

Project Wingspan: Landscape Enhancement for Imperiled Pollinators of the Midwest

Tips for Plant ID, Seed Collection, and Storage



Establish a regional seed collecting program to create increased connectivity across the landscape





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 TeamLeads if they are unfamiliar with plants
- Team Leads can mark plants for Collection Volunteers who may be inconsistent in plant ID



Pollinator Partnership <u>www.pollinator.org</u> 415-362-1137 ab@pollinator.org



What kinds of landscapes work best?

- ROWs (utilities, roadsides, etc.)
- 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



How to approach landscapes?



Project Wingspan: Landscape Enhancement for Imperiled Pollinators of the Midwest

As you may know, the iconic monarch butterfly (*Danaus plexippus*) and its spectacular migration are in jeopardy. Their North American numbers have suffered a steep decline of approximately 90% over the past two decades, and in 2014 the U.S. Fish and Wildlife Service was petitioned to protect the monarch butterfly under the Endangered Species Act (with a listing decision expected for summer 2019). Like the monarch, the rusty patched bumble bee (RPBB) was a common species 20 years ago, with a range across 28 states and two Canadian provinces. RPBB (*Bombus affinis*) populations have also seen a swift decline since the 1990s, which earned it placement on the endangered species list in 2017 – with a distinction of becoming the first bee in the contiguous 48 states to be declared endangered. The species has now only been observed as a few small patches of populations across what is estimated to be only 0.1% of its historical range.

Project Wingspan (PW) is a two-year project sponsored by a grant from the National Fish and Wildlife Foundation to the non-profit Pollinator Partnership (P2), which is leading a coalition of partners in an effort to enhance land across the Midwest to support our imperiled pollinators. The grant provides \$149,000 to be matched by \$385,500 of matching and in-kind contributions from the partners.



PW will increase monarch and RPBB habitat by building off the success of P2's, 2017-2019 Monarch Wings Across the Eastern Broadleaf Forest Program, (MWAEBF), and by engaging public land managers and private land stewards throughout the 8-state target region of Arkansas, Illinois, Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Wisconsin through a series of monarch habitat enhancement activities, with the goal of establishing 10,000, acres of monarch and RPBB habitat.

A core group of partners including P2, U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program, Illinois Department of Natural Resources (DNR) – Mason State Nursery, U.S. Forest Service, Ohio Pollinator Habitat Initiative, Michigan DNR, Indiana DNR, Holden Forests & Gardens, the University of Arkansas Center for Advanced Spatial Technologies, Michigan State University, Kettle Moraine Land Trust, Pennsylvania Natural Heritage Program, and Pheasants Forever will work together to ensure the activities below are well-executed to achieve a comprehensive and effective outcome. Additional satellite partners (a growing list that includes, but is not limited to, those noted at the end of this document) have been secured to maximize the efforts of the core partners.

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Seed Collecting for Monarchs and the Endangered Rusty Patched Bumble Bee!

The Pollinator Partnership has joined forces with several organizations and agencies to launch our new initiative, Project Wingspan, and <u>we need your help</u>! The project will be collecting seed throughout the states of Ohio, Indiana, Illinois, Pennsylvania, Wisconsin, and Michigan.



We are looking for enthusiastic seed collecting volunteers in all 6 states to help identify and collect milkweed and other valuable native forage plants. As a seed collecting volunteer you will be provided with training and be making valuable contributions to supporting migrating monarchs and the imperiled rusty patched bumble bee.

No seed collecting experience is required, but basic plant knowledge is preferred.

Project Wingspan is also looking for landowners and public land managers with robust native plant populations, who are interested in supporting local habitat restoration efforts by serving as native seed collection sites.



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Habitat Wanted

Pollinator Partnership invites public land managers and private landowners with at least one acre of land in WI, MI, PA, OH, IN, IL, MO, and AR who are committed to long-term conservation of monarch, rusty patched bumble bee, and other rare pollinator habitat to be a part of

Project Wingspan!



To participate complete the preliminary online survey if your site qualifies, you will get a FREE on-site review by Pollinator Partnership's Monarch & Pollinator Habitat Coordinator who will be able to offer habitat development guidance. Plant material awards will be given to selected sites for habitat enhancement. Are you committed to enhancing your land for monarch butterflies, rusty patched bumble bees and other imperiled pollinators? Visit this link to complete the survey today <u>https://pollinator.org/wingspan/</u> survey

Survey Deadline: June 15, 2019

For questions please e-mail Elizzabeth Kaufman at <u>ek@pollinator.org</u>

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> POLLINATOR PARTNERSHIP



Obtain permission to access property

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

Turn this in before leaving today!

POLLINATOR

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 but more whenever possible
- Different collections of the same species should be at least 1/4 mile apart to ensure they are two separate populations





POLLINATOR PARTNERSHIP

How to assess a population:

Scout the site while plants are flowering and confirm the target plants are there

Only collect from sites with a minimum of 50 harvestable individuals in the population (can be spread out)...but the more, the better

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



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



How much seed is in an ideal collection?

- The goal for each collection is a minimum of 1 ounce of cleaned seed.
- Collections resulting in larger than an ounce *are encouraged whenever possible*.
- Here are a few photos to illustrate what an ounce of a some of our target species looks like, with a can of Coke for size reference.



General Seed Collection Information

- Examine a small representative sample of seeds before you collect
- Seed should be dry, dark, and loose in its 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 Coordinator after collection has been made



Labeling your seeds

Labeling your seed collection

- Plant name in Latin
- Common name
- Collection date
- Site location name
- County, State
- State Collection Zone*
- 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



POLLINATOR

Data Collector

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

Project Wingspan Field Data Form

			COLLECTION TEA	M INFORMATION		
Seed Collection Team Reference I	D:		Project Site ID:		Collection Number:	
Date(s) Collected:			Collection Time:		Number of Volunteers:	
Collector Names (Circle data collec	tor):					
Seed Collection Zone (circle the color):		Green (nort	n (north) Orange (central or west) Blue (south)			th)
			SEED COLLE	CTION DATA:		
Scientific Name:				Common Name:		
Number of Plants Sampled:				Photograph Taken:	Yo	r N
			LOCATIO	N DATA:		



Project Wingspan Collection Tracking Sheet

Collection ID	Species (Latin name)	Date Collected	Date Shipped
IN.CT5.A-1	Monarda fistulosa	6-15-18	
IN.CT5.B-2	Rubbeckia hirta	6-21-18	
IN.CT5.A-3	Asclepias incarnata	7-14-18	

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

Collection Team ID.Site ID-Collection Number

Example: IL.CT1.A-1

Collection Team ID will be assigned by your State Coordinator





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

MWAEBF Field Data Form

		COLLECTION TEA	M INFORMATION		
Seed Collection Team Reference ID:		Project Site ID:		Collection Number:	
Date(s) Collected:		Collection Time:		Number of Volunteers:	
Collector Names (Cir data collector):	cle				
		SEED COLLE	CTION DATA:		
Scientific Name:			Common Name:		
Number of Plants Sampled:			Photograph Taken:	Yo	r N
		LOCATIO	N DATA:		
State:		County:		Land Owner:	
Permission Filed:	Y or N	GPS Data Recorded:	Y or N	Managed Area Name:	
Latitude:			Longitude:		
		HABITA	T DATA		
Current Temperature:		Current Humidity:		Land Use Type:	
Non-Target Associated Species:					
SCOUT	ING INFORMA				
Scientific Name:		TION: Target plant sp	ecies in bloom but n	ot ready for collect	ion
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Team Lead/Data Collector

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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.
- 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.

Project Wingspan Fleid Data Form

			COLLECTION TEA	M INFORMATION			
Seed Collection Team Reference I	n ID:	OH.CT1	Project Site ID:	A	Collection Number:		1
Date(s) Collected:	4	-24-17	Collection Time:	12:80 pm	Number of Volunteers:		4
Collector Names data collector):	(Circle	Jane Doe, Rs	avi Patel, Tyrone Jone	s, Cindy Lee			
Seed Collection Z (circle the color):	one	Green (no	orth) Orang	je (central or west	t) Bl	ue (so	uth)
			SEED COLLE	CTION DATA:			
Scientific Name:		Asclepias	incarnata	Common Name:	Swa	amp m	ilkweed
Number of Plants Sampled:		ŧ	57	Photograph Take	en:	Y	N
			LOCATIO	N DATA:			
State:		Ohio	County:	Cuyahoga	Land Owner:		Cleveland Metroparks
Permission Filed:		Y or N	GPS Data Recorded:	Y or N	Managed Are Name:	эa	Acacia
		41.5	04442	Longitude:	-	81.49	1285
Latitude: Directions: Provid Include parking in Headed north on I- Acacia Reservation	le detai format 271 tov n parkin	led direction ion and direction vard Lyndhur g lot. Found t	ts to the collection a ctions from parking at, took Brainard Rd (the marked trail and y	ite. Refer to neart area to collection axit. Turned right or valked about 50 me	by landmarks, ro site. nto Cedar Rd. Tur sters to the collec	rned ri	and towns. ght, into the eld, located on
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Notes:

Drying Your Seeds

Seed should be dried for at least 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





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





Tiny coin envelope



Other things to keep in mind

- Safety Concerns
- Controlling the spread of noxious weeds







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, poison sumac, and wild parsnip



Blacklegged Tick (Ixodes scapularis)

femal



Controlling the Spread of Noxious Weeds

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






Photo Credit: Heath Hamilton

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 and rusty patched bumble bee.

Please Log Your Volunteer Hours!



Don't Forget to Log those volunteer hours!

Thank you for volunteering with the MWAEBF project! After each volunteer activity in which you participate, please fill out our volunteer hour tracking form for your state. These activities include: seed collection events, in-person trainings, seed cleaning events, scouting potential collection sites, or any other MWAEBF volunteer activity.

Filling out our form helps us show how many volunteer hours have gone into this project and is an important metric when presenting the success of our project to the National Fish and Wildlife Foundation. This information can also be useful in tracking your time and mileage for a tax write-off so make sure to keep your copy of the responses for your records! Your copy will be emailed to you after the fill out the online form.



The volunteer hour tracking form can be found at the bottom of our Seed Collection Training page at: https://www.pollinator.org/wingspan/seed-collection



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 original copy for yourself) and make sure the bag is also labeled
- Use a free USPS priority mail flat rate box



Team Lead

How to ship via USPS:



Visit <u>www.usps.com</u>

- Click the Register/Sign In option to access the project USPS account
- Log in to the project USPS account
 -Contact State Coordinator or Pollinator Partnership for login credentials.



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Hover cursor over "Mail & Ship" tab and select "Click-N-Ship" from the drop down menu

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		This number is for your reference only.	
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	Dave Horvath	Notify recipient of shipping.	
	Company	You may request an email to be automatically sent to the recipient, including label number and your selected ship date.	
	IDNR, Mason State Nursery		
	* Street Address		
	17855 N. County Rd. 2400 E		
	Apt / Suite / Other	Want to ship to multiple addresses? Start a batch.	
	* City	Batch orders are used to send up to 20 multiple identical packages to different addresses.	
	Торека	Start a Batch Order	
	* State ZIP Code™		
	IL - ILLINOIS <		

POLLINATOR PARTNERSHIP

Send seed to:

Dave Horvath IDNR, Mason State Nursery 17855 County Road 2400 E Topeka, Illinois 61567

Enter a shipping date.

* Choose a Shipping Date Thursday 03/30/17

Select same day shipping to ensure seed is delivered ASAP

oz



- Select "I am Shipping Flat Rate"
- Leave package value option blank



Select a service (* Choose a Service Type Priority Mail®		
Selecting a Priority Mail® Flat Rate product or a Priority Mail	PACKAGE TYPE	EXPECTED DELIVERY	
Express™ Flat Rate product requires the USPS-provided packaging.	 Priority Mail® Flat Rate Envelope 12-1/2" × 9-1/2" 	May 28, 2019 // 3-Day Delivery	\$7.35
Price based on shipping a package from ZIP Code™ 94111 to 61567 on 05/24/2019.	 Priority Mail® Small Flat Rate Box 5-3/8" x 8-5/8" x 1-5/8" 	May 28, 2019 // 3-Day Delivery	\$7.90
If you plan to ship Live Animals, please go to your local Post Office.	 Priority Mail® Medium Flat Rate Box 11" x 8-1/2" x 5-1/2 13-5/8" x 11-7/8" x 3-3/8" 	May 28, 2019 // 3-Day Delivery	\$14 .35
	 Priority Mail® Padded Flat Rate Envelope 9-1/2" x 12-1/2" 	May 28, 2019 // 3-Day Delivery	\$8.00
	 Priority Mail® Large Flat Rate Box 23-11/16" x 11-3/4" x 3" 13-144" x 43-144" x 6" 	May 28, 2019 // 3-Day Delivery	\$19.95

- Select "Priority Mail" under "Choose a Service Type"
- Once all fields are complete click "view available Services and Prices"
- ► Select the appropriate size option e.g. "Priority Mail Medium Flat Rate Box"
- Be sure the scheduled delivery date falls before the weekend

Create Label Preference		Preferences	Shipping History	Address Book	Shipping Cart (1)
	SHIPPING ADD	DRESS	PACKAGE INFO	SERVICE	PRICE
(1 of 1)	DAVE HORVAT	н	Ship Date: 05/24/19	Priority Mail® 3-Day	
Edit	IDNR, MASON	STATE NURSERY	Value: \$0.00	Medium Flat Rate Box	\$14.35
Delete	17855 COUNTY TOPEKA II 61	Y ROAD 2400 E 567-9419	From: 94111	USPS Tracking®	Free
	101 210, 12 01			Label Total	\$14.35
Delete All				Order	Total (1) \$14.35
Create An	other Label				Next: Billing Information

- Review the order to ensure the information is correct
- Click "Next: Billing Information"

Billing Information

	ORDER TOTAL
	\$14.35
	*indicates a required field
	Paying with a credit card or PayPal [®] is safe and easy. All the information is encrypted and transmitted securely. For more details, see our Privacy Policy .
(● Use PayPal [®] PayPal
$\left(\right)$	Complete your transaction with PayPal®. (You'll return to USPS.com to print your labels)
	"I courty that my mailing complies with all applicable laws and U.S. Postal Service® regulations and does not contain any nonmailable or undeclared hazardous materials. Almost all hazardous materials (e.g., many common consumer and household goods such as perfumes and aerosols) are prohibited in international mail and in shipments sent to APO, FPO and DPO locations. Mailability information can be found in <i>Publication 52, Hazardous, Restricted, and Perishable Mail Manual, the Domestic Mail Manual and the International Mail Manual.</i> These publications are available online at http://pe.usps.gov.

Electronic products containing lithium batteries, such as cell phones and laptops, are subject to additional restrictions in international mail.

Any mailing containing cigarettes or smokeless tobacco must be presented to a Postal ServiceTM employee at a Retail Post OfficeTM location for proper acceptance.



- Check the box agreeing that your shipment doesn't contain anything hazardous or illegal
- Select "Pay Pal" as the payment method
 - Team Leads can get the Pay Pal login information from State Coordinator or P2



- You have now paid for the postage
- 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
- See Seed Collection Protocol provided by your state lead for all of these instructions





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Project Wingspan Seed Collection



The Project Wingspan mobile

⊁ 🚇 🛜 🔤 📶 69% 🖻 8:17 PM

Survey123

GIS App

- Partnership with University of Arkansas CAST
- Allows us to geospatially track the seed collections
- Database for site/plant photos
- Database will help with the seed distribution effort
- Providing valuable modeling information to CAST
- **Does not** replace the paper form







seed collection tool. By UAglobaladmin Created: 4/28/19

Last modified: 5/22/19

This Seed Collection Report supports field data recording and coordination of volunteer project teams for the Project Wingspan effort. Thanks to all of the Project Wingspan volunteers!

The survey design team is Amber Barnes from the Pollinator Partnership and Brian Culpepper with CAST at the University of Arkansas.

Developed and hosted by the Center for Advanced Spatial Technologies (CAST) at the University of Arkansas, Fayetteville.

ArcGIS Developer: R. Brian Culpepper, CAST 2019 (version 2.1.1) May 22, 2019 Fayetteville, AR



🗚 😰 💲 🔤 📶 17% 🖬 6:00 Pl

Survey123 for ArcGIS

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

▶ 1-2 designated Seed Collection Reporters per team

The paper 'field data sheet' <u>still needs to be</u> <u>completed</u>, and copies filed/kept by the State Coordinator or Team Leaders

The browser version compatible with entering data from your desktop can be found here: https://arcg.is/10ye09





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 <u>UPDATES</u> to your *Survey123 for ArcGIS* (mobile app), before fieldwork day or data upload day

POLLINATOR

PARTNERSHIP

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.

Username: pwstate_wi Password: pwseed2019

POLLINATOR PARTNERSHIP

Normally you will use the credentials provided to you by your State Coordinator and Brian Culpepper

Today, we're using a set of temporary credentials <u>made</u> <u>specifically for this training</u>.



Sign In

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



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

- Click "Download Surveys"
- To download: Select "Project Wingspan Seed Collection"
- 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'
- However, once you return to cell service or wi-fi, you <u>must</u> 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

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Project Wingspan

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ArcGIS Developer: R. Brian Culpepper, CAST 2019 (version 2.1.1) May 22, 2019 Fayetteville, AR



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



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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







 \vee \odot

Seed Collection Date: * When did the Seed Collection occur?

Friday, May 24, 2019

State Name: * Which State is this seed collection located?

County Name: *

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

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 Coordinator will assign each team an unique Collection Team ID





7.) State and County fields are drop down menus

- You must select your state first to get the appropriate list of counties
- To get to your county quickly, start typing the name and the drop box will narrow down the choices for you
- Once State and County have been filled out, your Collection Zone color will automatically fill in with the correct color code.
 - You can use this to fill out the paper form if you don't remember the collection zone color.



PW Seed Collector v2.1 💸 🚍

which state is this seed collection located?

Collecti The Project

Locate the Enable Locat County Name: *

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

the map to p long. collecte

No Location Position sou

© OpenStree

Collection Zone:

The Project Wingspan Collection Zone for this county is:

Locate the Seed Collection Site:

Enable Location Services on your mobile device, and ZOOM into the map to precisely locate the site. The map marker is the lat./ long, collected when you submit this survey.

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Target Pla Were any oth please.

WGS84 Geographic (lat long): 41.79669972939172 -79.40046167001206

	Seed Species Collected: *
Collectior	
Include peop	

8.) Locating the collection site:

- Make sure you turn on the location services on your device before opening the app.
- If location services are not on, the app will not be able to auto locate you and will show up red. You will need to close the app, turn the location on, and then re-open the app.
- If the top of the map is green you should be good to go!



POLLINATOR PARTNERSHIP

980 8 00 . 15% 🗖 6:11 PM PW Seed Collector v2.1 which state is this seed collection locate County Name: * Please select a county or begin typing to shorten the pick list Collection Zone: The Project Wingspan Collection Zone for this county is: Locate the Seed Collection Site: Enable Location Services on your mobile device, and ZOOM into the map to precisely locate the site. The map marker is the long, collected when you submit this survey Locate the Seed Collection Site: 🚜 🚍 able Location Services on your mobile device, and ZOOM into the ma precisely locate the site. The map marker is the lat./long. collected whe you submit this survey. OpenStreetMap con Search location or map coordinate WGS84 Geographic (lat long) 41.79669972939172 -79.40046167001206 Seed Species Collected: *

41.796700°N 79.400462°W

0 * 0 ?

11% 🖬 6.29 PM

8.) Locating the collection site:

- To auto-locate: select the bullseye on the small map
- If you have bad satellite reception, you may want to check the location to ensure accuracy of your point.
 - Tap the map this will open the map up larger
 - You can toggle between the blue arrow and bullseye buttons to switch between auto-locate and manual-locate

POLLINATOR



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 yellow check mark at the bottom-right of the screen to confirm your location



POLLINATOR



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

To assist with plant ID, you can see its key features from the plant profiles by clicking the small image next to the name of the species



11.) Photos can be submitted in two ways:

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

Note:

- The first three photo fields are necessary for <u>each</u> seed collection report.
 - Collection Site
 - Plant
 - Seed
- The last three are optional.
 - Leaf
 - Data Sheet
 - Social Media Photo



Summary of Survey Workflow:

- Start collecting
- ► Fill out the form
- Set location
- Take photos

Report

- Double check that all data is correct
- Two Choices: Either
 - Save in Drafts or
 - hit the checkmark to Submit this

 Survey Completed

 Your device is online

 Would you like to send the survey now?

 Send Later

 Send Now

 Continue this survey

state Name: *



POLLINATOR

PARTNERSHIP



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





- Number of surveys in circle
- Retry until survey is successfully

- Loss of cell signal or wifi



POLLINATOR PARTNERSHIP





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By UAglobaladmin Created: 4/28/19 Last modified: 5/22/19

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ArcGIS Developer: R. Brian Culpepper, CAST 2019 (version 2.1.1) May 22, 2019 Fayetteville, AR

Collect

Sent

Successfully sent surveys:

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





Recorder Name: p2MOuser Training Recorder Email: brian@cast.uark.edu

Project Wingspan Seed Collection

Lastname: Culpepper Collection Team - SiteID: Ok.TEST.34 Collection Number: 3 Seed Collection Date: 05/22/2019 County: Green Lake_WI Collection Zone Type: blue Seed Type: common_boneset Target Species Blooming: New_England_aster,black_eyed_Susan Volunteers: 4 Site Notes: Android tab A samsung test

Latitude: 37.33573690316514 Longitude: -95.02244880877092

p2mouser brian@cast.uark.edu

Thank you for Volunteering for the Project Wingspan project!

Here are some PW Site Visit Planning Resources

Driving Directions to this Seed Collection Site

Weather at the Seed Collection Site

Email receipt

Once your survey is successfully sent, it will automatically generate a summary receipt that will be sent to the email attached to your account



You are now ready to collect data!

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

Use the "Contact Tech Support" button within the Seed Collection Report too.

Any questions?

Project Wingspan Resources

Email Technical Support

CAST

University of Arkansas 2019

A copy of this PW seed collection report will be sent via email. KEEP YOUR ORIGINAL fieldwork forms too.

POLLINATO



Survey123

for ArcGIS













Meet The Species!







Asclepias spp., Milkweeds



Butterfly milkweedIAsclepias tuberosaI

Poke Milkweed Asclepias exaltata POLLINATOR PARTNERSHIP


Asclepias syriaca, common milkweed



Asclepias incarnata, swamp milkweed



Asclepias verticillata, whorled milkweed







Note: While considered common in all other PW states, *Asclepias verticillata* **should not be collected in Pennsylvania** due to potential change in legal status.

Asclepias tuberosa, butterfly milkweed









Asclepias exaltata, poke milkweed



POLLINATOR

Don't be fooled



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
- Echinacea purpurea
- Ratibida pinnata
- Rudbeckia hirta



Heliopsis helianthoides, ox-eye sunflower





Coreopsis tripteris, tall coreopsis







Don't be fooled!

Helianthus spp. - sunflowers



The phyllaries can also be helpful, as sunflowers often have many rows of overlapping green phyllaries.



The best feature to differentiate between tall coreopsis and sunflower species is their leaves: Sunflowers have simple (noncompound leaves).



Coreopsis palmata - prairie coreopsis



The disk flowers of prairie coreopsis (and many other coreopsis species) are yellow, opposed to the deep purplemaroon disk flowers of the tall coreopsis. Prairie coreopsis is much shorter (1-2.5' tall) and the leaves are lobed rather than compound.





Echinacea purpurea, **purple coneflower**







Note: While considered common in all other PW states, *Echinacea purpurea* should not be collected in Pennsylvania due to potential change in legal status.

Ratibida pinnata, yellow coneflower



Note: While considered common in all other PW states, *Ratibida pinnata* should not be collected in Pennsylvania due to potential change in legal status.





Rudbeckia hirta, black–eyed Susan





Cephalanthus occidentalis, buttonbush







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LSU AgCenter- Adam Agosta http://www.rnrisu.edu

Composite seeds that fly away

- Cirsium discolor
- Eupatorium perfoliatum
- Euthamia graminifolia
- Liatris spicata
- Liatris aspera
- Symphyotrichum laeve
- Symphyotrichum novae-angliae
- Vernonia gigantea



"Whoa! Watch where that thing lands we'll probably need it."



Cirsium discolor, field thistle









Don't be fooled!

Cirsium vulgare - bull thistle



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-Floral bracts curl outward and narrow into sharp points. Stems and leaves are covered in hairs and thick spines.

Underside of the leaf is green and some leaf bases extend down the stem to produce spiny wings.

Cirsium altissimum - tall thistle



Eupatorium perfoliatum, **common boneset**



POLLINATOR PARTNERSHIP

Don't be fooled!

Eupatorium altissimum - Tall boneset



Eupatorium serotinum



Euthamia graminifolia, grass-leaved goldenrod













Eutrochium purpureum, **sweet joe pye weed**

POLLINATOR PARTNERSHIP

Don't be fooled!

Eutrochium fistulosa - hollow-stemmed joe pye weed



Key features that distinguish Eutrochium fistulosa:

Leaves are arranged in whorls of 4-7, but usually 5-6, on petioles up to 1/2" long. Stems vary from solid purple to purplish-green, are hairless, typically glaucous (have a white waxy film that easily rubs off), and are hollow. Large dome-shaped flower panicles up to 1-1.5' wide with 5-7 disk florets. Prefers full or partial sun and wet to moist soils and ranges from 3-9' tall. Prefers full-

part sun

Eutrochium maculatum - spotted joe pye weed



- Preference for full or partial sun and moist soils and tends to be shorter than E. purpureum.

Liatris spicata, dense blazing star









Prairie Moon Nursery



Liatris aspera, tall blazing star











Note: While considered common in all other PW states, *Liatris aspera* should not be collected in Pennsylvania

Amber Barnes

Don't be fooled!

Liatris cylindracea - cylindric blazing star





Key features that distinguish Liatris cylindracea:

Larger flower heads, 1/2 to 3/4" wide with 10-35 flowers per head. Bracts are scale-like and pressed flat, with an abrupt point at the tip and often brown to purplish.

Stems are hairless and leaves are thin at 1/8 to 1/2" wide.

Liatris pycnostachya - prairie blazing star



Key features that distinguish Liatris pycnostachya:

- Bracts are pinkish red and have narrow tips that curl back away from the flowers. - Leaves vary in size along the stem 1/2" at the base to 1/8" at the top, usually hairy. Liatris squarrosa - scaly blazing star



Key features that distinguish Liatris squarrosa:

Sparse flower heads along stem, only 1/2 to 1" wide with 15-45 flowers per head.
 Green/purple bracts, lined with white hairs bend outward from the flower and end in a point.

Stem is hairy and typically light green with darker vertical lines and only 1 to 2.5' tall. Linear hairy leaves vary in length about 1/2" at the base, to 1/6" at the top.



POLLINATOR



Symphyotrichum novae – angliae, New England aster



POLLINATO PARTNERSHI

Vernonia gigantea, giant ironweed



Don't be fooled!

Vernonia fasciculata - Smooth Ironweed



Collection of seeds from composite flowers that fly away







All the rest

- Chamaecrista fasciculata
 Geranium maculatum
- Monarda fistulosa
- *Pycnanthemum tenuifolium*
- Pycnanthemum virginianum
- Penstemon digitalis
- *Tradescantia ohiensis*
- Veronicastrum virginicum
- Zizia aurea



Chamaecrista fasciculata, partridge pea







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Geranium maculatum, wild geranium





Just right!





Uh oh! Too late! The seeds are gone!
Monarda fistulosa, wild bergamot







Penstemon digitalis, foxglove beardtongue



Pycnanthemum tenuifolium, narrowleaf mountainmint



Pycnanthemum virginianum, Virginia mountainmint











Tradescantia ohiensis, Ohio spiderwort











Veronicastrum virginicum, Culver's root









Zizia aurea, golden Alexander











Online Training:

Increase reach

Simple 6-step Process

MWALBI-Seed Collection	Poll × +					×
) C' Ш	C D pollinator.org/n	nwaebf/seed-collection		🗉 … 🛡 ☆	± W\ ⊡	≡
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HOME MWAEBE	MWAEBF-SEED COLLEC	IN	Mor	narch Wings Across Th	ie EBF	
≡ MWAEBF	About Seed Collection	Training Habitat Survey Tec	hnical Training Webinars			
Here for	our online traini	ng? Please follow the	ese steps:	Monarch Resource	es	
 Fill out our pre see how effective pre-assessment a 	e-assessment quiz. This will h e our online training has been. and post-assessment forms d	elp us understand your background wi This is not required, but we would app uring this training.	th seed collection and allow us preciate it if you filled out both t	to ABOUT MONARCHS PROTECTING MONARCHS BROCHURE	S	
2.) Watch our two give you an overv target species - h	IENT QUIZ o training webinars (found bel iew of our collection protocol ow to identify the plants and	ow). These will provide you with backg walk you through how to use our GIS collect seeds from them in the field	round information about our pr app, and inform you about our	oject, POLLINATOR LEARNING	CENTER	

Training is housed online at www.pollinator.org/wingspan/seed-collection



All these resources and more can be found on our online training page...

Download Center

Whether you have already attended our in-person training or are looking into our online training option, this is the place to download the resources you'll need, to learn about collecting seed for monarchs.

MONARCH WINGS ACROSS THE EASTERN BROADLEAF FOREST SEED COLLECTION MANUAL

PLANT PROFILES FOR THE 20 TARGET SPECIES



OUR IN-PERSON TRAINING POWER POINT SLIDE

20 TARGET SPECIES WITH BLOOM CHART

Project Wingspan 29 Target Plants for Seed Collection		Bloom Period											
Latin (Botanical) Name	Common Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zizia aurea	golden Alexanders				х	х	х						
Tradescantia ohiensis	Ohio spiderwort				Х	Х	Х	Х					
Geranium maculatum	wild geranium				Х	Х	Х	Х					
Penstemon digitalis	foxglove beardtongue					Х	х	х					
Asclepias syriaca	common milkweed						Х	Х	Х				
Asclepias exaltata	poke milkweed						х	Х	Х				
Cephalanthus occidentalis	buttonbush						х	х	х				
Asclepias incarnata	swamp milkweed						х	х	Х	х			
Asclepias tuberosa	butterfly weed						Х	Х	Х	Х			
Rudbeckia hirta	black eyed Susan						Х	Х	Х	Х			
Pycnanthemum virginianum	Virginia mountain mint						х	Х	Х	х			
Pycnanthemum tenuifolium	narrowleaf mountainmint						Х	Х	Х	Х			
Chamaecrista fasciculata	partridge pea						х	х	Х	х			
Ratibida pinnata	yellow coneflower						х	х	Х	х			
Heliopsis helianthoides	oxeye sunflower						Х	Х	Х	Х			
Asclepias verticillata	whorled milkweed						Х	Х	Х	х			
Veronicastrum virginicum	Culver's root						Х	Х	Х	Х			
Echinacea purpurea	eastern purple coneflower							Х	Х	Х			
Monarda fistulosa	wild bergamot							х	Х	х			
Eutrochium purpureum	sweet joe pye weed							Х	Х	Х			
Eupatorium perfoliatum	common boneset							Х	Х	Х			
Liatris spicata	dense blazing star							Х	Х	Х			
Euthamia graminifolia	grass-leaved goldenrod							Х	Х	Х			
Cirsium discolor	field thistle							Х	Х	Х	Х		
Liatris aspera	tall blazing star							Х	Х	Х	Х		
Vernonia gigantea	giant ironweed							Х	Х	х	Х		
Coreopsis tripteris	tall coreopsis							Х	Х	Х	Х		
Symphyotrichum laeve	smooth blue aster								Х	Х	X		
Symphyotrichum novae-angliae	New England aster								Х	Х	Х		

https://www.pollinator.org/wingspan/seed-collection



Next steps...

- If you're interested in becoming a Team Lead, Co-Lead, or Data Collector, please let us know!
- Your State Coordinator will be organizing the Collection Teams and will be in touch soon to assign each of you to the nearest team
- Team Leads will then introduce themselves to their team and contact them when seed collection events are in the works.
- We will continue training new collection team volunteers with our online training module soon and will send out an email when that resource is up and running!





Angie Doucette Wisconsin State Coordinator ajd@pollinator.org

Emily Yates Indiana State Coordinator ey@pollinator.org

(And rusty patched!!)



Mike Retterer Ohio State Coordinator mr@pollinator.org



Joe Hovis

Pennsylvania

State Coordinator

jh@pollinator.org

MINNINN MARK

Elizzabeth Kaufman Illinois State Coordinator and Habitat Coordinator ek@pollinator.org

POLLINATOR

PARTNERSHIP



Amber Barnes Native Plant Materials Coordinator ab@pollinator.org



oucette n State nator ator.org

Plant information for this presentation obtained from: <u>http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx</u> <u>http://www.illinoiswildflowers.info/</u>

Connie Crancer

Michigan State

Coordinator

cc@pollinator.org