Metro Blooms DESIGN +BUILD

NNative Planting for PPollinators

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Metro Blooms Design+Build

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Metro Blooms

GROW. BLOOM. INSPIRE!

Metro Blooms is a 501(c)(3) nonprofit organization that partners with communities to create resilient landscapes and foster clean watersheds, embracing the values of equity and inclusion to solve environmental challenges.

Blue Thumb

PLANTING FOR CLEAN WATER™

Blue Thumb connects Minnesotans to resources that help them plant native gardens, rain gardens, and stabilize shorelines
with native plants to protect pollinators and improve water quality.

Metro Blooms DESIGN +BUILD

Our technical expertise resides in Metro Blooms Design+Build, a for-profit entity owned by and wholly supporting the mission of Metro Blooms. Design+Build provides design, install and maintenance services for Metro Blooms programs, projects and other clients.

Steps for a Pollinator Planting

1. Assessing your site
2. Making a Plan and Design
3. Installation
4. Maintenance

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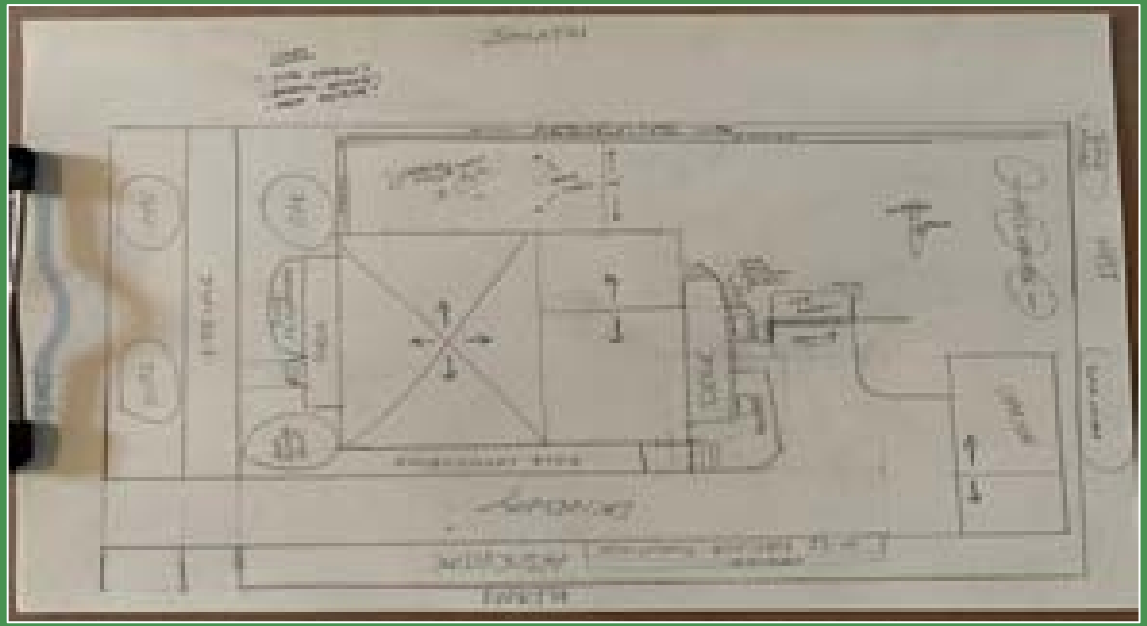
Site Assessment

Things to consider when assessing a site:

- Sunlight: full sun, part sun/part shade, full shade
- Soil: soil type, moisture, and soil health measures
- Existing structures, hardscapes, vegetation
- Stormwater runoff: flow, standing water
- Usage needs: access, recreation, visibility



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Designing a Pollinator Planting

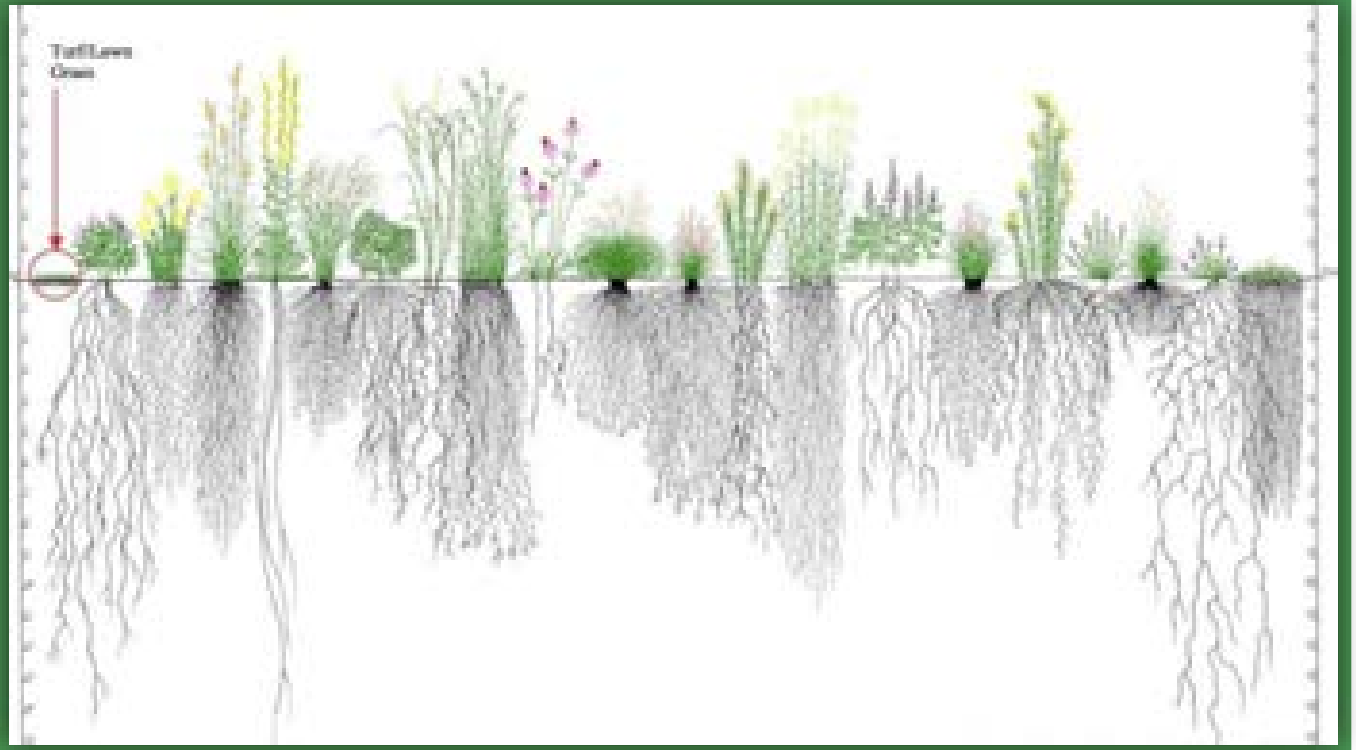
Considerations for a pollinator planting:

- Diversity of blooming plants across the seasons
- Host plants for larva
- Access to nesting sites
- Low chemical input

Aleli Balagtas

Designing with native plants

- Native plants are resilient!
- Choose the right plant, for the right place:
  - Sun/shade
  - Soil moisture
  - Plant height



Designing with Trees and Shrubs

- Trees can provide: structure, layers, early blooms, shade, wind screen
- Trees and shrubs are important host sites for many lepidoptera, and provide early forage for pollinators in spring
- Lower maintenance pollinator-friendly planting

Mall Apartments

Design Styles

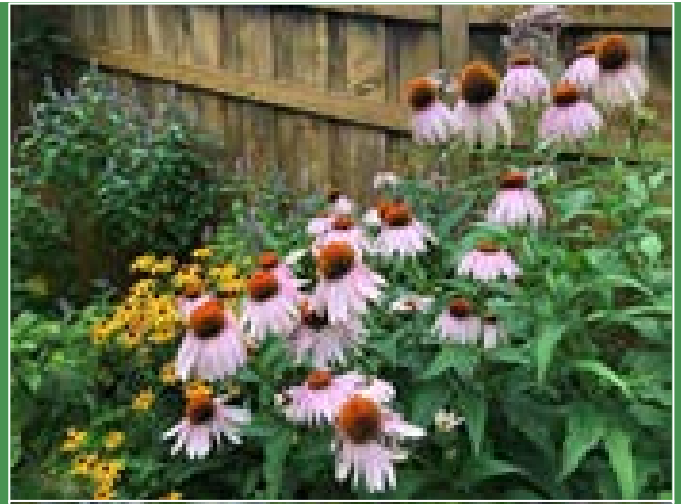
Plant Massing: Sunny Sites

Species planted in groups for visual impact

- Clumps of 3, 5 or 7 plants
- Also helps identify plants during garden maintenance

Benefits pollinators

- Large groupings of blooms provide forage throughout the season
- But don't forget to plant diverse species!



Design Styles

Plant Massing: Shady Sites

- Texture helps add definition while plants are not blooming
  - Texture can be created with leaf shape and color variation
- Spring blooms great early-season interest!




Design Styles

Matrix Plantings

- Useful in large planted areas
- “Matrix” of primary plant-
  - Sedges for wetter areas
  - Grasses for drier areas

… interspersed with scattered flowering native plants

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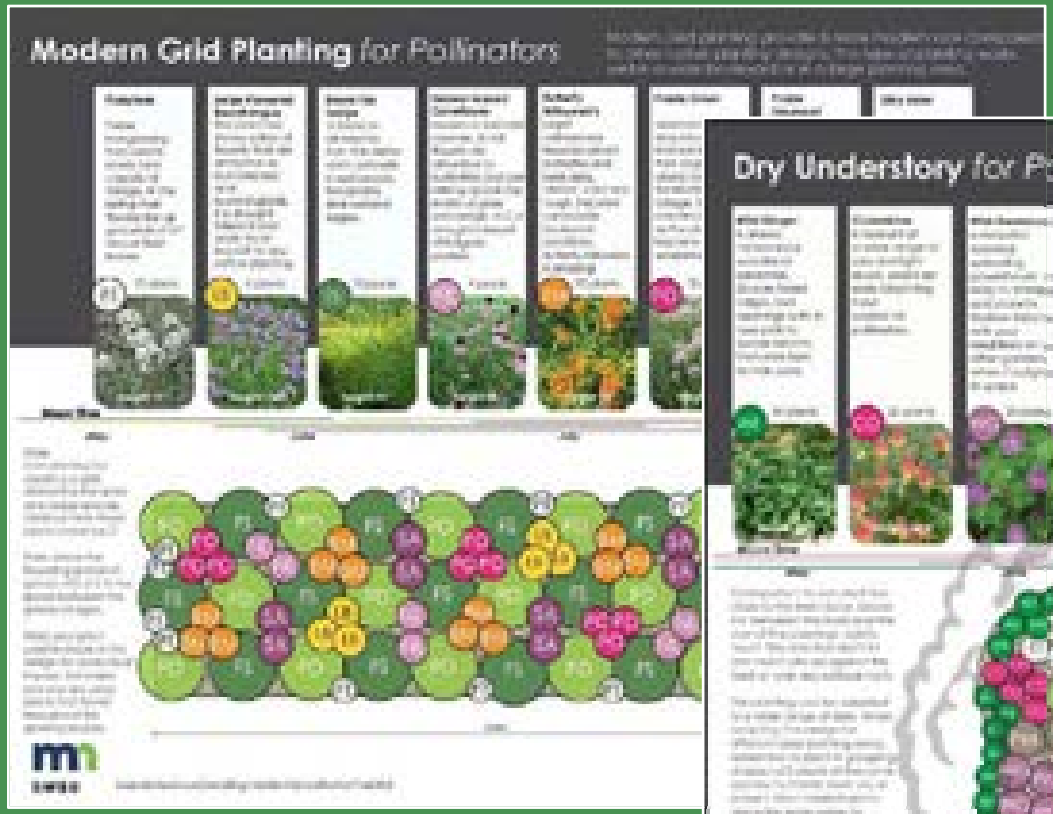

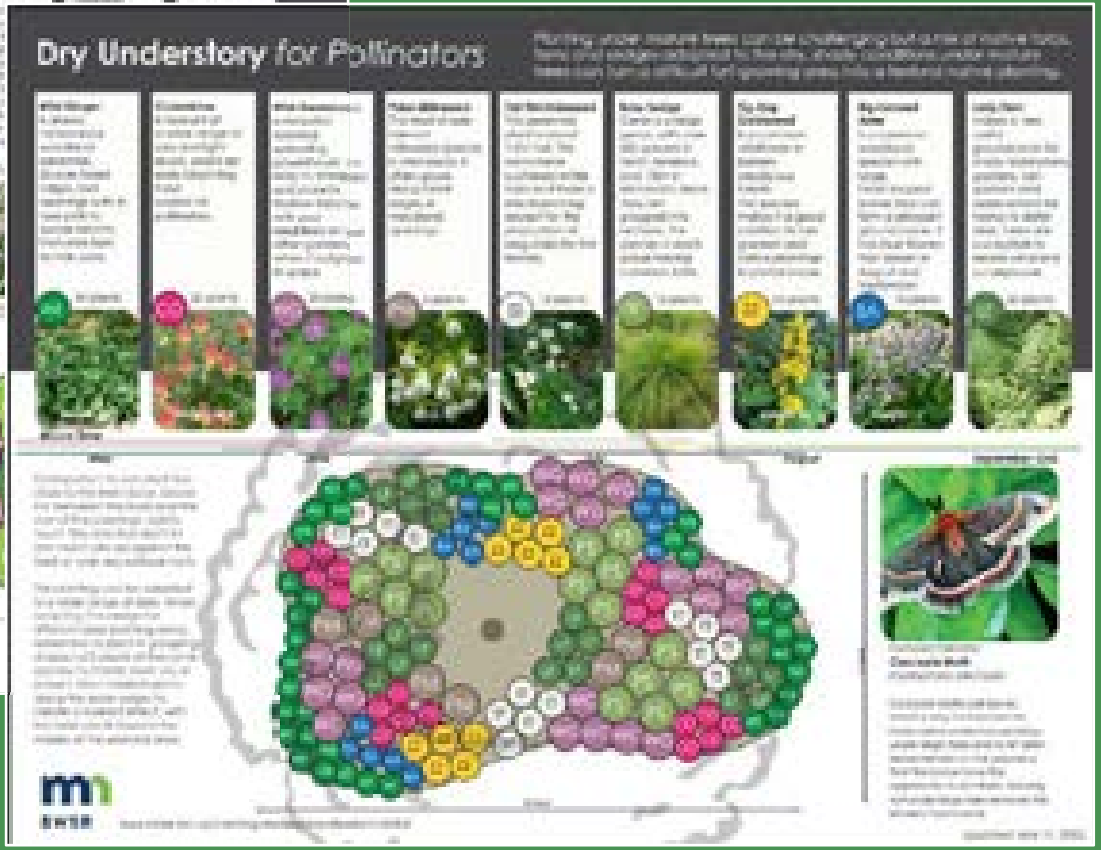

Find more design templates on the Blue Thumb website!

Installation

- Remove any existing turf, weeds, or invasive plants. Common methods include **hand digging, sheet mulching,** and **solarization**.
- Protect bare soil by mulching with **double-shredded hardwood mulch**.
- Lay out your plants before putting them in the ground so that you are happy with their spacing.

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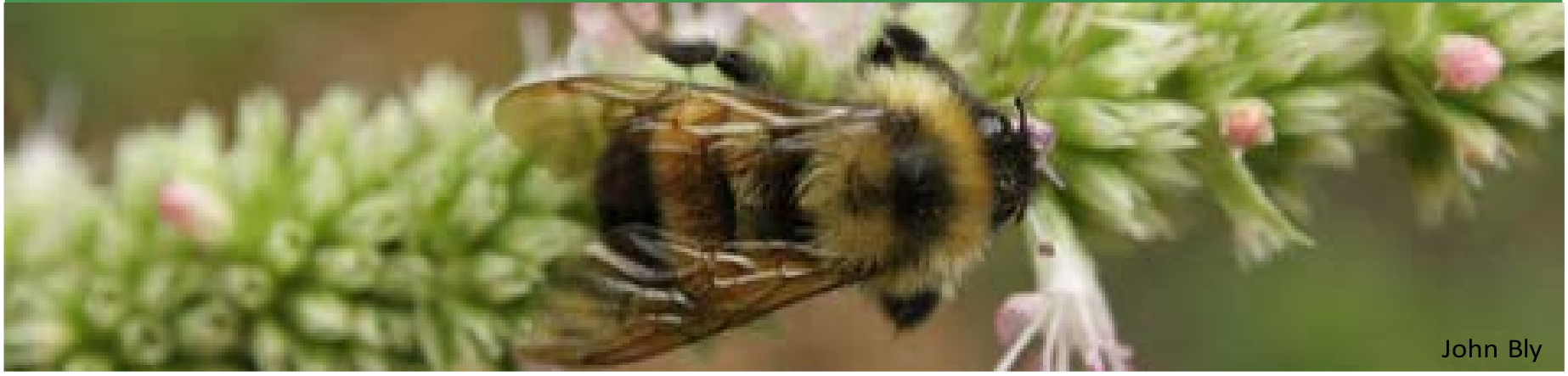
Landcare for Native Plantings

- Water at least 1” every week for the first 2 growing seasons
    - It is better to water longer, less often to encourage long roots
- Weeds are easiest to manage when they are small
- Edit your garden
    - Replace plants and mulch as needed
    - Divide, transplant, thin

Landcare for Pollinators

- Create overwintering areas by waiting to clean up until spring.
  - Wait until average temperature is 50 degrees, or when dandelions begin to blooms
- Avoid using fertilizers, herbicides, and pesticides
- Create a small, shallow water source



John Bly

Landcare for Pollinators

- Leave plants standing in the fall
  - Hollow/pithy stems provide nesting sites for stem-nesting bees
  - When you cut plants back, leave 18” remaining

- Leave the leaves! Many of MN pollinators overwinter in the leaf litter

Credit: Leslie Nelson Inman, Facebook-Pollinator Friendly Yards

Support communities planting for pollinators!

- Lawns to Legumes Grant Program - anyone living in MN can apply!
- Grant programs require use of native plants
- Work with local governments to support native plantings in ordinances
- Share resources for the DIY gardener - Bluethumb.org

Resources

Resources available on the Blue Thumb Website:

- Native plant nursery list
- Design templates
- Plant lists
- Plant Finder
- Step-by-step project guides
- Blue Thumb Partner Finder

Metro Blooms

GROW. BLOOM. INSPIRE!

Thank you!

Pollinator Conservation in Minnesota

Christina Locke | Pollinator Conservation Coordinator, DNR

DEPARTMENT OF NATURAL RESOURCES

So many groups working on pollinator projects

MONARCH JOINT VENTURE

Nationwide CCAA for MONARCH BUTTERFLY

XERCES SOCIETY for Invertebrate Conservation

DEPARTMENT OF TRANSPORTATION

UNIVERSITY OF MINNESOTA
Driven to Discover

Bee Lab

Home Spivak Lab Canvea

Bee ID

What kind of bee did I see?

BOARD OF WATER AND SOIL RESOURCES

Pollinator Toolbox

your yard CANBEE the CHANGE

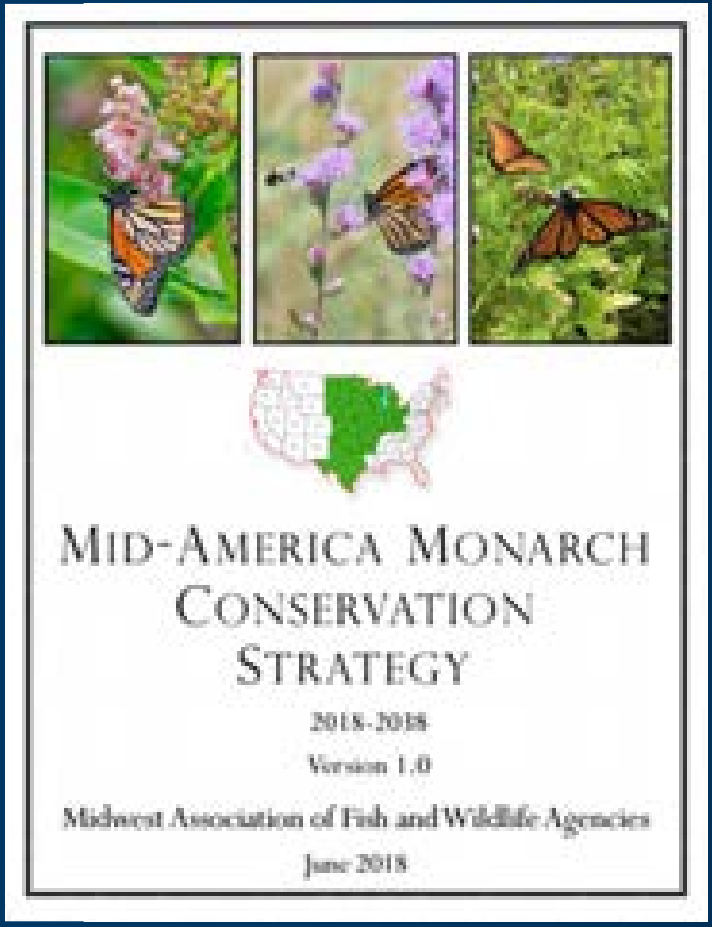
#lawns2Legumes

Pollinator conservation coordination at the DNR

- Cross-agency collaboration
- Internal DNR policies
- Habitat projects
- Research

Pollinator conser tion at the DNR

Cross-agency cc



Pollinator conservation coordination at the DNR

Cross-agency collaboration

Internal DNR policies

2024 Minnesota Statutes

Authenticate PDF

84.973 POLLINATOR HABITAT PROGRAM.

(a) The commissioner shall develop best management practices and habitat restoration guidelines for pollinator habitat enhancement. Best management practices and guidelines developed under this section must be used for all habitat enhancement or restoration of lands under the commissioner's control.

(b) Prairie restorations conducted on state lands or with state funds must include an appropriate diversity of native species selected to provide habitat for pollinators throughout the growing season.

History: 2013 c 114 art 4 s 12

DEPARTMENT OF NATURAL RESOURCES

Photo credit: Jessica Petersen

Pollinator Best Management Practices and Habitat Restoration Guidelines

SHORT TITLE: POLLINATOR BMPs

Overview

Insect pollinators native to Minnesota include hundreds of species of bees, butterflies, moths, flies, and beetles. By moving pollen from flower to flower, pollinators aid plant reproduction and help maintain

Pollinator conservation coordination at the DNR

Cross-agency collaboration

Internal DNR policies

Habitat projects

Pollinator conservation coordination at the DNR

Cross-agency collaboration

Internal DNR policies

Habitat projects

bwsr.state.mn.us pollinator-toolbox

Pollinator conservation coordination at the DNR

Cross-agency collaboration

Internal DNR policies

Habitat projects

Research

Minnesota Biological Survey

Pollinator conservation coordination at the DNR

- Cross-agency collaboration
- Internal DNR policies
- Habitat projects
- Research
- **Outreach**

What is a “pollinator?”

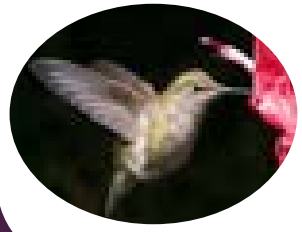
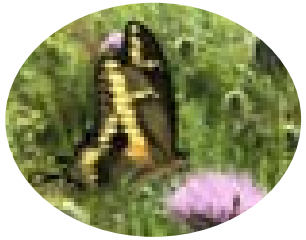
Pollinators aid plant reproduction by moving pollen from flower to flower.

Many flowering plants need help from animal pollinators to set seed or produce fruit, while others rely on wind, water, or gravity.

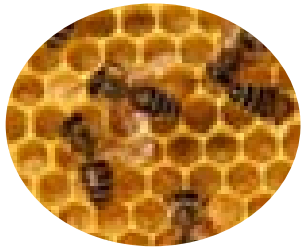
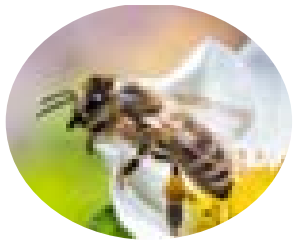
What is a “pollinator?”

5% of flowering plants are dependent on animal pollination
Most animal pollinators are insects, particularly **bees**
We know very little about most insect groups

Hummingbirds and many types of insects eat nectar or pollen, and may transfer pollen among flowers as they forage.


Honey bees live in colonies that can be moved to farm fields and used for crop pollination. Managed honey bees are considered non-native livestock in the U.S.

Bees are perfectly designed to collect pollen for their young. Minnesota is home to over 500 bee species.



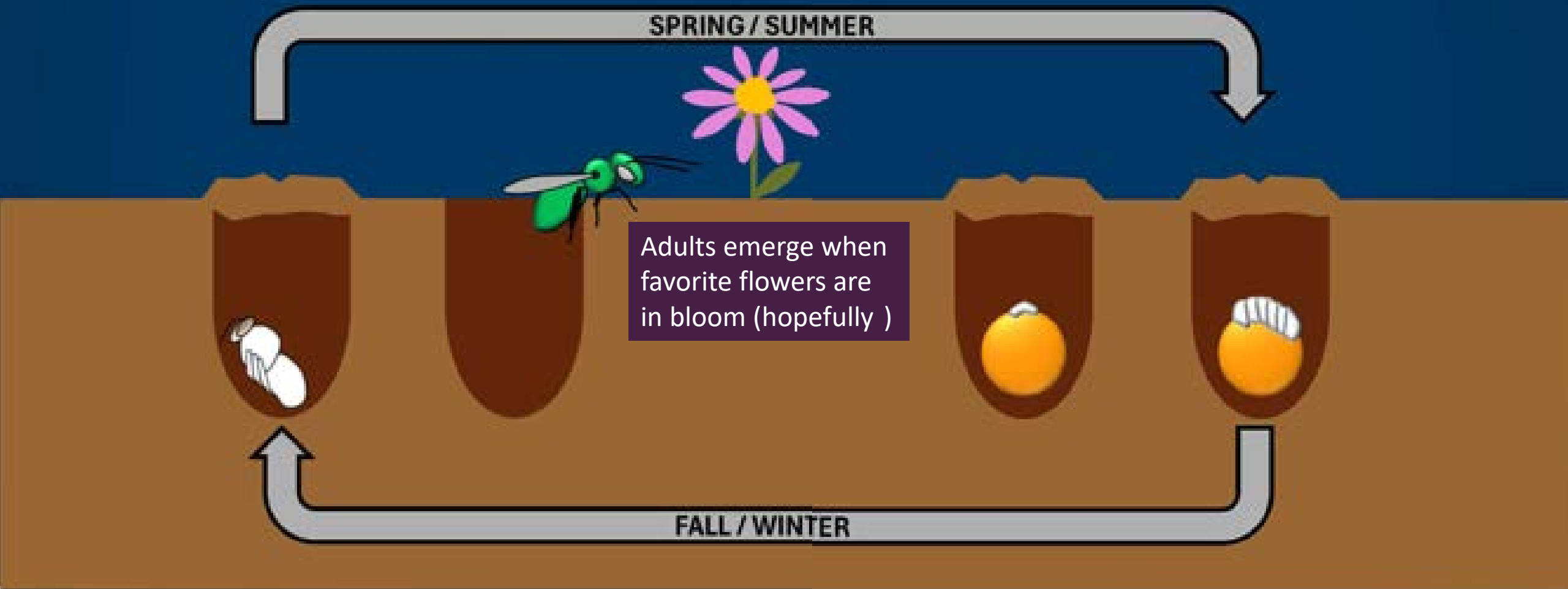

What is “pollinator habitat ”

Non-compacted soil
Dead wood
Leaf litter
Pithy/hollow stems
Native grasses

Leaves
Slopes
Vacated birds’ nests
Vacated rodent burrows

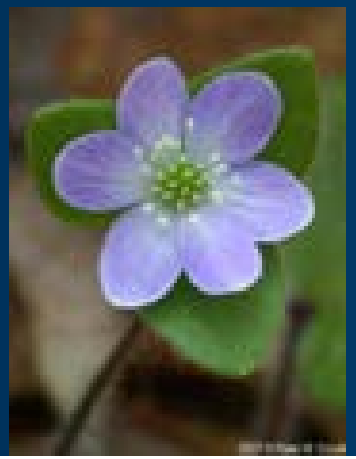
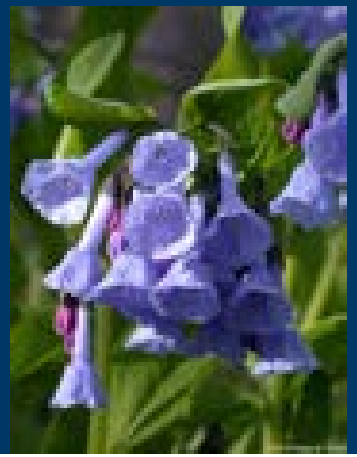
Timing matters

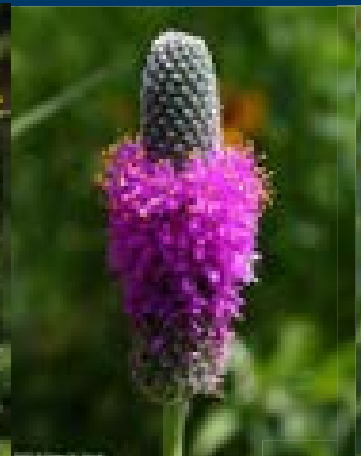
Minnesota is home to over 500 bee species.
Most are solitary nesters.



What is “pollinator habitat ”

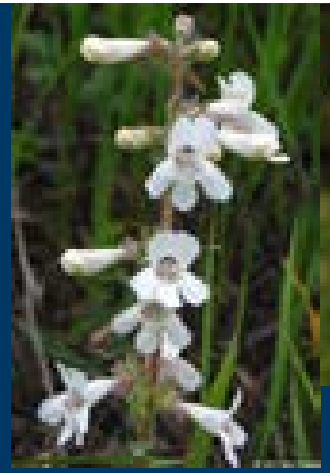
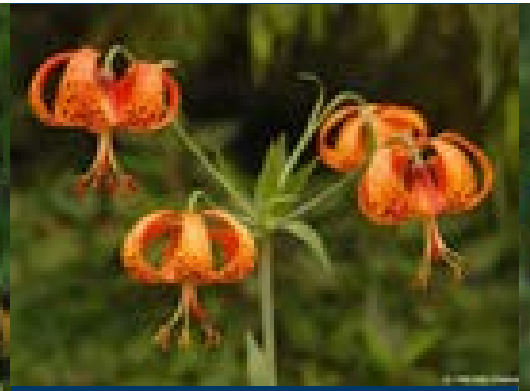
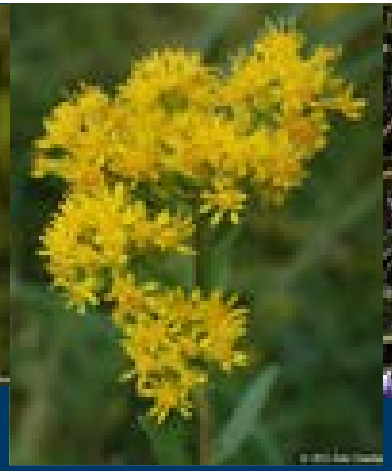
Blooming plants from spring to fall
Native perennial plants including specialist host plants

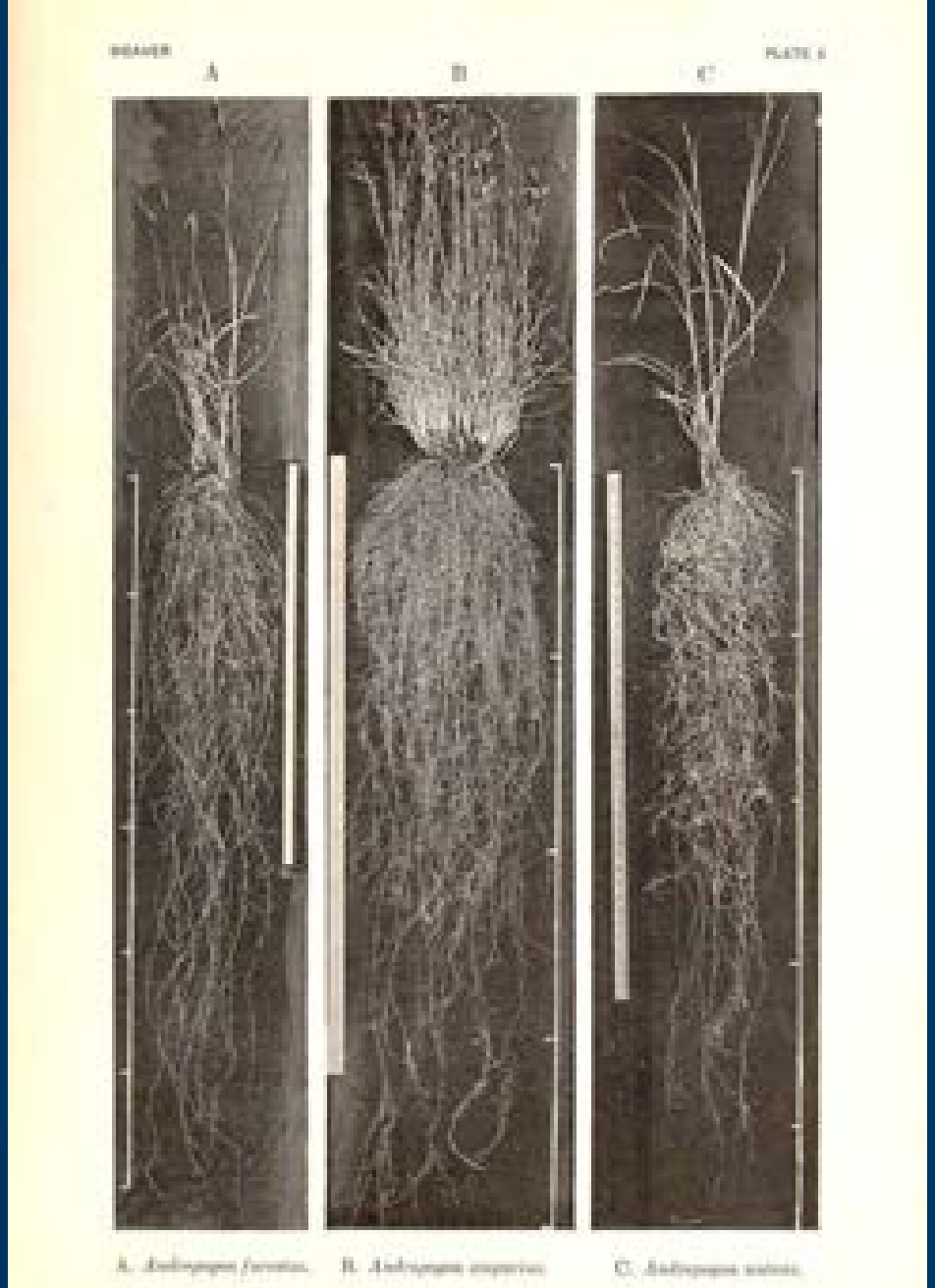



ctober

April


[Specialist Bees Minnesota DNR]



Why native perennials

- Water storage
- Carbon storage
- Soil health
- Bank stabilization
- Erosion control
- Water quality

Why not ornamentals cultivars

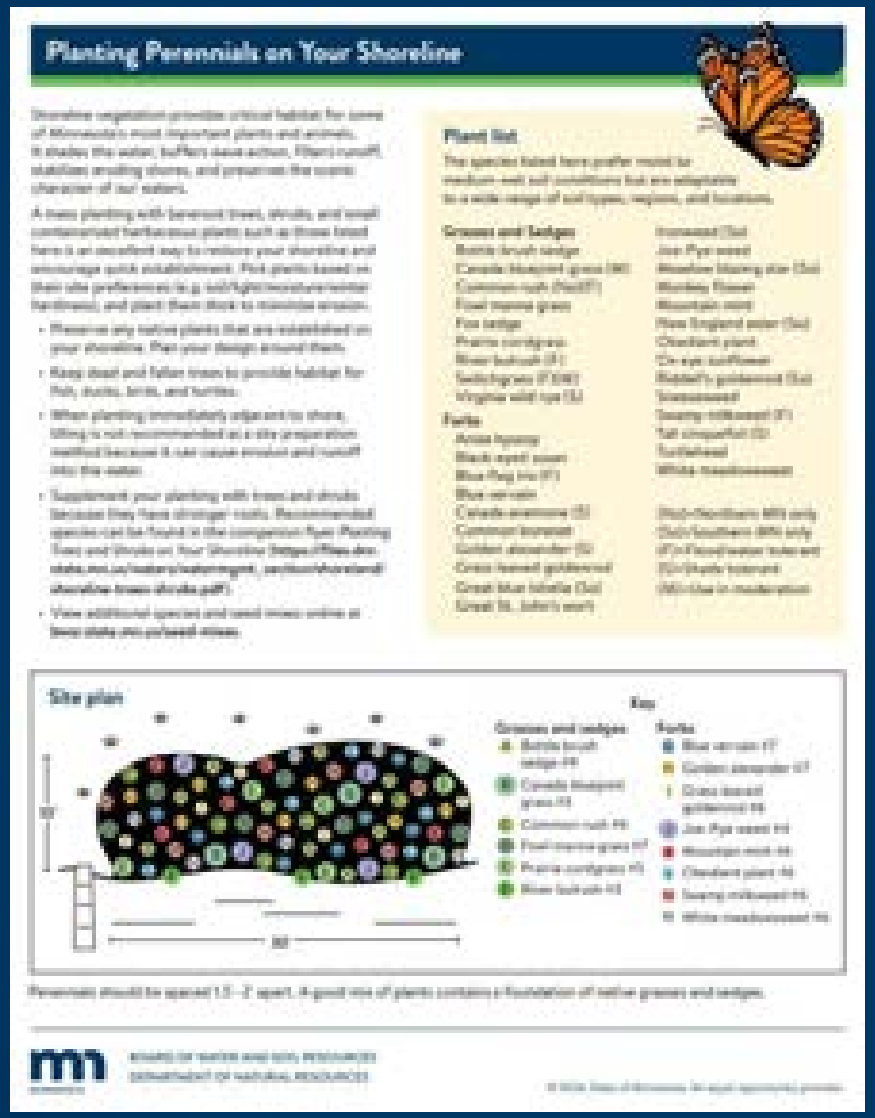
Inaccessible

Novel color

Invasive

Pollen quantity quality? Nectar availability?

Native plants: where to start



Planting Perennials on Your Shoreline

Shoreline vegetation provides critical habitat for some of Minnesota's most important plants and animals. It shades the water, buffers wave action, filters runoff, stabilizes eroding shores, and preserves the scenic character of our waters.

A mass planting with benevolent trees, shrubs, and small containerized herbaceous plants such as those listed here is an excellent way to restore your shoreline and encourage quick establishment. Pick plants based on their site preferences (e.g. soil/light/moisture/winter hardiness), and plant them thick to minimize erosion.

- Preserve any native plants that are established on your shoreline. Plan your design around them.
- Keep dead and fallen trees to provide habitat for fish, ducks, birds, and turtles.
- When planting immediately adjacent to shore, tilling is not recommended as a site preparation method because it can cause erosion and runoff into the water.
- Supplement your planting with trees and shrubs because they have stronger roots. Recommended species can be found in the companion flyer Planting Trees and Shrubs on Your Shoreline (https://files.dnr.state.mn.us/waters/watermgmt_section/shoreland/shoreline-trees-shrubs.pdf).
- View additional species and seed mixes online at bwsr.state.mn.us/seed-mixes.

Plant list

The species listed here prefer moist to medium-wet soil conditions but are adaptable to a wide range of soil types, regions, and locations.

Grasses and sedges
- Bottle brush sedge
- Canada bluejoint grass (W)
- Common rush (Yes/EF)
- Fowl manna grass
- Fox sedge
- Prairie cordgrass
- River bulrush (F)
- Switchgrass (F/UW)
- Virginia wild rye (S)

Forbs
- Anise hyssop
- Black eyed susan
- Blue flag iris (F)
- Blue vervain
- Canada anemone (S)
- Common boneset
- Golden alexanders (S)
- Cross-leaved goldenrod
- Great blue lobelia (Sw)
- Great St. John's wort
- Ironweed (Sw)
- Joe Pye weed
- Meadow blazing star (Sw)
- Monkey flower
- Mountain mint
- New England aster (Sw)
- Obedient plant
- Ox-eye sunflower
- Riddell's goldenrod (Sw)
- Sneezeweed
- Swamp milkweed (F)
- Tall coreopsis (S)
- Turtlehead
- White meadowsweet

(Yes)=Northern MN only
(Sw)=Southern MN only
(F)=Flood/water tolerant
(S)=Shade tolerant
(W)=Use in moderation

Site plan

Key

Grasses and sedges
- Bottle brush sedge (H)
- Canada bluejoint grass (W)
- Common rush (Yes)
- Fowl manna grass (H)
- Prairie cordgrass (H)
- River bulrush (H)

Forbs
- Blue vervain (F)
- Golden alexander (F)
- Cross-leaved goldenrod (H)
- Joe Pye weed (H)
- Mountain mint (H)
- Obedient plant (H)
- Swamp milkweed (H)
- White meadowsweet (H)

Perennials should be spaced 1.5 - 2' apart. A good mix of plants contains a foundation of native grasses and sedges.

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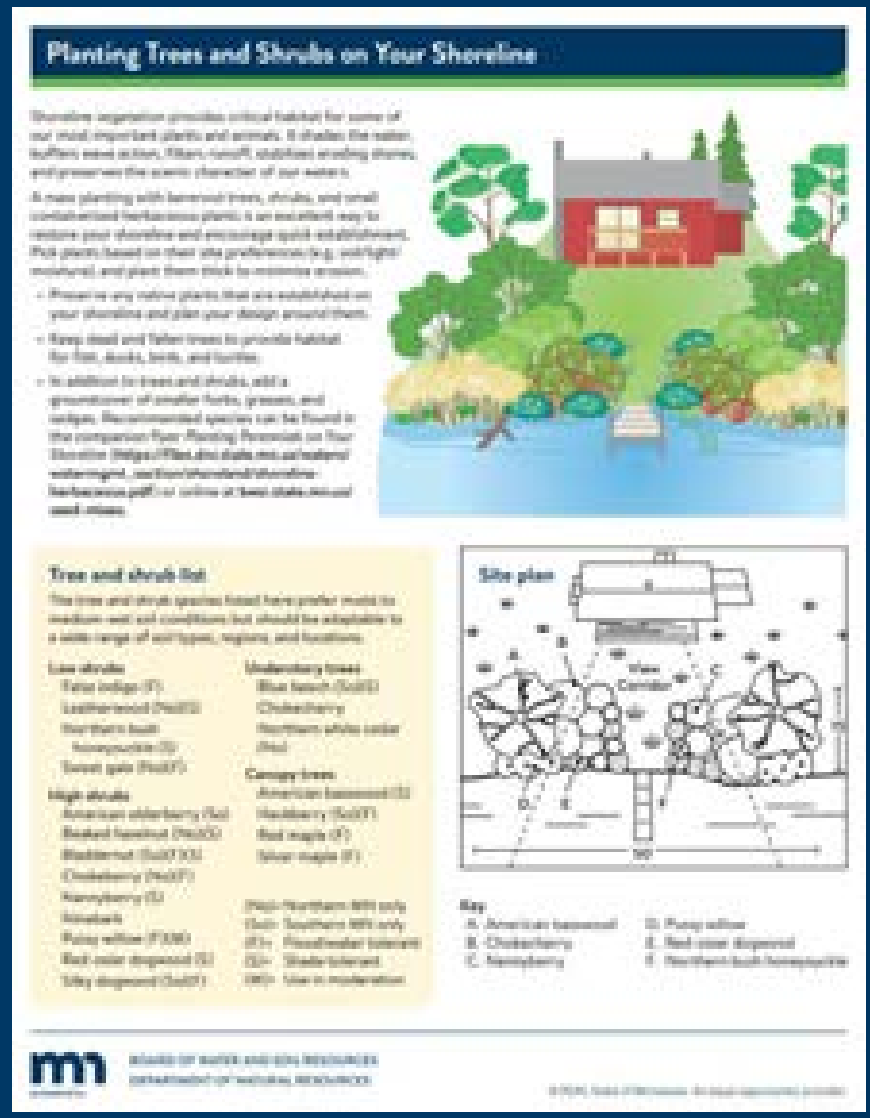
DEPARTMENT OF NATURAL RESOURCES



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A mass planting with benevolent trees, shrubs, and small containerized herbaceous plants is an excellent way to restore your shoreline and encourage quick establishment. Pick plants based on their site preferences (e.g. soil/light/moisture), and plant them thick to minimize erosion.

- Preserve any native plants that are established on your shoreline and plan your design around them.
- Keep dead and fallen trees to provide habitat for fish, ducks, birds, and turtles.
- In addition to trees and shrubs, add a groundcover of smaller forbs, grasses, and sedges. Recommended species can be found in the companion flyer Planting Perennials on Your Shoreline (https://files.dnr.state.mn.us/waters/watermgmt_section/shoreland/shoreline-herbaceous.pdf) or online at bwsr.state.mn.us/seed-mixes.

Tree and shrub list

The tree and shrub species listed here prefer moist to medium-wet soil conditions but should be adaptable to a wide range of soil types, regions, and locations.

Low shrubs
- False indigo (F)
- Leatherwood (Yes/EF)
- Northern bush honeysuckle (S)
- Sweet gale (Yes/EF)

High shrubs
- American elderberry (Sw)
- Beaked hazelnut (Yes/S)
- Bladdernut (Sw/EF/S)
- Chokecherry (Yes/EF)
- Nannyberry (S)
- Ninebark
- Pussy willow (F/UW)
- Red-osier dogwood (S)
- Silky dogwood (Sw/EF)

Understory trees
- Blue beech (Sw/EF)
- Chokecherry
- Northern white cedar (Yes)

Canopy trees
- American basswood (S)
- Hackberry (Sw/EF)
- Red maple (F)
- Silver maple (F)

(Yes)=Northern MN only
(Sw)=Southern MN only
(F)=Flood/water tolerant
(S)=Shade tolerant
(W)=Use in moderation

Site plan

Key
- A. American basswood
- B. Chokecherry
- C. Nannyberry
- D. Pussy willow
- E. Red-osier dogwood
- F. Northern bush honeysuckle

BOARD OF WATER AND SOIL RESOURCES
DEPARTMENT OF NATURAL RESOURCES

Make a list of the scientific names

Minnesota Wildflowers

a field guide to the flora of Minnesota

or try: advanced plant search

Donate

Share:

Spiraea alba (White Meadowsweet)

Pick an image for a larger view. See the glossary for icon descriptions.

Detailed Information

Flower:

Flowers are in densely packed branching clusters to 6 inches long at the top of the plant, blooming from the top down. Individual flowers are about ¼ inch across with 5 white petals and numerous long stamens surrounding a center ring that is pink, yellow or orange. The long stamens give it a somewhat fuzzy look.

Plant Info

Also known as:	
Genus:	Spiraea
Family:	Rosaceae (Rose)
Life cycle:	perennial woody
Origin:	native
Habitat:	sun, wet meadows, bogs, along shores
Bloom season:	June - September

www.minnesotawildflowers.info

Where to buy

Native plant suppliers, landscapers, and restoration consultants for Minnesota

Recommend a business by emailing NativePlantSuppliers.dnr@state.mn.us.
Please include the business name, URL, and contact person's name and phone number in your message.

Native plant suppliers and landscapers lists

The DNR maintains a list of native plant suppliers and consultants for Minnesota. Companies must certify that they sell Minnesota native plants sourced from the state, do not sell invasive or noxious plants, and/or have experience as a native plant consultant or habitat restoration specialist. Consultants who do not meet this criteria are excluded from the DNR's list.

Some nurseries on these lists sell a mix of Minnesota native, non-native, or horticultural varieties of plants. Minnesota wildlife –including pollinator species– benefit most from Minnesota native plants because they developed together. To find out what is native to your area, visit the DNR's MN Taxa Plant lists or the MN Wildflowers website.

Native plant supplier regions

Click to enlarge map.

Lists of native plant nurseries and native vegetation consultants are organized by regions of the state. *Last updated March 2024.*

- Northwestern Minnesota (PDF)
- Northeastern Minnesota (PDF)
- Central Minnesota (PDF)
- Southern Minnesota (PDF)
- Interactive map of midwest native plant and seed sellers

Native plant suppliers, landscapers, and restoration consultants for Minnesota Minnesota DNR

Make a list of scientific names

Find vendors that use full scientific names that match your list (e.g., *iraea alba*)

Be skeptical of substitutions

Avoid any with cutesy or trademarked nicknames, or signs of hybridization (“x”, “variety”, “hybrid”, etc.)

- ⊗ Echinacea Sombrero Salsa Red
- ⊗ Monarda 'Sugar Buzz Bubblegum’
- ⊗ Heuchera x ‘Forever Red’
- ⊗ Lonicera x brownii

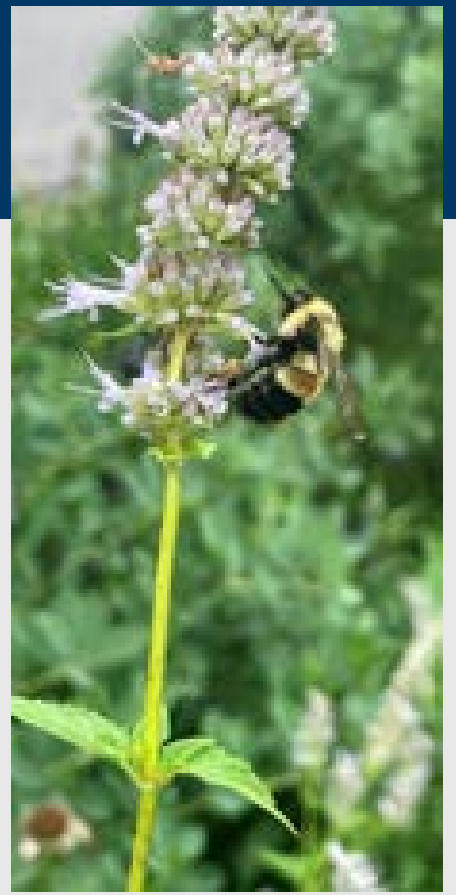
DEPARTMENT OF NATURAL RESOURCES

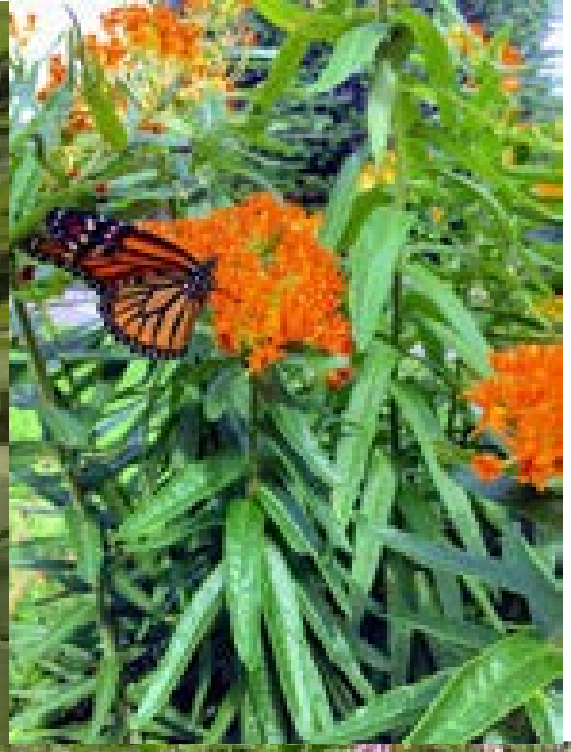
Thank You!

Christina Locke

christina.locke@state.mn.us

mndnr.gov/pollinators



Carlton Soil and Water Conservation District
A Pollinator Powerhouse!

Alyssa Bloss
District Manager
Carlton Soil & Water Conservation District

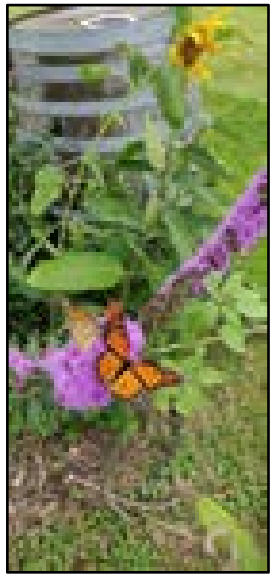
CARLTON SWCD

SOIL & WATER CONSERVATION DISTRICT

What is a SWCD?

Local Government Unit- Governed by local leaders!

- Minnesotans count on SWCD technical assistance with conservation practices to protect our state's great natural resource treasures!
- Manage and direct natural resource programs and practices at a local level
- Boots on the ground conservation with private landowners, public land partners, schools, churches, cities, and other great partners!
- Receive funds from many sources
  - State dollars passed through the Board of Water and Soil Resources
  - County
  - One Watershed, One Plan (1W1P) – Nemadji, Kettle River, St. Louis
  - Federal grants
  - Clean Water Funds
  - Other grants



What is a SWCD?

A Pollinator Powerhouse:

Carlton SWCD Native Plant and Pollinator Program

The Carlton Soil and Water Conservation District (SWCD) is partnering with landowners, cities, schools, the community and other organizations to increase diverse food sources, habitat, and corridors for the endangered Rusty Patched Bumblebee, Monarch Butterfly, and other beneficial insects.

What does this program do?

- Provides up to 100% funding assistance to integrate pollinator projects into the landscape
- Residential, school, city and community spaces qualify
- No minimum size
- Projects can be raingardens, pollinator gardens, pollinator meadows, bee lawns, and pollinator shoreline buffers

How the SWCD can help!

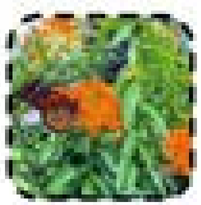
- Free site visit – SWCD will provide assistance throughout the project.
- Designs provided with native plants based on project goals with overlapping blooms spring through fall that benefit pollinators.
- Pay up to 100% of costs for plantings!
- Maintenance and advice on what to expect in the future will also be provided.

Why does this matter?

It aims to protect the rusty patched bumblebee (Minnesota's state bee) and other at-risk pollinators and beneficial insects. **Minnesota is home to more than 450 native bee species.**

Pollinators also include:

Butterflies
Moths
Beetles
Native Flies
Bats
Songbirds

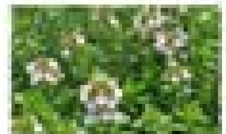


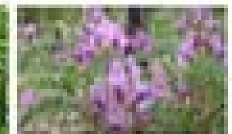
Populations have significantly declined worldwide in recent years due to:
Habitat loss, lack of related nutrition, pesticide use and pathogens.

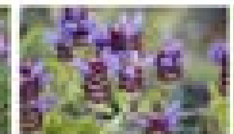
Do Your Part!

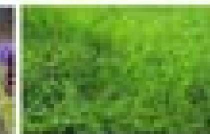
Raingardens are native plantings that are designed to catch stormwater runoff from your roof, yard, sidewalk, or other impervious surface before it reaches the storm drain, stream, or lake.

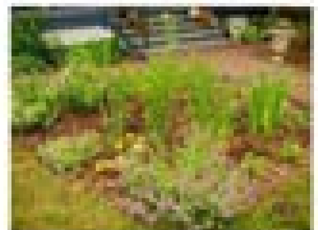
Bee Lawns are made of a mix of grasses and low-growing perennials that can be used much like a regular lawn, but also offer high-quality nutrients to pollinators.



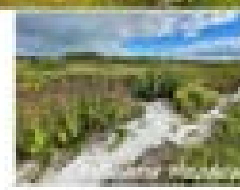






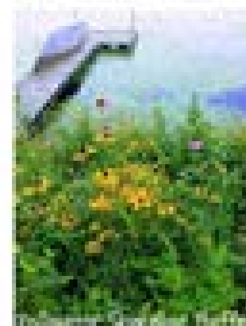


Pollinator Pockets are easy to incorporate into your existing yard or gardens! Diverse plantings of native plants will provide food, nesting and resting for pollinators and other beneficial insects.



Contact Information

Alyssa Bliss
Conservation Specialist II
Carlton SWCD
808 3rd St. Carlton, MN 55718
218-384-3891, ext#



Top 10 native plants for Northeastern Minnesota

Golden Alexanders (*Zizia* spp.)
Blazingstars (*Liatris* spp.)
Joe Pye weed (*Eutrochium* spp.)
Milkweeds (*Asclepias* spp.)
Goldenrods (*Solidago* spp.)
Bee balms (*Monarda* spp.)
Beardtongues (*Penstemon* spp.)
Red columbine (*Aquilegia canadensis*)
Asters (*Symphyotrichum* spp.)
Blue giant hyssop (*Agastache foeniculum*)

Additional Information → UMN Lawns to Legumes → Xerces Society

Native plants for projects!

Native Plantings	Non-Native Plantings
Adapted to local conditions Low Maintenance	Not from NA Fertilizer/Mowing/Watering High maintenance
Resistant to disease/pests	Insecticides
Shelter and Food (all seasons) (co-evolved flora & fauna)	Shelter and Food (hosts many non-native species)
Do well in all soils	Do well in disturbed soils
Blooms all seasons	One color/Short-lived
Deep Root Systems	Shallow Root Systems

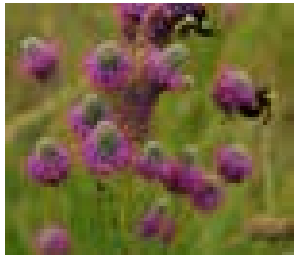
Indian Grass

Smooth Blue Aster

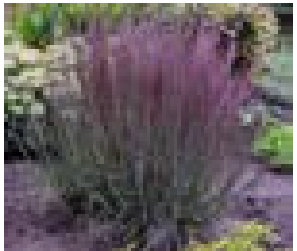
Butterfly Milkweed

Black Eyed Susan

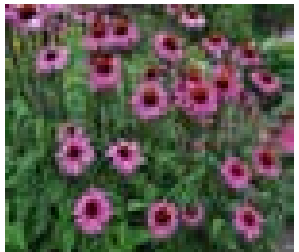
Purple Prairie Clover



Little Bluestem



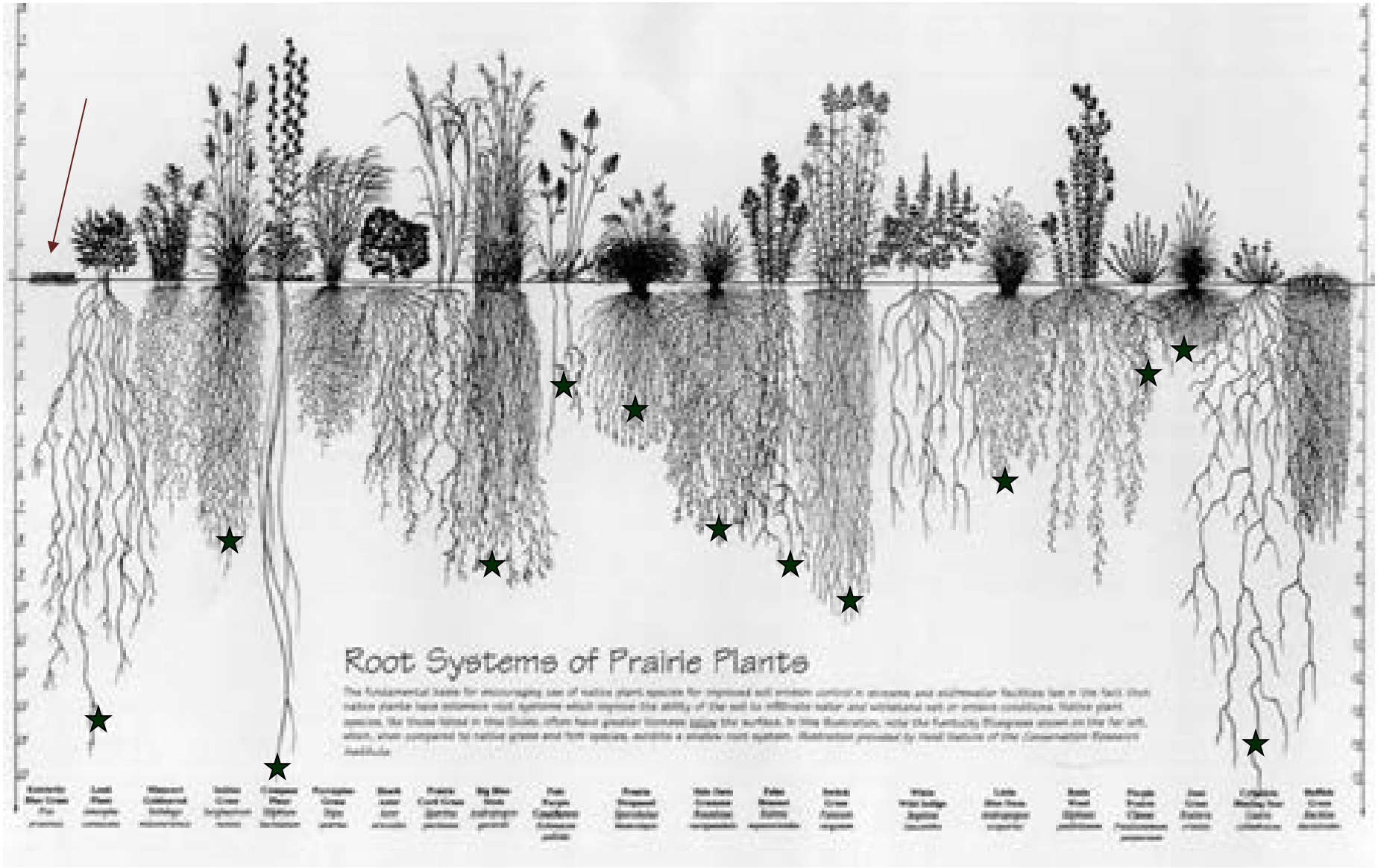
Purple Coneflower



Side Oats Gramma

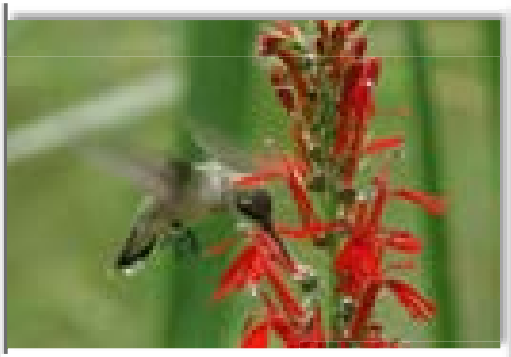
Wild Bergamot

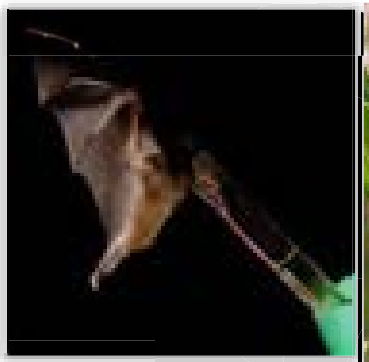
Benefits of Native Plants



Conservation Research Institute and Heidi Natura

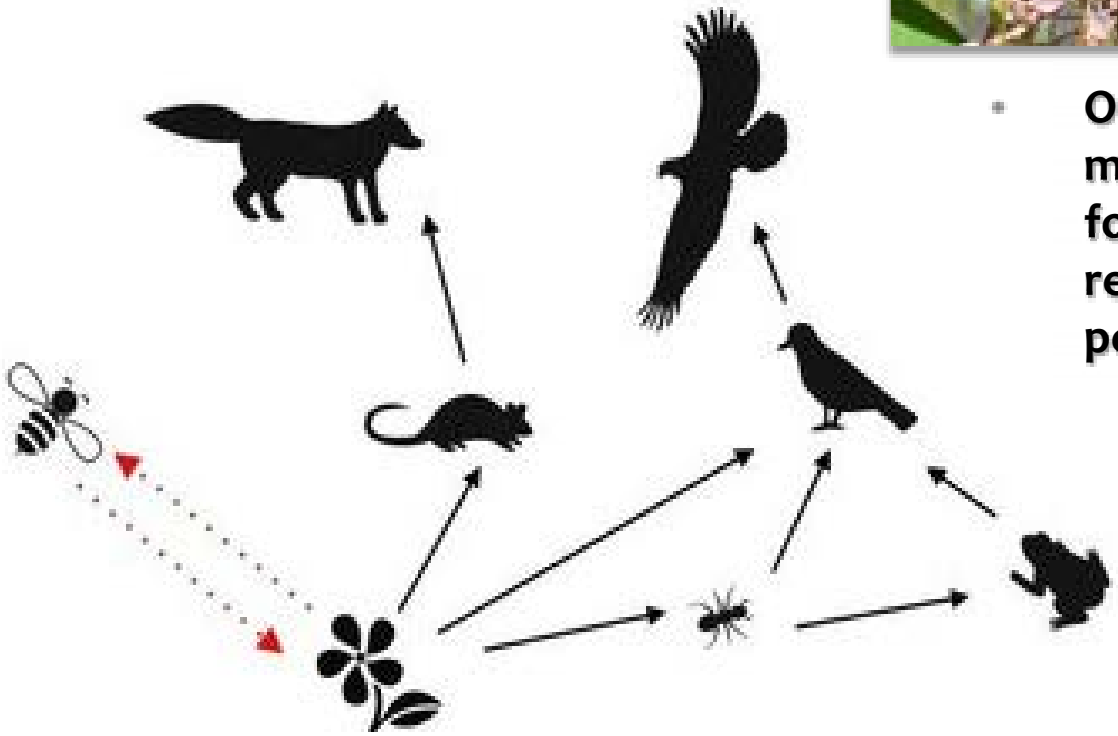
Benefits of Native Plants



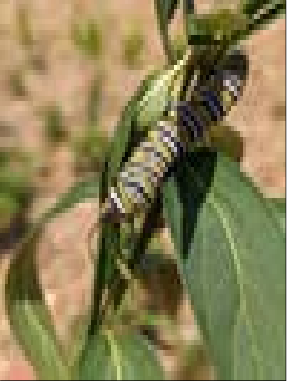


Pollinators are Keystone Species

- **>85% of world's 352,000 plants depend on insects for pollination**



- **One in three mouthfuls of food & drink require a pollinator!**



5 Steps to Help Pollinators

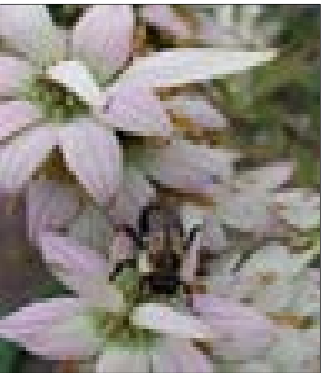
1. Plant NATIVE pollinator PLANTINGS

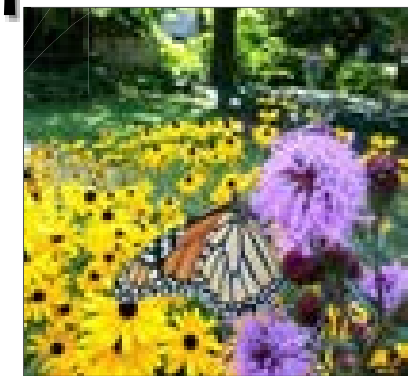
2. Create DIVERSTY of BLOOMS Spring-Fall

3. PROTECT Nests and Egg-Laying SITES

4. LEAVE overwintering HABITAT

5. DON'T Use Pesticides

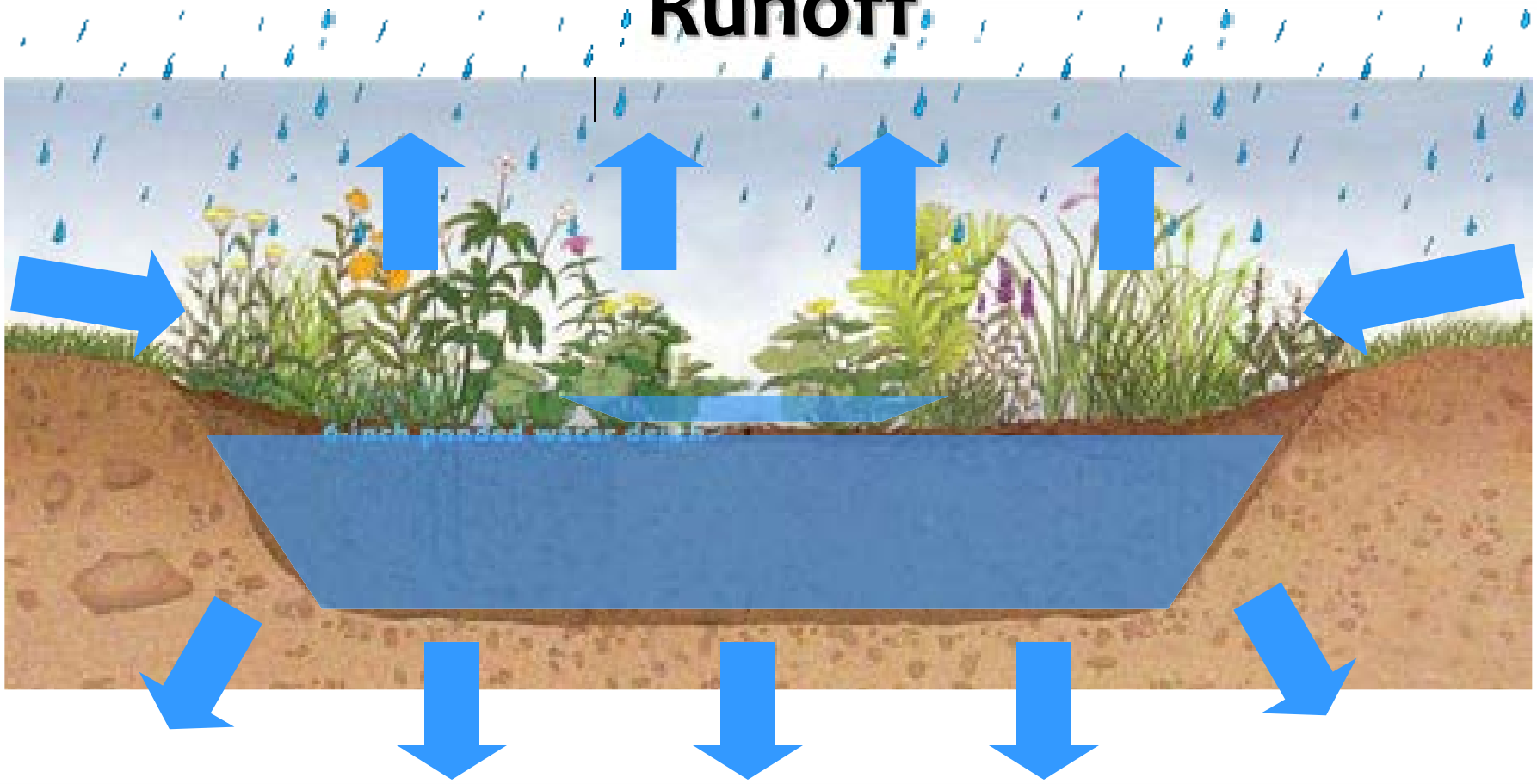




Pollinator Raingardens

- **Shallow** (9" to 12"deep) **depressions**
- **Surface should be dry in 48 hours** (or less)
- **Soil amendments sometimes needed** (compost and/or sand)
- **3" Double Shredded Hardwood Mulch**
- **Planted with deep-rooted plants** (natives work best)
- **Design as a landscape feature** ("natural", formal, or in-between)
- **Design to integrate into existing landscaping**
- **Select plants to attract wildlife**

Capture Rainwater and Stormwater Runoff

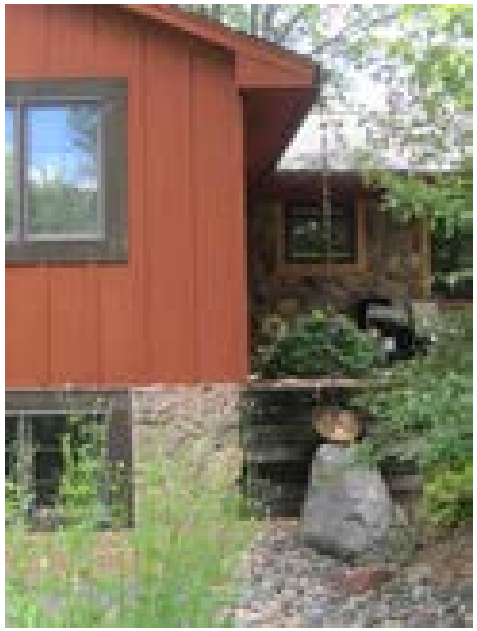
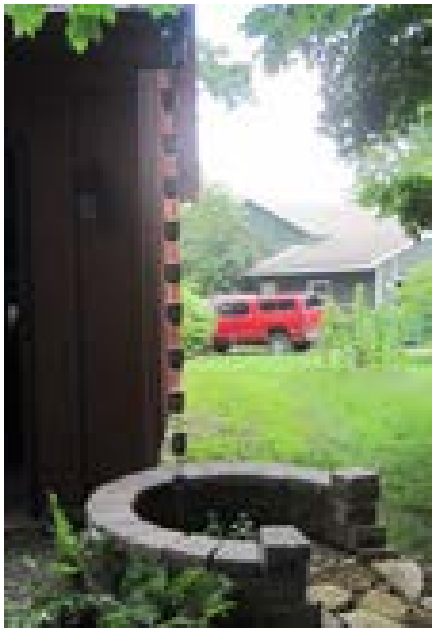
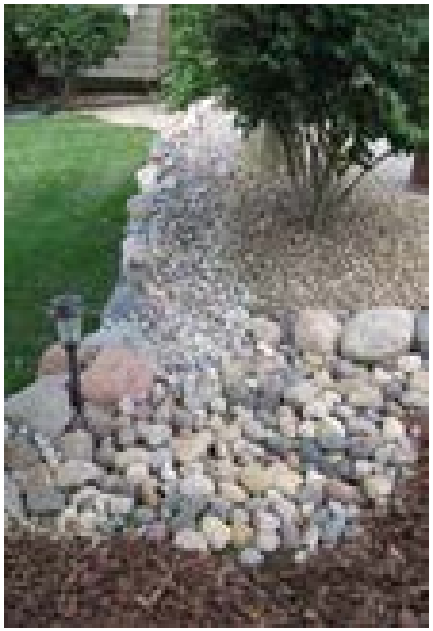
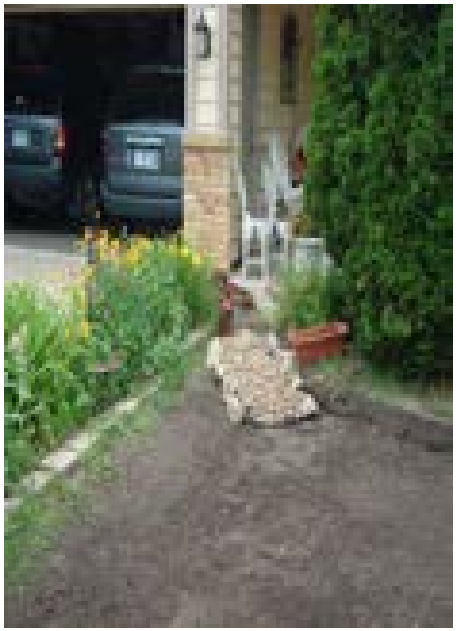


Just like a traditional flower garden, but able to absorb runoff and break down pollutants + POLLINATOR HABITAT!

Concept - Gregg Thompson, Illustration - Taina Litwak, Animation - Ron Struss


Where would you put a raingarden?

Be Creative!


Pollinator Raingardens

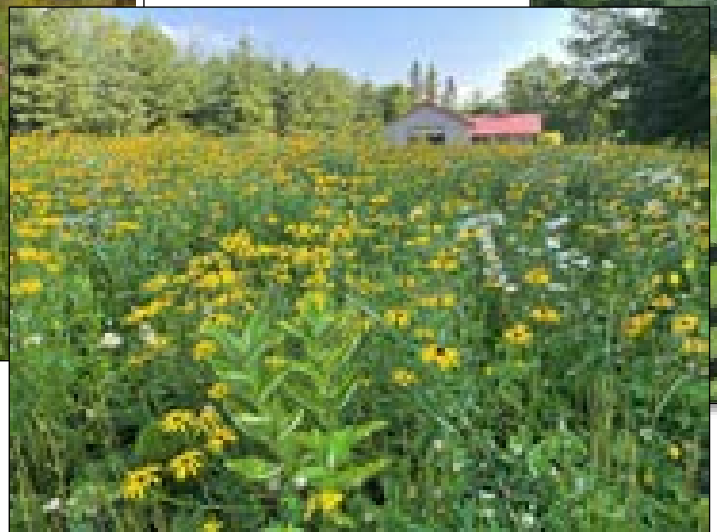
www.bluethumb.org

Pollinator Raingardens

Before

After

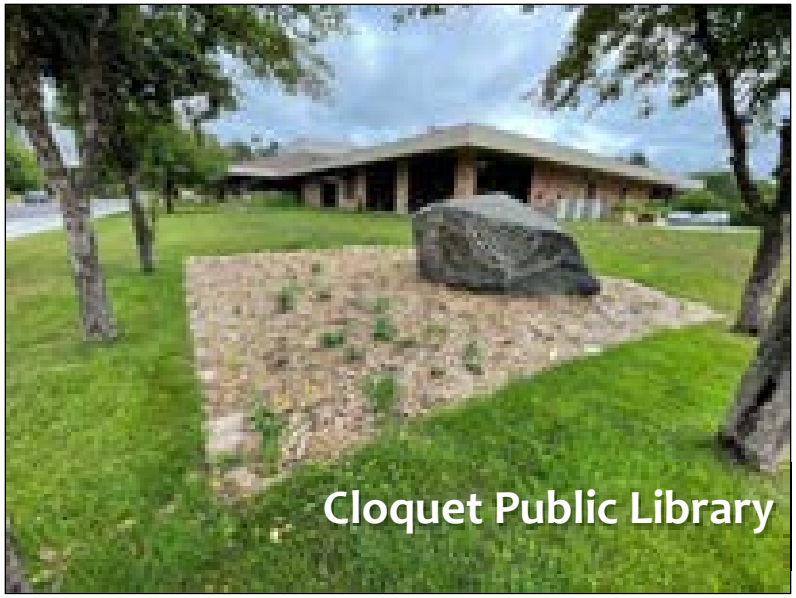
Pollinator Meadows

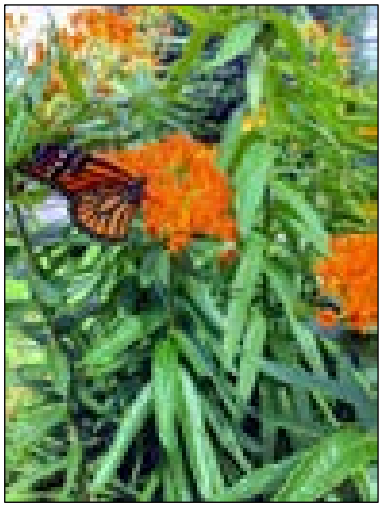


Pollinator Pockets

Photo: Projects completed by Shoreview Natives (Two Harbors, MN)

Pollinator Pockets





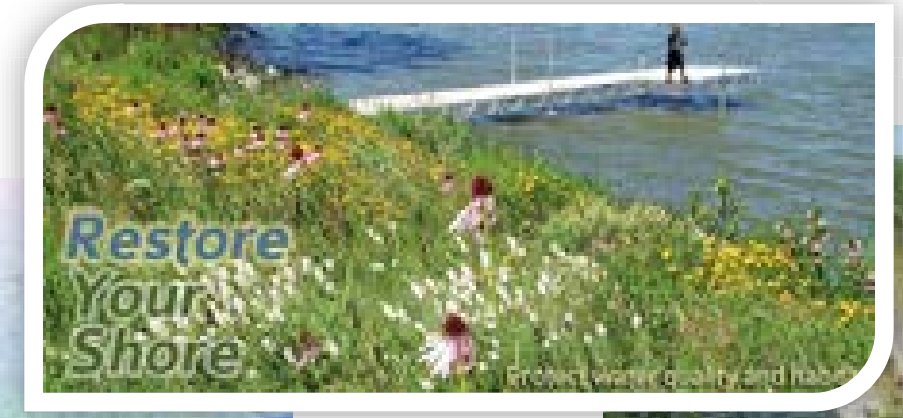
BEE LAWN

Integrate into existing lawn

OR

start fresh!

Native Shoreline Buffers



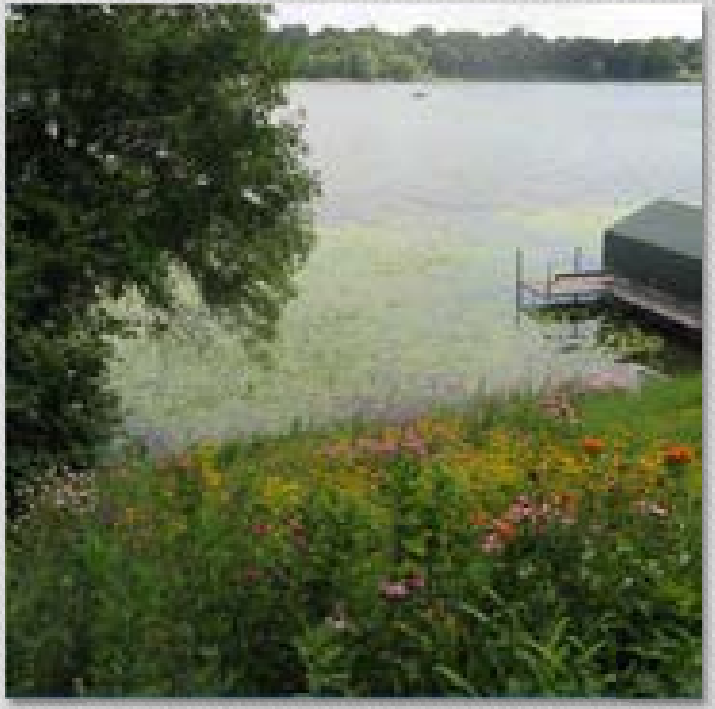

Erosion?


Habitat Improvement?


Water Quality?


Shoreline loss over 5 years!
MnDNR


A “Natural” Shoreline
Shoreland Vegetation
(erosion-control, water quality, cools water-especially for trout, wildlife habitat, high plant diversity = high wildlife diversity)
Drifted-in Logs & Snags
(wildlife habitat, erosion control & water quality)
Emergent Vegetation
(water quality, erosion-control & wildlife habitat)



Why a Vegetated Shoreline!

- Relatively inexpensive
- Plants filter out pollution before it reaches the water
- Attracts pollinators
- Flowers add color, natural beauty
- Adds privacy
- Plants take up excess nutrients reducing algal blooms
- Long rooted plants help decrease erosion and flooding
- Vegetation discourages geese from congregating
- Plants provide oxygen for fish
- Aquatic vegetation slow down incoming waves
- **NATURAL SHORELINE IMPROVES OVER TIME**
- **MORE PERMANENT FIX**

But….

- **PATIENCE!**
- **Seeding:2-3 Years to Establish**
- **Live Plants: Instant color, but not as diverse**

Stabilizing the Slope
Rock Rip Rap

More $$$
Doesn't filter pollutants
Creates "unnatural" shoreline
Requires maintenance not a permanent fix
Sometimes rock is needed to combat:
- Wave action
- Ice heaves
- Steep slopes
- Fluctuating water levels

Stabilizing the Slope
Coir Logs

Stabilizes slope and prevents wave action until vegetation is established

Coconut and jute fiber

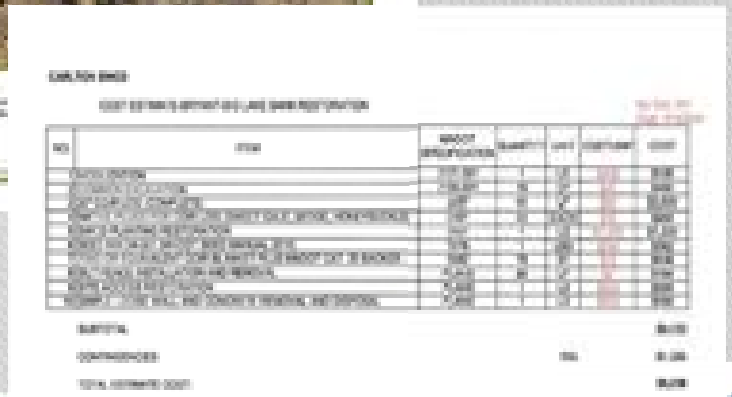
100% bio-degradable

2-5 year lifespan

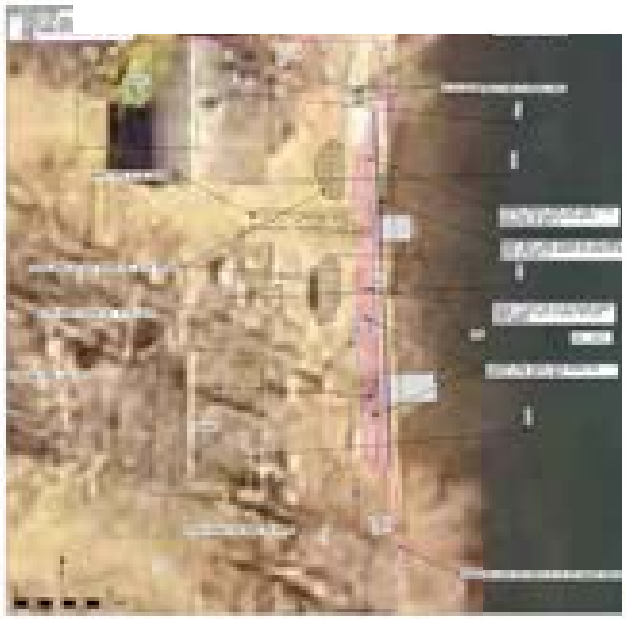
Able to plant vegetation directly into log for extra stabilization

Encourage sedimentation and re-vegetation

SWCD Assistance



Site visits and technical assistance is free
Survey, design, cost estimates, contractors provided
Cost share and grants!



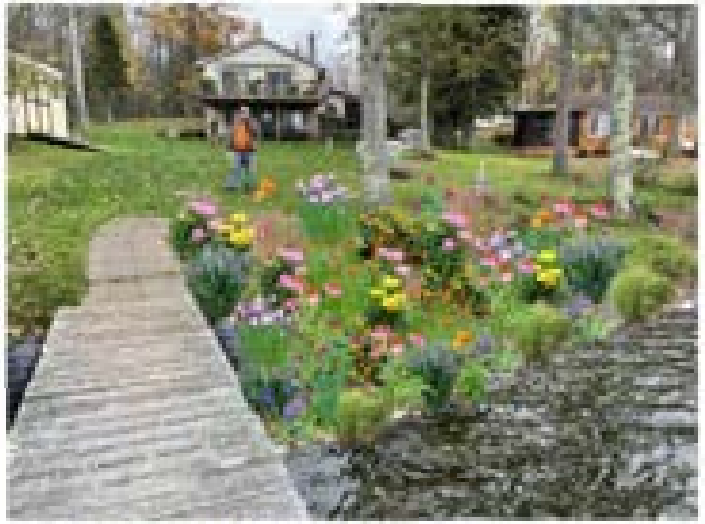
Project Area Concept:East of dock

Current Condition

Native Shoreline Planting with flowers, grasses, and sedges

Project Area Concept:West of dock

Current Condition



Native Shoreline Planting with flowers, grasses, and sedges

Realtime Landscaping Architect

Native Seed Mix

Minnesota Native Landscapes

MNL Lakeshore Mix

Shorter grasses/sedges in the mix highlight a diverse list of wildflowers for shoreline areas. Grass/Sedge height 2-3' with taller blooming forbs

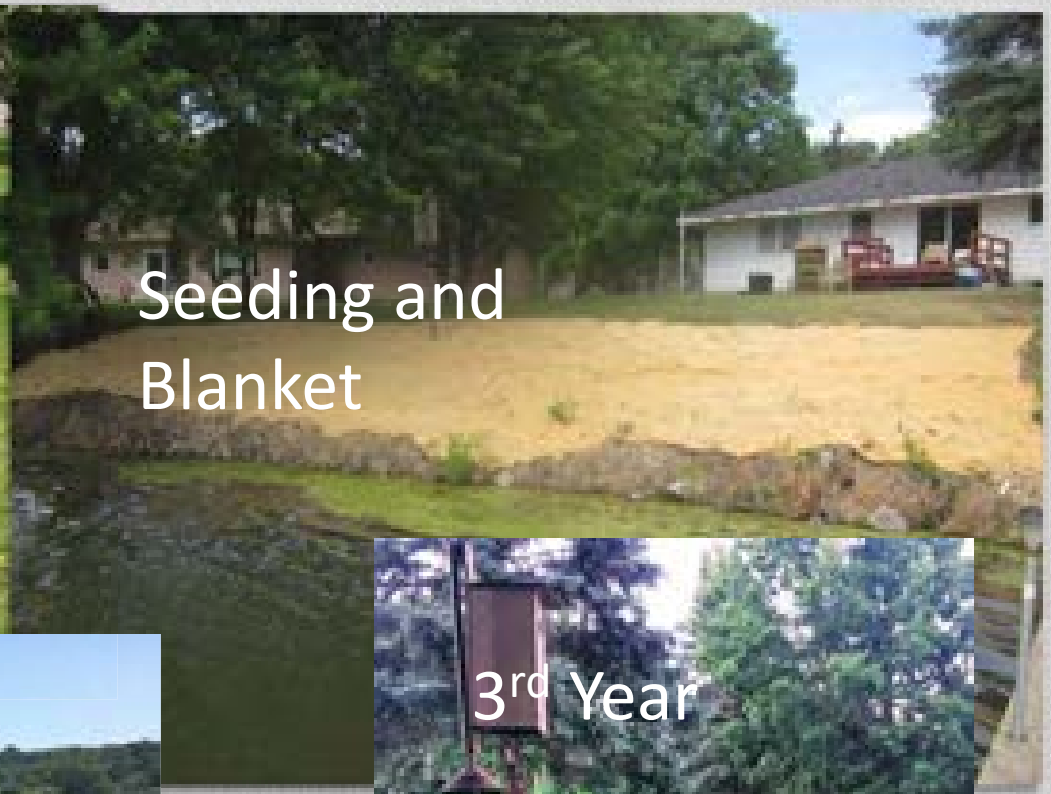
	Scientific Name	Common Name	% of Mix	Seeds/ Sq Ft	PLS lbs/ac	Bloom Season
Grasses:	Calamagrostis canadensis	Blue Joint Grass	1.00	7.50	0.07	
	Poa palustris	Fowl Bluegrass	4.00	15.37	0.28	
Sedges/Rushes:	Carex comosa	Bottlebrush Sedge	14.00	11.15	1.02	
	Carex lacustris	Lake Sedge	2.00	0.71	0.19	
	Carex normalis	Greater Straw Sedge	5.00	3.21	0.55	
	Carex pellita	Broad-Leaved Woolly Sedge	3.00	1.02	0.16	
	Carex retrorsa	Knotweed Sedge	5.00	1.41	0.55	
	Carex scoparia	Broom Sedge	8.00	11.88	0.88	
	Carex stipata	Common Fox Sedge	5.00	4.37	0.55	
	Schoenoplectus tabernaemontani	Softstem Bulrush	4.00	3.19	0.28	
	Scirpus atrovirens	Green Bulrush	0.75	8.67	0.05	
	Scirpus cyperinus	Woolgrass	0.50	21.80	0.04	
	Scirpus fluviatilis	River Bulrush	10.00	1.11	0.75	
Forbs:	Acorus americanus	Sweet Flag	0.50	0.63	0.09	Summer
	Alisma subcordatum	American Water Plantain	0.50	4.63	0.21	Summer
	Amorpha fruticosa	False Indigo	1.50	0.15	0.11	Summer
	Anemone canadensis	Canada Anemone	1.00	0.21	0.07	Spring
	Asclepias incarnata	Marsh Milkweed	3.00	3.62	0.20	Summer
	Chamaedrion angustifolium	Fireweed	0.25	3.21	0.02	Summer
	Echinacea maculata	Joe-Pye Weed	1.50	3.00	0.11	Summer
	Eupatorium perfoliatum	Boneset	0.50	3.00	0.04	Fall
	Helenium autumnale	Sneezeweed	0.50	1.67	0.04	Fall
	Iris versicolor	Northern Blue Flag Iris	3.00	0.10	0.21	Spring
	Liatris pycnostachya	Prairie Blazing Star	2.00	0.57	0.14	Summer
	Lobelia cardinalis	Cardinal Flower	0.10	1.03	0.01	Summer
	Lobelia siphilitica	Great Blue Lobelia	0.25	3.21	0.02	Summer
	Mimulus ringens	Monkey Flower	0.25	14.79	0.02	Summer
	Physostegia virginiana	Obedient Plant	0.25	0.57	0.02	Summer
	Pycnanthemum virginianum	Mountain Mint	0.40	3.26	0.03	Summer
	Rosa blanda	Smooth Rose	2.00	0.13	0.14	Summer
	Solidago riddellii	Riddell's Goldenrod	1.25	2.86	0.09	Fall
	Sparganium eurycarpum	Giant Burreed	4.00	0.07	0.36	Summer
	Symphyotrichum novae-angliae	New England Aster	0.66	3.38	0.14	Fall
	Verbena hastata	Blue Vervain	2.00	4.78	0.14	Summer
	Veronia fasciculata	Ironweed	2.00	1.23	0.14	Summer
	Veronicastrum virginicum	Culver's Root	0.25	0.14	0.02	Summer
			100.00	144.93	7.00	

Seeds/sq ft	147.00
Grass Species	2
Sedges/Rushes	11
Forb Species	22

LIVE PLANTS

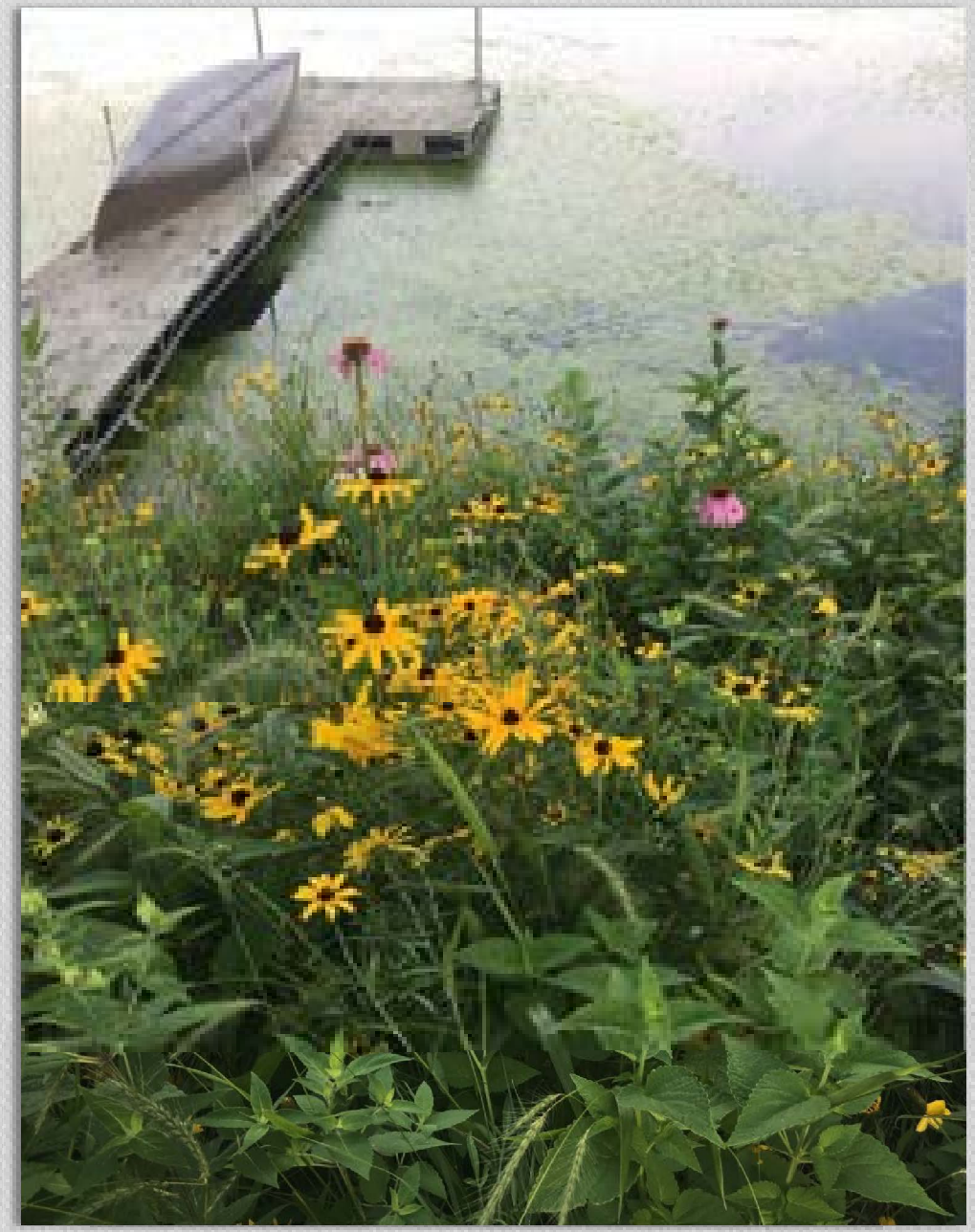
- Community Habitat Program in partnership with MNL
- Largest sale in MN since 2020
- Restored over 300 acres!


Site Planning
and Prep


Seeding and
Blanket


1ST Year


3rd Year




1ST Year
2nd Year


2021


2022

Stabilizing the Slope- Coir Logs

Before

After

10 years after coir logs installed!

Maintenance

Seed- PATIENCE!

1st year….They sleep

2nd year….They creep

3rd year……They LEAP!!

Live Plants

Watering

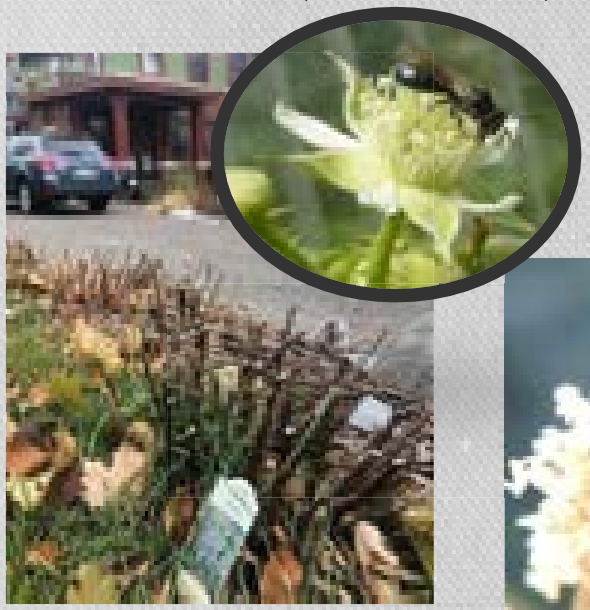
- **Young, establishing plants need 1 inch of water/week**
- **Water around the base of the plants using a hose**
- **Supplemental water may be needed during dry periods**

Weeding

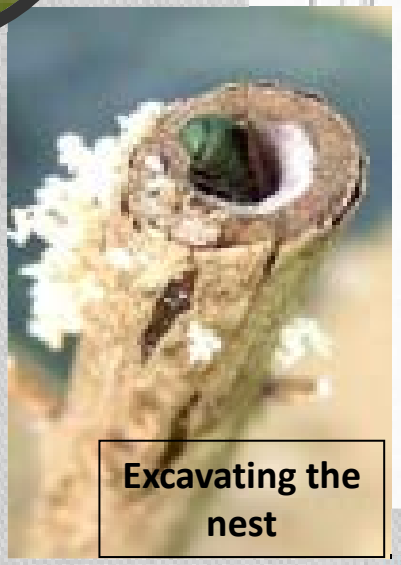
- **Mark each plant with popsicle stick etc. for easy ID**
- **Check garden monthly for weeds**
- **The native plants will eventually become established and take over habitat**

Save the stems!

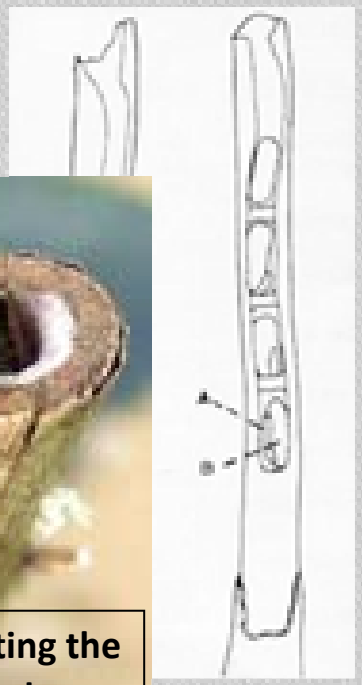
- High value pollinator plants
  - Provide food for one or more specialists – over 90% plant feeding insects are specialists!
- Provide nesting resources
  - Stems, leaf tissue, etc.



Ceratina **(small carpenter bees)**



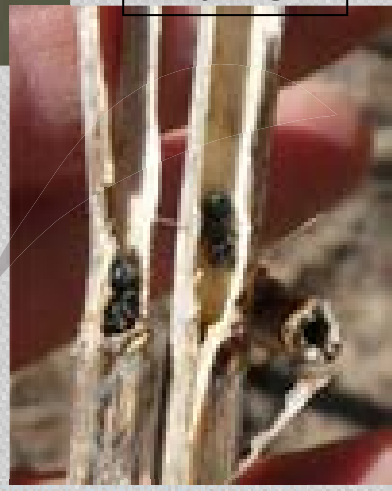
Excavating the nest



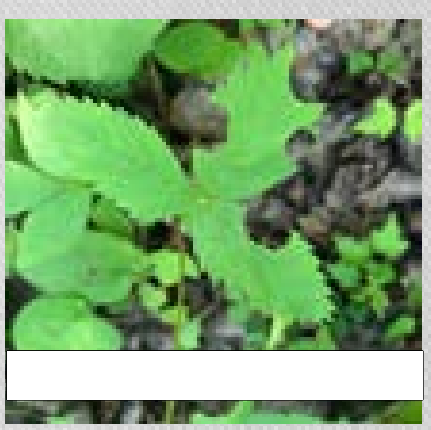
Inside the stem: larva & pollen

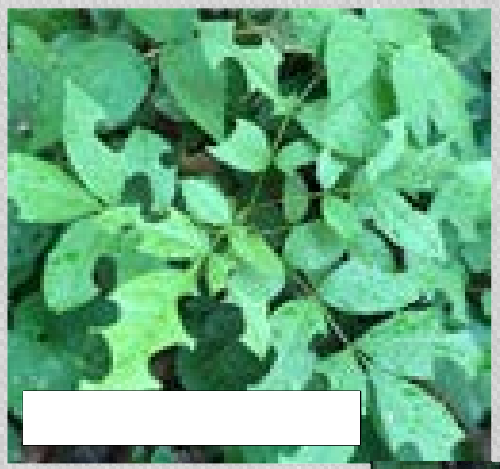
Nest entrance

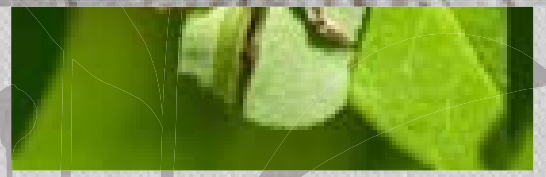
Inside the stem: adults in spring

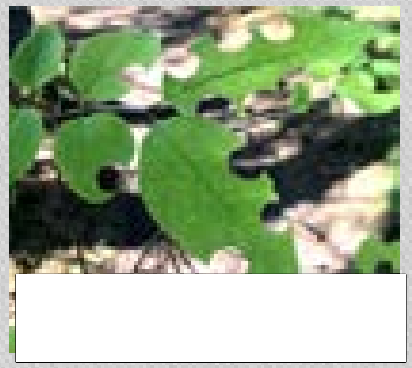


Bee nests
leaves and Petals!



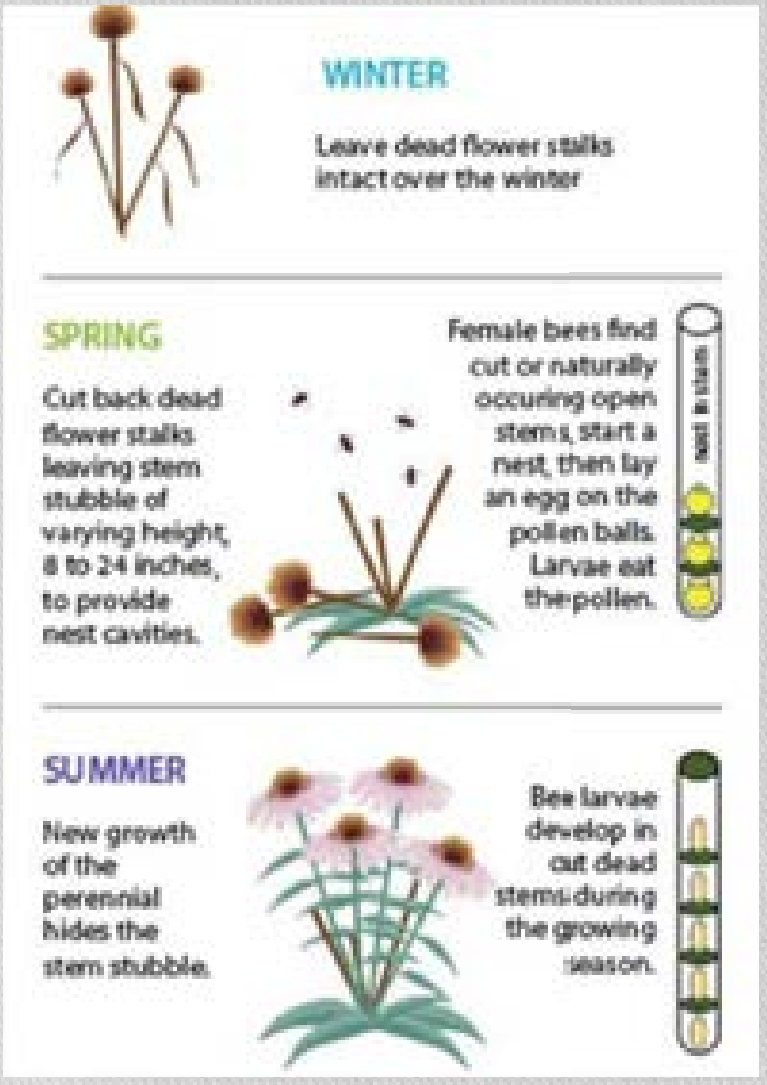


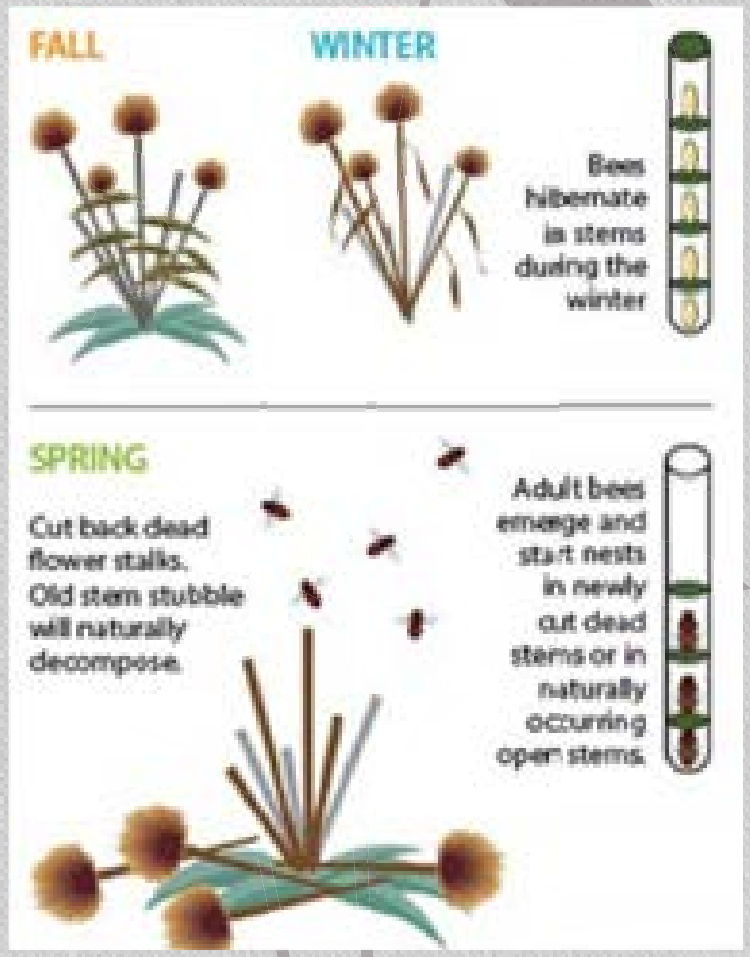




Photos: Sarah Foltz Jordan, Xerces Society

Creating Nesting Habitat

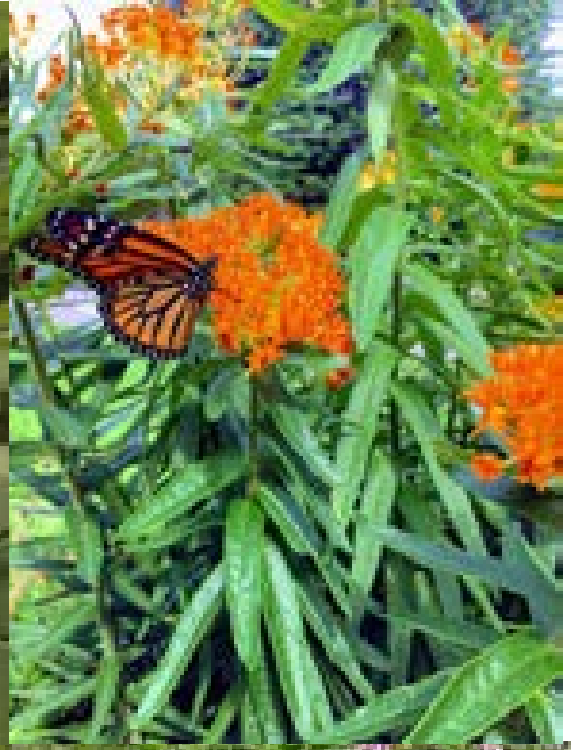


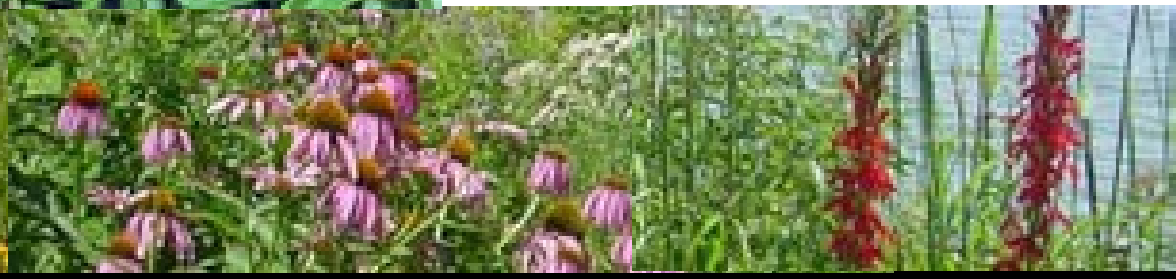


Funding & Cost-share Assistance

Cost-share assistance dependent on

- Natural resource or conservation concern
- Cost : Benefit
- Feasibility
- Available Funding
- Approval



Thank You!

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Questions?