



# HEALTHY LAKES SHORELINE, RAIN GARDEN & FISH STICKS PROJECTS

*Shoreline Restorations,  
Rain Gardens, and Fish  
Sticks*

# 2015 & EARLY 2016 HEALTHY LAKES PROJECTS

- *Before and after photos of projects*
- *Designs*
- *Recommendations for applying for the grant*
- *Recommendations to get projects in the ground*
- *Tips for creating beautiful & functional plantings*

# WISCONSIN LAKES & RIVERS ARE BECOMING INCREASINGLY



Photo courtesy WI DNR

- ~Loss of critical habitat
- ~Increased shoreline and slope erosion
- ~More contaminants carried to lake by runoff





# WHAT DO LANDOWNERS WANT TO SEE? THIS.....





.....OR THIS?



Photo courtesy WI DNR



## HOW ABOUT THIS?



Photo courtesy Green Lake RSVP

## OR AT LEAST THIS?

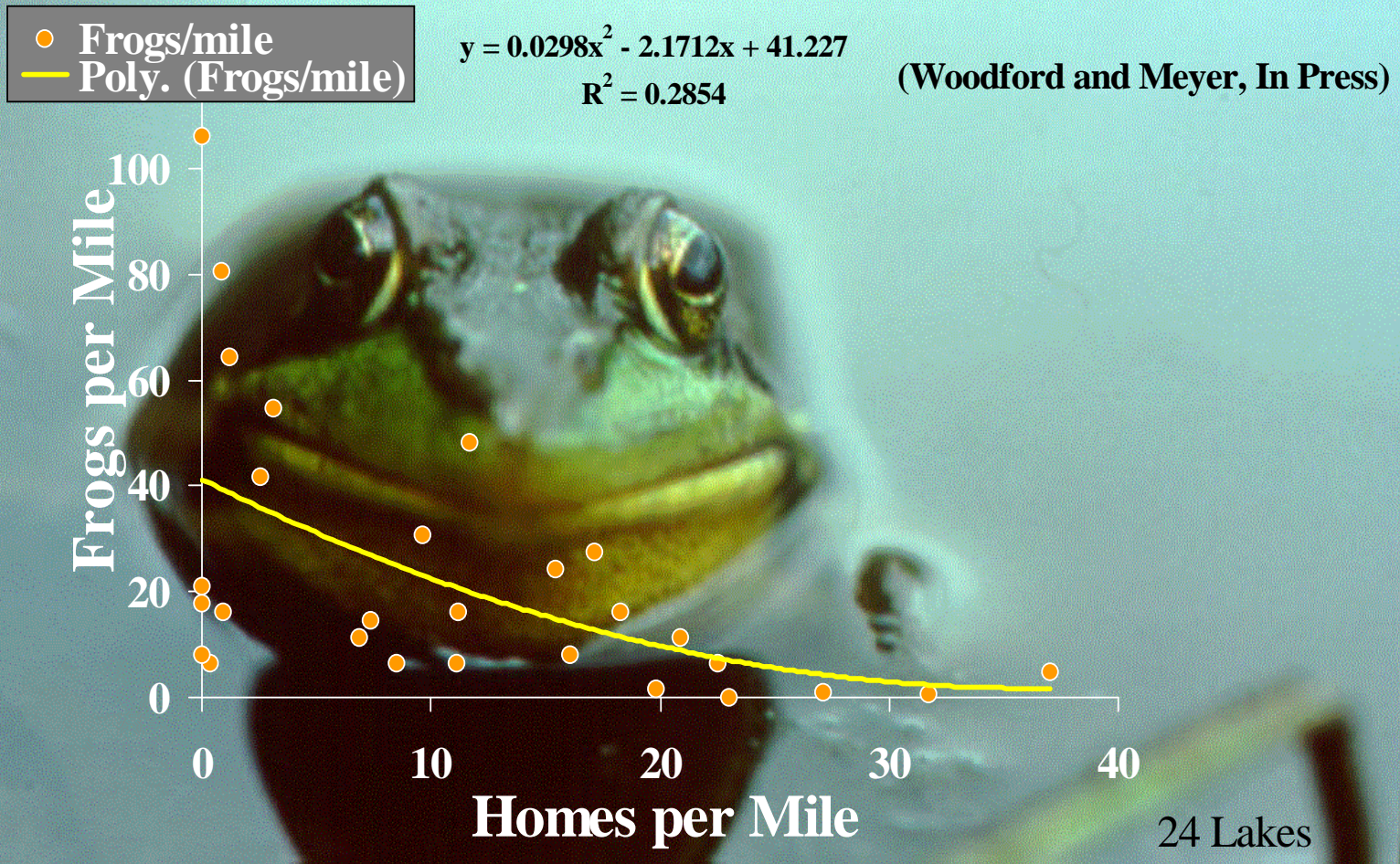


Photo courtesy Green Lake RSVP



# WE'RE LOVING OUR LAKES TO DEATH

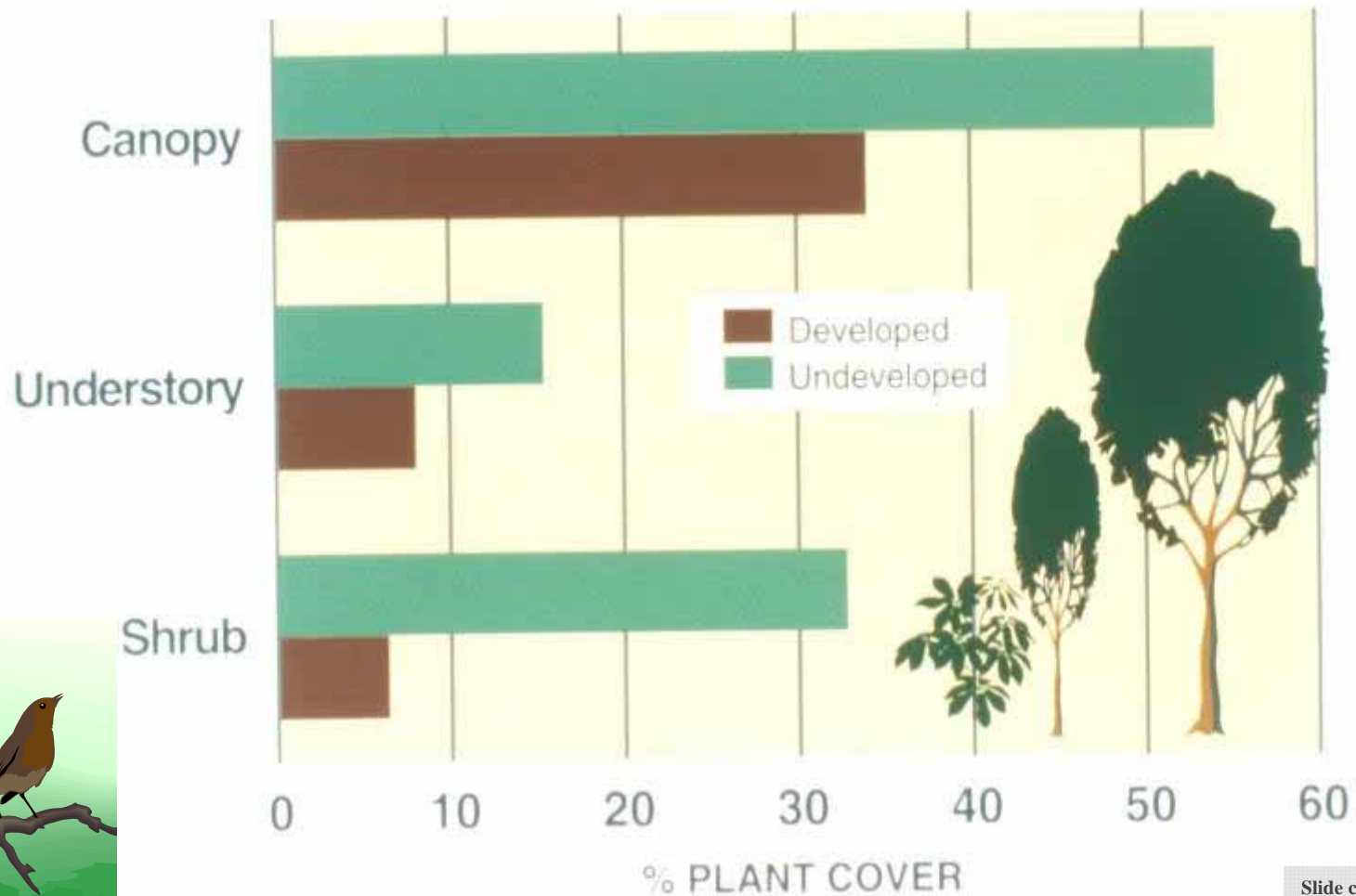
## What's Happened to Green Frogs





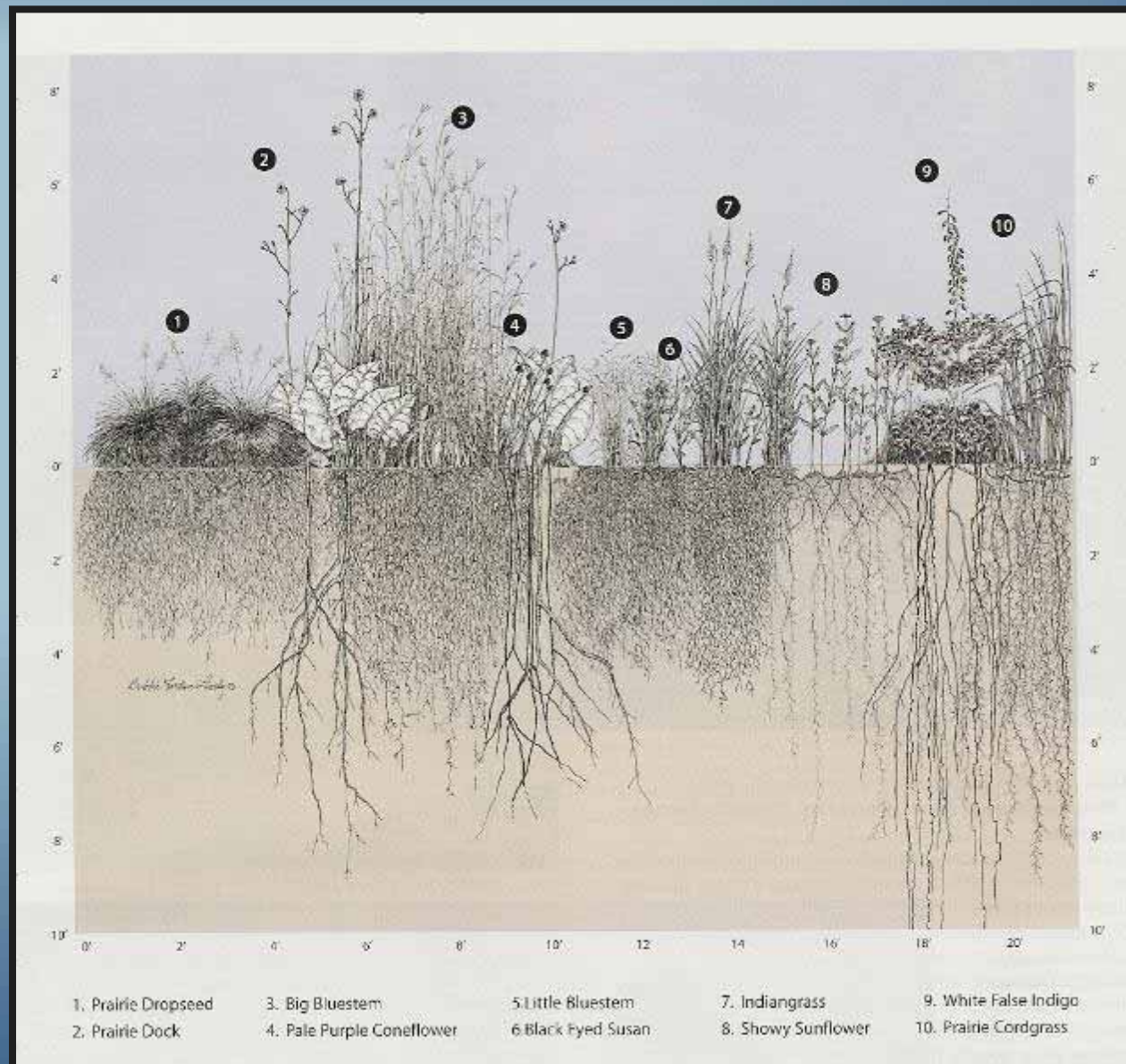
# LOSS OF NATIVE VEGETATION

## What has Happened to Shoreland Plants?



Slide courtesy WI DNR

# ROOTING DEPTHS OF NATIVE PLANTS



Picture courtesy  
Prairie Nursery



# NATIVE VS. CULTIVARS

- *Native species are adapted to local site conditions*
- *Native species provide needed habitat = food*
- *Cultivars and non-natives creates possible exotic invasives problem*
- *Annuals and biennials don't hold up*





**Jacob Cline Monarda**



**NATIVE  
WISCONSIN  
BEEBALM**



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**BERGAMOT**

**BEEBALM**

**MONARDA**

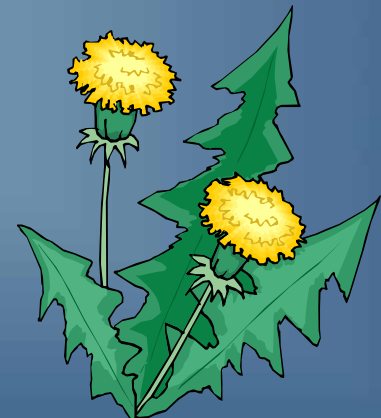


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# NATIVES VS. EXOTICS

- *Purple loosestrife, glossy buckthorn, Japanese honeysuckle, crown vetch, etc.*
- *Landowners = maintaining a native planting means keeping out exotics.*





*Oriental bittersweet*





*Glossy buckthorn*



# CLOVERLEAF LAKE SITES

*Shawano County, WI*





# FIRST PLANTING LATE JULY 2015



# STEEP SLOPE







**SITE #1 -  
MOSTLY UPLAND DRY/SHADY &  
WET AT WATER'S EDGE**





## SITE #1 COSTS

380 Sq. Ft. Planting

- *Herbicide treatments* **\$50**
- *4 yds 2x processed hardwood mulch* **\$140**
- *230 native plants* **\$575**
- *Labor* **\$275**
- *2 shrubs* **\$40**
- *Project design & coordination* **\$100**
- *Total cost* **\$1,179.98**

*\$3.10 per sq. ft.*

# SECOND SITE FIRST WEEK AUGUST 2015



# LANDOWNERS MULCHED AND PLANTED TOO







**SITE #2 -  
MOSTLY WETLAND WITH SMALL AREA OF UPLAND DRY/SUNNY**



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## SITE #2 COSTS

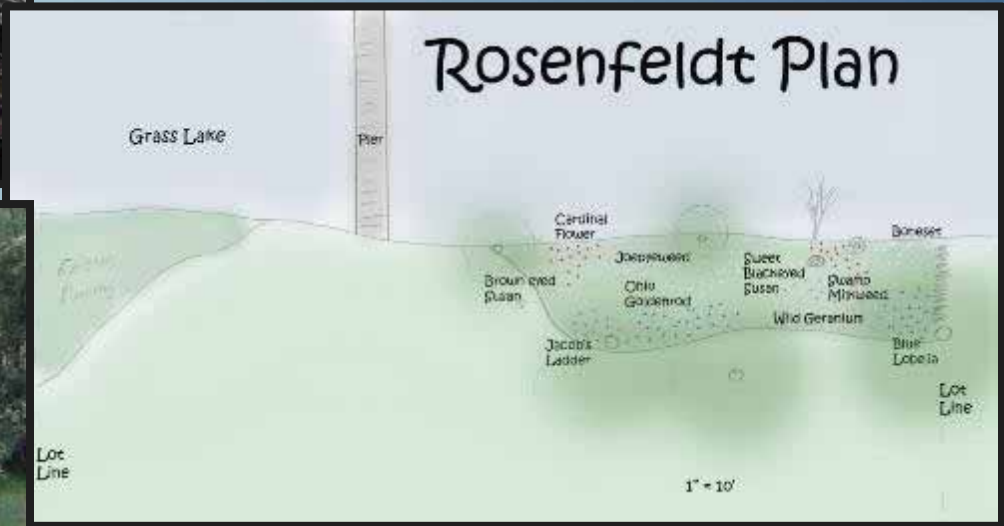
350 Sq. Ft. Planting

- *Herbicide treatments* **\$50**
- *4 yds 2x processed hardwood mulch* **\$140**
- *220 native plants* **\$550**
- *Labor* **\$175**
- *2 shrubs* **\$40**
- *Project design & coordination* **\$100**
- *Total cost* **\$1,054.98**

*\$3.01 per sq. ft.*



# THIRD SITE PLANTED 2<sup>ND</sup> WEEK AUGUST





# DEEP ROOTING NATIVES WILL MAKE A HUGE DIFFERENCE FOR STABILITY







**SITE #3 -  
MIX OF UPLAND DRY/SHADY &  
WET AT WATER'S EDGE**



## SITE #3 COSTS

480 Sq. Ft. Planting

- *Herbicide treatments* **\$75**
- *6 yds 2x processed hardwood mulch* **\$180**
- *350 native plants* **\$788**
- *Labor* **\$225**
- *2 shrubs* **\$40**
- *Project design & coordination* **\$100**
- *Total cost* **\$1,417.48**

*\$2.95 per sq. ft.*





# FOURTH SITE PLANTED WITH LANDOWNERS MID SEPTEMBER 2015



# LIME IS CRITICAL IN LOW PH AREAS







**SITE #4 -  
MOSTLY UPLAND DRY/SHADY &  
WET AT WATER'S EDGE**





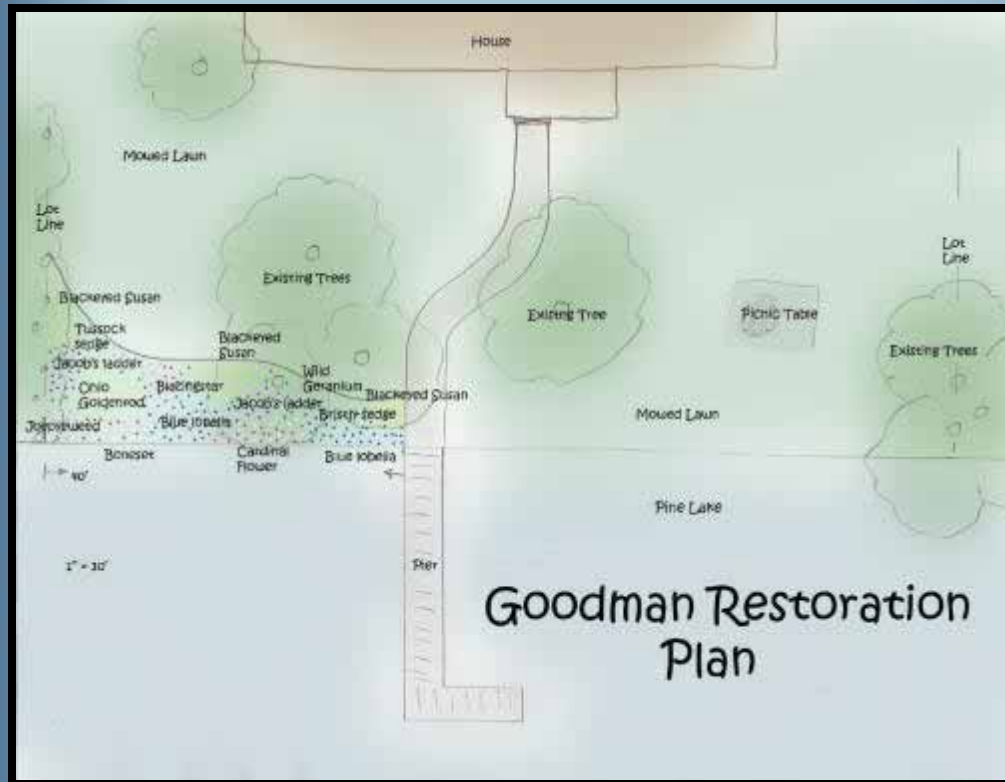
## SITE #4 COSTS

370 Sq. Ft. Planting

- *Herbicide treatments* **\$50**
- *Lime & bone meal* **\$15**
- *4 yds 2x processed hardwood mulch* **\$140**
- *220 native plants* **\$788**
- *Labor (includes brush cutting)* **\$200**
- *2 shrubs* **\$26**
- *Project design & coordination* **\$100**
- *Total cost* **\$1,318.48**

**\$3.46 per sq. ft.**

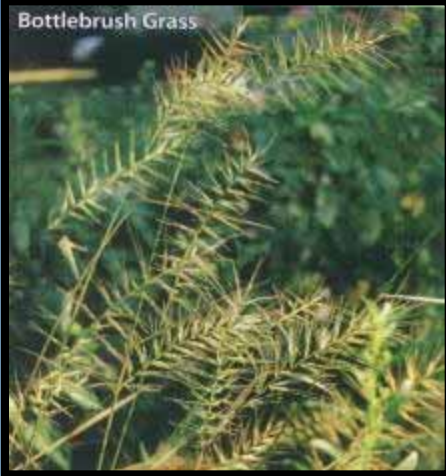
# FIFTH SITE – NEW RIP RAP



# PLANTING AREA DRY AND SHADY







**SITE #5 -  
RELATIVELY DRY, MIXED SUN & SHADE**



## SITE #5 COSTS

350 Sq. Ft. Planting

- *Herbicide treatments* **\$50**
- *4.5 yds 2x processed hardwood mulch* **\$157.50**
- *196 native plants* **\$490**
- *Labor* **\$150**
- *2 shrubs* **\$12**
- *Project design & coordination* **\$100**
- *Total cost* **\$969.48**

*\$2.76 per sq. ft.*



# SIXTH SITE - RAIN GARDEN



# 10"+ PINE NEEDLE DUFF REMOVED



Area was herbicided weeks prior,  
tilled, raked, tilled, raked, tilled,  
raked.....



Note the 'speed bumps' in  
the basin. C125 Coconut  
fiber erosion matting was  
used to help hold soil in  
place.

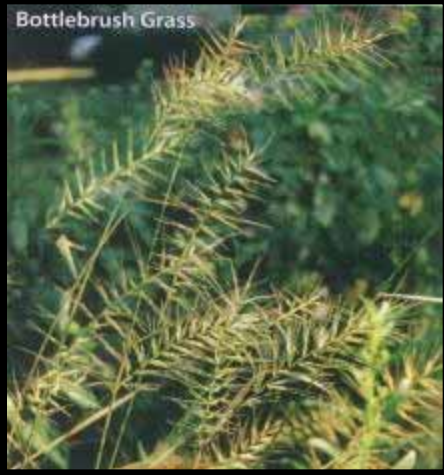


# MULCH COMPLETELY COVERS ENTIRE PLANTING AREA.





Bottlebrush Grass



© K. R. Robertson  
Illinois Natural History Survey



# SITE #6 - RAIN GARDEN VERY DRY, MOSTLY SHADE



Woodland Sunflower



Spiderwort



Tender Hyssop



© J. S. Tall  
Illinois Natural History Survey

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## SITE #4 COSTS

350 Sq. Ft. Planting

- *Herbicide treatments* **\$15**
- *Lime & milorganite* **\$25**
- *4 yds 2x processed hardwood mulch* **\$140**
- *212 native plants* **\$530**
- *Erosion netting* **\$50**
- *Labor (includes brush cutting)* **\$400**
- *Project design & coordination* **\$100**
- *Total cost* **\$1,260.00**

**\$3.60 per sq. ft.**

# SEVENTH SITE - AUGMENTING SPARSE GROUNDCOVER







**SITE #7 -  
MOSTLY WETLAND WITH SMALL AREA OF UPLAND DRY/SUNNY**



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## SITE #7 COSTS

350 Sq. Ft. Planting

- *Herbicide treatments* **\$50**
- *Lime & bone meal* **\$20**
- *1.5 yd 2x processed hardwood mulch* **\$52.50**
- *207 native plants* **\$517.50**
- *Labor (includes brush cutting)* **\$225**
- *2 shrubs* **\$40**
- *Project design & coordination* **\$100**
- *Total cost* **\$1,004.98**

***\$2.87per sq. ft.***





# MULCH IS CRITICAL TO HOLD MOISTURE IN SOIL



Main shade tree was limbed up to allow more light.







**SITE #8 -  
MOSTLY UPLAND DRY/SHADY WITH SMALL AREAS OF SUN  
AND WET ALONG WATER'S EDGE**



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## SITE #8 COSTS

### 350 Sq. Ft. Planting

- *Herbicide treatments* *\$50*
- *Lime & bone meal* *\$15*
- *4 yds 2x processed hardwood mulch* *\$140*
- *280 native plants* *\$630*
- *Topsoil* *\$132*
- *Labor (includes brush cutting)* *\$300*
- *2 shrubs* *\$40*
- *Project design & coordination* *\$100*
- *Total cost* *\$1,406.98*

*\$4.02 sq. ft.*





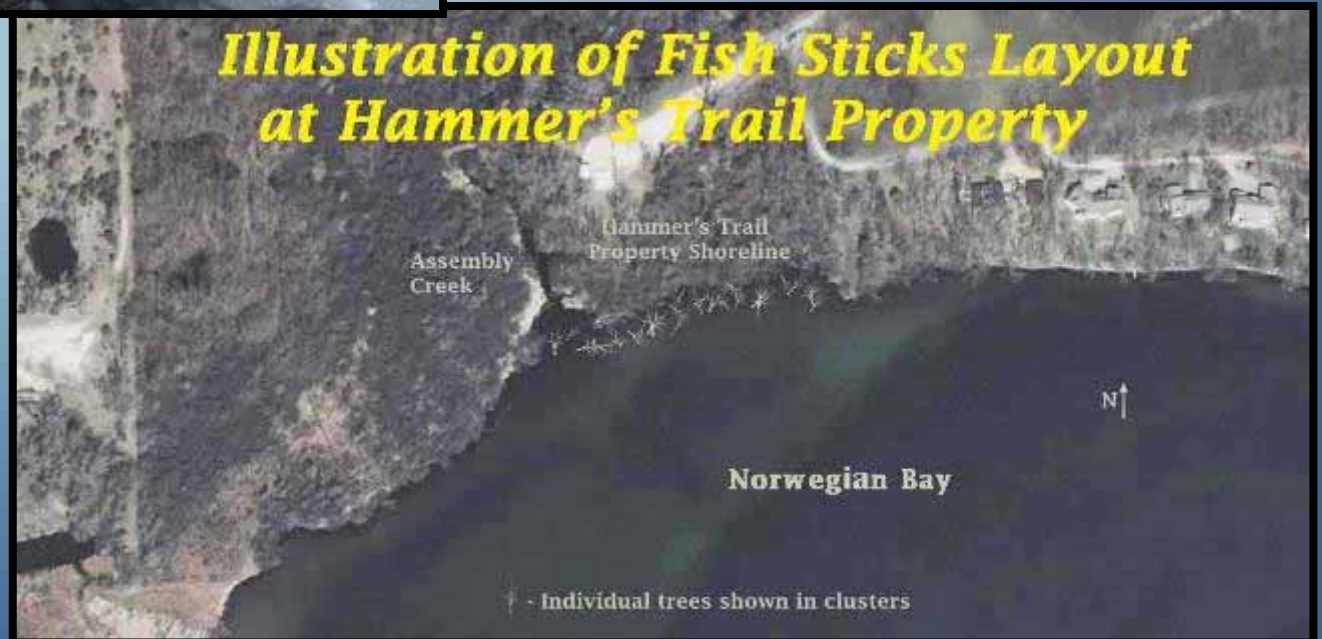
# **GREEN LAKE FISH STICK SITES**

*Green Lake County, WI*



# HEALTHY LAKES FISH STICKS

Big Green Lake





# UTILIZED TREES THAT WERE DYING, LEANING, POOR FORM, ETC. FIRST



# GLSD STAFF INSTALLED FISH STICKS AT 2 SITES





# WHERE TO START IF YOU WANT TO APPLY FOR HEALTHY LAKES FUNDING

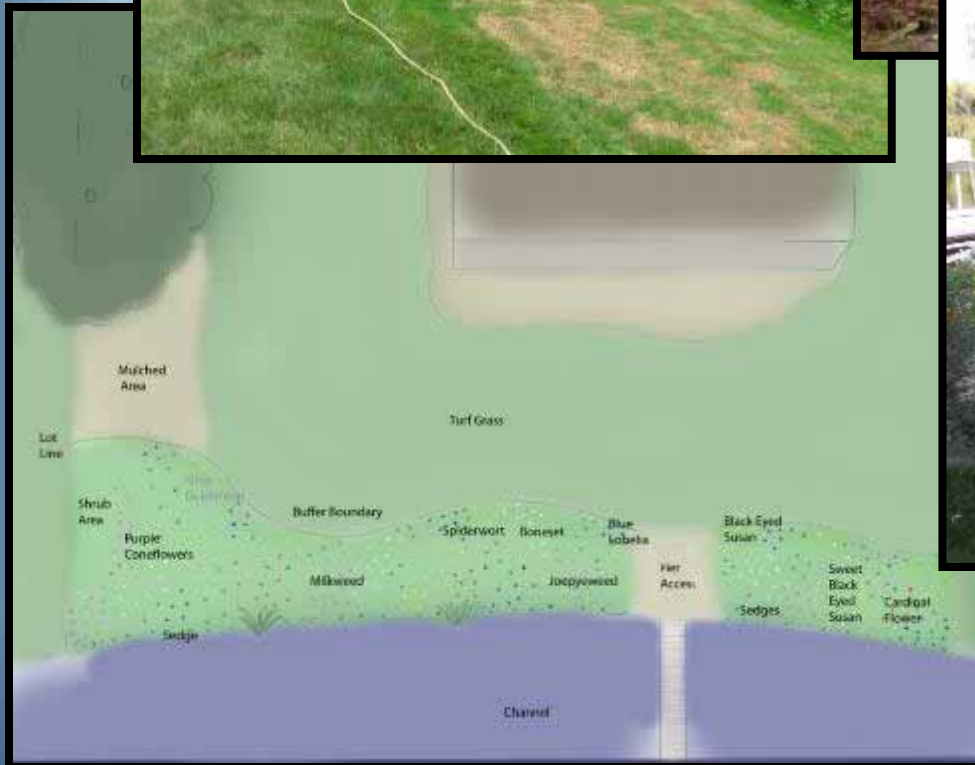
- *Get the word out ASAP....*
  - *Present info at your Lake Association Meetings*
  - *Put it on your web page*
  - *Send out e-mails*
- *Get board/committee members involved...*
  - *Making landowner contacts*
  - *Viewing sites and taking lots of photos*
  - *Ensuring landowners fully understand funding and requirements*
  - *Getting signed pledge forms*
  - *Make contact with your DNR Grants person*
- *Don't procrastinate....*
  - *Grants are due Feb. 1<sup>st</sup>..... Thanksgiving to New Years flies by!*
  - *Be sure you've planned well.... it's getting competitive*

# OK....YOU'VE GOT YOUR FUNDING, NOW HOW DO YOU MOVE FORWARD?

- *Get a professional involved....*
  - *Coordination*
  - *Design*
  - *Implementation*
- *Get board/committee members involved...*
  - *Keeping landowners committed*
  - *Viewing sites and taking lots of photos*
  - *E-mail reminders of timelines*
- *Don't procrastinate....*
  - *Professionals need time to meet landowners, design, site prep, etc. before planting*
  - *Summer goes by fast!*

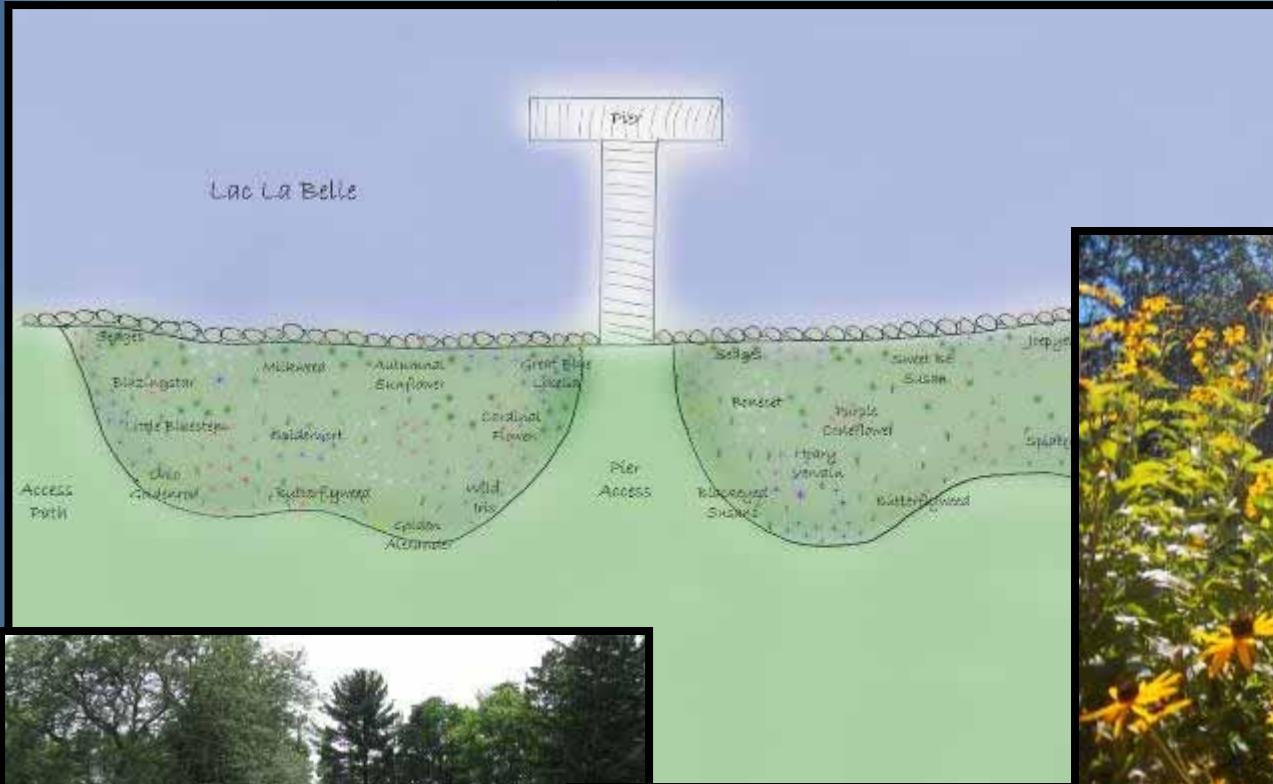


# Lac La Belle Project





# Lac La Belle Project



# TIPS FOR GREAT PROJECTS



- **Determine the size of the area available**
  - *Critical to picking plant species*
  - *Native plant heights above 3' need lots of space*
  - *The larger the planting, the increased maintenance required*
- **Determine the soil moisture of the area**
  - *Dry prairie*
  - *Mesic prairie*
  - *Wet edge*
  - *Wetland*
- **Determine the shade characteristics of the area**
  - *Full sun*
  - *Part sun (Minimum 4 hours)*
  - *Shade*





# KNOW THE AREA



- *Determine what colors or species you want the most*
  - *Create a list of favorites*
  - *Go over list and denote flowing times*
  - *Add species that flower in other times (i.e.-asters in late fall)*
- *Remember costs other than plants*
  - *Herbicide*
  - *Mulch*
  - *Hoses*
  - *Labor*



# KNOW A LITTLE ABOUT YOUR PALETTE

- Main things to know
  - Moisture needs
  - Heights
  - Shade

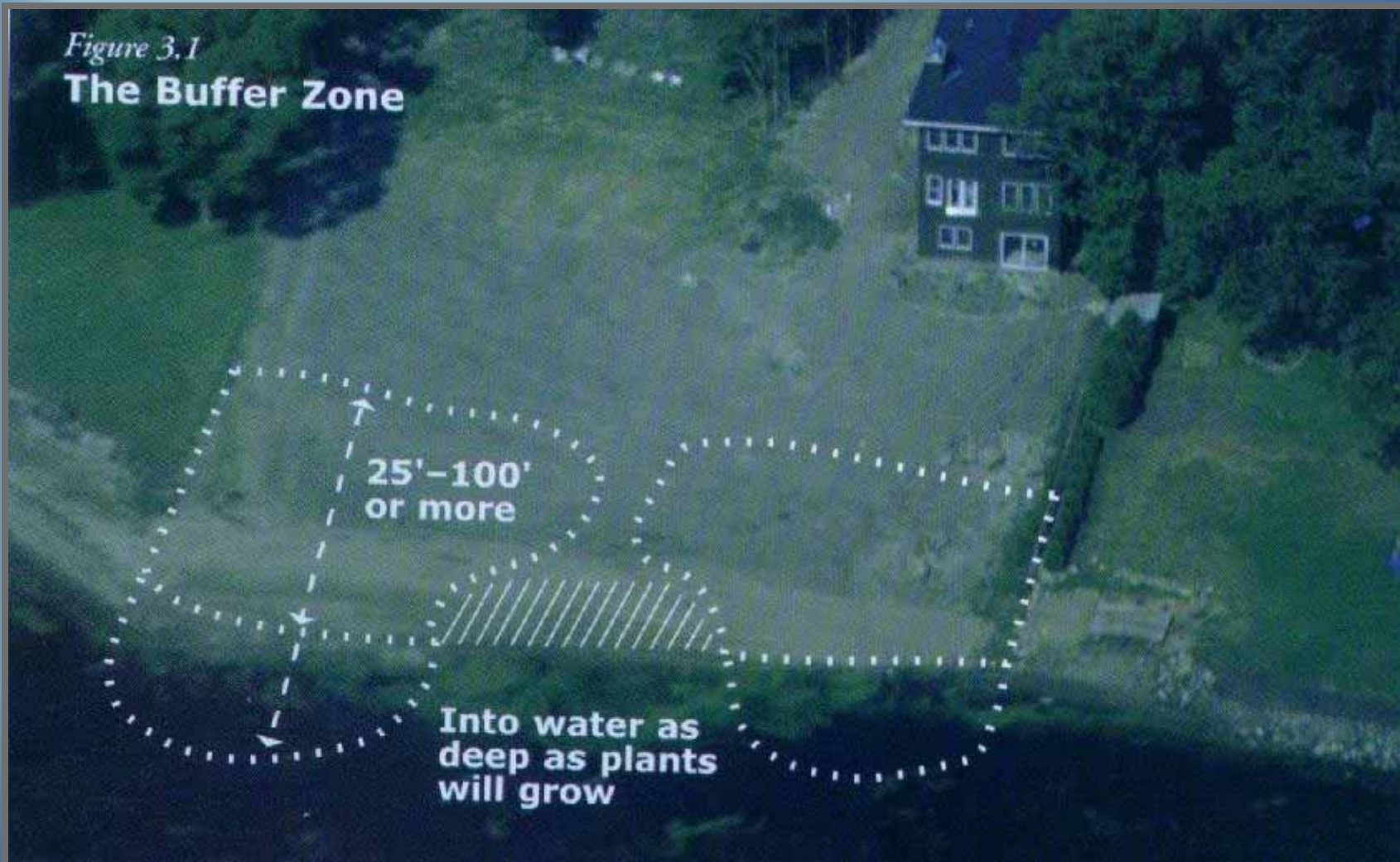




# GENERAL PLANTING TYPES

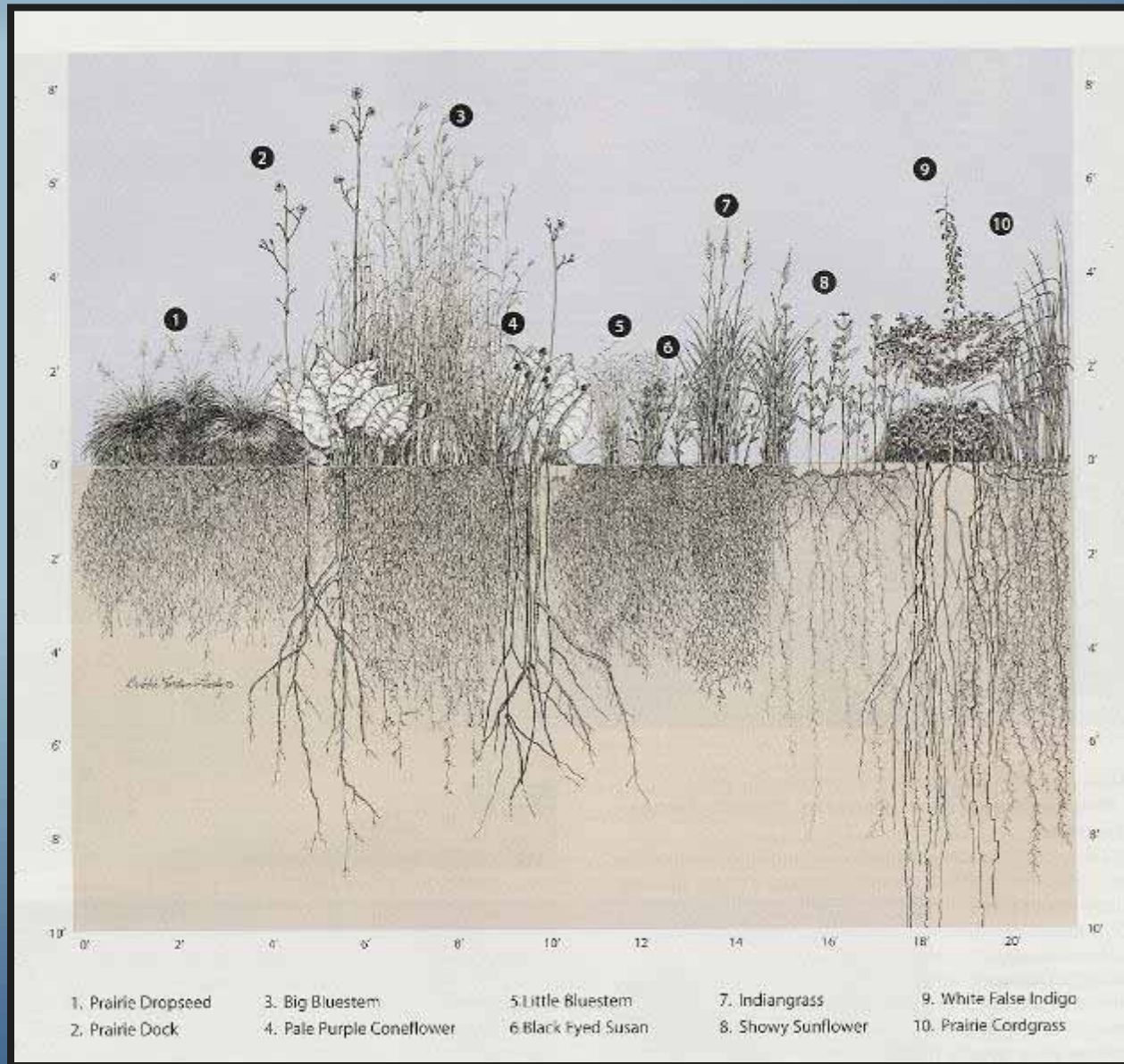
- *Upland prairie ~ often very 'flowery'*
- *Woodland/semi-shade ~ Very common*
- *Wetland/wet meadow ~ wide variety*
- *Emergent ~ Growing in popularity*

# POSSIBLE PLANTING AREAS





# ROOTING DEPTHS OF NATIVE PLANTS



Picture courtesy  
Prairie Nursery

# WHAT IS AN EFFECTIVE BUFFER?

- DENSE vegetation



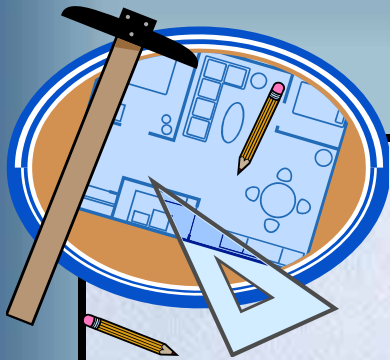
- Vegetation that consists of multiple SPECIES  
(Diversity helps meet various habitat needs)
- Vegetation consisting of multiple CANOPIES

# TIPS FOR ANY NATIVE PLANTING

- *Use borders and paths to define the planting area*
- *Develop a focal point*
- *Plant two to four species in broad sweeping masses or drifts that repeat throughout the planting area*
- *Use a mixture of bold and fine textures*
- *For larger plantings - Post signs to tell passers-by that your project is indeed planned*



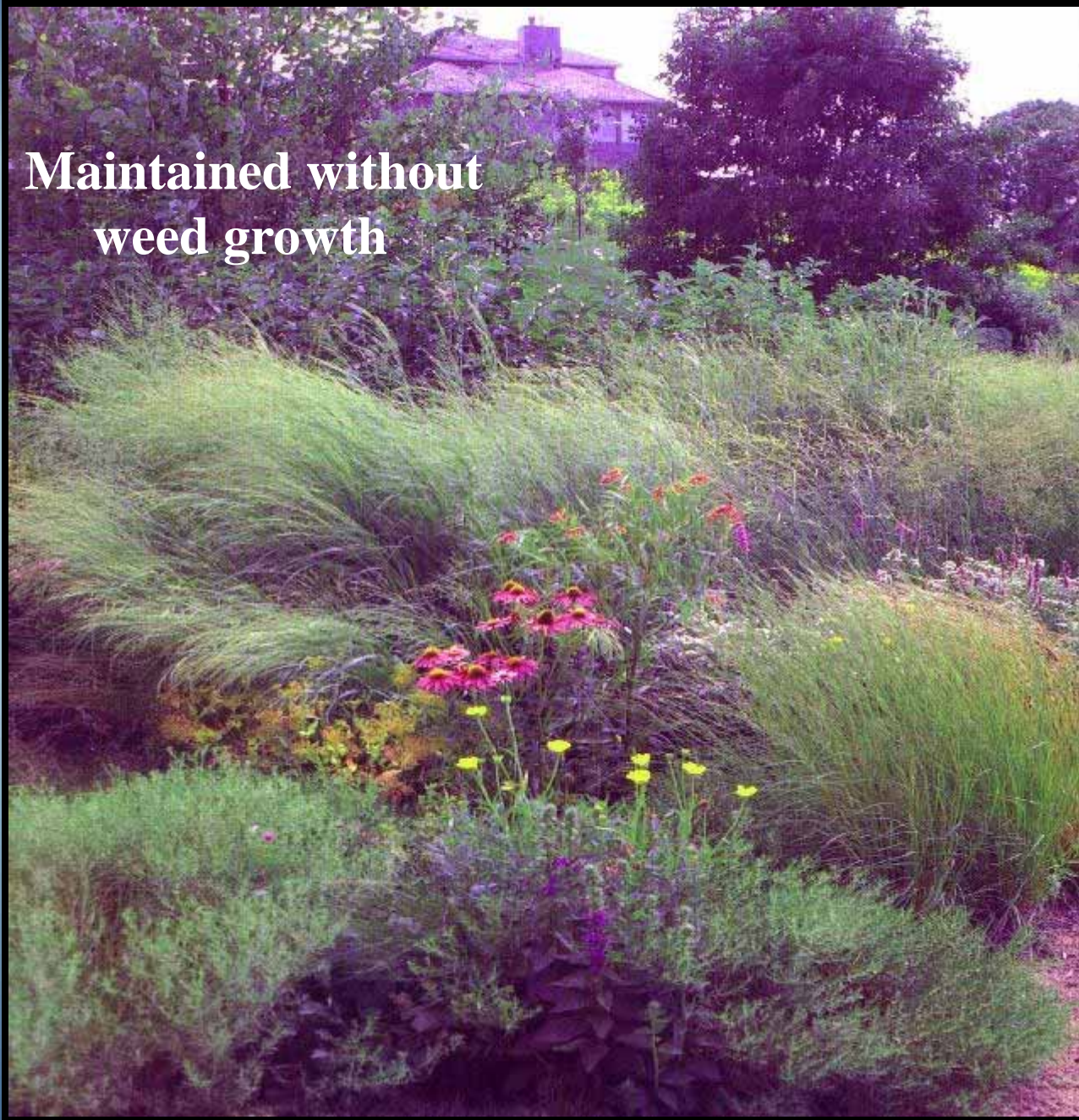
# DESIGNED FOR GARDEN APPEARANCE



Picture courtesy  
Prairie Nursery



**Maintained without  
weed growth**





# EXAMPLE OF A PRAIRIE BUFFER



**Few groupings of species,  
low maintenance**



# PLANNING A PLANTING

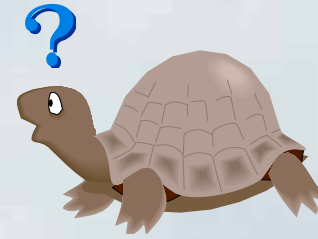
- *Don't be afraid to start small*
  - *You can add more sq. ft. each year*
- *Plant in fall; less watering for establishment*
- *Plant trees in spring; nurseries only have certain species prior to June 1<sup>st</sup>*
- *Consider a timer and hose with T's and sprinklers*
- *Don't fertilize*
  - *If you feel you have poor soil get a soil test*
  - *Utilize bone meal in the hole with the plant plugs*

# CONSIDER UTILIZING A TREE FALL ON YOUR SHORELINE



# THAT'S IT!

## Questions?



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