

DRAFT Phenology Monitoring Program: Volunteer Training Manual
Northeast Temperate Network
Version 1.11

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Background

Phenology is the study of recurring plant and animal life cycle events, or phenophases, such as leafing and flowering, maturation of agricultural plants, emergence of insects, and migration of birds. These events are critical to many aspects of human life – such as agriculture, gardening, health, cultural events, and recreation—and nearly all ecological relationships and processes. Regular observation of plant and animal phenology helps us better understand the ecology of an area, as well as helping us understand plant and animal responses to climate change.

Beginning in 2009, the National Park Service’s Northeast Temperate Network (NETN) began a partnership with the USA National Phenology Network (USA-NPN) to monitor phenology in northeastern National Parks. Currently observations are underway in 8 NETN parks: Acadia National Park (ACAD), the Appalachian National Scenic Trail (APPA), Boston Harbor Islands National Recreation Area (BOHA), Marsh-Billings-Rockefeller National Historical Park (MABI), Morristown National Historical Park (MORR), Saratoga National Historical Park (SARA), Saugus Iron Works National Historic Site (SAIR), and Weir Farm National Historic Site (WEFA).

This program engages park visitors and volunteers to learn about and participate in phenology observation. Phenology is particularly well-suited to volunteer participation because it is both easy to observe and engaging.

This program offers two levels of volunteer engagement. Most volunteers are trained to submit repeat observations or plant or animal phenology. Participation as an observer requires a moderate (at least weekly) time commitment, some familiarity with plant identification and observation, and the ability to keep careful records.

In addition, volunteers with technical skills and interest may be trained to maintain automated recording devices and participate in processing of audio or photographic data. Training for these tasks is more involved and specific, and is not described in this Manual. Rather, training at this level would occur one-on-one with NPS staff.

This manual provides detailed instruction for volunteers in participating NETN parks making repeat observations. It is adapted from USA-NPN training materials, and will be updated regularly in conjunction with that program.

Participants will use the USA-NPN website interface called Nature’s Notebook at www.usanpn.org to learn about their species, obtain datasheets, and submit data.

There are five steps to follow, in order to participate in this program:

- Find Monitoring Sites
- Select Plants and Animals to Observe
- Create an Account Online
- Make Observations
- Enter Data Online

Find Monitoring Sites

Within participating parks, monitoring occurs at designated sites within core or optional habitats chosen for phenology monitoring (Table 1). The two core habitats (vernal pools and northern hardwood forest) are monitored at all NETN parks except BOHA and SAIR which do not contain those habitats. In addition, park staff may choose to monitor optional habitats occurring in that park.

Table 1. Core and optional habitats for phenology monitoring within NETN parks. Core habitats are shown in bold.

	ACAD	APPA	BOHA	MABI	MIMA	MORR	ROVA	SAIR	SAGA	SARA	WEFA
Vernal pools	x	x		x	x	x	x		x	x	x ¹
Northern hardwood forest	x	x		x	x	x	x		x	x	x
Spruce-fir forest	x	x									
Alpine and subalpine		x									
Grassland and Open Field	x		x		x	x	x			x	x
Permanent freshwater wetland	x						x	x			
Coastline	x		x								

During training, the leader will identify designated monitoring sites at the park. These sites have been setup and marked for volunteers to make observations on marked plants and on animal populations.

Sites are chosen according to these guidelines:

Convenient: The site must be convenient and accessible enough to visit at least weekly throughout the growing season and in all weather.

Undisturbed: The site should be sheltered from human disturbance, such as buildings, pavement, farms, or other human land-use, or areas affected by fertilizers, pesticides, irrigation or watering by humans, or a man-made heat-island.

Representative: The site should be typical of the vegetation and climate of the target habitat.

Uniform: Conditions should be relatively uniform across the site.

Species presence: The site must contain the species to be monitored.

How big is a site?

The size of a monitoring site depends upon the habitat and species to be monitored. For sites in which only plants are monitored, the site will encompass the area immediately around the monitored plants.

For sites in which animals are monitored, the site will encompass a walking route from which the monitored species can be seen or heard. Sites are limited to be no larger than 6 hectares (about

¹ WEFA does not have true vernal pools, but does have pools where amphibians breed.

15 acres, or 250 x 250 meters). A site might be this large in an open grassland or near a body of water, because it is possible to hear animals that are far away. However, in a forest, a site will probably be smaller because it would not be possible to identify animals so far away. An area is divided into different sites if it includes habitats that are obviously different. For instance, if making observations at a pond in a meadow, the pond and the meadow must be registered as separate sites.

How are sites marked?

In training, your leader will provide specific examples of marking used at this park. Each site markers will display a unique label or name for the site or route written using permanent ink. At sites in which animals are monitored, a specific route will be marked for you to walk along as you search for animals. At sites in which plants are monitored, individual plants will be marked for monitoring.

Select Plants and Animals to Observe

You may choose to monitor plants or animals or both, and as many species as you feel you have the interest and enthusiasm to monitor. At each participating park, park staff choose species from a recommended list that are of interest and present in accessible locations at each park.

Recommended species are generally easy to identify, widely distributed across NETN parks, and ecologically important or of special interest to NETN parks. These species may be foundation species (dominant primary producers with large influence on the ecosystem, such as trees and shrubs), invasive species, animal pollinated plants and their pollinators, migratory species and their key food sources, or species with early spring phenophases. This recommended species list will be updated periodically, as new information becomes available on species of importance for phenological monitoring. The species recommended for monitoring within NETN park habitats are shown in Tables 2 and 3. During training, your leader will tell you which of these species are monitored within this park.

Table 2: Plant species recommended for phenology monitoring in NETN designated park habitats. Core habitats and associated species are shown in bold.

Plant species	Lifeform	Designated habitat
Garlic mustard <i>(Alliaria petiolata)</i>	Forb (herb)	Northern hardwood forest
White wood aster <i>(Eurybia divaricata)</i>	Forb (herb)	Northern hardwood forest
Red maple <i>(Acer rubrum)</i>	Broadleaf tree or shrub	Northern hardwood forest Permanent freshwater wetland
Sugar maple <i>(Acer saccharum)</i>	Broadleaf tree or shrub	Northern hardwood forest
Marsh marigold <i>(Caltha palustris)</i>	Forb (herb)	Permanent freshwater wetland

Plant species	Lifeform	Designated habitat
Purple loosestrife (<i>Lythrum salicaria</i>)	Forb (herb)	Permanent freshwater wetland
Bunchberry (<i>Cornus canadensis</i>)	Forb (sub-shrub)	Spruce-fir forest Alpine and Subalpine
Painted trillium (<i>Trillium undulatum</i>)	Forb (herb)	Spruce-fir forest Alpine and Subalpine
Hobblebush (<i>Viburnum lantanoides</i>)	Broadleaf tree or shrub	Spruce-fir forest Alpine and Subalpine
Balsam fir (<i>Abies balsamea</i>)	Conifer	Spruce-fir forest Alpine and Subalpine
Common milkweed (<i>Asclepias syriaca</i>)	Forb (herb)	Grassland
Rough-stemmed goldenrod (<i>Solidago rugosa</i>)	Forb (herb)	Grassland
Beach pea (<i>Lathyrus japonicus</i>)	Forb (herbaceous vine)	Coastline
Beach rose (<i>Rosa rugosa</i>)	Broadleaf tree or shrub	Coastline
Rockweed (<i>Ascophyllum nodosum</i>)	Seaweed	Coastline

Table 3: Animal species recommended for phenology monitoring in NETN designated park habitats.

Animal species	Lifeform	Designated habitat
Spotted salamander (<i>Ambystoma maculatum</i>)	Amphibian	Vernal pools
Spring peeper (<i>Pseudacris crucifer</i>)	Amphibian	Vernal pools
Wood frog (<i>Rana sylvatica</i>)	Amphibian	Vernal pools Permanent freshwater wetland
Common loon (<i>Gavia immer</i>)	Bird	Permanent freshwater wetland Coastline
Great black-backed gull (<i>Larus marinus</i>)	Bird	Coastline
Bobolink (<i>Dolichonyx oryzivorus</i>)	Bird	Grassland

Animal species	Lifeform	Designated habitat
Red-winged blackbird (<i>Agelaius phoeniceus</i>)	Bird	Grassland
Monarch butterfly (<i>Danaus plexippus</i>)	Insect (Lepidoptera)	Grassland
Eastern tent caterpillar (<i>Malacosoma americanum</i>)	Insect (Lepidoptera)	Northern hardwood forest
Ovenbird (<i>Seiurus aurocapillus</i>)	Bird	Northern hardwood forest
Winter wren (<i>Troglodytes hiemalis</i>)	Bird	Spruce-fir Forest
White-throated sparrow (<i>Zonotrichia albicollis</i>)	Bird	Spruce-fir Forest Alpine and Subalpine

How do I identify plants and animals?

Correct plant and animal identification is very important when making observations. If you are monitoring marked plants at a designated site in the park, the plant id will already be confirmed for you. You need only check the tag to make sure you are monitoring the correct individual. If you have selected your own individual plants, or are monitoring animals, you will need to confirm the species identification.

During training, your park leader will review identification of monitored species in the park. If you need additional assistance, field guides and online resources can help. Nature's Notebook contains links to useful online resources. If you are uncertain whether an animal you observed is a species on your list, it is best to record your observation of that species as uncertain by filling in a question mark (?) on your data sheet.

How do I select plants to observe?

At each site, select one to three individuals of each plant species you are observing. Observing three individuals at each site is best for understanding how phenology varies among individuals at a site; but data from only one or two individuals is useful as well.

You may observe individual plants that have already been marked by park staff. If allowed at your park, you may instead choose to observe individuals that you select yourself. If so, follow these guidelines: Choose plants that appear to be healthy, undamaged, and free of pests and disease. Do not choose plants that are closer than 6 meters (about 20 feet) to a road or building. Try to select individuals that are growing in a similar environment but not direct neighbors or closer than two to three times the width of a plant canopy. In a forest, selected trees should occupy similar positions in the tree canopy and habitats on the ground.

How do I mark the plant I am observing?

Marking uniquely identifies the individual plants you are observing for each subsequent visit. In training, your leader will provide specific instructions for marking plants at this park. It is

important that you follow these instructions exactly, so that your marking is appropriate for the park.

Each plant marker must display a unique label or name for the plant written using permanent ink. For example, the marker on a tree may be labeled “Red maple 1” or “Big red.” Marking must not change the growing conditions of the plant. For example, avoid placing a broad stake in a location where it could shade or cause root damage to a small plant. Markers will need to be replaced periodically as they weather and become damaged or 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), discuss this with your park coordinator. The coordinator may direct you to select a new individual to observe at the same location. Be sure to note the death of the previous plant, and add the replacement as a new plant with a different nickname.

Most plant species monitored within NETN park habitats are perennial, and will survive many seasons of observation. However, garlic mustard has a biennial lifecycle. Individual garlic mustard plants will die after flowering in the second year. For this species, a new individual will be selected to observe at the same location after death of the previously monitored plant.

Create an Account Online

Participants will use the USA-NPN website interface called Nature’s Notebook at www.usanpn.org to learn about their species, obtain datasheets, and submit data.

How do I create an account?

To begin, you will create an account on Nature’s Notebook. Navigate your computer web browser to www.usanpn.org and use the link to Nature’s Notebook in the upper right corner. Choose a username and password, and provide a valid email address. Then enter your first and last name, and your city and state. In the selection box for ‘Partner Organization,’ choose ‘National Park Service’, then ‘Northeast Temperate Network’, then the 4-letter code corresponding to the park at which you will observe (ACAD, APPA, BOHA, MABI, MORR, ROVA, SAIR, or SARA). You will also need to answer a validation question to ensure you are a real person and to prevent automated spam submissions.

How do I register sites?

Once you have created an account, you can log into Nature’s Notebook and register the sites where you will make observations. If you are observing at a designated park site, you will add those sites to your own homepage as follows. Click the My sites selection box, and choose the park at which you observe (ie, ACAD for Acadia National Park). Then, select a designated monitoring site, using the name provided to you during training.

How do I register plants?

Once you have successfully registered a site, you can select or enter the specific plants you will monitor. If the plant you are observing is already listed, choose it using the name provided to you by your coordinator or listed on the plant’s tag. If not, click “Add or Edit Plants.” To register a

plant, first ensure that the correct site is selected in the “Site” drop-down box. Then, select the plant species in the “Plant species” box. Once you start typing the plant name into the box, you’ll be offered suggested plant species from the recommended plant species list. Fill in answers to the remaining questions. Starred questions are required. Once you have successfully registered a plant to your site, you should see it appear on your Nature’s Notebook dashboard.

How do I create an animal checklist?

Next, you can create a checklist of animals to look and listen for at that site. Click “Add or Edit Animal Checklist.” To add animals to your checklist, first ensure that the correct site is selected in the “Site” drop-down box at the top. Then, select animal species from the “Species Available” window. You can filter the animals in this list using the “Species group” drop-down menu. Click the “Add to Checklist” button in the middle to move species into the “My Checklist” window on the right. Once a species appears in the “My Checklist” window, it has been added to your list for that site.

Once you are finished adding animals to your checklist, click the “Save checklist” button in the lower-left corner of the screen. Once you have successfully created an animal checklist for your site, you should see it appear on your Nature’s Notebook dashboard.

How do I print species information and datasheets?

From the Nature’s Notebook dashboard, you can quickly return to animal or plant profile pages to review the phenophases you are asked to observe, print a datasheet for a single species, or create a datasheet packet. A datasheet packet includes a phenophase datasheet for every plant and animal you have registered for your site, a cover sheet, and an animal checklist, if you are observing animals.

To start, we recommend you choose “Create All Datasheets (PDF)” 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.

As you fill 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” window of your Nature’s Notebook Home page and clicking on “Create Datasheet (PDF)” under the “Details for this Organism” window. A new Cover Sheet and Animal Checklist is included each time, but you may not need to print extras of those if you have already done so with new datasheets for a previous plant or animal.

Make Observations

Observing phenology is similar for both plants and animals. However, because animals move around and plants do not, there is one important difference in the way we 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 all through the year.

For animals: Create a checklist of animal species (using Nature's Notebook) and look for all of them each time you visit a site. For example, if your checklist has spotted salamanders, 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.

What equipment will I need?

- Plant marking equipment for first trip (if selecting your own plants)
- Phenophase definitions and Datasheets for each monitored species
- An Animal Checklist (if observing animals) and Cover Sheets for each site
- Clipboard (optional) and pencil
- Binoculars (optional, but helpful for observing animals as well as phenophases in tall trees)

When should I visit the site?

You will need to visit your site at least weekly, but ideally every other day during periods when phenology is changing quickly, such as in the spring. Observations can be made at any time of day, but monitors are encouraged to visit sites consistently around the same time of day. This is because some animal species tend to be more active at certain times of day and plant activity can vary over the course of the day.

What should I do at the site?

For plants: Visit each of your individual plants and check their phenophases. For each species, the Phenophase definitions you downloaded from Nature's Notebook will tell you what to observe.

For animals: Look and listen for the species on your animal checklist during a walk along a marked route through the site. During training, your leader will tell you the standard time spent observing animals at this site. Standard times typically range from 3-10 minutes, depending on the size of the site. Fill out a column on the Animal Checklist noting which animals were observed during each visit. You will probably not observe most, or any, of the animals during each visit, which is ok. For each visit, record the amount of time you spent looking.

Do you see/hear...?

For each species, the Phenophase definitions downloaded from Nature's Notebook will tell you what to look or listen for. During each visit, fill out a column on the Phenophase Datasheet for each individual plant or animal species observed. Do not fill out a column on the Phenophase Datasheet for animals which were not detected during this visit.

For each phenophase listed, record the appropriate response in the column below the date of each visit:

- **y** – if the phenophase **is** occurring
- **n** – if the phenophase **is not** occurring
- **?** – not certain if the phenophase is occurring

Do not record anything for phenophases which you do not look for that day.

How do I record abundance?

For each phenophase you have seen occurring and marked “y,” record abundance using the method specified for that phenophase. For plants, abundance of plant parts on the monitored individual that are exhibiting the recorded phenophase is counted or estimated and recorded as a numeric or percent class (such as % leaves that are colored). For example, for intensity of the “Leaves” phenophase for deciduous trees and shrubs, estimate what percentage of the canopy is full with leaves as: Less than 5%; 5-24%; 25-49%; 50-74%; 75-94%; or 95% or more. For intensity of the “Fruits” phenophase, count or estimate how many fruits are present on the monitored plant and record as: Less than 3; 3 to 10; 11 to 100; 101 to 1000; 1001 to 10,000; or More than 10,000.

Animal phenophase abundance is recorded as a count or estimate of animals exhibiting the phenophase. For example, for the “Active individuals” phenophase, count and record the number of individual animals seen. For amphibian vocalization, abundance is estimated using these categories:

1. Individuals can be counted, there is space between calls
2. Calls of individuals can be distinguished but there is some overlapping of calls
3. Full chorus, calls are constant and overlapping

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.

Why should I record 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 to five 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.

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 Phenophase Datasheet. For example, if your plant flowered while you were away on vacation, and you see dried flowers on the ground below the plant, note this in the comments. You can note similar occurrences with animals, for example, if you see chicks in a bird nest, but never saw the eggs.

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.

Once a phenophase has ended, continue to look for signs of it and record whether or not it occurs again. Sometimes phenophases occur two or more times in a season.

Can I report “Yes” for more than one phenophase at a time?

Often, more than one phenophase will occur simultaneously. Record data for each phenophase separately. For example, if you see a specific activity, like nest building, you are also seeing one or more active individuals, and should be reporting “Yes” to both of those phenophases for that species. Likewise, you may see “Breaking leaf buds” simultaneously with “Leaves” on the same plant, and should report “Yes” to both phenophases until virtually all leaf buds have broken.

How do I record observations?

During each visit, you will fill out:

- a column on the Animal Checklist noting which animal species were observed that day
- a column on the Phenophase Datasheet for each individual plant and animal species observed
- a column on the Cover Sheet documenting the visit

You will bring a separate **Phenophase Datasheet** for each individual plant you are observing, and for each animal species on your checklist. For each visit, you will fill out a column on the Phenophase Datasheet for each individual plant observed, as well as each animal species observed. You do not need to fill out a column on the Phenophase Datasheet for animal species you did not see or hear during that visit.

The **Animal Checklist** provides a summary of the animal species seen or heard at your site on each visit. For each visit, circle “**y**” if you saw or heard that species and “**n**” if you did not see or hear that species. If you are not sure whether you saw or heard that species, circle “**?**”.

You will also provide information about each visit on a separate **Cover Sheet** for each site. The Cover Sheet is used to track the amount of time you contribute to the project, the method of your animal observations, and conditions at your site.

For ‘Time spent observing’ include the total time spent getting organized, observing animals, and checking plants, but not traveling to the site. For ‘Time spent in travel,’ include any time spent in a vehicle as well as time spent walking or hiking to your site. However, do not include time for travel that would occur even if you were not making observations. For instance, if you make your observations from your regular work location, do not include the time spent driving to work.

The purpose of these two questions is administrative, to estimate the volunteer time contributed to the project. These estimates can be important in securing funding to keep the project going.

For ‘Time spent looking for animals,’ record the minutes spent looking for animals on each respective observation date. The amount of time spent looking will affect how many animals you

see or hear, and is important information for scientists using your data. Include only time spent actively looking or listening for animals; do not include time spent on other tasks, such as organizing datasheets or observing plants.

Next, circle “w” to indicate you walked a single line or transect through your site.

Finally, report on snow conditions at your site. Indicate whether there is snow on the ground. If there is, estimate how much of the ground is covered by snow and also whether there is snow in the tree canopy.

Enter Data Online

Once you’re ready to submit observations online, return to your Nature’s Notebook dashboard, select the plant or animal species for which you’d like to enter observations, and click the “Enter Observation” button. Now, the plant and animal species that you have registered to this site will appear in expandable blue menus. Click on one of the species names to access the data entry interface for that species.

Each column represents a day’s worth of observations. To enter a day’s observations, enter the date at the top of the column. For plants, click “y” for any phenophase which you observed as occurring, “n” for any phenophase you observed as not occurring, and “?” if you were not certain of the occurrence of the phenophase. If you did not look for the phenophase, do not click anything. Then, for any phenophase you reported “y” (ie occurring) choose the numeric or percent class describing the abundance of plant parts on your monitored plant which were displaying the observed phenophase.

For animals, the process is similar, but data is only entered for species which you did observe at your site on the day being reported. For each species you did see or hear that day, click “y” for any phenophases which you observed as occurring, “n” for any phenophase you observed as not occurring, and “?” if you were not certain of the correct species identification OR if you were not sure if the phenophase was occurring. If you did not look for that phenophase, do not click anything. Then, for any phenophase you reported “y” (ie occurring) enter the number of individual animals you observed exhibiting the phenophase at this site on the reported day.

If you would like to enter “N” for all phenophases for this animal on this date, click the “circle all no” at the top of the column. You may wish to use this function because for many animal species, you will not hear or see them on most of your visits to your site.

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. From here, you can enter further observations, or use the menu to navigate to other functions within Nature’s Notebook.

You will also need to enter the information from your Cover Sheet, including the time you spent observing, the time you spent in travel to and from your site, your animal observation methods, and snow conditions at your site. Each of these elements can be accessed through the blue

expandable menus on the “Enter Observations” page.

Tips for streamlining your data entry process

After each visit to your site, please enter the information recorded on your datasheets into Nature’s Notebook. Start by entering the information you recorded on your Cover Sheet for each date. Then enter your observations for each of your plants and animal species. For plants, simply enter the information written on each Plant Phenophase Datasheet. For animals, refer to your Animal Checklist. For the dates that a species does not have a check mark, click “n” (no) for each of the phenophases listed for that species. For dates that a species does have a check mark, refer to the Animal Phenophase Datasheet for that species and enter the information recorded there for that date.

How do I change observation data once I have entered it?

If you wish to correct your observation data for a particular date, navigate to that day’s column using the arrows at the bottom of your Nature’s Notebook Enter Observations form. Then change the “y”, “n” and “?” responses to the correct ones for that day. Unfortunately you cannot edit the date for which observations are reported in a given column. If you have correct data entered for the wrong date, please change all the responses in the column with the wrong date to “?”, and add a new column with the correct date and responses. You can add a comment describing the correction to help us keep track of your change.

Much of the value of phenology data is in observations from the same sites and plants over many years, so **please come back next year!**

Revision History

Version numbers will be incremented by a whole number (e.g., Version 1.3 to 2.0) when a change is made that significantly affects requirements or procedures. Version numbers will be incremented by decimals (e.g., Version 1.06 to Version 1.07) when there are minor modifications that do not affect requirements or procedures included in the protocol. Add rows as needed for each change or set of changes tied to an updated version number.

Revision History Log

Version #	Date	Revised by	Changes	Justification
1.00	August 2010 draft	Geri Tierney	Initial draft adapted from USA-NPN Standard Methods for Monitoring Plant and Animal Phenology Appendix I, Guide for Volunteers Using Nature's Notebook	
1.01	Oct 2010	Geri Tierney	Adjusted ? observation definitions to match NPN change. Edited text for individual plant selection.	
1.10	April 2011	Geri Tierney	Updated for 2011	
1.11	March 2011	Geri Tierney	Updated for 2012, including abundance classes, default cell value for reporting data, and instructions for reporting at shared sites. Editorial changes.	