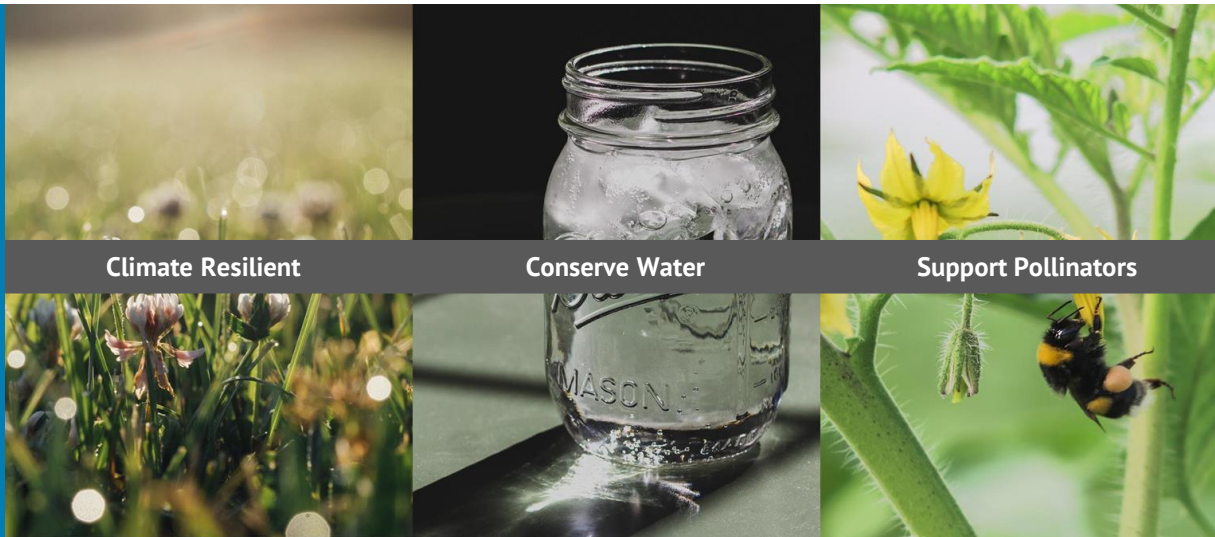


Twin City Seed Workshop: Conservation-Friendly Lawns



Presented by: James Wolfin,
Conservation Specialist

Function of the turfgrass lawn



Kentucky Bluegrass Lawns (*Poa pratensis*)

Require:

- 3 pounds of Nitrogen per thousand square feet per year
- Regular mowing (every 7-10 days)
- Regular watering (1 inch per week)

Our Solution

Turf Alternative Options

1. Low Maintenance Turf
2. Pollinator-Friendly Lawns

Low Maintenance Turf

(Option 1)


Improve sustainability without sacrificing aesthetics

Options for high traffic and low traffic

Low-Maintenance Characteristics

- Drought tolerance
- Slow vertical growth rate
- Low fertility needs





What if you want a
pristine lawn with reduced
environmental impact?

Tall Fescue Turfgrass (*Festuca arundinacea*)

- Higher quality ratings than Kentucky bluegrass



Tall Fescue Turfgrass (*Festuca arundinacea*)

- Higher quality ratings than Kentucky bluegrass
- The most drought tolerant turfgrass for cool-season climates



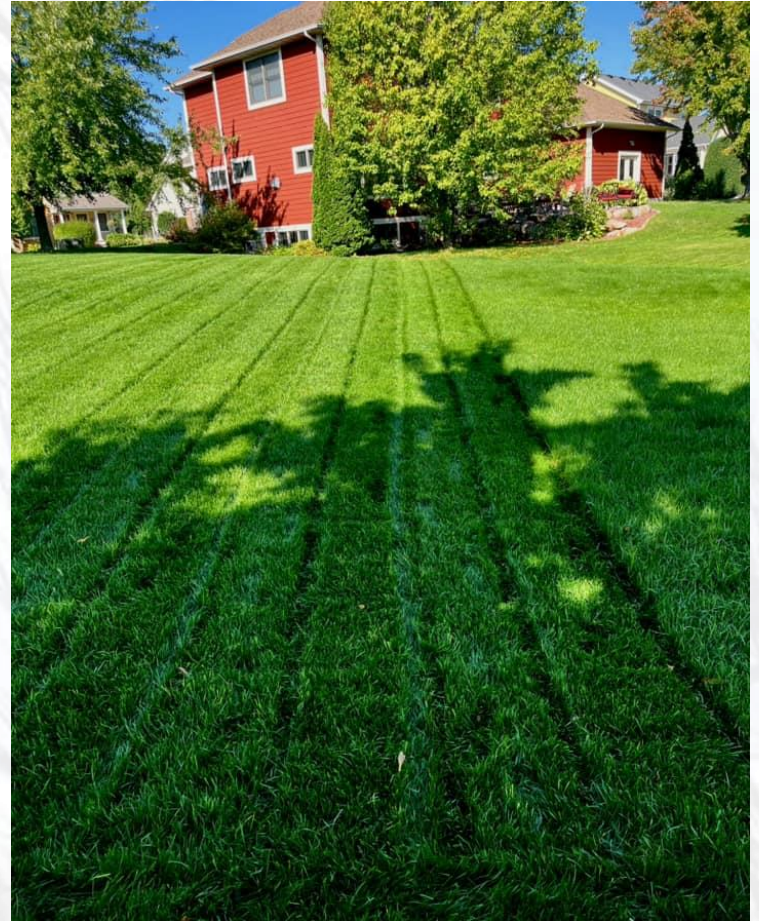
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- Fantastic wear tolerance
- Excels in sun and shade



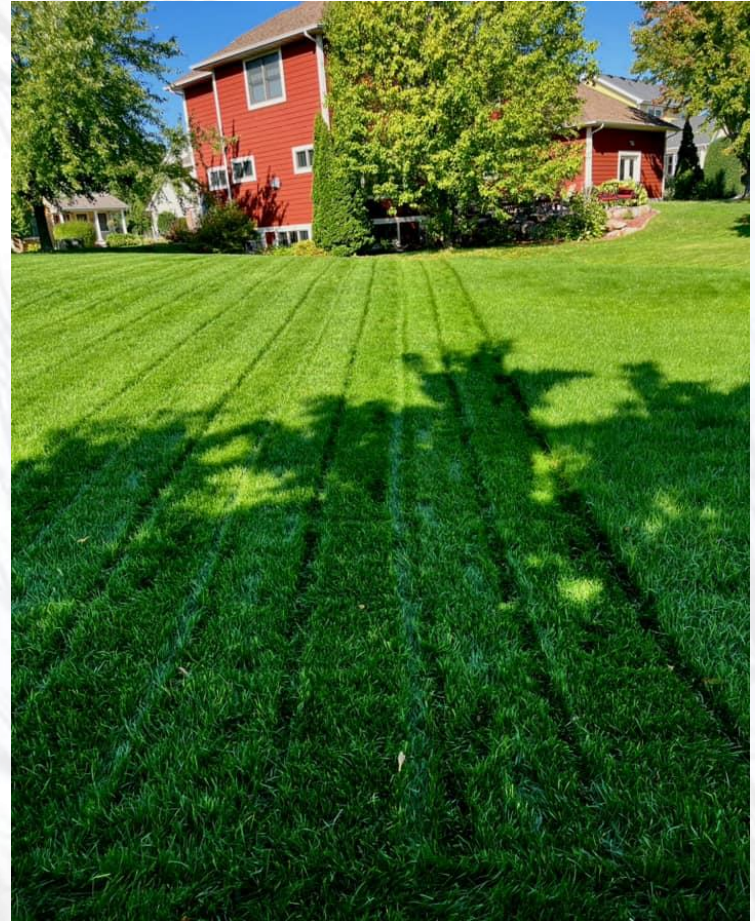
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- Fantastic wear tolerance
- Excels in sun and shade
- 2/3 fertilizer requirement of Kentucky bluegrasses.
- **Similar mowing requirement to KBG**






Kentucky Bluegrass



Tall fescue



What if you are willing to
slightly alter the traditional
aesthetic for *dramatically*
improved sustainability?

Fine Fescues (*Festuca sp.*)

- Low fertility needs (1/6th of Kentucky bluegrass)
- Slow-growing (suggested mowing 2-4x per year)
- Drought tolerance
- Shade or sun
- Winter hardy
- Quick germination
- Allelopathy

Negatives

- Low traffic tolerance
- Snow mold



Stages of Fine fescue turfgrass

Living Laboratory

*It all
+ adds up.*

LOW-MAINTENANCE TURFGRASS

Reducing the amount of
water and fertilizer needed
to maintain a pleasing and
functional campus.



italladdsup.umn.edu/livinglab

UNIVERSITY OF MINNESOTA

Delivering the Future

Stages of Fine fescue turfgrass

Living Laboratory

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UNIVERSITY OF MINNESOTA
Delve to Discover

Stages of Fine fescue turfgrass



Table 8 Estimated carbon emissions due to home lawn turfgrass maintenance practices for the US

Maintenance practice	HCC of maintenance emissions (Gg Ce year ⁻¹)	
	Low management	High management
N fertilizer	626.7	3,760.2
P fertilizer	0.0	0.0
K fertilizer	9.1	54.6
Total fertilizer	635.8	3,814.8
Mowing fuel combustion	1,868.3	3,736.6
Mean	2,504.1	7,551.4

Day 45 of no rainfall or irrigation

A lush garden filled with various flowers, including purple and white blossoms. In the center, a circular sign is visible, partially obscured by the text. The sign features a QR code and the text "Protect Pollinators in Your Lawn".

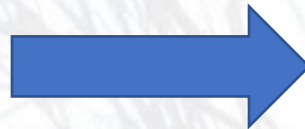
Pollinator Lawns (Option 2)

**What if you want something that
is both eco-friendly and
pollinator-friendly?**

Our Solution

Transform the Urban Lawn

Traditional turf



Bee friendly forage



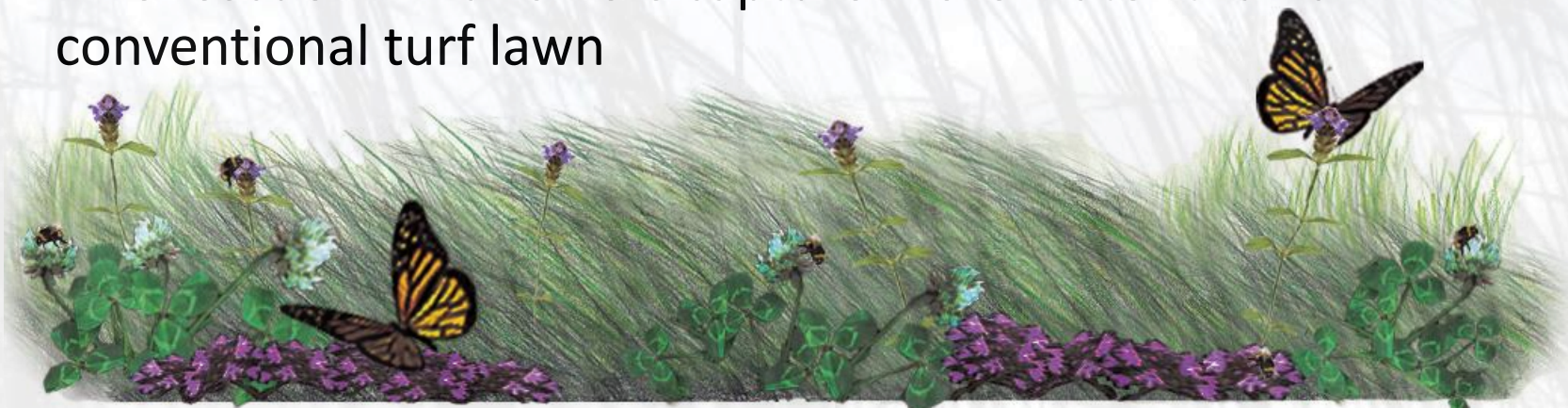
Encouraging pollinators in
turfgrass settings



“Flowering Lawn”

Goals of a Bee Lawn

- Low maintenance
 - Minimize lawn management (mowing, watering, weeding, fertilizing)
- Protect our pollinators
 - Incorporate flowers that provide high quality forage for our pollinators
- Improve water quality
 - Fine fescue + wildflowers capture more water than a conventional turf lawn



Low-Maintenance Characteristics

- Drought tolerance
- Slow vertical growth rate
- Low fertility needs



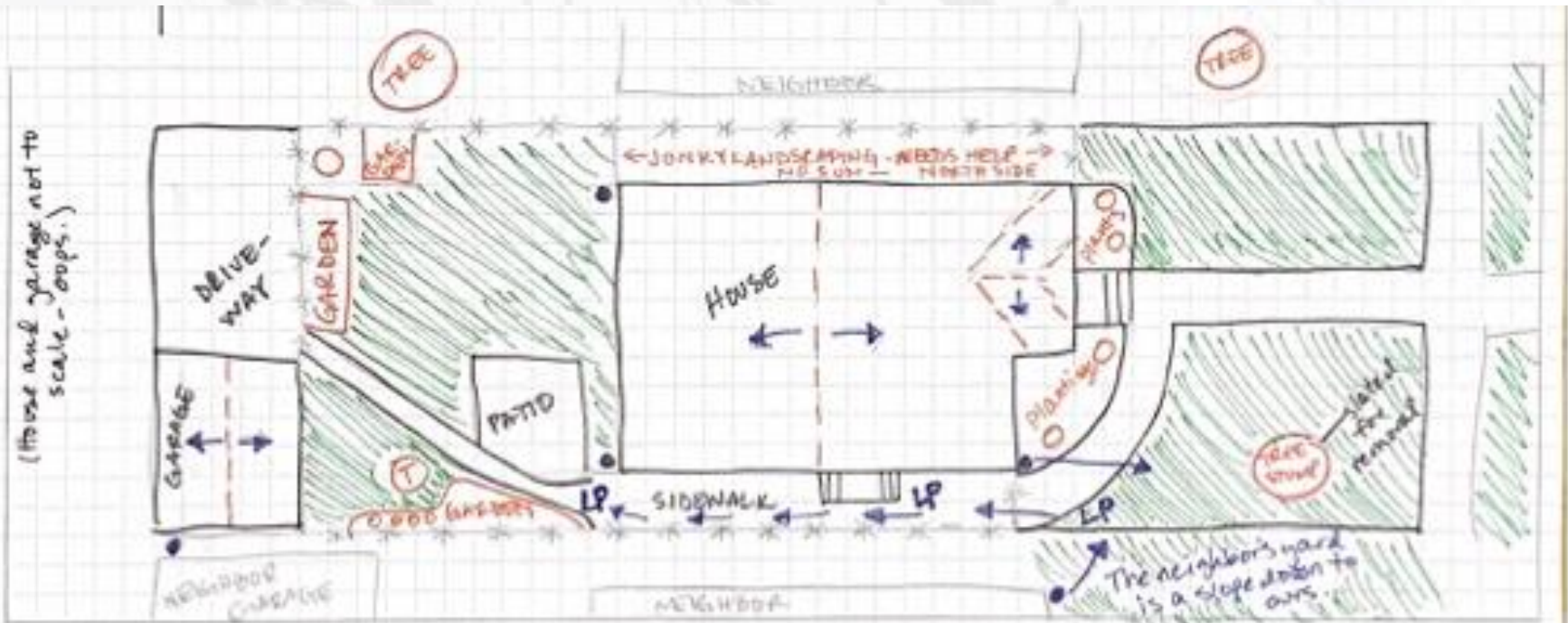
Pollinator protection



Bee lawns and stormwater conservation

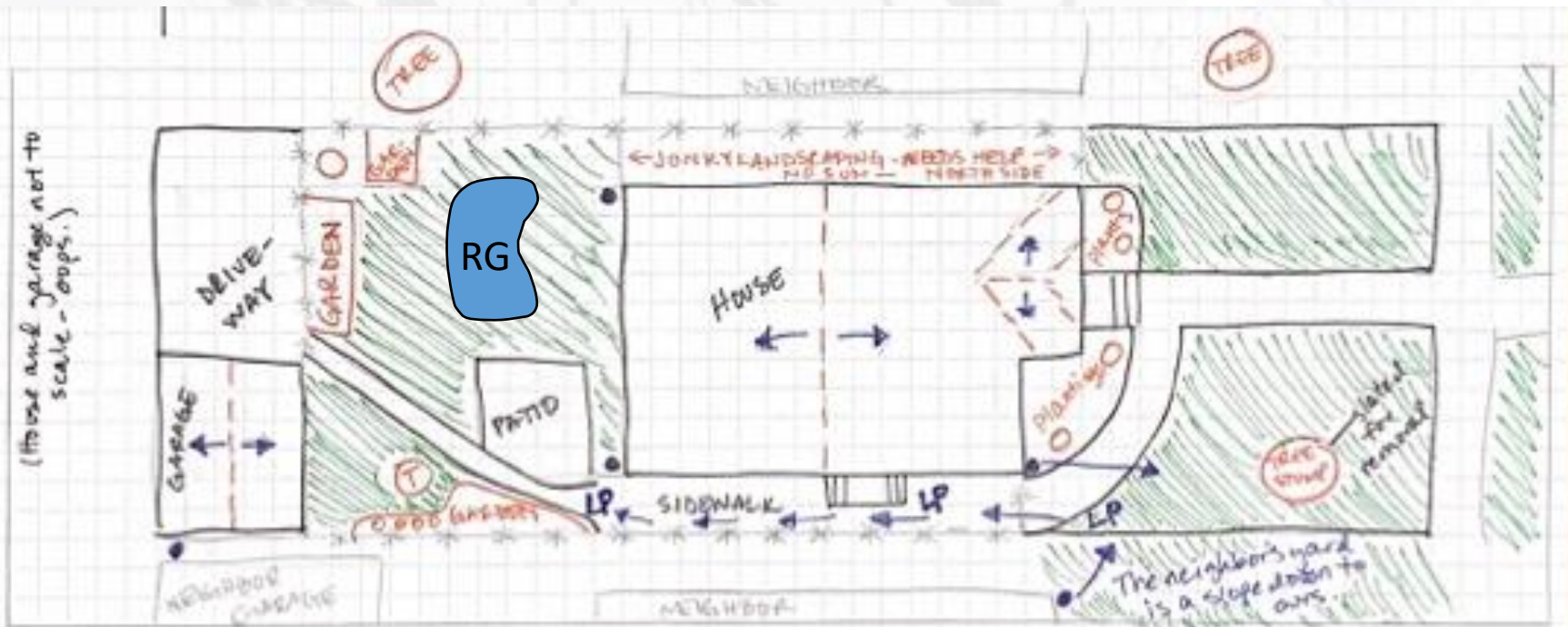


Bee lawns and stormwater conservation



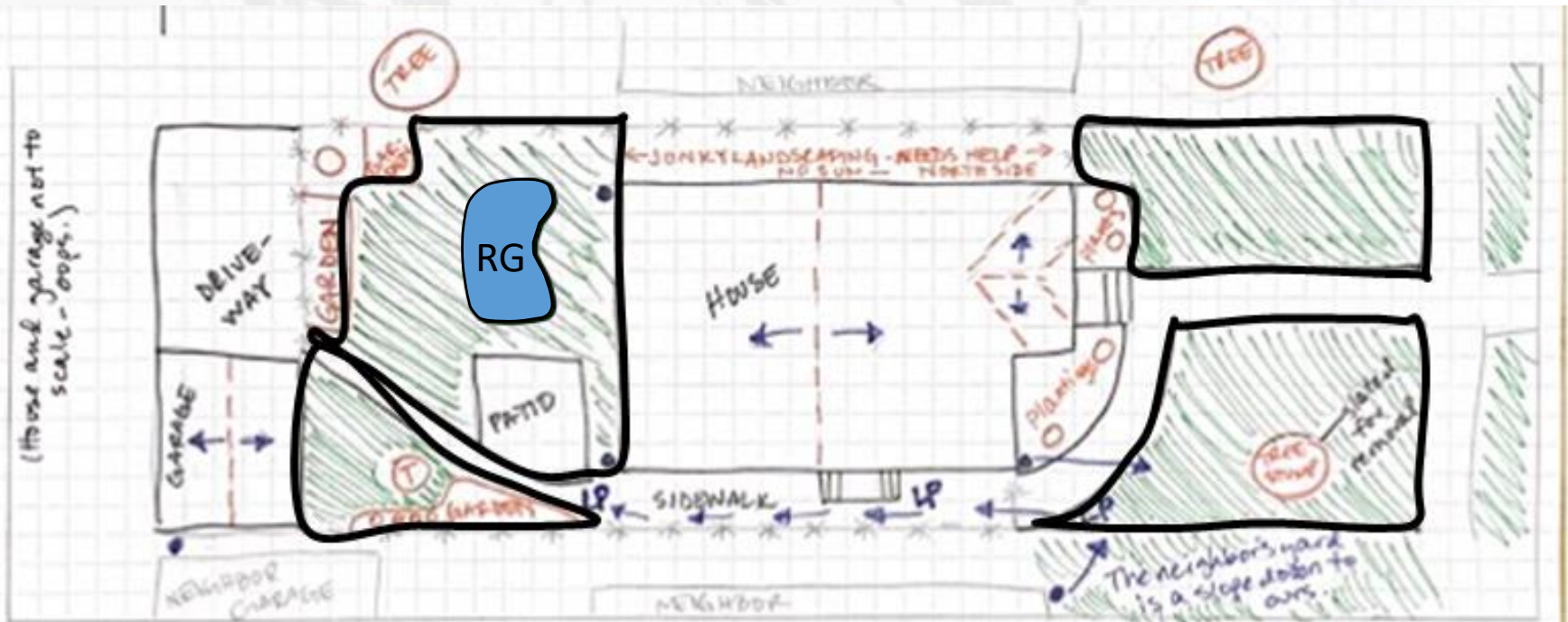
We are interested in a rain garden in our front and possibly backyards. We are also open to planning a grass-free front yard w/ vegetables and landscaping. The tree stump will be removed this spring - it's GIANT and will change the grade of the entire yard.

Bee lawns and stormwater conservation



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Elements of a bee lawn

- Build from the bottom up
 - Selecting a turf species
 - Selecting floral species
 - Who visits a bee lawn?



Fine Fescues (*Festuca sp.*)

- Uses: home lawns, parks, golf course fairways
- Positives
 - Low fertility needs
 - Slow-growing
 - Shade or sun
 - Drought tolerance
 - Winter hardy
 - Quick germination
 - Allelopathy
- Negatives
 - Low traffic tolerance
 - Snow mold



Preferred Floral Species

- Find floral species that will:
 - Establish in Minnesota soils
 - Serve as high quality forage for wild bees
 - Try to incorporate native flowers



Self Heal
(*Prunella vulgaris* ssp. *Lanceolata*)

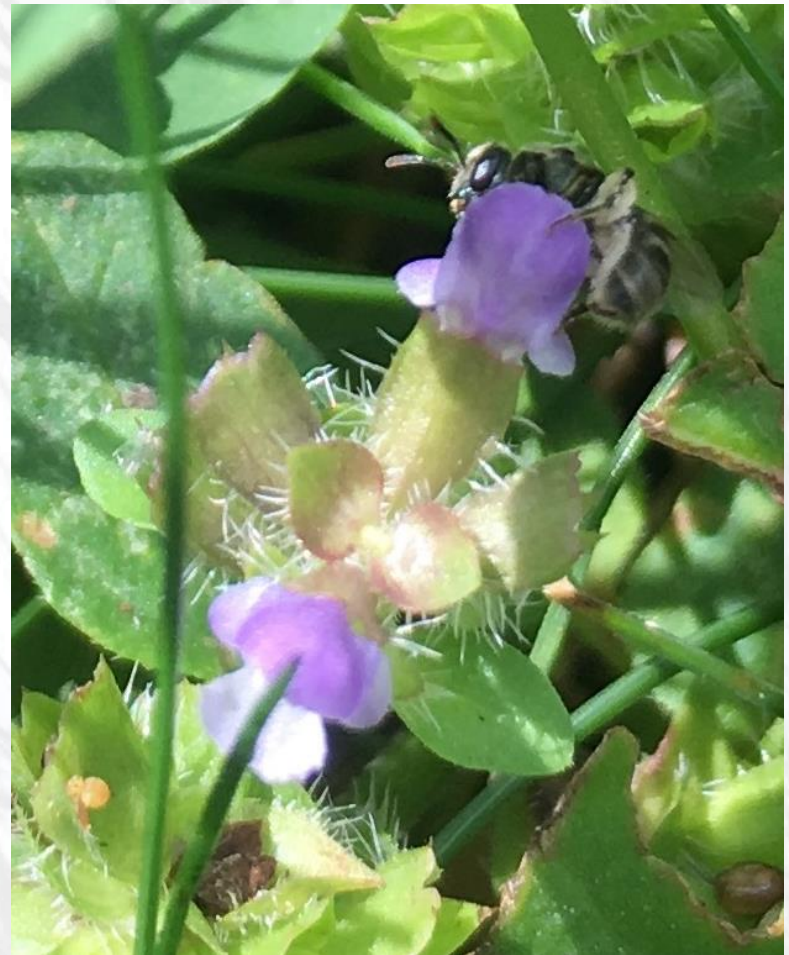


Ground Plum
(*Astragalus crassicarpus*)

Self Heal

(*Prunella vulgaris* ssp. *Lanceolata*)

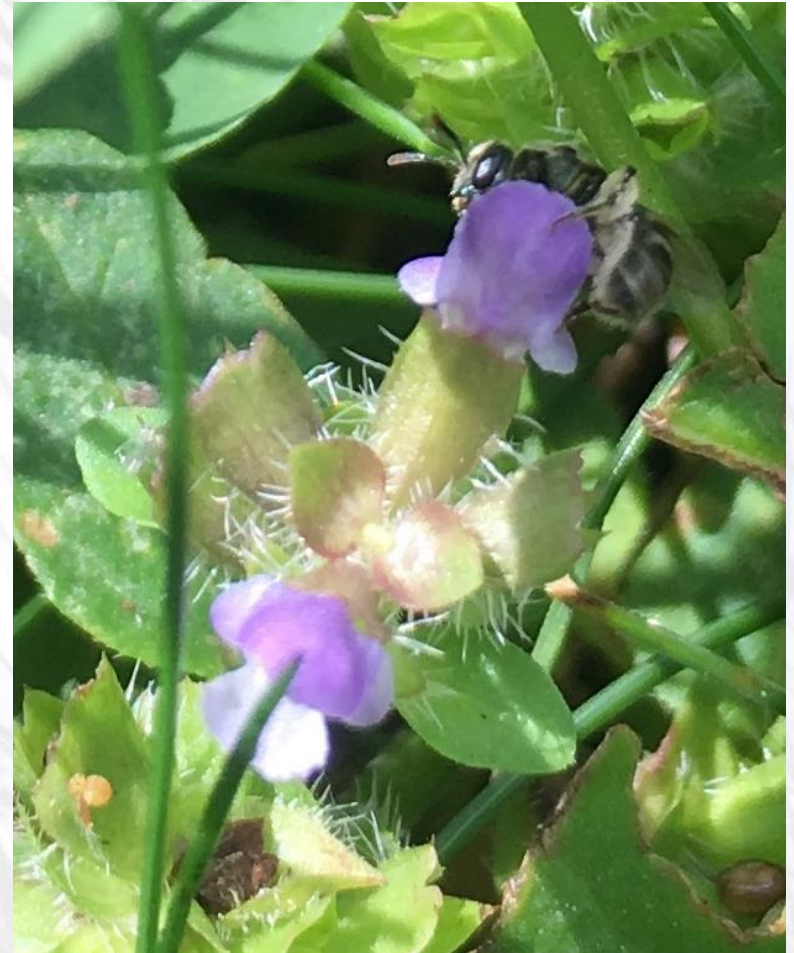
- Medium-large, whorled blooms
 - Larger bees (*Bombus*/*Apis*)
 - Smaller bees (*Lasioglossum*)
- Nectar and Pollen Source
- Full-part sun, moist soils





Self Heal (*Prunella vulgaris* ssp. *Lanceolata*)

More than 95% of visitors
observed on self-heal were
native species



Creeping thyme (*Thymus serpyllum*)

- Small, open blooms
 - Smaller bees
(*Andrena/Lasioglossum*)
- Drought tolerance and winter hardiness
- Deer deterrent



Creeping thyme (*Thymus serpyllum*)

- Small, open blooms
 - Smaller bees (*Augochlorella/Lasioglossum*)
 - Late blooming source of forage (Aug - Sept)
- Drought tolerance and winter hardiness
- Deer deterrent



Creeping thyme (*Thymus serpyllum*)

Creeping thyme is the
latest to bloom of all bee
lawn flowers!



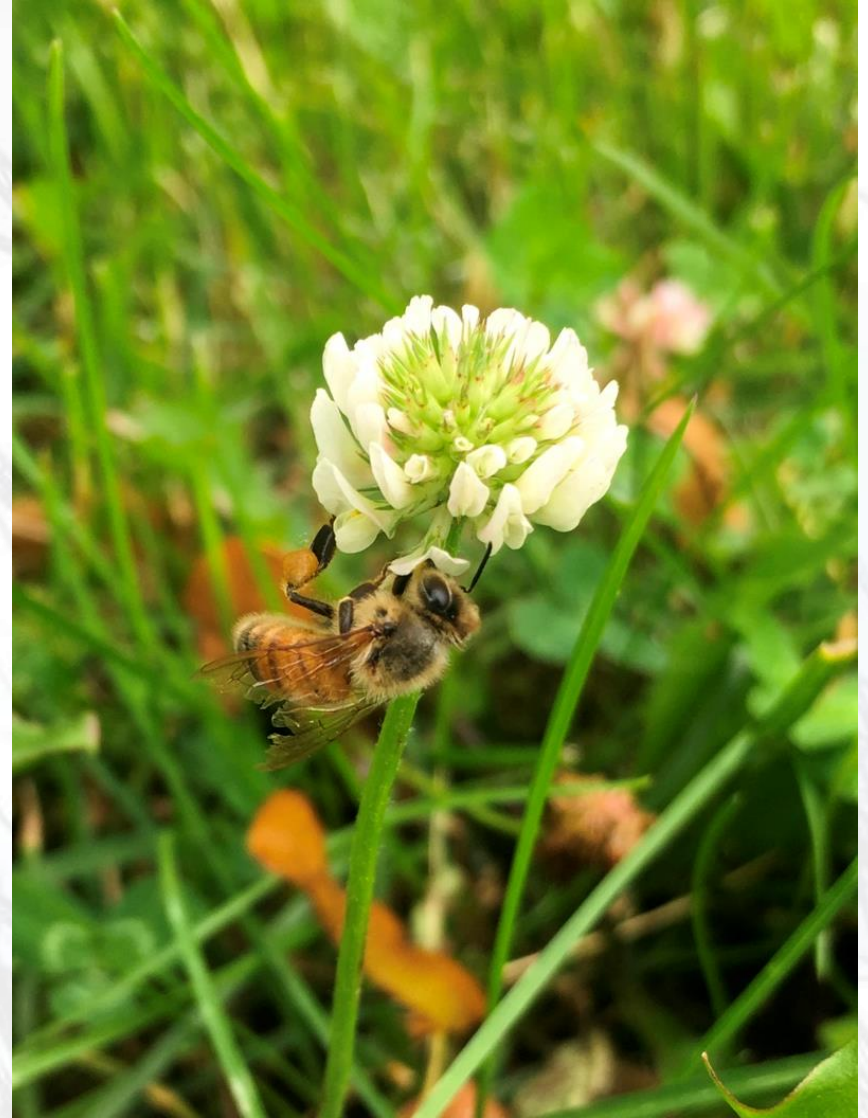
Dutch White Clover (*Trifolium repens*)

- Open, medium sized blooms
 - Small-large sized visitors
- Great source of pollen and nectar
- Nitrogen fixer



Dutch White Clover (*Trifolium repens*)

Clover is a critical source
of forage for honey bees
and native bees





More than 55 bee species use Dutch white clover as a source of forage in Minneapolis, including honey bees



More than 65 bee species use bee lawn flowers as a source of forage in Minneapolis. More than 15% of all bees in MN!



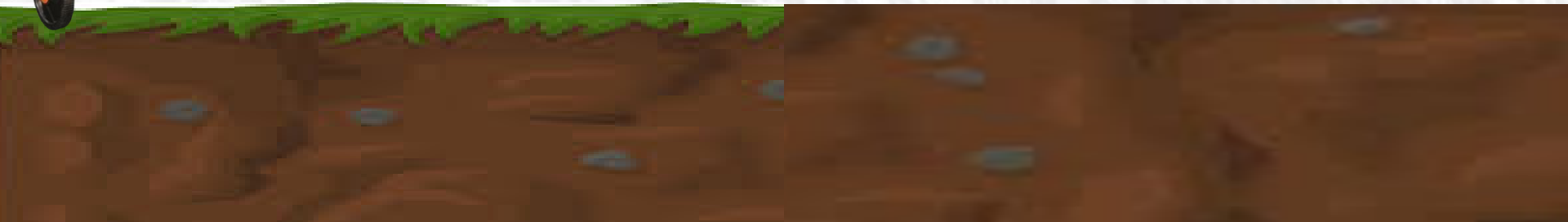
Installing a bee lawn

Overseeding VS new lawn renovation

Overseeding



New lawn renovation



Installing a bee lawn

Overseeding VS new lawn renovation

Overseeding

KYBG or fine fescue
Low weed presence



New lawn renovation

Tall fescue, ryegrass, other
High weed presence



Pollinator Lawn – Overseeding

When to overseed

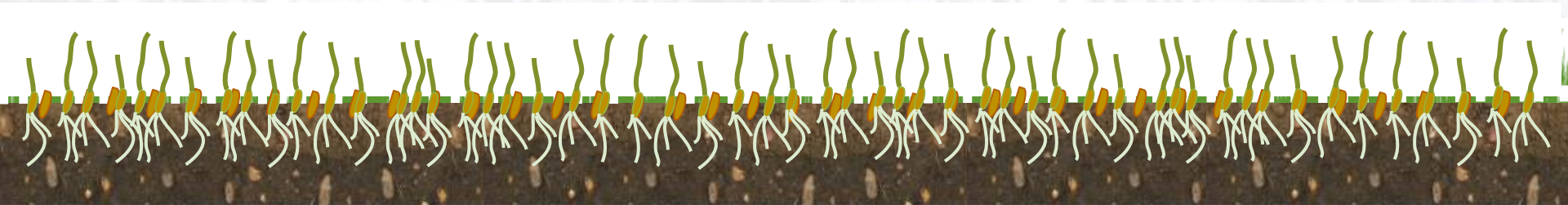
- Fine Fescue/Kentucky Bluegrass Lawn
- Limited weed infestation

1. Mow lawn as short as possible.

2. Rake clippings to expose as much soil as possible.

Pollinator Lawn – Overseeding

3. **Spread seed.** Compost or sand make good bulking agents.
4. Keep moist until sprouting, and then cut back on watering and stop fertilizing.



For seeding rates and more options and information see www.bluethumb.org/turfalternatives, or attend a Turf Alternatives Workshop in your area!

Pollinator Lawn – New Lawn Renovation

Basic Example and Instructions

*If the lawn doesn't have a bunch of creeping charlie or other aggressive invasives that will spread, this method may be right for you:

1. Remove turf by hand, machine or cultural method.
2. Add compost or soil amendments as needed.

For seeding rates and more options and information see www.bluethumb.org/turfalternatives, or attend a Turf Alternatives Workshop in your area!

Pollinator Lawn – New Lawn Renovation

3. Spread seed. Lightly rake soil to help seeds settle (don't submerge!).
4. Cover with germination blanket.
5. Keep moist until sprouting, and then cut back on watering and stop fertilizing.



For seeding rates and more options and information see www.bluethumb.org/turfalternatives, or attend a Turf Alternatives Workshop in your area!





Questions?