



# How to Observe Nature's Notebook Plant and Animal Phenology Handbook

September 2013



**USA National Phenology Network**

# **USA National Phenology Network Plant and Animal Observation Handbook**

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# How to Observe

## *Nature's Notebook* Plant and Animal Phenology Handbook

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*Nature's Notebook* is the USA National Phenology Network's (USA-NPN) plant and animal phenology observation program. **Phenology** refers to recurring plant and animal life cycle stages, or phenophases, such as leafing and flowering, maturation of agricultural plants, emergence of insects, and migration of birds.

Phenology records can help us understand plant and animal responses to climate change. Changes in phenological events like flowering and bird migrations are among the most sensitive biological responses to climate change. Across the world, many spring events are occurring earlier—and fall events are happening later—than they did in the past. However, not all species are changing at the same rate, and some are not changing at all. These different shifts in timing are shaking up ecosystems and altering interactions and processes (like pollination and carbon cycling) that took place in the past. The valuable data collected using *Nature's Notebook* will help scientists and managers identify which species are changing the timing of their life cycles, and how, so that we can better predict the impact of changing phenologies on natural systems and people.

### About This Handbook

This Handbook is intended to be a reference for participants in *Nature's Notebook*. It includes information that may be useful out in the field; it is intended to be taken to your observation sites, at least as you are getting started.

As part of *Nature's Notebook*, you are invited to observe both plants and animals. Some of the information in this document is specific to plant phenology observations; headings for this information are preceded by a leaf icon 🌿. Other information is specific to making animal observations; headings for this information are preceded by a bird icon 🐦. Information that pertains to either plant or animal phenology observations has standard black text headings.

Additional *Nature's Notebook* training materials are available on the *Nature's Notebook* website:

- **Online instructions and training videos** for creating an account, joining an existing group, and recording plant and animal phenology can be found at [www.usanpn.org/nn/guidelines](http://www.usanpn.org/nn/guidelines).
- **Frequently Asked Questions** can be found at [www.usanpn.org/nn/faq](http://www.usanpn.org/nn/faq).
- Lists of other resources for observing, including suggested field guides and web resources (link for this??)
- An online **Glossary** can be found at [www.usanpn.org/glossary](http://www.usanpn.org/glossary)
- **Botany and Phenophase Primers** (coming soon)

You can also email us with questions at [support@usanpn.org](mailto:support@usanpn.org) or with biological/plant and animal phenology questions at [observe@usanpn.org](mailto:observe@usanpn.org).

## Overview

As part of *Nature's Notebook*, you are invited to observe both plants and animals. Observing phenology is very similar for both, however, because animals move around and plants do not, there is one important difference in the way we ask you to observe the two groups:

 **For plants:** Observe the same individual plants each time you visit your site. For example, you should observe the same red maple in your back yard all through the year.

 **For animals:** Create a checklist of animal species and look for all of them each time you visit your site. For example, if your checklist has robins, wood frogs, and tent caterpillars on it, you should record whether or not you see or hear those species anywhere in your site each time you visit.

Whether you choose to observe both plants and animals or only one or the other, there are several steps to setting up your observation program. More information is provided on each of these steps in the sections below and can also be accessed on the website via the following link:

[www.usanpn.org/nn/guidelines](http://www.usanpn.org/nn/guidelines).

There are three main steps to get started with a *Nature's Notebook* observation project. They include more details about how to get set up online, how to choose a site and species to monitor, how to monitor, and how to record your observations on both paper datasheets and the *Nature's Notebook* online interface. This handbook provides information about each of these steps as well as screen shots to guide you through the process.

This *How to Observe Handbook* corresponds to the online materials found at [www.usanpn.org/nn/guidelines](http://www.usanpn.org/nn/guidelines). Both follow the same outline:

1. **JOIN *Nature's Notebook***
2. **SET UP YOUR ACCOUNT**
  - a) Choose a Site
  - b) Choose Plant and Animal Species
  - c) Set Up Your Sites and Species Online
3. **START OBSERVING!**
  - a) Get Organized to Go Outside
  - b) Record Plant Observations
  - c) Record Animal Observations
  - d) Submit Observations Online

## Let's begin!



## 1. JOIN *Nature's Notebook*

Your first step is to create a *Nature's Notebook* account. You will create a unique user name and password. Visit the main *Nature's Notebook* webpage to get started, [www.nn.usanpn.org](http://www.nn.usanpn.org), click on the **BECOME AN OBSERVER** callout and follow the instructions on the screen (Figure 1).

Figure 1 The Join *Nature's Notebook* Screen where you'll create your account.



Once you have created an account, you will be able to log in to *Nature's Notebook* and access your personal *Nature's Notebook* **Observation Deck** (see Figure 3 on the next page). This is the page you will return to for all activity. From this page, you can register a site, register individual plants, create an animal checklist, and enter your observation data. These key functions in *Nature's Notebook* are found underneath the **Sites**, **My Plants & Animals**, **Details for this Organism**, and **Enter Observations** boxes. The links that you can click on will always appear in **ORANGE**. Returning to your **Observation Deck** is easy. The link is accessible on each page in *Nature's Notebook* by clicking on the **OBSERVE** drop down menu and then **My Observation Deck**.

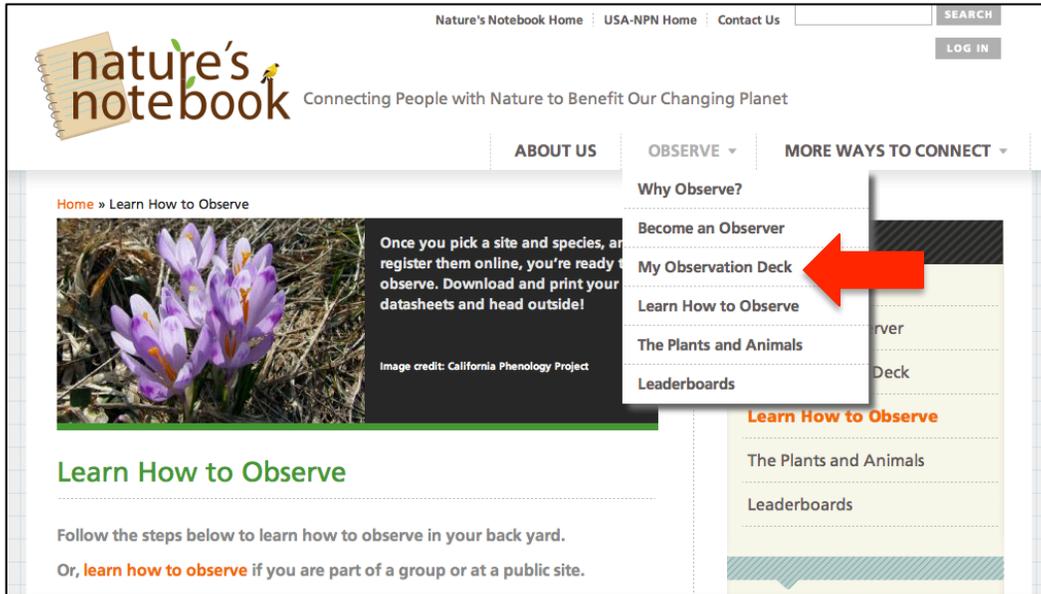


Figure 2 Return to Observation Deck

[Nature's Notebook Home](#) | [USA-NPN Home](#) | [Contact Us](#) | [Logout](#)

Connecting People with Nature to Benefit Our Changing Planet

[ABOUT US](#) | [OBSERVE](#) | [MORE WAYS TO CONNECT](#)

[Home](#) » [Observation Deck](#)

## lorianne.barnett's Observation Deck

Earn Badges by Contributing!

Hover over each badge for details.

### Observations

Enter your observations below or via smartphone. You can edit the sites, plants or animals you've selected anytime.

**Sites**

My Sites

- LA's Home
- Joseph Wood Krutch Garde
- Saguaro BioBlitz 2011 (P)
- Stella Olson Park (P)
- Sherwood High School (P)
- Tucson Audubon Mason Cer

[Edit Site](#) »

[Add a New Site](#) »

[Add a Public Site](#) »

**My Plants & Animals**

- blue paloverde-1
- yellow paloverde-1
- common green darner
- curve-billed thrasher
- mourning dove
- yellow warbler
- American robin
- black-chinned hummingbird
- eastern collared lizard
- American bullfrog

[Add or Edit Plants](#) »

[Add or Edit Animals](#) »

[Sort Plants & Animals](#) »

[Print Field Datasheets](#) »

**Details for this Organism**

blue paloverde-1

blue paloverde (Parkinsonia florida)

Patch? No

Wild? Unknown

Gender? Unknown

[View Species Profile](#) »

[Print Field Datasheet](#) »

[Print Phenophase Definition Sheet](#) »

**Enter Observations**

[Enter Observation Data](#) »

[Download My Data \(489\)](#) »

**Nature's Notebook mobile apps for Android and iPhone.**

**Observe**

[Why Observe?](#)

[Become an Observer](#)

**My Observation Deck**

[Learn How To Observe](#)

[The Plants and Animals](#)

[Leaderboards](#)

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**MY ACCOUNT**

You are currently logged in as **lorianne.barnett**

[MY ACCOUNT DETAILS](#)

[FAQs](#) | [Terms of Use](#)

Nature's Notebook is a project of the USA National Phenology Network.

Figure 3 Full Observation Deck

## 2. SET UP YOUR ACCOUNT

### a) Choose a Site

A site is the area within which you will look for your chosen animal species, and which encompasses any plants you choose to observe. When you select a site, such as your yard or a nearby natural area, consider these guidelines:

**Convenience:** You will be visiting your site(s) regularly, so it should be convenient and easily accessible.

**Representative location:** As much as is practical, the selected site(s) should be representative of the environmental conditions for your area.

#### What is a representative location?

We welcome all observations, even if your site is unusual for your area, but we encourage people to select sites that are representative of the local environment when possible. For example, if possible, we recommend that you select a site in a relatively flat or gently sloping area. We also recommend that you avoid areas that are subject to drifting snow or funneled or channeled winds. The site should ideally be neither excessively dry nor wet for your area. In forested areas, the site should be generally similar to the surrounding forest, reflecting the overall canopy composition and stature. If you are observing wild plants, we suggest you avoid locations where plants are watered or fertilized. If your site is unusual for your area, just record the unusual characteristics in the comments section of the *Nature's Notebook* Add a New Site page when you register your site.

**Uniform habitat:** The conditions of your selected site(s) should be relatively uniform across the site. If you would like to observe two adjacent but distinct habitats, please document them as separate sites. For example, a wetland adjacent to or surrounded by a drier grassland or forest should be documented as a separate site from the grassland or forest.

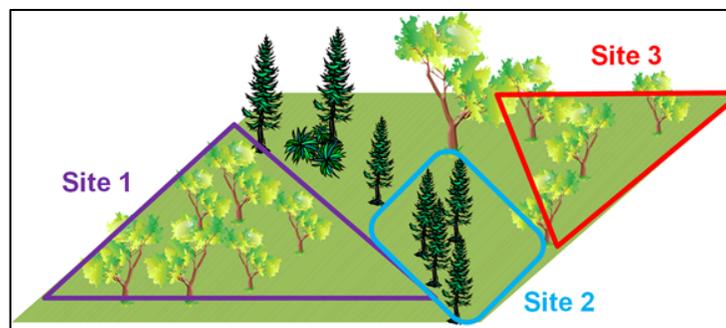


Figure 4 Example of adjacent sites separated by forest type

In this example, the area has been divided into three sites: Site 1 is deciduous forest, Site 2 is conifer forest, and Site 3 is deciduous forest.

**Appropriate size:** A site should be *no larger than 15 acres* (6 hectares or 250 x 250 meters, or the size of a pixel from a land surface satellite image), a square with sides the length of 2 ½ football fields. A site can certainly be smaller than this, and larger areas can be divided into multiple sites.

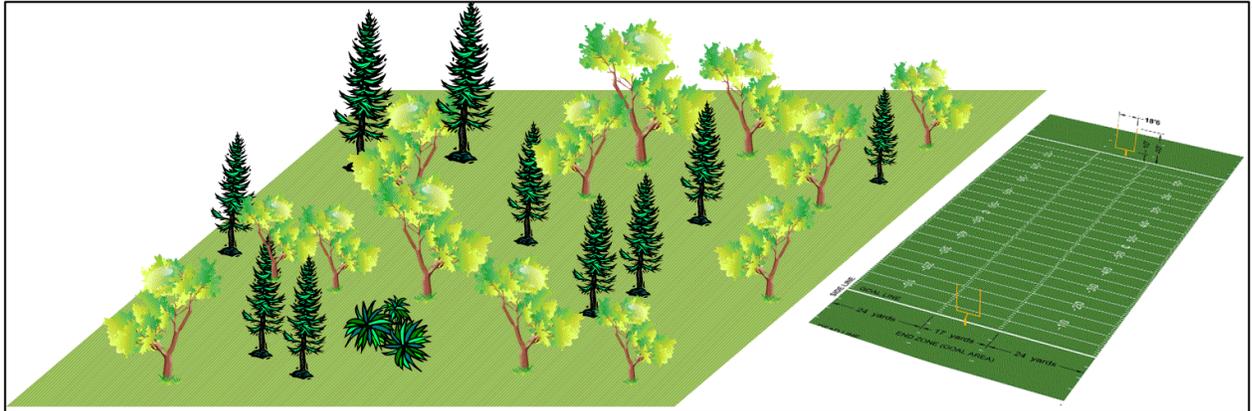


Figure 5 Illustration of an appropriate size for a site

In this example, the site is slightly larger than the length of one football field, so it is well within the recommended 15-acre size limit.

#### How do I choose an appropriate size for my site?

The best size for your site depends on the scale of your landscape and the distance over which you can easily see or walk. It also depends on whether you are observing animals or only plants. For plants, a site is the area that surrounds the individual plants you are observing. For animals, a site is the area where you look for the animals on your checklist. If you are observing both plants and animals, your site(s) can serve in both of these ways.

**If you are observing both 🌿 plants and 🐦 animals or 🐦 only animals:** Because you will be reporting observations of animals you see or hear *in your site*, your site can include the area that you can see and hear well while standing still or the area that you can walk in a relatively short amount of time. If you are observing in an open grassland or near a body of water, your site might be the maximum recommended size (15 acres), because you may be able to identify animals that are far away. In contrast, if your site is in a dense forest, it might be relatively small, as you may not be able to identify species at great distances.



Figure 6 Open Grassland site and Dense Forest Sites

If your site is in open grassland or at a lake or coastline, you may be able to see well and identify animals that are far away. Your site might be as large as the maximum recommended size (15 acres). If your site is in a dense forest, your site might be quite small because you aren't able to see far.

Even if you can identify animals over a large area, an area should be divided into different sites if it includes habitats that are obviously different. For instance, if you are making observations at a pond in a meadow, the pond and the meadow should be registered as separate sites. In that case, just report your animal observations for the site at which you saw or heard them, for example, at either the pond or the meadow.

 **If you are observing only plants:** For plants, the size of your site does not matter much as long as the conditions are pretty similar throughout your site. If you are observing just one plant, your site can simply be the small area immediately around that plant, say within 3 feet of the plant. If you are observing several plants near one another, you can consider them all to be at one site, as long as the site conditions are pretty similar and the site is **no larger than 15 acres** or 6 hectares.

When selecting the plants to observe at your site, you will want to strike a balance between how much time it will take to walk between plants, while ensuring that the individual plants that you are observing are not too close together. If you choose to observe multiple plants, we recommend that you select plants that are not direct neighbors – that is, selected plants should not be closer than two or three times the width of one of the plants.

**Proper permission:** If you do not own the property where the site is located, you must get permission from the landowner before marking any plants or reporting the site location information (such as latitude/longitude coordinates).

Many public agencies encourage observations of this kind and would be glad to know that you are reporting your observations to *Nature's Notebook*. However, you should get permission to make observations from the appropriate department of the federal government, state, or municipality that has responsibility for the property. Land managers often issue written permits for land access, which will help ensure that you can mark your sites and plants and can regularly visit your site.

### Mark your site

Regardless of whether you are observing only plants, only animals, or both, you will make your observations repeatedly at the same site(s) over time. You will want to somehow mark your site(s) so that you can find it again in the future.

Because plant monitoring requires that you **observe the same individual plants repeatedly**, you will also need to mark each plant so that you can find it on each visit. We recommend that you mark each individual plant with a **unique label**. For example, you could mark pieces of flagging tape with "red maple-1", "red maple-2", etc. and then tie them to each of the red maples you are observing.

Remember that if you do not own the property where your site is located, you must get permission from the landowner to put up any markers.

### How can I best mark my site?

There are many options, but the most important thing is that you mark your site so that you can find it again in the future. For most sites, it is probably easiest to mark the four corners with colorful flagging, scrap cloth, or something similar. You can also use natural or man-made landmarks, like the edge of a yard, big rocks, a bend in a trail, a road, or something similar, to define the boundaries. You will need to replace your markers periodically as they weather and become unreadable. Also, remember that if you are observing a site on public land, you will need to get permission before marking the site.



Figure 8 Site marker-forestry tape and rebar

## b) Choose Plant and Animal Species

Choose one or more species from our list of plant and animal species. For plants, we encourage you to select at least one **species from our annual campaigns** (<https://www.usanpn.org/nn/connect/region>). For animals, we recommend that you select several species that occur in your local area or in your state.

Make sure that you have correctly identified the plant and animal species at your site before reporting your observations for those species online.

### How do I identify my plants and animals?

Correct plant and animal identification is important when reporting your observations in *Nature's Notebook*. We know it can be tricky to identify a plant or animal, and luckily there are many field guides and online resources that can help. Many communities also have gardening, birding, native plant or naturalist groups, cooperative extension offices, nature centers, local colleges, herbaria, state or national parks, or wildlife refuges where you can find people to help identify plants or animal in your area.

If you are uncertain of your plant's identity, you can certainly record your observations on a datasheet until you have identified it ([see FAQ "Can I start observing a plant if I am unsure which species it is?"](#)). **Please do not record the information in the database until you are sure you are observing the correct species.**

If you uncertain whether an animal you saw was a species on your list that you are observing, it is best to record your observation of that species as uncertain by filling in the question mark (?) on your data sheet (see section 3 b & c, [Record Plant and Animal Observations](#)). The USA-NPN National Coordinating Office staff is small, so unfortunately, we cannot visit your site or identify your plant or animal from a photograph, but we will continue to add more information to our website to help



make identifying plants and animals, and their phenophases easier.

Here are some resources that may help you to identify species:

#### Online field guides

- Discover Life's ID nature guides ([www.discoverlife.org](http://www.discoverlife.org))
- eNature ([www.enature.com/home](http://www.enature.com/home))
- Arbor Day Foundation (for trees, [www.arborday.org/trees/whattree](http://www.arborday.org/trees/whattree))
- Smithsonian Institution's *Encyclopedia of Life* ([www.eol.org](http://www.eol.org))

#### Other online resources for plants

- USDA PLANTS ([www.plants.usda.gov](http://www.plants.usda.gov))
- Lady Bird Johnson Wildflower Center ([www.wildflower.org/explore](http://www.wildflower.org/explore))

#### Other online resources for birds and animals

- All About Birds ([www.allaboutbirds.org](http://www.allaboutbirds.org))
- Patuxent Bird Identification Infocenter  
(<http://www.mbrpwrc.usgs.gov/id/framlst/infocenter.html>)
- US Fish and Wildlife Service Educator's Page  
(<http://www.fws.gov/educators/educators.html>)
- National Cooperative Extension Resources ([www.extension.org](http://www.extension.org))

#### Field Guide books

Look for plant or animal field guides at a local or online book store. Field guides that are particular to your region are often the best choice.

#### What can I do if the plant or animal I would like to observe is not on the recommended species list?

The *Nature's Notebook* species list includes plants and animals that are important to observe for a variety of reasons, including their ecological and economic importance, conservation value, importance as game species, association with health issues such as allergies, or importance to ecosystem services such as food supply, and major partner priorities.

We do regularly revise the species list to meet research objectives. In the end, our goal is to have a deep dataset on a relatively small number of species indicative of a changing climate. A dataset with a lot of data on a few species can be of greater value to researchers than a dataset with sparse data on many species.

We welcome your suggestions for additions or changes. Our data management team reviews these



requests on an annual basis, usually in the fall. To make a species addition suggestion, make a comment on the species list, or ask a question about a plant or animal, please email [observe@usanpn.org](mailto:observe@usanpn.org).

In the meantime, if you would like to start observing a plant or animal not currently on our species list, you can observe that species using a datasheet appropriate for a similar species, and submit your observations to *Nature's Notebook* later if we decide to add that species to the list. You may also consider participating in one of the many other observation programs that are tracking the phenology of particular groups of plants and animals (view a list of other observation programs at <https://www.usanpn.org/nn/connect/friends>).

### **Select individual plants**

At your site(s) select one or more individuals of each of your chosen plant species to observe. Choose plants that appear to be healthy, undamaged, and free of pests and disease. If you want to observe several individuals of the same species, try to select individuals that are **not direct neighbors**, but are still growing in a **similar environment**.

For [annuals](#) (which only survive one growing season) and [biennials](#) (which survive for two growing seasons), avoid choosing the first or the last seedling to emerge in the spring since they may not be representative of the larger population at your site.

### **How many individual plants of the same species should I observe?**

For most observers, we recommend observing between one and three individuals of the same plant species at a site. Observers at research sites may wish to choose three to five individuals per site. Observing multiple individuals helps to give scientists an idea of the variation in phenology among individuals at your site. In some years and for some phenophases, multiple individuals will exhibit identical timing in their phenology, and in other years or phenophases they will not. Even if all your individuals seem to exhibit the same timing, that is still interesting to know and valuable data to collect!

When you choose the number of individuals to observe, you should consider the time it will take to make the observations. If you do decide to observe multiple individuals of the same species, try to select plants growing in a similar environment (for example, have similar amounts of sun or shade), but which are not direct neighbors—selected plants should not be closer than two or three times the width of one of the plants. For example, an observer might select three lilacs growing in his or her yard, each growing in full sun and spaced three plant widths apart from each other. If the lilacs are growing as a hedge, this would mean every third lilac plant could be selected. If you are observing the same species at multiple sites but have limited time, you may want to observe multiple individuals of each species at one of the sites, and only observe one of each species at the other sites.



Figure 9 Three creosote bush plants selected for monitoring in an observer's back yard.

**Are there other things I should consider when selecting my plant(s)?**

Yes. Although we welcome all observations, we encourage observers to avoid selecting plants that are closer than 20 feet to a road or building. Also, please read the "Special Considerations for Observing" section of the species profile to find out if there are other considerations for your plant species. For example, some species grow clonally and form large clumps of stems growing from the same roots. If your plant can be [clonal](#), try to choose individual stems from different clumps. Where it is not possible to follow these guidelines for a specific individual, mention that in the comments section of your *Nature's Notebook* [Add or Edit Plants](#) page online.

**How can I best mark the plant(s) that I am observing?**

For trees and shrubs, you can attach flagging tape or small, inconspicuous aluminum tags (which you can buy at a hardware store or forestry supply company) to the trunk or a branch on each plant. For grasses and [forbs](#), you can place labeled toothpicks, popsicle sticks, or skewers in the ground next to each plant, or loosely tie colored string around the base of the plant. However you mark your individual plants, you will want to make sure you do not change the growing conditions of the plant. For example, avoid placing a broad stake next to a small plant that would shade it or cause root damage. You will need to replace your markers periodically as they weather and become unreadable.

**What if the plant I am observing dies?**

If an individual dies or is obviously declining in health (when others of the same species around it are still healthy), you should select a new individual to observe. However, be sure to report the old individual as dead on your *Nature's Notebook* [Add or Edit Plants](#) page and add the replacement as a new plant with a different nickname. If you are observing any [annual](#) or [biennial](#) species at your site, you will need to select a new plant on a regular basis since the individual plants die after one and two years, respectively.



Figure 10 Recently dead red glacier lily



Figure 11 Using aluminum plant tags, wooden stakes, and colored toothpicks to mark plants

### What is 'patch monitoring', and how do I set up a patch?

For small plants that grow in large masses of individual stems, it can be difficult to single out a few individuals to observe over time. Instead you can set up a patch of designated size and report on the phenophases for the patch as a whole. This method works well for grasses, clonal species that tend to grow as a groundcover, annuals, and very small forbs that tend to grow in clumps of individuals.

To set up a patch, mark the four corners of a square within the area the species takes up over the ground. We recommend a square that is three feet (or one meter) on each side, but the square can be smaller (such as one foot on each side) if the species does not cover an area as large as nine square feet (or a square meter). When you register the plant on your Nature's Notebook, **Add or Edit Plants** page, simply click the check box for **Patch?** to indicate you are observing a patch rather than a single individual, and report the size of your patch. If the species covers enough area at your site, you could create several patches to observe separately just as you might choose several individual trees of the same species to observe.

### c) Set Up Your Sites and Species Online

As you collect data during the season, you will need to log in to *Nature's Notebook* and enter the observations you have recorded. When you first visit *Nature's Notebook* online, you will need to follow these steps to get set up **before** you can begin to enter your observations.

#### Register your site

##### Add a personal site

To register a site, click **Add a New Site** link under the Sites box on your **Observation Deck**. On the **Add a New Site** page, enter a name for your site and use the map interface to pinpoint its location. You can locate your site by entering an address (which will be automatically geo-located on the map), by clicking directly on the location on the interactive map, or by typing the latitude and longitude into the boxes below the map.

Below is an example of where you can find the **Add a New Site** link on your **Observation Deck** and an example of the **Add a New Site** Screen.

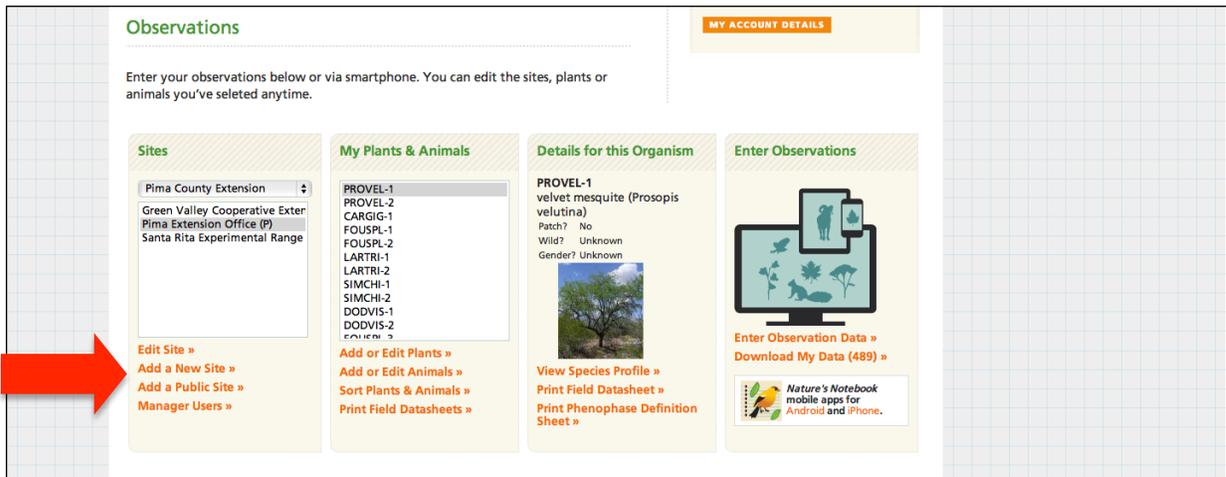


Figure 12 Add a New Site link on your Observation Deck

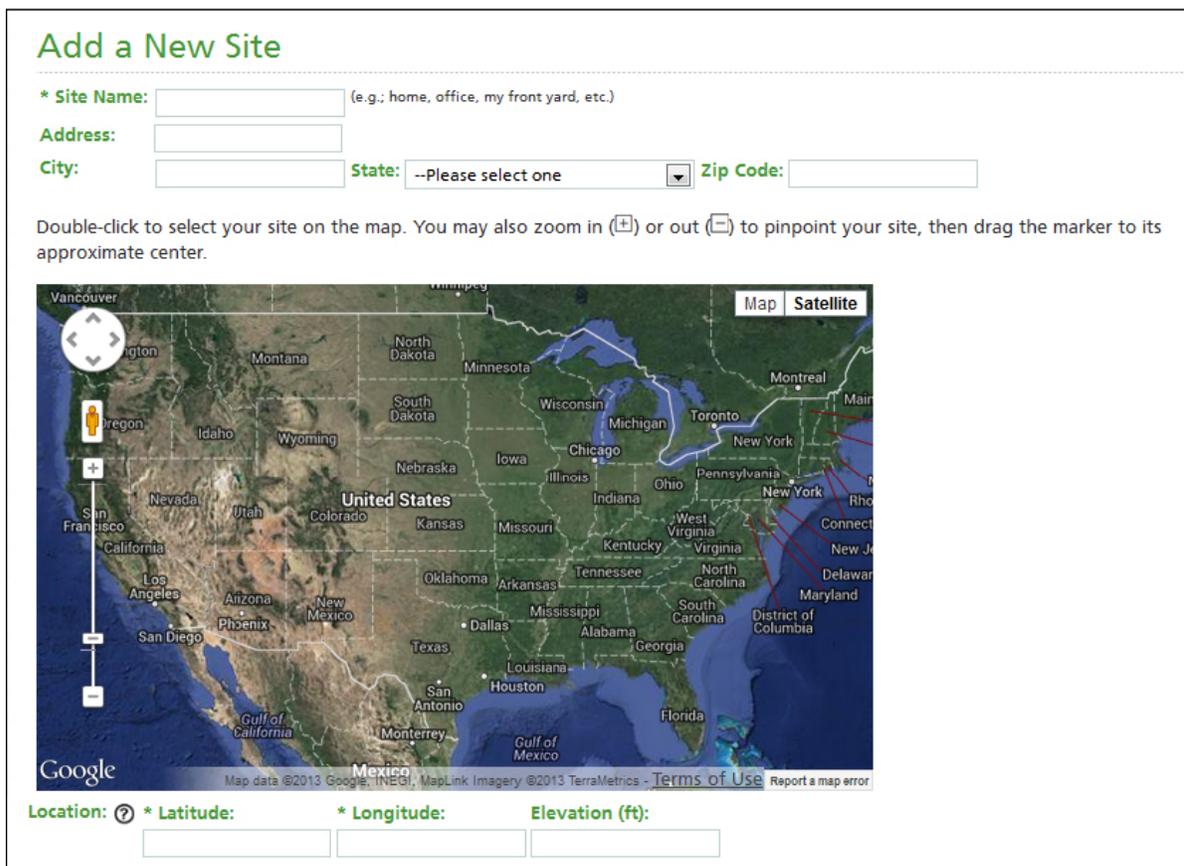


Figure 13 Add a New Site Page in Nature's Notebook

Please fill out as much of the “Optional Additional Information” about your site as possible. This additional information helps scientists to better interpret the observations you make at your site. There are **three tabs** for overall information about the site, information specific to plant observation at the site, and information specific to animal observation at the site. You can find more information about each question by holding your cursor over the **?** icon.

**Optional Additional Information**  
Please answer as many of the following questions as you can. Hover over the ? symbol for further explanation of the choices. If you do not know how to best answer a question for your site, please leave it blank.

**Overall** Plants Animals

The degree of development surrounding the site can best be described as: ?  
--Please select one

This site is best described as: ?  
--Please select one

How close is the nearest paved or maintained dirt road to the site? ?  
--Units

How close is the nearest permanent body of water to the site? ?  
--Units

What is the area of the site? ?  
--Units

Comments:

CREATE SITE

Figure 14 Optional Information Page – Overall Tab

**Optional Additional Information**  
Please answer as many of the following questions as you can. Hover over the ? symbol for further explanation of the choices. If you do not know how to best answer a question for your site, please leave it blank.

Overall **Plants** Animals

Answering these questions about your sites will help the scientists who use your data on plant observations.

If there are trees at this site, they can best be described as: ?  
--Please select one

Is this site on or near a slope? ?  
 No, the surrounding terrain is relatively flat  
 Yes, and the site is...  
 On the top of the slope or on a ridge  
 In the middle of the slope  
 At the bottom of the slope or in a valley between slopes

If yes, the slope faces: ?  
--Please select one

Comments:

SAVE CHANGES

Figure 15 Optional Information Page – Plants Tab

**Optional Additional Information**  
 Please answer as many of the following questions as you can. Hover over the ⓘ symbol for further explanation of the choices. If you do not know how to best answer a question for your site, please leave it blank.

Overall Plants **Animals**

Answering these questions about your sites will help the scientists who use your data on animal observations.

If there are domesticated animals outside at the site, please specify below. ⓘ

Cats  
 Dogs  
 Other  
 Other

Is there a flower or vegetable garden maintained at the site? ⓘ

Yes

If there are feeders, nest boxes or any other features designed to attract animals at the site please specify below. ⓘ

Bird Feeder  
 Nest Box  
 Fruit  
 Birdbath, fountain or artificial pond  
 Other, please specify below  
 Specify other features:

**Comments:**



Figure 16 Optional Information Page – Animals Tab and Save Changes Button

When you are done, click the **Save Changes** button. Now, when you return to your **Observation Deck** you will see the site just created appear in the **Sites** box under the My Sites drop down box. See the example below. From here, you can click the **Edit Site** button to return your site’s page at any time to edit the information you entered.

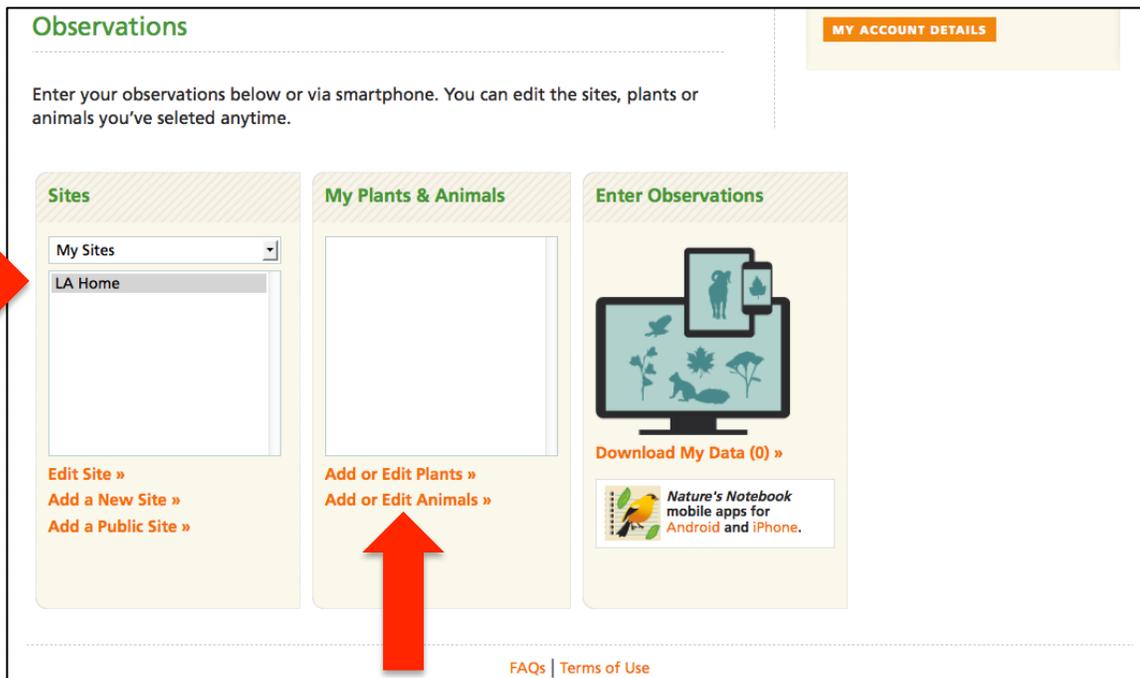


Figure 17 Registered Site in your Observation Deck and link to Add or Edit Plants

### Add or Edit Plants

Once you have successfully registered a site, you can add individual plants to that site by clicking **Add or Edit Plants** under the **My Plants & Animals** box.

To register a plant at your site, first ensure that the site to which you would like to register the plant is selected in the **My Sites** drop-down box under the **Sites** box. See the screen shot above. Clicking on the **Add or Edit Plants** link will take you to the page to add plant species. An example can be found below.

## Add or Edit Plants

Select the site where your plant is located. Site: SNS home

To add a plant, from the list of available plants, start typing its common or scientific name in the "Plant Species" box, and select from the list of possible matches.

Your plants:

[Add new plant](#)

buffelgrass  
 mesquite  
 yellow paloverde-1

**BUFFELGRASS**

\* Plant Species

\* Nickname

Patch?

Shade status

Wild?

Watered?

Fertilized?

Gender?

Planting date: Month (MM):   
 Day (DD):   
 Year (YYYY):

Delete?

Dead?

Plant Image

Comments

Figure 18 Add or Edit Plants Page

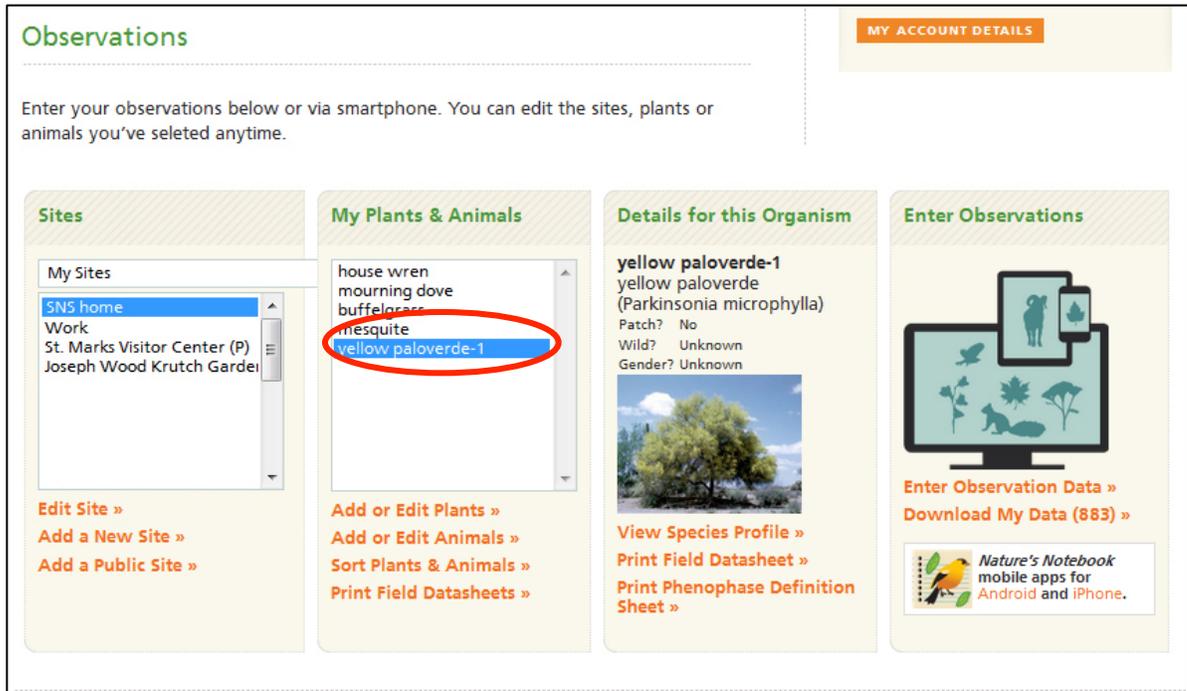
Click on the link for **Add new plant** and you will be presented with a box to begin typing the species of your choice. You can also search the list of 900 available species by clicking on the link for [available plants](#).

Then, begin typing the common or scientific name of the plant species in the Plant species box. In the example above, we are selecting buffelgrass. Once you start typing, you will be offered suggested plant species from the *Nature's Notebook* plant species list. Click on the plant species you would like to register, and it will automatically be given a nickname in the **Nickname** box. You can keep this default nickname or change it to something else. The purpose of the nickname is for you to distinguish between different individuals at your site, in case you register more than one individual of the same species.

Choose answers to the remaining questions, and add the planting date (of non-wild plants) if you happen to know what it is. Planting date is important primarily for individual plants that were planted within a year of when you began observations.

When you are done, click the **Save this plant button**, and the registered plant will appear in the **Your Plants** window on the left. Click the **Add new plant** link to add your next plant. To edit the information for any of your registered plants, at any time, select the plant in the **Your plants**

window, and its information will appear on the page. When you are done, return to your **Observation Deck** and notice that your plant has now been added to your **My Plants & Animals** box in the center of your Observation Deck.



The screenshot shows the 'Observations' page layout. At the top right is a 'MY ACCOUNT DETAILS' button. Below the title is a text box: 'Enter your observations below or via smartphone. You can edit the sites, plants or animals you've selected anytime.' The main content is divided into four columns:

- Sites:** A list of sites including 'SNS home', 'Work', 'St. Marks Visitor Center (P)', and 'Joseph Wood Krutch Garden'. Below the list are links: 'Edit Site »', 'Add a New Site »', and 'Add a Public Site »'.
- My Plants & Animals:** A list of species including 'house wren', 'mourning dove', 'buffelgrass', 'mesquite', and 'yellow paloverde-1'. The 'yellow paloverde-1' entry is circled in red. Below the list are links: 'Add or Edit Plants »', 'Add or Edit Animals »', 'Sort Plants & Animals »', and 'Print Field Datasheets »'.
- Details for this Organism:** Information for 'yellow paloverde-1' (yellow paloverde, *Parkinsonia microphylla*). It includes fields for 'Patch?' (No), 'Wild?' (Unknown), and 'Gender?' (Unknown). Below this is a photo of a tree and links: 'View Species Profile »', 'Print Field Datasheet »', and 'Print Phenophase Definition Sheet »'.
- Enter Observations:** A graphic of a computer monitor and smartphone displaying nature icons. Below are links: 'Enter Observation Data »' and 'Download My Data (883) »'. At the bottom is a banner for 'Nature's Notebook mobile apps for Android and iPhone'.

Figure 19 Plant species successfully added to the Observation Deck

### Deleting a Plant Species

Later on, if you need to delete a plant, or report that it died, you may do so by checking the appropriate box located just above the comments section for the plant. You will then be asked a number of questions as to why you are deleting the plant or when and how you think it died. When you are finished answering these questions, click on either the “Delete” or “Mark as Dead” buttons. See the example on the following page.

Home » Observation Deck » Add or Edit Plants

## Add or Edit Plants

Select the site where your plant is located. Site: LA Home [Add a new site](#)

To add a plant, from the list of [available plants](#), start typing its common or scientific name in the "Plant Species" box, and select from the list of possible matches.

**Your plants:**  
[Add new plant](#)

yellow paloverde-1

**YELLOW PALOVERDE-1**

\* Plant Species ?

\* Nickname ?

Patch? ?

Shade status ? Mostly sun

Wild? ? No

Watered? ? Yes

Fertilized? ? Yes

Gender? ? Unknown

Planting date: Month (MM):   
 Day (DD):   
 Year (YYYY):

**Delete?** ?

Dead? ?

Plant Image ADD IMAGE

Comments

SAVE THIS PLANT

[FAQs](#) | [Terms of Use](#)

Nature's Notebook is a project of the USA National Phenology Network.



Figure 20 The Delete a Plant Checkbox

### Add or Edit Animal Checklist

Once you have successfully registered a site, you can create a checklist of animals to look and listen for at that site by clicking [Add or Edit Animals](#) under the [My Plants & Animals](#) box on your **Observation Deck**.

To add animals to your checklist, first ensure that the site to which you would like to register the plants is selected in the **Site** drop-down box at the top of the [Add or Edit Animal Checklist](#) page, as in the example below.

### Add or Edit Animal Checklist

Create a list of animals you will look for at each site on each visit. Select among **available animals** from the box to the left and click 'Add to Checklist' to move them into your checklist. Save your checklist when you switch between species groups and when you're finished.

Site: **SNS home**

Filters

State:

Species group:

Partner:

Species Available			My Checklist		
Common Name	Scientific Name	Species Type	Common Name	Scientific Name	Species Type
American alligator	Alligator mississippiensis	Reptile	house wren	Troglodytes aedon	Bird
American black duck	Anas rubripes	Bird	mourning dove	Zenaidura macroura	Bird
American bullfrog	Lithobates catesbeianus	Amphibian			
American eel	Anguilla rostrata	Fish			
<b>American goldfinch</b>	Carduelis tristis	Bird			
American kestrel	Falco sparverius	Bird			
American oystercatcher	Haematopus palliatus	Bird			
American redstart	Setophaga ruticilla	Bird			
American robin	Turdus migratorius	Bird			
American shad	Alosa sapidissima	Fish			
American swallow-tail	Elanoides forficatus	Bird			
American toad	Anaxyrus americanus	Amphibian			
American woodcock	Scolopax minor	Bird			

[Click Here to Reorder Plants & Animals List](#)

Figure 21 Add or Edit Animal Checklist Page

Next, select animal species from the **Species Available** window on the left. You can filter the animals in this list by choosing options in the drop-down menus for “State”, “Species group” and monitoring “Partner”. Click the **Add to Checklist** button in the middle to move the selected species into the **My Checklist** window on the right. You can also use the **Remove** button to remove species from your checklist.

Once you are finished adding animals to your checklist, click the **Save checklist** button in the lower-left corner of the screen. **Be sure to save your checklist** before you change any filter choices.

Once you have successfully created an animal checklist for your site, you should see the animal species appear on your **Observation Deck** in the **My Plants & Animals** window, as in the example below.

**Observations**

Enter your observations below or via smartphone. You can edit the sites, plants or animals you've selected anytime.

**MY ACCOUNT DETAILS**

**Sites**

My Sites

- SNS home
- Work
- St. Marks Visitor Center (P)
- Joseph Wood Krutch Garden

[Edit Site »](#)  
[Add a New Site »](#)  
[Add a Public Site »](#)

**My Plants & Animals**

- house wren
- mourning dove
- buffalgrass
- mesquite
- yellow paloverde-1

[Add or Edit Plants »](#)  
[Add or Edit Animals »](#)  
[Sort Plants & Animals »](#)  
[Print Field Datasheets »](#)

**Details for this Organism**

**mourning dove**  
 mourning dove (Zenaida macroura)  
 Site: SNS home  
 Type: Bird

[View Species Profile »](#)  
[Print Field Datasheet »](#)  
[Print Phenophase Definition Sheet »](#)

**Enter Observations**

[Enter Observation Data »](#)  
[Download My Data \(883\) »](#)

*Nature's Notebook*  
 mobile apps for  
 Android and iPhone.

Figure 22 Observation Deck with Animal Species correctly added and the Sort Plants & Animals link.

You can always sort the order of appearance of the plants and animals in your **My Plants & Animals** list by clicking on the **Sort Plants & Animals** link. This allows you to move them up or down in the list. See below for an example.

## Sort Plants & Animals

Set the order of your plants and animals on your Observation Deck and Field Datasheets. Select one or more species and use the controls to change the plant or animal's position in the list.

Select the site where your plant is located. Site:  [Add a new site](#)

Species	Nickname	
velvet mesquite	PROVEL-1	FIRST
velvet mesquite	PROVEL-2	UP
saguaro	CARGIG-1	DOWN
ocotillo	FOUSPL-1	LAST
ocotillo	FOUSPL-2	
creosote bush	LARTRI-1	
creosote bush	LARTRI-2	
jojoba	SIMCHI-1	
jojoba	SIMCHI-2	
Florida hopbush	DODVIS-1	
Florida hopbush	DODVIS-2	
ocotillo	FOUSPL-3	
blue paloverde	PARFLO-1	
Anna's hummingbird	Anna's hummingbird	
black-chinned hummingbird	black-chinned hummingbird	
broad-tailed hummingbird	broad-tailed hummingbird	
callope hummingbird	callope hummingbird	
Costa's hummingbird	Costa's hummingbird	
rufous hummingbird	rufous hummingbird	
bumblebee	bumblebee	
cabbage white	cabbage white	
common buckeye	common buckeye	
Lyside sulphur	Lyside sulphur	
monarch	monarch	
orange sulphur	orange sulphur	
pipevine swallowtail	pipevine swallowtail	
queen	queen	
Sonoran bumble bee	Sonoran bumble bee	
valley carpenter bee	valley carpenter bee	
buffelgrass	buffelgrass-1	
blue paloverde	parflor	

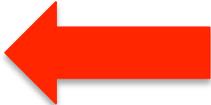


Figure 22 Sort Plants and Animals Page

### 3. START OBSERVING!

#### a) Get Organized to Go Outside

Now that you have set up your site outside and created your account online, you are ready to go out and observe. This section provides information about how to make observations on your datasheets and enter your observations into the online *Nature's Notebook* interface. You will find more information on the Nature's Notebook website, and we've got resources available to help you with basic botany and phenophase identification.

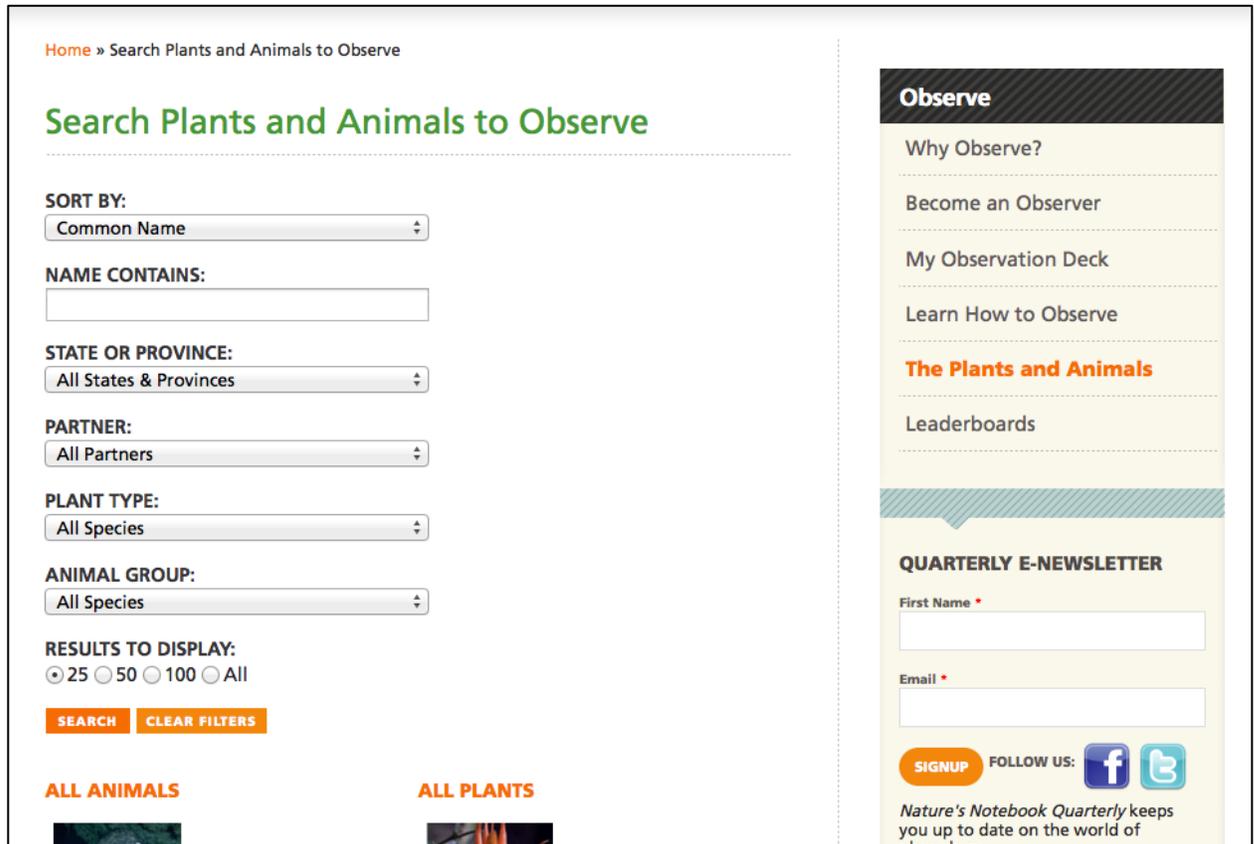
To assist you with phenophase identification and to create consistency throughout the database, the USA-NPN and *Nature's Notebook* staff have developed specific [phenophase](#) protocols and definitions for all species on the list. These phenophase definitions are unique to plant and animal type, and in some cases, to the species. All of the definitions are accessible on each species profile page online and can either be printed directly from there or via the **Observation Deck**.

Access the species profiles using **The Plants and Animals** link in the *Nature's Notebook* navigation menu.



Figure 23 The Plants and Animals Navigation Menu Selection

From **The Plants and Animals** you can enter a species of your choice and search for its availability in the system. The search page offers a number of ways to filter your search: by scientific or common name, by state, by partner, or by plant and/or animal type.



The screenshot shows a web interface for searching plants and animals. At the top left, there is a breadcrumb trail: [Home](#) » [Search Plants and Animals to Observe](#). The main heading is **Search Plants and Animals to Observe**. Below this, there are several filter sections:

- SORT BY:** A dropdown menu with 'Common Name' selected.
- NAME CONTAINS:** An empty text input field.
- STATE OR PROVINCE:** A dropdown menu with 'All States & Provinces' selected.
- PARTNER:** A dropdown menu with 'All Partners' selected.
- PLANT TYPE:** A dropdown menu with 'All Species' selected.
- ANIMAL GROUP:** A dropdown menu with 'All Species' selected.
- RESULTS TO DISPLAY:** Radio buttons for '25', '50', '100', and 'All', with '25' selected.

At the bottom of the filter section are two buttons: **SEARCH** and **CLEAR FILTERS**. Below the filters, there are two columns of results, each with a heading and a small image:

- ALL ANIMALS** (with a small image of a bird)
- ALL PLANTS** (with a small image of a plant)

On the right side of the page, there is a sidebar with a dark header **Observe**. Below the header, there is a list of links: [Why Observe?](#), [Become an Observer](#), [My Observation Deck](#), [Learn How to Observe](#), **[The Plants and Animals](#)**, and [Leaderboards](#). Below this is a section for a **QUARTERLY E-NEWSLETTER** with input fields for 'First Name' and 'Email', a **SIGNUP** button, and social media icons for Facebook and Twitter. At the bottom of the sidebar, it says: *Nature's Notebook Quarterly keeps you up to date on the world of observation.*

Figure 24 Search for Plants and Animals to Observe

Home » Search Plants and Animals to Observe

## Search Plants and Animals to Observe

[Search Species Home](#)

**SORT BY:**

**NAME CONTAINS:**

**STATE OR PROVINCE:**

**PARTNER:**

**PLANT TYPE:**

**ANIMAL GROUP:**

**RESULTS TO DISPLAY:**  
 25  50  100  All

**SEARCH** **CLEAR FILTERS**

[red maple \(\*Acer rubrum\*\)](#)

1 |

**Observe**

Why Observe?

Become an Observer

My Observation Deck

Learn How to Observe

**The Plants and Animals**

Leaderboards

---

**QUARTERLY E-NEWSLETTER**

First Name \*

Email \*

**SIGNUP** FOLLOW US:  

*Nature's Notebook Quarterly* keeps you up to date on the world of phenology.

 **Nature's Notebook** mobile apps for **Android** and **iPhone**.

Figure 25 Species Search page with red maple selected

The next figure demonstrates what you will see when you click on the link for [red maple \(\*Acer rubrum\*\)](#) and go to its species profile page. You will find the phenophase definition sheets including information about the species, where they can be found, links to more information, and the appropriate phenophase definitions. Click on the icon for datasheets to download a datasheet and phenophase definition sheet to take into the field with you.

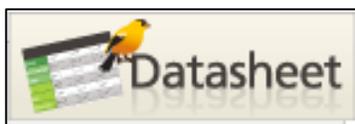


Figure 26 Datasheet icon on the phenophase definition page

## Acer rubrum

---

red maple

▼ **What does this species look like?**

**What does this species look like?:**  
 Red maple is a deciduous tree growing 30 to 90 feet tall. Its tiny, usually red, male and female flowers mostly occur separately on the same tree but occasionally can occur on different trees.

Red maple is often found in swamps and on moist soils, but can also thrive in drier habitats. It occurs on moist soils along stream banks, and in swamps, moist to drier woodlands, and occasionally on dry rocky hillsides and sand dunes. It is moderately shade-tolerant.

▼ **Why observe this species?**

Red maple is a USA-NPN calibration plant species. Calibration species have broad distributions and are ecologically or economically important. The NPN integrates observations on calibration species to get "the big picture" of plant responses to climate across the nation. In addition, this species is an allergen. Observations on its phenology will provide valuable information to benefit people with allergies and the public health community.

▼ **Where is this species found?**

**States & Provinces:**  
 AL, AR, CT, DC, DE, FL, GA, IA, IL, IN, KY, LA, MA, MD, ME, MI, MN, MO, MS, NB, NC, NH, NJ, NL, NS, NY, OH, OK, ON, PA, PE, QC, RI, SC, TN, TX, VA, VT, WI, WV



[click to enlarge](#)

▼ **Special Considerations for Observing**

If drought seems to be the cause of leaf color or fall for a plant, please make a comment about it for that observation.

This species has separate male and female flowers. If you know whether the flowers you are observing are male or female (or both), please make a comment about it for that observation.

Note that individuals of this species with only male flowers will not produce fruit.

▼ **Which phenophases should I observe?**

<b>LEAVES</b>	<p>Do you see...?</p> <p><b><i>Breaking leaf buds</i></b>                      One or more breaking leaf buds are visible on the plant. A leaf bud is considered "breaking" once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base. For <i>Acer rubrum</i>, leaf tips may appear reddish'</p>	
---------------	--	--



Figure 26 Species profile page for Red Maple

▼ Which phenophases should I observe?



LEAVES	Do you see...?
	<p><b>Breaking leaf buds</b></p> <p>One or more breaking leaf buds are visible on the plant. A leaf bud is considered "breaking" once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base. For <i>Acer rubrum</i>, leaf tips may appear reddish'</p> <p><b>How many buds are breaking?</b></p> <p>Less than 3;3 to 10;11 to 100;101 to 1,000;1,001 to 10,000;More than 10,000</p> <p>More...</p> <p><b>Leaves</b></p> <p>One or more live, unfolded leaves are visible on the plant. A leaf is considered "unfolded" once its entire length has emerged from the breaking bud so that the leaf stalk (petiole) or leaf base is visible at its point of attachment to the stem. Do not include fully dried or dead leaves.</p> <p><b>What percentage of the canopy is full with leaves?</b> Ignore dead branches in your estimate.</p>

Figure 27 Close up of phenophase definition sheet including abundance data

You can also access your phenophase definition and datasheets by clicking on the link for [Print Field Datasheets](#) via the **Observation Deck**. When you select a site in the **My Sites** box, all the plants and animals you registered to that site will appear in the **My Plants & Animals** box. When you select a plant or animal in this window, its information appears to the right under **Details of this Organism**. Buttons below these windows allow you to return to the [Add or Edit Plants](#) and [Add or Edit Animals](#) pages to make changes, sort the order in which individual plants and animals appear in your list, return to the species profile page in order to review the phenophases you are asked to observe for each plant or animal, and create datasheets.

Below is an example of all of the places these documents are accessible.

**Observations**

Enter your observations below or via smartphone. You can edit the sites, plants or animals you've selected anytime.

**MY ACCOUNT DETAILS**

**Sites**

My Sites

- SNS home
- Work
- St. Marks Visitor Center (P)
- Joseph Wood Krutch Garden

[Edit Site »](#)  
[Add a New Site »](#)  
[Add a Public Site »](#)

**My Plants & Animals**

- house wren
- mourning dove
- buffelgrass
- mesquite
- yellow paloverde-1

[Add or Edit Plants »](#)  
[Add or Edit Animals »](#)  
[Sort Plants & Animals »](#) 1  
[Print Field Datasheets »](#) 2

**Details for this Organism**

**mourning dove**  
 mourning dove (*Zenaida macroura*)  
 Site: SNS home  
 Type: Bird



[View Species Profile »](#) 3  
[Print Field Datasheet »](#)  
[Print Phenophase Definition Sheet »](#) 4

**Enter Observations**



[Enter Observation Data »](#)  
[Download My Data \(883\) »](#)

*Nature's Notebook*  
 mobile apps for  
 Android and iPhone.

Figure 28 Observation deck with accessible locations for printing species definition and datasheets From the *Nature's Notebook* Home page, you can sort your plants and animals (1), print field datasheets (2), return to the species profile page (3), and create datasheets (4).

For example, if you click on **Print Field Datasheets**, a window will appear prompting you to create all or some of the datasheets in your datasheet packet. Once you make a choice, a .pdf file will be downloaded (or you will be prompted to download it) on your computer. You can then print the datasheets to use for recording your observations in the field.

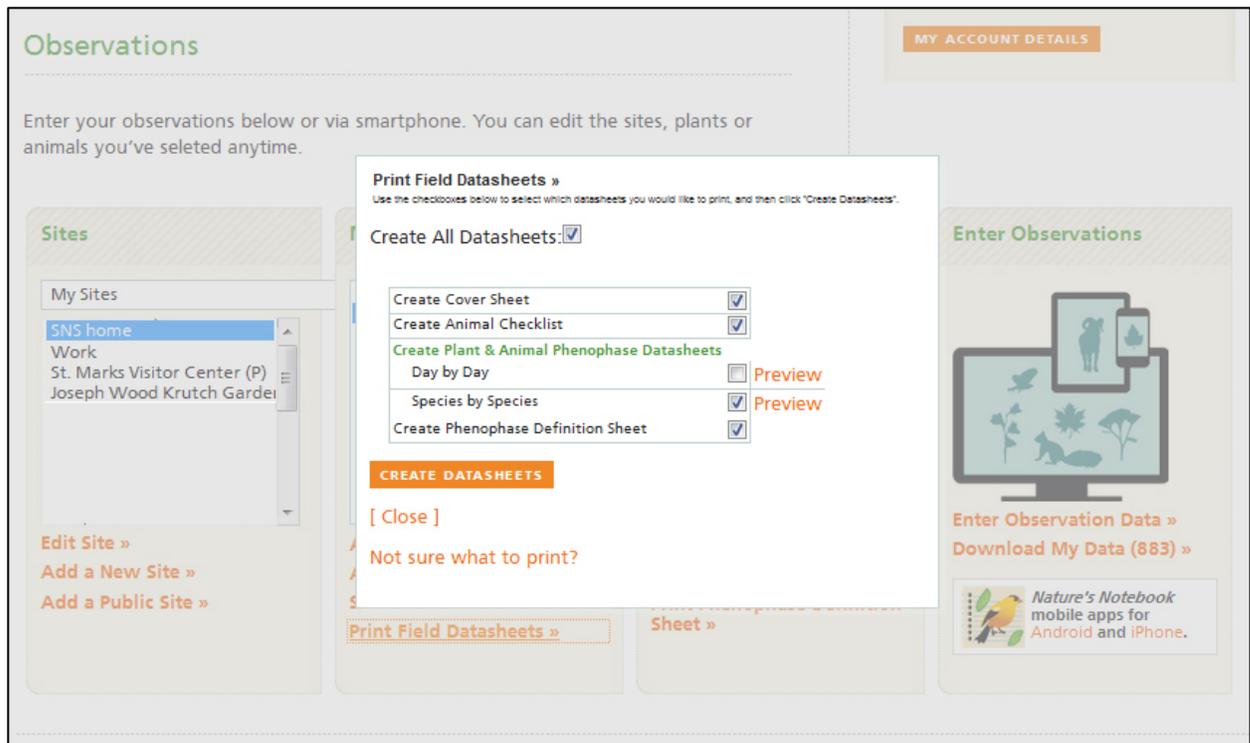


Figure 29 Create Species by Species Datasheet pop-up window

To begin we recommend you choose **Create All Datasheets** and print the entire packet for your site. The packet includes a **Cover Sheet**, an **Animal Checklist** (if you have added animals to your checklist), a **Plant Phenophase Datasheet** for each individual plant you are observing, and an **Animal Phenophase Datasheet** for each species of animal you are observing (see Appendix A, *Recording Phenology Observations: A concrete example of how to complete datasheets* for help).

We also provide the option of printing datasheets for a particular site on a day-by-day basis. This is useful for visits to public and shared sites, or for one time visits to a location. The day-by-day datasheets include all plant and animal phenophase data entry boxes in order they appear at the site. This method is also useful for site leaders who host workshops and introduce participants to collecting data on each species along a trail.

As you fill these up and need new datasheets for each plant and animal, you can generate them individually by selecting the plant or animal in the **My Plants & Animals** box on your **Observation Deck** and clicking on the **Create Single Datasheet (PDF)** button under the **Details for this Organism** window. A new **Cover Sheet** or **Animal Phenophase Checklist** can be printed by clicking on “Create Datasheets” and selecting your choice from the window that appears.

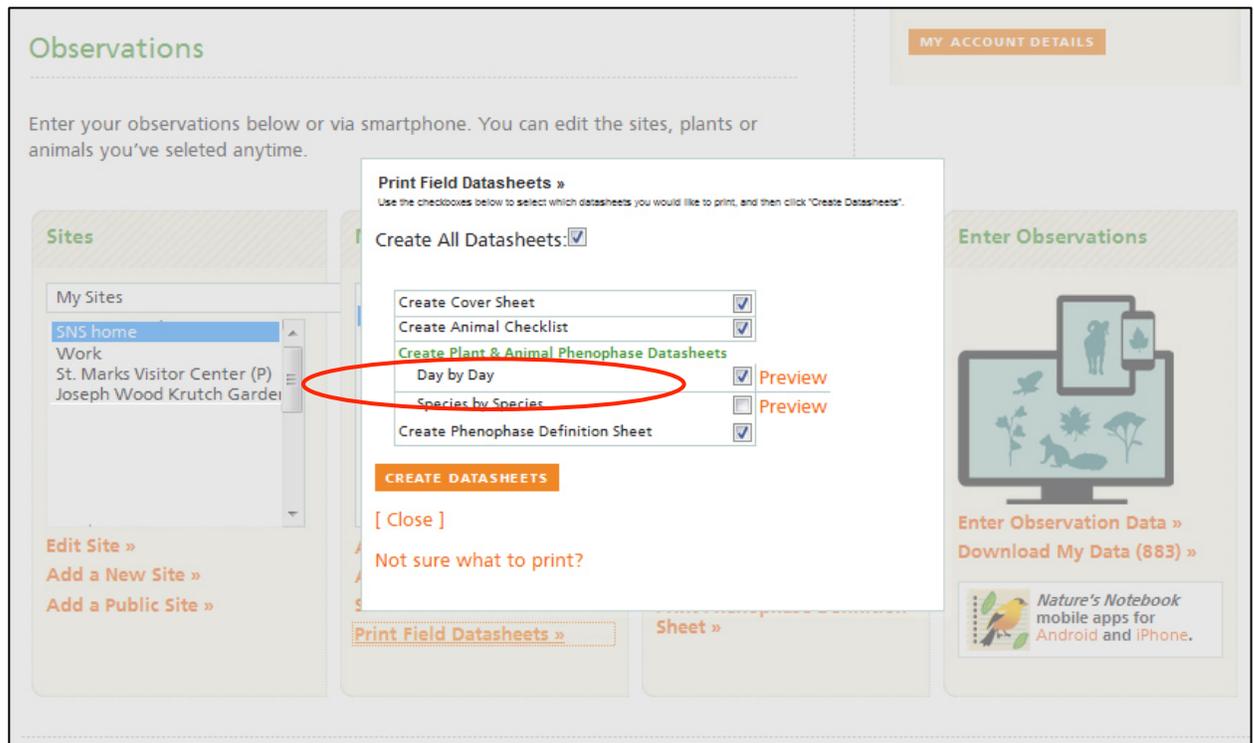


Figure 30 Create Datasheet dialog box with Day by Day datasheet type selected.

Once you have printed your datasheets, you are ready to go out into the field. There are several things we recommend you take with you.

To make your phenology observations, you will need the following:

- **Phenophase definitions and instructions:** Check the profile page for each of your selected plant and animal species to see the list of phenophases for those species and instructions on how to recognize them.
- **Datasheets, clipboard, pencil**
- **Binoculars** (optional, yet helpful for observing animals as well as phenophases in tall trees)
- **Mobile device and mobile app\***

\***Note** that there are *Nature's Notebook* mobile applications available to you via the iTunes (iPhone, iPad) and Google Play (Android) stores. For more information, visit this page:

<https://www.usanpn.org/nn/mobile-apps>.

It's best to set up your account on a laptop or desktop computer first, rather than attempt to add sites, plants and animals on a smartphone. While it can be done, it is not easy. You will have a better experience if you use the apps only for submitting observations on pre-registered sites, plants and animals.

The Android app works offline, so that when there is no data service (3G, 4G or WiFi) observations are stored locally on the phone and uploaded to our servers when you re-enter data coverage, or when you click Settings > Manual Sync in the app. Similar capability for the iPhone and iPad apps is coming soon.

### Making your observations

 **For plants:** Visit each of your individual plants and check their phenophases. To determine which phenophases to watch for, check the plant species profile pages on the USA-NPN website ([www.usanpn.org/nn/species-search](http://www.usanpn.org/nn/species-search)). For each visit when you make an observation, you will record the date and time on your plant phenophase datasheet, and for each phenophase, circle one of the following choices:

- **Yes (Y)** – if you saw that the phenophase *is* occurring
- **No (N)** – if you saw that the phenophase *is not* occurring
- **Uncertain (?)** – if you were *not certain* whether the phenophase was occurring
- Do not circle anything if you *did not check* for the phenophase.

Examples of a plant datasheet can be found at the end of this section.

***It is very important to record this information, even if nothing has changed on your plant since your last visit!*** Knowing when a plant is *not* in a given phenophase is just as important as knowing when it is. This allows someone who is viewing the data to understand more precisely when the phenophase began and ended.

For most plant phenophases you can also **report on the intensity** (or abundance) that you observe, like the number of open flowers you see or how close to full size the new leaves have grown. Phenophase intensity choices vary by species and can be found on the profile page for each species.

Once a phenophase has ended you should **continue to look for signs of it and record whether or not it occurs again**. Sometimes phenophases will occur a second or third (or more) time in a season, whether because of a killing frost, rain, pests, etc.

If there are phenophases and/or intensity measures on which you do not want to report for a species because you find them too difficult to observe or identify, or don't have time **just ignore them**. You can cross them out on your datasheets, and do not circle or enter anything for them when you enter your data online.

 **For animals:** Look and listen for all of the species on your **Animal Checklist**. You can do this by one of three methods:

- **walking** (a single pass or transect through your site)
- **stationary** (standing or sitting at a single point)
- **area search** (multiple passes through your site, possibly crossing the same point more than once)

Try to spend about the same amount of time looking for animals at each visit. We recommend **three minutes** as a standard, but you can spend as much or as little time as you like. You will probably not see most, or any, of the animals during each visit, which is ok.

For each visit when you make an observation, record the amount of time you spent looking and which of the three methods you used. To determine which phenophases to look and listen for, check the animal species profile pages on the USA-NPN website ([www.usanpn.org/species\\_search](http://www.usanpn.org/species_search)). Record whether or not you saw or heard each animal species on your animal checklist, and for each animal you did see or hear, you will need to fill out the animal phenophase datasheet. On this datasheet, record the date and time, and for each phenophase, circle one of the following choices:

- **Yes (Y)** – if you saw or heard that the phenophase *is* occurring
- **No (N)** – if you saw or heard that the phenophase *is not* occurring
- **Uncertain (?)** – if you were *not certain* whether you saw or heard that species or that phenophase
- Do not circle anything if you *did not check* for the species or phenophase

***It is very important to record this information, even if you did not see a particular animal species!*** Knowing when an animal is *not* present, or when an animal is *not* in a given phenophase is just as important as knowing when it is.

**For both  Plants and  Animals**

For most plant and animal phenophases you can also [report on the intensity \(or abundance\)](#) that you observe, like the number of individuals you see feeding or the degree of overlap in frog calls, or the number of leaves or flowers present on an individual plant. Phenophase intensity choices vary by species and can be found on the profile page in the phenophase definitions for each species. See Figure 27 above.

If there are phenophases and/or intensity measures on which you do not want to report for a species because you find them too difficult to observe, ***just ignore them.*** You can cross them out on your datasheets, and do not circle or enter anything for them when you enter your data online.

**What if I never see some of the animals I am observing?**

On most days you will probably not see or hear most of the animals you are observing. You may not see or hear some species all year. Even though it can be frustrating to look for animals that are not there very often, information about when and where a species is and is not is very important to scientists, ***so please continue to record that you DO NOT see phenophases for these animal species on each day you observe.*** In some ways the information about when and where a species is not present is more important than information about where it is, because those observations (called negative data) are more rare. This is why we suggest that you observe species from our animal species list that occur in your state, even if you do not see them often, or at all.

**How often should I make my observations?**

You should make observations as often as is convenient for you, [preferably at the same time of day](#). Ideally, we would like observers to make observations once a week or even as frequently as every two or three days, particularly during the spring and fall when plant and animal phenology is changing quickly in many parts of the country. Plants and animals can often be active during the winter, but if you live in a cold region where their activity is reduced, you can lengthen the time between observations during this season. ***Most importantly, you should record all the observations you make—your observations, no matter how often you make them, provide valuable data!***

### **What if a phenophase does not occur when expected?**

If you are watching for a phenophase and it does not seem to be starting when you expect it would, ***continue to watch for it and record that it is not occurring***. This could mean the phenophase is occurring later or not at all in a given year, and could be very valuable information. Many phenophases do not occur in every year—birds may not breed in a certain area, trees may not flower or fruit, turtles may not lay eggs. ***Information about when and where these phenophases did and did not occur is very important to scientists studying these species and the interactions between species.***

### **Why should I continue looking for a phenophase even after it has passed?**

Many phenophases may occur two or more times in a year. Many birds lay a second clutch of eggs in the summer after the first clutch has fledged. If a frost or pest kills many of the leaves on a tree, it will often have a second flush of breaking leaf buds and new leaves. In dry climates, some phenophases repeat after multiple rain events. Also, ***climate change is changing the timing and frequency of life cycle events, which is extremely important to capture!*** For example, as temperatures warm and growing seasons get longer, many species are reproducing more frequently—some birds are having more broods, some plants flower more often, and insects like butterflies and dragonflies may go through more generations in a single year.

Once a phenophase has ended you should ***continue to look for signs of it and record whether or not it occurs again***. Sometimes phenophases will occur a second or third (or more) time in a season, whether because of rain, pests, or climate change.

### **Why should I record my observations when nothing seems to be happening?**

Having a full record of your observation dates allows scientists to more confidently estimate the date a phenophase began or ended. For example, if you first report that you heard wood frog calls on your April 6 visit, and your last visit (when you did not hear them) was April 2, we know that the wood frogs started calling sometime within those four days. If you only report the April 6 visit and no previous visit, we only know that the frogs started to call sometime between April 6 and the last time you reported visiting your site, which might have been 3 months earlier! This example also illustrates why more frequent observations are useful when conditions change rapidly, such as in the spring or fall. If you can make observations every two or three days, you improve scientists' ability to estimate the day a phenophase actually started or ended.

### **What if I missed a phenophase?**

If you miss the occurrence of a phenophase entirely, and you see evidence that the phenophase did occur, then make a note of this in the comments section of the **Enter Observations** page. For example, if your plant flowered while you were away on vacation, and you see dried flowers on the ground below the plant, feel free to note this in the comments section of the **Enter Observations** page. You can note similar occurrences with animals, for example, if you see chicks in a new bird nest, but never saw nest building.

For more details on making plant and observations, visit our [Frequently Asked Questions](https://www.usanpn.org/learn-how-to-observe) page accessed from the bottom of the Learn How to Observe Page ([www.usanpn.org/nn/guidelines](https://www.usanpn.org/nn/guidelines)).



## Record Your (b) Plant & (c) Animal Observations

Visit your site(s) as often as possible. **At least once a week** is good, but several times a week or even once a day is even better during times of the year when things are changing quickly (for example, spring and fall).

## Filling in the Plant and Animal Phenophase Datasheets

For making your plant and animal phenology observations, there are three types of datasheets you are asked to complete, and one optional form:

-  **Animal Phenophase Datasheet** (if you are observing animals)
-  **Plant Phenophase Datasheet**
-  **Optional Animal Checklist**
- **Cover Sheet**

The  **Animal Phenophase Datasheet** (if you are observing animals) and  **Plant Phenophase Datasheet** are for tracking your phenophase observations for each animal species or each individual plant. The  **Optional Animal Checklist** lists all of the animal species (if you are observing animals) you've selected at your site and provides a quick summary. It also saves you from printing out a lot of extra **Animal Phenophase Datasheets** when you do not see or hear many of the species on each day you observe. The purpose of the **Cover Sheet** is to report information to describe each visit to your site (and is most easily completed at the end of your visit each day).

On each of the **Plant and Animal Phenophase Datasheets**, fill out a column for each visit and indicate whether or not you saw or heard each of the phenophases and what intensity or abundance you observed. For **Animal Phenophase Datasheets**, you do not need to fill out a column for dates that you circled "n" on your **Animal Checklist** and thus did not see or hear that species.

Below are some examples of: **Animal Phenophase Datasheet**, **Plant Phenophase Datasheet**, **Optional Animal Checklist**, and **Cover Sheet**.

A complete example illustrating how to fill in the suite of datasheets for plant or animal phenology observations is provided in Appendix A.

### Trees and Shrubs *Deciduous (with pollen)*

**Directions:** Fill in the date and time in the top rows and circle the appropriate letter in the column below.  
**y** (phenophase is occurring); **n** (phenophase is not occurring); **?** (not certain if the phenophase is occurring).  
 Do not circle anything if you did not check for the phenophase. In the adjacent blank, write in the appropriate measure of intensity or abundance for this phenophase.

Nickname: \_\_\_\_\_  
 Species: **red maple** \_\_\_\_\_  
 Site: \_\_\_\_\_  
 Year: \_\_\_\_\_  
 Observer: \_\_\_\_\_

	Date:							
Do you see...	Time:							
Breaking leaf buds	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Leaves	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Increasing leaf size	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Colored leaves	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Falling leaves	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Flowers or flower buds	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Open flowers	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Pollen release	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Fruits	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Ripe fruits	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Recent fruit or seed drop	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Check when data entered online:	<input type="checkbox"/>							
Comments:								

Plant Phenophase Datasheet

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Figure 31 Example of a Plant (Red Maple) Datasheet

### Songbirds *(no insect eating)*

**Directions:** Fill in the date and time in the top rows and circle the appropriate letter in the column below.  
**y** (phenophase is occurring); **n** (phenophase is not occurring); **?** (not certain if the phenophase is occurring).  
 Do not circle anything if you did not check for the phenophase. In the adjacent blank, write in the appropriate measure of intensity or abundance for this phenophase.

Species: \_\_\_\_\_  
 Site: \_\_\_\_\_  
 Year: \_\_\_\_\_  
 Observer: \_\_\_\_\_

	Date:							
Do you see/hear...	Time:							
Active individuals	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Feeding	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Fruit/seed consumption	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Calls or song	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Singing males	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Mating	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Nest building	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Dead individuals	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Individuals at a feeding station	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Check when data entered online:	<input type="checkbox"/>							
Comments:								

Figure 32 Example of an Animal (Songbird) Datasheet

Feel free to search and download other datasheets from the species search page for examples of other types of plant and animal. We capture data on select species of Wildflowers & Forbs, Deciduous Trees & Shrubs, Evergreen Trees & Shrubs, Grasses, Sedges & Rushes, and Cacti. For animals, we capture data on select species of Mammals, Fish, Reptiles & Amphibians, Birds, and

Insect. Each phenophase definition sheet is specific not only to the type of plant or animal, but to the individual species as well.

### Animal Checklist

**Directions:**  
Please list below all the animal species from the animal checklist you created online for this site.  
Fill in the date and time of your site visit in the top rows. In each row, circle the appropriate letter for that visit:

y (if you see or hear this species);  
n (if you do not see or hear this species);  
? (if you are not certain if you saw or heard this species)  
*Do not circle anything if you did not check for this species*

For each species you circled y or ? (present or uncertain), please also fill out a column in your Animal Phenophase Datasheet for this species to report on the status of each of the phenophases for that visit.

For each species you circled n (not present), you do not need to fill out a column in the Animal Phenophase Datasheet, and can simply click "Circle all 'No'" (meaning you did not see or hear any phenophases for that species) when entering your observations online for that visit.

Site: Pima Extension Office  
Year: 2013  
Observer: LoriAnne Barnett

	Date:												
Do you see or hear...?	Time:												
Anna's hummingbird	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
black-chinned hummingbird	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
broad-tailed hummingbird	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
calliope hummingbird	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Costa's hummingbird	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
rufous hummingbird	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
bumblebee	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
cabbage white	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
common buckeye	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Lyside sulphur	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
monarch	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
orange sulphur	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
pipevine swallowtail	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
queen	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Sonoran bumble bee	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
valley carpenter bee	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Comments:													

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Figure 33 Example of the Optional Animal Checklist

### Filling in the Cover Sheet

In addition to tracking the phenophases you observe for the plants and animals on your list, we ask that you provide information about each visit you make to your site on a **Cover Sheet**. The purpose of the **Cover Sheet** is to track the amount of time you contribute to the project, the time and method of your animal observations, and [snow cover](#) (if any) at your site.

**Time: Cover Sheet** you are asked to report 'Time spent observing', 'Time spent in travel' and 'Time spent looking for animals'. We ask you to report these three things for very different reasons. The purpose of the first two are purely administrative, to estimate the volunteer time contributed to the project and demonstrating the value brought to the program by you – the participants. These estimates can be important to groups for securing funding to keep the project going. The purpose of the third, 'Time spent looking for animals', is scientific, to estimate the time that went into animal sampling which will affect how many animals you see or hear. This third estimate is very important to scientists using your data.

### Cover Sheet

**Directions:**  
On this Cover Sheet, please report information to describe each visit to the site. On the Animal Checklist, please list the species of animals you are looking for at the site and record whether or not you saw or heard that species on each visit. On the Plant and Animal Phenophase Datasheets, please record the phenophases you observed on each visit for your individual plants and your animal species.

Below, please fill in the date and time of your site visit in the first rows. Then, estimate your contribution of time to the project for that visit, separating the time it took you to travel to the site and the time you spent making observations on plants and animals once you arrived at the site. If you are observing animals, report the time you specifically spent searching for animals and circle the appropriate letter for your observation method (there is no need to report time for incidental sightings):

i – incidental: chance sighting while not specifically searching  
s – stationary: standing or sitting at a single point  
w – walking: a single pass or transect through your site  
a – area search: multiple passes through your site

If there is snow on the ground or in the canopy (treetops), please make a note of it in the third section and estimate the percent of the ground that is covered. After each visit, please enter the information from these datasheets online.

Site: \_\_\_\_\_  
Year: \_\_\_\_\_  
Observer: \_\_\_\_\_

	Date:													
	Time:													
<b>Report your contribution of time</b>														
Time spent observing	hr min													
Time spent in travel	hr min													
<b>Report your animal observation methods</b>														
Time spent looking for animals	hr min													
Animal survey method	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a	i s w a
<b>Report on snow</b>														
Is there snow on the ground?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
% of ground covered														
Is there snow in the canopy?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
Check when data entered online:	<input type="checkbox"/>													
Comments:														

Figure 34 Example of a Cover Sheet

### d) Submit Observations Online

Once you have collected data outside you'll need to report the data in the online *Nature's Notebook* interface. If you don't enter the data online, researchers (and you!) won't be able to access it to answer science questions in an easy way. Therefore, entering your data is an important next step. You don't need to enter the data each time you observe, but do try to enter your data on a regular basis (at least once a month).

When you are ready to submit observations online, return to your **Observation Deck**, select the site for which you would like to enter observations, and click the **Enter Observation Data** button. See the example below.

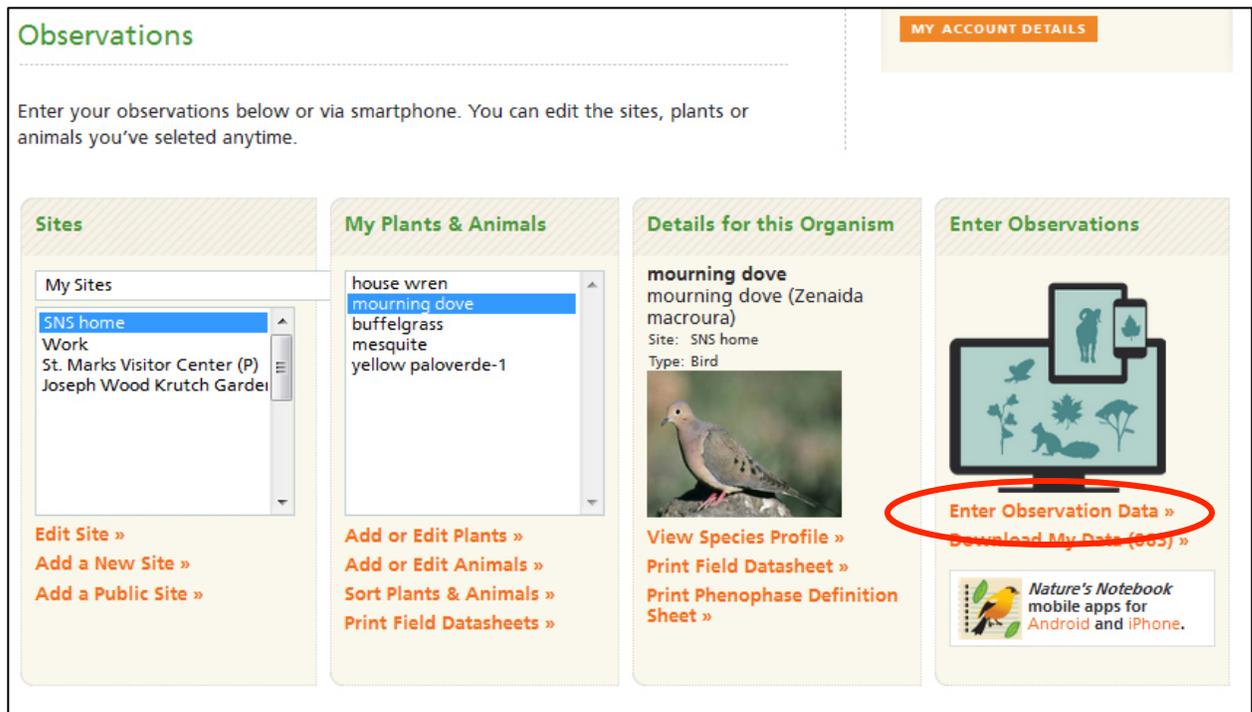
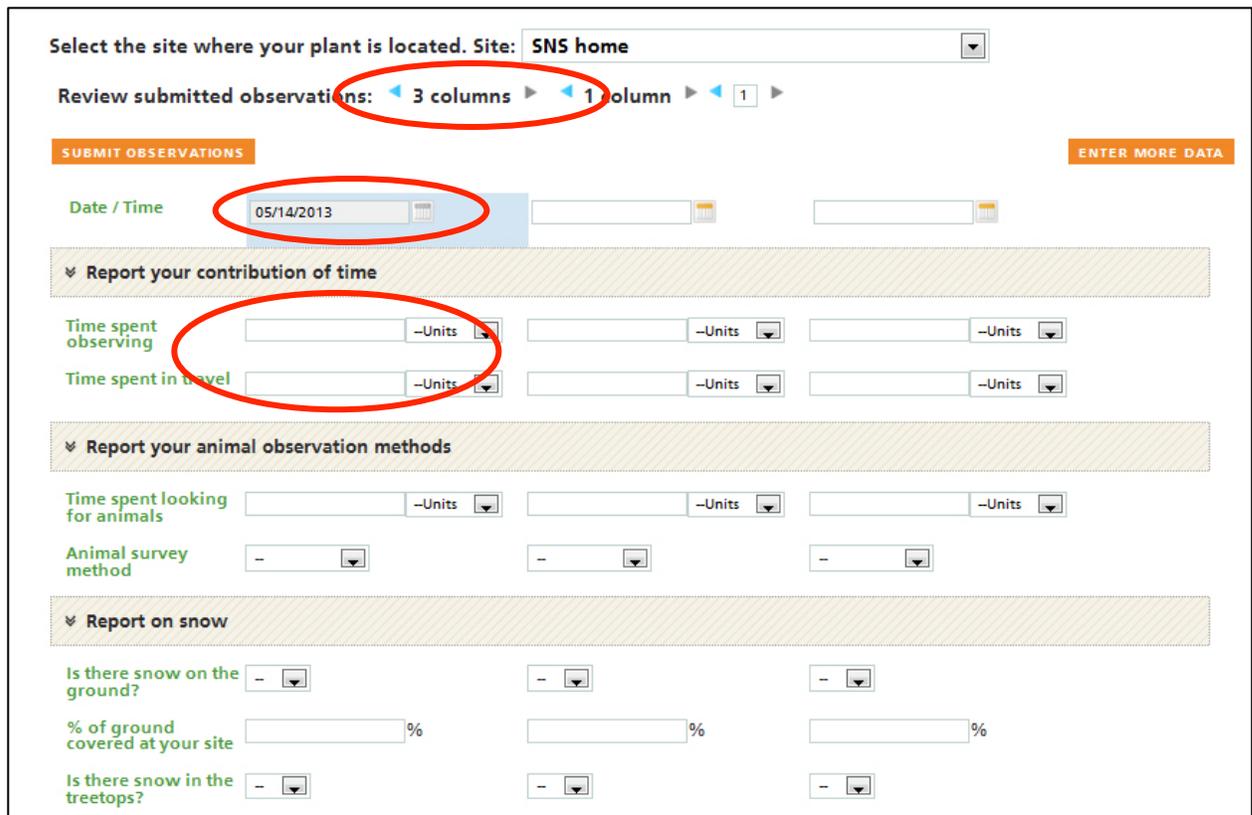


Figure 35 Observation Deck with Enter Observation Data link selected

You will be taken to the **Enter Observations** page. The items from the **Cover Sheet** and each of the **Plant and Animal Datasheets** that you have registered to this site will appear in expandable blue menus. Click on the menus to access the data entry interface for each item and each plant and animal.

On the **Enter Observations** page you will need to enter a new date at the top of the column for which you are entering data. You may see the last time you entered data show up in the first column when you log in. Simply move to the second column to enter today's data.

Each column represents a visit's worth of observations. Following what you have written on your **Cover Sheet**, enter the date and time of your visit at the top of the column, and type in the information on the **Cover Sheet** for that visit.



Select the site where your plant is located. Site: SNS home

Review submitted observations: 3 columns 1 column 1

SUBMIT OBSERVATIONS ENTER MORE DATA

Date / Time 05/14/2013

Report your contribution of time

Time spent observing [ ] -Units [ ] -Units [ ] -Units

Time spent in travel [ ] -Units [ ] -Units [ ] -Units

Report your animal observation methods

Time spent looking for animals [ ] -Units [ ] -Units [ ] -Units

Animal survey method [ ] [ ] [ ]

Report on snow

Is there snow on the ground? [ ] [ ] [ ]

% of ground covered at your site [ ]% [ ]% [ ]%

Is there snow in the treetops? [ ] [ ] [ ]

Figure 36 Entering Cover Sheet data in the Enter Observations Page

Then for each of your individual plants, click “y”, “n”, or “?” for each phenophase choice you circled on the **Plant Phenophase Datasheet**. If you did not circle anything on the datasheet (meaning you did not check for that phenophase), do not click any of the choices.

In entering observation data for your animals, you should refer to your **Animal Checklist**. If “n” is circled for the species on that visit, click “Circle all no” at the top of the column in that species’ data entry interface and all phenophases will be set to “no”. If there was a particular phenophase that you did not bother to look or listen for (for instance, you were ignoring bird calls at your site because you do not know how to recognize them), please click the circled “n” for that phenophase so it becomes uncircled and no selection is made for the phenophase. If a “y” or “?” is circled for a species, refer to the **Animal Phenophase Datasheet** for that species and enter the information recorded there for each phenophase for that visit.

For both plants and animals, report the intensity or abundance you observed for any phenophase for which you clicked “y” or “?” by selecting a value from the "What value?" dropdown menu, or entering a number in the "How many?" box.

Below is an example of the online entry for a mourning dove based on the **Animal Checklist** and **Animal Phenophase Datasheet**.

mourning dove				
	06/30/2013 06:00 PM	Circle all no Delete	Circle all no Delete	Circle all no Delete
Do you see active individuals?	<input checked="" type="radio"/> Y <input type="radio"/> N ?	1.0	Y N ? How many	Y N ? How many
Do you see feeding?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Do you see fruit/seed consumption?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Do you hear calls or song?	<input checked="" type="radio"/> Y <input type="radio"/> N ?	1.0	Y N ? How many	Y N ? How many
Do you hear singing males?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Do you see mating?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Do you see nest building?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Do you see dead individuals?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Do you see individuals at a feeding station?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	Y N ? How many	Y N ? How many
Comments				

Figure 37 Completed online data entry for mourning dove, including abundance and intensity

Once you have entered all of your observations, click the **SUBMIT OBSERVATIONS** button in the lower left corner of the screen. This will save your data. You should receive a message that your observations were successfully saved. **IF YOU DO NOT CLICK THE SUBMIT OBSERVATIONS BUTTON AT THE BOTTOM OF THE SCREEN AFTER EACH DATA COLUMN IS ENTERED, YOUR DATA WILL NOT BE SAVED.**

Do you see mating?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input type="radio"/> N ?	How many
Do you see nest building?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input type="radio"/> N ?	How many
Do you see dead individuals?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input type="radio"/> N ?	How many
Do you see individuals at a feeding station?	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input checked="" type="radio"/> N ?	How many	<input type="radio"/> Y <input type="radio"/> N ?	How many
Comments						

^ buffelgrass

^ mesquite

^ yellow paloverde-1

Select the site where your plant is located. Site:

Review submitted observations: ◀ 3 columns ▶ ▶ 1 column ▶ ▶ 0 ▶

**SUBMIT OBSERVATIONS** **ENTER MORE DATA**

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Figure 38 The SUBMIT OBSERVATIONS button



You will know your data are saved when you receive the All observations successfully saved message at the top of the screen.

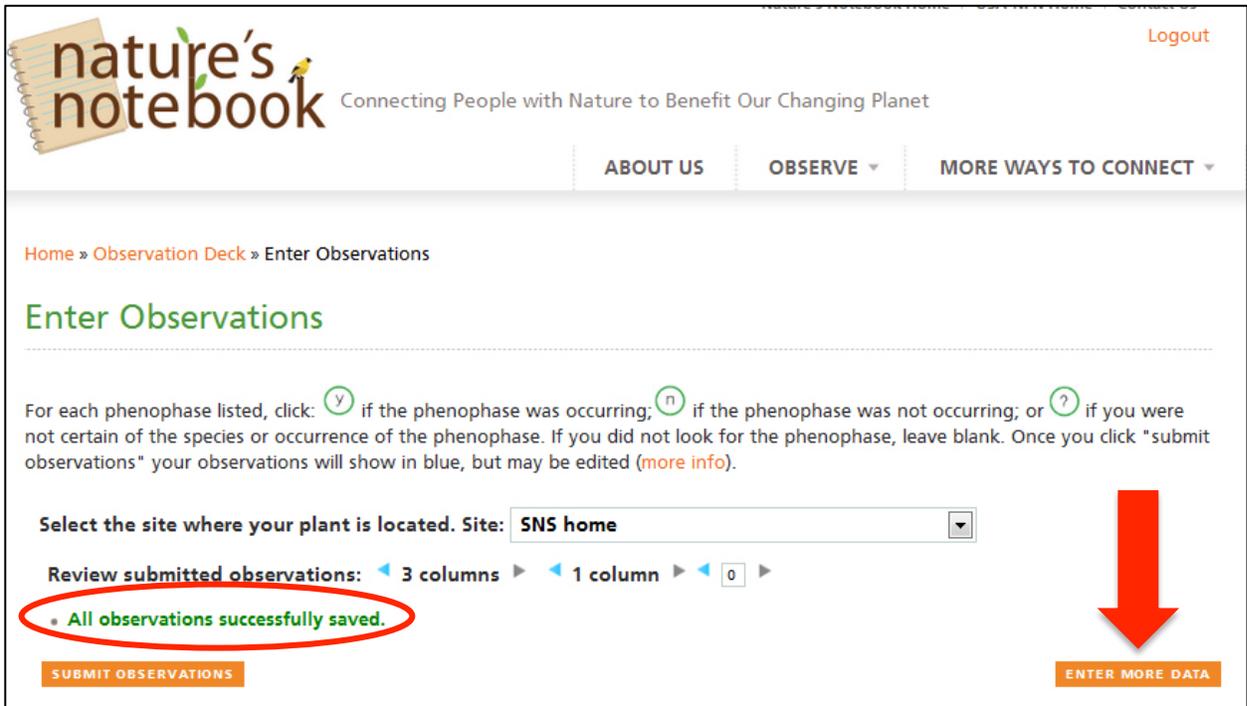


Figure 39 All observations saved message

If you'd like to enter another day's worth of data, click on the **ENTER MORE DATA** and follow the same procedure.



## APPENDIX A. Recording Phenology Observations: A concrete example of how to complete datasheets

This section provides a full example of how to make plant or animal phenology observations and to complete the three types of datasheets and the cover sheet. The **Animal Checklist**, the **Animal Phenophase Datasheet**, **Plant Phenophase Datasheet**, and the **Cover Sheet**.

In this example, you have three animal species on the checklist for your site:

- house wren
- mourning dove
- bumblebee

You also have three individual red maple trees that you observe at your site.

### Taking animal observations

You travel to your site and opt to observe your animal species before checking your plants. You select your central observing location, then stand still and look and listen for three minutes. During that time, you:

- See two house wrens fly through the site
- Hear (but do not see) one mourning dove singing
- See two bumblebees visiting flowers

On your **Animal Checklist**, write the date and time of your visit and then circle “y” next to “house wren and bumblebee”, as you did observe these species at your site. Because you did not observe mourning dove, you would circle “n” next to “mourning dove”. Below you will find an example of this sheet completed.

## Animal Checklist

**Directions:**

Please list below all the animal species from the animal checklist you created online for this site. Fill in the date and time of your site visit in the top rows. In each row, circle the appropriate letter for that visit:

- y (if you see or hear this species);
  - n (if you do not see or hear this species);
  - ? (if you are not certain if you saw or heard this species)
- Do not circle anything if you did not check for this species

For each species you circled y or ? (present or uncertain), please also fill out a column in your Animal Phenophase Datasheet for this species to report on the status of each of the phenophases for that visit.

For each species you circled n (not present), you do not need to fill out a column in the Animal Phenophase Datasheet, and can simply click "Circle all 'No'" (meaning you did not see or hear any phenophases for that species) when entering your observations online for that visit.

	Date: 5/24/13	Date:	Date:	Date:	Date:	Date:	Date:
Do you see or hear...?	Time: 8:30 am	Time:	Time:	Time:	Time:	Time:	Time:
house wren	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
mourning dove	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
bumblebee	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?
	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?	y n ?

Figure 40 Completed Animal Checklist

Next, on your **Animal Phenophase Datasheet** for house wren you would circle “y” for ‘Active individuals’ and write “2” in the blank to the right, as you saw **two** house wrens flying through the site. You would circle “n” for the remainder of the phenophases, as you did not observe the house wren:

- Feeding
- Engaging in song
- Mating
- Building a nest
- At a feeder

And you also did not observe any dead house wrens at your site.

See the example below of a completed **Animal Phenophase Datasheet** for the house wren.

## Songbirds *(no fruit and seed eating)*

**Directions:** Fill in the date and time in the top rows and circle the appropriate y (phenophase is occurring); n (phenophase is not occurring); ? (not certain if phenophase is occurring). Do not circle anything if you did not check for the phenophase. In the adjacent

	Date: 5/28/13	Date:
Do you see/hear...	Time: 9:30am	Time:
Active individuals	y n ? <u>2</u>	y n ? _____
Feeding	y n ? _____	y n ? _____
Insect consumption	y n ? _____	y n ? _____
Calls or song	y n ? _____	y n ? _____
Singing males	y n ? _____	y n ? _____
Mating	y n ? _____	y n ? _____
Nest building	y n ? _____	y n ? _____
Dead individuals	y n ? _____	y n ? _____
Individuals at a feeding station	y n ? _____	y n ? _____
Check when data entered online:	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>		

Figure 41 Completed Animal Phenophase Datasheet for house wren

On your **Animal Phenophase Datasheet** for mourning dove you would circle “n” for ‘Active individuals’ since you did not observe any at the site. You would circle “y” for ‘Calls or song’, and write “1” in the blank, as you heard a mourning dove singing. You were not certain whether it was a male or a female mourning dove singing, or whether the song fits the specific definition for ‘Singing males’ (which refers to territorial proclamation), so you would circle “?” for ‘Singing males’ and write “1” in the blank. You would circle “n” for the remainder of the phenophases, as you did not observe the mourning dove:

- Feeding
- Mating
- Building a nest
- At a feeder

And you also did not observe any dead mourning doves at your site.

See the example below of the completed **Animal Phenophase Datasheet** for the mourning dove.

## Songbirds *(no fruit and seed eating)*

**Directions:** Fill in the date and time in the top rows and circle the appropriate **y** (phenophase is occurring); **n** (phenophase is not occurring); ? (not certain if phenophase is occurring). Do not circle anything if you did not check for the phenophase. In the adjacent

	Date: 5/28/13	Date:
Do you see/hear...	Time: 9:30am	Time:
Active individuals	y (n) ? _____	y n ? _____
Feeding	y (n) ? _____	y n ? _____
Insect consumption	y (n) ? _____	y n ? _____
Calls or song	(y) n ? <u>  1  </u>	y n ? _____
Singing males	y n (y) _____	y n ? _____
Mating	y (n) ? _____	y n ? _____
Nest building	y (n) ? _____	y n ? _____
Dead individuals	y (n) ? _____	y n ? _____
Individuals at a feeding station	y (n) ? _____	y n ? _____
Check when data entered online:	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>		

Figure 42 Completed Animal Phenophase Datasheet for [mourning dove](#)

On your **Animal Phenophase Datasheet** for bumblebee, you would circle “**y**” for ‘Flower visitation’ and write “**2**” in the blank, as you saw two individuals visiting flowers. You would also circle “**y**” and write “**2**” for ‘Active adults’, as the criteria for this phenophase (“one or more adults are seen moving about or at rest”) was also met. You would circle “**n**” for the remainder of the phenophases, as you did not observe bumblebees mating and you also did not see any dead bumblebees at your site.

See the example below for the completed **Animal Phenophase Datasheet** for the bumblebee.

## Bees

**Directions:** Fill in the date and time in the top rows and circle the appropriate letter **y** (phenophase is occurring); **n** (phenophase is not occurring); **?** (not certain if the phenophase is occurring). Do not circle anything if you did not check for the phenophase. In the adjacent blank space, write the number of individuals observed.

	<b>Date:</b> 5/28/13	<b>Date:</b>
<b>Do you see/hear...</b>	<b>Time:</b> 9:30am	<b>Time:</b>
<b>Active adults</b>	(y) n ? <u>  2  </u>	y n ? <u>      </u>
<b>Flower visitation</b>	(y) n ? <u>  2  </u>	y n ? <u>      </u>
<b>Mating</b>	y (n) ? <u>      </u>	y n ? <u>      </u>
<b>Dead adults</b>	y (n) ? <u>      </u>	y n ? <u>      </u>
Check when data entered online:	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>		

Figure 43 Completed Animal Phenophase Datasheet for [bumblebee](#)

You have now completed the suite of **Animal Phenophase Datasheets** for your observations for today.

### Taking plant observations

Next, you check the three individual red maple trees you are observing.

You walk to your first tree and carefully look at and compare what you see to the phenophases you are asked to observe for red maple on the phenophase definition sheets. It seems to be in full flower and upon close inspection you see breaking leaf buds. As of yet you do not see any unfolded leaves or any fruits. You determine that your plant fits the definition for 'Breaking leaf buds', but not the definitions for any of the other leaf phenophases. You circle "y" for the 'Breaking leaf buds' phenophase on your datasheet for this individual plant, and "n" for all of the other leaf phenophases. You review the intensity choices for 'Breaking leaf buds' on red maple and determine there are 10 or more on this plant, but not more than 100, so you write "11-100" in the blank to the right. For help on the abundance and



Figure 44 Red maple (*Acer rubrum*) breaking leaf buds

intensity questions, please refer to the phenophase definition sheets provided for each species as well as our [Frequently Asked Questions](#) guide.



Figure 45 Fresh flowers on red maple (*Acer rubrum*)

Next you check the flowers on your tree. This red maple is covered in fresh, open flowers and meets the definition for both 'Flowers or flower buds' and 'Open flowers', so you circle "y" for both of those phenophases on your datasheet. You review the intensity choices for these phenophases and the best choice for 'Flowers or flower buds' is "More than 10 but less than 100", while the best choice for 'Open flowers' is "Peak flower". You write "11-100" in the blanks for these phenophases. Since you cannot reach any of the flowers to see if pollen falls in your hand when you shake it, you do not circle anything for this phenophase.

You do not see any fruits so you circle "n" for all of the fruit phenophases.

Below is an example of a completed Plant Phenophase Datasheet for your first red maple. The information corresponds to what you saw on the tree.

### Trees and Shrubs

**Directions:** Fill in the date and time in the top rows and circle y (phenophase is occurring); n (phenophase is not occurring); ? (phenophase is uncertain); or intensity number (phenophase intensity). Do not circle anything if you did not check for the phenophase.

	Date: 5/24/13	Date:
Do you see...	Time: 8:30 am	Time:
Breaking leaf buds	y n ? 11-100	y n ?
Leaves	y n ?	y n ?
Increasing leaf size	y n ?	y n ?
Colored leaves	y n ?	y n ?
Falling leaves	y n ?	y n ?
Flowers or flower buds	y n ? 11-100	y n ?
Open flowers	y n ?	y n ?
Pollen release	y n ?	y n ?
Fruits	y n ?	y n ?
Ripe fruits	y n ?	y n ?
Recent fruit or seed drop	y n ?	y n ?
Check when data entered online:	<input type="checkbox"/>	
<b>Comments:</b>		

Figure 46 Completed Plant Phenophase Datasheet for your first red maple

Next, you take observations for the two other red maple trees you are observing and fill out your **Plant Phenophases Datasheets** for each of them.

### Completing the Cover Sheet

Before leaving your site, you fill out your **Cover Sheet**. Write in the date and time of the visit at the top of the column. An approximate time, such as rounding to the nearest 15 minutes is fine.

Then indicate the time you spent observing. Recall, this is an indication of the *total* time you spent observing. If you were observing both plants and animals, this estimate would include the time you spent both looking and listening for your animals and also inspecting your plants. In our example the approximate observing time was one hour and five minutes.

In this example, you looked and listened for animals for ten minutes. It took you 45 minutes to check your three red maple trees, review the phenophase definitions and fill out the datasheets. This time also included the time spent filling out your animal data sheets. You also spent five minute sharpening your pencil at the beginning and filling out the cover sheet at the end. This resulted in a total of 60 minutes, or one hour, spent observing.

Indicate the time you spent traveling to and from your site. In this example, let's say the site is in a park across the street from your house. You spent five minutes walking to the park and five minutes walking back to your house, for a total of ten minutes in travel.

	Date:	Date:
	5/24/13	
	Time:	Time:
	8:30 am	
<b>Report your contribution of time</b>		
Time spent observing	1 <input type="radio"/> hr 5 <input type="radio"/> min	hr min
Time spent in travel	10 <input type="radio"/> hr 0 <input type="radio"/> min	hr min
<b>Report your animal observation methods</b>		
Time spent looking for animals	10 <input type="radio"/> hr 0 <input type="radio"/> min	hr min
Animal survey method	<input type="radio"/> i <input type="radio"/> s <input type="radio"/> w <input type="radio"/> a <input type="radio"/> i <input type="radio"/> s <input type="radio"/> w <input type="radio"/> a	
<b>Report on snow</b>		
Is there snow on the ground?	y <input type="radio"/> n <input checked="" type="radio"/> ?	y n ?
% of ground covered		
Is there snow in the canopy?	y <input type="radio"/> n <input checked="" type="radio"/> ?	y n ?
Check when data entered online:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>		

Figure 47 Entering the date and time on the Cover Sheet



Next, indicate the amount of time you spent looking for animals. Recall in this example you took observations for three minutes. Also indicate which method you used to search for the animals on your checklist. Recall that in this example, you stood still at a single point for three minutes. You would circle "s" for 'Stationary'.

Indicate whether there was snow at your site on this day. In this example, there was not snow on the ground, so you circled "n" for both questions regarding snow on the ground and in the tree canopy.

You are finished – you have successfully taken your plant and animal phenology observations and completed all of the datasheets. Thank you for your efforts!

The next step is to enter your observations online via the *Nature's Notebook* interface (log in at [www.nn.usanpn.org](http://www.nn.usanpn.org)). Remember, for the citizen science project to be effective, you also need to record your data online so others can use it too. The datasheets include a space to check when you have entered your data online. See the example below.