

# "Introduction to Landscaping with Native Plants for pollinators & other wildlife in the Northwoods"



Patrick Goggin < [pgoggin@uwsp.edu](mailto:pgoggin@uwsp.edu) >, UW-Extension Lakes / Wisconsin Lakes Partnership / UW-Stevens Point

26 August 2016 / Oneida County - Three Lakes Pollinator Project /  
Reiter Center / Three Lakes, WI



University of Wisconsin-Stevens Point  
College of Natural Resources





# Wisconsin Lakes Partnership

Since its genesis in the early 1970s, the Wisconsin Lakes Partnership has become a national model of a true partnership. Three groups form the core of this unique team:

## Wisconsin Department of Natural Resources

Provides technical and financial assistance and regulatory authority

## University of Wisconsin-Extension Lakes

Designs and delivers educational materials and community outreach

## Wisconsin Lakes

Advocates for local lake people and organizations at the state level



101 S. Webster Street  
PO Box 7921  
Madison, WI 53707-7921  
[www.dnr.state.wi.us](http://www.dnr.state.wi.us)  
608-267-7694  
[Watershed@wisconsin.gov](mailto:Watershed@wisconsin.gov)



College of Natural Resources  
University of Wisconsin-Stevens Point  
800 Reserve Street  
Stevens Point, WI 54481  
[www.uwsp.edu/cnr/uwexlakes](http://www.uwsp.edu/cnr/uwexlakes)  
715-346-2116  
[uwexlakes@uwsp.edu](mailto:uwexlakes@uwsp.edu)



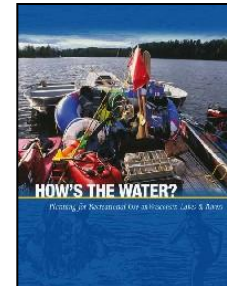
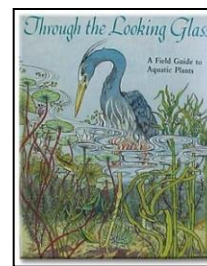
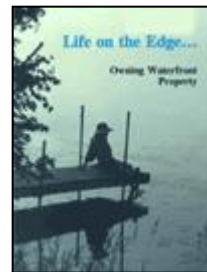
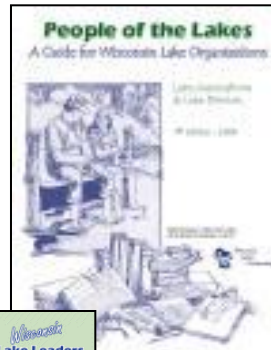
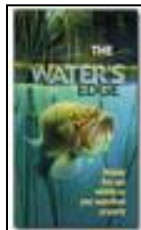
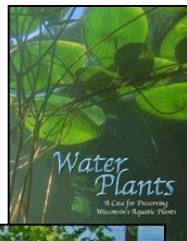
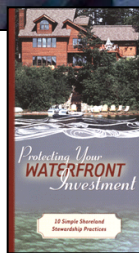
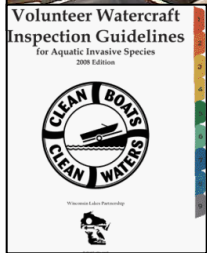
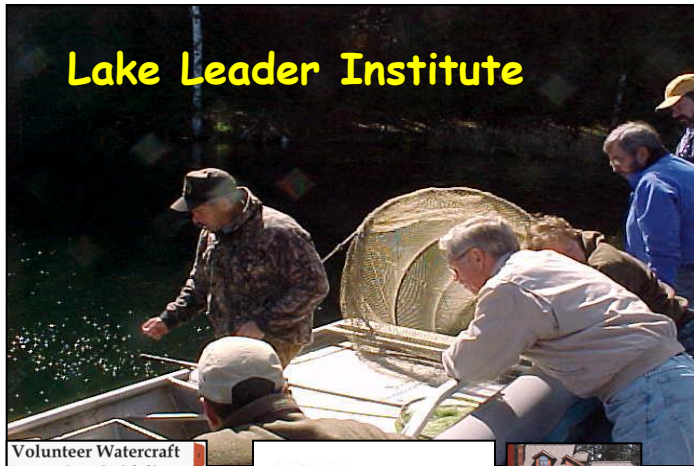
4513 Vernon Blvd., Suite 101  
Madison, WI 53705-4964  
[www.wisconsinlakes.org](http://www.wisconsinlakes.org)  
608-661-4313, 800-542-LAKE (5253)  
[wal@wisconsinlakes.org](mailto:wal@wisconsinlakes.org)



University of Wisconsin-Stevens Point  
College of Natural Resources



# Making lake education easy...and a lot of fun!



**University of Wisconsin-Stevens Point**  
College of Natural Resources



# The Wisconsin Lakes Partnership



- Is a national model of partnerships...
- Brings the state's resources to the communities...
- Is private citizens spending dollars and time on public waters...
- Understands professionals should be on tap not on top...



- Google UWEX Lakes
- <http://www.uwsp.edu/cnr/uwexlakes/>
- <http://www.wisconsinlakes.org/>
- <http://www.dnr.state.wi.us/>
- Lake Tides... The Lake Connection
- Lake List





# Talk outline / major themes

- Defining native plants
- Why do we use native plants?
- Guidelines for selecting native plants / why landscape w/ natives?
- Examples of native plant gardening up North
- Growing rarer native species
- Trying to grow Zones 4 / 5 species
- Getting started-identification
- Resources for visiting native plants in situ
- Native plant gardening resources
- Restoring native habitat resources
- Plant material types available
- Installation tips / lessons learned
- Germination & propagation resources
- Landscape & bed design resources
- Propagation tips
- Choosing plants
- Plant protection measures





# Definition – what are native plants?

- Those that evolved naturally in North America.
- Species that were growing naturally in that region before humans introduced plants from distant places.
- Typically grew in communities with species adapted to similar soil, moisture, and weather conditions.
- Some of the widespread communities included oak-hickory-chestnut and beech-maple forests, tall-grass and short-grass prairies, and freshwater marshes. Additional communities occupied specialized niches, including savannahs, fens, bogs, flood plains and alpine areas.



Source: Wild Ones.org



**University of Wisconsin-Stevens Point**  
College of Natural Resources



# Why use native plants?

- Gardening with native plants may soon become the norm rather than the exception.
- The benefits of native landscaping are fueling a gardening movement that says “no” to pesticides and fertilizers and “yes” to biodiversity and creating more sustainable landscapes.
- Novice and professional gardeners are turning to native landscaping to promote plant and wildlife conservation, manage stormwater / rain water, and to reduce maintenance.







# Why use native plants?

## - stormwater / rain water control



- Rain gardens, bioretention and wetland detention basins are a few best management practices in use.
- They slow down and absorb rain water, thus reducing the quantity and velocity of storm water runoff while improving water quality.



Source: Scott Woodbury,  
Shaw Nature Reserve



University of Wisconsin-Stevens Point  
College of Natural Resources

# Why use native plants? - for resistance to deer browse

- Fortunately deer avoid many native plants.
- Deer rely on their sense of smell to determine whether an area is safe and which plants are desirable to eat. For instance, plants with aromatic foliage such as wild bergamot (*Monarda fistulosa*) and groundsel (*Packera aurea*) deter deer.
- Some plants repel deer because of their coarse, rough, hairy or spiny textures. This group includes rattlesnake master (*Eryngium yuccifolium*) and prickly pear cactus (*Opuntia humifusa*).
- A deer-resistant garden includes a high percentage of these types of plants.





# Why use native plants? - educational opportunities

- Native plant gardens present endless opportunities for learning about seasonal cycles, wildlife, and plant life cycles.
- Quiet spaces outside can be used for art and reading classes.
- Environmental and conservation topics are taught best outdoors.



# Why use native plants?

## - for a sense of place

- People who have lived in one place for a time develop images of their home that create a sense of belonging and familiarity.
- Many Wisconsinites recognize the coming of spring with maple sap / syrup making time.
- The cultural significance of wild rice to our heritage and sense of place is as relevant as ever—talk about a local food!





# Why use native plants? - for beautification

*Betula alleghaniensis* – yellow birch

- Wildflowers, flowering vines, shrubs and trees offer a wide range of colors, textures and forms to create dynamic seasonal displays.
- Grasses and sedges have interesting flowers and seed heads and yellow–orange fall color.
- Shrubs and trees have fall color and berries that persist into the winter.
- Choosing a wide assortment of plants ensures seasonal interest, with the bonus of attracting colorful birds, butterflies and insects.



# Why use native plants?

## - for less maintenance

Compared with lawns, landscapes planted with appropriate native plants require less maintenance. They require minimal watering (except during establishment and drought periods) and they need no chemical fertilizers or pesticides.

Characteristics of native plants that reduce maintenance include:

- a) Longevity: plants that live for many decades
- b) Three to four-season interest: plants that are appealing most of the year
- c) Variable conditions: plants that tolerate a wide range of light and moisture conditions
- d) Small and compact: plants that are in scale with a given space
- e) Weed elimination: plants that grow into dense groupings and eliminate weeds
- f) Less seediness: plants that do not spread readily from seed (some exceptions of course)





# Why use native plants?

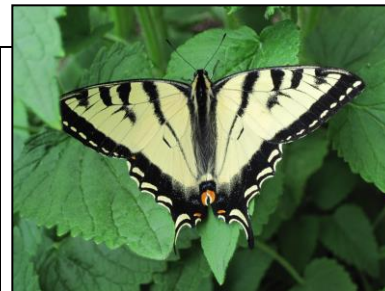
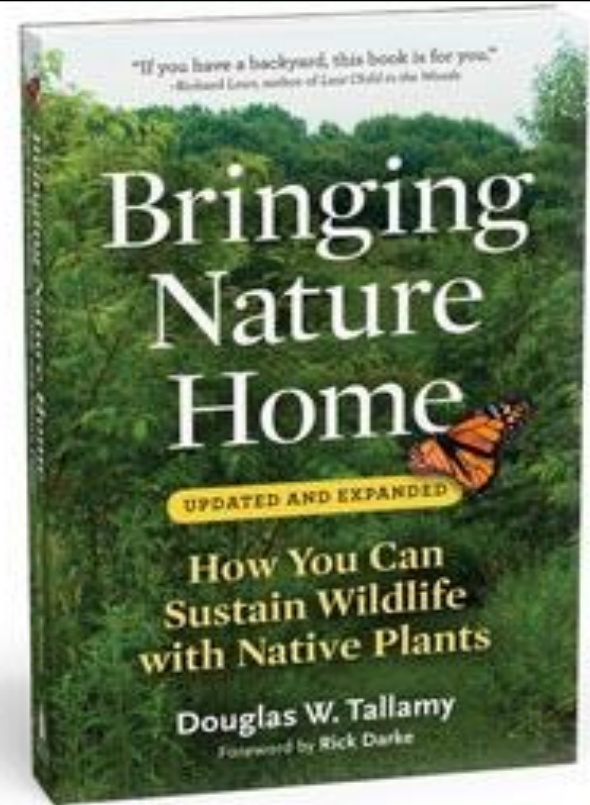
## - to create wildlife habitat / structure

- A native plant garden with a diversity of trees, shrubs, perennials and grasses provides food and shelter for insects, birds, amphibians and mammals throughout the growing season.
- Leaving seed heads and plant structure throughout winter provides continuing food and shelter for many creatures and provides opportunities to observe nature up close.



# Doug Tallamy – native plants sustain wildlife

- When native plants disappear, the insects disappear, impoverishing the food source for birds and other animals.
- Throughout the U.S., we have fragmented the habitats that support biodiversity by the way we landscaped our cities, suburbs, and farmlands.
- Replacing 1/2 the area that is now in barren lawn with native plants that are best at supporting food webs would create over 20 million acres of connectivity—going a long way toward sustaining biodiversity into the future.





# Native plants and butterflies – example combos

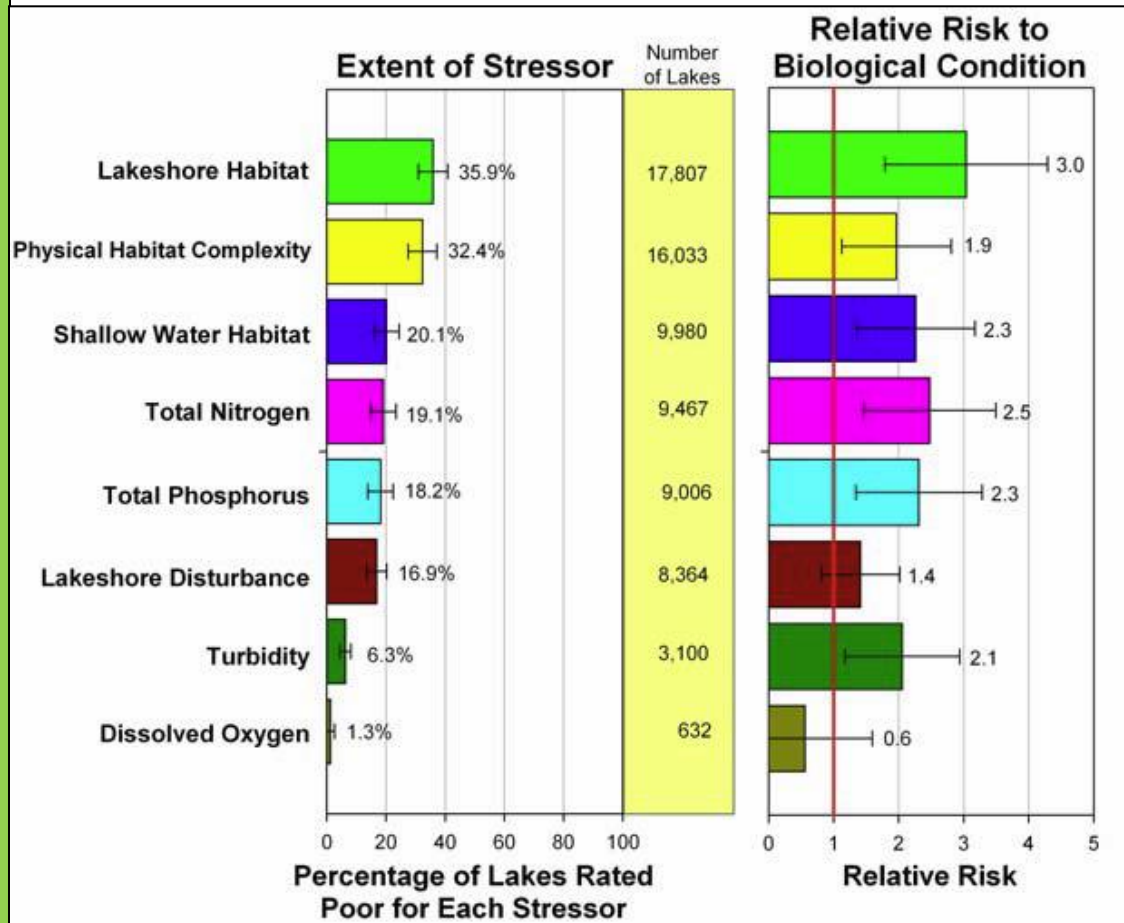
Source: Tallamy 2012

Native plant	Number of species of caterpillars (moths & butterflies)
Oaks ( <i>Quercus</i> sp.)	557
Cherries ( <i>Prunus</i> sp.)	456
Hazelnuts ( <i>Corylus</i> sp.)	131
Buckthorns ( <i>Rhamnus</i> sp.)	10
Blueberries ( <i>Vaccinium</i> sp.)	294
Maples ( <i>Acer</i> sp.)	297



# National Lakes Assessment (NLA)

- First-ever baseline study of the condition of the nation's lakes.
- The latest in a series of surveys of the nation's aquatic resources.
- Unbiased estimates of the condition of natural and man-made freshwater lakes, ponds, and reservoirs greater than 10 acres and at least one meter deep.
- A total of 1,028 lakes were sampled for the NLA during summer 2007, representing the condition of about 50,000 lakes nationwide.





# Guidelines for selecting native plants

- In general, the more closely you match the environmental conditions of the source of your plant material to that of the planting site, the better it will grow. Example: red maple from the deep south will not do well in the north. Also, a red maple from a lowland will not do well if transplanted to an upland site (within 100 to 150 miles...).
- Getting plant material grown from local seed sources helps preserve local pollinators, insects, birds, and mammals, and other wildlife which have co-evolved with plants of your local ecotype.
- This approach also preserves the genetic diversity and integrity of native plants.



Source: Wild Ones.org



University of Wisconsin-Stevens Point  
College of Natural Resources



# Why landscape with native plants?

- **Native plants save energy** - less inputs of time, water, and nutrients.
- **Provide a place for children to play** - give children a place to play where they can become aware of the workings of the world around them.
- **Native plants stay put** – these species rarely become invasive like other plants introduced from other areas that are out of place; they provide food and shelter for birds, butterflies and other desirable wildlife.
- **Many help to enrich the soil / deliver water** - their root systems help rainfall percolate into the soil, reducing erosion and runoff; this improves water quality.
- **Native plants are interesting** - the diversity of native plants includes interesting flowers and foliage. Native shrubs and trees provide a variety of heights, shapes and textures in the landscape.

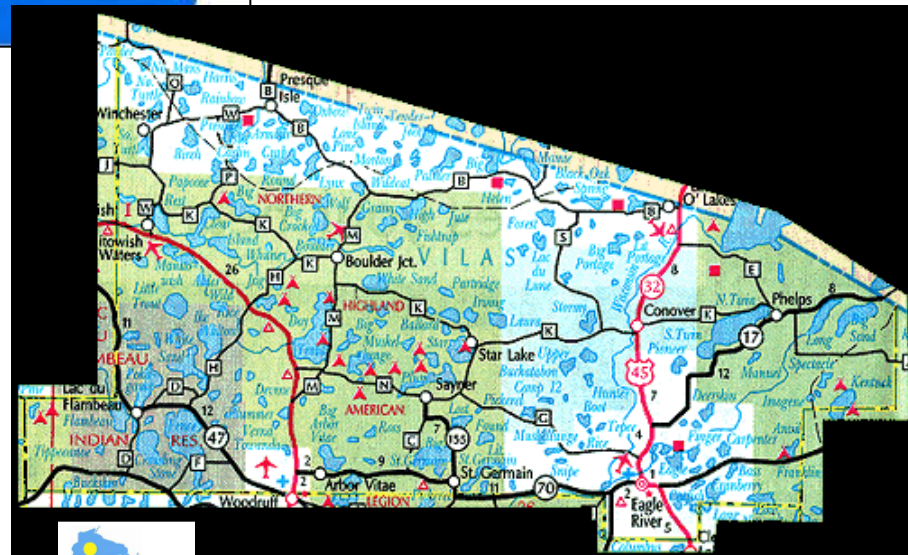




# Let's jump in the family truckster & head north to Phelps, WI!



- Quita and Pat's gardens - Phelps, WI
- Zone 3b – it's cold, really cold
- Soil is composed of sand, gravel, silt, clay and organic material--primarily result from glacial till, outwash, or deposits.
- At about 1700 ft. above sea level



University of Wisconsin-Stevens Point  
College of Natural Resources



# Butterfly garden / rain garden beds





# What do butterflies need?

Host plants: the specific food of a caterpillar



Nectar plants: plants with sugary fluid secreted by flowers—the principal food for adult butterflies



# Common North Woods butterflies and their habitats

## Bogs:

Pink-edged sulphur	Silver-bordered fritillary
Bronze copper	Meadow fritillary
Bog copper	Harris' checkerspot
Dorcas copper	Baltimore checkerspot
Spring azure	Common ringlet
Silvery blue	Jutta arctic
Aphrodite fritillary	Arctic skipper
Atlantis fritillary	Dreamy duskywing
Bog fritillary	Black dash



## Deciduous forests:

Canadian tiger swallowtail	Northern pearly-eye
Mustard white	Little wood-satyr
Spring azure	Silver-spotted skipper
Aphrodite fritillary	Dreamy duskywing
Atlantis fritillary	Sleepy duskywing
Gray comma	Juvenal's duskywing
Compton tortoiseshell	

## Oak woodlands:

Pink-edged sulphur	Baltimore checkerspot
Edwards' hairstreak	Sleepy duskywing
Banded hairstreak	Juvenal's duskywing
Aphrodite fritillary	Arctic skipper

Pepper and salt skipper  
*Amblyscirtes hegon*



## Swamps:

Spring azure	Viceroy
Eastern comma	Northern pearly-eye
Gray comma	Eyed brown
Milbert's tortoiseshell	Arctic skipper
Mourning cloak	Pepper & salt skipper

Pink-edged sulphur  
*Colias interior*



## Coniferous forests:

White admiral  
Green comma  
Arctic skipper

## Sandy areas:

Silvery blue  
Silvery checkerspot  
Sleepy duskywing

Spring azure  
*Celastrina ladon*



## Burned areas:

Pink-edged sulphur (wherever blueberry plants are found.)  
Silvery blue  
Silvery checkerspot



University of Wisconsin-Stevens Point  
College of Natural Resources

The Wisconsin Lakes Partnership





# Deciduous forest examples –



Pepper and salt skipper  
*Amblyscirtes hegon*



Compton tortoiseshell  
*Nymphalis vaualbum*

## Pepper and salt skipper:

- Caterpillar plant(s): grasses: Indian grass, *Poa* species.
- Adult food(s): blackberries, blueberries, honeysuckles, viburnum, Virginia waterleaf, self-heal, and spreading dogbane.

## Compton tortoiseshell:

- Caterpillar plant(s): birch, willow, and aspen leaves.
- Adult food(s): tree sap (especially maples) and rotting fruit.



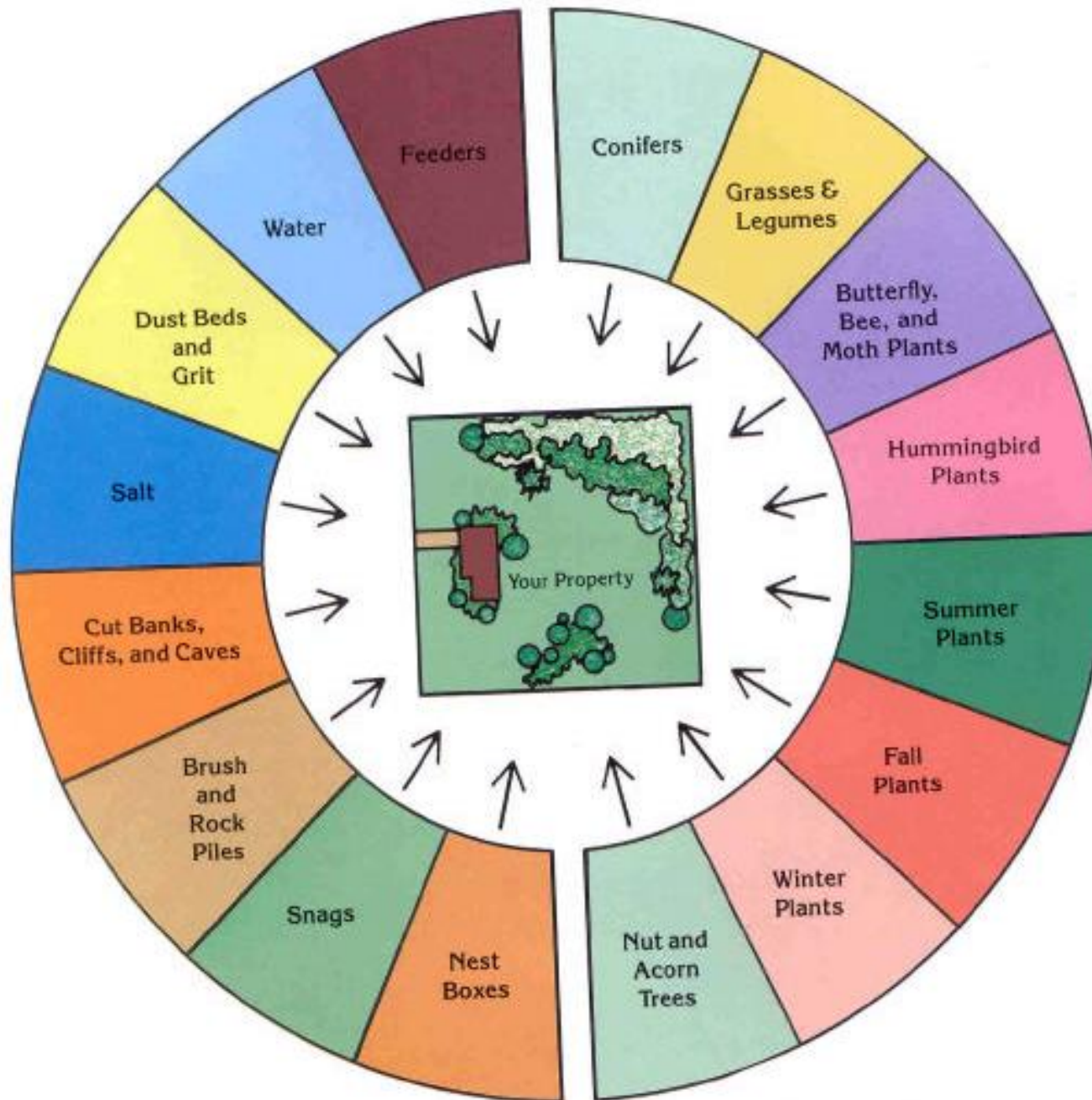
# What do birds need?

## Basic necessities

- Food
- Water
- Shelter
- Providing food, nest boxes, nesting materials, water, and natural habitat can attract

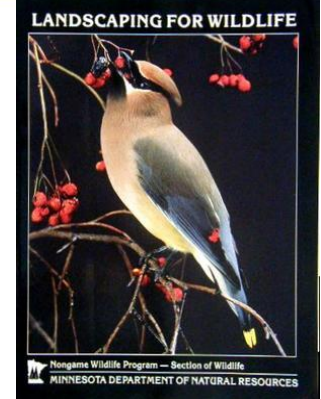




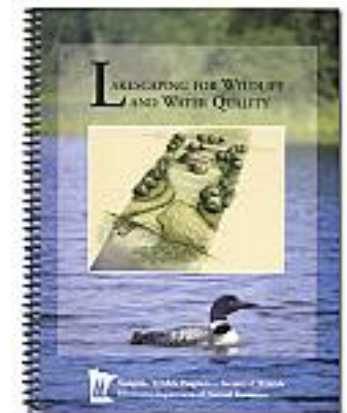


Structural Components

Plant Components



By: Carol Henderson



By: Carol Henderson,  
Carolyn Dindorf,  
and Fred Rozumalski



# Butterfly garden / rain garden beds (dual purpose)



- Handout reference / design sheet
- Future goals: filling in holes; add more grasses and sedges; height in middle; more bloom balance over growing season

- Bergamot; yellow coneflower; ox eye daisy; purple coneflower; queen-of-the-prairie; Culver's-root; greater bladder sedge; etc.

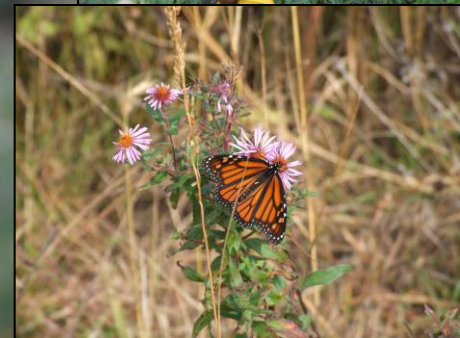


# Plant profiles – bird / butterfly garden



## Butterfly / Insect Favorites

*Agastache* species - Hyssops / *Allium* species - Onions / *Amorpha* species—  
Lead Plant, et al. / *Asclepias* species - Milkweeds / *Aster* species - Asters /  
*Campanula americana* - Tall Bellflower / *Ceanothus americanus* - New  
Jersey Tea / *Coreopsis* species - Coreopsis / *Echinacea* species—  
Coneflowers / *Eupatorium* species - Joe Pye Weed, et al. /  
*Helianthus/Heliopsis* species - Sunflowers / *Liatris* species - Blazing Stars /  
*Monarda fistulosa* - Wild Bergamot / *Petalostemum (Dalea)* species - Prairie  
Clovers / *Phlox* species - Phlox / *Pycnanthemum* species - Mountain Mints /  
*Ratibida* species - Coneflowers / *Rosa* species - Roses / *Rudbeckia* species  
- Black-eyed Susans / *Silphium* species - Compass Plant et al. / *Solidago*  
species - Goldenrods / *Tradescantia* species - Spiderworts / *Verbena*  
species - Vervains / *Vernonia* species - Ironweeds / *Viola* species - Violets /  
*Zizia* species - Golden Alexanders

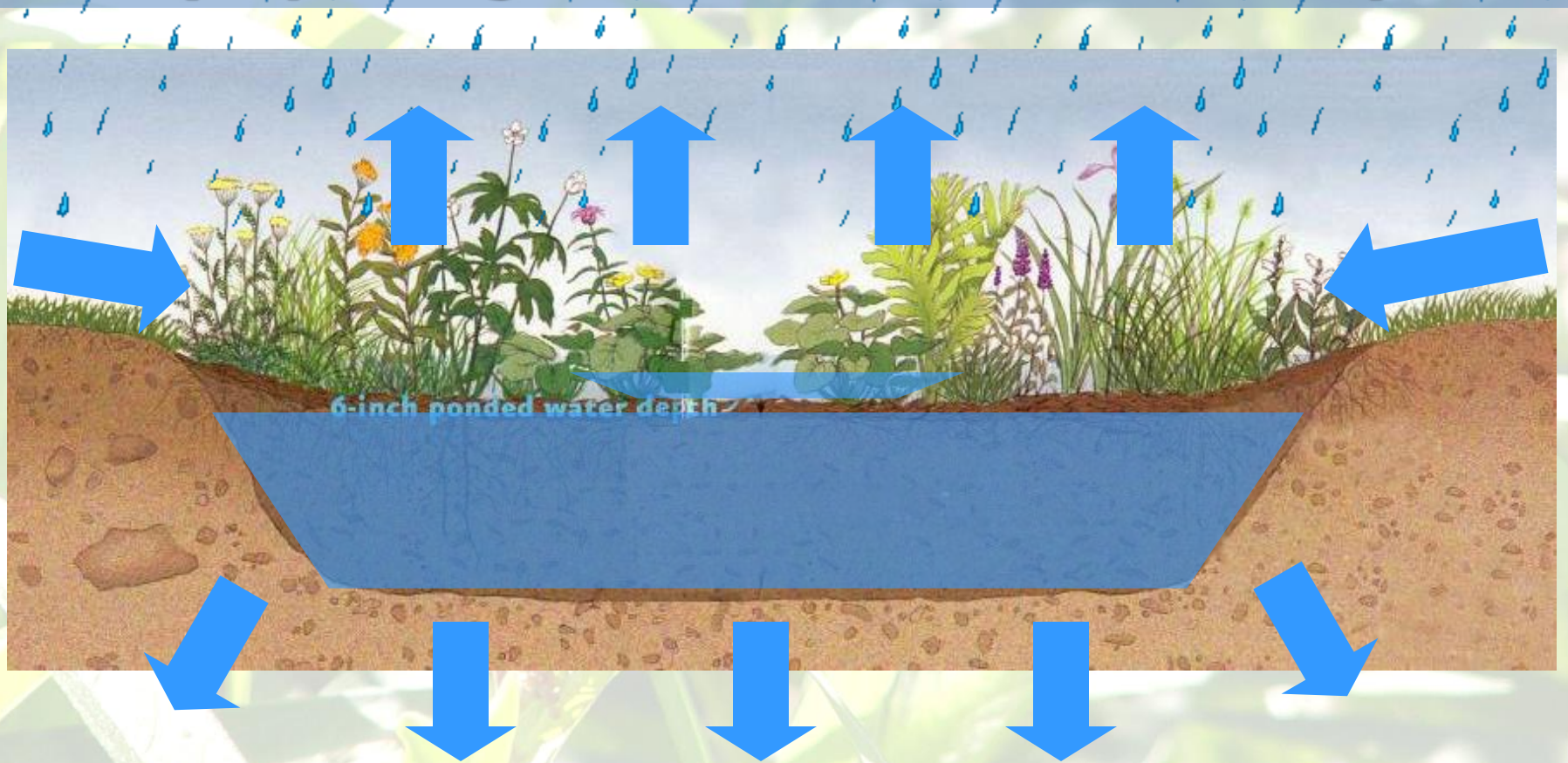


University of Wisconsin-Stevens Point  
College of Natural Resources



# Raingardens

## (Capturing Rainwater / Stormwater )

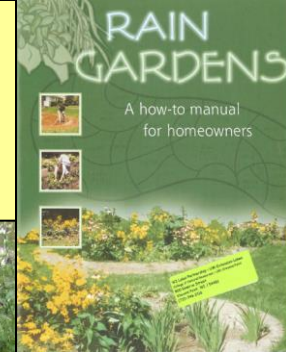


Just like a regular planting, but able to absorb  
rainwater and breakdown pollutants



# Rain garden

— DNI  
guide





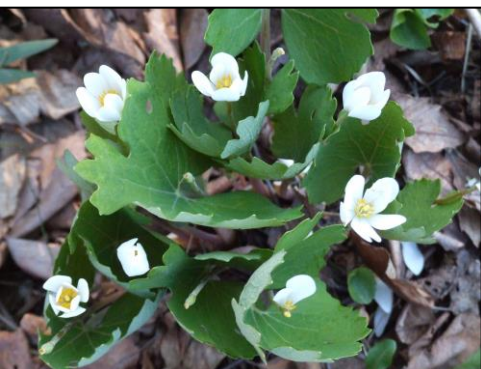
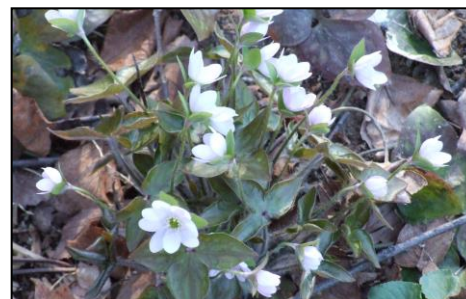
# North-facing spring ephemerals & ferns bed



- Only real mesic spot for our property
- Future goal: more diversity of ephemerals; add some ferns
- Interrupted fern (*Osmunda claytoniana*); red elderberry (*Sambucus racemosa* L. subsp. *pubens*); hostas; spring ephemerals; Jack-in-the-pulpit (*Arisaema triphyllum*); violets



# North-facing spring ephemerals & ferns bed



- Virginia bluebells (*Mertensia virginica*); big white trillium (*Trillium grandiflorum*); barren-strawberry (*Waldsteinia fragarioides*); Dutchman's-breeches (*Dicentra cucullaria*); ; sharp-lobed hepatica (*Anemone acutiloba*); eastern shooting-star (*Dodecatheon meadia*); sessile bellwort (*Uvularia sessilifolia*)



# Garage native plant beds



- Future goal: more woodland plants; increase fertility
- Blue aster (*Aster oolentangiensis*); white wild indigo (*Baptisia alba*); grassed-leaved goldenrod (*Euthamia graminifolia*); spiderwort (*Tradescantia ohioensis*); etc.



# Garage native plant beds

- Blue-ridge buckbean (*Thermopsis caroliniana*); yellow honeysuckle vine (*Lonicera reticulata*); tall white beards-tongue (*Penstemon digitalis*); sneezeweed (*Helenium autumnale*); Canada anemone (*Anemone canadensis*); Jacob's ladder (*Polemonium reptans*); big-leaved aster (*Aster macrophyllus*); etc.





# New wood-chipped woodland bed



- Late season asters and *Solidagos*
- Shrub layer for birds-roses; hazelnuts; dogwoods; witch-hazel; snowberry; buttonbush; native honeysuckle; butternut; etc.
- Concord grape vine mixed in (100+ y/o)
- Note:  
neighbor Leonard's help w/ chips



# New wood-chipped woodland bed



Photo by: Merel Black



- Wild-ginger (*Asarum canadense*); may-apple (*Podophyllum peltatum*); twinleaf (*Jeffersonia diphylla*); wood-betony (*Pedicularis canadensis*); columbine (*Aquilegia canadensis*); etc.
- Future goals: fill out bed with ephemerals and woodland stuff/more ferns, shrubs

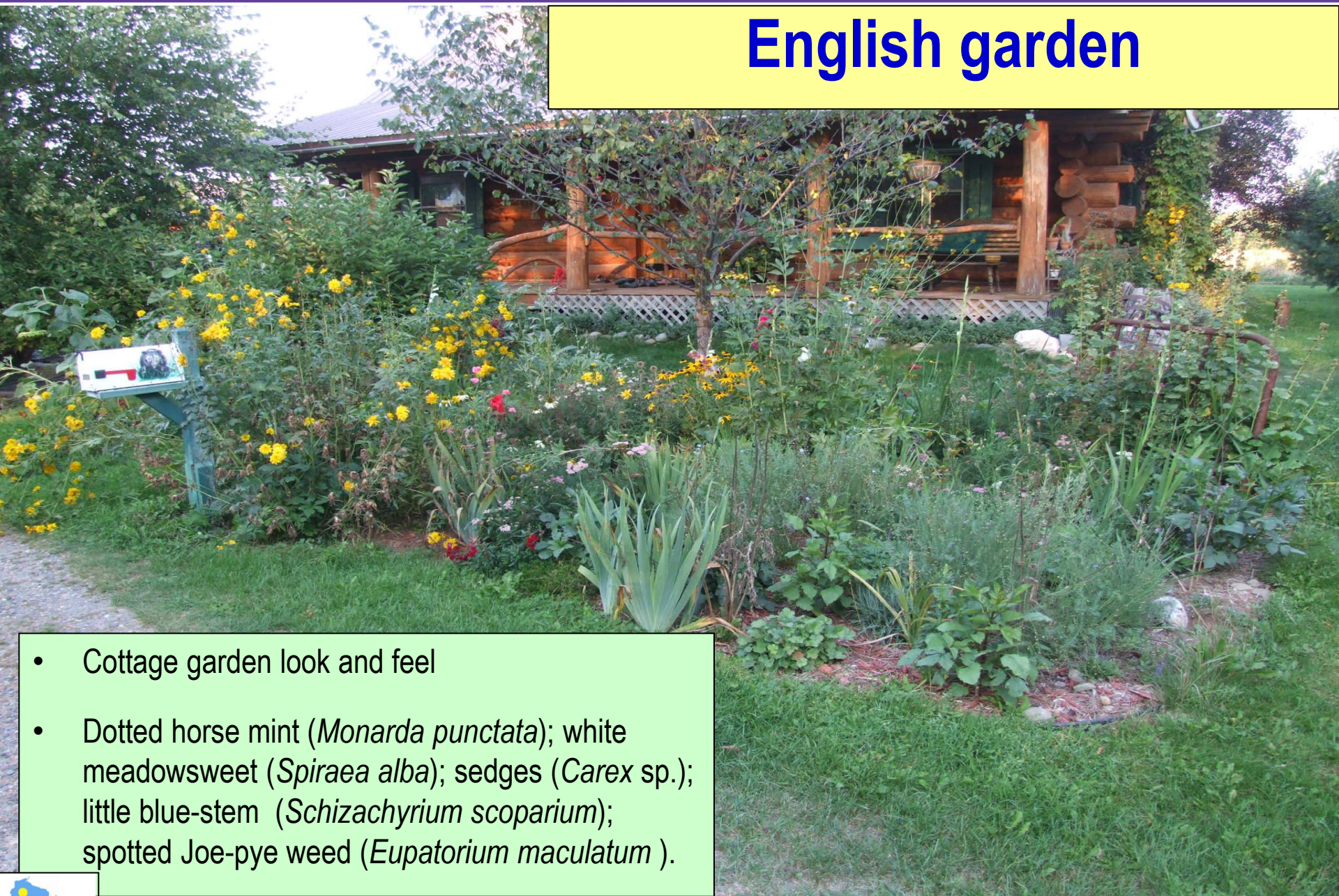




**University of Wisconsin-Stevens Point**  
College of Natural Resources



# English garden



- Cottage garden look and feel
- Dotted horse mint (*Monarda punctata*); white meadowsweet (*Spiraea alba*); sedges (*Carex* sp.); little blue-stem (*Schizachyrium scoparium*); spotted Joe-pye weed (*Eupatorium maculatum*).



# English garden

- Future goals: stay out of bed; more spring blooms, grasses, and better bloom balance over season





# Rock garden



- Whoa rock garden purists—this is not a “real” rock garden—it has well-drained soil and a lot of rocks from on-site (2006)



# Rock garden

2008



- Brittle prickly-pear cactus (*Opuntia fragilis*); eastern prickly pear cactus (*Opuntia humifusa*); Missouri primrose (*Oenothera macrocarpa*); alum root (*Heuchera richardsonii*); bottle gentian (*Gentiana andrewsii*); ground juniper (*Juniper horizontalis*); stiff goldenrod (*Solidago rigida*); etc.



# Rock garden

2010



- Rattle-snake master (*Eryngium yuccifolium*); pasque-flower (*Anemone patens*); showy beards-tongue (*Penstemon cobaea*); bearberry (*Arctostaphylos uva-ursi*); purple clematis (*Clematis occidentalis*); rough blazing-star (*Liatris aspera*); etc.



# Rock garden

2011



- Future goals: sweet grass control; weeding; freshen up mulch
- Thimbleberry (*Rubus parviflorus*); lead plant (*Amorpha canescens*); butterfly-weed (*Asclepias tuberosa*); little bluestem (*Schizachyrium scoparium*); white clematis (*Clematis virginiana*); rough blazing-star (*Liatris aspera*); etc.



# Wetland bed

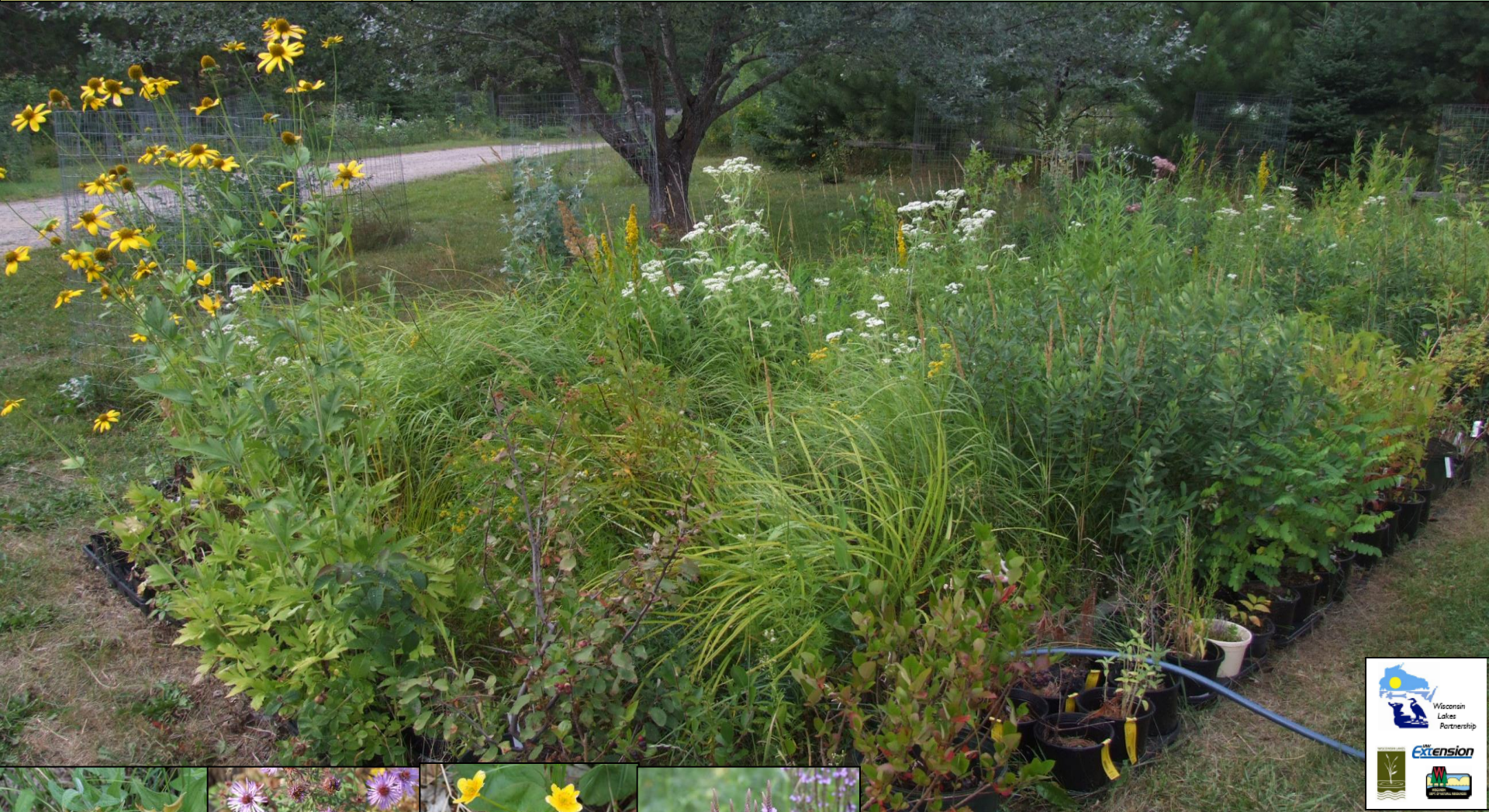
- Lined the bed with 6 mm black plastic
- Organic soil and humus
- Slope to the bed-south to north; some plants like slow-flowing water
- Cream gentian (*Gentiana alba*); boneset (*Eupatorium perfoliatum*); sweet gale (*Myrica gale*); marsh rose (*Rosa palustris*); great St. John's wort (*Hypericum pyramidatum*); wood lily (*Lilium philadelphicum*); bog goldenrod (*Solidago uligosa*); etc.





# Wetland bed

- Future goals: add more eye candy species; prune shrub layer back a little.
- Cardinal flower (*Lobelia cardinalis*); yellow lady-slipper (*Cypripedium parviflorum*); New England aster (*Aster novae-angliae*); bristly sedge (*Carex comosa*); jewel-weed (*Impatiens capensis*); marsh marigold (*Caltha palustris*); wool-grass (*Scirpus cyperinus*); etc.



University of Wisconsin-Stevens Point  
College of Natural Resources



# Raised native plant beds



- “Your former wives” / Henry <sup>the 8th</sup> style
- Native seed source for meadow / prairie project plantings
- Illustrates native plant diversity for garden tours



# Raised native plant beds (May 2011)





# Raised native plant beds

- Future goals: seed collecting for stock; nurturing more delicate species along; add more early season species; add more whimsy—tastefully (August 2011)





# Meadow / prairie project

- Plant density discussion
- Cool and warm season plants
- Challenge of warm season grass establishment
- Cup-pant (*Silphium perfoliatum*); dwarf blazing-star (*Liatris cylindracea*); prairie cord-grass (*Spartina pectinata*); willows (*Salix* sp.); Bicknell's sedge (*Carex bicknellii*); showy goldenrod (*Solidago speciosa*); side-oats gama grass (*Boutelou curtipendula*); etc.





# Meadow / prairie project

- Prairie dock (*Silphium terebinthinaceum*); Indian grass (*Sorghastrum nutans*); white sage (*Artemisia ludoviciana*); Indian paintbrush (*Castilleja coccinea*); great blue lobelia (*Lobelia siphilitica*); nodding wild onion (*Allium cernuum*); sunflowers (*Helianthus* sp.); etc.





# Meadow / prairie project

- Future goals: increase prairie size; more species diversity





# Meadow / prairie project





# Woodland project

~50 trees selectively  
cut last winter







**Woodland project**



# US Forest Service Northern Research Station High School Scholars - Healthy Lakes project >147 native trees, shrubs, & vines planted



## Woodland project



University of Wisconsin-Stevens Point  
College of Natural Resources





**Woodland project**



# Growing rarer species (rare, threatened, and endangered)



- Wild petunia (*Ruellia humilis*); wild quinine (*Parthenium integrifolium*); dwarf lake iris (*Iris lacustris*); pimpernel (*Taenidia integerrima*); wood aster (*Aster furcatus*); etc.



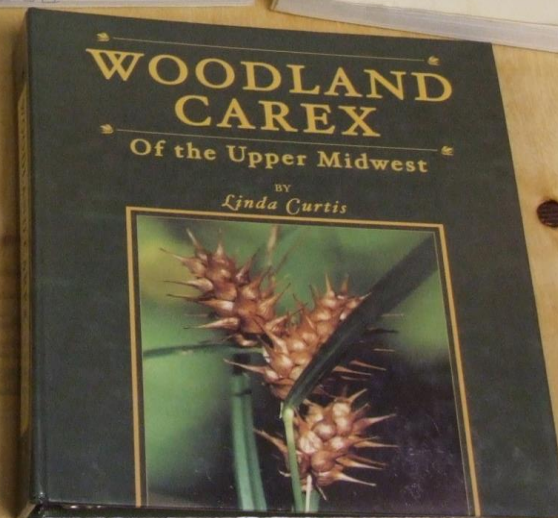
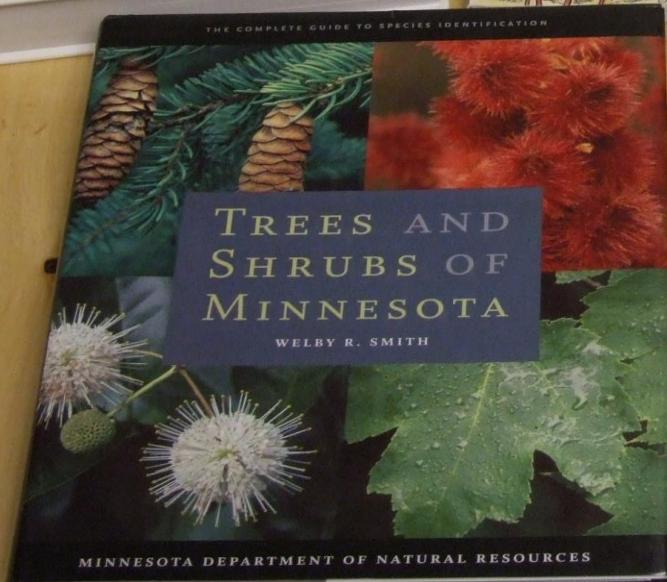
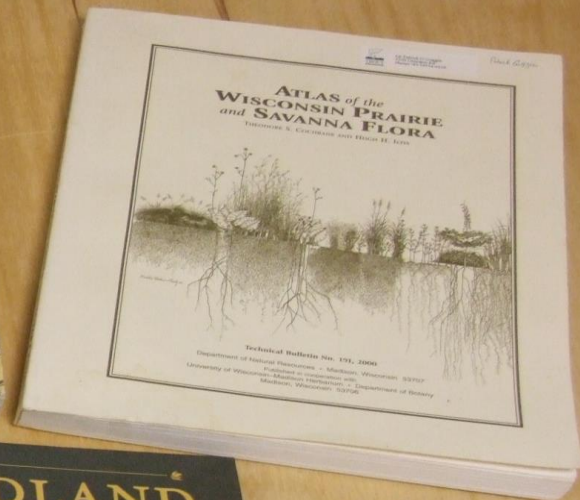
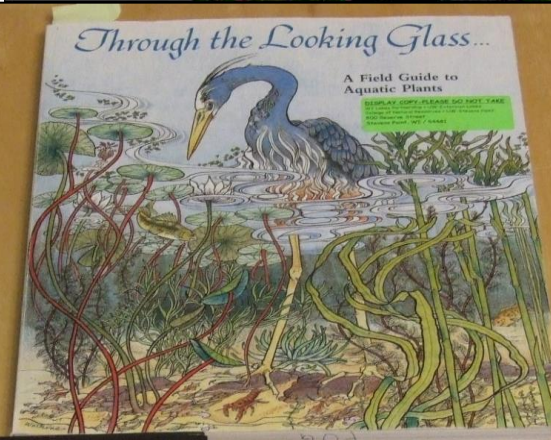
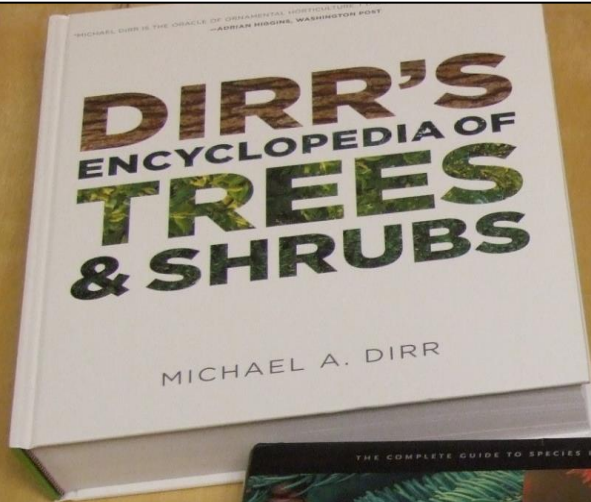
# Try to push it with zone 4 / 5 plants



- West-Indian psychic (*Porteranthus stipulus*); bunchflower (*Melanthium virginicum*); glade mallow (*Napaea dioica*); rose mallows (*Hibiscus militaris*; *H. lasiocarpus*); Kankanee mallow (*Iliamna remota*); American burnet (*Sanguisorba canadensis*); etc.



# Native plant identification – resources



University of Wisconsin-Stevens Point  
College of Natural Resources

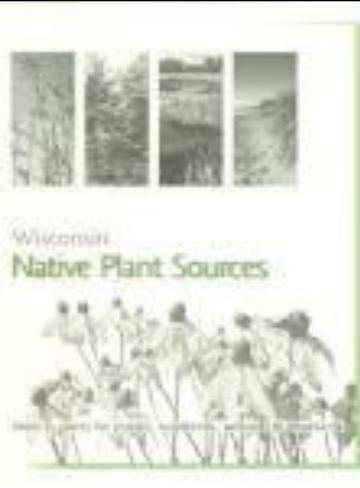


# Native plant identification [continued] – resources



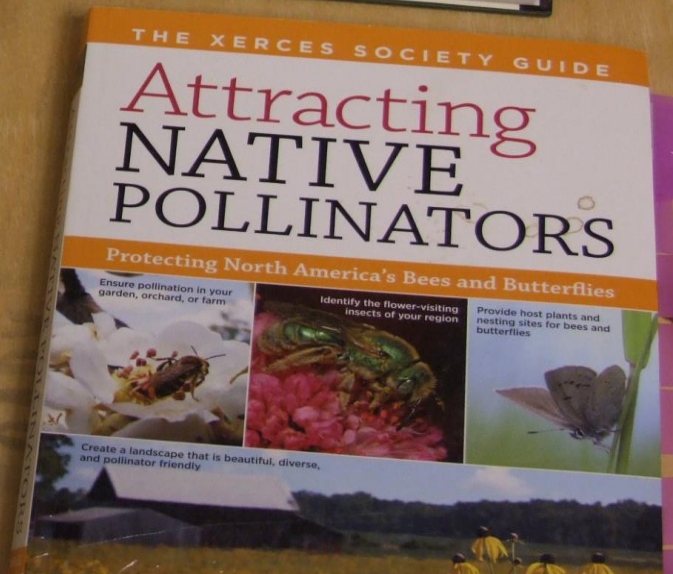
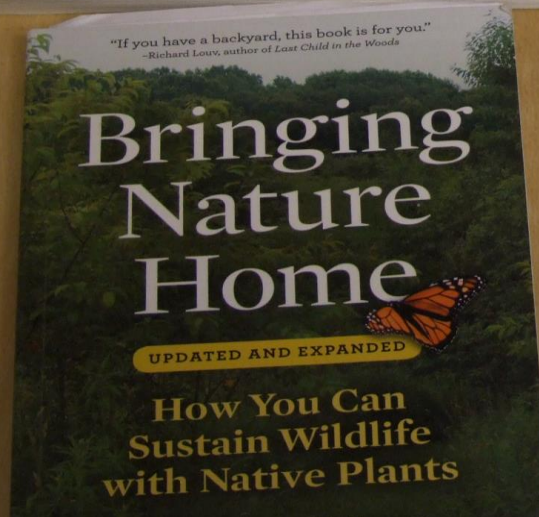
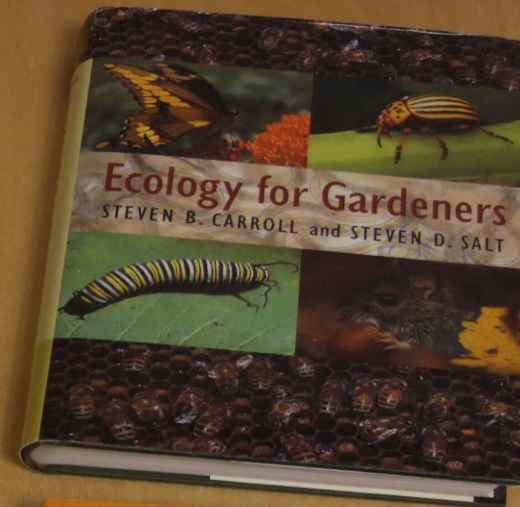
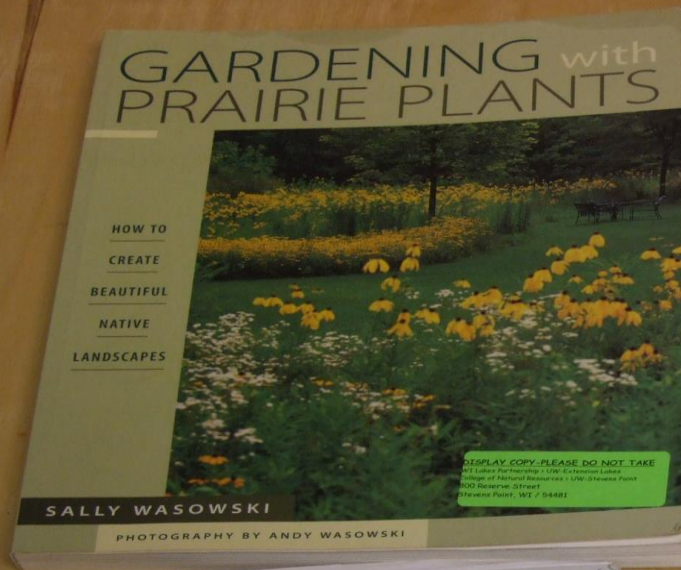


# Native plant material sources



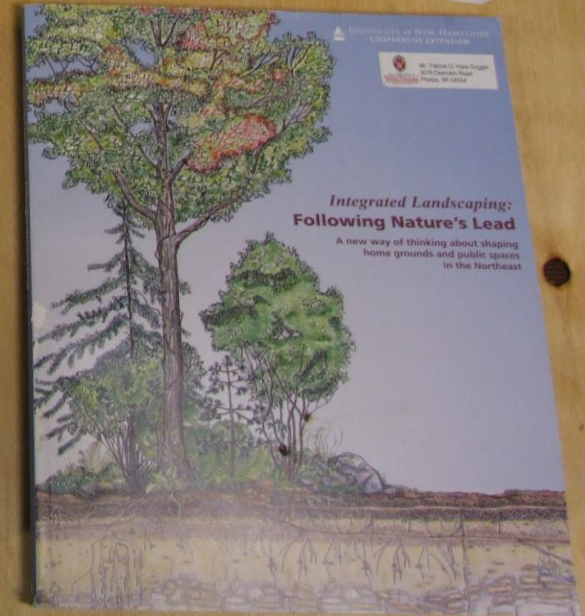
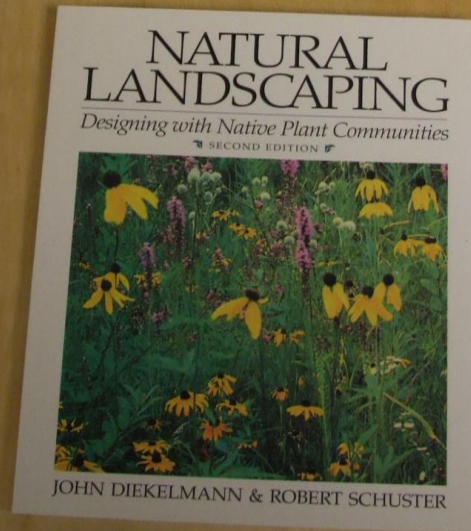
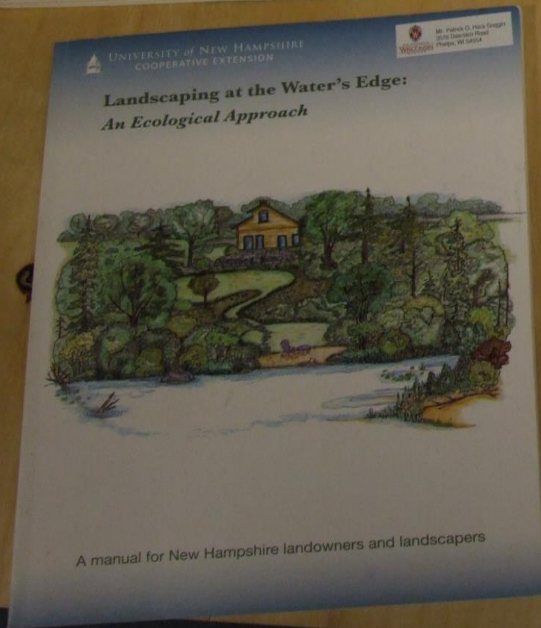
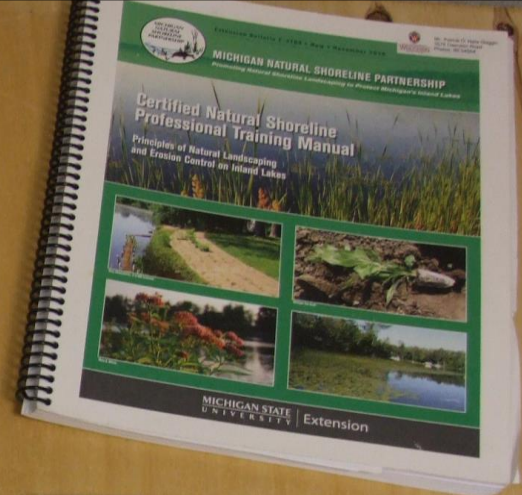
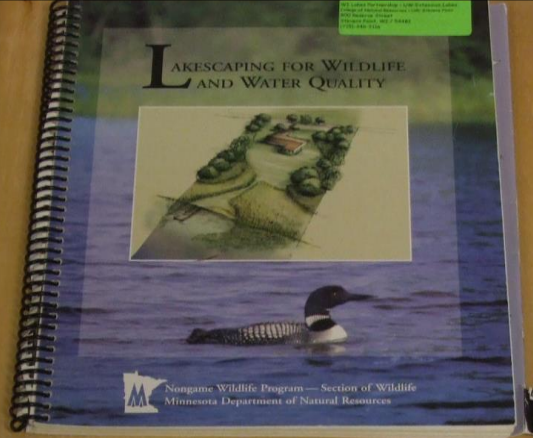
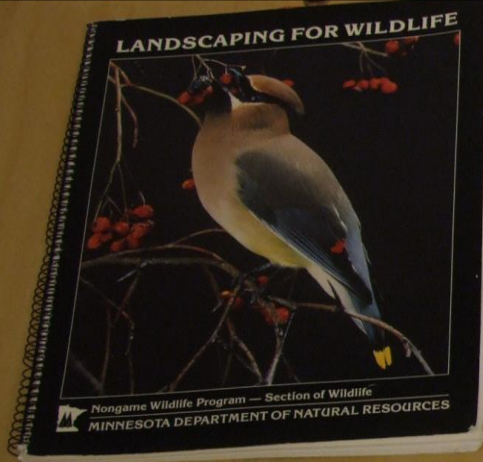


# Gardening with native plants & ecology – resources



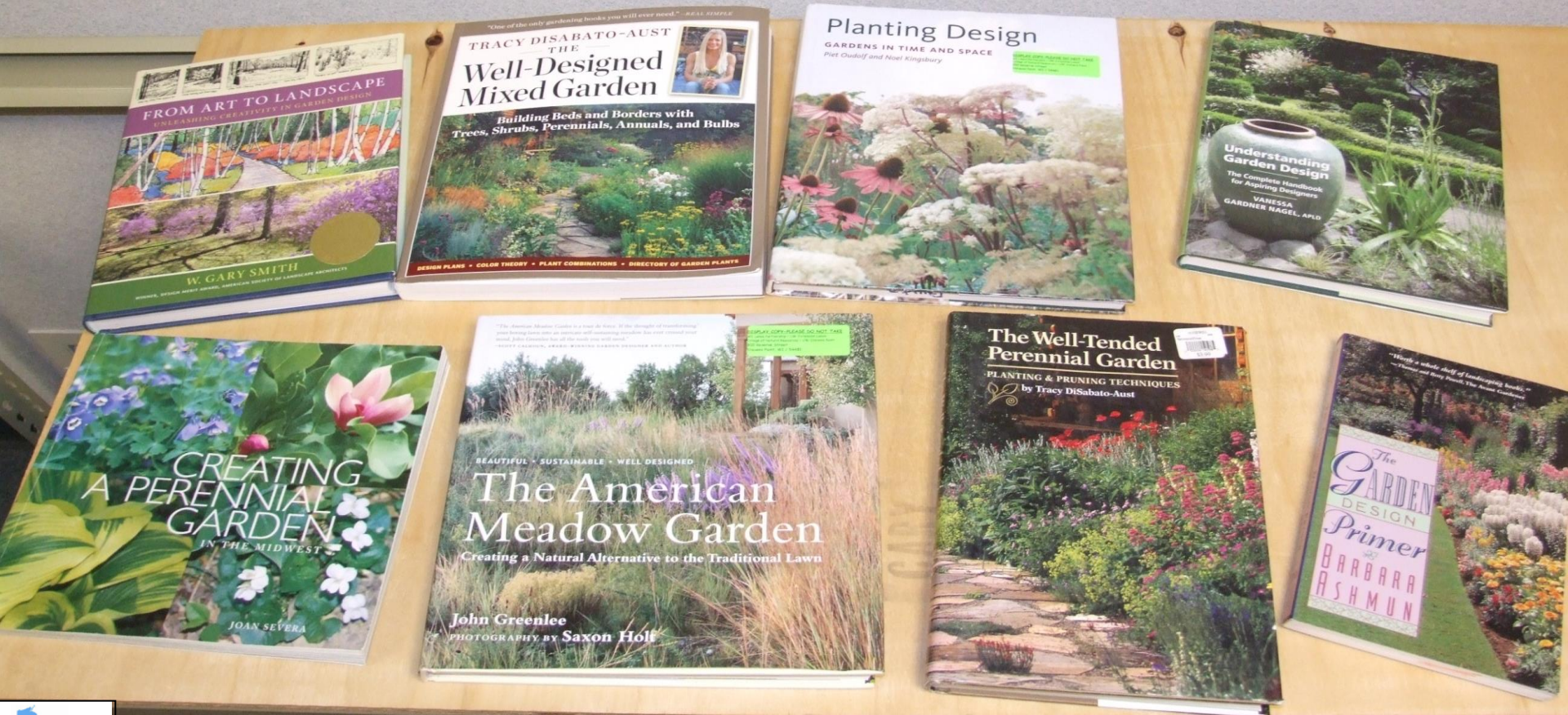


# Landscaping with native plants – resources





# Landscape design – resources







# Ten elements of natural design

By: Larry Weaner < <http://www.lweanerdesign.com/TenElementsofNaturalDesign.pdf> >

1. Cultivate an appreciation of the beauty in nature.
2. Minimize disturbance of existing native growth.
3. Decide how closely your design will emulate the native landscape.
4. Allocate the location of woodlands, open spaces and transitional areas.
5. Base your design on native plant communities found in similar conditions in the surrounding areas.
6. Use and plan for natural processes of change to modify the landscape.
7. Occupy all the spaces.
8. Increase ground water recharge by preserving rainwater on-site.
9. Employ alternatives to high-maintenance lawns.
10. Exclude invasive, exotic plants in the native landscape.





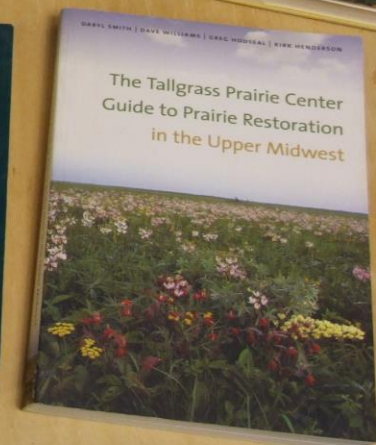
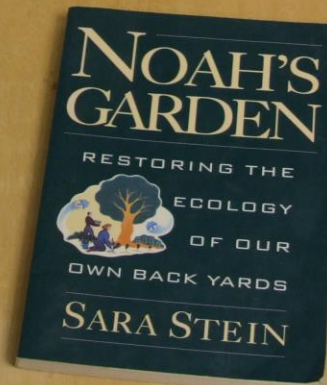
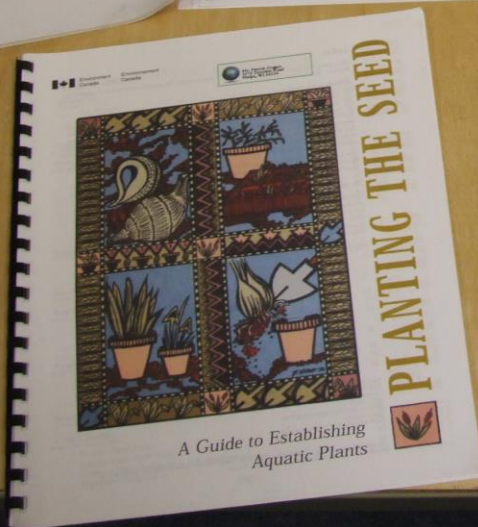
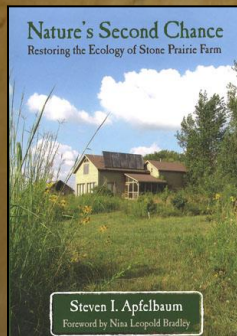
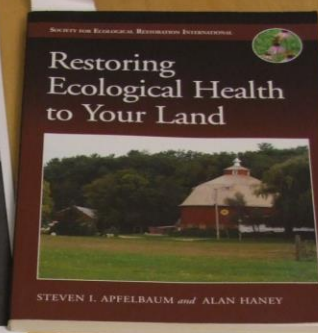
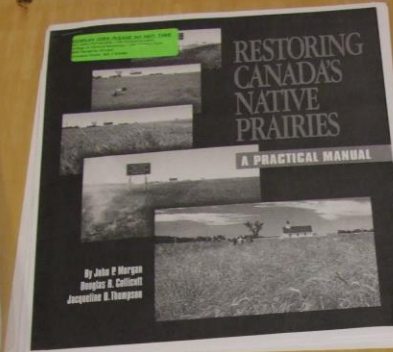
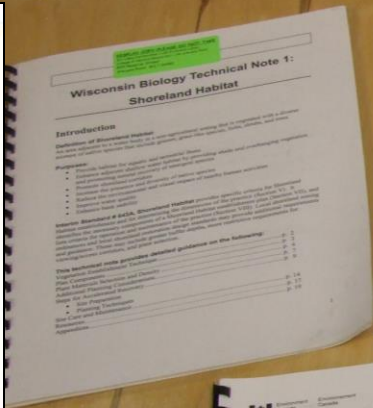
# Landscape design – cues to care

- Framing edges
- S-curves versus straight lines
- Drifts of plants
- 'Eye candy' mixed in
- Placement of rocks, benches, etc.
- Pathway design with flowing patterns





# Native plant community restoration – resources





# Native plant alternatives to non-natives & invasive species book – resources





# Native plant germination & propagation techniques—resources

- Built-in dormancy mechanisms
- Stratification-cold, moist periods (maybe warm too)
- Scarification / hull removal
- Hot water treatment / soaking seeds
- Soil temperature can be a trigger
- Light / disturbed ground as a trigger
- Cuttings, division, bulbets
- Legume / rhizobium inoculums
- Hemiparasitic
- Planted fresh (i.e., woodland spp.)
- Small, surface sown

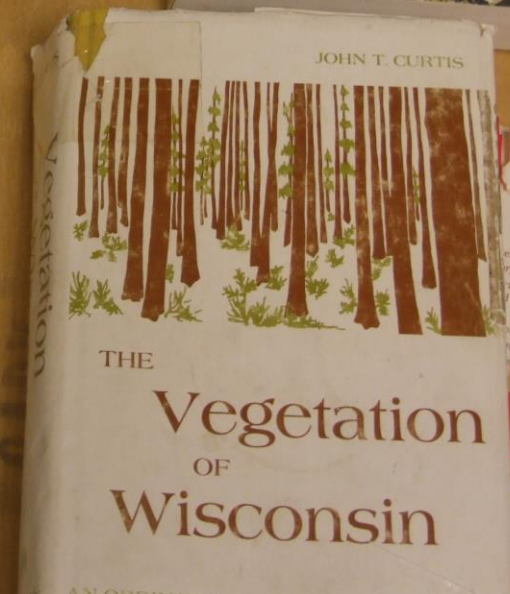
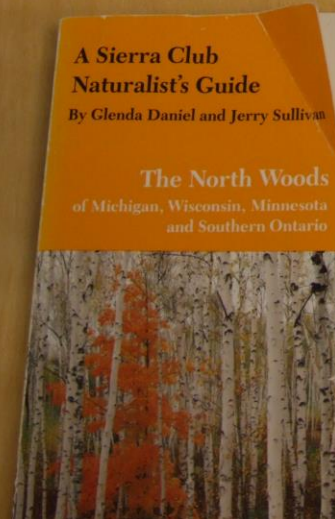
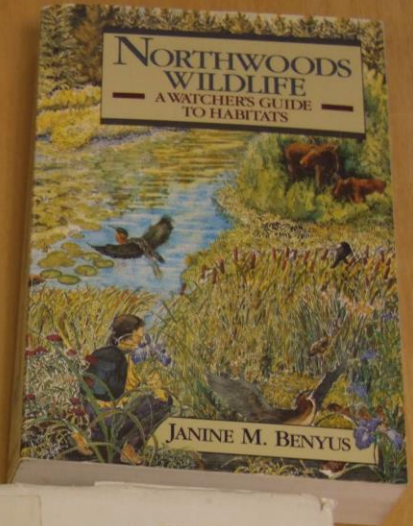
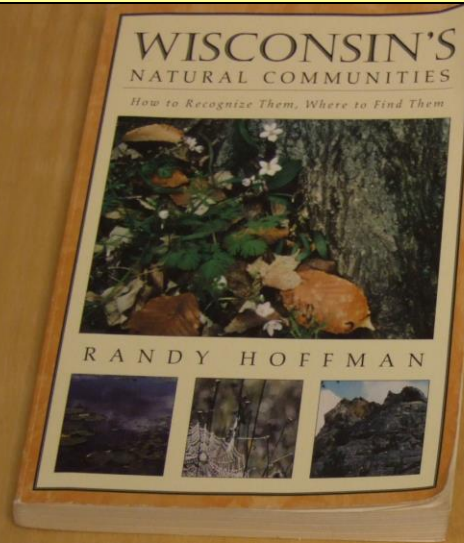




# Natural areas & visiting native plants in situ – resources



<http://www.wisconsinwetlands.org/GemsBookFlyer.pdf>





# Sod cutter machine – installation

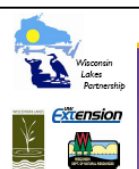
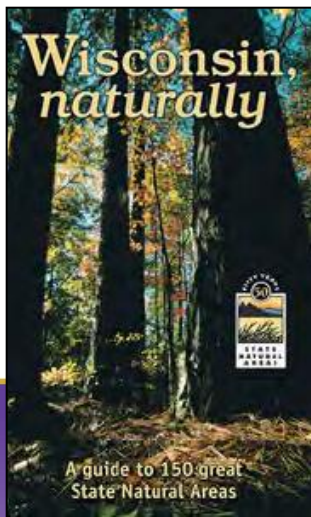




# Visiting scientific natural areas (SNA's) & arboreta



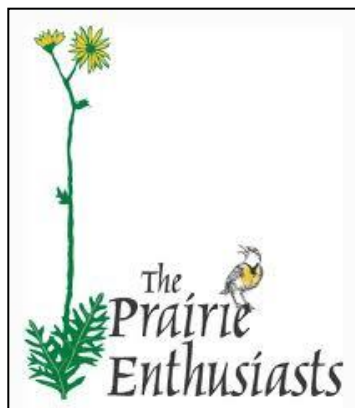
<http://dnr.wi.gov/topic/Lands/NaturalAreas/alpha.html>



University of Wisconsin-Stevens Point  
College of Natural Resources



# Native plant conservation groups / herbaria



- Robert W. Freckmann Herbarium @ UW-Stevens Point /  
< <http://wisplants.uwsp.edu/index.html> >



- University of Wisconsin-Madison Herbarium /  
< <http://botany.wisc.edu/herbarium/> >



- The Cofrin Center for Biodiversity Herbarium @ the University of Wisconsin Green Bay  
< <http://www.uwgb.edu/biodiversity/herbarium/index.htm> >





# Medicinal uses of native plants & folklore – resources

- Basketry-ex. paper birch; bulrush
- Dyes-ex. spiderwort; bloodroot; indigo bush
- Food-ex. berries, nuts, grains
- Wax/resin-ex. pine pitch; tamarack
- Fiber-ex. hemp
- Soap
- Countless medicinal uses of native plants





# Herb garden / wheel





# Choosing plants: the right plant for a specific spot



- Pocket prairie
- Bird thicket
- Wet or dry prairie patch
- Nectar garden
- Moon garden
- Food and medicine garden
- Woods / shady areas



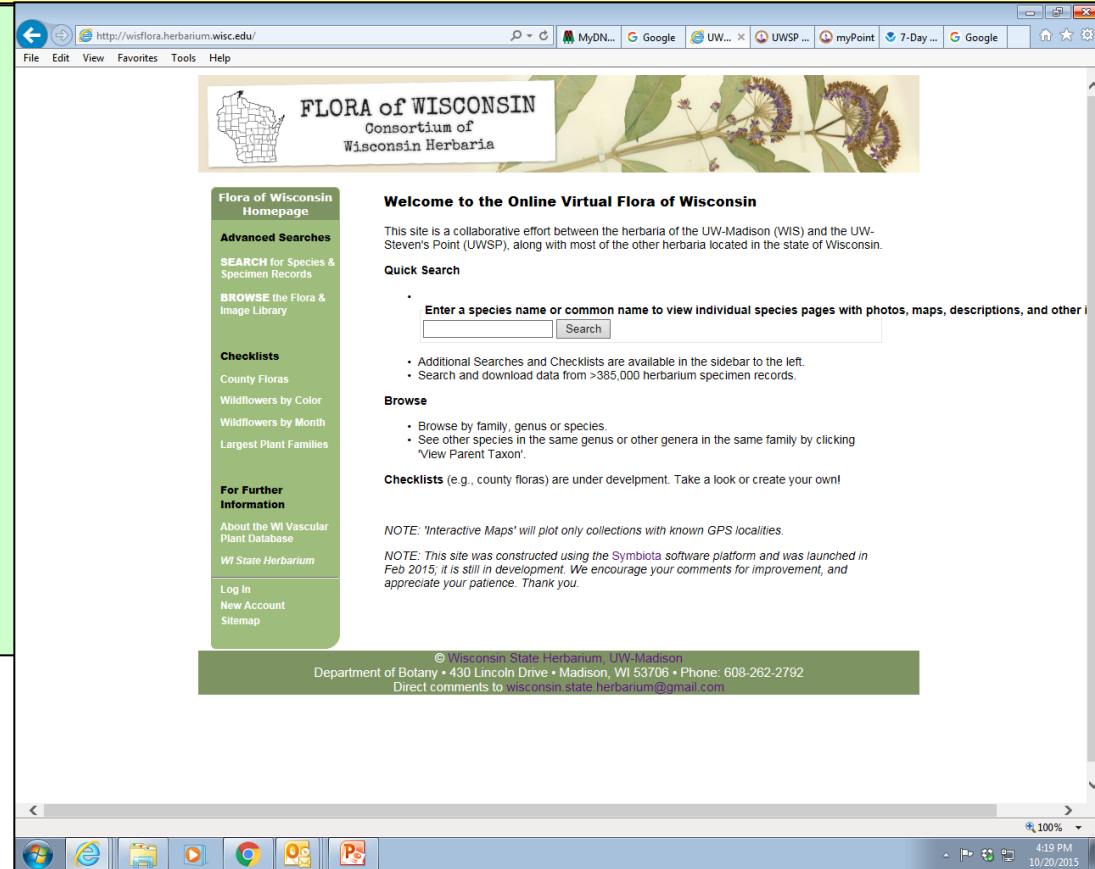
- Annual / biennial / perennial
- Cool season / warm season = mosaic
- Color / bloom time
- Height / width
- Aggressive / rhizomatous
- Attracts certain birds, wildlife, beneficial insects
- Available from area nurseries in local genotype
- Soil type / water needs
- Use the terrific catalogs / web sites out there for you to employ
- Seeding vs. plant plugs
- Growth form / plant attributes: bushy, leggy, floppy, clumping, aggressive, etc.
- Source identified ecotypes
- Sun exposure needs





# Native ranges / WISFLORA web site

- <http://wisflora.herbarium.wisc.edu/>
- Search by common name or scientific name
- Range maps
- Detailed distribution map
- Lists plant status (i.e., is it a native?)





# Site characteristics

- Slope
- Soil type / moisture / drainage pattern
- Amount of sunlight
- Organic matter / soil fertility
- Surrounding plants—color schemes
- Kids – think about poisonous plants / toxicity
- Climatic zone
- Experimentation
- Plant height and width over time





# Site preparation



- Black plastic
- Soil tilling
- Herbicides
- Newspaper
- Old rugs
- Start clean, stay clean!





# Installation tip – killing off turf grass / weed control





# Plant material overview



- On-line resources
- Choose a reputable nursery
- Roots going down / look for these kind of containers
  - Bare root stock
    - Plugs
    - Seeds
    - Burlap





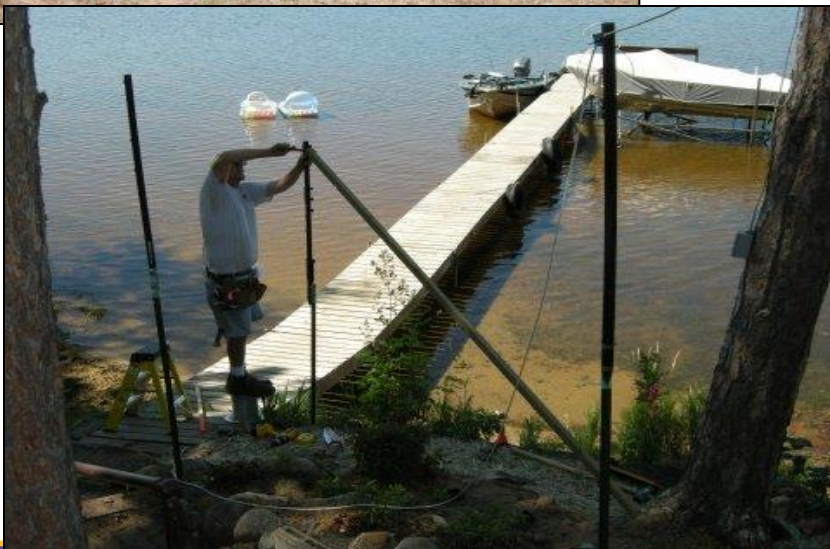
# Maintenance

- Pruning – hand pruning of perennials, grasses, shrubs and trees
- Weed / invasive control – hand removal of any weeds in planting beds
- Mulch – top dress; aeration (fluffing) of existing mulch
- Soil amendment – addition of compost to root areas of shrubs and perennials
- General clean-up – seasonal plant debris removal—I do it in spring
- Caging / fencing
- Watering in drought times / irrigation
- Insects / diseases
- Deadheading
- Prescribed fire



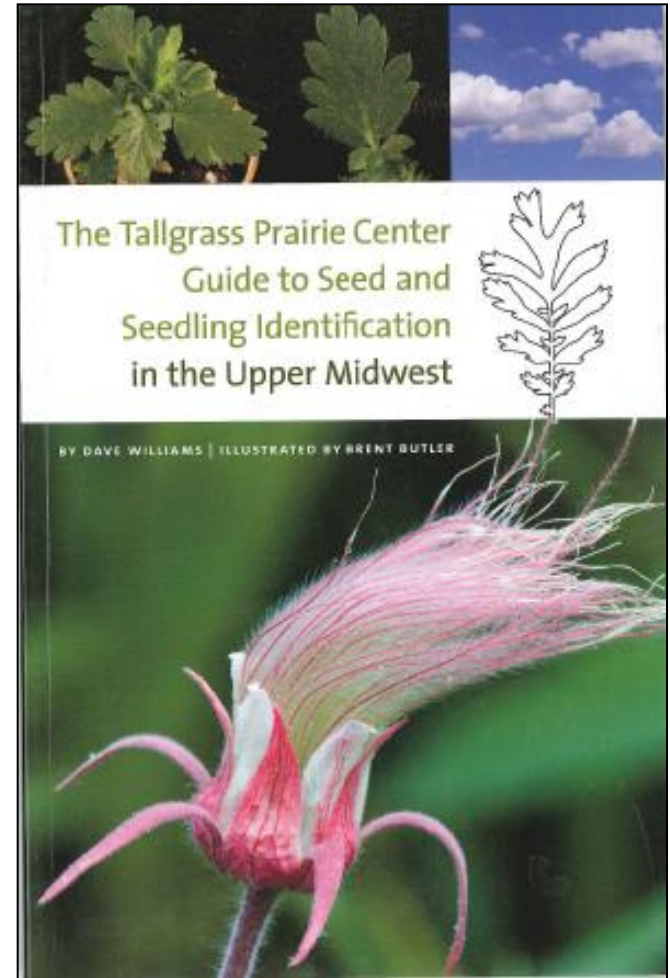


# Maintenance – deer and rabbit protection





# Maintenance – invasives seedling identification

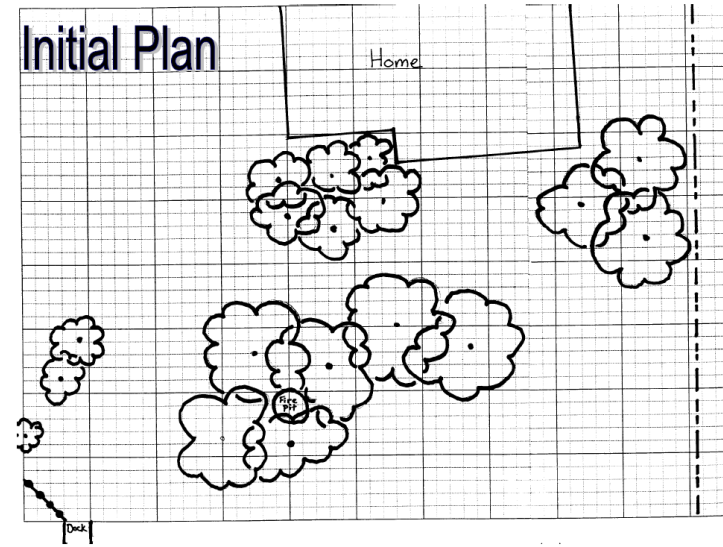




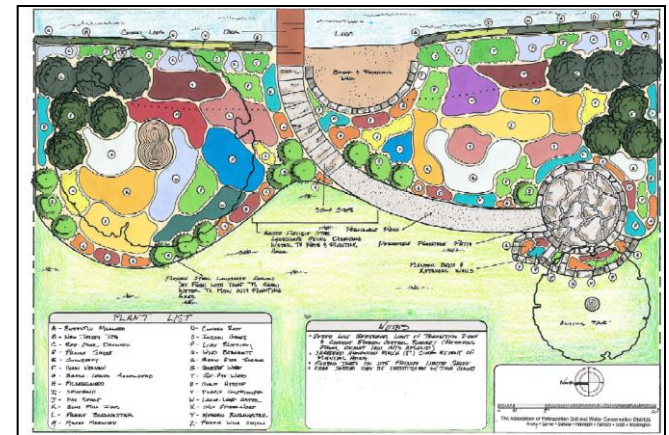
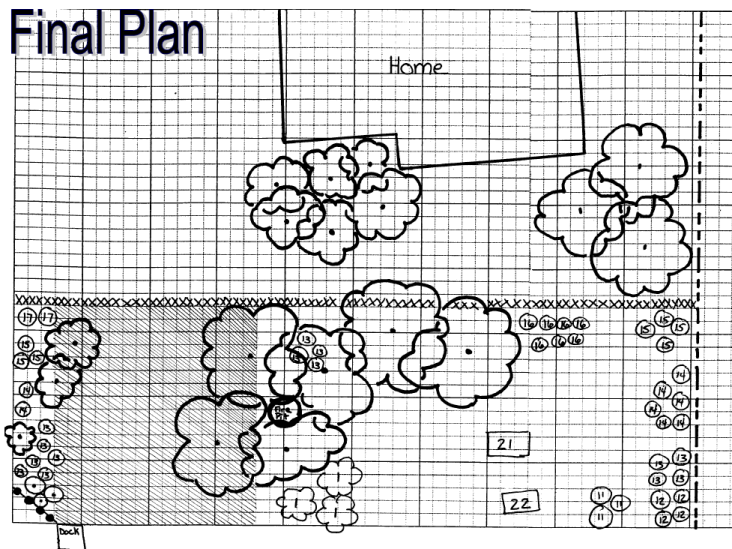
# Drawing up a plan

- Site analysis information-utility lines, access areas, lawn, water features, access to water, compacted soils, etc.
- Existing vegetation mapped
- Plotting new planting beds
- Vegetation structure
- Slopes, view corridors, screening from neighbors

Initial Plan



Final Plan





# Installation tips

- Plant density & weeds
- Adding organic matter
- Clip root bound plugs /
- Buy plant containers that push roots downward
- Using deterrent sprays after big planting
- Fencing / other protection measures
- Mulching
- Fertilization
- Watering
- Lawn scalper machine / islands
- Start small with one bed
- Drifts





# Installation tips – drifts & plant density











**University of Wisconsin-Stevens Point**  
College of Natural Resources



# Installation tips – fencing examples





# Installation tips – raised beds





# Installation tip - holding plants until planting time





# Seeding a site

## 1. Assess Your Site.

Determine the sun and soil conditions of your site to match appropriate seed mixes or individual species. Pace off or measure the area in square feet. 43,560 sq ft = 1 acre.

## 2. Define Your Objectives.

What do you hope to accomplish with your project? We recommend designing a native plant community to emulate the high diversity of interdependent or complementary species found in thriving natural ecosystems.

## 3. Set Your Budget.

Realism is a critical component of the planting process. A realistic appraisal of time, energy and money may lead you to an incremental approach, planting in stages over several seasons. We can give you better advice and recommendations if you know your project budget when you call.

## 4. Plan Your Native Plant Community.

Selecting appropriate species for the sun and soil conditions of your site is the most critical component of the planning process and will determine the site's likelihood of success. We are happy to help you with this process; just give us a call.

## 5. Prepare the Site.

Weed growth is stimulated by soil disturbance so we usually advise no tilling, pulling, digging, etc. Weed elimination is most commonly done with herbicide applications. (Non-herbicide techniques are detailed on our website.)

## 6. Sow the Seeds.

Hand-sowing seed is practical for areas of 1 acre or less. Plan to add a filler such as sawdust or sand to bulk up your seed mix for even broadcasting. November is the most popular seeding time, but seed can be sown on top of snow throughout the winter months or in spring.

## 7. Control the Weeds.

Weed control is critical during the first few years of a newly planted native plant community. Maintenance mowing and other persistent efforts are the main feature of the management techniques described in our six-page guide: < [www.prairiemoon.com/growing-your-prairie](http://www.prairiemoon.com/growing-your-prairie) >.

## 8. Long-Term Management.

Most native plantings, after two or three growing seasons, need to be burned annually for the next five or more years to become well established. Burning yields better growth and more flowers. Mature prairies with no weed problems may need burning only once every three years





# The End

Patrick Goggin: < [pgoggin@uwsp.edu](mailto:pgoggin@uwsp.edu) >  
(715)-365-8943



University of Wisconsin-Stevens Point  
College of Natural Resources