Monarch Wings Across The Eastern Broadleaf Forest

An Ecoregional approach to developing rapid increases in available seed and plant materials to support monarch habitat

A presentation by Tom Van Arsdall

POLLINATOR PARTNERSHIP

Increase Monarch Habitat

- Engage public land managers and private land stewards
- Multiple monarch habitat enhancing efforts
- Establish 4,688 acres of monarch habitat

Build on success of Monarch Wings Across Ohio

NFWF Grant

Budget

$450K → **$300K** match + **$150K** NFWF cash over 2 years

- Administered by Pollinator Partnership and Core Group of Partners

Core Group

- US Fish and Wildlife Service's Partners for Fish and Wildlife Program (Il, IN, OH)
- Illinois Department of Natural Resources - Mason State Nursery
- Ohio Department of Natural Resources
- Ohio Pollinator Habitat Initiative
- Pheasants Forever
- Pollinator Partnership

1. Establish ecoregional seed collecting program

- Cooperation with existing collection programs to support their capacity

2. Provide technical assistance and training for seed collection and planting

Plant Profiles

MWAEBF - PLANT PROFILE

Pycnanthemum tenuifolium

(Narrowleaf Mountainmint)

Other common names include: Slender mountain mint and Common horsemint

[1]

Bloom Period:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
					X	X	X	X			

Plant Characteristics:

Duration: Perennial
Type: Forb
Size: 2-3' tall
Leaf: Opposite; up to 3" long and ¼" across. Leaves have no petiole (leaf stem), are linear, and hairless, with a prominent central vein and smooth edges. Leaves smell minty when crushed.
Stem: Stiff, smooth, slender, square stem, with no hairs.
Flower: The short tubular flowers are white, often with scattered purple dots, and individually about ¼" long. The flower petals have an upper lip, and three-lobed lower lip.
Seed collection**: Late September-Late October [2]

What it can be confused with:

This plant has a delicate, somewhat airy appearance. *P. tenuifolium* closely resembles Pycnanthemum virginianum (Common mountainmint), except that the *P. tenuifolium* has hairless stems and leaves that never exceed ¼" across. *P. virginianum*, on the other hand, has lines of white hairs on its stems, and some of the larger leaves will exceed ¼" across. *P. virginianum* tends to be taller, stouter, and less branched in appearance; it also blooms a little later in the year. [3]

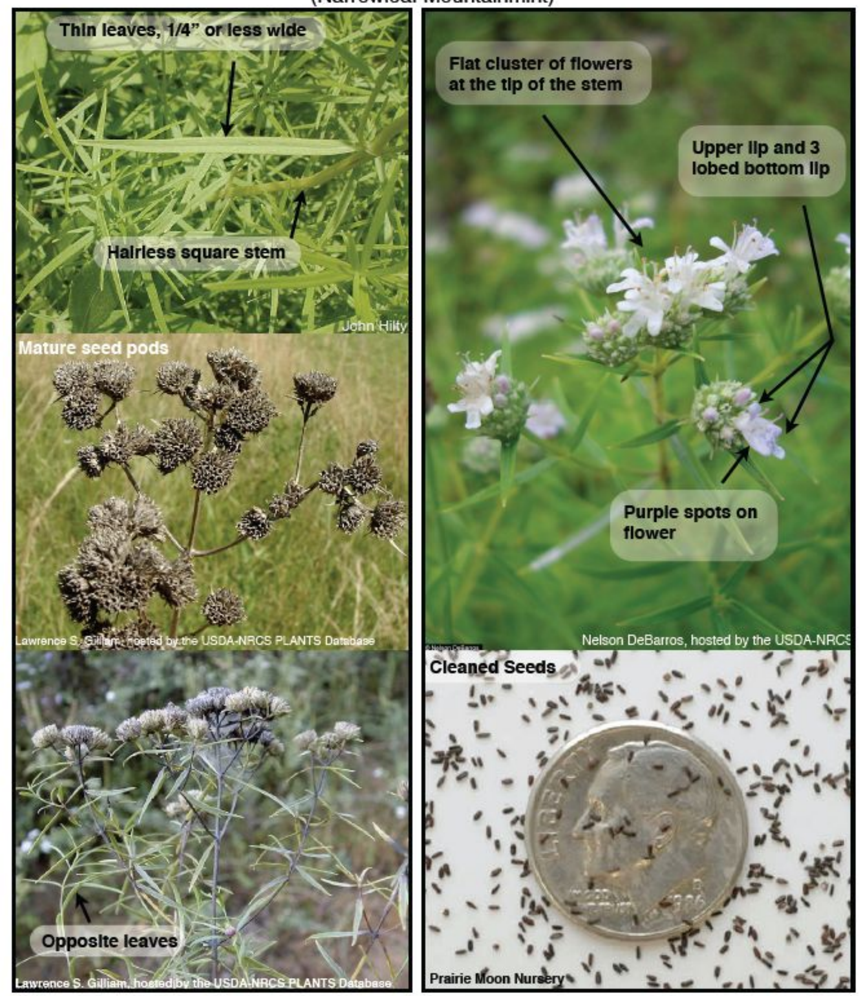
Known Pollinators:
Honey bees, native bees, flies, wasps, butterflies, skippers, and beetles. [3]

** Seed collection times will vary due to location and weather conditions during the growing season. This is a general time seed may be ready, locations will need to be scouted to get a more accurate timetable for each location.

[1] USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols.* Charles Scribner's Sons, New York. Vol. 3: 142.
[2] http://plants.usda.gov/plantguide/pdf/pg_pyte.pdf
[3] http://www.illinoiswildflowers.info/prairie/plantx/slm_mintx.htm

Pycnanthemum tenuifolium

(Narrowleaf Mountainmint)



3. Long-term habitat establishment

Scientific support

The Willamette Valley Seed Increase Program

Developing genetically diverse germplasm using an ecoregion approach

Kimiora Ward, Melanie Gisler, Rob Fiegener, and Amy Young

ABSTRACT

A Collaborative Program to Provide Native Plant Materials for the Great Basin

By Nancy Shaw, Mike Pellant, Matthew Fisk, and Erin Denney

Origin of the Great Basin Native Plant Selection and Increase Project

COMPATIBILITY OF BREEDING FOR INCREASED WOOD PRODUCTION AND LONG-TERM SUSTAINABILITY: THE GENETIC VARIATION OF SEED ORCHARD SEED AND ASSOCIATED RISKS

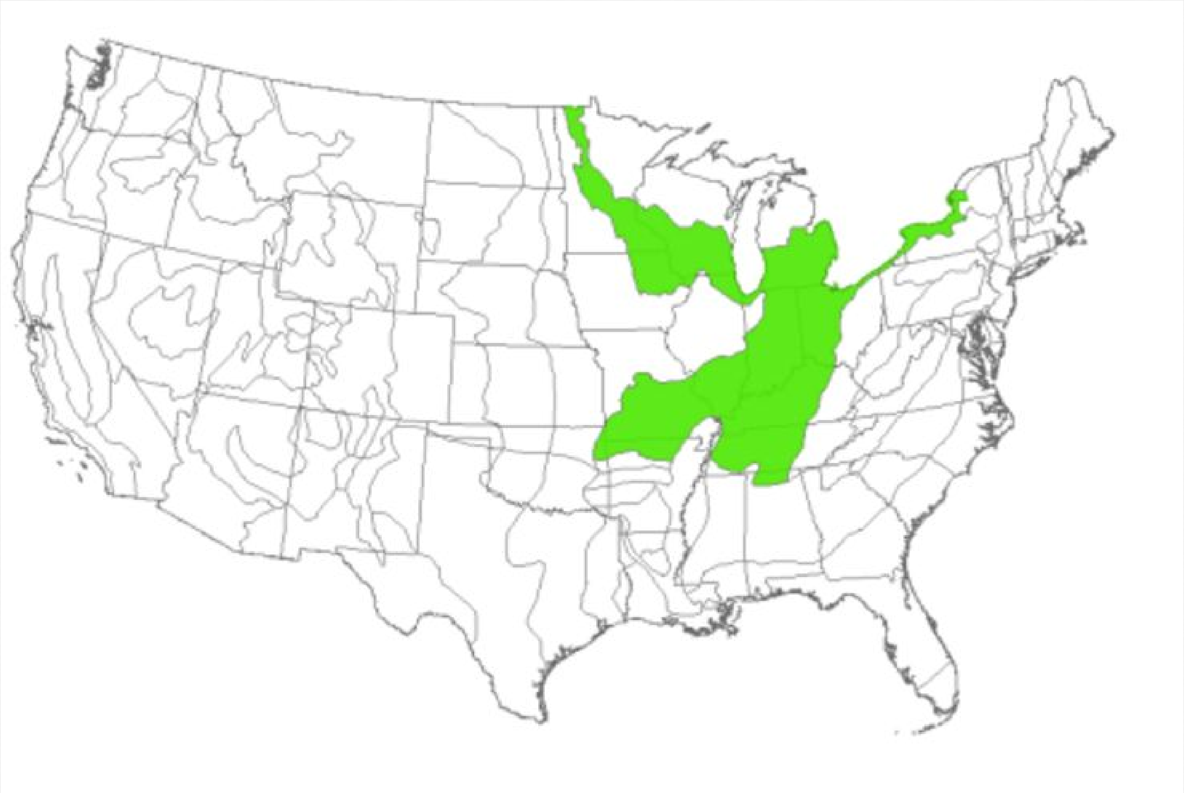
Randy Johnson[1] and Sara Lipow[2]

ABSTRACT

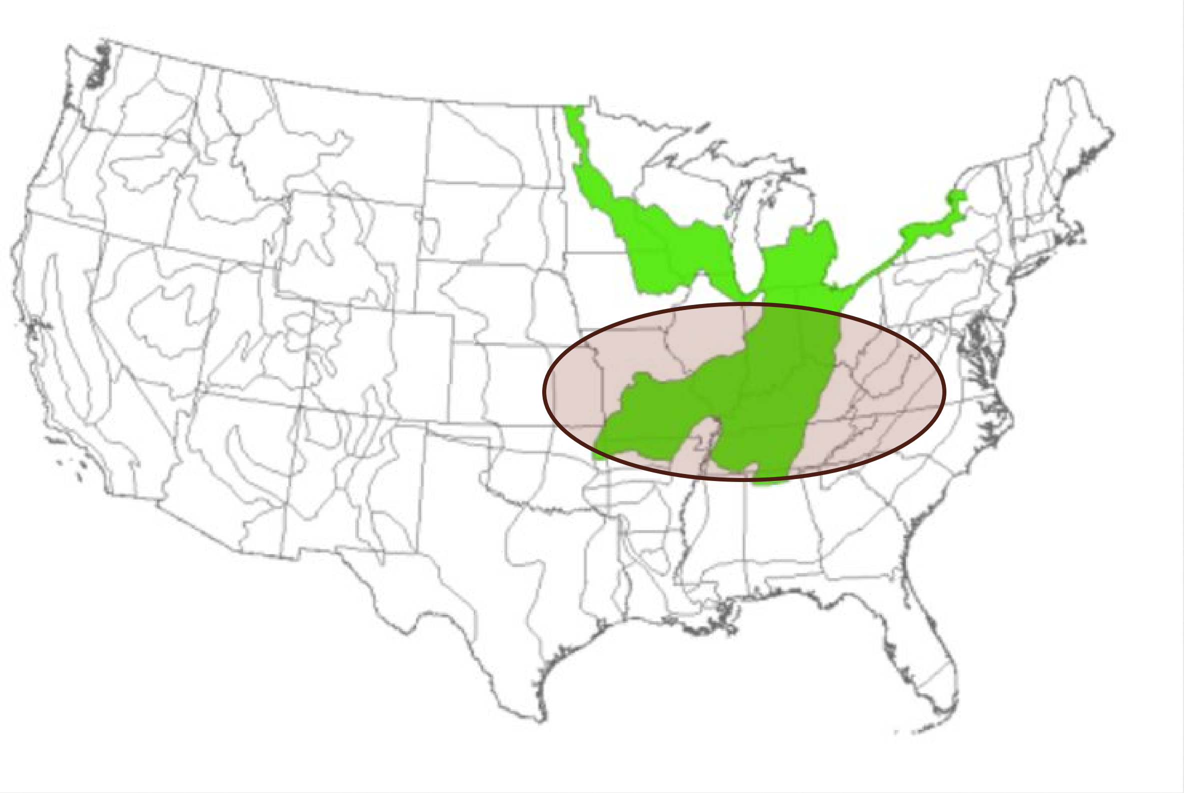
KEY WORDS: Genetic diversity, tree breeding, seed orchards, risks.

INTRODUCTION

Eastern Broadleaf Forest Continental Province



For this reason, an ecoregional approach to seed collection is being taken across the project's five target states; Ohio, Indiana, Illinois, Missouri and Arkansas.



The goal of Monarch Wings Across the Eastern Broadleaf Forest is to make 300 seed collections of milkweed and monarch nectar species, or approximately 60 collections per state over two years.

MWAEBF seeks to target common, native species that are either monarch larval hosts (milkweed) or nectar resources.

Target List of Common Species

Botanical Name	Common Name	Bloom Period											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zizia aurea	Golden Alexander				X	X	X						
Tradescantia ohiensis	Ohio Spiderwort				X	X	X	X					
Penstemon digitalis	Foxglove beardtongue					X	X	X					
Asclepias syriaca	Common milkweed						X	X	X				
Asclepias verticillata	Whorled milkweed						X	X	X	X			
Ratibida pinnata	Yellow coneflower						X	X	X	X			
Pycnanthemum tenuifolium	Narrowleaf mountainmint						X	X	X	X			
Heliopsis helianthoides	Ox eye Sunflower						X	X	X	X			
Asclepias incarnata	Swamp milkweed						X	X	X	X			
Rudbeckia hirta	Black eyed susan						X	X	X	X			
Chamaecrista fasciculata	Partridge pea						X	X	X	X			
Verbena urticifolia	White vervain						X	X	X	X	X		
Monarda fistulosa	Wild bergamot							X	X	X			
Eupatorium perfoliatum	Common boneset							X	X	X			
Coreopsis tripteris	Tall coreopsis							X	X	X	X		
Symphyotrichum pilosum	Frost Aster							X	X	X	X		
Vernonia gigantea	Giant ironweed							X	X	X	X		
Eupatorium serotinum	Late boneset							X	X	X	X		
Symphyotrichum novae-angliae	New England aster								X	X	X		
Symphyotrichum laeve	Smooth blue aster								X	X	X		

How'd we get there?

- Species widely distributed across ecoregion by county
- Species cover broad bloom period
- Cross-referenced regional weedy/invasive lists
- **7** rounds of vetting from partners and advisors
- Ground-truthed via local experts
- Considered species tolerance and Coefficient of Conservation

Plant Profiles for All 20 Plants

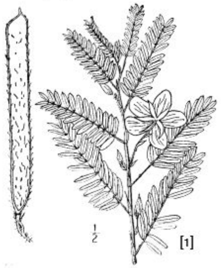
- Applicable across the full ecoregion
- Contact us at **info@pollinator.org** if you want copies

MWAEBF - PLANT PROFILE

Chamaecrista fasciculata

Partridge pea

Other common names include: Showy Partridge Pea, Sleepingplant, or Sensitive Plant



Bloom Period:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
					X	X	X	X			

Plant Characteristics:

Duration: Annual
Type: Forb
Size: 1-3' tall
Leaf: Alternate, pinnately compound. Medium to dark green. Petioles with nectaries. Each compound leaf has up to 20 leaflets, which are hairless, oblong, and roughly 2/3" long and 1/3" wide.
Stem: Shorter plants are erect while larger plants tend to sprawl. Stems are slender and hairless, and are light green at first but become reddish brown.
Flower: Flowers are bright yellow and irregular, appearing on 1/3" flower stalks along major stems near leaf axils. Flowers are 1" wide with 5 rounded petals and approximately 10 ruddy stamens. No scent. [3]
Seed collection**: Early September [2].

What it can be confused with:

Sometimes confused with *Chamaecrista nictitans* which can be distinguished by its flowers (which are smaller in size - about 1/3" across, have 5 stamens, and appear on 1/10" flower stalks), as well as its leaves, which are sensitive to the touch and will fold when contacted. [5]

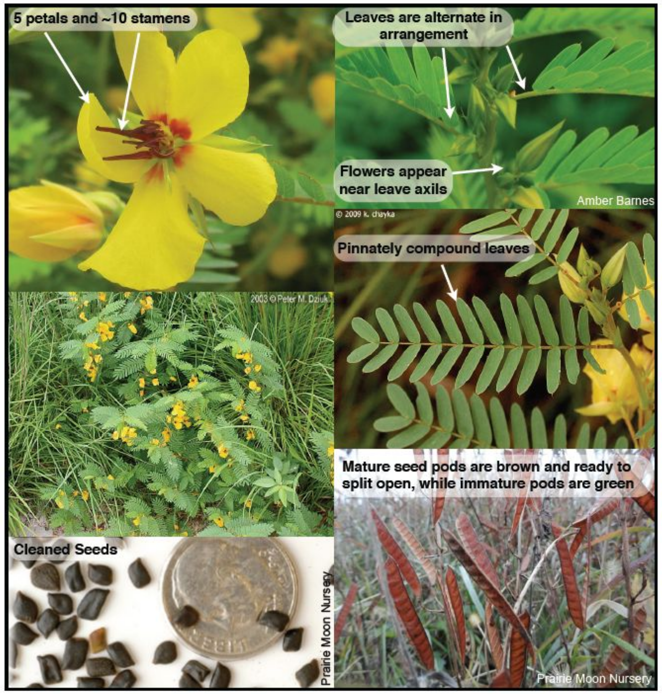
Known Pollinators:
Honey bees, native bees, flies, wasps, ants, butterflies [4, 5]

** Seed collection times will vary due to location and weather conditions during the growing season. This is a general time seed may be ready, locations will need to be scouted to get a more accurate timetable for each location.

[1] USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 2: 337.
[2] http://pleasantvalleyconservancy.org/seedcollectingtimes.html
[3] http://www.illinoiswildflowers.info/prairie/plantx/part_peax.htm
[4] http://www.wildflower.org/plants/result.php?id_plant=CHFA2
[5] https://gobotany.newenglandwild.org/species/chamaecrista/fasciculata/

Chamaecrista fasciculata

Partridge pea



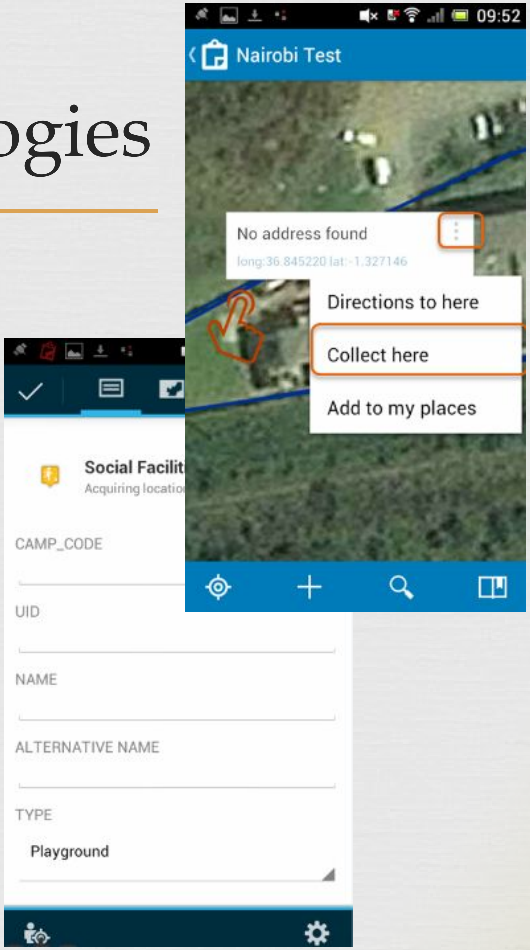

Seed collection by collecting team
Seed is shipped to be cleaned, tested (viability and weed), and placed into temporary storage. Collections are held separately.
Plug grow-out from collections
Direct seeding (from collections)

Mapping App

University of Arkansas

Center for Advanced Spatial Technologies

- Smartphone app for volunteers to map collections and store data
- Secure server hosted by U of AR
- Enabled for offline data entry
- Valuable data for model validation
- Future applications…



Opportunities and Challenges

Challenges

- Fear of contamination and competing seed sources
- Identifying sites
- Recruiting volunteers
- Plant identification
- Training

Opportunities and Challenges

Opportunities

- Training will be consistent
- Jump start for habitat
- Develops new resources for seed collection in the future
- Scientifically sound

Next Steps

- Secure state leads
- Build plant profiles and training modules
- Train volunteers
- Identify and secure sites and make collections
- Seeds processed, cleaned, checked, and verified
- Planting/Seed distribution

Rapid increase of much-needed monarch habitat

2017 NAPPC Poster – The Monarch Highway

- Ongoing project
- Available Earth Day, April 22nd

Join us!

We need volunteer seed collectors in Arkansas, Missouri, Illinois, Indiana, and Ohio

Contact **info@pollinator.org**

Interested in being a State Lead in Arkansas or Missouri?

Contact Amber Barnes
AB@pollinator.org

Thank You!

Project Coordinators:
Laurie Davies Adams
Evan Cole
Amber Barnes

QUESTIONS?

Please send to:

info@pollinator.org

POLLINATOR
PARTNERSHIP

The preceding presentation was delivered at the

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Washington, D.C. February 13-16, 2017

This and additional presentations available at http://nativeseed.info

NATIVE SEED NETWORK

Institute for Applied Ecology