

# “Residential Habitat Restoration: A Focus on Meadows”

Diana Raichel, *Conservation Biologist*

“NJ Butterflies and their Habitats”

Jim Springer, *North American Butterfly Association*

"Understanding the effects of pollinator plantings on  
beneficial insect communities."

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Bristol Univ. - UK



C. Zimmerman

# What is a meadow?



Upper Millstone River Preserve



Cadwalader Park





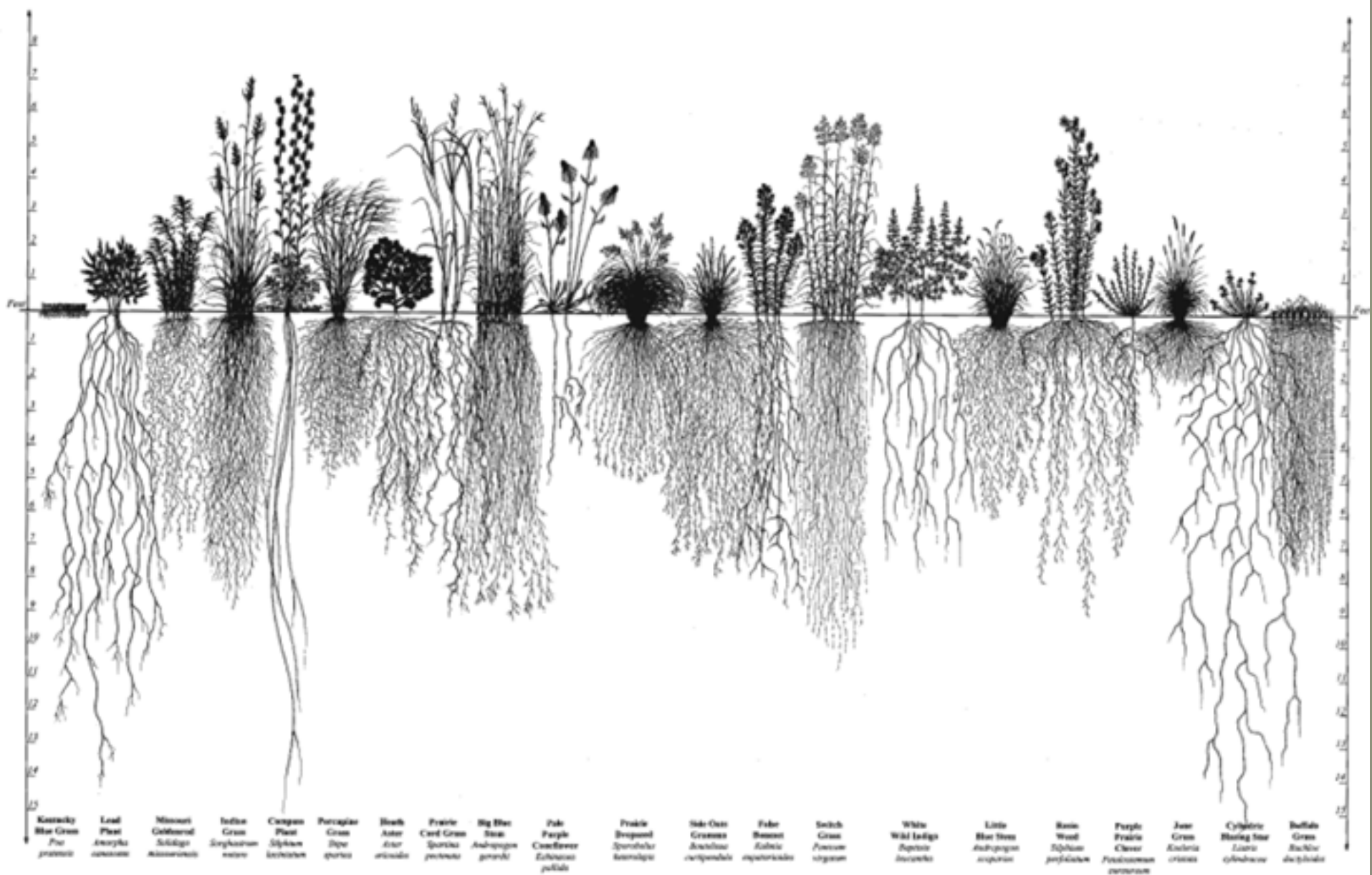
# Grasslands

Cider Mill Preserve,  
East Amwell Twp



Maple Lane Preserve,  
Hillsborough Twp





# Benefits – Meadow vs Lawn

- Promotes our pollinators (native bees, butterflies, moths, and other insects)
- Promoting pollinators benefits crops
- Provides nesting habitat, shelter and food for wildlife

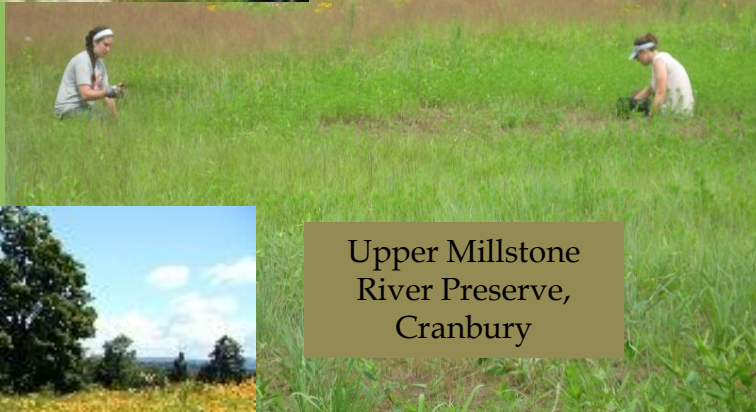


Photo: Dan Cariveau

# Aesthetics



Photo: Carl Baker



Upper Millstone  
River Preserve,  
Cranbury



Photo: Larry Weaner



Cadwalader Park, Trenton



# Benefits, continued

- < use of fossil fuels  
(air quality)
- < noise pollution (mowers, weed-wackers, blowers,...)
- No fertilizers (water quality)
- > water infiltration (replenishing aquifers)
- Stabilizes soil (deep roots)
- Low maintenance once established

# Caveats or Challenges

- Lengthy process
  - Rid area of problems (weeds)
  - Root establishment
- First year not a thing of beauty
- Cost of wildflower seed – Ernst 2013
  - Partridge pea - \$10/Lb
  - Bergamot - \$136/Lb
  - Joe pye weed - \$228/Lb
  - Grass-leaved goldenrod - \$400/Lb
- Potentially unappreciative neighbors – mowed borders work wonders

# Basics for Establishing a Meadow

## Analyze your site

- Enough sun?
  - min 6 hrs/day
- Soil? Poor vs. rich in organic matter



# Before and After



Upper Millstone River Preserve

# Site Analysis, continued

- Invasive weeds (e.g., mugwort, Canada thistle)?
- Large or small site? 1+ ac, 0.5 ac, 100 SF?
- Current use of site – lawn, crop field, old field



Old field with autumn olive starting to establish

# Extreme shrub removal



# Site Prep – Getting rid of undesirables

Avoid soil disturbance

Small area

- Smother

Large area

- Herbicide (fall then spring)

Organic or  
Glyphosate

Allow time



# Choosing Seeds or Plants

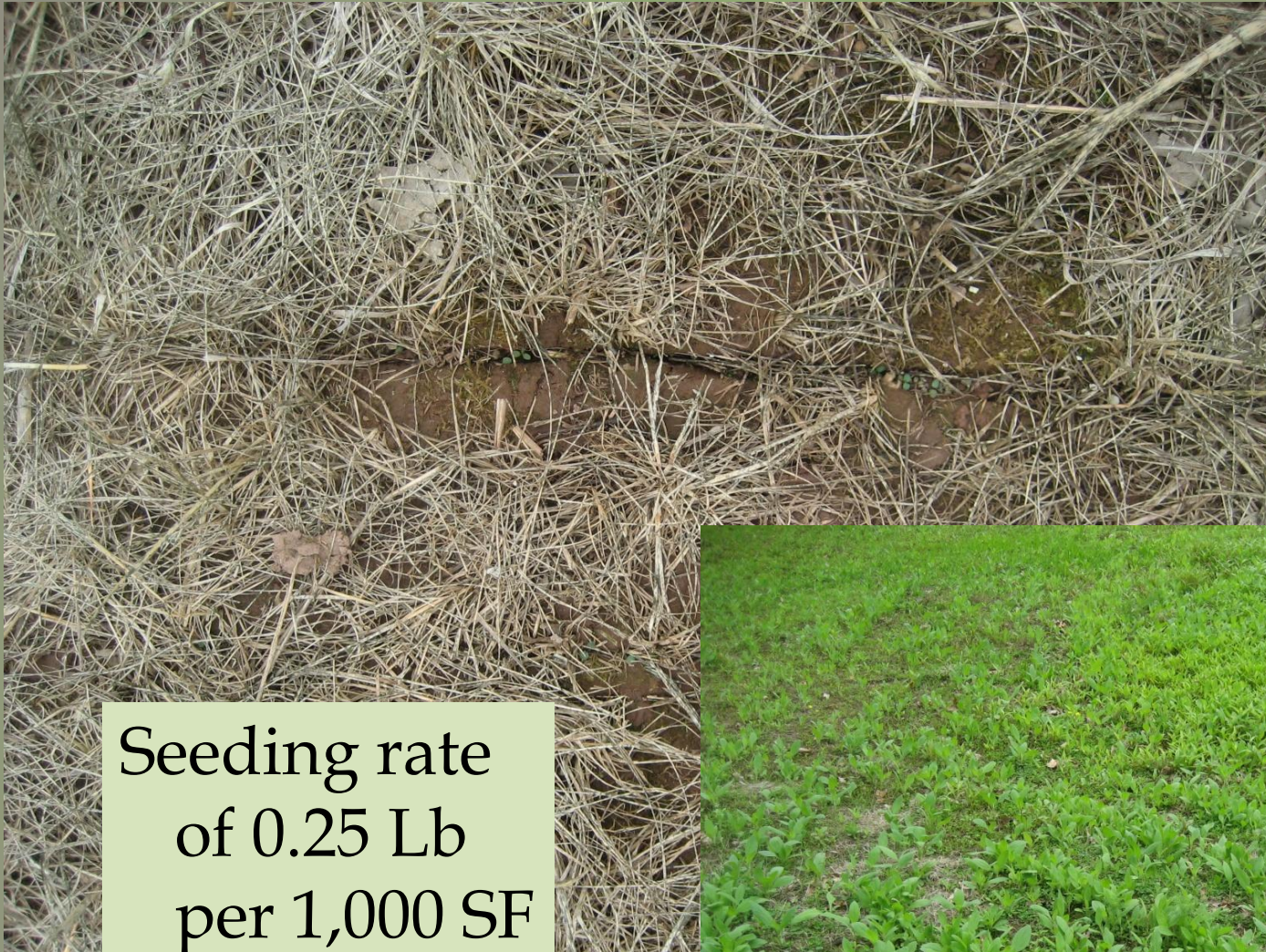
- Native plants adapted to region and soil, use a reference site
- Annuals for first year color
- Beware of commercial mixes
- 50% wsg & remainder in forbs and csg



First year, Cadwalader

# Large areas - Seeding No-till drill-seeder





Seeding rate  
of 0.25 Lb  
per 1,000 SF  
~11 Lb per  
acre



# Smaller areas - seeding or planting



- Hand broadcast seed  
OR
- plugs, potted plants  
OR
- Stop mowing and add wildflowers and wsg



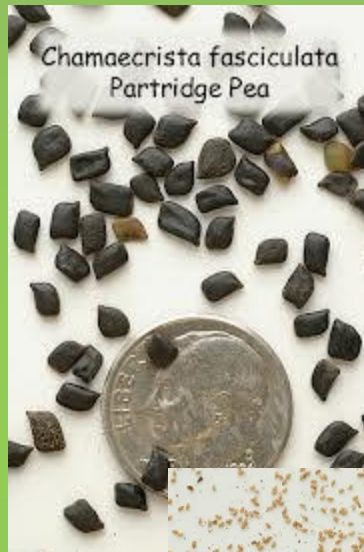
# Seeding, continued

## Distributing the seed

- Mix with medium (kitty litter, coarse sand) – dampened for hand-broadcasting

## When?

- April through early June ideal
- Late summer/early fall
- Dormant (winter)



# Early Maintenance for seeded meadows

Keep annual weeds down



First year – keep at 6" until ~early July



Second year – Mow/weedwack to  
12" ~ May-mid June

Wait until 2<sup>nd</sup> or 3<sup>rd</sup> year to  
add potted plants!

# Smaller-scale scenarios

- Mulch or layer straw between plantings
- Protect your plantings from herbivory, if necessary



# Long-term maintenance for seeded OR planted meadows

## Periodic disturbance

- Burning or annual mowing
- Late winter/early spring OR
- After frost (Nov.)
- Brush-mower or weed wacker
- Cut high
- Spot treatments or hand pull weeds as needed



Cadwalader Park, third year

# Strong suggestions

- Start small! (strips or patches)
- Take your time and plan ahead (take care of weeds)
- When seeding, establish grasses first (add wildflowers later)



# Suggestions, continued

- Create focal areas for pollinators
- Provide blooms from spring through fall



# Resources

## Literature:

- *Urban and Suburban Meadows* – Catherine Zimmerman 2012
- *Stewardship Handbook for Natural Areas in Southeastern Pennsylvania* – Natural Lands Trust 2008
- *Anything* by Larry Weaner, Larry Weaner Landscape Associates
- *Wildflower Meadow Book: A Gardener's Guide* - Laura C. Martin 1990
- *Wild Ones, Native Plants, Natural Landscapes* – [www.wildones.org](http://www.wildones.org)

## Plant sources:

- Ernst Seeds, Meadville, PA, [www.ernstseed.com](http://www.ernstseed.com)
- Belle Mead Co-op (oats, annual rye), Hillsborough, NJ 908-359-5173
- Pinelands Nursery, Columbus, NJ, [www.pinelandsnursery.com](http://www.pinelandsnursery.com)
- North Creek Nurseries, Landenberg, PA, [www.northcreeknurseries.com](http://www.northcreeknurseries.com)
- D&R Greenway Land Trust
- New Moon Nursery, Bridgeton, NJ, [www.newmoonnursery.com](http://www.newmoonnursery.com)

## Contractors:

Weeds Inc. – herbiciding, drill-seeding – 1-215-870-0895

Your local hay farmers - grass drill-seeding and mowing

ArcheWild – consulting, restoration - 1-855-7526862, [www.archewild.com](http://www.archewild.com)

StewardGreen – consulting, restoration – 1-908-376-1429

Brush mowers: DR Power Equipment, Doylestown, PA – 1-800-376-9637