

3RD ANNUAL
CREATING & IMPROVING
POLLINATOR HABITAT
CONFERENCE

Presented By: Dr. Kim Stoner, CAES



SITE ANALYSIS & PLANNING POLLINATOR HABITAT THAT WILL THRIVE ON THE SITE

-OR-

Bees – Give ‘Em What They Want

-OR-

Bugs & Thugs: How To Pick A Fair Fight



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ASSESSING THE SITE

What Is The Land Telling Us?



Thin, Rocky, Sloping Soil



Dry, Thin, Acidic Soil

Scrub Oak & Little Bluestem



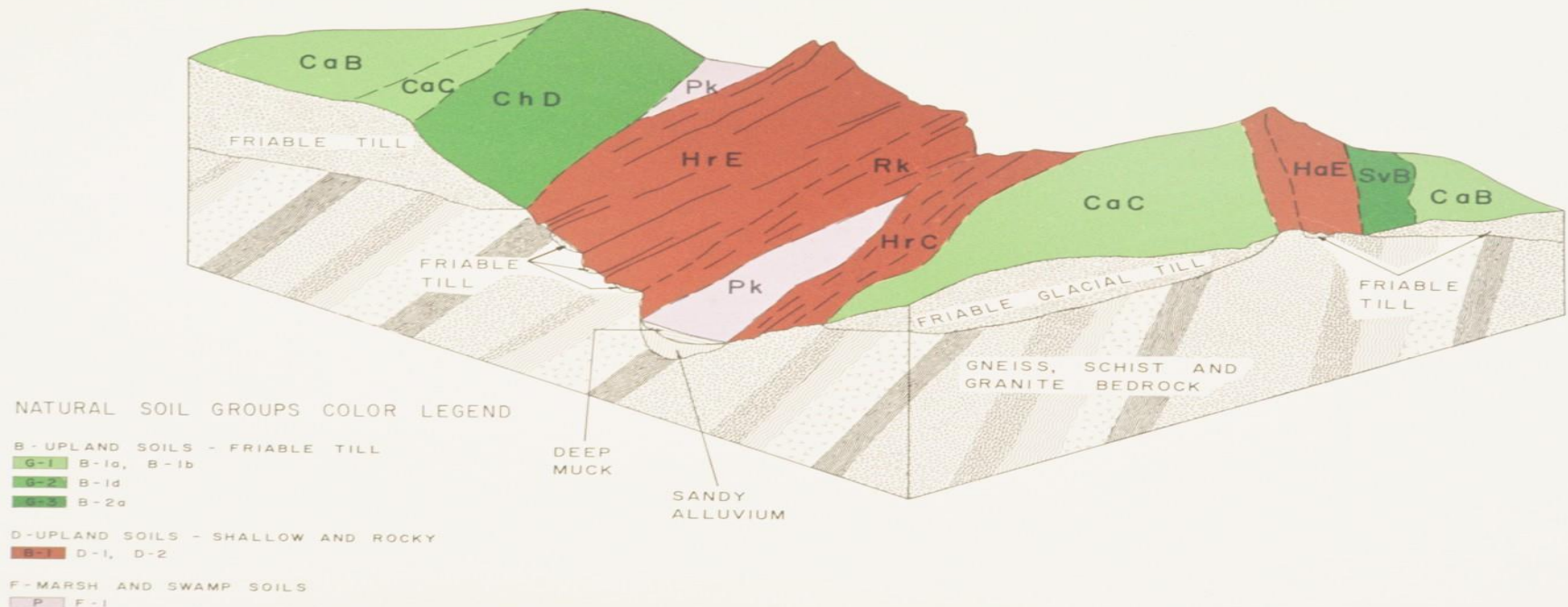
Sensitive Fern (*Onoclea sensibilis*)

Wet Soil

KNOW YOUR SOIL TYPES

Soil Types Can Vary Widely On The Same Property

LANDSCAPE SEGMENT WITH NATURAL SOIL GROUPS



WHAT GROWS WHERE & WHY

Plants have developed over millennia to prefer certain niches
Soil pH, organic matter, texture, drainage, microbes, exposure
Plant them where they want to be for long-term success



Wild Bergamot (*Monarda fistulosa*)

Full Sun

Alkaline Soil



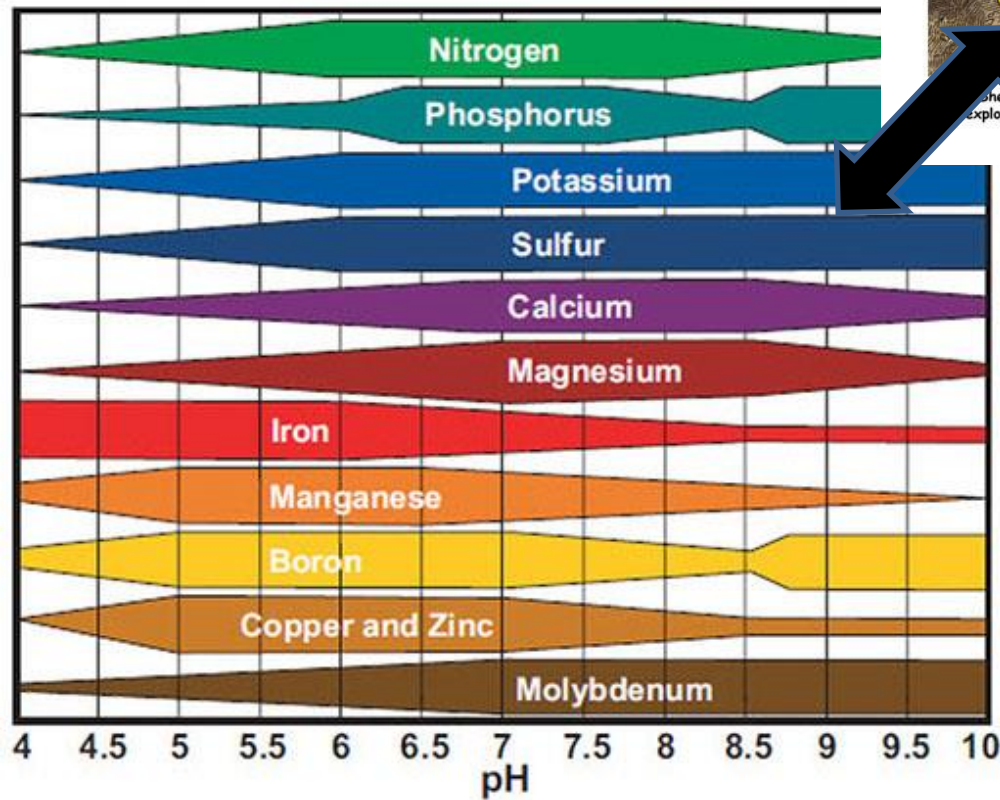
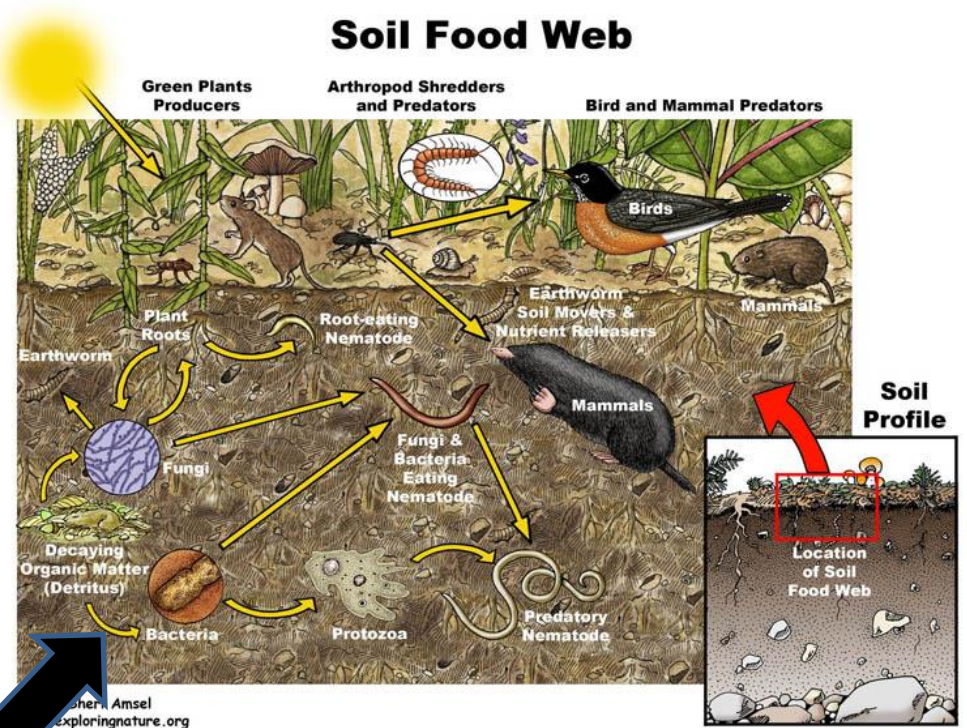
Photo: Ellen Sousa, Turkey Hill Brook Farm

Black Cohosh (*Actaea racemosa*)

Woodland Edge

Acidic Soil

CHEMICAL & BIOLOGICAL PROCESSES



WHERE THE TWO
OVERLAP IS THE
SWEET SPOT



Common Yarrow (*Achillea millefolium*)
& Certain Asters
Dry, Depauperate Soil

Foamflower (*Tiarella cordifolia*)
Rich, Moist Soil



EXPOSURE



Shade



Deep Shade



Woodland Edge



Full Sun

TOPOGRAPHY

Drier on Top, Wetter On Bottom

Windier On Top, Calmer On The Bottom

Poorer Soil On Top, Richer Soil On The Bottom



PRESERVATION

Preserve The Habitat
You Already Have

Clumping Grasses
Bare Soil Patches

Pollen & Nectar Sources
Undisturbed Woodland Edge





Hollow Stems For
Solitary Bees



Dry, Rocky, Bare Soil
For Wasps



Stumps & Clumps
For Bumblebees



A snag can be a very productive part of an ecosystem



Excellent Native Pollinator Habitat

REFUGIA

Leave It And They Will Come



INVASIVE PLANTS

Removing Undesirable Vegetation



HUMAN DISTURBANCE #1 REASON FOR INVASIVE PLANT INCURSION



Honeysuckle, Barberry, Multiflora Rose, Bittersweet, Garlic Mustard



Butterfly Weed (*Asclepias tuberosa*)
3-5 year before Flowering, Grows Taproot First

LEAVE THE GOOD STUFF

INITIATE AN INVASIVE PLANT MANAGEMENT PLAN

Constant Vigilance

Remove Weeds When Young

Minimize Soil Disturbance

Fill All Niches Or Nature Will



REMOVAL METHODS

1 “Editing” with weed mower

2 “Glove of Death”

3 Propane Flame Weeder

1



DRIP TUBE APPLICATION

Some plants move nutrients down to the roots in the fall
Apply organic herbicide to exploit this vulnerability
Ag Vinegar 100% Concentration, Use A Dye



SITE PREPARATION

The #1 Reason For Failure Is
Inadequate Site Preparation

XERCES Society Guidelines

Organic Site Preparation for Wildflower Establishment:

<http://xerces.org/guidelines-organic-site-preparation/>

Establishing Pollinator Meadows from Seed

<https://xerces.org/establishing-pollinator-meadows-from-seed/>

SOME PLANT REMOVAL METHODS



Weed Wrench



Forestry Mower



AVOID EXCESS SITE DISTURBANCE



REPEATED ORGANIC HERBICIDE APPLICATIONS



25b Exempt List





AGRICULTURAL VINEGAR
Three Blanket Applications
Two Spot-Sprays
Two Months

FARMSCAPING:

Plant What Your Pollinators Want
& What You Need



Clump Of Anise Hyssop (*Agastache foeniculum*)



FIRST, DECIDE WHAT CROPS YOU WANT TO GROW

So You Know Which Pollinators To Attract



WHAT WOULD A POLLINATING INSECT BE CONCERNED WITH?

Food Resources
Nesting Sites
Water Source
Existing Vegetation
Compass Orientation
Prevailing Wind



FARMSCAPING



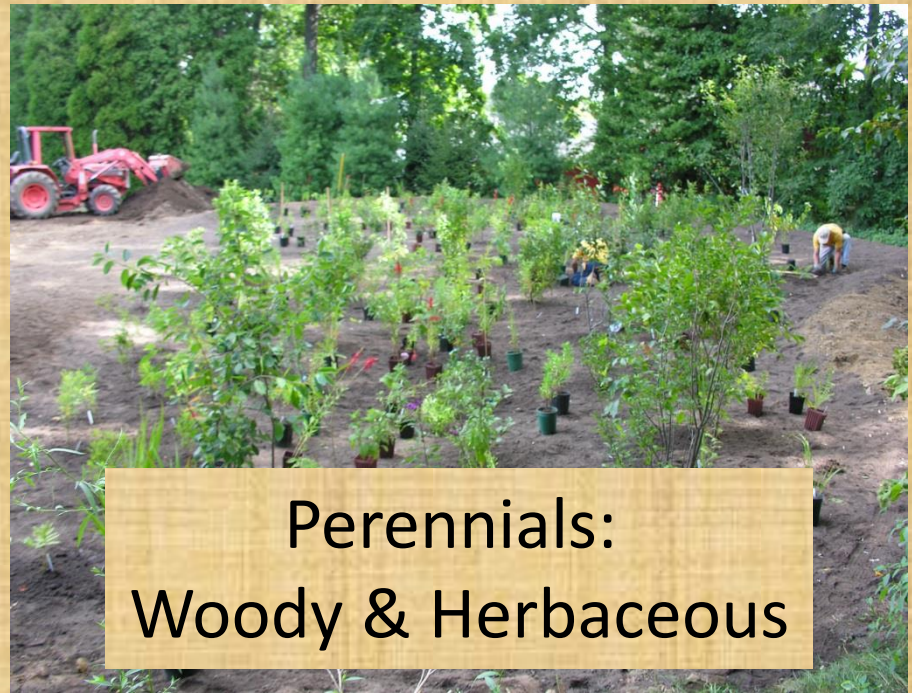
Helping Nature Self Sow



Violets, Dandelions & Clover



Annuals: Buckwheat & Rye



Perennials:
Woody & Herbaceous

DIRECT PLANTING



Plant groups of the same species

Provide for generalists & specialists

Plant close to the crop to be pollinated

Mow once in early spring or not at all

SEEDING SMALLER OR MORE DIVERSE SITES



STARTING FROM SEED



1 Moisten Sawdust; 2 Mix In Seeds; 3 Sow; 4 Rake In





SUCCESS!

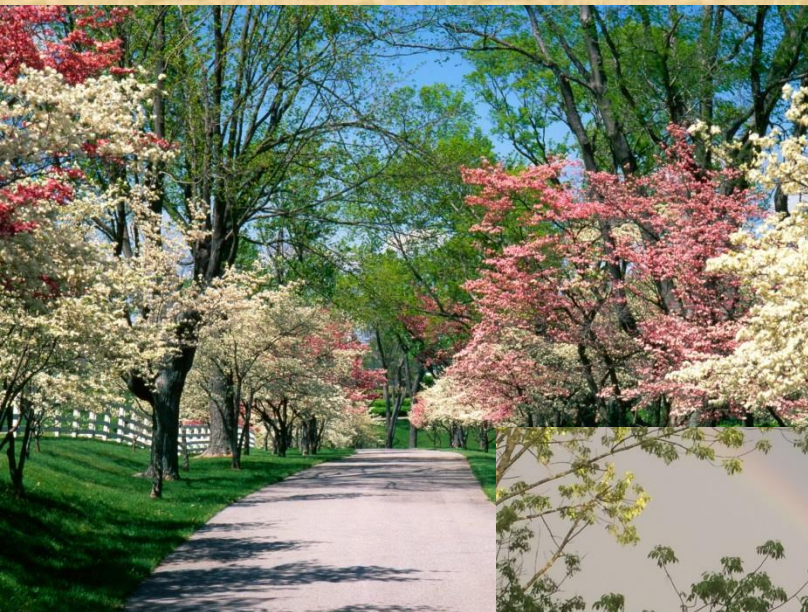
SEEDING LARGER SITES

Truax Meadow Seeder



FLOWERS THROUGHOUT THE SEASON

SPRING



SUMMER



FALL



GLOBAL WEIRDING ...



Vernal Witch Hazel (*Hamamelis vernalis*)



... WINTER
POLLINATORS?

EARLY SPRING FLOWERS



Wild geranium (*Geranium maculatum*)



Common Strawberry (*Fragaria virginiana*)



Dog Violet (*Viola labridorica*)

MID-SEASON FLOWERS



Partridge Pea (*Chamaecrista fasciculata*)

© AmericanMeadows.com



Great Blue Lobelia (*Lobelia siphilitica*)



Butterfly Weed (*Asclepias tuberosa*)

LATE SEASON FLOWERS



Goldenrod, Joe-Pye Weed, Aster, Boneset, Cutleaf Coneflower



Woodland Edge - Fall

PLANTS FOR HIGH pH (Alkaline) SOILS



PLANTS FOR BASIC SOILS



Beardtongue (*Penstemon digitalis*)



Fairy Candles
(*Veronicastrum virginicum*)



Gray Goldenrod
(*Solidago nemoralis*)

PLANTS FOR LOW Ph (Acid) SOILS



Sneezeweed
(*Helenium autumnale*)



Butterfly Weed
(*Asclepias tuberosa*)



Marsh Marigold
(*Caltha palustris*)

CREATE
NEW
HABITAT





Wild Blackberries & Garter Snake
Predator-Prey Relationship



Apple Blossom & Friend



Milkweed & Monarch Butterfly Larvae



Let Some Onions Go To Seed



**BUGS ON DRUGS?
SPOILED BRAT POLLINATORS!**

GO NATIVE!

Blue Mason Bee



Sweat Bee



A vibrant rainbow arches across a clear, light blue sky, positioned above a dense forest of lush green trees. The foreground shows the dark, silhouetted branches of a tree on the left, while the background is filled with a thick canopy of bright green foliage. The overall scene is bright and cheerful, suggesting a clear day after a rain shower.

Thank You!