

# USFWS Phenology Network

## A Collaboration Between the USFWS and the USA-NPN

Are you looking for a standardized way to measure changes in phenology at your Refuge? A way to engage visitors or community partners while also meeting management objectives? The USA National Phenology Network (USA-NPN) offers a data collection interface that can be adapted to suit the needs of your Refuge.



*Nature's Notebook* is an online phenology monitoring program for recording observations of plant and animal life cycle events. It allows for the collection and storage of long-term data sets for use in decision-making and management.

Users have access to:

- Standardized protocols and profiles for more than 1100 species
- Data entry tools, including web-based and mobile apps
- Data download tools
- Spatial and temporal visualization tools
- Educational materials for use in public engagement programs

[usanpn.org/fws](http://usanpn.org/fws)

### How can *Nature's Notebook* help you monitor on your Refuge?

*Nature's Notebook* provides standardized methods and protocols used to inform management decisions, information about potential changes in key biological events, and ecosystem impacts. More specifically, *Nature's Notebook* can store data to inform:

- Invasive species control
- Restoration projects
- Pest management
- Controlled burns
- Migration and breeding seasons

*Nature's Notebook* provides a one-stop shop for phenological data collected on your Refuge. You can store existing phenology monitoring data or upload new data. The USA-NPN Science and Education Staff can help you design a science and education program that meets the changing needs of your Refuge. Your monitoring program can be expanded to involve local Refuge visitors and Friends Groups, who will help answer local science questions through making regular observations.



*Nature's Notebook* is a great way to engage people in scientific discovery.



## How do I get started?

### 1. Sign up

Visit [usanpn.org/fws](http://usanpn.org/fws) to create an account and monitoring site for your Refuge. Instructions on how to do so can be found on the Learn How To Observe page ([usanpn.org/nn/guidelines](http://usanpn.org/nn/guidelines)). You can also create a group that allows multiple people to contribute data at a specific location, each using their own *Nature's Notebook* account.

### 2. Create a monitoring program

What phenology information are you currently collecting? Could you create a science question to guide data collection and engage visitors in Refuge management?

Select plant and animal species to monitor based on your specific management needs. Consider engaging an active Friends Group or other local community organization in the monitoring process. Find a champion for your monitoring program interested in supporting the Refuge and regularly collecting data.

### 3. Collect data

Once you have established a site and species to monitor in *Nature's Notebook* you can use traditional paper data sheets in the field. We also offer Android and iPhone mobile applications, to make data collection even more efficient, and easier.

Use our templates to design interpretive signs for outreach programs and check out our resources for training volunteers.

### 4. Download and Visualize Data

Compare data from your Refuge to other Refuges and other locations across the country. Use the USA-NPN Phenology Visualization Tool to explore patterns in the data ([usanpn.org/data/visualizations](http://usanpn.org/data/visualizations)), or download customized datasets ([usanpn.org/results/data](http://usanpn.org/results/data)). Integrate your science and outreach programming and use our models for sharing results with your community.

For further information on how to get started with your Refuge Science and Management staff, contact: Jana Newman ([jana.newman@fws.org](mailto:jana.newman@fws.org)), USFWS I&M Chief or Erin Posthumus, ([erin@usanpn.org](mailto:erin@usanpn.org)) USA-NPN FWS Liason.

For information on how to get started with your Visitor Services or education staff, contact LoriAnne Barnett ([lorianne@usanpn.org](mailto:lorianne@usanpn.org)) USA-NPN Education Coordinator.

