

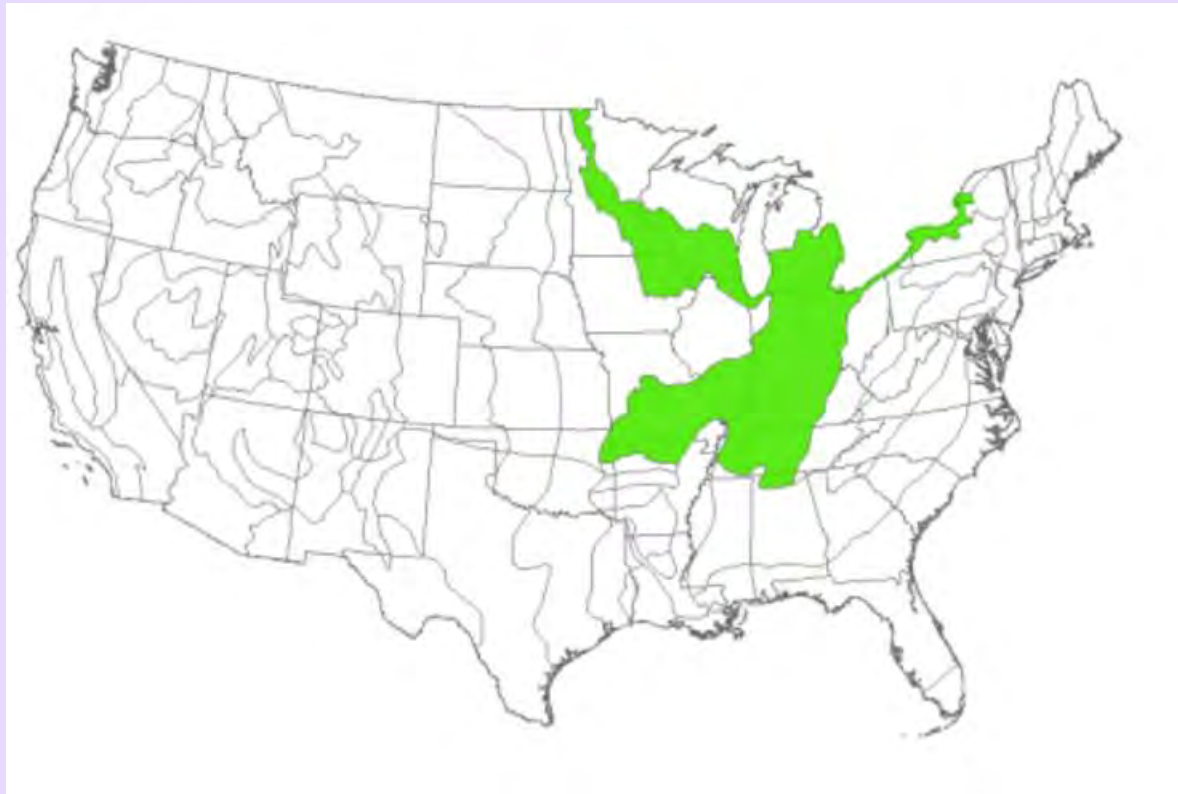
Monarch Wings Across the Eastern Broadleaf Forest Initiative



Tips for Plant ID and Seed Collection and Storage



Establish ecoregional seed collecting program



Provide technical assistance and training for seed collection



Training and Communication



- ❧ Team Leads need to be well versed in plant ID
- ❧ Volunteers can collect alongside Team Leads if they are unfamiliar with plants
- ❧ Team Leads can mark plants for Collection Volunteers who may be inconsistent in plant ID

**POLLINATOR
PARTNERSHIP**

Pollinator Partnership
www.pollinator.org
415-362-1137
ab@pollinator.org

State
leads

Team
Leads

Volunteer
Collectors

What kinds of landscapes work best?



- ❧ ROWs (utilities, roadsides, etc.)
- ❧ Public/community gardens
- ❧ Botanical gardens
- ❧ State/federal parks and lands
- ❧ Farms
- ❧ Tribal Lands
- ❧ Private Lands
- ❧ Corporate Lands
- ❧ Rail Lines



How to approach landscapes?



- ✿ Send emails to groups like
 - ✿ National Association of Conservation Districts
 - ✿ American Farm Bureau Federation
 - ✿ Master Naturalists groups
 - ✿ Farm Cooperatives
 - ✿ Land Trusts
 - ✿ Parks and their friends groups



Obtain permission to access property



- ❧ Property Entry Formal Permission Form
- ❧ Property Entry Oral Permission Form
- ❧ **Volunteer Waiver / Hold Harmless Form**

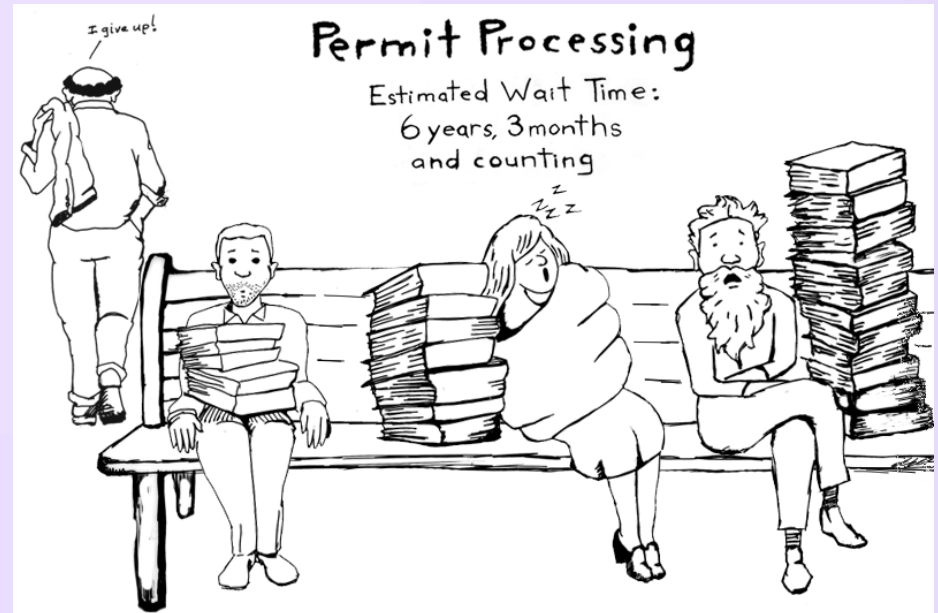


Turn this in
before
participating!

Preliminary Site Visits and Permission to Collect



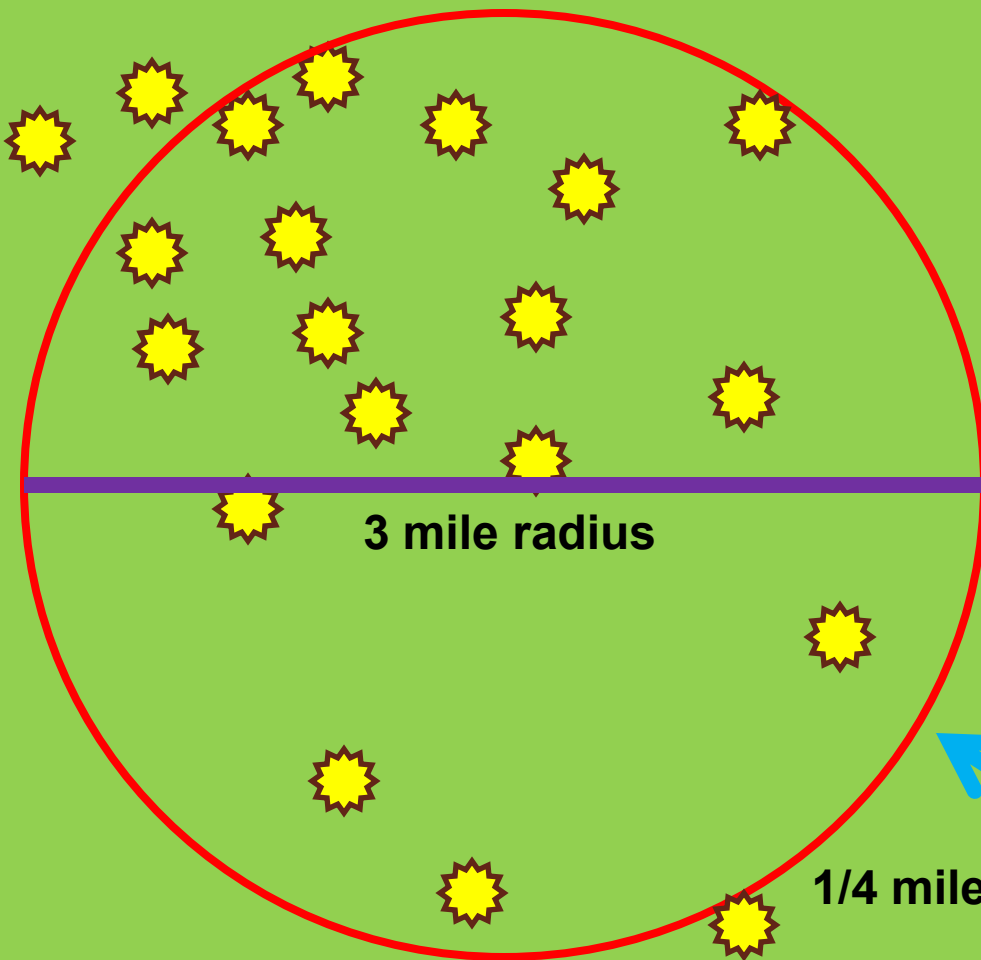
- Scout potential sites
- Assess target population
- Plan ahead for Permits
- Hold Harmless Documents



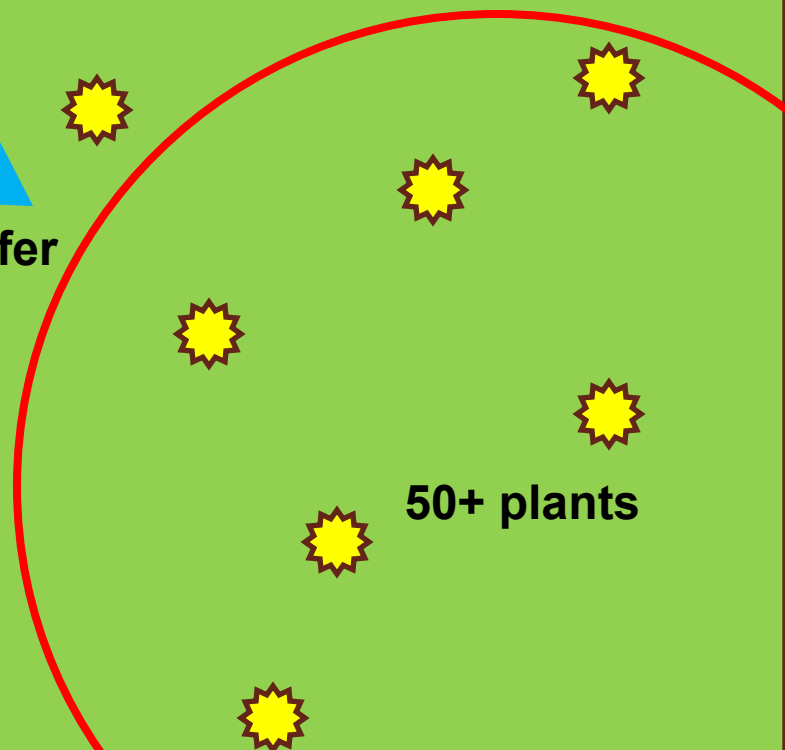
What makes a population?



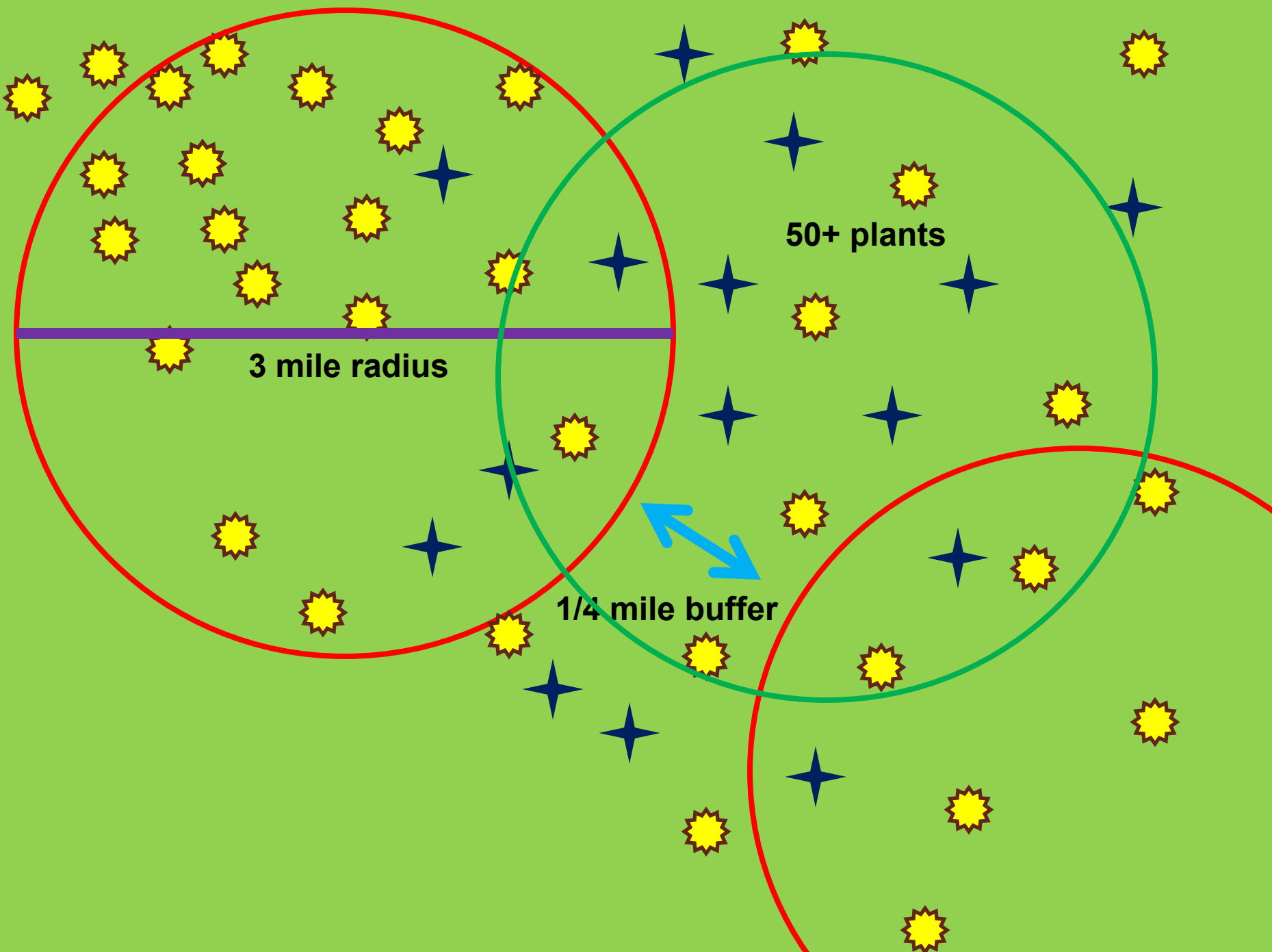
- ❧ A group of one species of plants living within the same collection site, continuous in range, and generally uniform in appearance; one population
- ❧ Consider plants within a 3 mile radius around the main collection site to be the same population
- ❧ To gain the most representatively balanced sample of seeds, collecting should be conducted in an even and random method from **at least 50 plants**
- ❧ Different collections of the same species should be at least 1/4 mile apart to ensure they are two separate populations



1/4 mile buffer



50+ plants



How to assess a population:



- ❧ Scout the site while plants are flowering and confirm the target plants are there
- ❧ Only collect from sites with 50+ individuals in the population (can be spread out)
- ❧ Check with the land owner and see if it is okay to mark the populations (flagging tape, pin flags, or yarn)
- ❧ Scout again during seed set to estimate when the collection should be scheduled.
- ❧ Perform a cut test on the seed to determine seed maturity and amount of bug damage

Is the seed ready?

Visually Assessing the Seed



- 🌀 Look for changes in fruit and seed color
- 🌀 Fruits should be splitting or breaking open
- 🌀 Seeds will rattle
- 🌀 Seeds will be hard and dry
- 🌀 Some seeds have already dispersed



Cut Tests

How do we know if the seed is viable?



What is it?

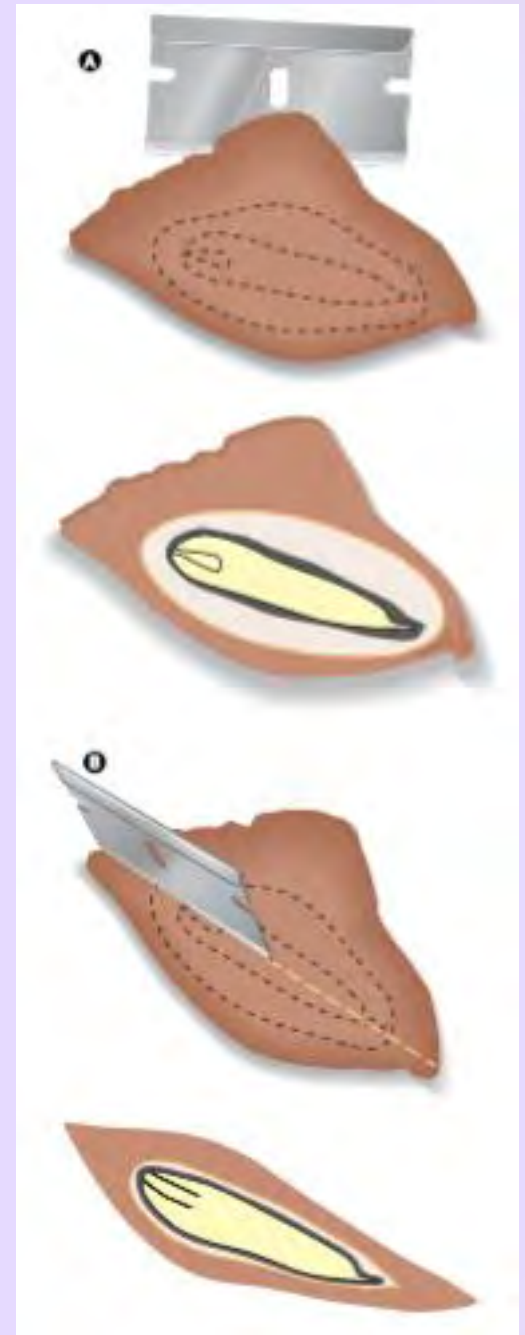
- A method of testing seeds by cutting them open to see if their internal tissues are fully developed and undamaged

Tells the collector:

- If the seeds are mature enough
- If seeds have been damaged (aids in determining the amount of seed needed)

How to perform a cut test:

- Cut seed longitudinally on a firm surface
- Use a clean, sharp razor blade & push downwards through the middle of the seed with constant pressure
- Examine the seed contents



Seeds reach their maximum viability and peak maturity at the time of natural seed shed

Mature Seed:

- ☛ Seed maturity is usually based on the presence of a fully developed embryo

Immature Seed:

- ☛ Have a softer outer seed coat and an inner tissue that can be milky, and generally not as firm as that found in mature seed

Empty Seed:

- ☛ Likely the result of insect damage or failure to mature



<https://ssaw.org.au/2016/07/01/testing-seed-viability/>

What to collect



What goes in the bag?

- ❧ Seed heads
- ❧ Seed pods
- ❧ Fruits



What does not go in the bag?

- ❧ Weeds
- ❧ Woody materials
- ❧ Stems/branches
- ❧ Leaves
- ❧ Insects
- ❧ Rocks
- ❧ Clippers
- ❧ Sunglasses

Beware of Weeds



- Attention to weeds is crucial!
- Do not accidentally collect weed seeds along with the desired species. It is difficult, and in many cases impossible, to eliminate weed seed contamination once it is in a collection.



Collecting Techniques



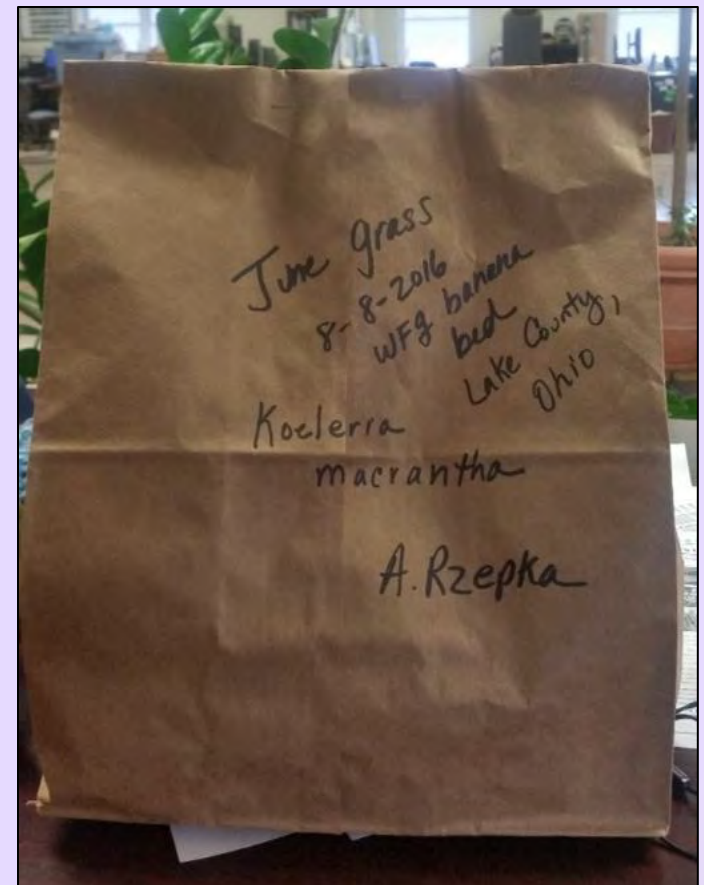
How to collect randomly and not exceed 20%:

- 🌱 Collect widely throughout the whole site
 - Do not stay in one small area, as the plants might be related
- 🌱 Make sure to include plants that are in different microhabitats throughout the site (wetter, drier, steeper areas)
- 🌱 Do not avoid plants that look different or are smaller than the others of the same species
- 🌱 Only collect from every 5th plant or 20% of the seed pods present on each individual

General Seed Collection Information



- ❧ Examine a small representative sample of seeds before you collect
- ❧ Seed should be dry, dark, and loose in it's shell
- ❧ Do not collect empty or damaged seeds
- ❧ Estimate the number plants you collect from
- ❧ Take care of what you have collected
- ❧ Email or call State Lead after collection has been made



Labeling your seeds



Labeling your seed collection

- 🌀 Plant name in Latin
- 🌀 Common name
- 🌀 Site location name
- 🌀 County, State
- 🌀 Collection date
- 🌀 Collector(s) names
- 🌀 Unique Seed Collection Reference ID Number
- 🌀 If multiple bags are needed to hold the seed from one collection, make sure to mark them 1 of 2, 2 of 2



Photo Documentation and GIS App



At least three photos should be taken for each collection:

- 🌀 Landscape level / population
- 🌀 Individual plants
- 🌀 Material collected (seed)
- 🌀 When possible, close up of flower and leaf structure



Field Documentation and Data Forms



- ❧ Record data in the field
- ❧ Fill out a separate data form for each species collected, even if the collection occurs at the same location
- ❧ Do not forget your Seed Collection Reference ID Number
- ❧ Make a copy for your records and send a copy with your seed

MWAEBF Field Data Form					
COLLECTION TEAM INFORMATION					
Seed Collection Team Reference ID:		Project Site ID:		Collection Number:	
Date Collected:		Collection Time:		Number of Volunteers	
Collector Name(s):					
SEED COLLECTION DATA:					
Scientific Name:		Common Name:		Photograph Taken:	Y or N
Number of Plants Sampled:		Approx. Number of Seeds Collected:			
Scientific Name:		Common Name:		Photograph Taken:	Y or N
Number of Plants Sampled:		Approx. Number of Seeds Collected:			

Monarch Wings Across the Eastern Broadleaf Forest Collection Tracking Sheet

[illegible]

- 🐼 Use the Collection Tracking Sheet to stay organized
- 🐼 This sheet will help you track:
- 🐼 Which species have been collected from what site
- 🐼 Collection and shipping dates
- 🐼 Your collection IDs (avoiding accidental duplicates)

Seed Collection Reference ID Number Format

Examples:

Ohio collection team 1 collects their first collection of the season, *Asclepias incarnata*, at a local park. The seed collection reference number would be as follows:

OH.CT1.A-1

Ohio collection team 1 goes to the same site and their next collection is a new species (*Rudbeckia hirta*). The seed collection reference number would be as follows:

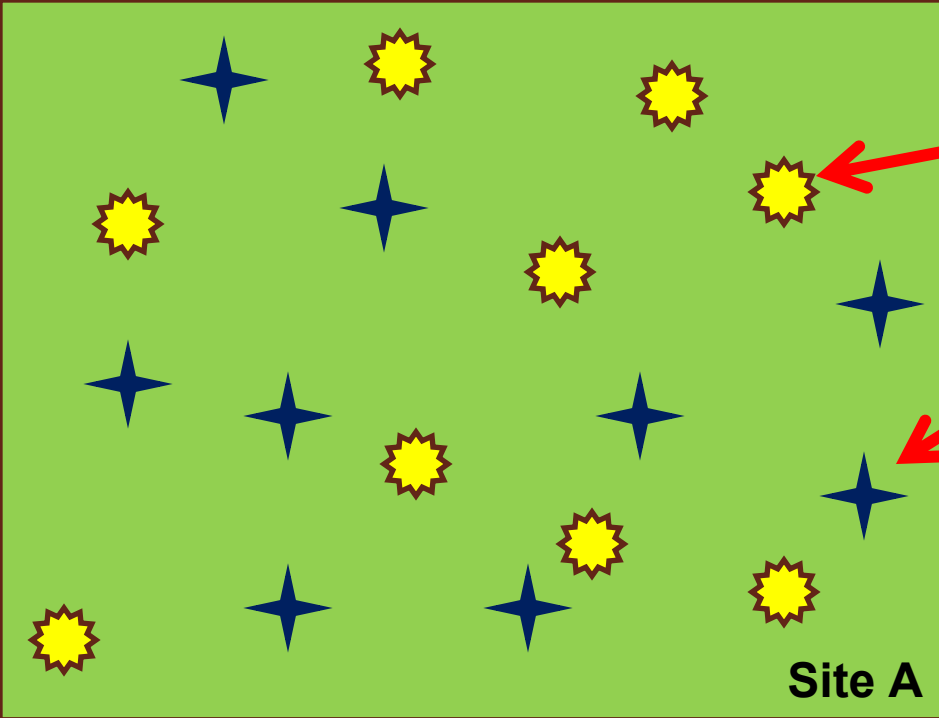
OH.CT1.A-2

- *If revisiting a site to collect a new species, utilize the same project site ID, but assign a unique collection number*

Ohio collection team 1 now goes to a new site and collects from *Asclepias incarnata*. The seed collection reference number would be as follows:

OH.CT1.B-3

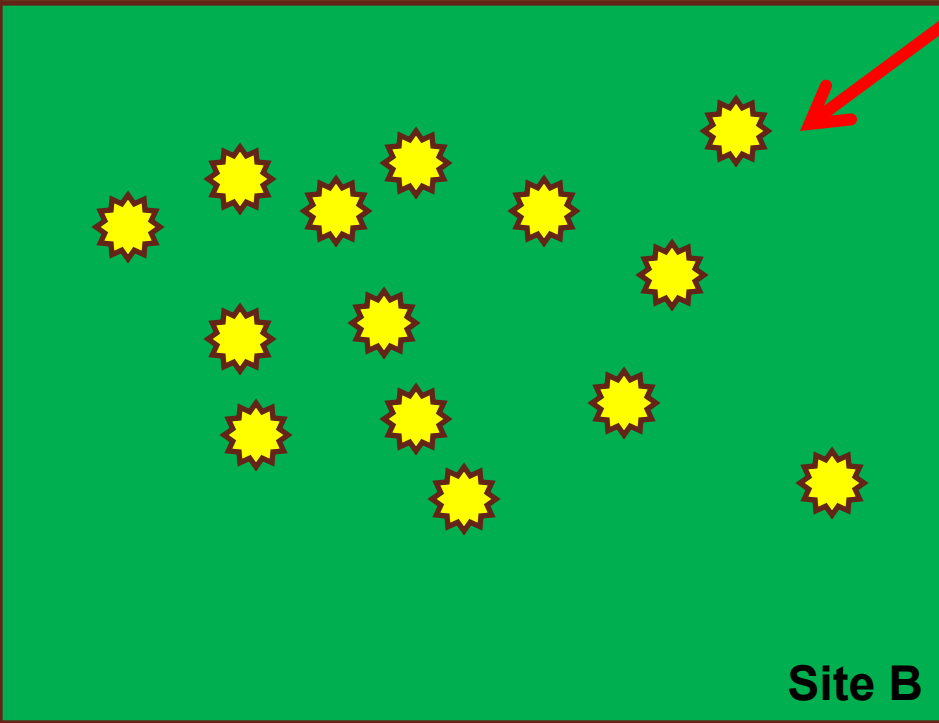
- *Even though it is the same species that was sampled at project site A, it is a different population (it is found at site B) with unique genetics, so it is recorded using a new collection number*



OH.CT1.A-1

OH.CT1.A-2

OH.CT1.B-3



- ☞ Each population gets it's own collection number
- ☞ Each site gets it's own site ID
- ☞ Collection numbers do not start over for each site, they run consecutively throughout the season

MWAEBF Field Data Form

COLLECTION TEAM INFORMATION

Seed Collection Team Reference ID:		Project Site ID:		Collection Number:	
Date(s) Collected:		Collection Time:		Number of Volunteers:	
Collector Names (Circle data collector):					

SEED COLLECTION DATA:

Scientific Name:		Common Name:	
Number of Plants Sampled:		Photograph Taken:	Y or N

LOCATION DATA:

State:		County:		Land Owner:	
Permission Filed:	Y or N	GPS Data Recorded:	Y or N	Managed Area Name:	
Latitude:		Longitude:			

Directions: Provide detailed directions to the collection site. Refer to nearby landmarks, roads, and towns. Include parking information and directions from parking area to collection site.

HABITAT DATA

Current Temperature:		Current Humidity:		Land Use Type:	
Non-Target Associated Species:					

SCOUTING INFORMATION: Target plant species in bloom but not ready for collection

Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	

Notes:

Mock Collection

- Seed collection team OH.CT1 made their first collection of the season at 12:30 pm on April 24, 2017 at project site A.
- The collection team was comprised of 4 volunteers: Jane Doe (the data collector), Ravi Patel, Tyrone Jones, and Cindy Lee.
- They collected from about 57 plants of the species *Asclepias incarnata* (swamp milkweed).
- Site A is a park called Acacia, which is owned by Cleveland Metroparks, and it is located in Cuyahoga County, Ohio.
- Permission was filed in advance and the volunteers used their GIS App to record the GPS location of the site. The coordinates are: 41.50442, -81.49128.
- Using their phones, they also determined that the temperature was 65° F with 20% humidity.
- While at the site, they noticed that there were other target species present, but not ready for collection since they were currently in bloom. These were *Monarda fistulosa* (wild bergamot ~35 plants) and *Coreopsis tripteris* (tall coreopsis ~58 plants)
- The team also identified a few non-target associated species at the site: unknown grasses, red clover, Queen Ann's lace, goldenrod, and multiflora rose.

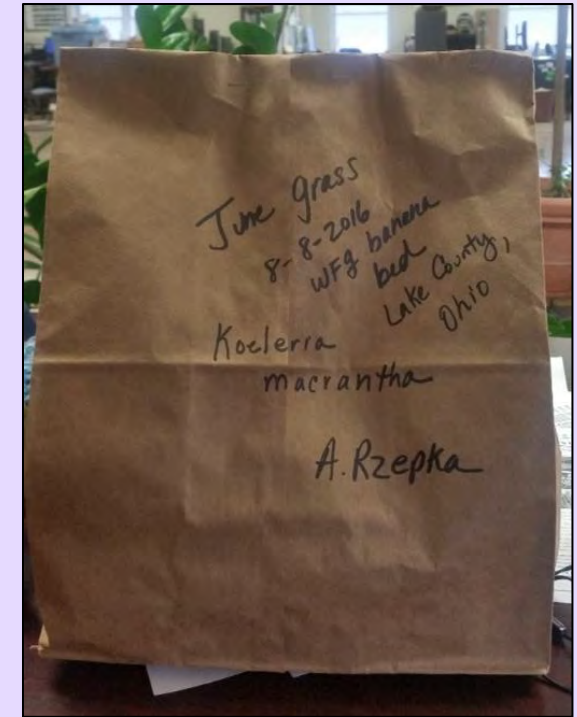
MWAEBF Field Data Form

COLLECTION TEAM INFORMATION					
Seed Collection Team Reference ID:	OH.CT1	Project Site ID:	A	Collection Number:	1
Date(s) Collected:	6-24-17	Collection Time:	12:30 pm	Number of Volunteers:	4
Collector Names (Circle data collector):	Jane Doe, Ravi Patel, Tyrone Jones, Cindy Lee				
SEED COLLECTION DATA:					
Scientific Name:	Asclepias incarnata		Common Name:	Swamp milkweed	
Number of Plants Sampled:	57		Photograph Taken:	Y or N	
LOCATION DATA:					
State:	Ohio	County:	Cuyahoga	Land Owner:	Cleveland Metroparks
Permission Filed:	Y or N	GPS Data Recorded:	Y or N	Managed Area Name:	Acacia
Latitude:	41.504442		Longitude:	-81.491285	
<p>Directions: Provide detailed directions to the collection site. Refer to nearby landmarks, roads, and towns. Include parking information and directions from parking area to collection site.</p> <p>Headed north on I-271 toward Lyndhurst, took Brainard Rd exit. Turned right onto Cedar Rd. Turned right, into the Acacia Reservation parking lot. Found the marked trail and walked about 50 meters to the collection field, located on the left side of the trail.</p>					
HABITAT DATA					
Current Temperature:	65°	Current Humidity:	20%	Land Use Type:	Urban, Rural, Park, ROW
Non-Target Associated Species:	Unknown grasses, red clover, queen ann's lace, goldenrod, and multiflora rose.				
SCOUTING INFORMATION: Target plant species in bloom but not ready for collection					
Scientific Name:	Monarda fistulosa	Common Name:	wild bergamot	Approx. Number of Plants Present:	35
Scientific Name:	Careopsis tripteris	Common Name:	tall careopsis	Approx. Number of Plants Present:	58
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Scientific Name:		Common Name:		Approx. Number of Plants Present:	
Notes:					

Drying Your Seeds

- ☛ Seed should be dried for 3 days prior to shipping in a dry, dark room with low humidity
- ☛ If you have space:
 - ☛ Lay out newspaper and spread the collection out – 1 layer thick
 - ☛ A fan on its lowest setting, gently blowing over the seed can expedite the drying process
- ☛ If you don't have space:
 - ☛ Leave the seed in the bag, but leave the bag open and stir the seeds at least once a day
 - ☛ A fan on its lowest setting, gently blowing over the bag can expedite the drying process

Big paper grocery bag



Source: Agriculture Magazine

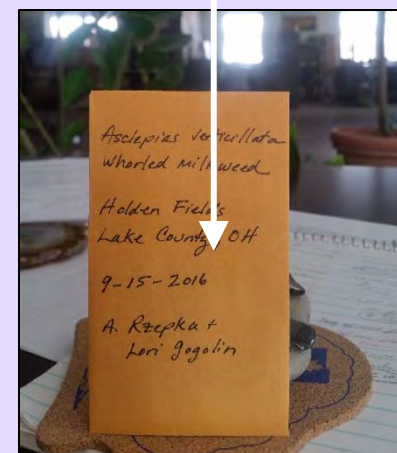
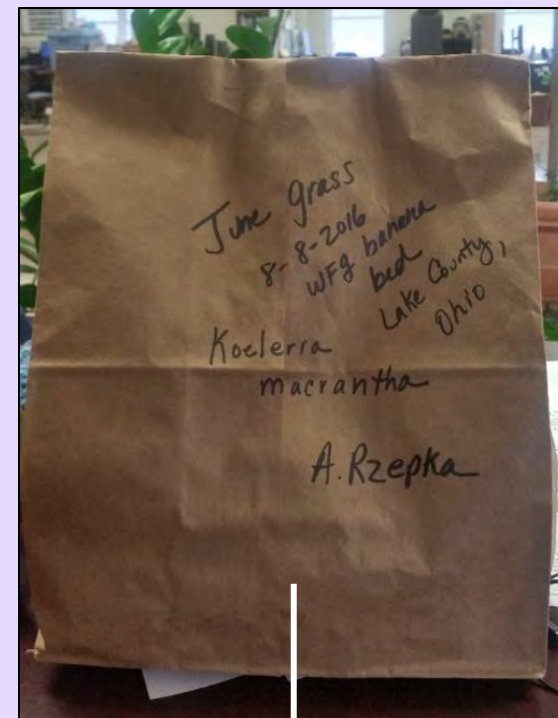
Storing Your Seeds

*Only if unable to ship seed
immediately to
Mason State Nursery*

- 🌿 Clean seed – remove all chaff
- 🌿 Put seed into a paper bag
- 🌿 Put seed in a dry, dark room with low humidity until they can be mailed
- 🌿 If the collection bag is different from the storage bag, transfer the label information

It is okay to hold on to collections for a week or so in order to send them in bulk, but please do not store them for multiple months and send all collections at once. This is not ideal for the seed and puts a lot of stress on the seed cleaning facility

Big paper grocery bag



Tiny coin envelope

Other things to keep in mind



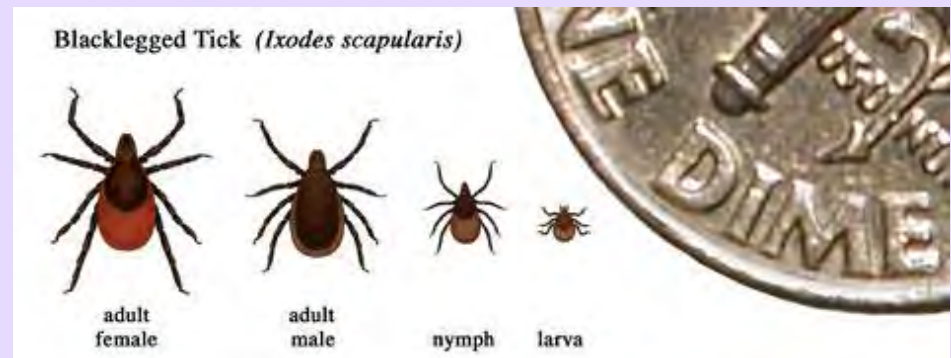
- ☛ Safety Concerns
- ☛ Controlling the spread of noxious weeds
- ☛ GIS App



Safety Concerns



- ❧ Be careful when handling milkweed pods
- ❧ Remember to hydrate
- ❧ Wear bright clothes near roads
- ❧ Check for ticks and chiggers
- ❧ Keep an eye out for poison ivy, poison oak, and poison sumac



Controlling the Spread of Noxious Weeds



- ❧ Educate yourself before you visit the site
- ❧ Come clean
- ❧ Pay attention to your surroundings
- ❧ Leave clean





Send us your photos!

A picture is worth a thousand words. Please take some photos of your Collection Teams scouting, collecting, or cleaning seeds and send them to Amber Barnes (ab@pollinator.org).

P2 can then use these photos on social media and grant materials to promote the wonderful on-the-ground work that our volunteers are doing and raise awareness to the plight of the monarch.

Sending Your Seeds



- ❧ Ship your seeds via USPS
- ❧ Unless directed otherwise, ship your seeds directly to Mason State Nursery
- ❧ Do not mail your seeds out on Thursday or Friday
- ❧ Always check the estimated delivery before mailing to ensure seed arrives before the weekend
- ❧ **Send a copy of the field data form with each collection (keep the hard copy for yourself) and make sure the bag is also labeled**
- ❧ Use a free USPS priority mail flat rate box



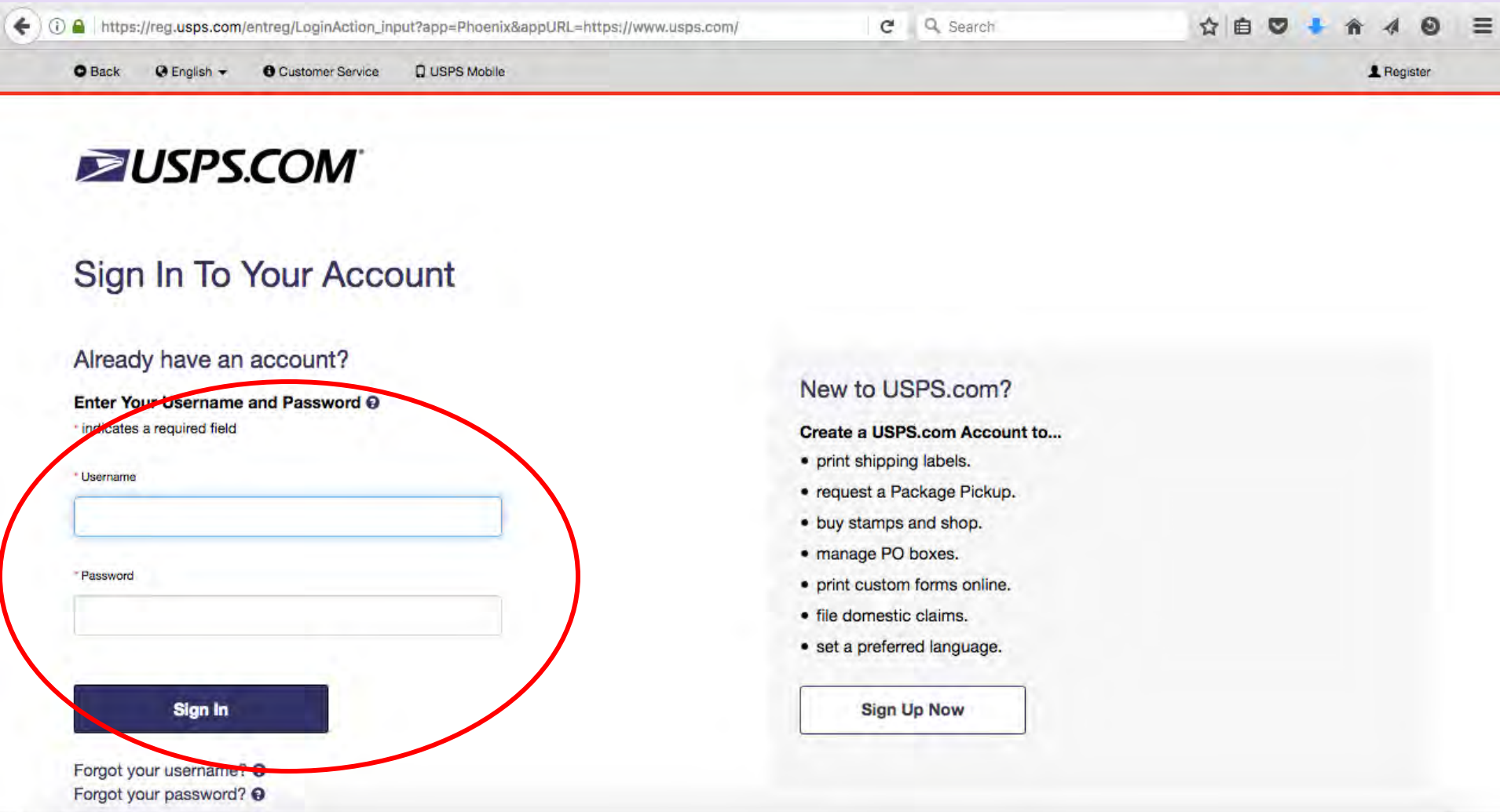
How to ship via USPS:

The screenshot shows the USPS website interface. At the top, the browser address bar displays 'https://www.usps.com'. The navigation bar includes the USPS logo, 'Quick Tools', 'Mail & Ship', 'Track & Manage', 'Postal Store', 'Business', 'International', 'Help', and a 'Register / Sign In' link circled in red. The main banner features 'Gifts of Friendship Forever® Stamps' with images of the US Capitol and cherry blossoms, and a 'Buy Now' button. Below the banner are three sections: 'Track a Package' with a tracking number input field, 'Click-N-Ship®' for creating shipping labels, and 'Stamps and Supplies' for purchasing mailing materials.

🐼 Visit www.usps.com

🐼 Click the Register/Log in option to access the project USPS account

How to ship via USPS:



https://reg.usps.com/entreg/LoginAction_input?app=Phoenix&appURL=https://www.usps.com/

Back English Customer Service USPS Mobile Register

USPS.COM

Sign In To Your Account

Already have an account?

Enter Your Username and Password ⓘ

* indicates a required field

* Username

* Password

Sign In

Forgot your username? ⓘ
Forgot your password? ⓘ

New to USPS.com?

Create a USPS.com Account to...

- print shipping labels.
- request a Package Pickup.
- buy stamps and shop.
- manage PO boxes.
- print custom forms online.
- file domestic claims.
- set a preferred language.

Sign Up Now

- 🔗 Log in to the project USPS account
- Contact State Lead or Pollinator Partnership for login credentials.

How to ship via USPS:

- ☛ Once you're processed the payment for the postage, you can print the label and securely tape it to the top of the box
- ☛ You can either:
 - ☛ Hand deliver the package to any USPS Post Office
 - ☛ Schedule a pickup with your daily mail pickup
- ☛ Make sure:
 - ☛ The package is received by a postal worker on the same day
 - ☛ The package is never left in an uncontrolled, hot, or humid environment
- ☛ Contact your State Lead or info@pollinator.org to confirm seed has been shipped
- ☛ See Seed Collection Protocol – provided by your state lead - for all of these instructions



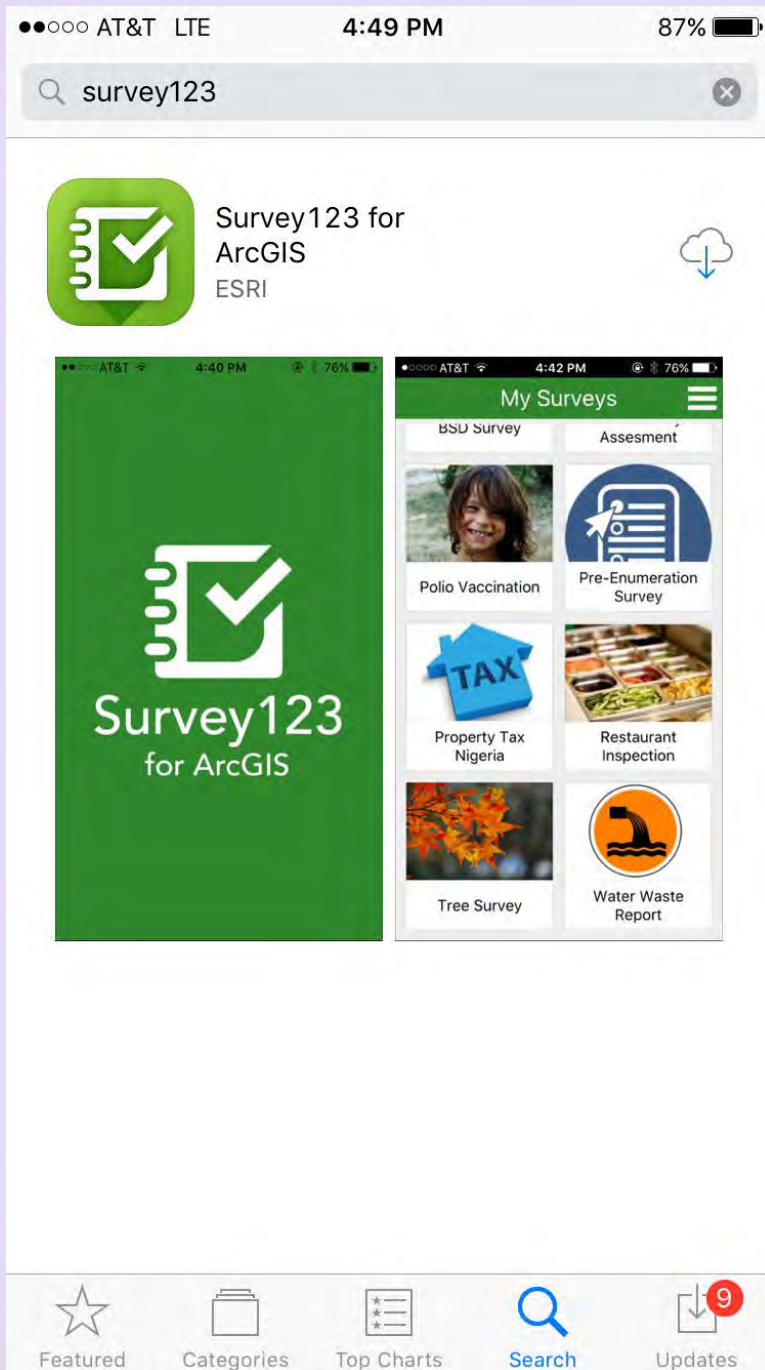
Survey 123

Seed Collection Report Training



- **Completed using:**
- Web browser OR Free mobile app called "Survey123 for ArcGIS"
 - Apple, Windows Mobile or Android devices
 - See seed collection manual for browser and desktop instructions
- If you don't have a smart phone, no worries! Look at your neighbor's or use your desktop computer to access the online Seed Collection Report later
- 1-2 designated Seed Collection Reporters per team
- The paper 'field data sheet' **still needs to be completed**, and **copies filed/kept** by the State Coordinator or Team Leaders
- Additional copies will be mailed with the cleaned/packaged seeds

<https://tinyurl.com/p2seeds2018>



1.) To download the **Survey123 for ArcGIS** app on your smart phone, first navigate to the App Store

**Tip: Free apps may require your password before download for Installation*

2.) Search for “**Survey123 for ArcGIS.**” This app was developed by ESRI, Inc.

- Locate and install

Check for UPDATES to your *Survey123 for ArcGIS* (mobile app), before fieldwork day or data upload day

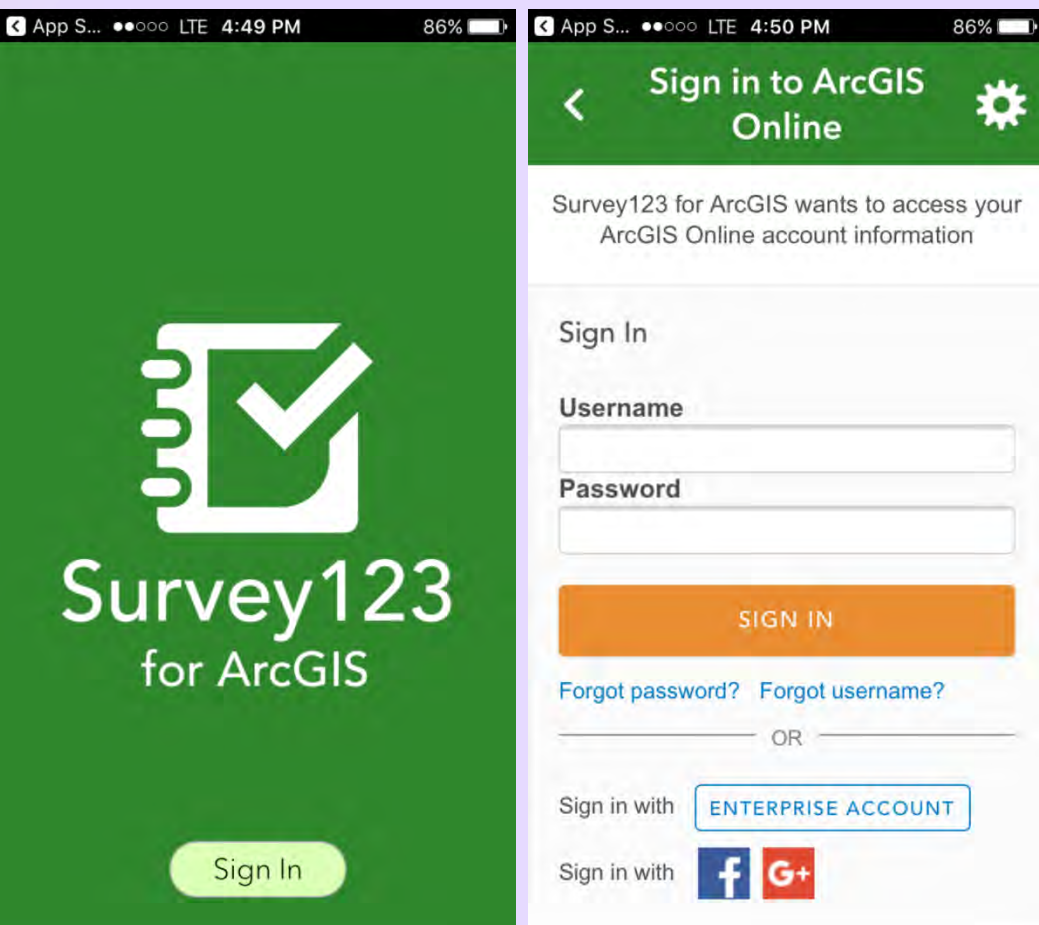
iTunes download (Apple):

<https://itunes.apple.com/us/app/survey123-for-arcgis/id993015031?mt=8>

Google Play download (Android):

<https://play.google.com/store/apps/details?id=com.esri.survey123&hl=en>

<https://tinyurl.com/p2seeds2018>



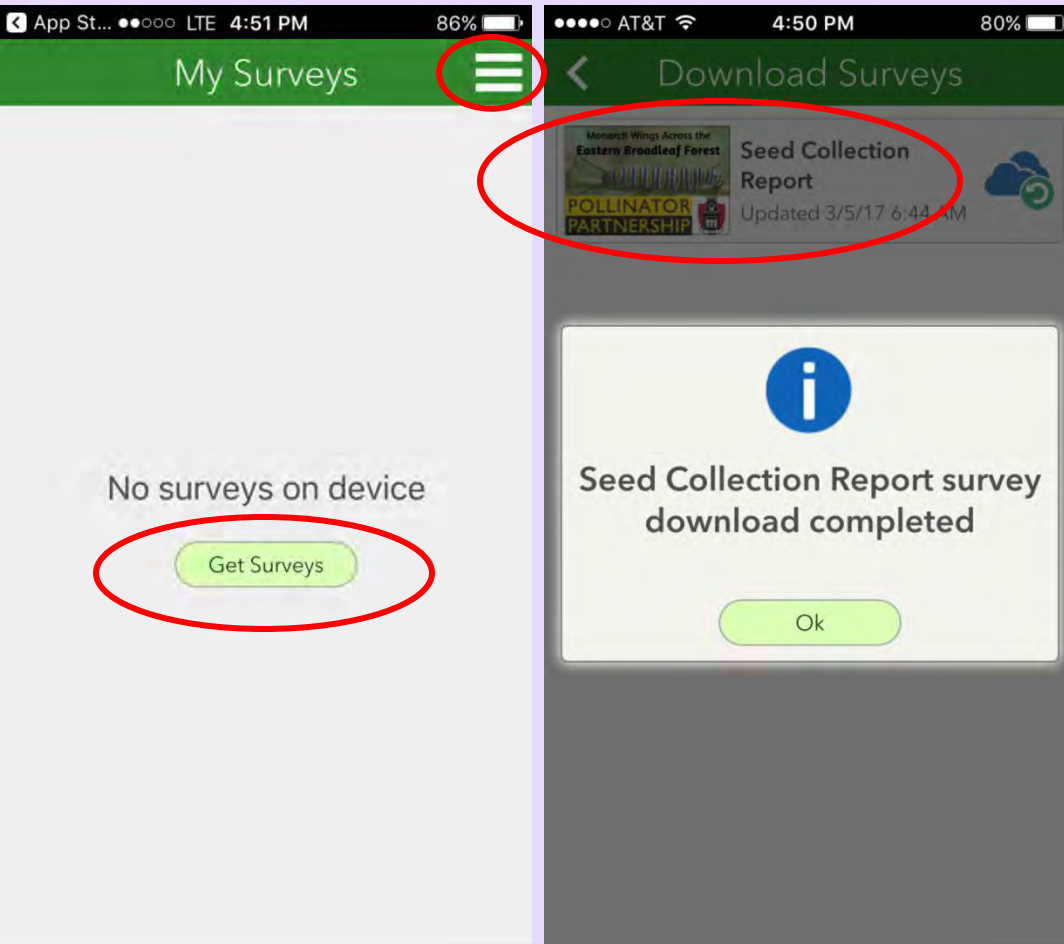
3.) After install, use your credentials to **Sign-in** to the Survey123 for ArcGIS application

Normally you will use the credentials provided to you by your state lead and Brian Culpepper

Today, we're using a set of credentials **made specifically for this training.**

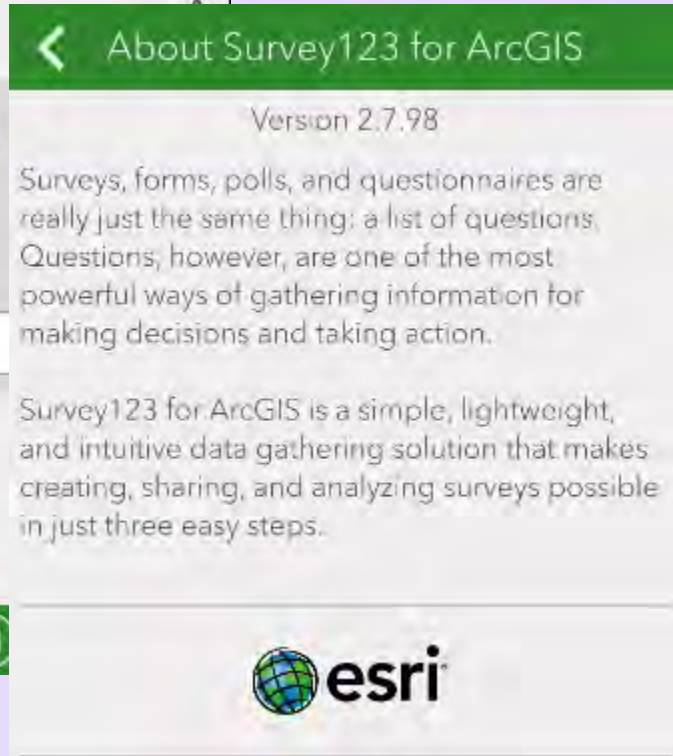
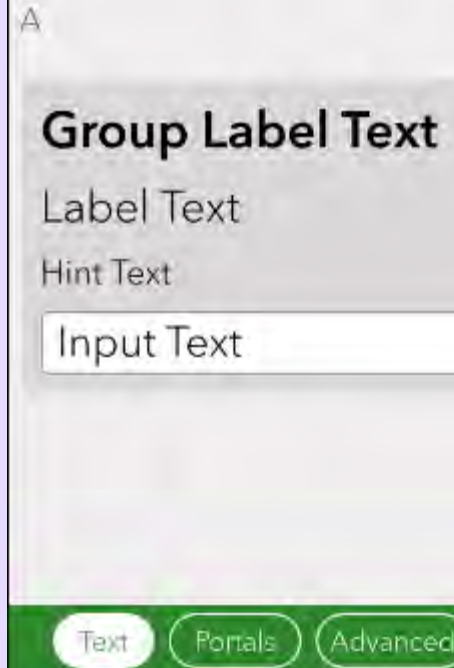
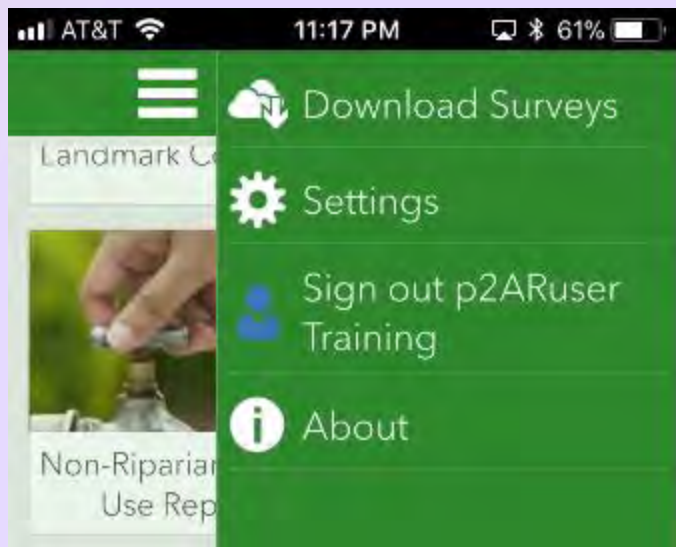
username	password
p2ohuser	p2seed17

This temporary log-in information will not be used for seed collection. Use these for today's training only so that your contact info is related to your seed collections.

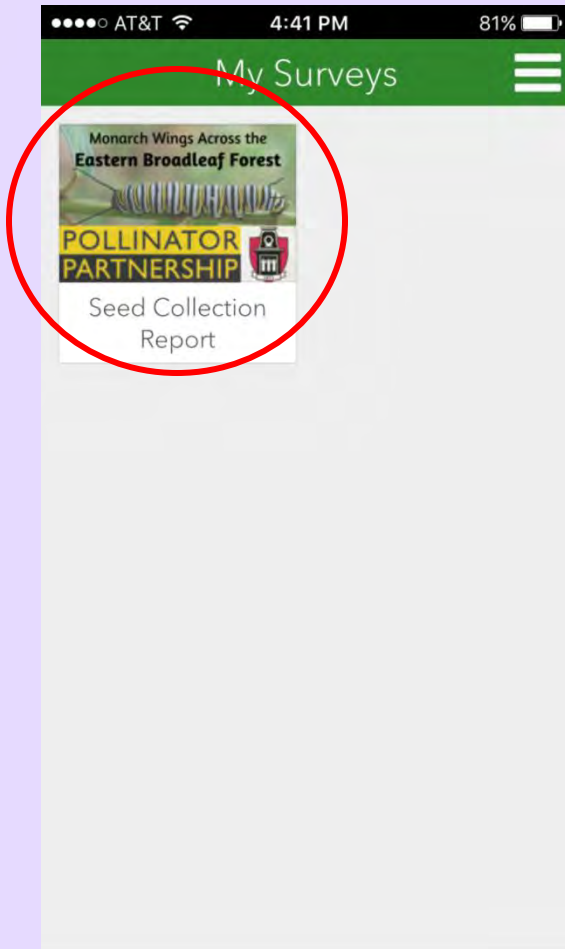


4.) Next, you will need to download the Seed Collector Report survey

- 🐦 Click “Download Surveys”
- 🐦 To download: Select “Seed Collection Report”
- 🐦 It should now display in the “My Surveys” home screen



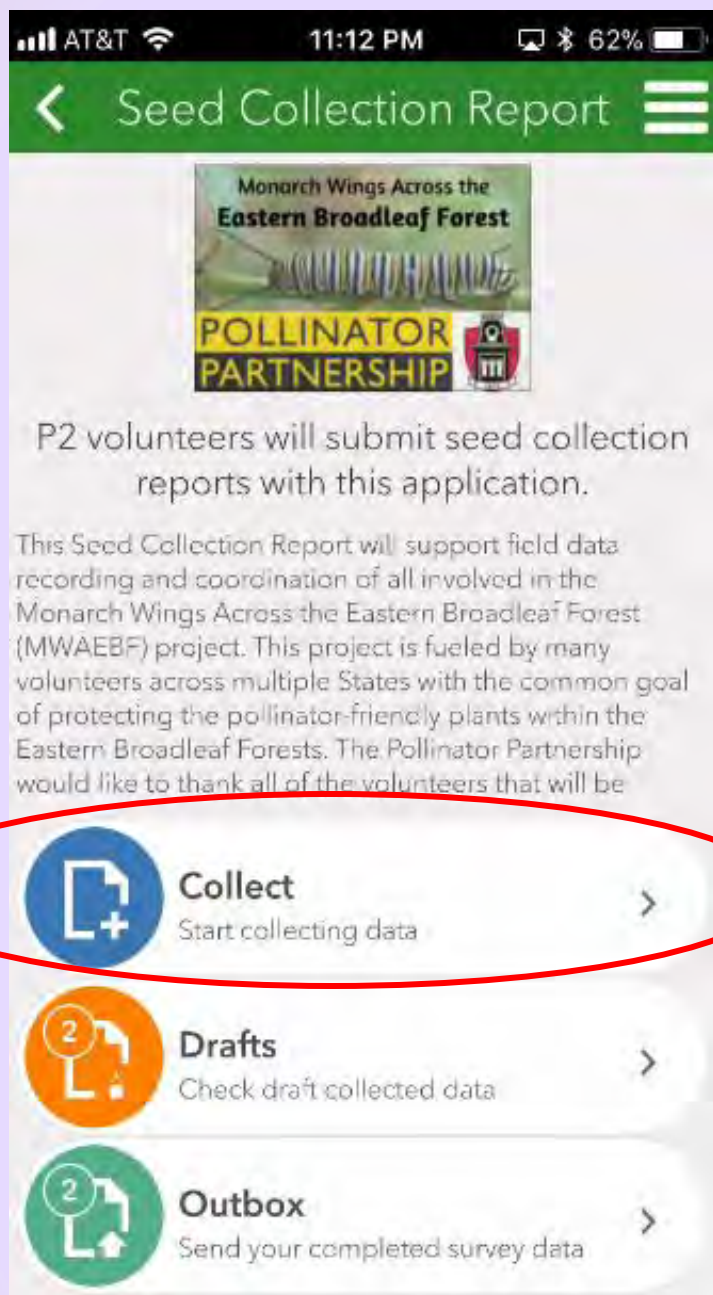
Using the App in the field:



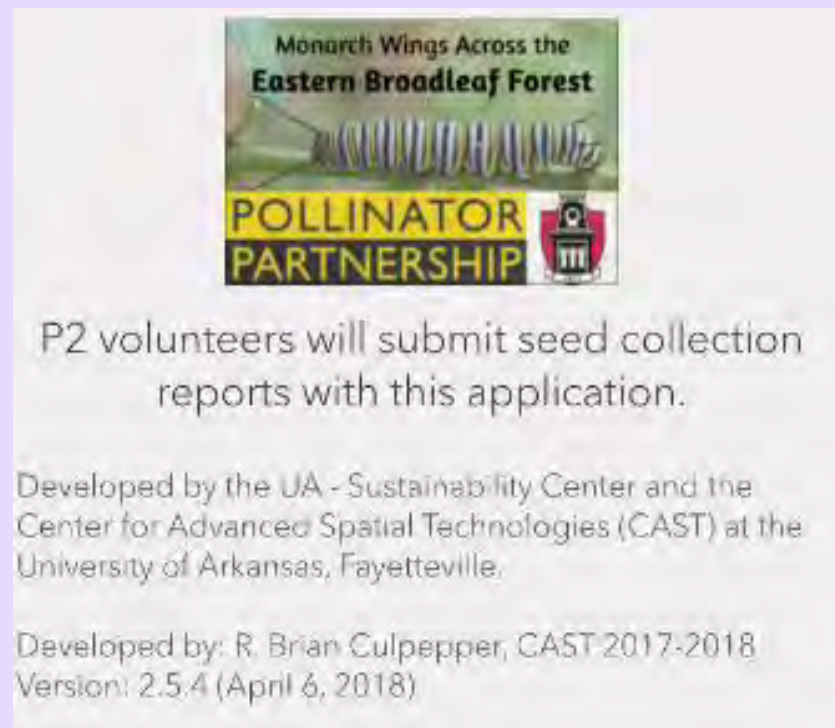
1.) Now that you've installed the app and downloaded the survey, you are all set to begin collecting data!

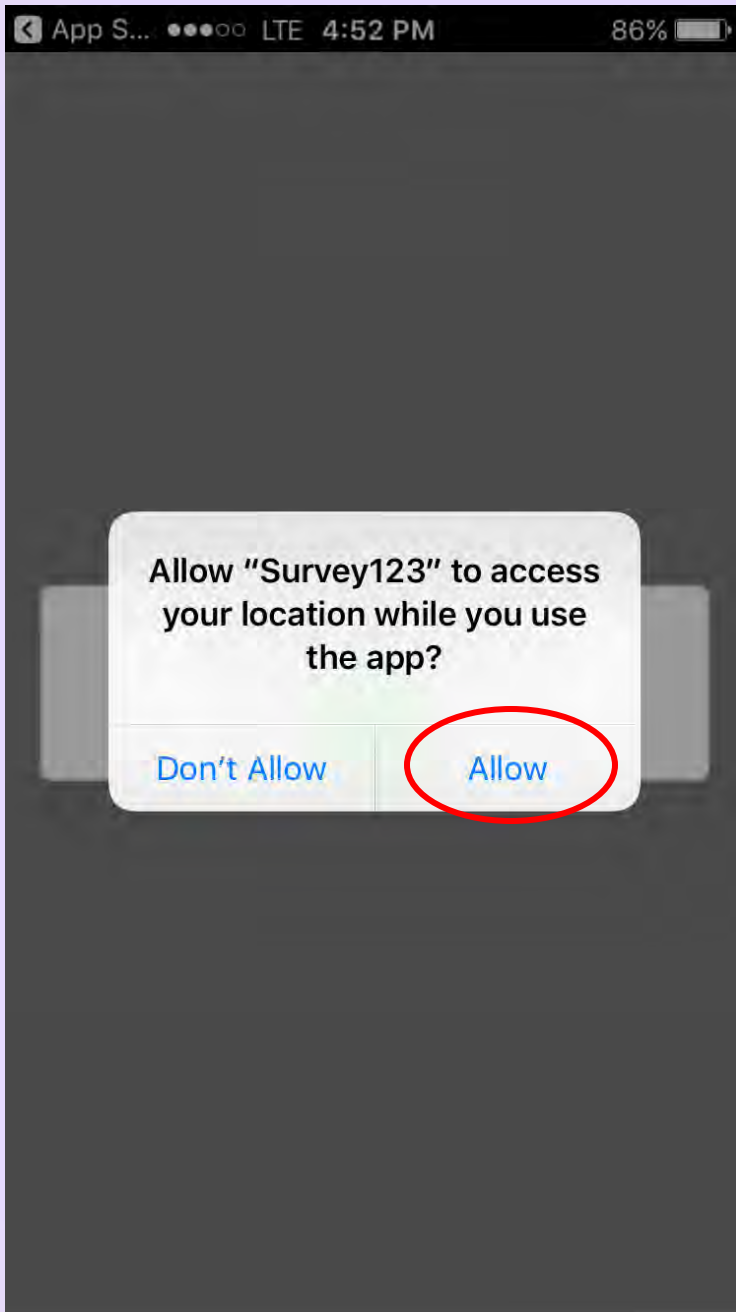
- 🐛 This survey app can be used when 'off-line' and should work whether you have wi-fi / cell service or not
- 🐛 *However*, once you return to cell service or wi-fi, you must remember to submit those 'draft' survey responses so that they are sent to the database

2.) Select Seed Collection Report on the “My Surveys” home page to be directed to the survey’s home page



3.) To begin collecting data, select the “Collect” button at the bottom of the Seed Collection Report home page





**TURN – ON LOCATION SERVICES BEFORE
OPENING Survey123**

4.) Select “Allow” so that the app can auto-locate your point based on your phone’s GPS coordinates

AT&T 11:20 PM 59%

Seed Collector v1.5

Seed Collection Report

Data Recorder Name: *

Last name only.

Enter TEST here for training

Collection Team and Project Site ID: *

e.g. OH.CT1.A

Collection Number: *

Please enter this Seed Collection Number following the training material guidelines.

Seed Collection Date: *

When did the Seed Collection occur?

✓

5.) Fill out the form starting with
“Data Recorder Name”

🐼 **TODAY ONLY - enter TEST as the name**

🐼 Note that **fields marked with asterisks are required** in order to submit the survey

6.) Refer to the training manual for the appropriate **Collection Team and Project Site ID** formats

- Your State Lead will assign each team an unique Collection Team ID

AT&T 11:20 PM 59%

Seed Collector v1.5

Seed Collection Date: *

When did the Seed Collection occur?

April 6, 2018

State Name: *

Which State is this seed collection located?

County Name: *

Please select a county or begin typing to shorten the pick list.

Locate the Collection Site:

Enable Location Services, or ZOOM into the map to precisely locate the site. The Red marker will be the lat./long. collected when you submit this survey.

✓

7.) **State** and **County** fields are drop down menus

- 🐼 You must select your state first to get the appropriate list of counties
- 🐼 Only counties within the EBF are listed. If you don't see your county, it's likely not in the EBF.
- 🐼 Contact Amber Barnes to see if collections should be made if your county is not listed

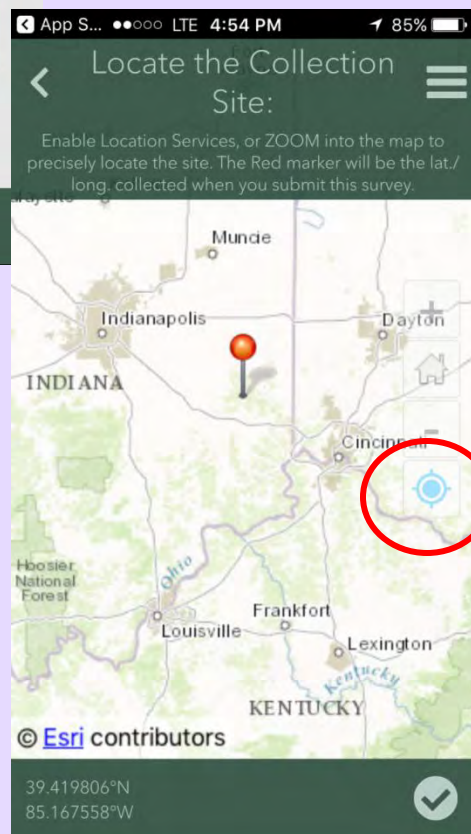
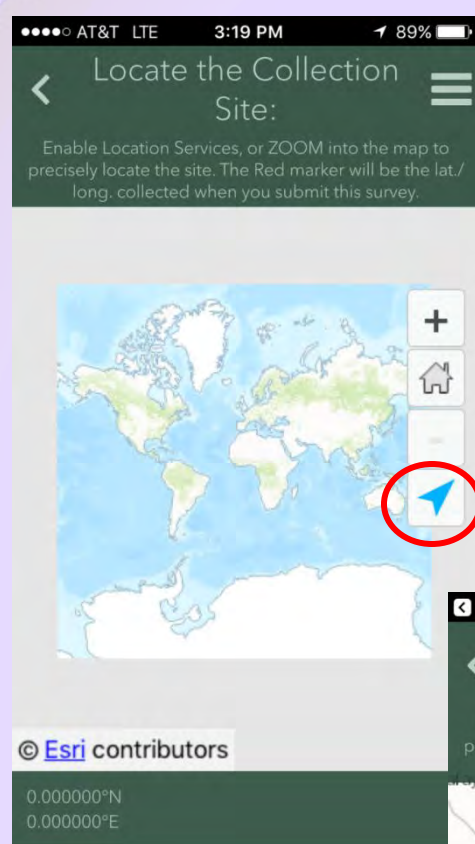
TURN – ON LOCATION SERVICES BEFORE OPENING Survey123

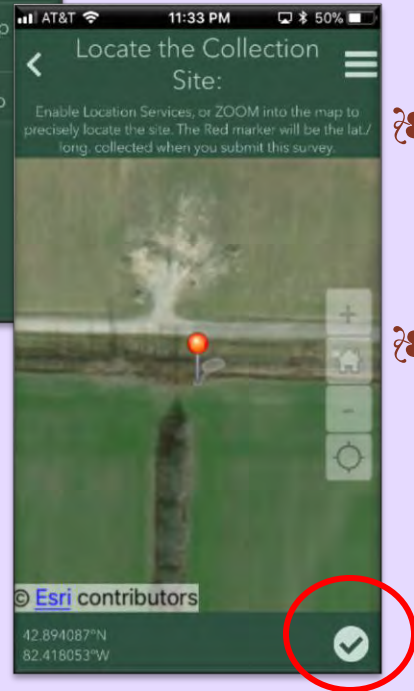
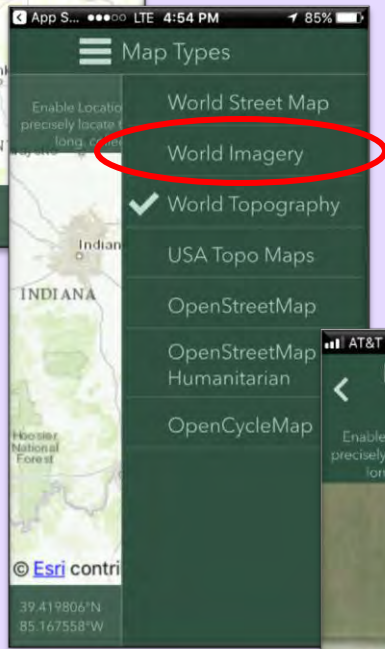
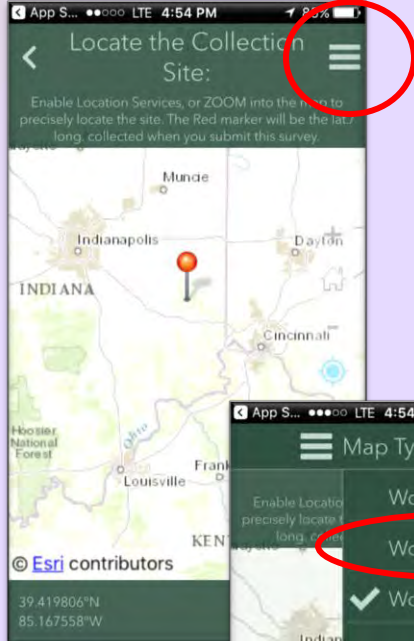
8.) Locating the collection site:

🐼 To auto-locate: select the bullseye on the map

🐼 You need to allow the app to access your location for this feature to work

🐼 You can toggle between the blue arrow and bullseye buttons to switch between auto-locate and manual-locate





8.) Locating the collection site:

- 🐼 Switching to “World Imagery” may help you determine your exact location based on nearby features
- 🐼 To manually locate the collection site, select the map and drag the pin to the appropriate location
- 🐼 Pinch to zoom or use the “+” or “-” buttons
- 🐼 When satisfied with the position of your point, select the green check mark at the bottom-right of the screen to confirm your location

AT&T 11:22 PM 58%

Seed Collector v1.5

Seed Type Collected: *

Species In Bloom:

Were any other target plant species in bloom?

<input type="checkbox"/> Swamp milkweed	<input type="checkbox"/> Common milkweed
<input type="checkbox"/> Whorled milkweed	<input type="checkbox"/> Partridge pea
<input type="checkbox"/> Tall coreopsis	<input type="checkbox"/> Common boneset
<input type="checkbox"/> Late boneset	<input type="checkbox"/> Ox eye Sunflower
<input type="checkbox"/> Wild bergamot	<input type="checkbox"/> Foxglove beardtongue
<input type="checkbox"/> Narrowleaf mountainmint	<input type="checkbox"/> Yellow coneflower

9.) Select the species being collected

- Each collection gets a unique collection ID
- If collecting 2 species from the same site, on the same day, two separate collection surveys must be filled out
- Same goes for the paper forms

10.) Scout the site and record if other target species are present, but not ready for collection

Collection Site Photo:

Include people and try to capture the collection area character.



Plant Photo:

Please include the actual plants or group of plants collected from at this site.



Seed Photo:

High-contrast, clear image including an item for image scale such as a coin.



Leaf Photo:

A clear leaf photo from the plant(s) that seed was collected.



Data Sheet Photo:

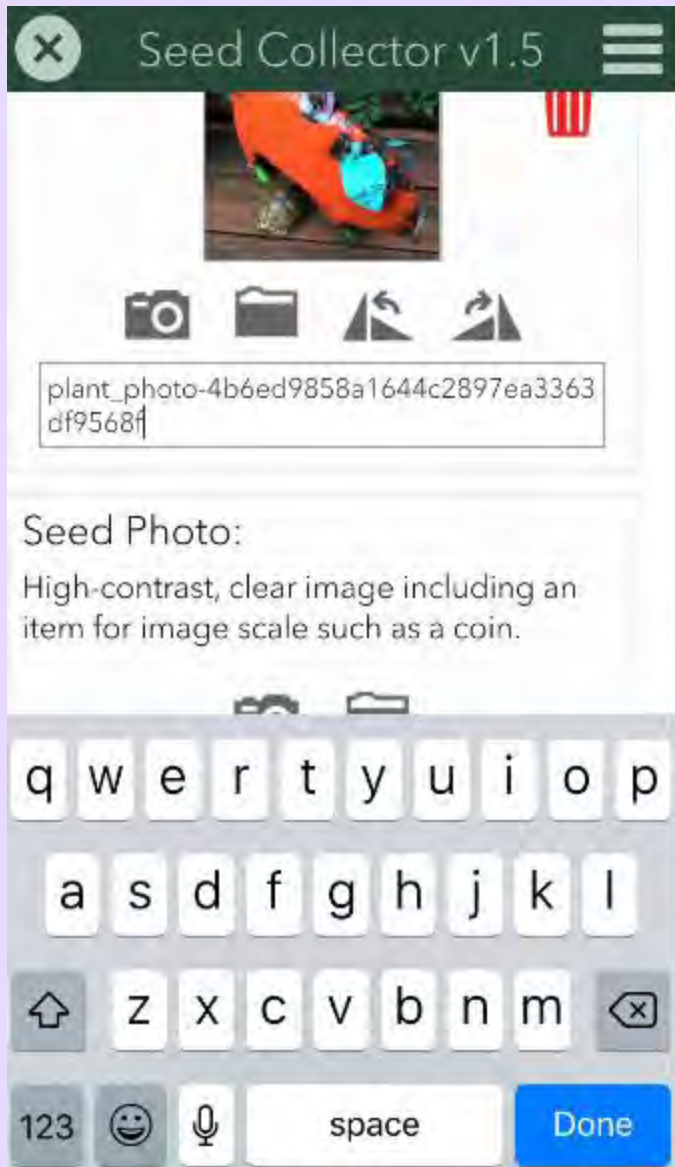
A photo of any field notes taken during the collection.

11.) Photos can be submitted in two ways:

- 🐞 Click the camera icon to take a photo directly through the app.
- 🐞 Click the folder icon to select a photo from your saved pictures.

Note:

- 🐞 The **first three** photo fields are **necessary for each seed collection report.**
 - Collection Site
 - Plant
 - Seed
- 🐞 The last two are optional.
 - Leaf
 - Data Sheet



11.) Photos cont...

- 🐦 Once uploaded, you can change the name of the photo
- 🐦 Preferred naming:
 - Collection reference ID.photo type
- 🐦 Example:
 - IN.CT1.A1.seed
 - IN.CT1.A1.collection site

●●●● AT&T 4:42 PM 81%

Seed Collector v1.5

Volunteer Census: *

How many Volunteers were present during this Seed Collection effort?

Site Description:

Field notes for this seed collection site?

[Get Local Weather](#)

Air Temperature:

Measured during the collection in degrees Fahrenheit (F)

Relative Humidity:

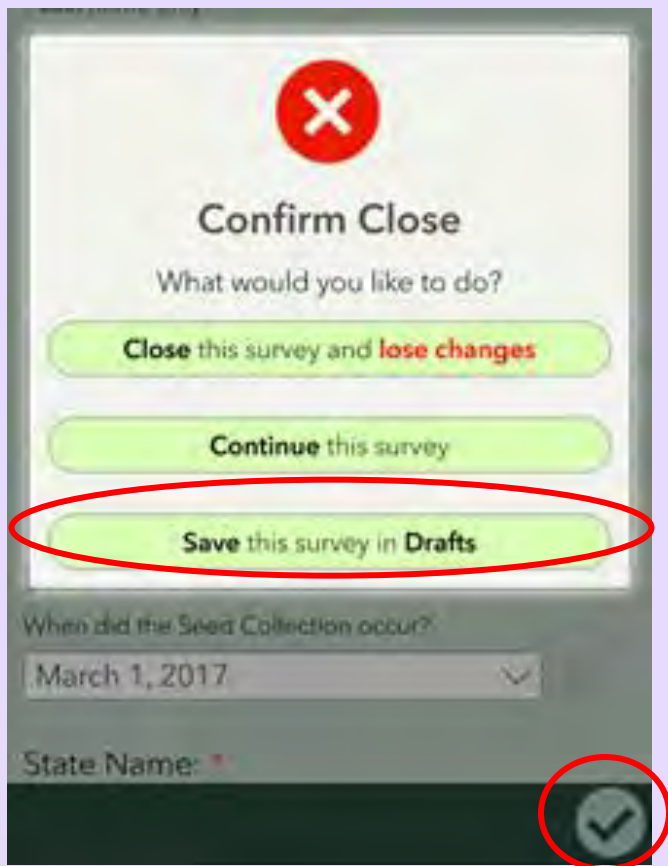
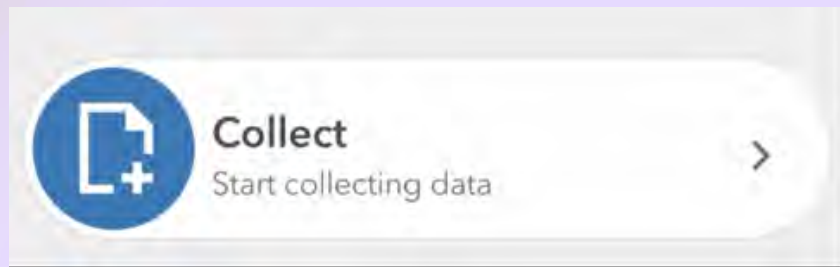
If known for the day and time of this seed collection.

[Contact Technical Support](#)

✓

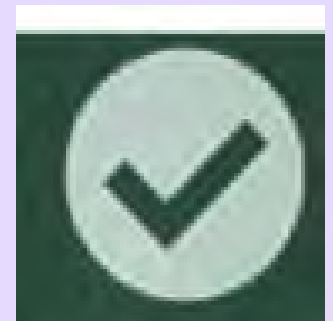
12.) Click “Get Local Weather”

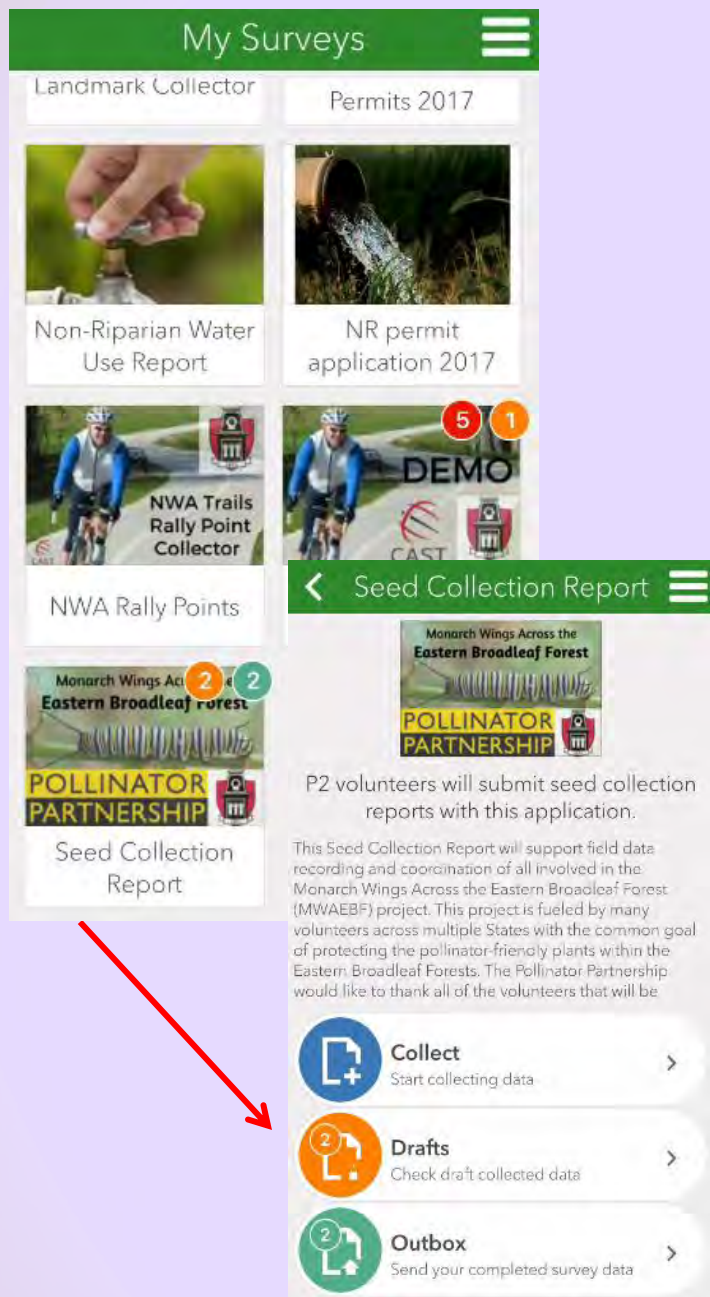
- Directs you out of the app to your browser
- Enter zip code or city to get weather data
 - Air Temperature and Relative Humidity
- Return to the app to enter in the information in the final two fields of the survey form



Summary of Survey Workflow:

- 🐼 Start collecting
- 🐼 Fill out the form
- 🐼 Set location
- 🐼 Take photos
- 🐼 Double check that all data is correct
- 🐼 Two Choices: Either **Save in Drafts** or hit checkmark to **Submit this Report**



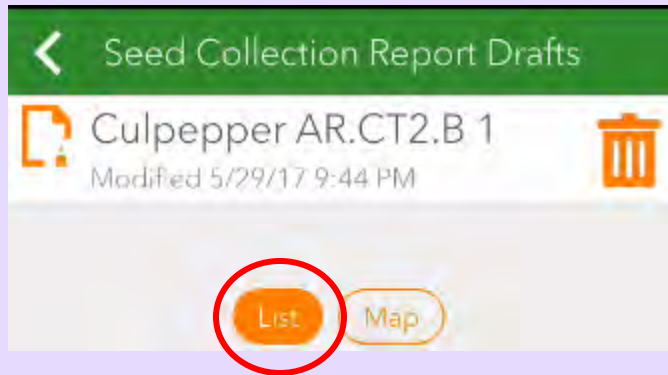


Accessing and completing drafts:

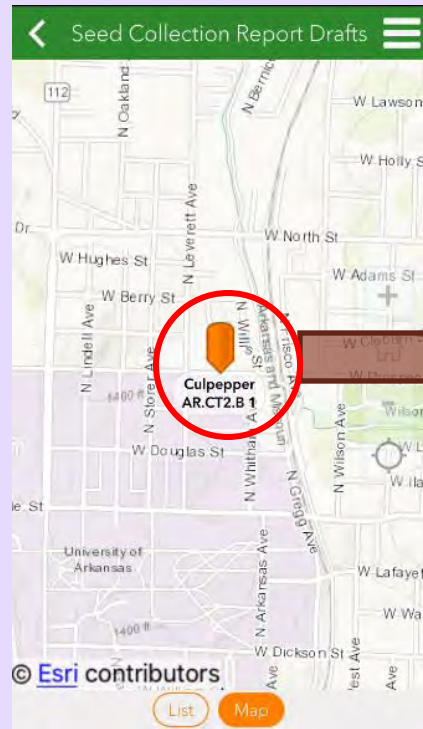
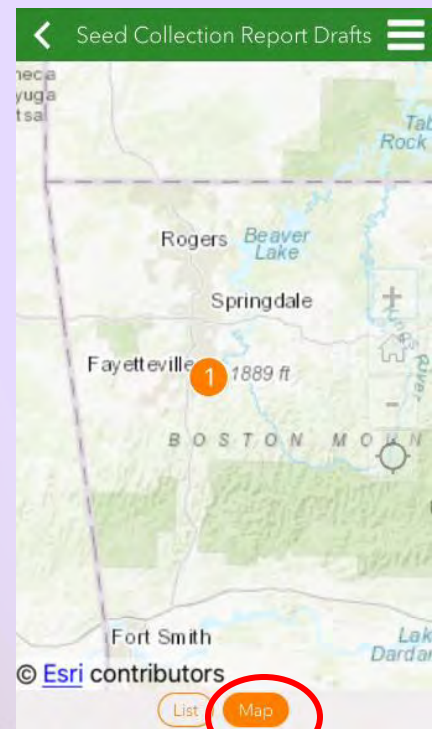
- 🐼 You can see active drafts when you open up the survey
- 🐼 If you select drafts, it will bring you to a list of drafts that need to be completed
- 🐼 Select the draft to open and complete the survey



Accessing and completing drafts:



- ❧ Draft Surveys can be viewed in **map** or **list** format
- ❧ If you select drafts, it will bring you to a list of drafts that need to be completed
- ❧ Select the draft to open and complete the survey



This screenshot shows the 'Seed Collector v1.5' form for completing a draft survey. The form is titled 'Seed Collection Report' and contains several fields for data entry:

- Data Recorder Name:** * Last name only. (Culpepper)
- Collection Team and Project Site ID:** * e.g. OH.CT1.A (AR.CT2.B)
- Collection Number:** * Please enter this Seed Collection Number following the training material guidelines: (1)
- Seed Collection Date:** * When did the Seed Collection occur?

A large red arrow points from the draft 'Culpepper AR.CT2.B 1' in the map view to this form.



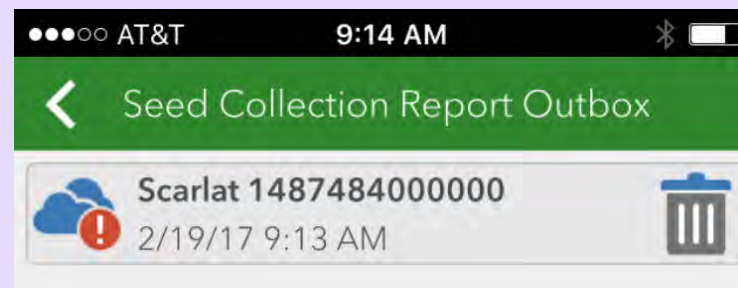
Completed unsent surveys:

- Outbox folder
- Number will be **red**
- Retry until survey is successfully submitted



What causes this?

- Loss of cell signal or wifi interruptions





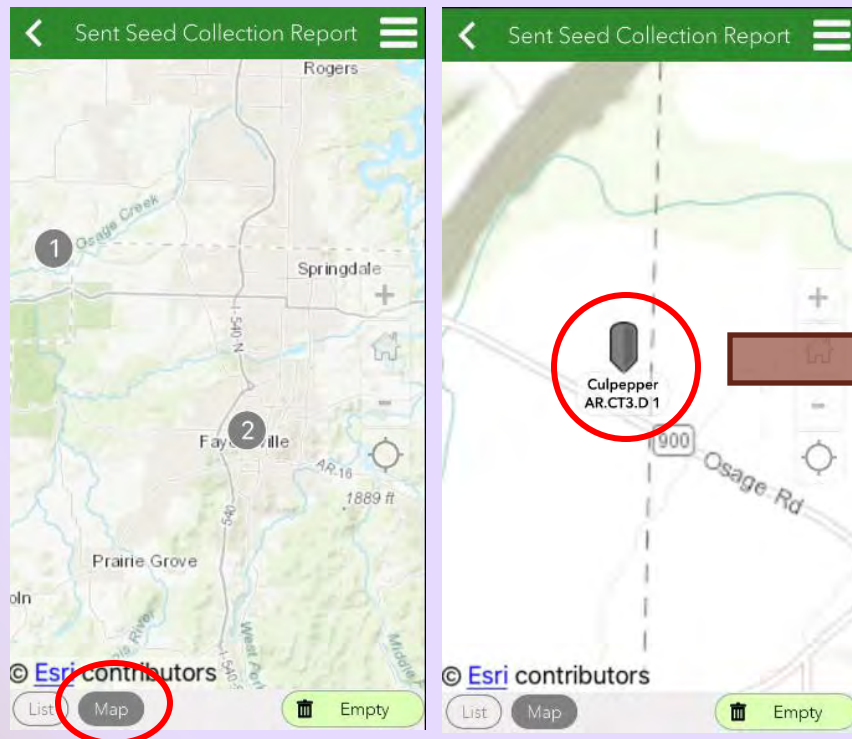
- 🐛 **Successfully sent surveys:**
 - Sent Folder
 - Logo and number are **grey**
- 🐛 If you select the sent box, it will take you to your completed surveys





Accessing sent submissions:

- 🌀 Sent Surveys can be viewed in **map** or **list** format
- 🌀 If you select sent, it will bring you to a list of surveys that have been completed
- 🌀 If you made an error, you can edit and overwrite the survey by resending it
- 🌀 Records are locally stored on your device, under your username. These will only show up on the mobile device & username used to create/send the survey





Survey123
for ArcGIS

Sign In

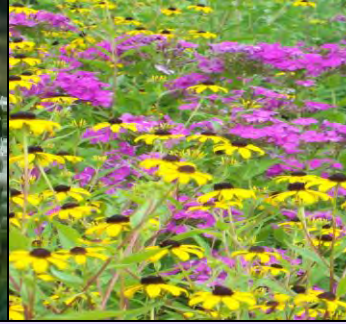
You are now ready to collect data!

If you have any troubles with the App, please contact the Pollinator Partnership (info@pollinator.org) or Brian Culpepper (brian@cast.uark.edu) at the University of Arkansas, Fayetteville for assistance.

Use the **“Contact Tech Support”** button within the Seed Collection Report too.

Any questions?

Everyone



Meet The Species!



Asclepias spp., Milkweeds

Common Milkweed
Asclepias syriaca



Swamp Milkweed
Asclepias incarnata



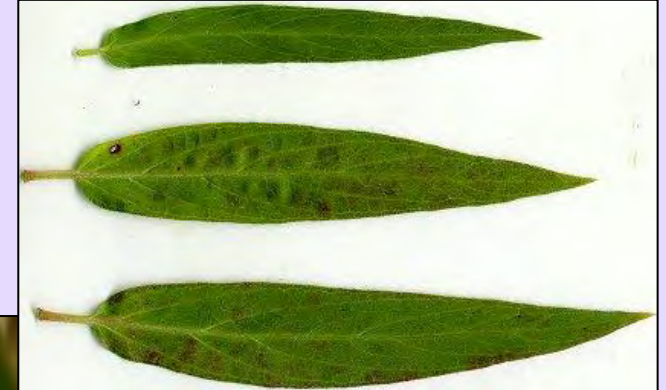
Whorled Milkweed
Asclepias verticillata



Asclepias syriaca, common milkweed



Asclepias incarnata, swamp milkweed



Asclepias verticillata, whorled milkweed



Don't be fooled

Spreading Dogbane (Apocynum androsaemifolium)

Leaf



Plants
with Buds



Flower Buds



Flower Buds
Opening



Plants
in Bloom



Flowers



Flowers
and
Green
Seed Pods



Flowers
and
Ripe
Seed Pods



Open Pod
with Seeds



Collecting Milkweed Seeds





Please do not put these in
your collection bag



Composite seeds that can be shaken out or gently mashed



☛ *Heliopsis*
helianthoides

☛ *Coreopsis tripteris*

☛ *Ratibida pinnata*

☛ *Rudbeckia hirta*



Heliopsis helianthoides

ox-eye sunflower



Coreopsis tripteris tall coreopsis



Ratibida pinnata
yellow coneflower



r Morse

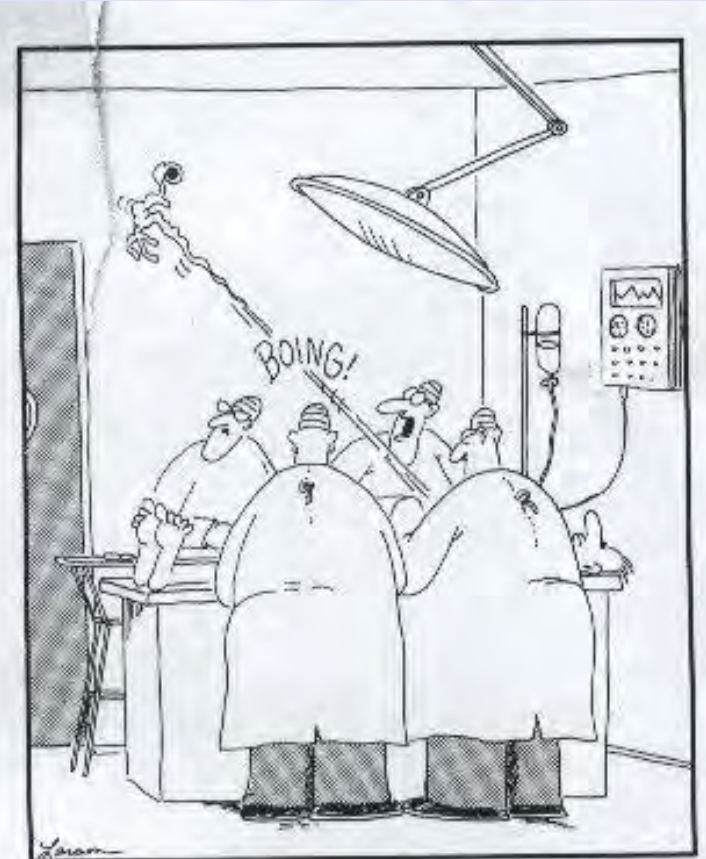
Rudbeckia hirta black – eyed Susan



Composite seeds that fly away



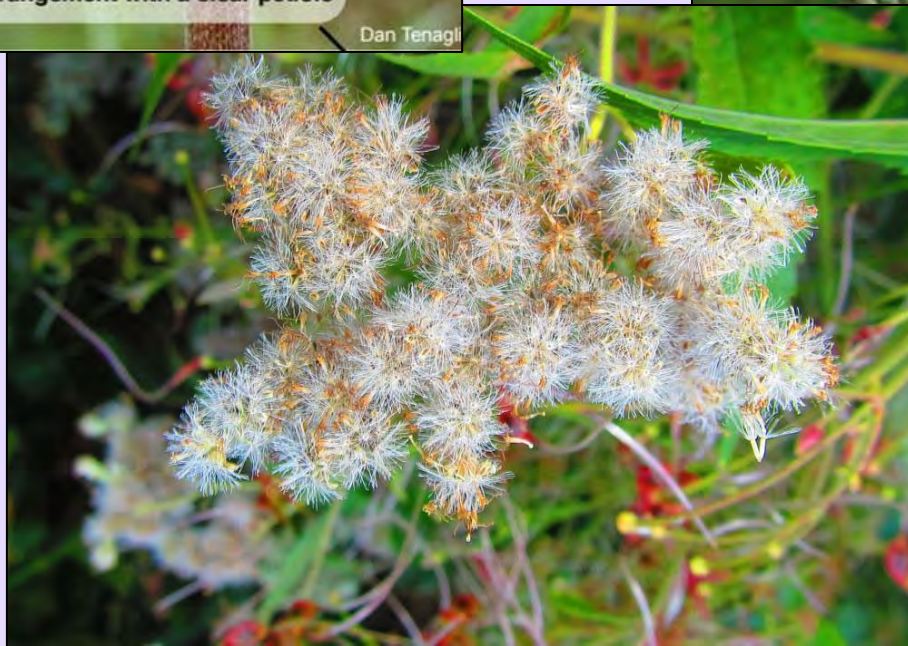
- ❧ *Eupatorium serotinum*
- ❧ *Eupatorium perfoliatum*
- ❧ *Symphyotrichum laeve*
- ❧ *Symphyotrichum novae-angliae*
- ❧ *Symphyotrichum pilosum*
- ❧ *Vernonia gigantea*



“Whoa! Watch where that thing lands—
we’ll probably need it.”

Eupatorium serotinum

late boneset

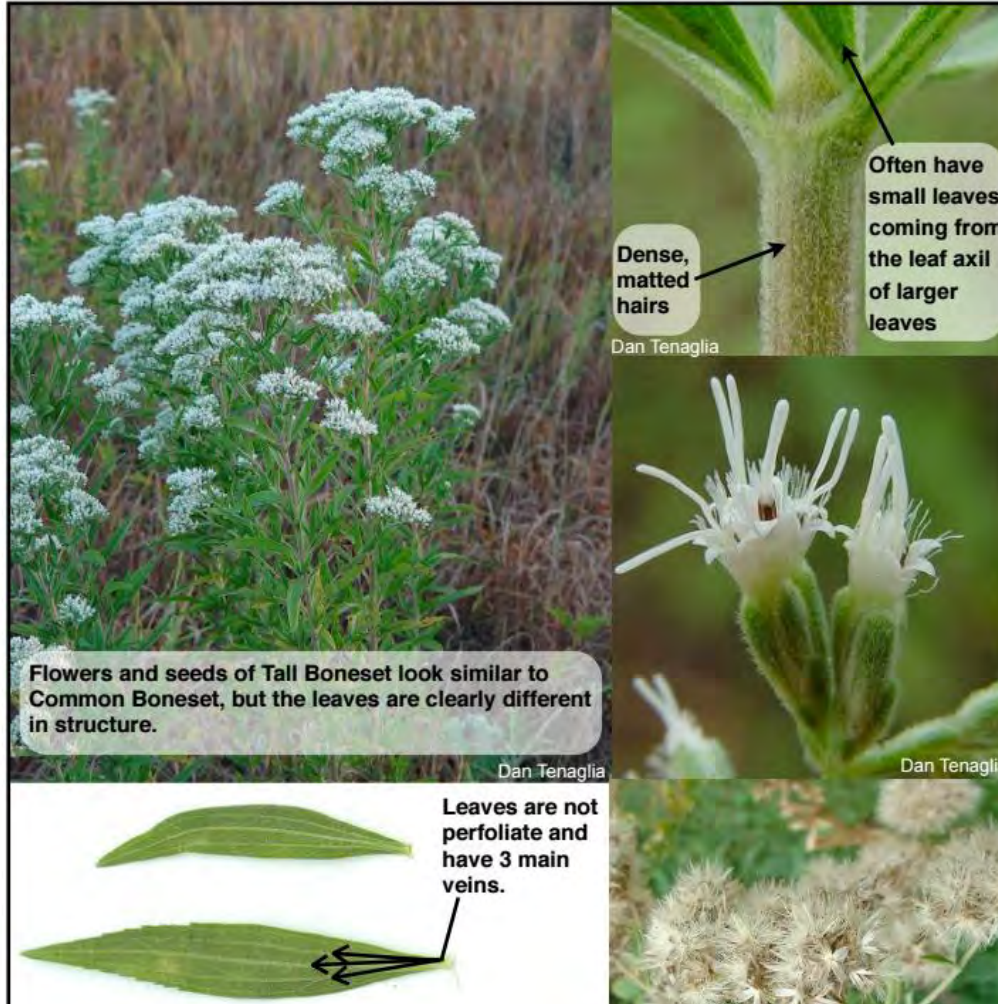


Eupatorium perfoliatum
common boneset



Don't be fooled

Eupatorium altissimum - Tall boneset



Symphiotrichum laeva

smooth blue aster



Symphiotrichum novae – angliae

New England aster



Symphiotrichum pilosum

frost aster



Vernonia gigantea giant ironweed



Don't be fooled

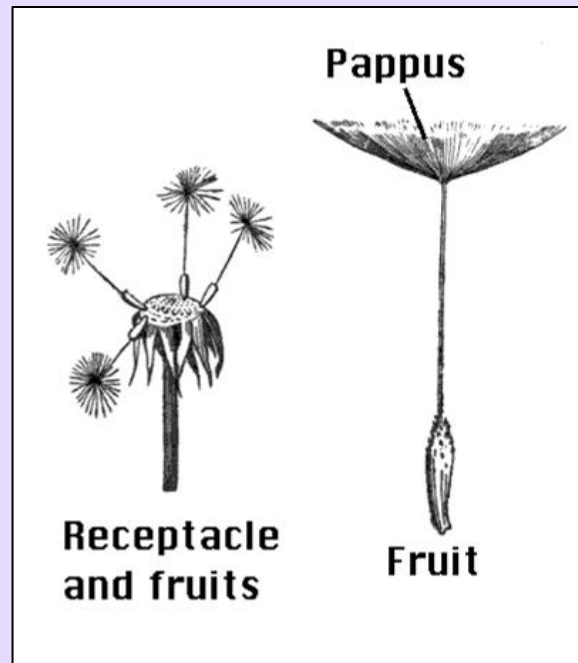
Vernonia fasciculata - Smooth Ironweed



Keys to distinguishing Smooth Ironweed from Giant Ironweed:

- Has hairless leaves and stems
- Will sometimes have black dots on the underside of the leaves.
- Narrower leaves: $\frac{1}{2}$ " or less vs. over $\frac{1}{2}$ " wide.
- Condensed flowering head vs. spreading.

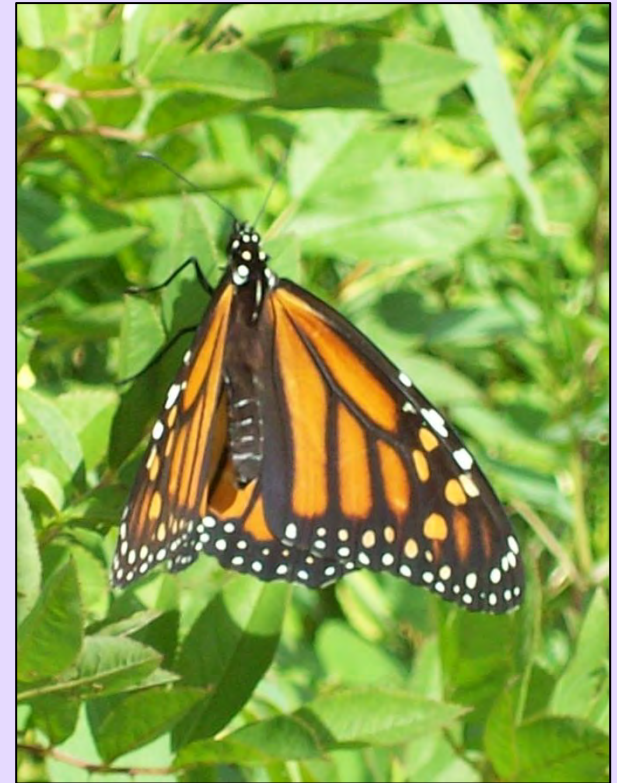
Collection of seeds from composite flowers that fly away



All the rest



- ❧ *Chamaecrista fasciculata*
- ❧ *Monarda fistulosa*
- ❧ *Pycnanthemum tenuifolium*
- ❧ *Penstemon digitalis*
- ❧ *Tradescantia ohiensis*
- ❧ *Verbena urticifolia*
- ❧ *Zizia aurea*





Chamaecrista fasciculata
partridge pea

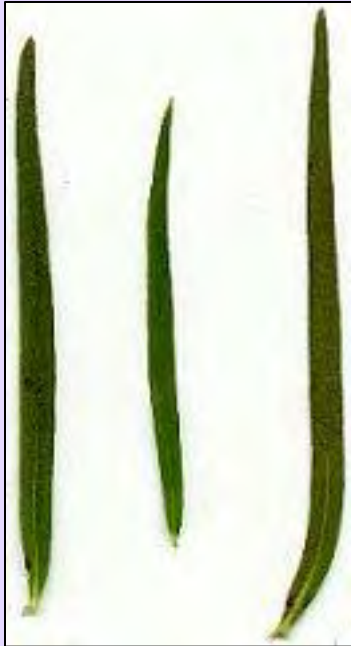
Monarda fistulosa
wild bergamot



Penstemon digitalis
foxglove beardtongue



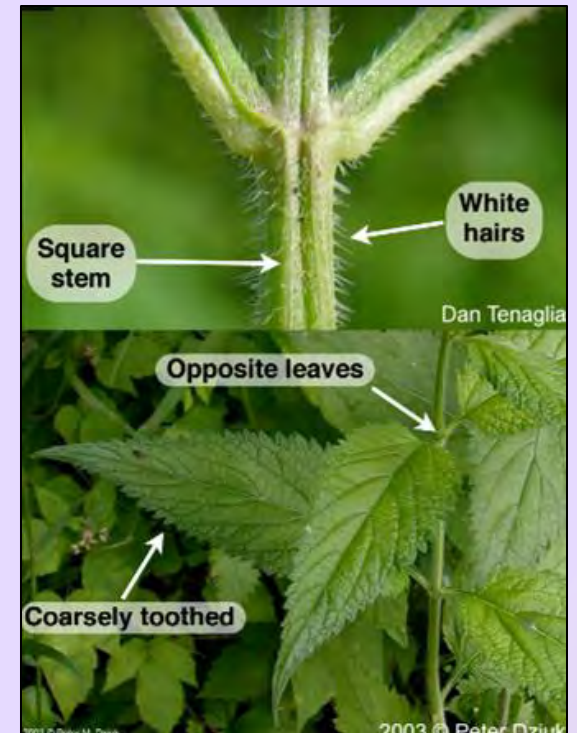
Pycnanthemum tenuifolium
narrowleaf mountainmint



Tradescantia ohiensis
Ohio spiderwort



Verbena urticifolia white vervain



Don't be fooled

Verbena hastata - Blue Vervain

Keys to distinguishing Blue Vervain from White Vervain:

- Flowers are blue vs white.
- Leaves are more narrow.
- Flowers (and seed pods) are densely present on the panicles vs. the sparsely distributed flowers (and seed pods) of white vervain.



Zizia aurea
golden Alexander



Questions?



**Monarch Wings Across
the
Eastern Broadleaf Forest**

**POLLINATOR
PARTNERSHIP**





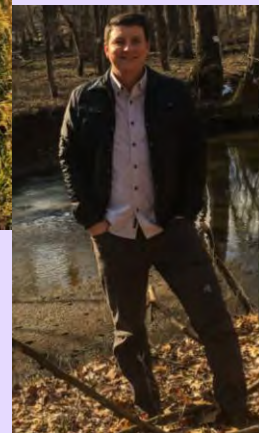
Annie Rzepka Budziak
Wildflower Garden Horticulturist
Holden Forests and Gardens
arzepka@holdenarb.org



Amber Barnes
Pollinator Partnership
ab@pollinator.org



Julia Kemnitz
Indiana Partners for
Fish and Wildlife
Julia_kemnitz@fws.gov



Ben Miller
Indiana Dept. of
Natural Resources
bmiller2@dnr.in.gov



Elizabeth Kaufman
Pollinator Partnership
ek@pollinator.org



Nick George
Illinois Partners for Fish
and Wildlife
Nicholas_george@fws.gov



Andrew DiAllesandro
Illinois Partners for Fish
and Wildlife
Andrew_diallesandro@
fws.gov



Pati Vitt
Chicago Botanic Garden
pvitt@chicagobotanic.org



Kay Havens
Chicago Botanic Garden
khavens@chicagobotanic.org



**POLLINATOR
PARTNERSHIP**

Plant information for this presentation obtained from:

<http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>

<http://www.illinoiswildflowers.info/>