Phenology Questions Answered!

Nature's Notebook webinar, March 11, 2014

Nature's Notebook Webinar: How a phenology program can help you meet science and outreach objectives
March 11, 2014
Webinar Q&As

Q. What are some examples of science questions from other groups?

Here are some other groups, and the science questions they are using phenology to answer:

California Phenology Project: https://www.usanpn.org/cpp
- How do iconic, widespread, and ecologically important species of the California flora respond to variation in climate?

Casey Trees: https://www.usanpn.org/nn/casey-trees
- Does the timing of leaf-out, flowering, and fruit ripening at our tree farm in rural VA vary from the timing of these events in the same species of trees in urban Washington, DC?
- What is the timing of leaf out and leaf senescence for the trees planted in the urban area?

Audubon Arizona: https://www.usanpn.org/nn/az-audubon
- Track changes in species diversity and richness within Audubon Arizona's migratory bird and pollinator garden within the City of Phoenix's Rio Salado Habitat Restoration Area
- Inform future decisions regarding future plantings and projects within the garden
- Engage the urban population, specifically youth, in scientific monitoring and data collection
- Provide homeowners with a means to track pollinator diversity/abundance in their yards

Tortolita Middle School, Tucson, Arizona:
- Is the timing of select phenophases for our monitored desert species the same at our school as it is at the nearby Tucson Audubon Mason Center?

Primate Anthropology Methods Class, 300-Level, University of Arizona
- What is the phenology of select desert species in the campus cactus garden in the University of Arizona Arboretum, and how is plant phenology related to animal phenology?
- How does phenology influence habitat interactions?
- How does the phenology of the monitored species vary from year to year?

Santa Rita Experimental Range, Tucson, Arizona:

- Does the lilac that is part of the Cloned Lilac Project (https://www.usanpn.org/nn/cloned-lilacs) at the Range leaf out and flower earlier than the common lilac at the same site, and is location a factor?

You can see how other schools and universities are using *Nature's Notebook* on our Partners page: https://www.usanpn.org/partners/educational.

Q: Do all participants making observations on a group site need to have their own *Nature's Notebook* login?
Yes, we recommend that each group member have their own *Nature's Notebook* account, as opposed to a group having a single account. This allows administrators to see who entered what data, and better manage their groups. Having records tied to an individual observer is also helpful for certain data quality measures. Our staff can help you get this set up – contact us at groups@usanpn.org for assistance and more information.

Q. What do you recommend is the easiest way for members of the public utilizing a phenology trail to submit their observations?
You can either download and print paper datasheets from within your Observation Deck, then upload observations on our website, or use our smartphone applications for Android or iPhone to collect and submit observations (download from iTunes and Google Play Store). Learn more about our smartphone applications: www.usanpn.org/nn/mobile-apps.

Q: Is there a way to link multiple public sites?
Yes, you can link multiple public sites by setting them up within a group. You will need to be an administrator of the group to create a public site for the group. Remember, a public site is one to which anyone registered in *Nature's Notebook* can submit data.   More info: https://www.usanpn.org/shared_sites.

Q: Are the Phenology Walks at various sites on a Phenology Trail typically organized by different groups or by one?
Typically, Phenology Trails are collaborations of multiple organizations. However, a single group could set up a system of sites as a Phenology Trail. Learn more about Phenology Trails at Phenology Trails Resources (https://www.usanpn.org/node/21081) and see more information about the organizations partnered with the Tucson Phenology Trail at http://www.usanpn.org/tucson-phenology-trail.

Q: It would be really useful if monitors/volunteers could view the maps that administrators create when establishing a site. Is NPN considering making those maps viewable by everyone?
We don't currently have a way to host those maps, but as an administrator, you are welcome to share maps with your group members. We've created one for our local Tucson Phenology Trail using Google Maps, where we've added all of the sites and it is now interactive. Here is a link to that map: Tucson Phenology Trail in Google Maps.

Q: Do you have examples of how to use the downloaded excel data to "translate" back to the volunteers to keep them enthused and show them the annual/longer term data?

We use this method frequently in our campaigns. You can see some of the results we shared with participants in our campaigns last year on the specific campaign webpages found via our Join a Campaigns page: https://www.usanpn.org/nn/campaigns. You can also learn how to download and summarize data by watching the videos on our Data Download Page: https://www.usanpn.org/results/data.

Our upcoming webinar "What came first, the flower or the bee? Learn to explore patterns in space and time with our Visualization Tool" on July 8 might be useful for these needs as well.

Q: Is there a USA-NPN local phenology leader list serv?

Yes, we are currently setting this up. Please email LoriAnne at lorianne@usanpn.org if you are interested in joining the listserv. She will send an email to everyone on the list when it is ready sometime in the next few weeks.

Q: Where can I get *Nature's Notebook* plant tags?

If you are interested in tags for your group, please email lorianne@usanpn.org.

Q: Can high school kids be phenology leaders or do you need to be an adult?

A high school student with the right motivation could definitely be a phenology leader, especially with the guidance of a teacher. We have no age requirements for being a leader. In fact, becoming a local phenology leader would be a great project for a 4-H Teen Leader, a teen Girl or Boy Scout, or other youth member of a youth development program. Contact lorianne@usanpn.org for more details about how to support a teen in your area in this role.

Q: How do I download USA-NPN data?

You can download the data you have submitted yourself from within your Observation Deck, and choose to only download data for a particular site from within the "Edit Site" tab. As an administrator you can download data for a group or submitted by a particular observer. You can also download all of the data in the National Phenology Database, choosing to filter by date range, species, location, and more: https://www.usanpn.org/results/data. We welcome you to use the data to answer your own science questions!

Our upcoming webinar "What came first, the flower or the bee? Learn to explore patterns in space and time with our Visualization Tool" on July 8 might help answer these questions.

Q: Is there a way to get data pertaining to the observers at our sites?

As an administrator for a group, you can view the observers who are part of that group, how many observations they have each submitted, and view the data they have submitted for the

group. However, if your site is set up as a public AND a group site, and users join the public group (rather than affiliate themselves with a Partner Group) you will not see information about the user. If you want to track your users because they are a group of volunteers and/or students, be sure to give them the information about your group so they may sign up that way.

If you want data that is not part of a group you belong to, you can select the "Observer" Optional Metatdata Sheets at the bottom of the Data Download Tool: www.usanpn.org/results/data. Note that it is optional for each observer to enter details about themselves, therefore not all data will have details about the person who collected them. In addition, our privacy policy prevents us from releasing personally identifying information (email, name, address) about our observers via the publicly available Data Download Tool.

Q: How do you use the national data? Any articles to read?
Professional scientists are using data curated by the USA-NPN to answer questions about changes in phenology related to climate change, changes in species distributions, and predictions about how plant function may change in future decades. You can see peer-reviewed articles using data collected through *Nature's Notebook* here: www.usanpn.org/pubs/results. You can also see examples of how our data is being used here: www.usanpn.org/nn/vignettes.

Q: Do you have any marine sites? What about sites in estuaries?
We have many coastal sites, but no off-shore sites at this time. You can see where all of our sites are located with our Visualization Tool: http://www.usanpn.org/data/visualizations.

Q: Do you offer guides with images of the phenophases for any of the species?
We are currently finishing up a Botany 101 guide, which will have basic information about leaves, flowers, fruits, and more. We are also developing a "Phenophase Primer" that will have helpful tips for identifying phenophases in each of our "functional group" categories (deciduous trees, conifers, evergreens, cacti, etc.). We will be widely advertising once these resources are available, this spring and summer.

Q: How do you check for errors in your data?
At the present, data curated in the National Phenology Database are available as-is. Scientists using our data are often skilled in understanding what data are "outliers" and know how to filter the data to meet their needs.

We have many quality control measures in place to ensure that good data are entered in the National Phenology Database. Several local efforts are comparing volunteer and professional records, to shed light on observer accuracy. We plan to develop quality assurance measures (checking the data after entry for errors and outliers), but this is currently the responsibility of the data end user. You can read about the measures we have taken for Quality Assurance and Quality Control here: https://www.usanpn.org/files/shared/files/USA-NPN_QA-

QC_tech_info_sheet_3-2012.pdf.

Q: Do you measure size of habitat, abundance, or size of critters?
When you set up a site in your Observation Deck, you can enter details about how large the site it, its proximity to urban areas and water, and more. You can also enter details about individual plants, including uploading photos of your individual plants. We don't have the capability to have observers upload details of animals at this time, though you can enter this sort of information in the "comments" field for each observation. On our datasheets, in addition to questions about phenophases, we have intensity and abundance questions for plants and animals. All of the information entered becomes part of the "metadata" and is accessible via the Data Download Tool.

Q: Do you provide methods for observers to estimate diversity of their site?
No, at this time we don't provide methods to estimate diversity. However, an observer who downloads data that includes abundance information would be able to use several different methods to calculate diversity. You can read more about these methods here: http://en.wikipedia.org/wiki/Diversity_index.

Q: If you have a question about another observer's data, can you contact them directly?
If you are an administrator for a group, you can see the emails of all the members of that group, and contact them to ask questions about their data. The data from individual observers and other groups is listed confidentially, so you would not be able to contact other people about their data. If you have a question or concern about data collected, we welcome you to contact us at nco@usanpn.org, and we will attempt to get touch directly with the observer to resolve the issue.

Q: What is the relationship between *Nature's Notebook* and Project Budburst? Specifically do the two programs share data or not? Is it a problem if the same plant observations get entered at both sites?
USA-NPN and Project Budburst operate as complementary programs, supporting each other's efforts. The primary goal of Project Budburst is education and outreach, with an important secondary goal to collect useful data on plant phenology and make it freely available. USA-NPN's *Nature's Notebook* engages a variety of audiences, from high-schoolers to professional scientists, in making observations of plant and animal phenology using protocols designed to inform current scientific and resource management concerns. The primary goal of *Nature's Notebook* is collecting long-term observations following rigorous protocols that are made freely available to support scientific discovery and inform management, while a secondary goal is education and outreach. Moreover, *Nature's Notebook* is designed to be implemented as a long-term monitoring program, complementary to specific science and outreach goals within an organization or site.

Q: Can you link to other citizen science projects, especially birds, started years ago by state agencies?
The *Nature's Notebook* infrastructure does not presently offer the capacity to directly link to other programs. However, it is certainly possible to collect data for multiple projects at the same site. Some programs have integrated data collection for multiple programs into a single site; Nature Up North (natureupnorth.org/) is a good example. We invite other citizen science programs to register with us on our Phenology Friends page: https://www.usanpn.org/nn/connect/friends. If you have a legacy dataset, you can share it with us via our registry tool: https://www.usanpn.org/data/share.

Check out our list of future webinars to see what's next!
www.usanpn.org/nn/connect/Webinars2014

Helpful links:
Data visualization tool: www.usanpn.org/data/visualizations
Data download tool: www.usanpn.org/results/data
Geographic affiliates, find a local contact: www.usanpn.org/partner/geo_affiliates
Register a legacy data set: www.usanpn.org/data/share