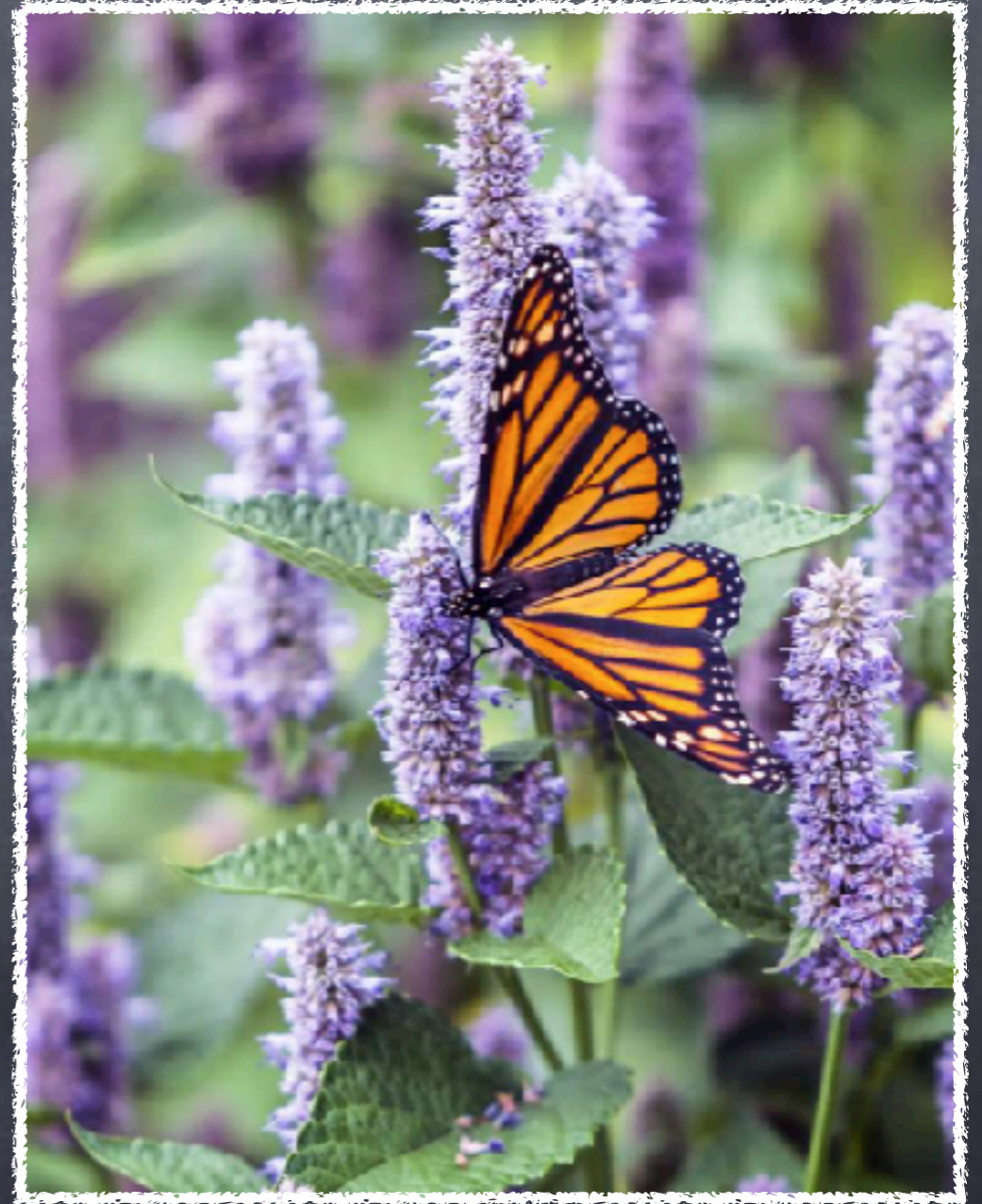
If you choose to have a lawn



- Only as large as you **N-E-E-D**
- Incorporate lawn alternatives / ground covers
- Avoid herbicides / pesticides
- Mow less - every 2-3 weeks with high blades (STUDY...)
- Create a native meadowing area

NATIVE plants have ecosystem benefits

- provide much better food for insects
- benefit from close relationships with other local organisms over 1000's of years
- adapt better to local soil without amendments
- require less weeding, watering, and mulching!



Use native species not cultivars

Why ?

Greater
ecological
value



“Cardinal Flower”

Lobelia cardinalis

Mean nectar: 5.47 μL \pm 4.13



“Cardinal Flower”

Lobelia x speciosa ‘Fan Scarlet’

Mean nectar: 0.72 μL \pm 0.30

"Straight" native plant species have the greatest wildlife benefits

Plants that

- have optimal nectar
- are host plants for moths/
butterflies
- Attract many pollinator species
- Support at-risk pollinators

Native

New England Aster



Aster cultivar
'Alma Potschke'

Include HOST PLANTS

Plants that organisms
live on and off of



- Painted Lady and Pussytoes
- Monarchs and milkweed plants
- Black swallowtails and dill, rue, fennel, and parsley

NATIVE SHRUBS - host many native butterflies & moths

WILLOWS

Attract

399 species
of butterflies
and moths!



Cranberries/
Blueberries
Attract

282 species
of butterflies
and moths!

Use Keystone plants!

Example - OAK TREES

- Host to over 400 caterpillar species
- **More CATERPILLARS**
= More BIRDS!
- One of the most valuable wildlife food resources
- **More than a hundred** vertebrates in the US eat acorns



Avoid all the "CIDES"

Neonicotinoids are neurotoxins that

- Impair bee learning ability and reproduction
- Disorient: navigation and food collection
- Kill bees after multiple visits to plants
- Increase susceptibility to diseases



Glyphosate, AKA RoundUp

- Wipes out soil microorganisms
- Weakens insects' immune system
- Makes insects more susceptible to microbial pathogens.

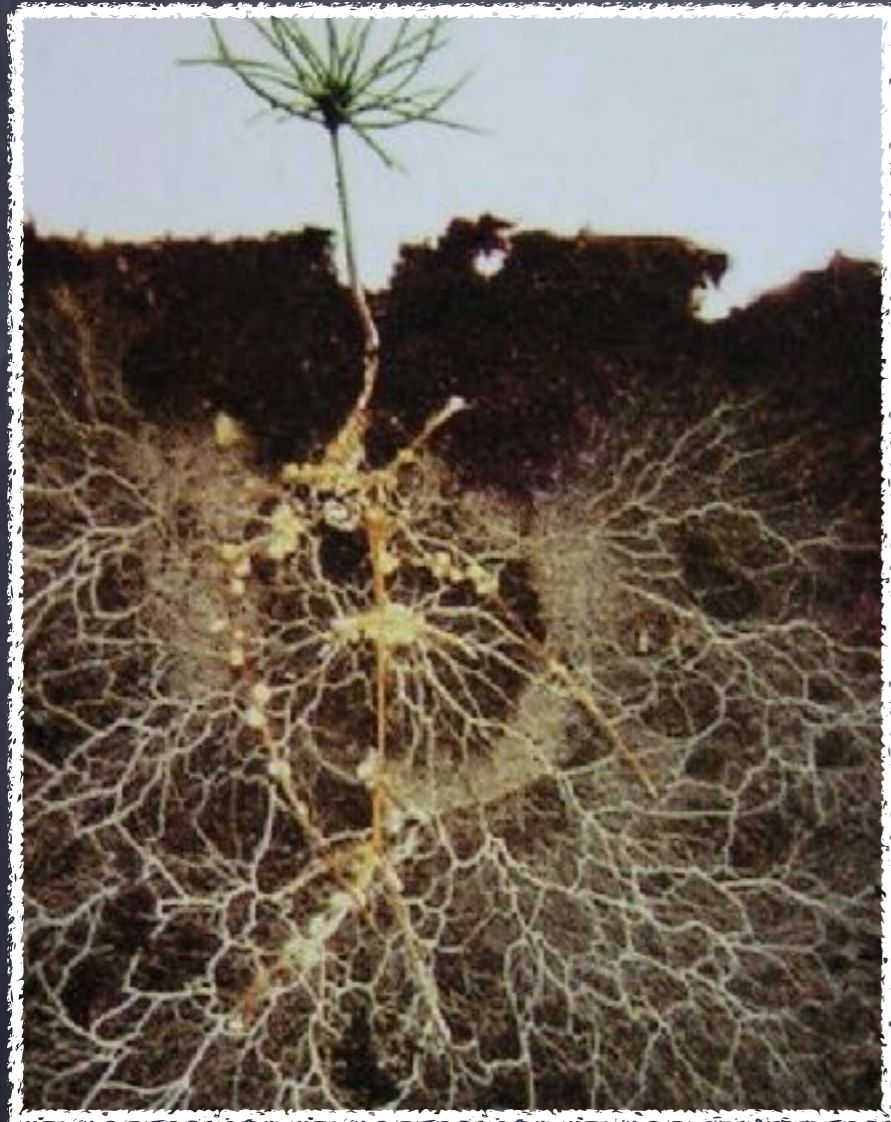


WATCH OUT!

- Growers often use pesticides to create "perfect plants" for their customers
- *Always ASK* garden centers for plants, seeds, and soil free of herbicides and pesticides

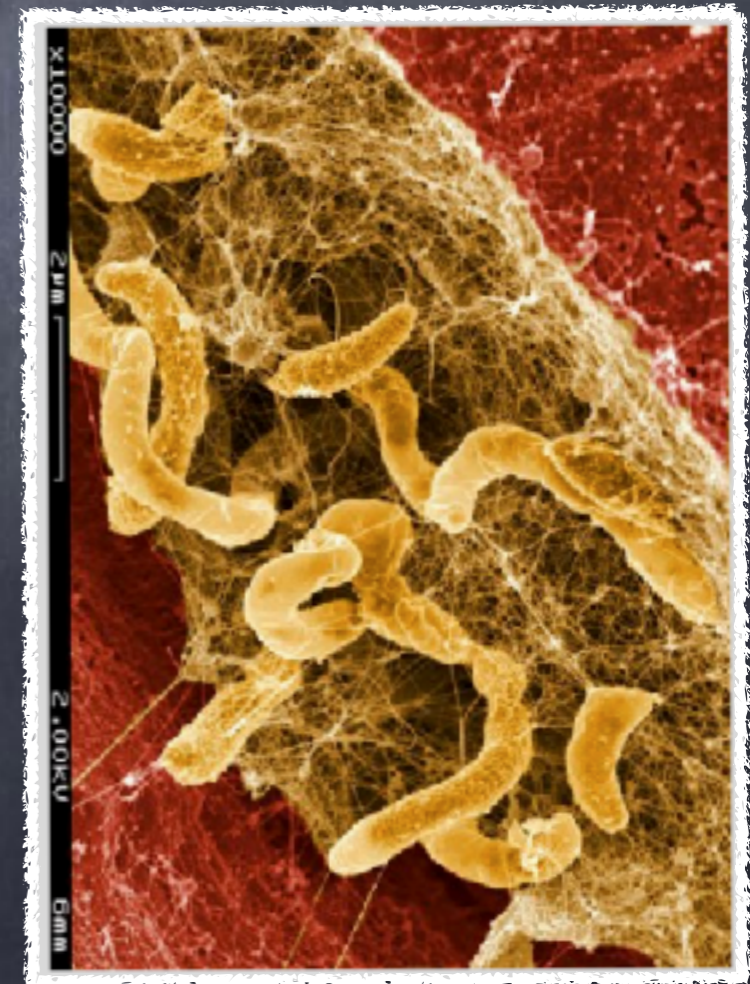


Biodiversity MATTERS below ground!



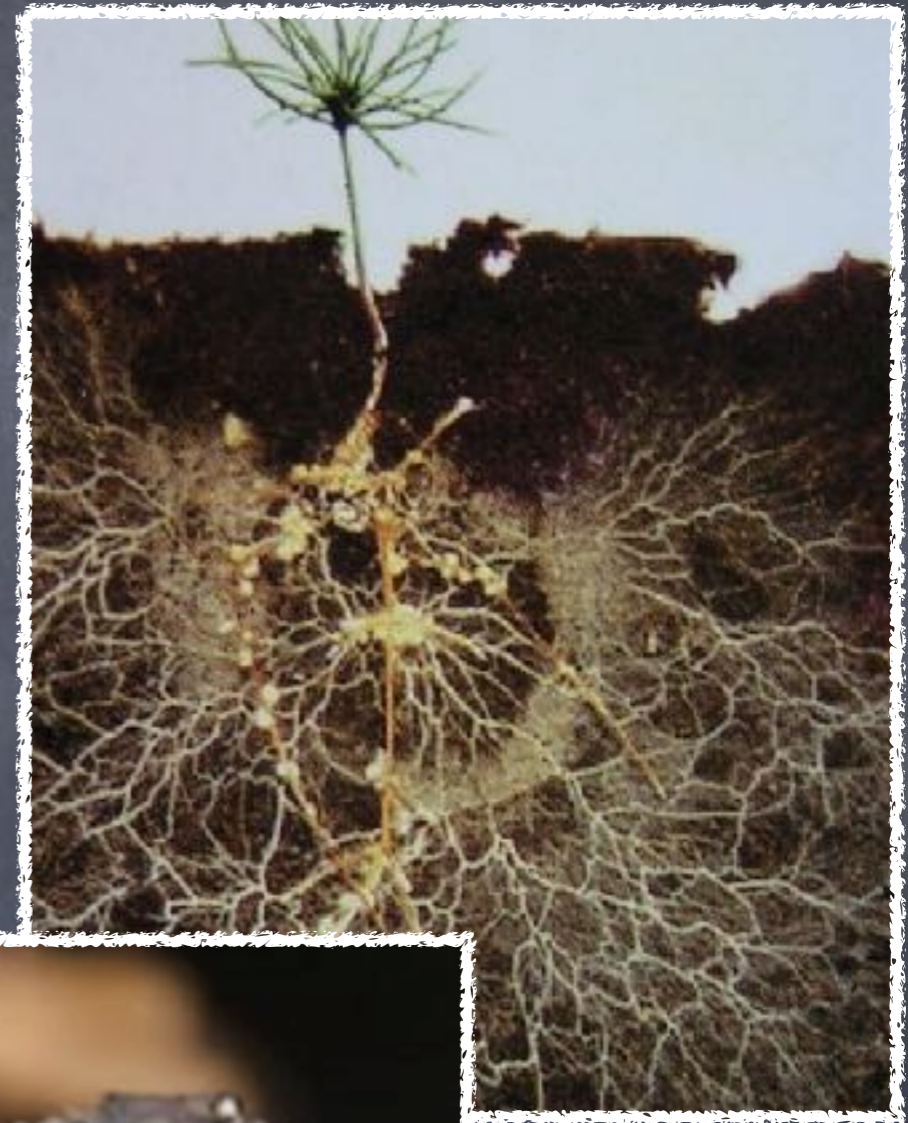
A mycorrhizal network of tiny threads called mycelia forming nodes with roots

Microorganisms
(a.k.a., Microbes)



Fungi / mycorrhizal network

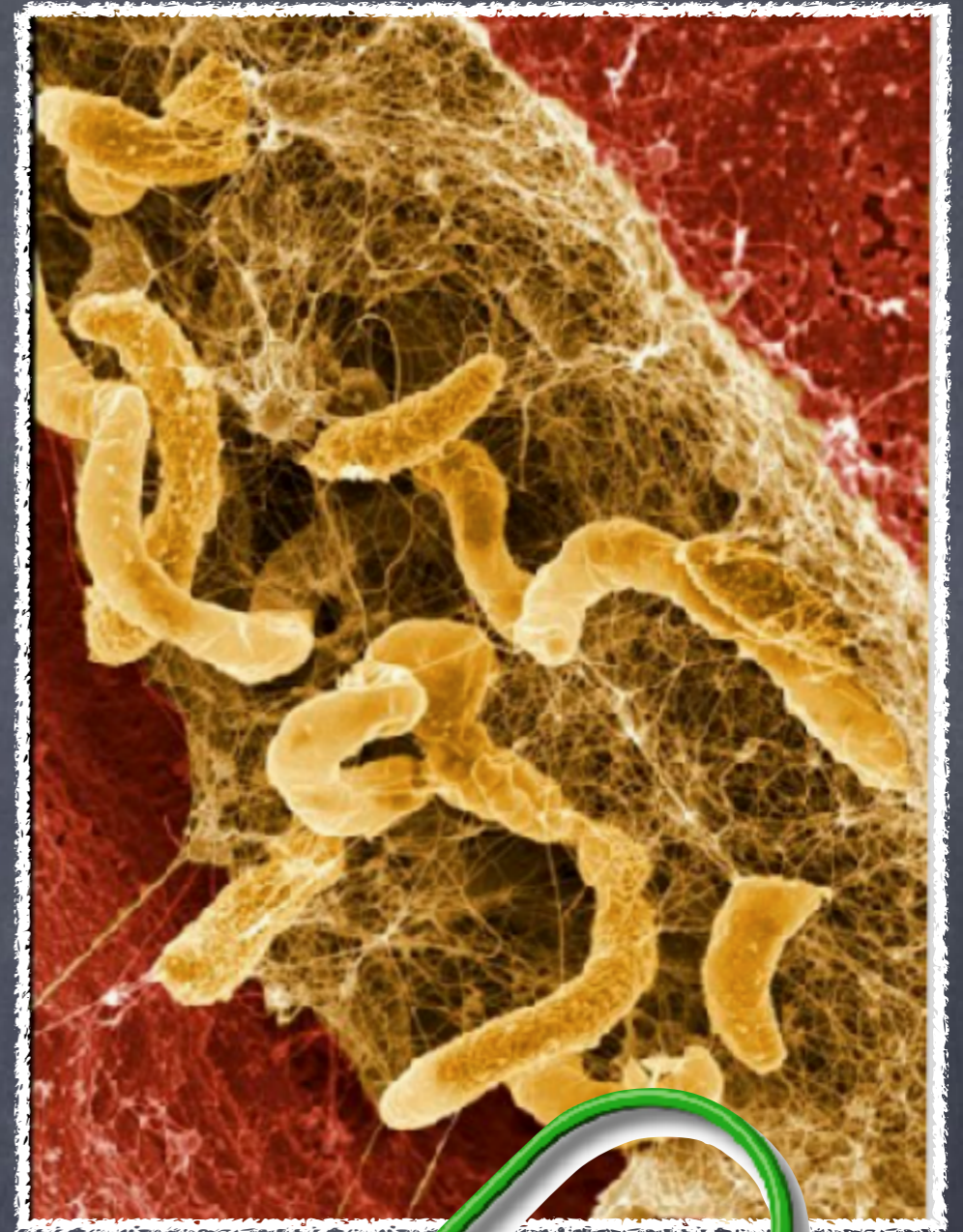
- Tiny threads called **mycelia** form nodes with roots
- Help species survive in difficult conditions
- Allow plants to exchange water, nutrients, and information more easily through their roots
- Transfer and store carbon in plants and soil
- Support beneficial bacteria



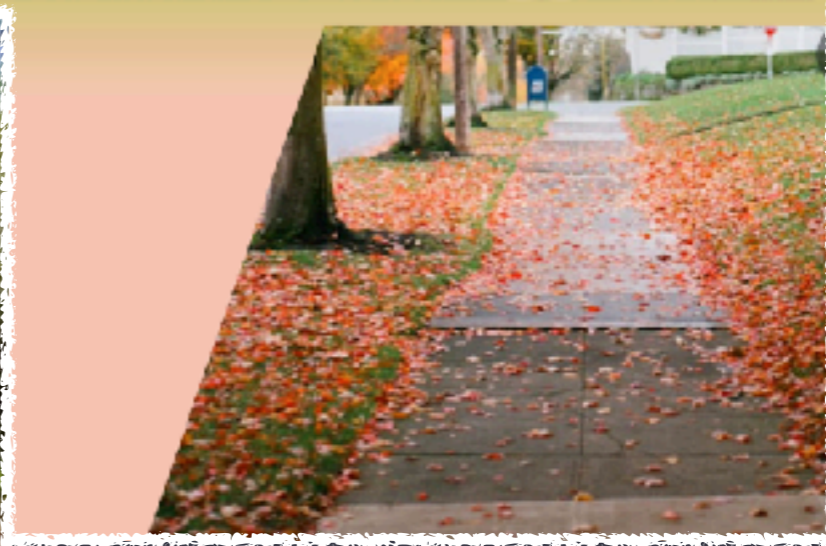
Microorganisms (a.k.a., Microbes)

1 gram of healthy soil
contains 100,000 - 1,000,000
living microbes

- Decompose organic materials
- Recycle nutrients
- Earth worms, termites, and ants ingest and tunnel and improve soil structure
- Millipedes break down dead plant tissue



Humans maintain many kinds of routes for human travel



Pollinator Pathways are vital to:

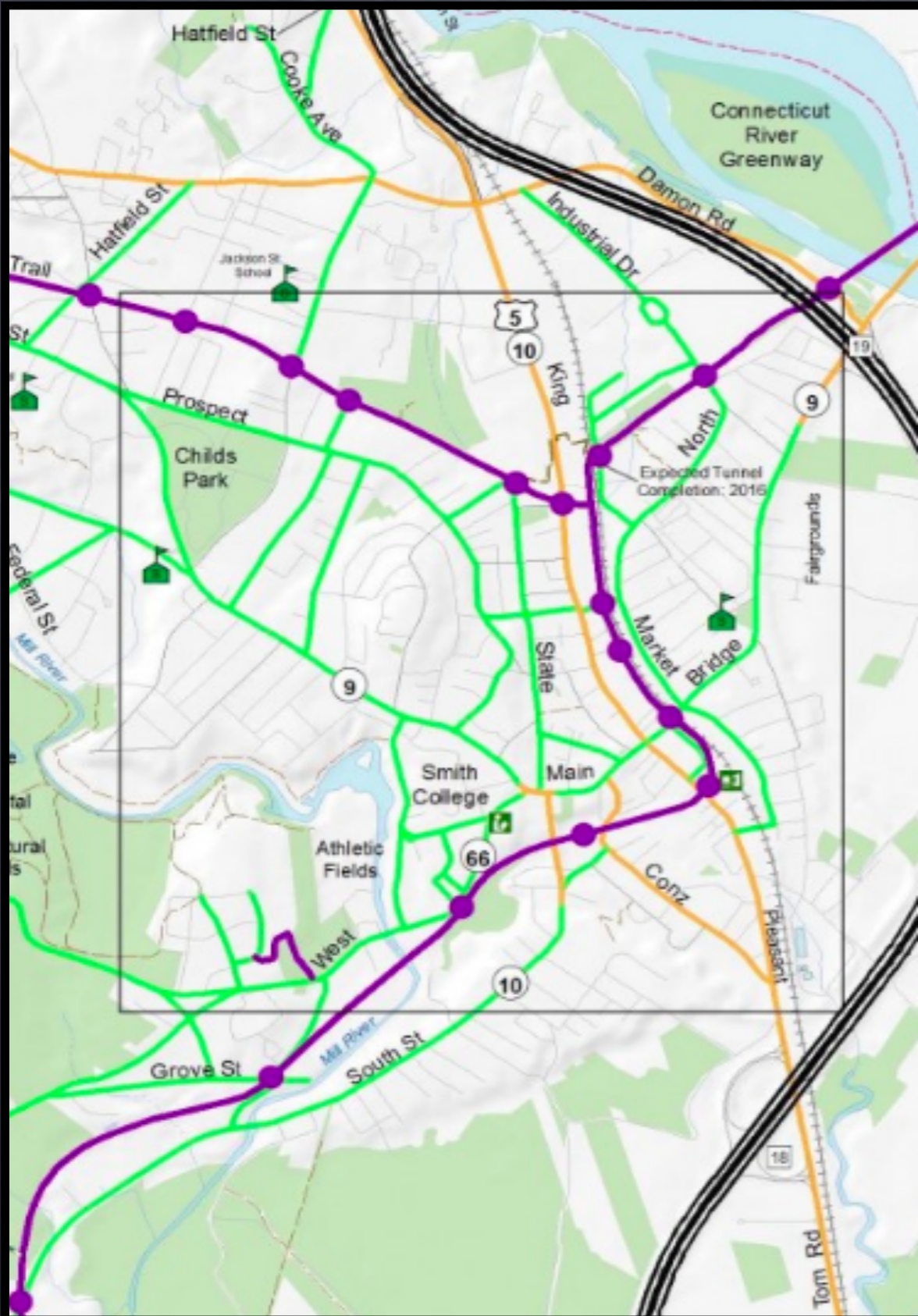
REPAIRING fragmented landscapes,

CREATING continuous bee foraging,

and **BUILDING** pollinator resiliency

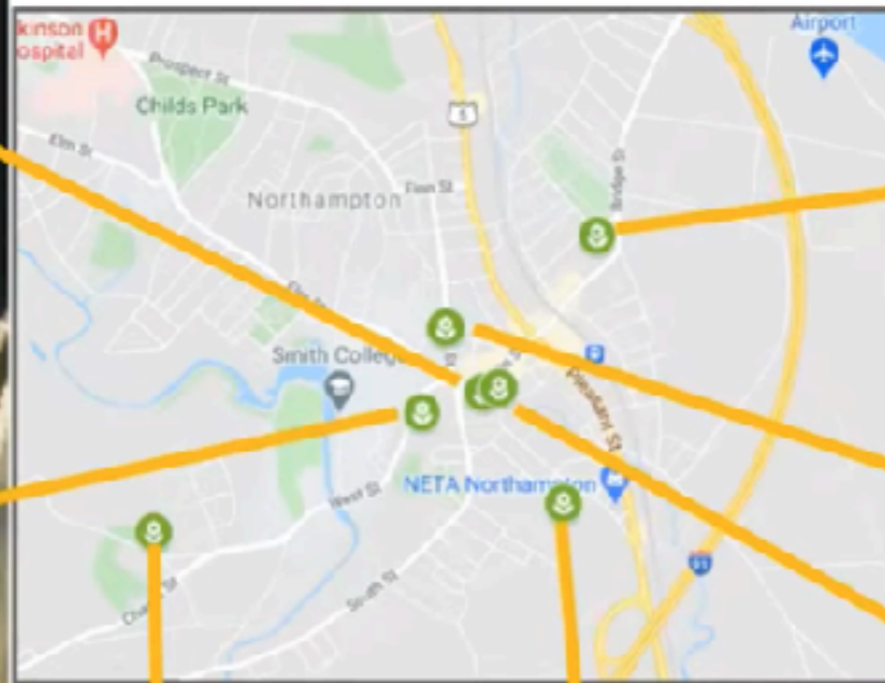
EXAMPLE:
Northampton's
Pollinator Pathway

MORE native plants and trees
= MORE native pollinators
= MORE native birds



A variety of ANCHOR plantings

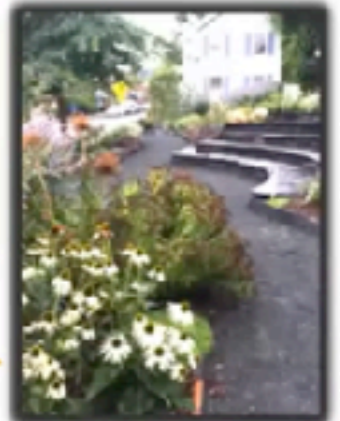
Layout of anchor plantings



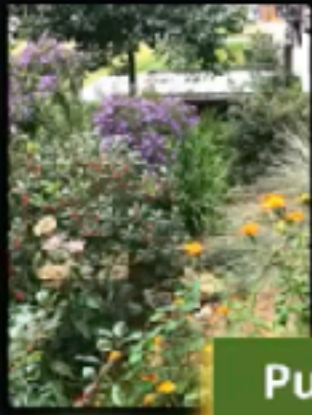
Bridge Street School



Hungry Ghost Bread



Pulaski Park



Forbes Library



Community Garden



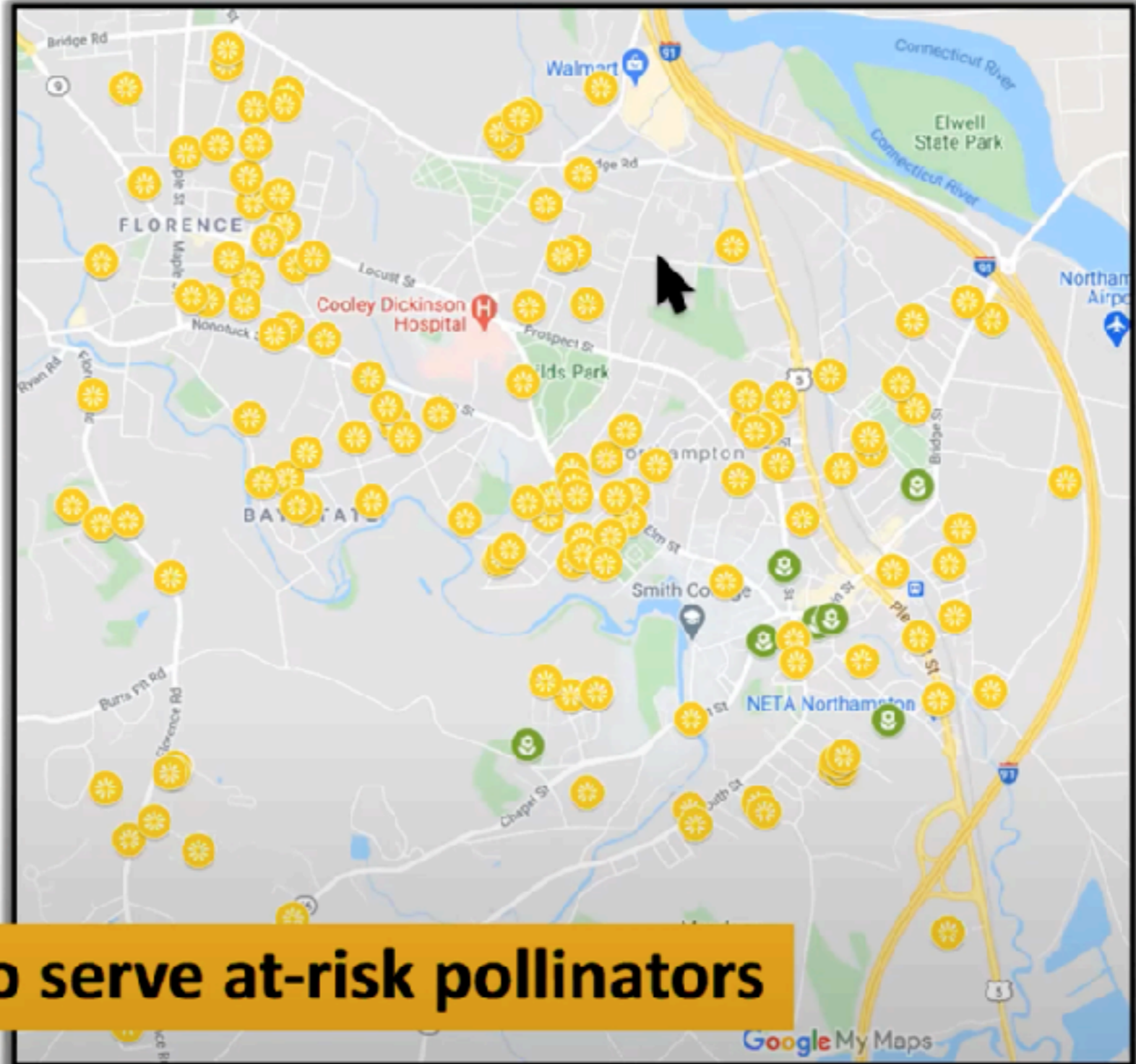
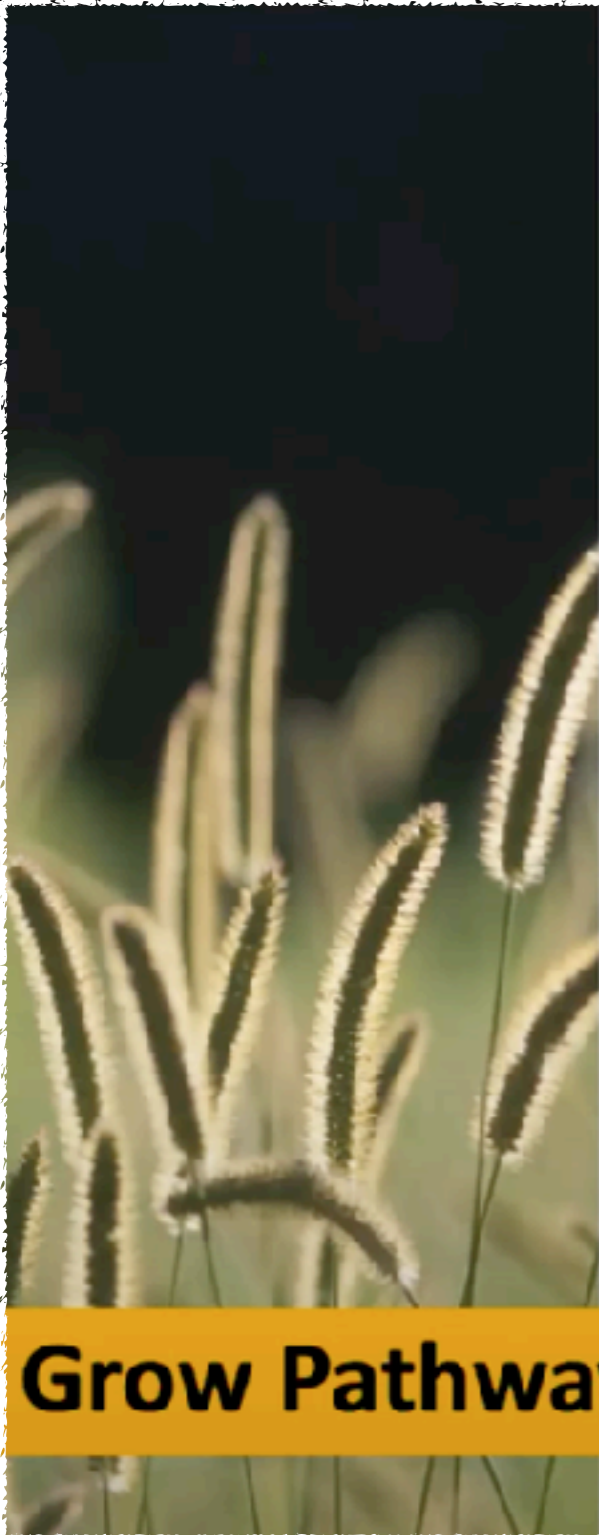
Senior Center



City Hall (Crafts Ave)



Households participating



Grow Pathway to serve at-risk pollinators

PART 2 -

June 8th at 6:00 pm
to hear Heidi Dollard

***"Transform Your Yard to
Support Pollinators:
A 12 Step Program"***



Choosing plants for your yard



- Plants for nectar and pollen
- Spring, summer, fall blooms
- Variety of colors, shapes, and heights
- 70% native "straight species"
- Plants that support at-risk pollinators



And much, much more about

- ***Planning and evaluating***
- ***Garden design tips***
- ***All about native plants***
- ***Flowers and shrubs to choose and why***
- ***Plant lists and best sources***

Creating any garden is
all about JOY



What could
South Hadley
residents
create together?



Resources to explore

- MassPollinatorNetwork.org
 - Plant lists by soil/light/wetness conditions
 - Regional nurseries specializing in native plants:
 - Speakers - live/online and past recordings
 - Info on pesticides
- XERCES Society
 - Plant lists
 - Habitat creation
 - Books and materials

