



All the Dirt on Native Seed Collecting

Marlene Smith

Charles County Master Gardener

Molly Moore

President, Southern Maryland Audubon

Charles County Master Gardener

UNIVERSITY OF
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NATIVE PLANTS

A MASTER GARDENER PROGRAM



AND JUSTICE FOR ALL

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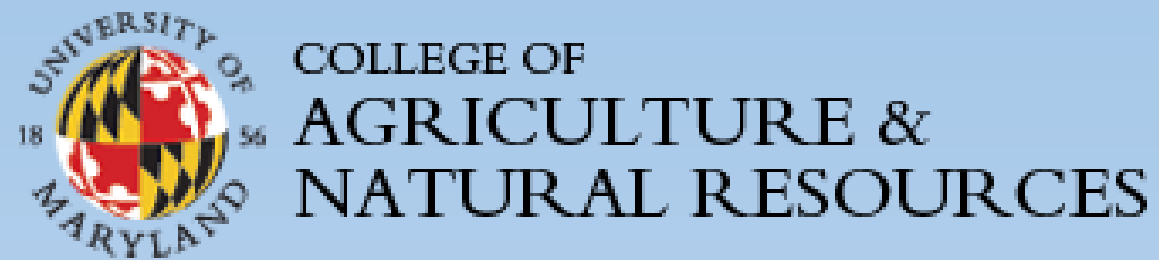
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MASTER
GARDENER 



Molly Moore

President, Southern MD Audubon
Charles County Master Gardener
Maryland Master Naturalist/
Nanjemoy Creek Environmental
Education Center

Marlene Smith

Treasurer, Charles County Master
Gardeners
Bay-Wise Master Gardener
Maryland Tree Steward
Xerces Ambassador

Why collect native seeds?

- Native plants are adapted to our environment
- Provide native habitat for insects/birds/other wildlife
- Preserve genetic diversity
- Access hard-to-find plant species
- Educational (full life cycle from seed to seed)
- Easy
- Fun hobby (therapeutic/potentially addictive)
- Trading with other gardeners
- Budget-friendly way to get new plants

Cardinal flower-Lobelia cardinalis

More than 60 plants from collected seeds: \$390 value for \$0



10 Steps to Native Seed Collection

1. Observe ethical collection guidelines
2. Accurately identify source plants
3. Learn to recognize when seeds are ready
4. Gather collection materials
5. Collect seeds
6. Dry seeds
7. Clean seeds
8. Store seeds
9. Special handling
10. Next steps... Sharing, Swapping, Winter sowing

Step 1: Ethical Native Seed Collection



Red-eyed Vireo on Sweetbay Magnolia

- Know what the species is and its status prior to collecting—never collect seeds from [rare, threatened or endangered plants](#)
- Always seek permission (NOT forgiveness)
- Respect nature—never harvest more than 30% of seeds from a single plant or plant community. **You don't need a lot!**
- Collect seeds only from healthy plants.
- Don't collect in the rain or right after rain.

Step 2: Identify your source plants

- Types of seeds you can collect:

Annuals Biennials Perennials

Vines Shrubs Trees

Grasses Sedges

- Select plants while flowers are in bloom
- Record location
- Mark with flags, flagging tape, string, mesh bags, etc.



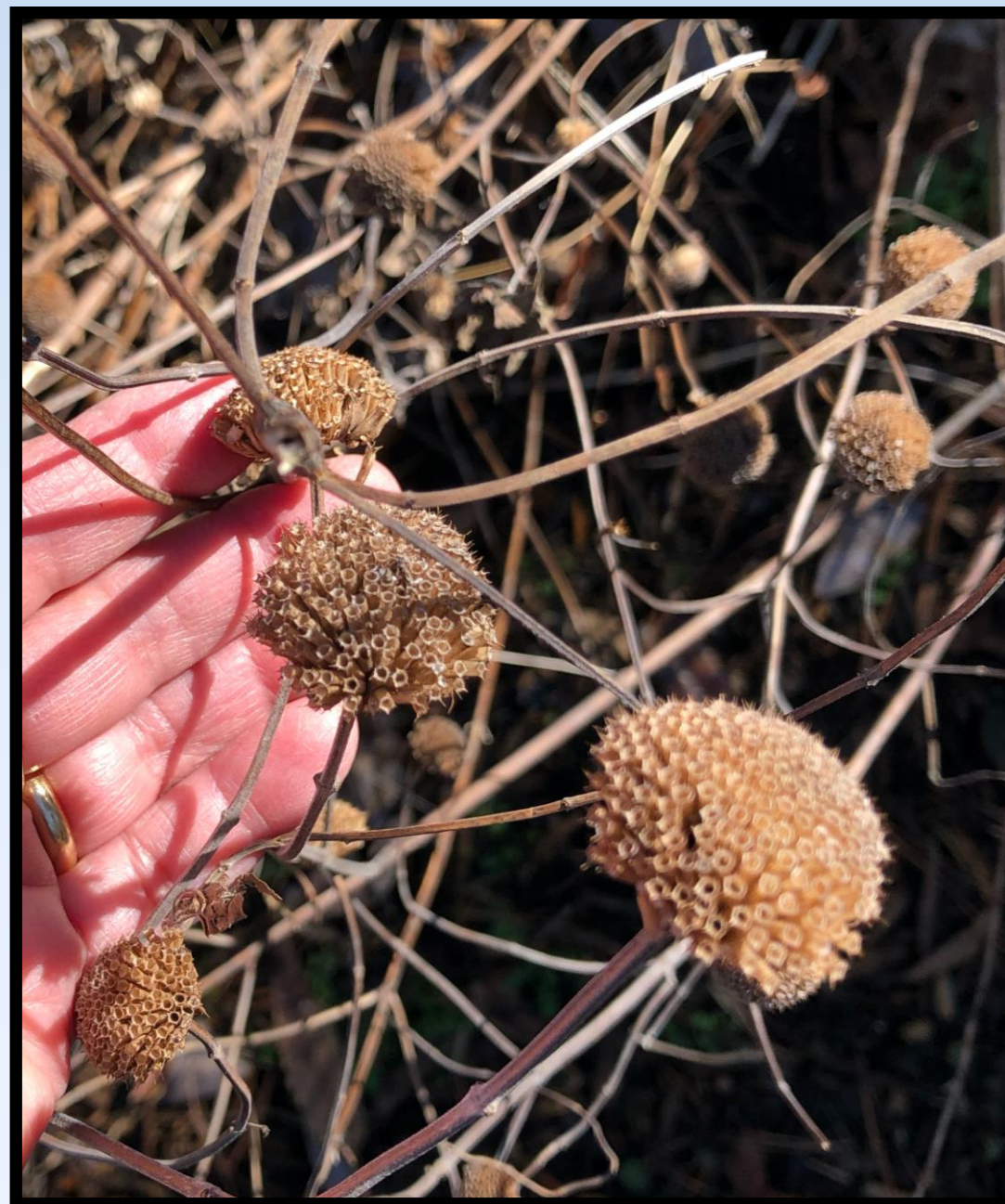
Monarda fistulosa



Step 3: Recognize when seeds are ready



Apocynum cannabinum
Eutrochium purpureum
Monarda fistulosa



- Wait 6-8 weeks after blooms have finished
- Seed structure and location where it attaches to stem should be brown or tan
- For some species, use techniques like organza bags or rubber bands to contain seeds until ripe

But wait! To complicate matters..... Not all seeds on same plant ripen at same time

- Some seeds ripen & disperse suddenly
- Others ripen slowly, a few seeds or pods at a time over days or weeks
- *Lobelia* species flower and seeds ripen in sequence from bottom of stem upwards over several weeks
- *Liatris* species flower and seeds ripen from top of the stem down
- **RECORD KEEPING IS CRITICAL!**



Ziza aurea



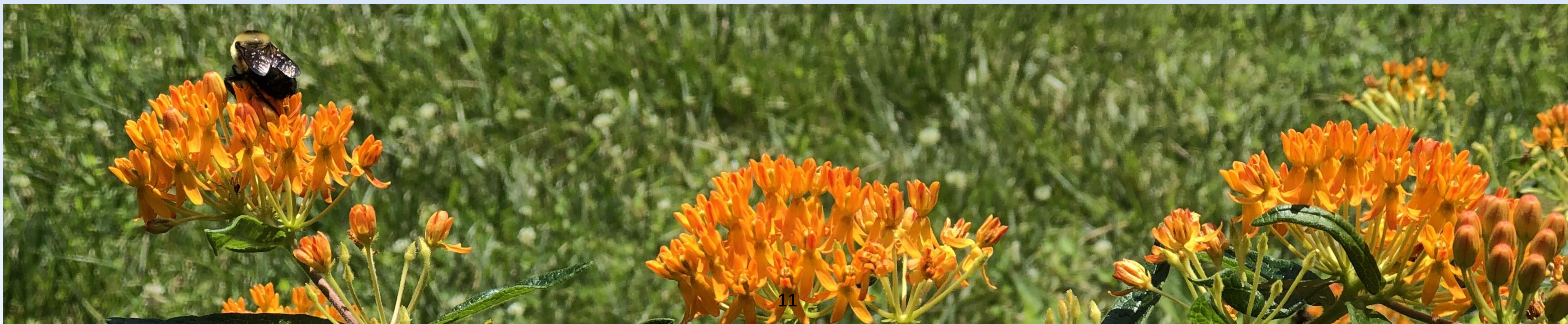
*Lobelia
cardinalis*



Liatris spicata

When can you collect native plant seeds?

Species	Late spring	Early summer	Summer	Late summer	Early fall	Fall	Late fall
Pussytoes, <i>Antennaria plantaginifolia</i>							
Wild Columbine, <i>Aquilegia canadensis</i>							
Twin leaf, <i>Jeffersonia diphylla</i>							
Wild Bergamot, <i>Monarda fistulosa</i>							
Coral honeysuckle, <i>Lonicera sempervirens</i>							
Orange Jewelweed, <i>Impatiens capensis</i>							
Golden Alexanders, <i>Zizia aurea</i>							
Purple Coneflower, <i>Echinacea purpurea</i>							
Butterfly weed, <i>Asclepias tuberosa</i>							
Sneezeweed, <i>Helenium autumnale</i>							
Panicked Ticktrefoil, <i>Desmodium paniculatum</i>							



Step 4: Gather what you need to collect seeds

(Mostly stuff from around your house!)



Paper bags or other collection containers



Scissors, knife, pruner, etc.



Gloves



Markers

Know your seed groups!

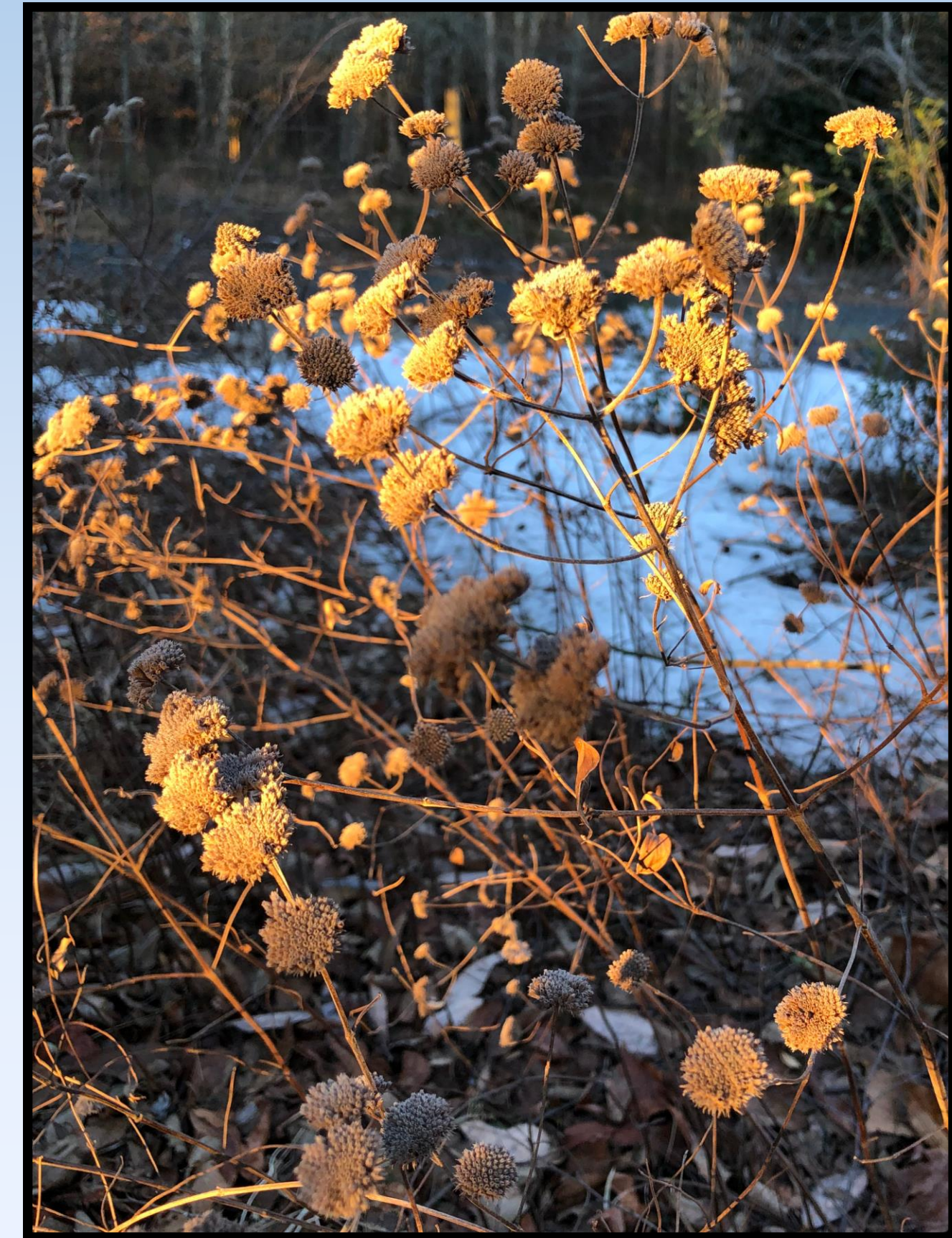
Time sensitive

Seeds disperse in a few days or weeks due to wildlife, sensitivity to wind, etc



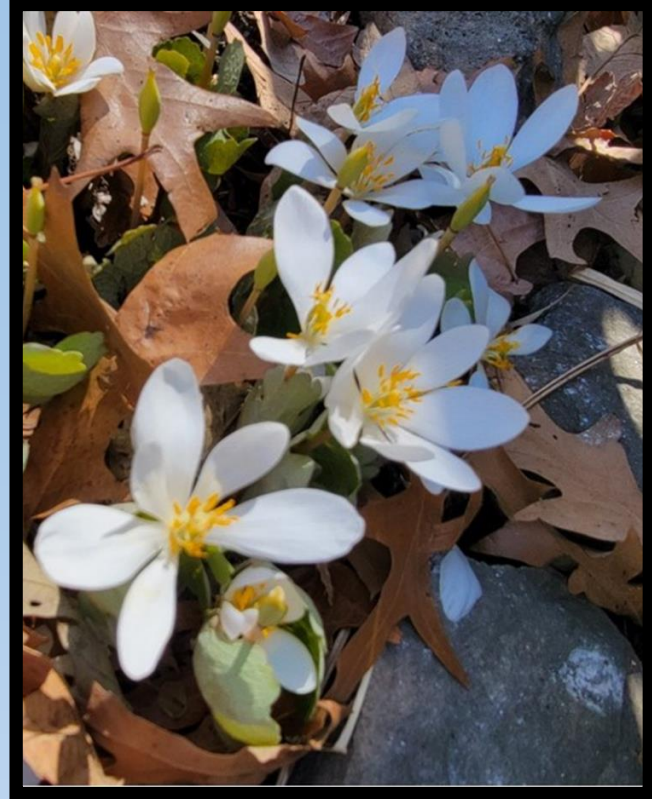
Mama's Boys

Seeds can linger on the stem for weeks or months

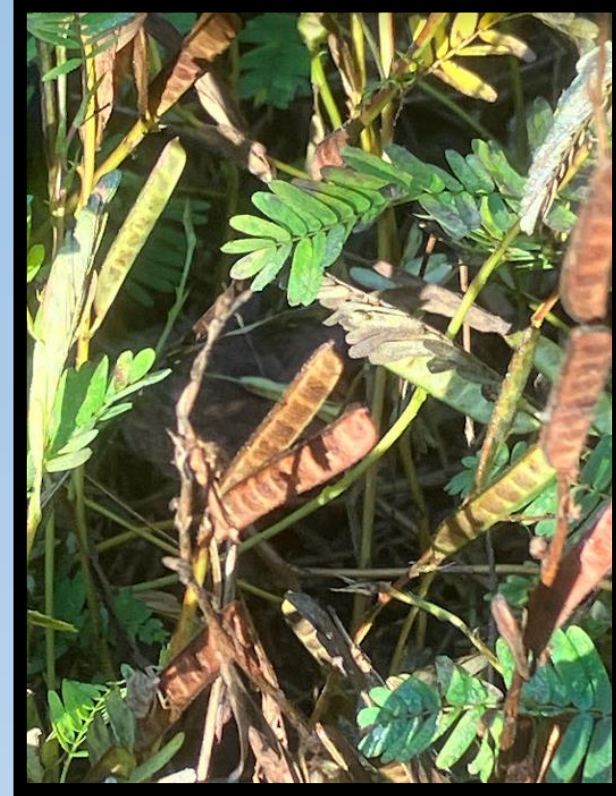


Time sensitive group

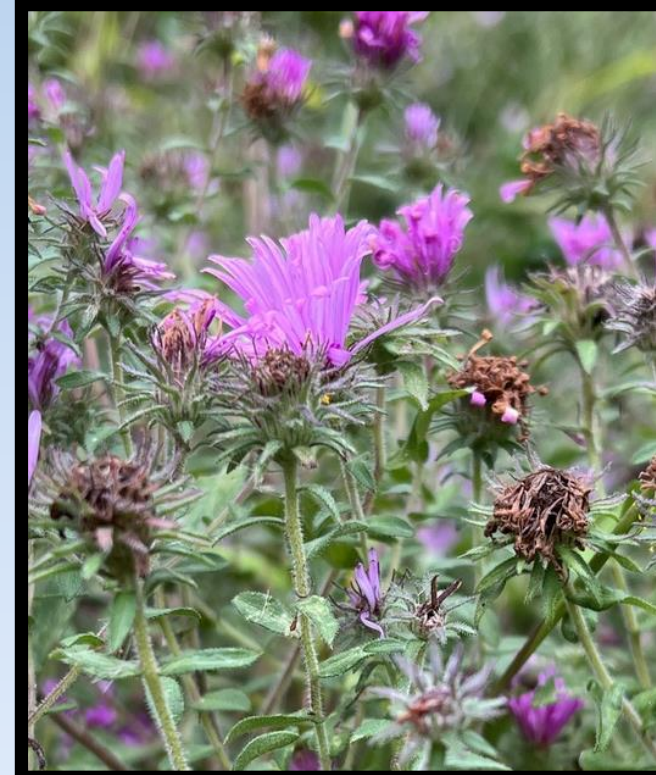
Elaiosomes



Ballistic



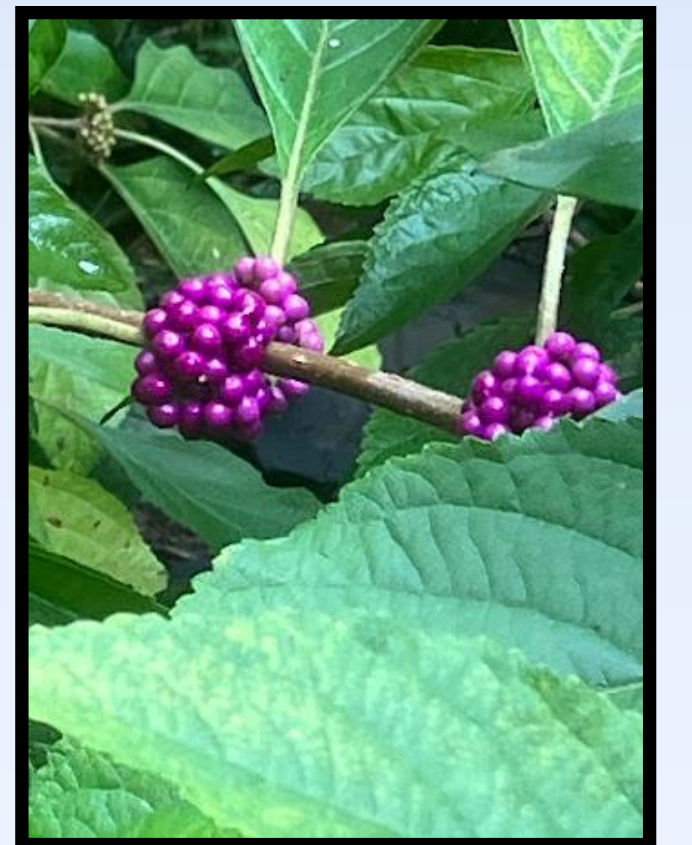
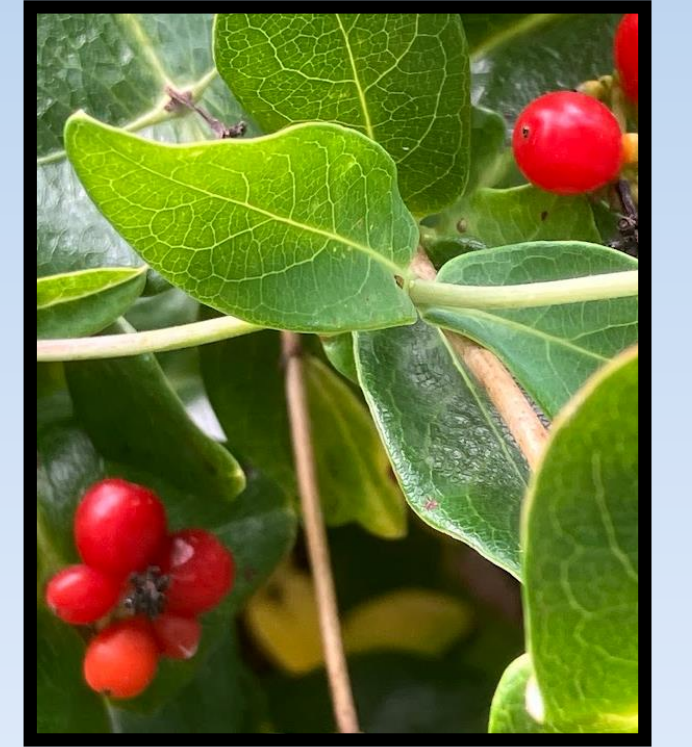
Fluffy



Milkweed



Berries

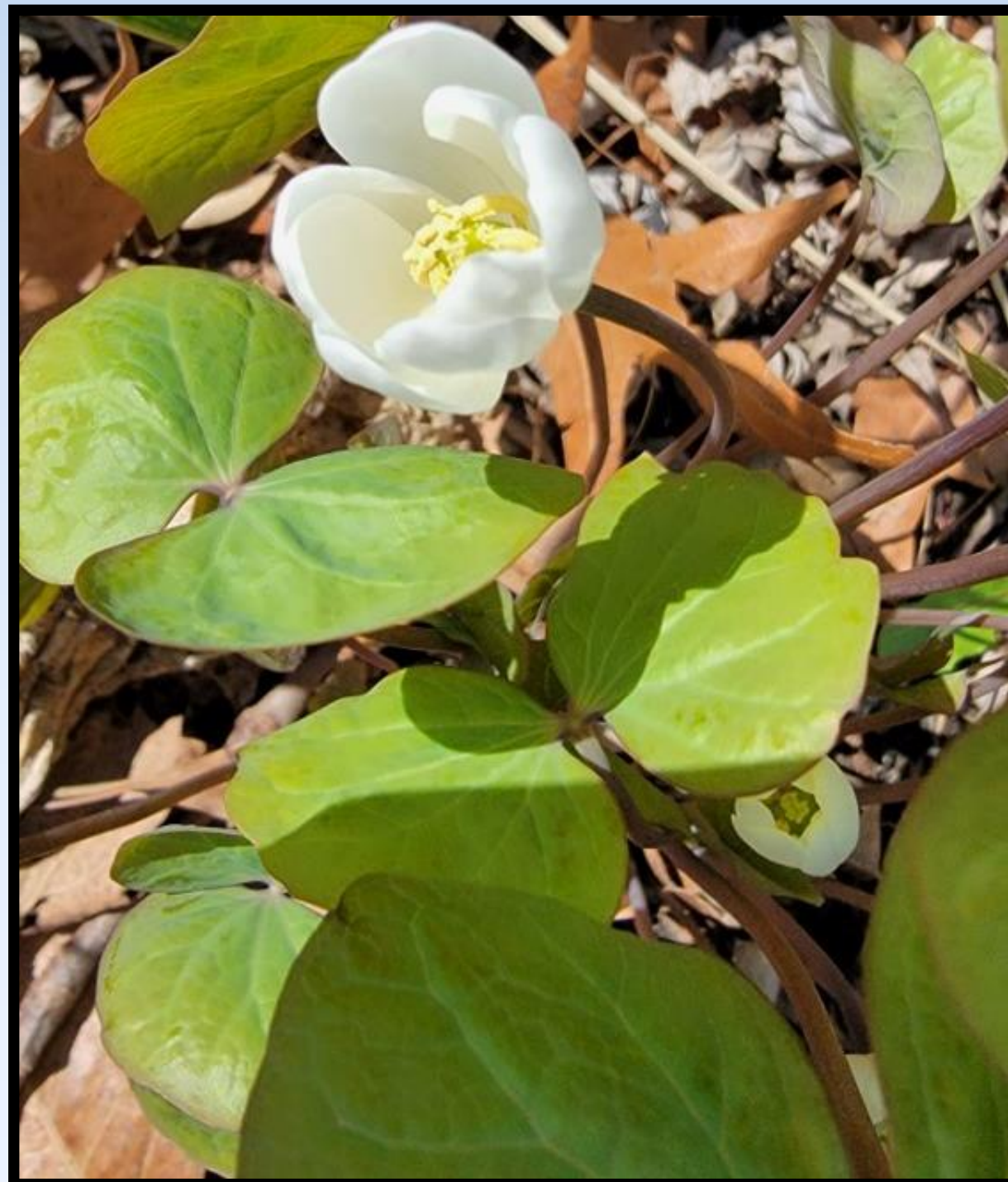


Elaiosomes

Fleshy structures attached to seeds. Nutrient-rich in lipids & proteins. Sometimes called “ant candy.”

Dispersal: Ants are strong & motivated, able to quickly carry the candy home to feed larvae while tossing heavy “candy wrapper” (seeds) into their compost piles.

Examples: **Twinleaf**, *Jeffersonian diphylla*; Wild ginger, *Asarum canadense*; Spring beauty, *Claytonia virginica*; Dutchman’s breeches, *Dicentra cucullaria*; Bloodroot, *Sanguinaria canadensis*



Elaiosomes

- **To harvest:** Check these species frequently; ants will rapidly collect all of the seeds.
- **To clean/store:** These seeds have higher germination when sown within a day or two.



Ballistic capsules

Catapult their babies
up to several feet



Dispersal: Seed forcefully
ejected by flinging seeds
from parent plant
(explosive dehiscence)



Examples:

Orange Jewelweed, *Impatiens capensis*; Wild geranium,
Geranium maculatum; Partridge
pea, *Chamaecrista fasciculata*;
Woodland phlox, *Phlox divaricata*; New Jersey tea,
Ceanothus americanus



Ballistic capsules

To harvest: Learn ripening sequence & harvest just before explosion; store in a *sealed* paper bag or mesh bag for a day or two.

To clean/store: After the seeds have popped in either the mesh bag on the plant or indoors, carefully open the bag and collect the seeds.



Fluffy seeds

Quite common, with “feather-duster” seed heads (pappus).

Dispersal: Fluff allows wind to efficiently move seeds long distances. Spring fluffy seeds more sensitive to strong wind.

Examples: **Pussytoes**, *Antennaria plantaginifolia*; Goldenrods, *Solidago spp*; Asters, *Symphyotrichum spp*; Joe Pye, *Eutrochium spp*; White snakeroot, *Ageratina altissima*



Fluffy seeds

To harvest: Collect when fluffy. It is ok to collect these seeds *slightly* early, by collecting entire stems with seeds either fully poofed or have dropped their ray florets (the colorful “petals”) Snip stems & let them poof in paper or mesh bag.

To clean/store: Seeds can be stored with fluff once completely dry.



Milkweed Seeds

Pods (follicles) split open when ripe, revealing brown seeds on white, silky, filament-link hairs (floss).

Dispersal: Seeds become wind born when left on plant, carried away by filament.

Examples: *Asclepias incarnata*, *Butterfly weed*; Common milkweed, *Asclepias syriaca*; Swamp milkweed, *A. incarnata*; *Smooth dogbane*, *Apocynum cannabinum var. glaberrimum*



Milkweed seeds

To harvest: Ignore pod color; may still be green. Place rubber band around unripe pods (or cover with organza bag) to prevent seeds from flying away.

To clean/store: Remove seeds from filaments; **save filaments and put outside in spring for hummingbirds use as nesting material.**



Berries

Seed stored in juicy flesh that turns vibrant & mushy when ripe: An advertisement to wildlife to EAT ME and disperse the seed.

Dispersal: Wildlife disperse seeds by chewing, digestion & dispersal in a pile of “fertilizer” distances from parent plant.

Examples: **Coral honeysuckle, *Lonicera sempervirens***; Paw paw, *Asimina triloba*; Jack-in-the-pulpit, *Arisaema triphyllum*; Chokeberry, *Aronia species*; Beautyberry, *Callicarpa Americana*



Berries

To harvest: Collect when ripe before wildlife devour. Cover with organza bags while ripening to protect from wildlife.

To clean/store: These seeds are not used to drying out and need to be sown fresh in damp soil OR cleaned & stored in plastic in the refrigerator (which maintains a higher level of humidity).



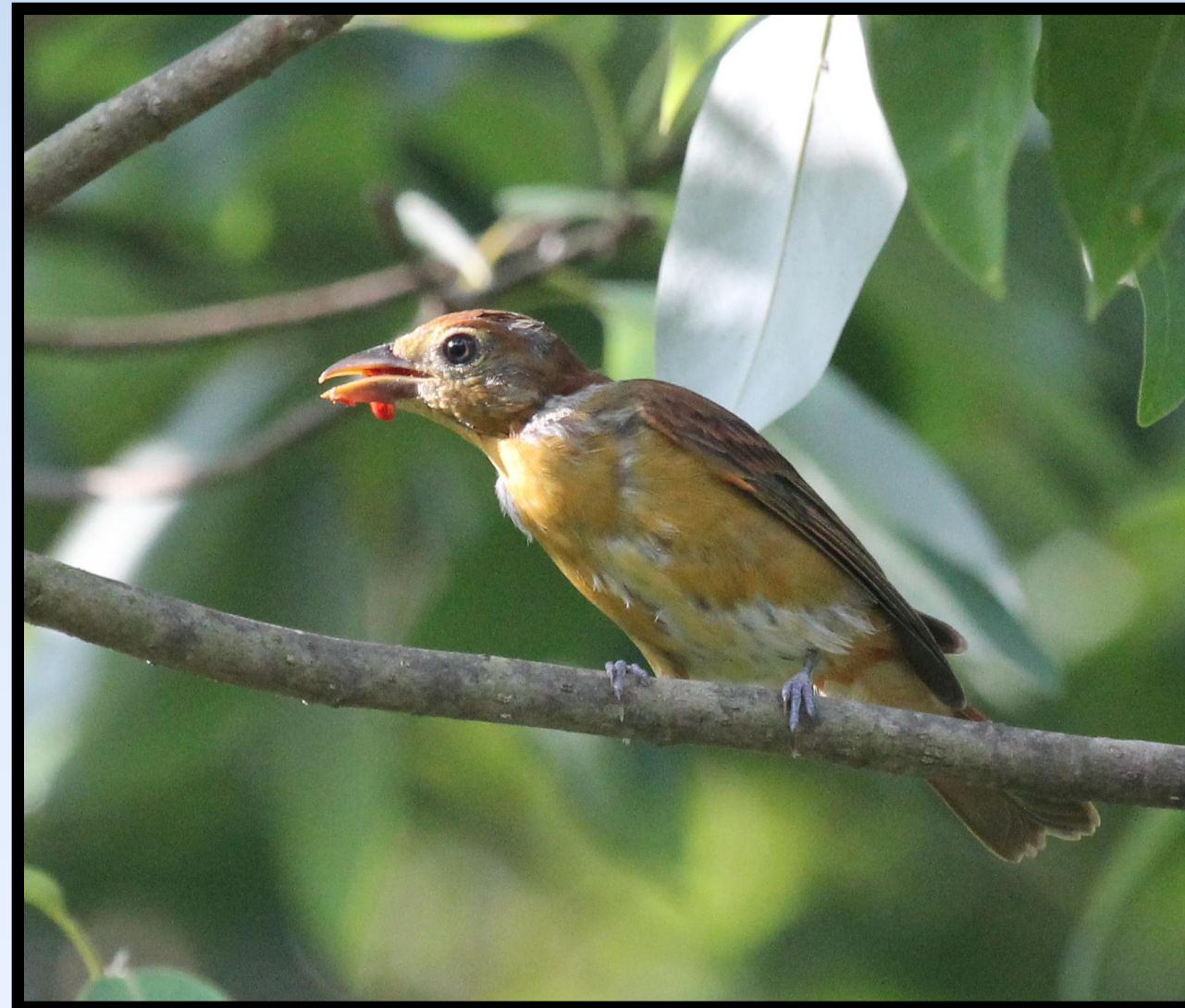
Meet the drupes!



Red-eyed Vireo & Summer Tanager
on Sweetbay Magnolia



Northern mockingbird on Fringe tree



Mama's Boys

Shakers



Beaks



Coneheads



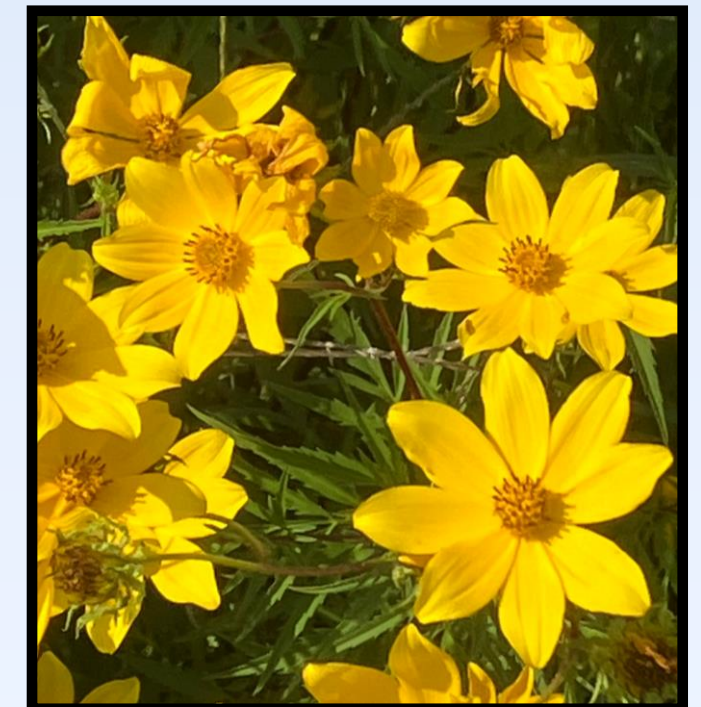
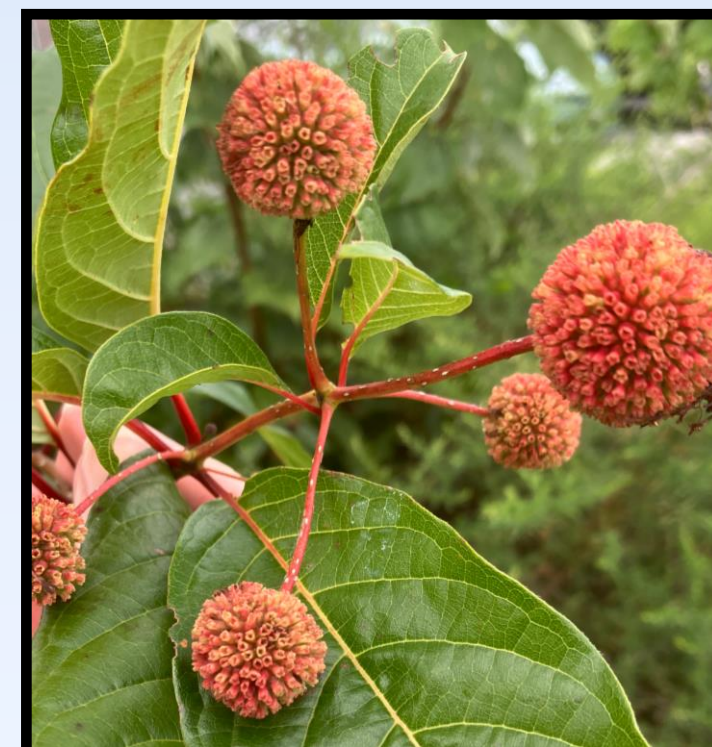
Crumbly Coneheads



Shatterers



Hitchhikers

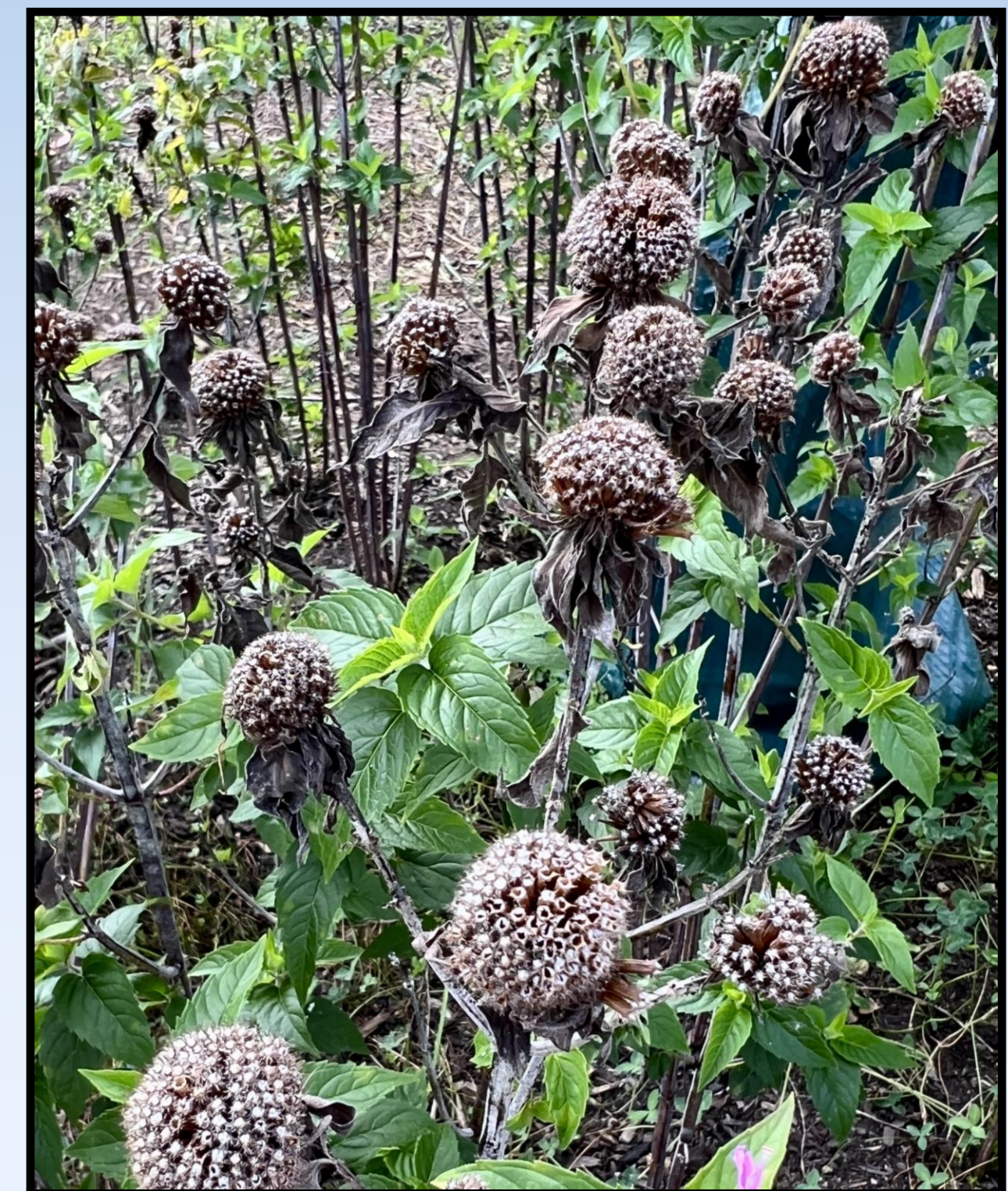


Shakers

“Petals” (florets) fall off, leaving tube-shaped calyx behind. Seeds are inside these tubes. Seeds drop very close to mother plant & can remain for weeks.

Dispersal: Naturally shaken loose by wind or wildlife

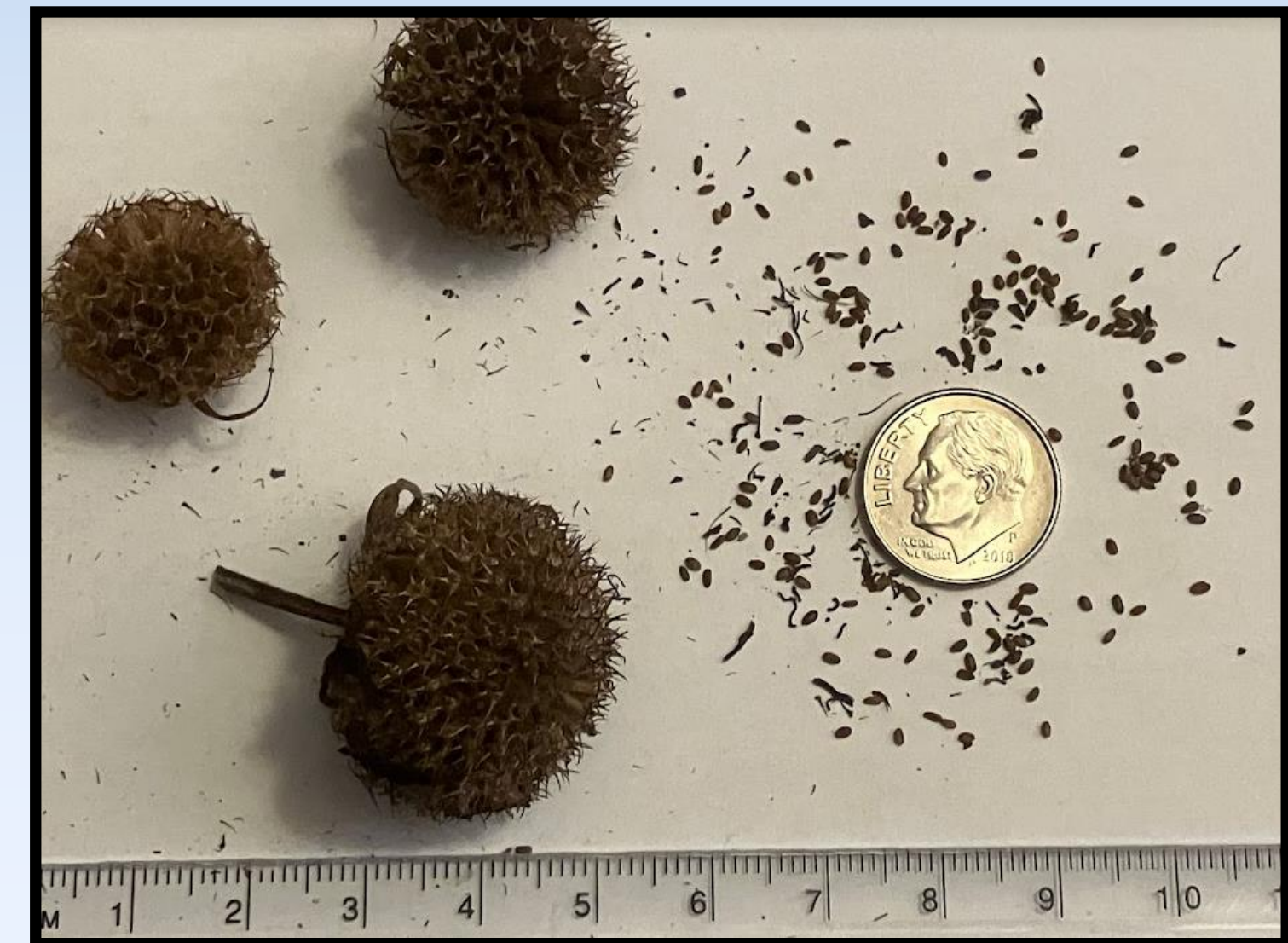
Examples: **Eastern beebalm**, *Monarda bradburnia*; Wild Bergamot, *Monarda fistulosa*; Virginia mountain mint, *Pycnanthemum virginianum*; Blue vervain, *Verbena hastata*



Shakers

To harvest: The seed heads, a collection of calyx tubes, turn from green to brown when ripe. Tip the seed head into your hand or container & tap. Or collect entire seed head for further processing.

To clean and store: Turn seed head over and tap the seeds out, or mash them over a screen or strainer to free the seeds located at the base of the tubes.



Beaks

Subset of shaker group with seed capsules that split open like a beak when seeds are ripe.

Dispersal: Naturally shaken loose by wind or wildlife.

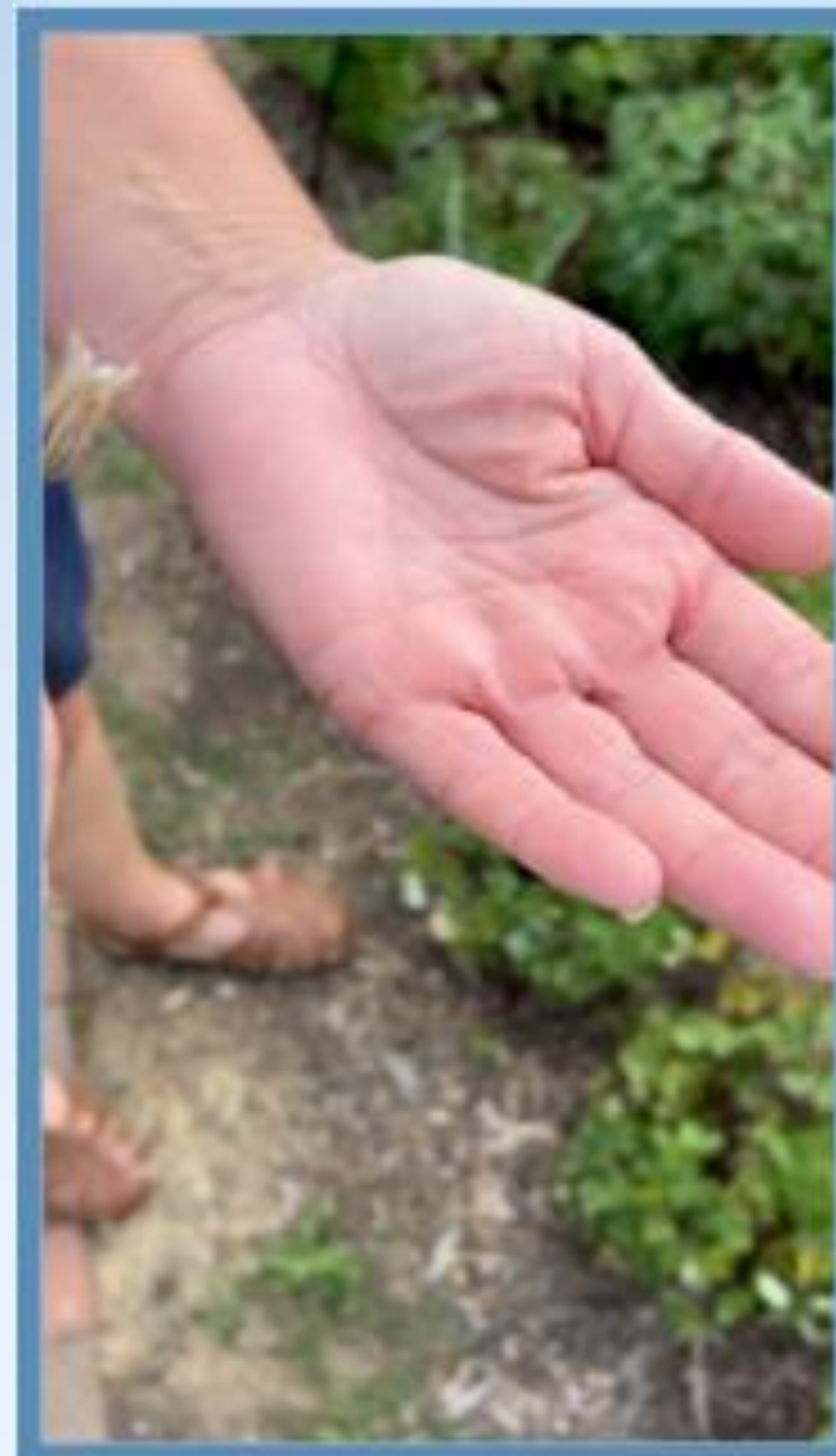
Examples: *Wild Columbine, Aquilegia canadensis*; Foxglove beardtongue, *Penstemon digitalis*; Swamp Rose Mallow, *Hibiscus moscheutos*; Cardinal flower, *Lobelia cardinalis*; Nodding Onion, *Allium cernuum*



Beaks

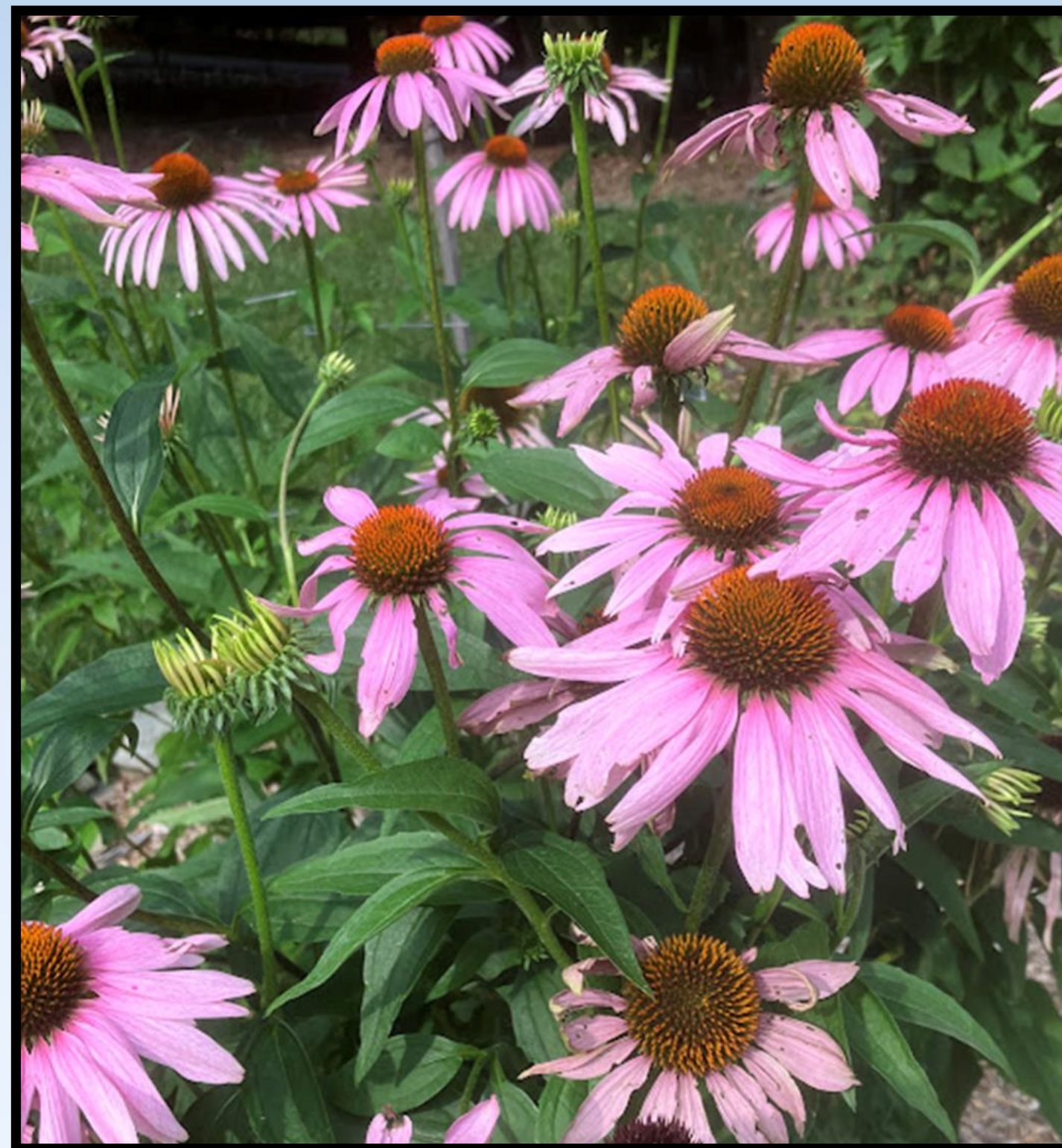
To harvest: Collect when upright capsules, or beaks have dried & open. Tap seed head into your hand or container. Tiny seeds fall out when ripe.

To clean and store:
Store dry seeds.



Coneheads

Flowers with cone-shaped center. Seeds attached to hard cone among spikes.



Dispersal: Wildlife eat seeds & disperse in their waste.



Examples:

Purple coneflower, *Echinacea purpurea*; *Rudbeckia* spp; Woodland Sunflower, *Helianthus divaricatus*; Oxeye Sunflower, *Heliopsis helianthoides*



Coneheads

To harvest: Collect entire cone when the “petals” have fallen off and the stem is brown where the cone attaches.

To clean/store: When completely dry, seeds and spikes are easily separated from the cone. Then separate the seeds from the spikes.



Crumbly Coneheads

Cone-shaped or thimble-shaped. Softer than standard coneheads, they crumble when ripe. Tiny disk florets eventually replaced by seeds.

Dispersal:
Seeds often dispersed by water.

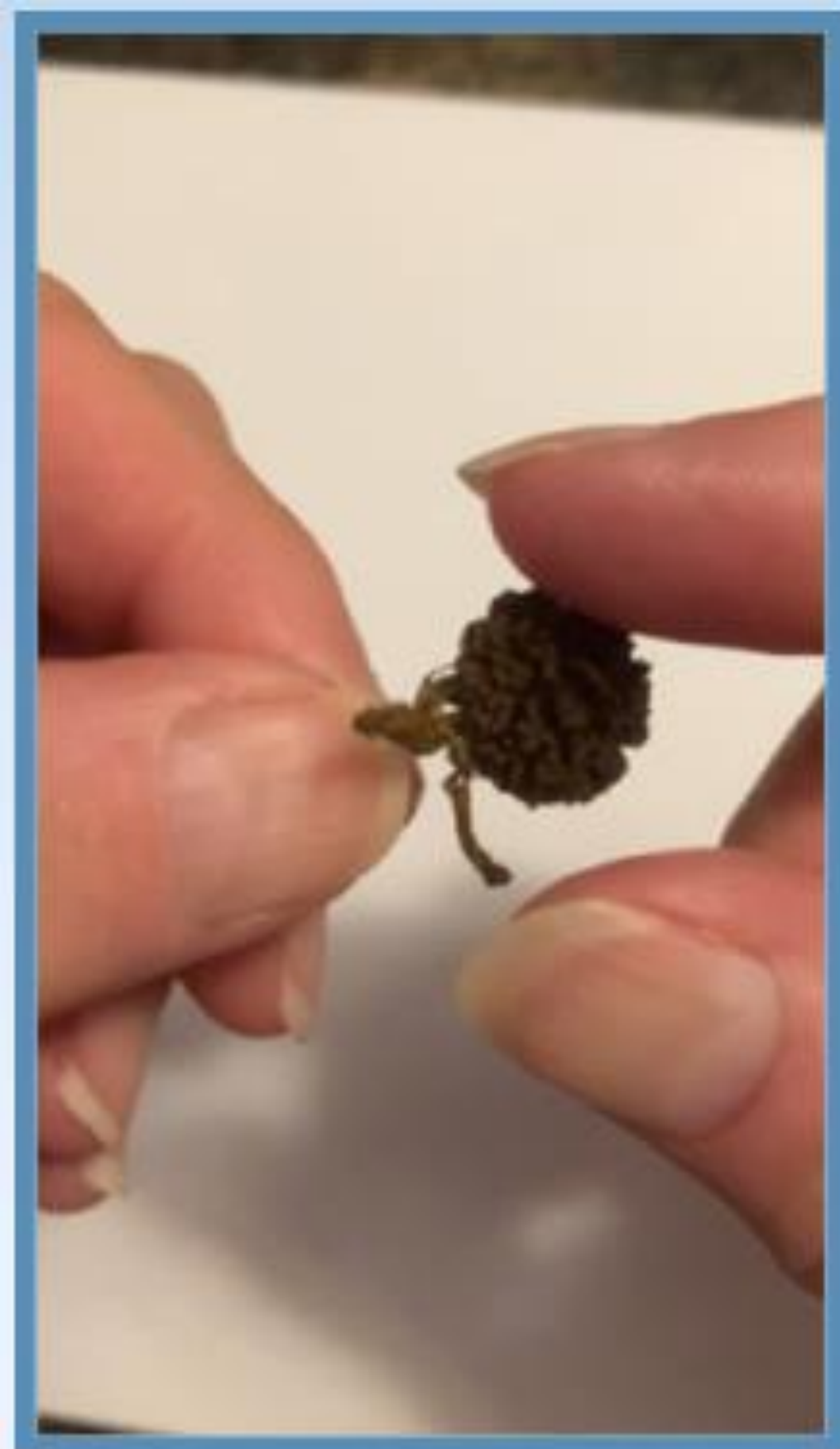
Examples: **Sneezeweed**, ***Helenium autumnale***; Yellow Crownsbeard, *Verbesina occidentalis*; Buttonbush, *Cephalanthus occidentalis*



Crumbly Coneheads

To harvest:
Easily stripped by hand

To clean/store:
Store dry seeds.



Shatterers

Seeds are attached to stem.
Some of these species drop quickly & are not Mama's Boys.

Dispersal: Often found in colonies, these seeds do not travel far on their own.

Examples: **Golden Alexander**, *Zizia aurea*; Wood Anemone, *Anemone quinquefolia*; Indigo Bush, *Amorpha fruticose*; grasses, sedges.



Shatterers

To harvest: Seeds can be tough to visually judge for ripeness. Use a *gentle* touch test to see if the seeds easily loosen. Spring seeds remain green (perhaps for camouflage) and swell slightly. Fall seeds typically turn brown or beige when ripe.

To clean/store: Crush capsules to release dark brown seeds. Store dry.



Hitch-hikers

Sticky, bristly, or barbed structures or burs that contain the seeds.

Dispersal: Seeds will stick to clothing, fur or feathers, and be carried to new habitat.

Examples: **Panicled ticktrefoil**, *Desmodium paniculatum*; White avens, *Geum canadense*; Black snakeroot, *Sanicula marilandica*

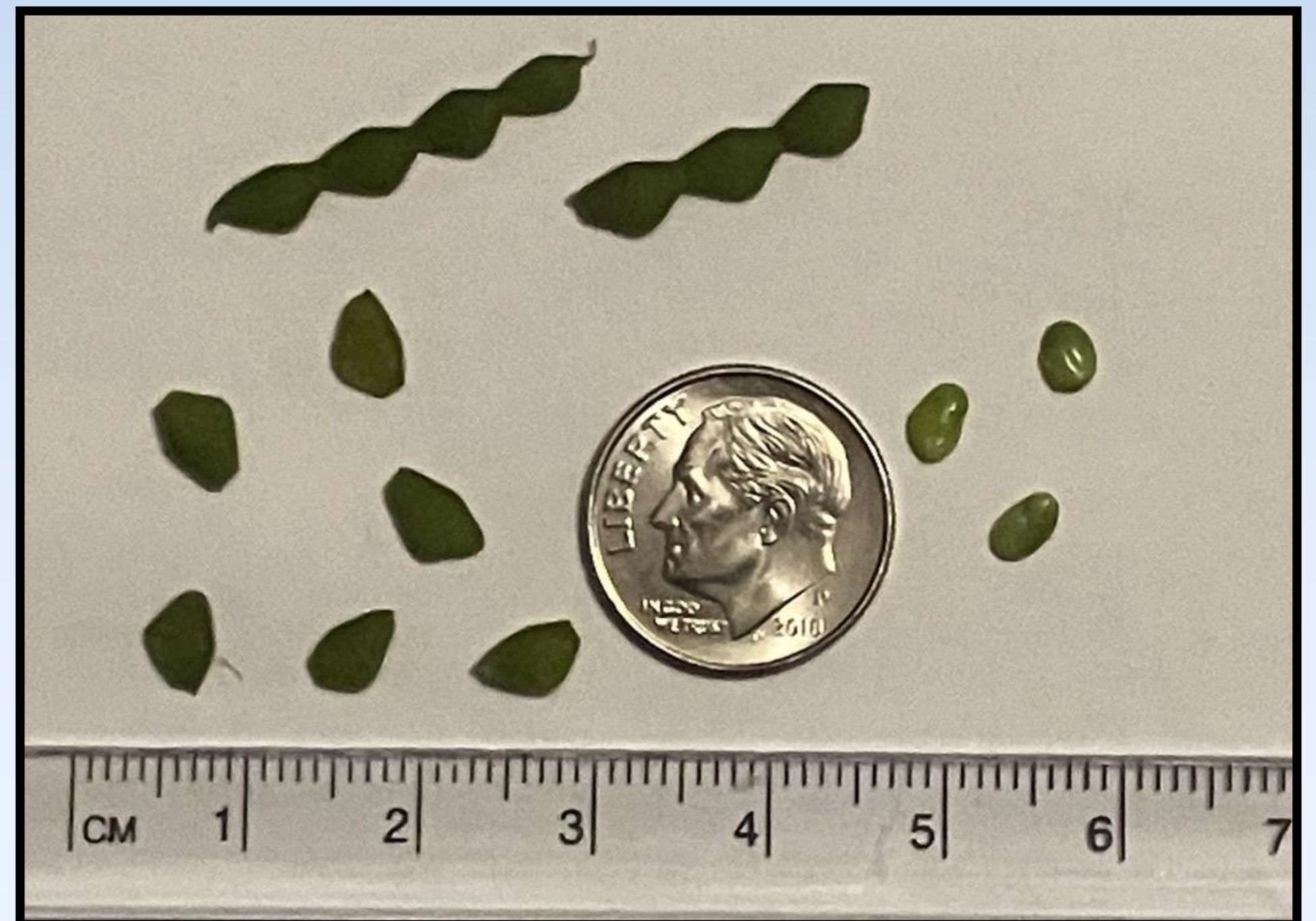


Hitch hikers

To harvest: Easy to tell when ripe – they hitch a ride on your pants! Color can be an indicator, but not always. Gather in fall & dry in paper bags 1-2 weeks.

To clean/store:

Use gloves to remove seeds from pods. Store seeds dry.



Ready or not?



Ready or not?



Ready or Not?



Step 6: Dry your seeds

- Allow collected material to air dry (with exception of hydrophilic seeds)
- Drying:
 - Makes cleaning easier
 - Makes seeds resistant to bacteria and fungi
 - Prepares seed for dormancy



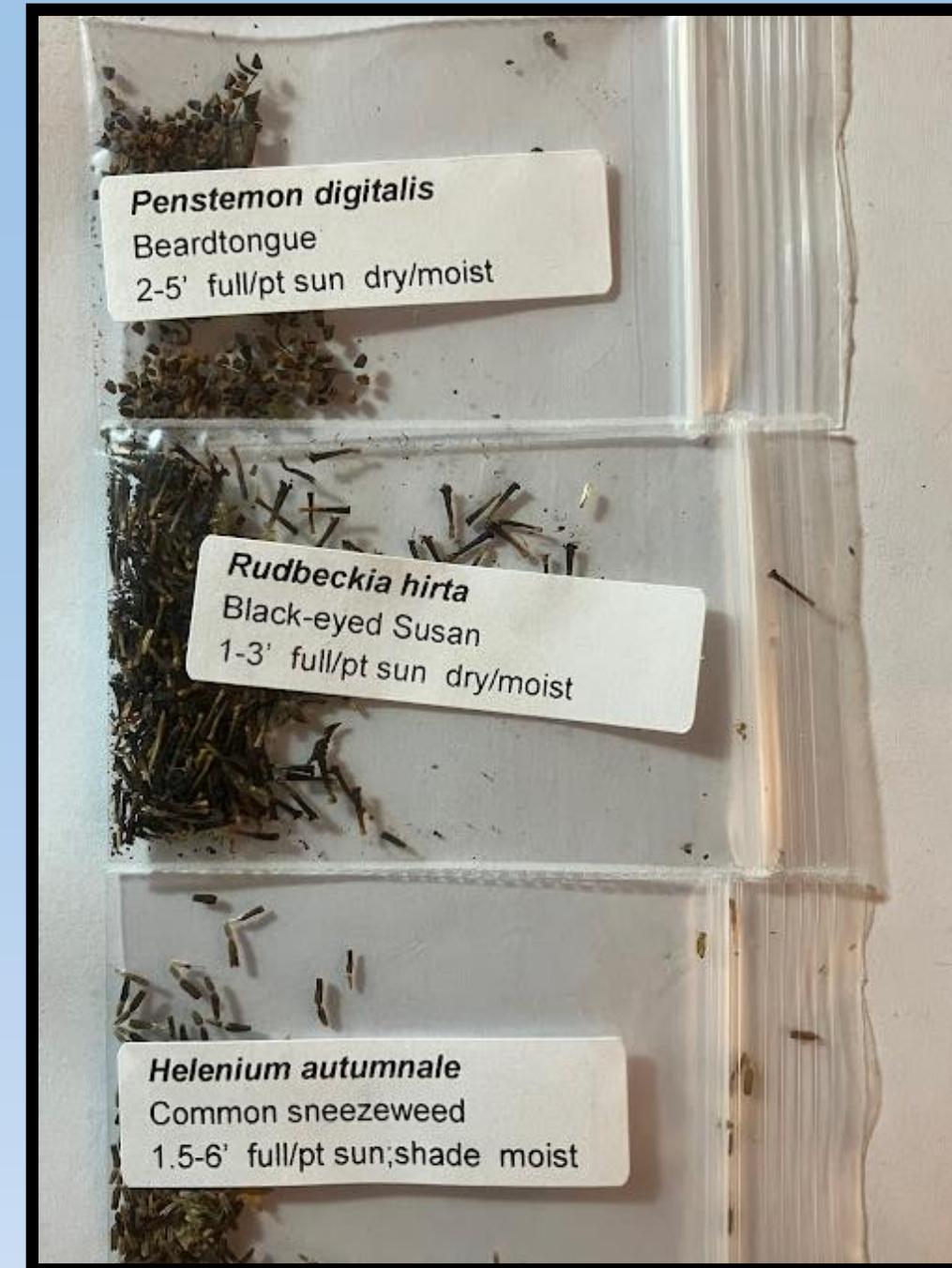
Step 7: Clean your seeds

- Process seeds to remove chaff and other plant material (leaves, stems, fluff); chaff tends to hold moisture
- Cleaning reduces space required for storage
- Work with one species at a time on newspaper or disposable plates, changing between species



Step 8: Store your seeds

- Label all storage containers
- Keep in dark, dry location
- Use paper envelopes, glass jars, plastic jars, etc.
- Store in a baggie in the fridge with sand (3 tablespoons sand to 1 teaspoon seeds) for sowing in late fall/winter (This is NOT for long term storage)
- Store safely away from pests (insects, mice), other critters.



Step 9: Special handling

HYDROPHILIC SEEDS WILL NOT SURVIVE DESSICATION

Some seeds have a high moisture content and should not be allowed to dry out (i.e., hydrophilic seeds)

If they lose too much moisture, the embryo will die, and the seeds will not germinate.

For example, paw paw and persimmon seeds need to stay moist



Asimina triloba



Diospyros virginiana

Step 10: Next steps.....

Collecting seeds is NOT enough! The goal of seed collecting should be getting seeds and more native plants in the ground.

- Sharing with family and friends
- Swapping with others
- Winter sowing

Stay tuned for our winter sowing workshops coming soon!



**Speaking of winter sowing.....
these are 2-year-old tree and shrubs winter sown in 2022**



Resources



Lake County Seed Collection Guide for Native Gardeners



IUN Community Garden: Collecting and Cleaning Seeds from the Garden - 2022 <https://youtu.be/wXQ43Y7VQIs>



UME Talbot County, Mikaela Bolely Seed Saving 101: Native Plant Seed Saving video: <https://youtu.be/dVEsoq9d78U> and webinar slides: <https://files.constantcontact.com/d9ced8a6601/721efafa-1d5b-462e-907c-060bb49f8a23.pdf>



Xerces Society- Collecting and Using Your Own Wildflower Seed <https://xerces.org/publications/guidelines/collecting-and-using-your-own-wildflower-seed>



Tallgrass Prairie Seed Collecting Guide https://tallgrassprairiecenter.org/sites/default/files/techguide1_seedcollecting_2015_web.pdf



Pleasant Valley Conservancy seed collecting chart <https://pleasantvalleyconservancy.org/seedcollectingtimes.html>



U.S. Forest Service- Native Seed Collecting https://www.fs.usda.gov/wildflowers/Native_Plant_Materials/developing/collecting.shtml



Charles County Master Gardeners Native Plants webpage. <https://extension.umd.edu/locations/charles-county/master-gardener/native-plants>



Audubon “Plants for Birds” webpage. <https://www.audubon.org/plantsforbirds>



Charles County Master Gardeners Resources webpage. <https://extension.umd.edu/locations/charles-county/master-gardener/resources>

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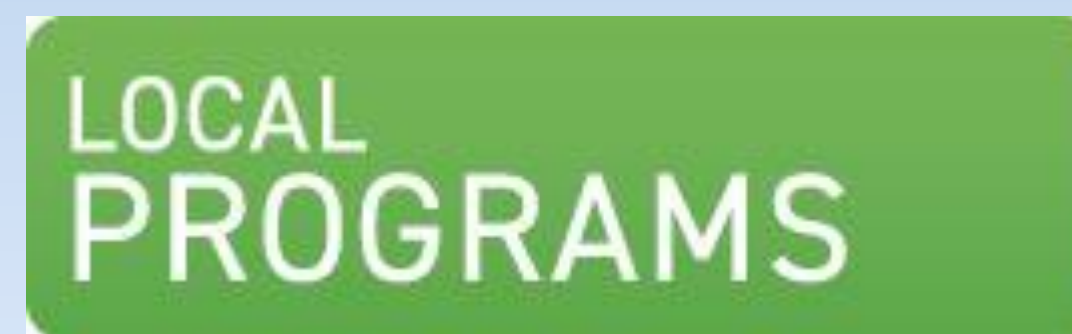


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