



Goals for data collection

The data that you collect as part of the Time to Restore project will help our team to provide better guidance on when nectar plants bloom and seed, and how the timing may be impacted by climate change. Any data that you can collect on the flowering and seed timing of the priority species below will be very helpful. We are especially interested in when flowering and seeds start and peak. Learn more about Time to Restore: www.usanpn.org/TimeToRestore

Priority species list

wild bergamot (*Monarda fistulosa*)

cardinal flower (*Lobelia cardinalis*)

buttonbush (*Cephalanthus occidentalis*)

eastern purple coneflower (*Echinacea purpurea*)

common sunflower (*Helianthus annuus*)

green antelopehorn (*Asclepias viridis*)

showy milkweed (*Asclepias speciosa*)

tall blazing star (*Liatris aspera*)

See an [additional list of species](#) created by those working on pollinator restoration in the South Central Region.

Data collection platforms

We invite you to collect data on flowering and seed timing of these species in either of both of the following programs:



- Easy to pick up and use
- Great for species ID, one-time observations, casual visitors, visiting a place you won't regularly return to
- Submit data via the app, photos allowed
- [Training videos available](#)



- Requires more training and set-up to get started
- Great for repeated observations on the same plants, capturing timing of start and peak of flowering/seeding
- Submit data via the app or paper datasheets and then online, no photo submissions
- [Training course available](#)

Time commitment for this project

We appreciate any amount of data you can collect as part of this project. You could spend a couple minutes submitting photos of nectar plants in flower to iNaturalist. Or set up a *Nature's Notebook* site with a couple plants and spend 10 minutes a week doing regular data collection. How much time you spend is up to you! We anticipate that this project will be ongoing for several years.

Contact the Time to Restore state leads for help with data collection trainings

New Mexico - Kim Eichhorst, kimde@unm.edu

Oklahoma - Jane Breckinridge, jbreckinridge@hotmail.com

Louisiana - Gail Bishop, lgbishopos@gmail.com

Nature's Notebook guidelines for sites, plants, and phenophases

For *Nature's Notebook*, you will make repeated observations on the same individual plants (or patches of plants for species where it's hard to tell apart individual plants) at the same sites.

Select a site that is:

- Convenient – the easier your site is to access, the more likely you are to visit it. Set up a site in your backyard or another place you frequent like a park or trail.
- Uniform and representative – try to pick a site that represents your area that has a similar ecosystem type. You can create multiple sites if you have different ecosystems.

We are most interested in flowering and fruiting phenophases for this project. There is a detailed definition for each of the questions on the *Nature's Notebook* datasheet.

Do you see...	Date:
	Time:
Initial growth	y n ? ___
Leaves	y n ? ___
Flowers or flower buds	/ n ? ___
Open flowers	/ n ? ___
Fruits	/ n ? ___
Ripe fruits	/ n ? ___
Recent fruit or seed drop	y n ? ___
Check when data entered online:	<input type="checkbox"/>
Comments:	

Open flowers

One or more open, fresh flowers are visible on the plant. Flowers are considered "open" when the reproductive parts (male stamens or female pistils) are visible between or within unfolded or open flower parts (petals, floral tubes or sepals). Do not include wilted or dried flowers.

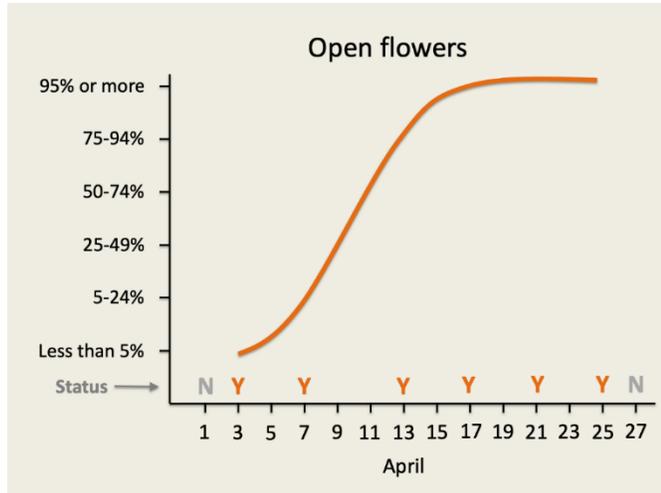
More...

What percentage of all fresh flowers (buds plus unopened plus open) on the plant are open? For species in which individual flowers are clustered in flower heads, spikes or catkins (inflorescences), estimate the percentage of all individual flowers that are open.

- Less than 5%
- 5-24%
- 25-49%
- 50-74%
- 75-94%
- 95% or more

Remember, the goal is to capture the **start** of open flowers/ripe seeds and the **peak**.

- A precise estimate of the **start** of flowering will depend on making more observations near the beginning of flowering/seeding. The shorter the period between your last "no" and your first "yes", the better
- An estimate of the **peak** will depend on answering questions about "What percent of flowers/fruits are open/ripe?"



To get regular updates on data collection on the Time to Restore species and other nectar species across the country, sign up for the Nectar Connectors Campaign! You will receive emails approximately once a month with tips on observing, results from data collection, and more!

www.usanpn.org/nn/NectarConnectors



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