



2009 Observer Survey Report

September 2010

usannpn.org

USA-NPN Technical Series 2010-003

USA National Phenology Network

2009 Observer Survey Report

Theresa M. Crimmins¹, Alyssa H. Rosemartin², Alexis Lincicome³, Jake F. Weltzin⁴

¹Partnerships & Outreach Coordinator, USA-NPN National Coordinating Office; University of Arizona

²Information Technology & Communications Coordinator, USA-NPN National Coordinating Office; University of Arizona

³Web & Communications Assistant, USA-NPN National Coordinating Office; University of Arizona

⁴Executive Director, USA-NPN National Coordinating Office; US Geological Survey

Suggested citation: Crimmins, T.M., A.H. Rosemartin, A. Lincicome, J.F. Weltzin. 2010. USA National Phenology Network 2009 Observer Survey Report. USA-NPN Technical Series 2010-003. www.usanpn.org.

DRAFT

Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Although this report is in the public domain, permission must be secured from the individual copyright owners to reproduce any copyrighted material contained within this report.

TABLE OF CONTENTS

ABSTRACT.....	5
INTRODUCTION	6
What is phenology?	6
The USA National Phenology Network	6
METHODS.....	7
RESULTS	8
Responses to questions consistent across both surveys.....	9
Responses to questions unique to reporting participants	11
Responses to questions unique to non-reporting observers	14
Demographic Information (questions common to both surveys)	15
SYNTHESIS & DISCUSSION	17
Overall participant experience	17
Motivations for participating.....	18
Reasons for non-reporting.....	18
Suggested changes to the program	18
Suggested changes to MyNPN	19
Demographic information.....	19
RECOMMENDATIONS	19
CONTRIBUTIONS & ACKNOWLEDGMENTS.....	21
APPENDIX A. OBSERVER (REPORTING) SURVEY	22
APPENDIX B. REGISTERED OBSERVER (NON-REPORTING) SURVEY	23
APPENDIX C. INVITATIONS TO COMPLETE OBSERVER SURVEYS.....	24
APPENDIX D. COMPLETE RESPONSES TO SURVEY QUESTIONS.....	25

ABSTRACT

The USA-National Phenology Network (USA-NPN) seeks to engage volunteer observers to collect phenological observations of plants and animals using consistent standards and to contribute their observations to a national data repository. In March 2009, the National Coordinating Office staff implemented an online monitoring program for 213 plant species. In this pilot year of the program, 547 observers reported phenology observations on one or more plants via the online interface.

To learn more about our participants and to improve our program and our participants' experience, we undertook a survey of individuals registered in the USA-NPN phenology observation program. This report summarizes the results of the 2009 observer surveys. Two populations were targeted via separate surveys:

- 1) Individuals who registered with the USA-NPN plant phenology monitoring program via MyNPN but did not submit any data in 2009 (hereafter termed "non-reporting participants"), and
- 2) Individuals who submitted phenology observations via MyNPN in 2009 (hereafter termed "reporting participants").

In general, participants in the 2009 USA-NPN plant phenology observation program seemed to have a reasonably good experience. When asked why they would or would not recommend the program to friends, the majority of comments were of a positive nature, and included explanations such as, "It is an interesting and fairly light duty activity", "It's a cool program!", and "A way to contribute to science". The most commonly indicated reason for not submitting observations among non-reporters was getting lost in the registration process (14% of respondents). Another 14% of respondents indicated that they had collected observations but did not submit them online.

Survey participants' suggestions for improving the program fell into several categories, including the need for a more expansive list of plants from which to pick, the ability to monitor animals, and more information on the plants, including photographs of the various phenophases to aid in identification. Participants also requested increased contact from the USA-NPN, in the form of weekly or monthly emails or newsletters and reminders to collect and submit observations. Many of these suggestions are either already being addressed in changes being made to the monitoring system and online entry system or are planned for future modifications.

INTRODUCTION

The USA-National Phenology Network (USA-NPN) seeks to engage volunteer observers to collect phenological observations of plants and animals using consistent standards and to contribute their observations to a national data repository. To guide the effort, the USA-NPN National Coordinating Office, based in Tucson, Arizona, has developed phenology monitoring protocols and an information management system that houses a data repository, the National Phenology Database. In March 2009, the National Coordinating Office staff implemented an online monitoring program for 213 plant species (*The National Phenology Monitoring System, v0.1*, www.usanpn.org/results/reports). In this pilot year of the program, 547 observers reported phenology observations on one or more plants via the online interface (*2009 USA-NPN Data Summary Report*, www.usanpn.org/results/reports).

To learn more about our participants and to improve our program and our participants' experience, we conducted a survey of individuals registered in the USA-NPN phenology observation program. This report summarizes the results of the 2009 observer surveys.

What is phenology?

Phenology refers to recurring plant and animal life cycle stages, such as leafing and flowering, maturation of agricultural plants, emergence of insects, and migration of birds. It is also the study of these recurring plant and animal life cycle stages, especially their timing and relationships with weather and climate. The Intergovernmental Panel on Climate Change report (2007) notes that plants and animals respond to changes beyond their tolerances by shifting the timing of life-cycle events, shifting range boundaries, changing morphology, or becoming extirpated or extinct. The report states that "phenologyis perhaps the simplest process in which to track changes in the ecology of species in response to climate change." Understanding the phenology of a species includes understanding the influence of seasonal and interannual variation in climate on the life-cycle events and activities of the species.

People have observed and responded to phenological events long before written history as part of their day-to-day activities, yet in the contemporary era people are often unaware of or overlook the importance of phenology in their everyday lives. Current understanding of phenology is important for society to identify how species are responding to climate change and to plan for how these changes might affect activities such as resource management, public health planning, agriculture and range management, and recreational/tourism marketing.

The USA National Phenology Network

The USA National Phenology Network monitors the influence of climate on the phenology of plants, animals, and landscapes. We do this by encouraging people to observe phenological

events and by providing a place for people to enter, store, and share their observations. We also work with researchers to develop tools and techniques to use these observations to support a wide range of decisions made routinely by citizens, managers, scientists and others, including decisions related to allergies, wildfires, water, and conservation.

The USA-NPN is comprised of many partners including federal, state and local agencies, universities, colleges and schools, non-governmental organizations, citizen volunteers, and many others. Our participants range from individual observers making observations in their backyards to professional scientists monitoring long-term plots.

METHODS

Individuals participating in the USA-NPN plant phenology observing program follow species-specific protocols consisting of a suite of **phenophases**, or observable stages or phases in the annual life cycle of the plant that can be defined by a start and end point. Each organism has a suite of potential phenophases that can be observed at each sample date. On each visit to an individual plant, the observer indicates ‘yes’ if the phenophases is occurring and ‘no’ if it is not. Monitoring protocols, phenophases, and general plant descriptions are provided via species profile pages on the USA-NPN website. USA-NPN phenology protocols employ phenological “status” monitoring, rather than “event” monitoring. Phenological “event” monitoring involves precisely documenting defined points in the annual life cycles of plants and animals, such as first and last flowering, and first and last arrival of migratory animals. In contrast, status monitoring involves noting the phenological status (e.g., the presence of leaves, flowers, or fruits; singing or mating) of plants and animals during a series of repeated observations.

The first fully functional version of the USA-NPN plant phenology observing program and associated online user interface was released on March 2, 2009 and was named “MyNPN.” Through MyNPN, phenology observers could 1) register as an observer with the USA-NPN; 2) register one or more sites where they are observing plant phenology; 3) register one or more individual plants under observation; and 4) enter phenology observations.

To better understand our participants’ experience with the USA-NPN phenology program and online interface and to increase the number of participants submitting phenology observations, we conducted a survey of individuals who had registered in 2009. The purposes of the surveys were to:

- 1) Identify barriers individuals encountered either in participating or in reporting their data;
- 2) Identify aspects of the USA-NPN phenology observation program and online data entry system that could be improved;
- 3) Identify ways to increase the proportion of registered, non-reporting individuals to observers reporting phenology observations in the USA-NPN phenology observation program;
- 4) Characterize observers registered with the USA-NPN.

Two populations were targeted via separate surveys:

- 3) Individuals who registered with the USA-NPN plant phenology monitoring program via MyNPN but did not submit any data in 2009 (hereafter termed “non-reporting participants”), and
- 4) Individuals who submitted phenology observations via MyNPN in 2009 (hereafter termed “reporting participants”).

There were several questions in common across the two surveys, including questions regarding demographic information. The surveys also included questions specific to the audiences being addressed (reporters or non-reporters).

Surveys were published on the USA-NPN website using the Drupal module Webform and were only accessible online (www.usanpn.org/survey2-obs [reporting individuals] and www.usanpn.org/survey1-reg [non-reporting individuals]). Copies of the surveys are in Appendices A and B. Surveys were advertised to reporting and non-reporting individuals via email on November 22, 2009 and December 3, 2009, respectively via a USA-NPN newsletter. Copies of the initial invitation are in Appendix C. Follow-up requests to complete the survey were sent to both groups on December 8, 2009 (Appendix C). The surveys were accessible until December 31, 2009.

RESULTS

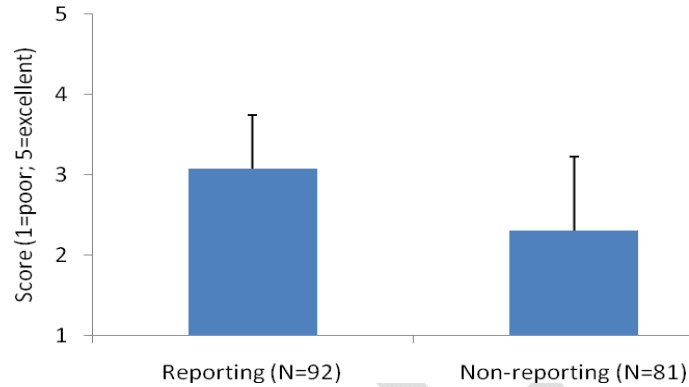
The survey designed for non-reporting participants was sent to 1,597 individuals via email. Of these, 546 (34.2%) opened the email advertising the survey, and of those opening the email, 81 individuals (14.8%) completed the survey.

An email advertising the survey for reporting participants was sent to 486 individuals. Of these, 254 individuals (52.3%) opened the email, and 92 (36%) completed the survey.

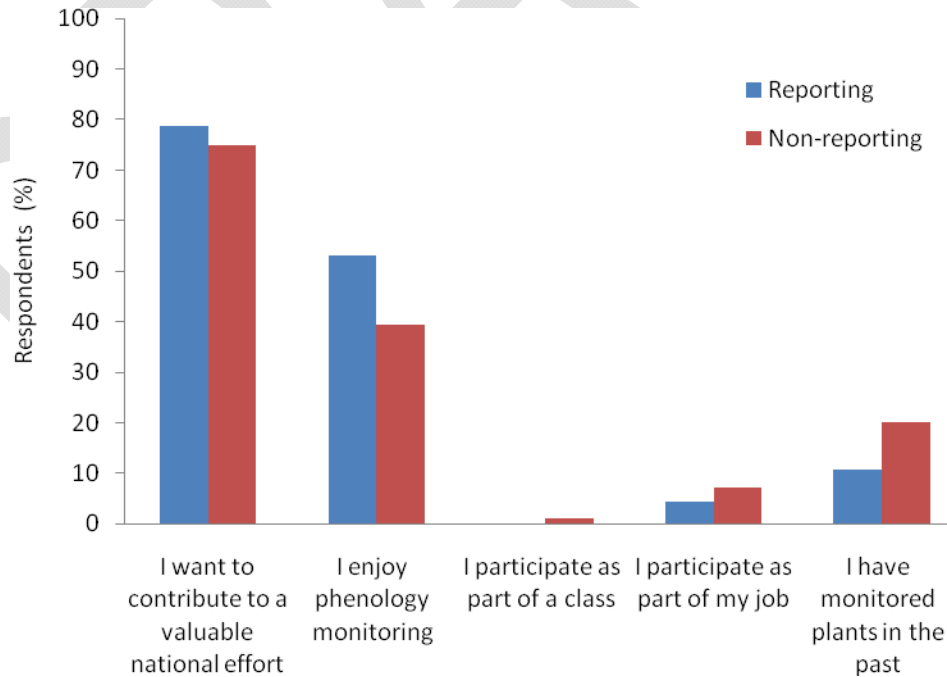
Responses to the five questions that were consistent across the two surveys are provided in the following section. This is followed by responses to questions specific to the survey of reporting participants, responses to the question specific to the survey of non-reporting participants, and demographic questions common to both surveys.

Responses to questions consistent across both surveys

1. **“How would you rate your overall experience participating in this program?”**
(1 = poor, 5 = excellent; mean±SE)



2. **“What motivated you to participate in monitoring with the USA-NPN?”** (N=173)
Observers were asked to select all that applied and to fill in “Other” if appropriate. No significant difference between reporting and non-reporting respondents ($\chi^2 = 6.58, p = 0.160$).



3. “Do you have suggestions for changing or improving the program?”

Representative responses listed by individuals reporting data (all responses appear in Appendix D):

- *More exact photos of the emerging leaves and flower buds would help a novice learn what to look for.*
- *Adding more plants.*
- *I would really like to see more frequent emails like this. Say monthly, discussing what to expect for the current season etc.*
- *Keep posting maps and trends and data.*
- *Looking forward to animal monitoring.*

Representative responses listed by individuals not reporting data (all responses appear in Appendix D):

- *Is there a way to track the phenology of a species instead of an individual plant? Or does that obscure the whole purpose of this thing?*
- *E-mail reminders to check to progress of the plants would be helpful.*

4. “Do you have suggestions for changing or improving the online data entry system?”

Representative responses listed by individuals reporting data (all responses appear in Appendix D):

- *Offer more choices than Y, N, or ? when asking for a phenophase: do you want to know if that phenophase is happening now or has it already happened before and it's already over? How do we mark this?*
- *Change to ask for indication of most recent phenophase, i.e. "all leaves colored." As it stands, it seems to call for all relevant phenophases at once, i.e. "emerging leaves," "unfolded leaves," "leaves >75% of full leaf size," etc. Thus for some of mine I've entered everything from ">75% of full size" to ">50% of leaves fallen," because all were literally true.*

Representative responses listed by individuals not reporting data (all responses appear in Appendix D):

- *I'm not computer savvy enough to figure out the process.*

5. Please provide us with any other thoughts, suggestions, or comments you would like to share.

Representative responses listed by individuals reporting data (all responses appear in Appendix D):

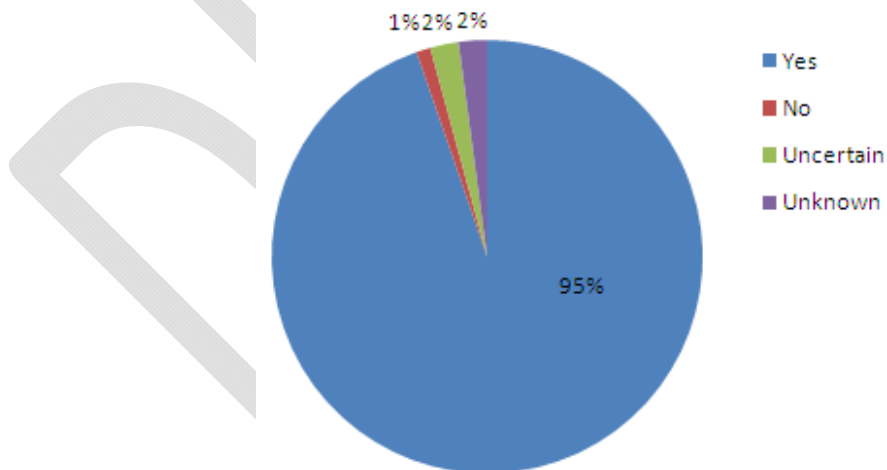
- *I tried to delete one of my plants, dandelions, and it would not remove itself from my monitoring list.*
- *Judging 75% growth in leaf size with no specific criteria given (75% of max. width? etc.) seemed way too subjective; it's the only phenophase observation I did not make. And, what's the rationale for using it?*
- *I think it's a really interesting program, but the plant phases were difficult to distinguish. I would really like to have some guidance, definitions or specific criteria for the phases. Also, why not include animals (frogs, bats, insects, etc)?*

Representative responses listed by individuals not reporting data (all responses appear in Appendix D):

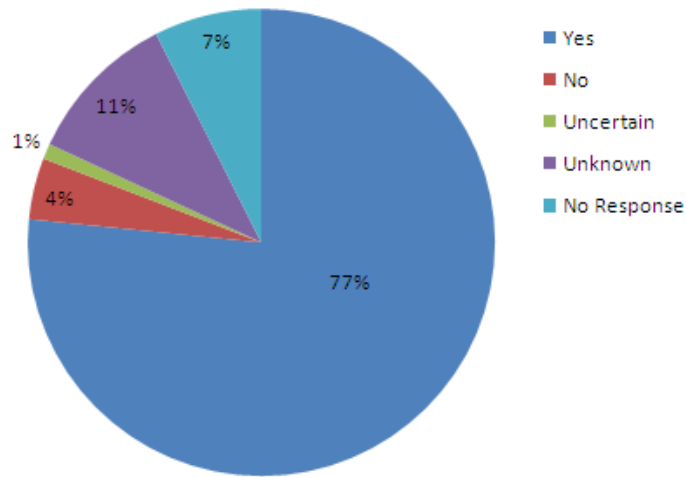
- *I am only interested in bird monitoring, so it sounds like you should drop my name.*
- *When I first tried to join, the web site was too confusing. I've wandered around on it now a bit and it looks like it will work for me. I participate in Cocorahs which is super easy, so needed something more along those lines. I really want to do this, as I have monitored plants on our own property for 30 or so years and find it fascinating.*

Responses to questions unique to reporting participants

6. "Do you plan to participate in the upcoming year?" (N=91)



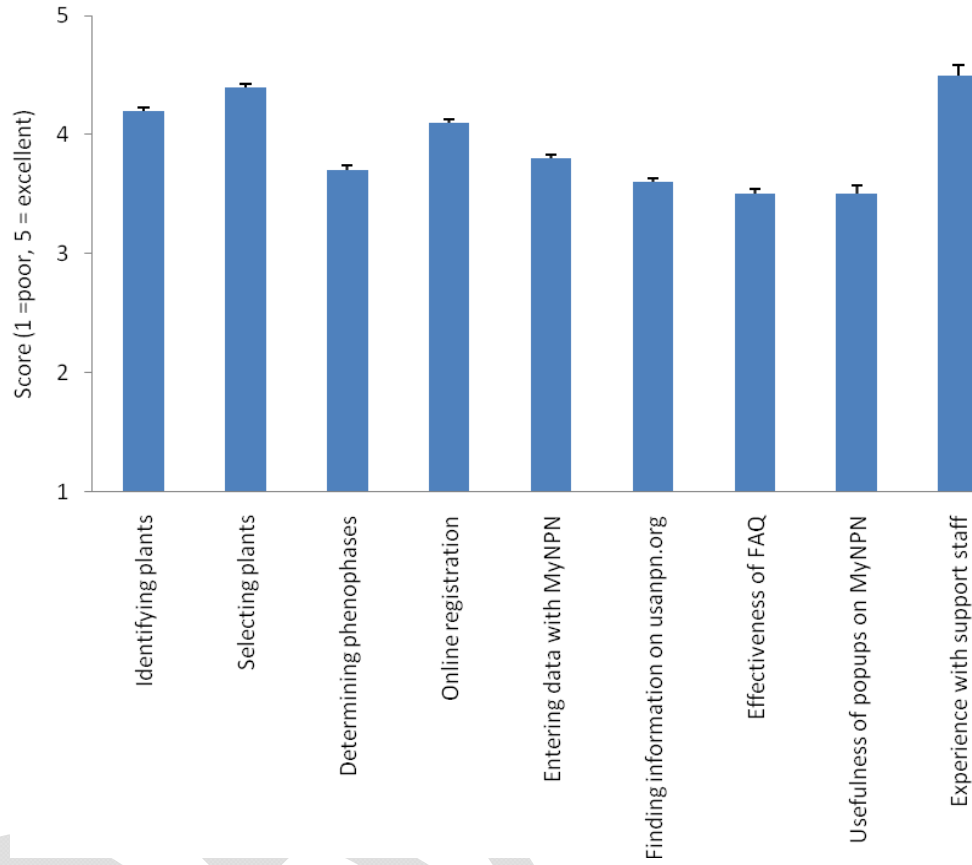
7. "Would you/have you recommended this program to friends?" (N=92)



Representative responses to "Why or why not?" (all responses appear in Appendix D):

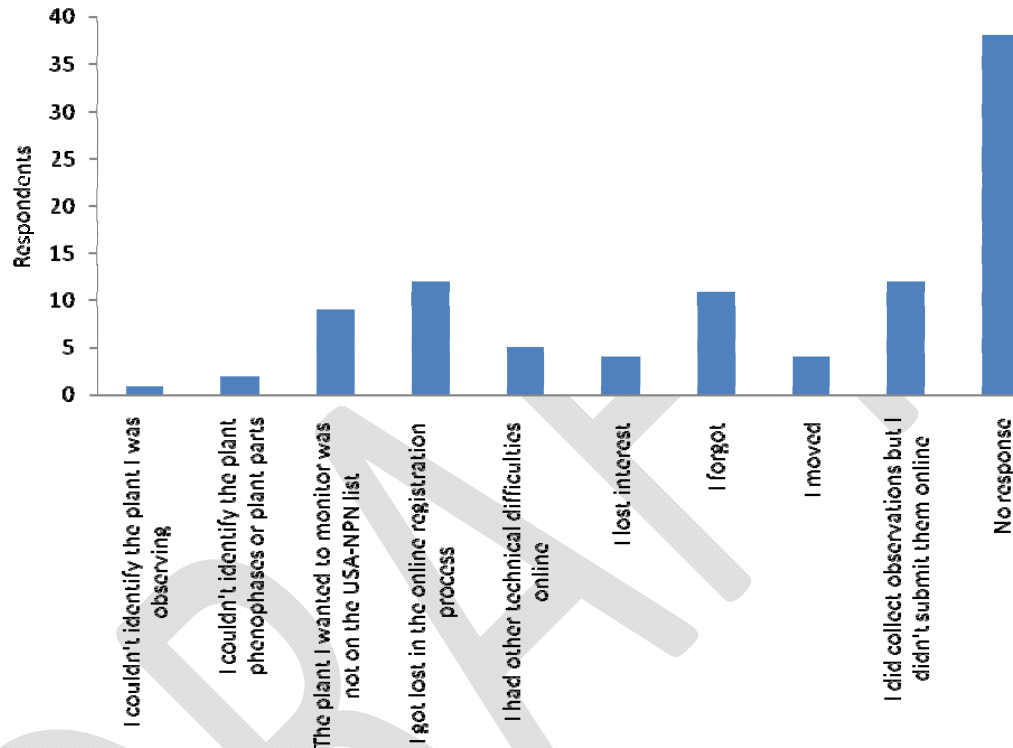
- I haven't thought about mentioning it. I will try to do this next year.
- Most of my friends are interested in nature and ecology
- It is an interesting and fairly light-duty activity.
- Interesting to participate in scientific observation
- It's a cool program!
- A way to contribute to science

8. **“Please rate your experience with USA-NPN.”** (N=92) Observers were asked to rate each of the elements on a scale 1-5 (1 = poor, 5 = excellent; mean±SE).



Responses to the question unique to non-reporting observers

9. “I didn’t submit observations because...” (N=81). Observers were asked to select from among the provided responses or to fill in “Other” as appropriate.

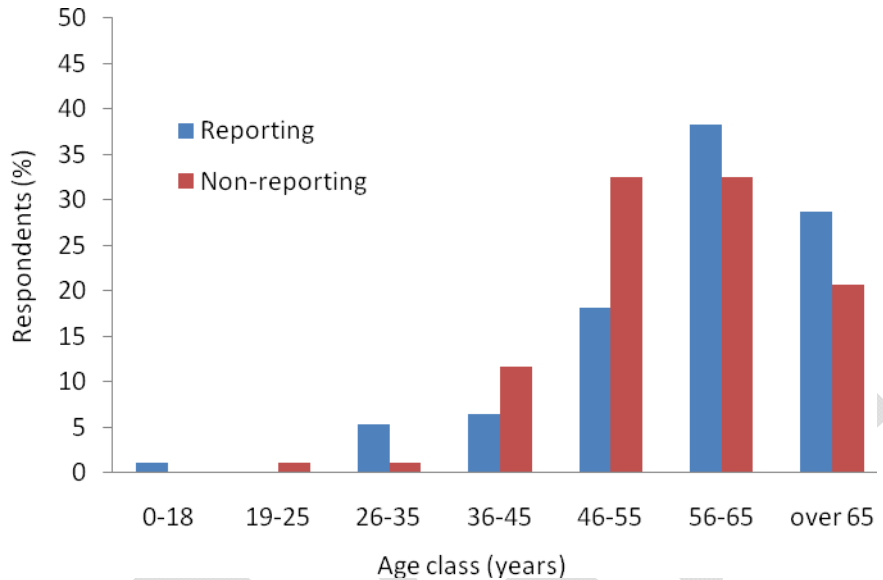


Representative “Other” responses (all responses appear in Appendix D):

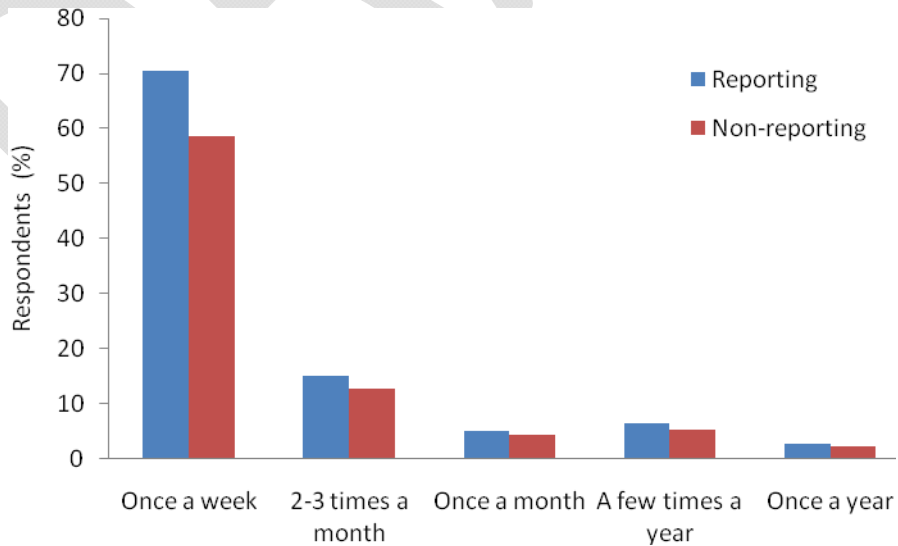
- I didn't have the time to select the plants and figure out what phases I should observe until too late in the season.
- Did not hear anything after initial registration, unsure of how to proceed
- I signed on late in the growing season
- I was blindsided by the new format and never really got back to it. I will try again next year!
- Eventually lost 2009 data
- I live in an area where the plants you are observing do not grow--but I do have other plants (such as lilacs!) that grow here.

Demographic Information (questions common to both surveys)

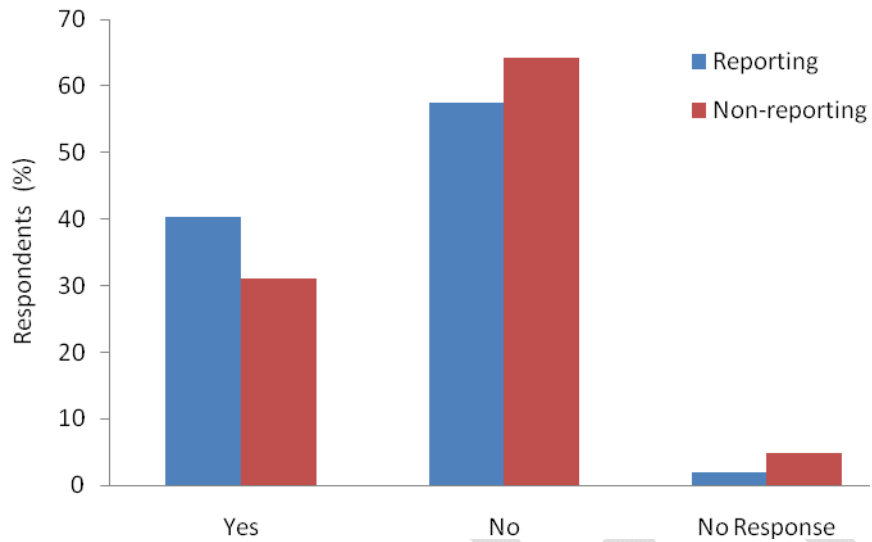
10. **Age of survey respondents** (N=173). Reporting and non-reporting respondents showed marginal differences in age, depending on age class ($\chi^2 = 12.6, p = 0.049$). Individuals in the 46-55 age bracket more frequently did not report data; however, in the 55-65 and over 65 age brackets, individuals reported data more often than not.



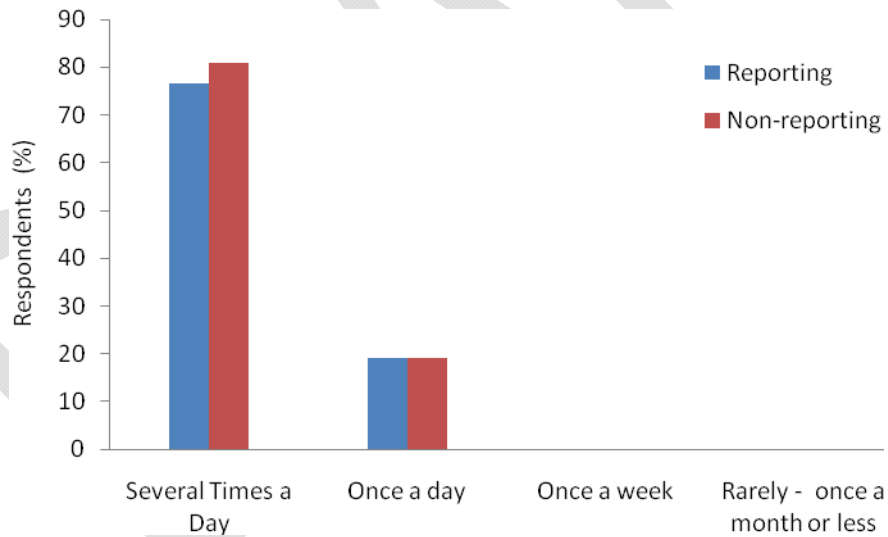
11. **“How often do you garden, hunt, hike, or visit zoos, botanic gardens, or nature centers?”** (N=173). No significant difference between reporting and non-reporting respondents ($\chi^2 = 0.074, p = 0.999$).



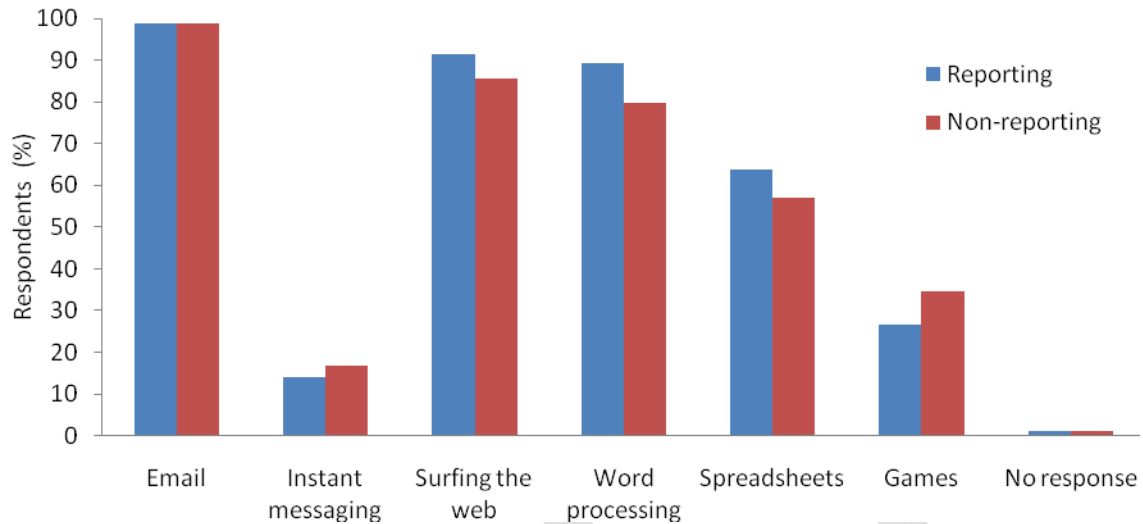
12. **“Do you have a higher degree (college or above) in biology or an environmental-related field?”** (N=173). No significant difference between reporting and non-reporting respondents ($\chi^2 = 1.53, p = 0.217$).



13. **“How frequently do you use a computer?”** (N=173). No significant difference between reporting and non-reporting respondents ($\chi^2 = 0.019, p = 0.889$).



14. **“What do you use a computer to do?”** (N=173). No significant difference between reporting and non-reporting respondents ($\chi^2 = 2.25, p = 0.814$).



SYNTHESIS & DISCUSSION

Overall participant experience

In general, participants in the 2009 USA-NPN plant phenology observation program seemed to have a reasonably good experience. Those that reported data rated their overall experience as “good” (3.1 out of a possible 5; Question 1). Those that did not report data rated their experience slightly lower, more equivalent to “fair” (2.3 out of a possible 5). It seems reasonable that those who liked the program better would be those who would follow through and submit their observations. In addition, 95% of individuals that reported data indicated that they intended to participate in the program in subsequent years (Question 6) and 77% of these same individuals noted that they would recommend the program to friends (Question 7). When asked why they would or would not recommend the program to friends, the majority of comments were of a positive nature, and included explanations such as, “It is an interesting and fairly light duty activity”, “It’s a cool program!”, “A way to contribute to science”, “It’s really important, and fun”, “reasonable to do and scientifically important”, and “It makes one more aware of the natural world, learn new things”.

Data reporters rated nearly all facets of their experience, including identifying plants, registering online, and the online “Frequently Asked Questions” as 3.5 or above (out of a possible 5; Question 8). The facet that was ranked highest was their experience with USA-NPN support staff, demonstrating that our responses to observer queries (typically by email or phone) are satisfactorily serving the needs of our participants.

Motivations for participating

Reporting and non-reporting survey respondents cited similar reasons for participating in the program (Question 2). Both populations communicated a desire to contribute to a valuable national effort. The second most frequently selected reason for participating was “I enjoy phenology monitoring,” suggesting a familiarity with the concept outside of the USA-NPN program. Other motivations for participating included general interest in gardening and biology, concern about global change, and participation in other programs (National Weather Service Co-op Observer Program, Community Collaborative Rain, Hail, & Snow Network, Master Gardeners). It is not surprising that individuals who indicated involvement in other participatory programs were also those who reported data to the USA-NPN program; these individuals are familiar with the process of collecting and submitting data to a central location throughout the year. Non-reporting individuals noted a curiosity and enjoyment of the outdoors and an interest in learning more about their local area.

Reasons for non-reporting

The most commonly indicated reason for not submitting observations among non-reporters was getting lost in the registration process (14% of respondents; Question 9). Another 14% of respondents indicated that they had collected observations but did not submit them online. Other commonly noted reasons for not reporting data included forgetting to do so (13%) and the fact the plant the observer wished to monitor was not on the USA-NPN list of species (11%). These findings point to the importance of making the registration and data entry processes as straightforward as possible. These results also reinforce the importance of periodic reminders to registered observers to collect and submit observations and to provide prompt, courteous, and thorough responses to participant questions.

Suggested changes to the program

Survey participants’ responses regarding what changes they might suggest for improving the program fell into several categories (Questions 3, 4, and 5). Several individuals indicated the need for a more expansive list of plants from which to pick. Others wished to monitor animals as well. Multiple respondents requested more information on the plants, including photographs of the various phenophases to aid in identification. Finally, one respondent requested the ability to submit more qualitative information.

Participants also requested increased contact from the USA-NPN, in the form of weekly or monthly emails or newsletters and reminders to collect and submit observations. One respondent suggested prompting observers to make observations at specific times of the year based on the expected timing of phenophases. Finally, observers wished to see their observations synthesized in map and graph form.

Suggested changes to MyNPN

Rather than providing suggestions for improving the MyNPN interface, survey respondents primarily communicated issues they had encountered using the system. Some comments indicated that the interface was difficult to use with a dial-up connection to the internet. Others indicated a misunderstanding of how to make observations, suggesting a need for more thorough training of observers. Another respondent noted trouble deleting individual plants, and other comments suggested that the system was complicated and difficult to navigate.

Demographic information

There was little demographic difference between the reporting and non-reporting populations (Questions 10-14). Both populations appear to be outdoor-oriented, frequently participating in gardening, hunting, hiking, and visiting zoos and nature centers (Question 11). More often than not, members of both populations do not have a higher degree in biology or an environment-related field (Question 12). Both populations appear to be quite computer-savvy, using computers several times a day (Question 13), most frequently for email, web surfing, and word processing (Question 14).

There was a marginally significant difference in ages between the two populations (Question 10). Most participants in both categories are approaching, or are at, retirement age. Individuals in the 46-55 age bracket more frequently did not report data. However, in the 55-65 and over 65 age brackets, individuals were more likely to report data. These differences may be explained by retirees having more time to devote to participating in the program and working through barriers they may have encountered in the online reporting system.

RECOMMENDATIONS

Based on the feedback from these surveys, there are several areas that the USA-NPN could focus changes to the plant phenology observation program to better serve participants. Many of these suggestions are either already being addressed in changes being made to the monitoring system and online entry system or are planned for future modifications. Changes already being addressed include:

1. Continually improve training materials
2. Add more plants to the USA-NPN recommended species list
3. Allow monitoring of animals
4. Add photographs of plants and phenophases
5. Improve navigation through MyNPN and fix specific bugs

6. Work to engage participants from other participatory programs such as the National Weather Service Co-op Observer Program, the Community Collaborative Rain, Hail, & Snow Network (CoCoRaHS), and Master Gardeners

Changes planned for the future that will address participants' needs include:

1. Provide more visitor support in the form of emails, newsletters, and reminders
2. Provide data synthesis and visualizations
3. Work to engage participants from other participatory programs through the development of additional partners
4. Develop better services and tools (e.g., web services, training materials, educational modules) for partners

A continued effort to understand and improve participants' experience is important to ensure the success of the USA-NPN phenology observation program.

CONCLUSIONS & FUTURE DIRECTIONS

The 2009 USA-NPN observer survey was relatively successful; our response rate was notably higher than expected based on the experience of other programs. Most participants in the USA-NPN plant phenology observing program seem to have a good experience, plan to participate in 2010, and have provided suggestions for improvements that are already underway or planned for the near future. Individuals who participate in other monitoring programs (e.g. CoCoRaHS or the NWS Co-op Observer Program) seem more likely to contribute data via the USA-NPN plant phenology observing program; we will work to engage these target audiences in the future. Under the current system, individuals of middle-age or greater are most frequently participating. We will work to improve our system to continue to attract and retain observers in this age bracket. We will also work to identify ways to attract individuals in younger age brackets. As this survey yielded many useful findings, we intend to repeat it at the conclusion of 2010.

CONTRIBUTIONS & ACKNOWLEDGMENTS

TMC co-developed the surveys, performed statistical analyses, and made final improvements to the text. AHR initiated the project, co-developed the surveys, and edited versions of the text. AL performed data synthesis and wrote the first draft of the report. JFW provided revisions to the structure of the document.

We gratefully acknowledge participants in the USA-NPN plant phenology observing program, especially those who completed our 2009 observer surveys.

The logo for usa npn.org, with 'usa' in green, 'npn' in orange, and '.org' in blue.

APPENDIX A. OBSERVER (REPORTING) SURVEY

DRAFT

[Log In](#)[ABOUT](#)[PARTICIPATE](#)[RESOURCES](#)[EDUCATION](#)[RESULTS](#)[ARCHIVE](#)

Search Site

[Home](#) > [USA-NPN Observer Survey](#)

USA-NPN Observer Survey

Thank you for your interest in the USA-NPN plant monitoring program. We are working to improve our program and our online interfaces; your responses to these questions will help us to better meet the needs of observers like yourself. Individual responses will not be released to anyone and will remain anonymous.

Please provide your answers to the survey by **December 31, 2009**.

How would you rate your overall experience participating in this program?:

Sponsors



What motivated you to participate in monitoring with the USA-NPN?:

- I want to contribute to a valuable national effort to understand the effects of climate change
- I enjoy phenology monitoring
- I participate as part of a class
- I participate as part of my job
- I have monitored plants in the past

Other (please specify):

Do you plan to participate in the upcoming year?:

Would you/have you recommended this program to friends?:

Why or why not?:

[About Us](#) | [Contact Us](#) | [Partners](#) | [Privacy](#) | [Accessibility](#) | [Glossary](#) | [Links](#) | [Media Center](#)
USA National Phenology Network, National
Coordinating Office
1955 E. Sixth St., Tucson, AZ 85721
[Admin Login](#)

Monitoring program

What was your experience with identifying plant species?:

What was your experience with selecting individual plants to monitor?:

What was your experience with determining which phenophases to look for?:

What was your experience with using the online registration system?:

What was your experience with entering data online via MyNPN?:

What was your experience with finding information on the USA-NPN website?:

Comments:

Training and support

How effective did you find the FAQs to be?:

How effective did you find the help popups in MyNPN to be?:

What was your personal experience with USA-NPN support staff?:

Comments:

Do you have suggestions for changing or improving the monitoring program?:

Do you have suggestions for changing or improving the online data entry system?:

Please provide us with any other thoughts, suggestions, or comments you would like to share:

Demographic information

Your age:

select..

How often do you garden, hunt, hike, or visit zoos, botanic gardens, or nature centers?:

select..

Do you have a higher degree (college or above) in a biology or environment-related field?:

select..

How frequently do you use a computer?:

select..

What do you use a computer to do? (check all that apply):

- Email
- Instant messaging
- Surfing the internet
- Word processing
- Spreadsheet work (e.g., Excel)
- Games

Submit

APPENDIX B. REGISTERED OBSERVER (NON-REPORTING) SURVEY

DRAFT


[Log In](#)
[ABOUT](#)
[PARTICIPATE](#)
[RESOURCES](#)
[EDUCATION](#)
[RESULTS](#)
[ARCHIVE](#)


[Home](#) > [USA-NPN Registered User Survey](#)

USA-NPN Registered User Survey

Thank you for your interest in the USA-NPN plant monitoring program. We are working to improve our program and our online interfaces; your responses to these questions will help us to better meet the needs of observers like yourself. Individual responses will not be released to anyone and will remain anonymous.

You have registered yourself with the USA-NPN, but we do not have plant phenology observations submitted for your username.

Please provide your answers to the survey by **December 31, 2009**.

How would you rate your overall experience participating in this program:

I didn't submit observations because (check all that apply):

- I couldn't identify the plant I was observing
- I couldn't identify the plant phenophases or plant parts
- The plant I wanted to monitor was not on the USA-NPN list
- I got lost in the online registration process
- I had other technical difficulties online
- I lost interest
- I forgot
- I moved
- I did collect observations but I didn't submit them online (if you fall into this category, note that it is not too late to enter your data online)

Other (please specify):

What motivated you to participate in monitoring with the USA-NPN? (check all that apply):

- I want to contribute to a valuable national effort to understand the effects of climate change
- I enjoy phenology monitoring
- I participate as part of a class
- I participate as part of my job
- I have monitored plants in the past

Other motivation (please specify):

Do you have suggestions for changing or improving the online data entry system?:

About Us | Contact Us | Partners | Privacy |
Accessibility | Glossary | Links | Media Center
USA National Phenology Network, National
Coordinating Office
1955 E. Sixth St., Tucson, AZ 85721
Admin Login

Do you have suggestions for changing or improving the monitoring program?:

Please provide us with any other thoughts, suggestions, or comments you would like to share with us:

Demographic information

Your age :

select..

How often do you garden, hunt, hike, or visit zoos, botanic gardens, or nature centers?:

select..

Do you have a higher degree (college or above) in a biology or environment-related field?:

select..

How frequently do you use a computer?:

select..

What do you use a computer to do? (check all that apply):

- Email
- Instant messaging
- Surfing the internet
- Word processing
- Spreadsheet work (e.g, Excel)
- Games

Submit

APPENDIX C. INVITATIONS TO COMPLETE OBSERVER SURVEYS

DRAFT

Having trouble viewing this email? [Click here](#)

You're receiving this email because you registered as an observer with the USA National Phenology Network. Please [confirm](#) your continued interest in receiving email from us.

You may [unsubscribe](#) if you no longer wish to receive our emails.



USA-NPN Fall Newsletter

In This Issue

Preliminary Results from 2009

Polly's Keeps an Eye on Phenology

Send us your Feedback!

Dear USA-NPN,

Thank you for participating in the USA National Phenology Network's first season of data collection. By observing and reporting the timing of plant life cycle events you are contributing to an exciting new effort that will provide valuable information to scientists and managers as they work to understand and adapt to climate change. We had a great first season, and are grateful for your continued enthusiasm for the project!

Quick Links

[USA-NPN Website](#)

[Login to MyNPN](#)

[Observer Survey](#)

[Training Videos](#)

Preliminary results from spring & summer 2009

The USA-NPN's first official season of phenology monitoring began on March 2, 2009. We now have 2,200 registered observers and sites across the nation.

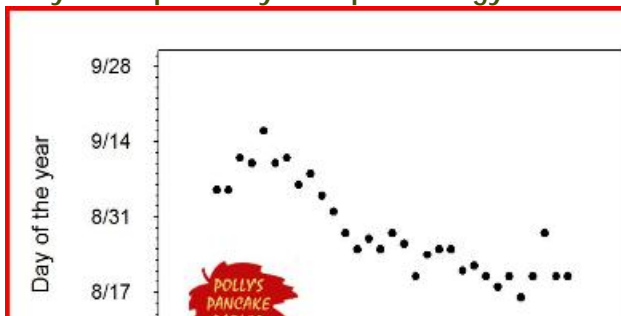
The map to the right shows results for observers who monitored forsythia plants in spring 2009. Observers saw their first blooms on forsythia later in the year at more northern locations. While this doesn't yet tell us much about how forsythia might respond to warmer springs, it does show a good coverage and quality of data for the first season. We hope to have your observations on this and other species in 2010. Click on the map to see the full size version.

First Recorded Date of Open Flowers
Forsythia spp.
Reporting period Mar 2 - Aug 20, 2009



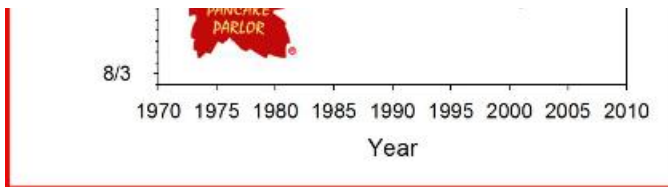
Check our website for dynamic data visualizations coming this spring!

Polly's keeps an eye on phenology...



Polly's Pancake Parlor, in Sugar Hill, New Hampshire, has been keeping an eye on leaf phenology since 1975. Here, the day the leaves started to change color is plotted against the year. Although other parts of the country are seeing leaves change color later in the year, in Sugar Hill, fall is arriving earlier than it did in 1970.

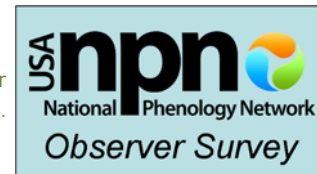
With more observations of fall color we'll be better able to understand how climate change is



impacting plants through the fall. Observers like you can help researchers predict changes for local economies, including New England's fall tourist season.

Send us your feedback!

We are preparing for next season here at the USA-NPN and we need your feedback to guide us. Take a few moments to fill out this [online survey](#) about your participation in our monitoring program. The responses are for internal use only, and your entry is anonymous. Thank you!



We have been making improvements to our website throughout the year, including the addition of six short [training videos](#) on how to participate. Please don't hesitate to [contact us](#) if you have additional questions or need help getting your monitoring project off the ground.

Thank you for your interest and participation!

The USA-NPN [National Coordinating Office](#)



Forward email

✉ **SafeUnsubscribe®**

This email was sent to nco@usanpn.org by nco@usanpn.org.

[Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Email Marketing by



National Coordinating Office of the USA-NPN | 1955 E. Sixth Street | Tucson | AZ | 85721

Having trouble viewing this email? [Click here](#)

You're receiving this email because you registered as an observer with the USA National Phenology Network. Please [confirm](#) your continued interest in receiving email from us.

You may [unsubscribe](#) if you no longer wish to receive our emails.



USA-NPN Fall Newsletter

In This Issue

Send us your Feedback!

Preliminary Results from 2009

Polly's Keeps an Eye on Phenology

Dear USA-NPN,

Thank you for your interest in phenology monitoring with the USA National Phenology Network. This exciting new effort will provide valuable information to scientists and managers as they work to understand and adapt to climate change. This coming spring is a great time to check back in with us. We are continuing to improve our website and data entry interface - to make it easier to participate. We also recently added six short [training videos](#) to the website on how to participate. Please don't hesitate to [contact us](#) if you have additional questions or need help getting your monitoring project off the ground.

Send us your feedback!

We are preparing for next season here at the USA-NPN and we need your feedback to guide us. Take a few moments to fill out this [online survey](#) about your participation in our monitoring program. The responses are for internal use only, and your entry is anonymous. Thank you!



Quick Links

[USA-NPN Website](#)

[Login to MyNPN](#)

[Training Videos](#)

[Observer Survey](#)

Preliminary results from spring & summer 2009

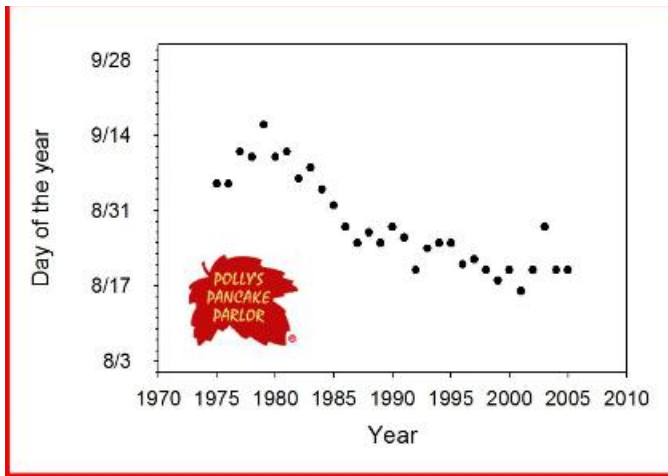
The USA-NPN's first official season of phenology monitoring began on March 2, 2009. We now have 2,200 registered observers and sites across the nation.

The map to the right shows results for observers who monitored forsythia plants in spring 2009. Observers saw their first blooms on forsythia later in the year at more northern locations. While this doesn't yet tell us much about how forsythia might respond to warmer springs, it does show a good coverage and quality of data for the first season. We hope to have your observations on this and other species in 2010. Click on the map to see the full size version.



Check our website for dynamic data visualizations coming this spring!

Polly's keeps an eye on phenology...



Polly's Pancake Parlor, in Sugar Hill, New Hampshire, has been keeping an eye on leaf phenology since 1975. Here, the day the leaves started to change color is plotted against the year. Although other parts of the country are seeing leaves change color later in the year, in Sugar Hill, fall is arriving earlier than it did in 1970.

With more observations of fall color we'll be better able to understand how climate change is impacting plants through the fall. Observers like you can help researchers predict changes for local economies, including New England's fall tourist season.

Thank you for your interest and participation!

The USA-NPN [National Coordinating Office](#)



[Forward email](#)

✉ [SafeUnsubscribe®](#)

This email was sent to nco@usanpn.org by nco@usanpn.org.

[Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Email Marketing by



National Coordinating Office of the USA-NPN | 1955 E. Sixth Street | Tucson | AZ | 85721

Dear USA-NPN,

We recently sent out an email newsletter to all of our observers - if you missed it, you can view it online [here](#).

We appreciate the feedback which many of you contributed through our online survey. If you have not yet responded, it's not too late. Click [here](#) to take survey.

Preliminary Survey Results

We are using your suggestions to improve our website. You noted, for example, that unannounced changes to the website can be challenging - and in response we are working to improve our notification system, training materials and other features to support upcoming changes to the interface.

Several of you suggested that we add animal monitoring to our program - and we're right with you! Beginning in March 2010, we will invite participants to submit observations online for many species of animals, including marmots, loons, turtles, frogs, salmon and bumblebees.

If you have a specific issue with your MyNPN account, even if you mentioned it in the survey, please [contact us](#) for assistance - we'll be happy to help you.

Thanks again for your interest and participation!

The USA-NPN National Coordinating Office

Quick Links...

[USA-NPN Website](#)

[Log in to MyNPN](#)

[Training Videos](#)

[Survey](#)

[Contact Us](#)

✉ **SafeUnsubscribe®**

This email was sent to nco@usanpn.org by nco@usanpn.org.

[Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Email Marketing by



USA National Phenology Network | 1955 E. Sixth Street | Tucson | AZ | 85721

Dear USA-NPN,

We recently sent out an email newsletter to all of our observers - if you missed it, you can view it online [here](#).

We appreciate the feedback which many of you contributed through our online survey. If you have not yet responded, it's not too late. Click [here](#) to take survey.

Preliminary Survey Results

We are using your suggestions to improve our website. You noted, for example, that unannounced changes to the website can be challenging - and in response we are working to improve our notification system, training materials and other features to support upcoming changes to the interface.

Several of you suggested that we add animal monitoring to our program - and we're right with you! Beginning in March 2010, we will invite participants to submit observations online for many species of animals, including marmots, loons, turtles, frogs, salmon and bumblebees.

If you have a specific issue with your MyNPN account, even if you mentioned it in the survey, please [contact us](#) for assistance - we'll be happy to help you.

Thanks again for your interest and participation!

The USA-NPN National Coordinating Office

Quick Links...

[USA-NPN Website](#)

[Log in to MyNPN](#)

[Training Videos](#)

[Survey](#)

[Contact Us](#)

✉ **SafeUnsubscribe®**

This email was sent to nco@usanpn.org by nco@usanpn.org.
[Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Email Marketing by



USA National Phenology Network | 1955 E. Sixth Street | Tucson | AZ | 85721

APPENDIX D. COMPLETE RESPONSES TO SURVEY QUESTIONS

2. “What motivated you to participate in monitoring with the USA-NPN?”

Observers were asked to select all that applied and to fill in “Other” if appropriate.

All “Other” responses listed by individuals reporting data:

- *I have always been interested in gardening and biology, and would have loved to have been a scientist.*
- *Read about it in National Geographic*
- *Not a scientist but interested in botony and ecosystem functions.*
- *I combine monitoring with the USA-NPN and my observations for the NWS*
- *It seems to fit in nicely with CoCoRaHS and Master Gardening activities.*
- *I want to contribute*
- *I am concerned about changes occurring in the Arctic and Alaska.*
- *I studied effects of climate change on soybeans in Grad school*
- *I garden as a volunteer. I will also be beginning research on global warming as a sub-topic and have been thinking a lot on it.*

All “Other” responses listed by non-reporting individuals:

- *Citizen science sharpens my observation and enhances my enjoyment of my yard.*
- *I enjoy the outdoors*
- *Science in the public sphere is sorely needed*
- *I am curious*
- *I keep weekly garden records for myself and would like to share them.*
- *Wanted to learn more about my local area.*

3. “Do you have suggestions for changing or improving the program?”

All responses listed by individuals reporting data:

- *More exact photos of the emerging leaves and flower buds would help a novice learn what to look for.*
- *Add more species (for my area I'd like to see norway maple and grey birch as options) I limited myself to species I knew well and shrubs and trees that have long been in place. More guidance in identifying annuals at early stages would be help me expand the variety of plants I can observe.*
- *Adding more plants.*
- *I would really like to see more frequent emails like this. Say monthly, discussing what to expect for the current season ect.*
- *keep posting maps and trends and data*

- *From my perspective I think all is fine with the program as I use it anyway...*
- *I would appreciate e-mail reminders, or perhaps monthly maps indicating activity from around the US. That would help stimulate interest in my own locale. A monthly newsletter might be the answer.*
- *Better selection of plants appropriate to regions, especially native plants.*
- *Maybe the online Field Monitoring Datasheet could be more specific.*
- *Include animals; it was difficult to understand some of the phases of the plants you asked to report on.*
- *looking forward to animal monitoring*
- *Don't be afraid to include lots of pictures of the phases of plants. Also, you may already do this, but please include links to additional information about specific plants that may help us answer specific questions we have.*
- *This might sound old fashioned, but perhaps compiling a catalogue with photographs of some of the changes observers should be looking for would be helpful; these could be mailed out so that participants/observers can have a reference to check against at home or in "the field". If a catalogue is not the way to go, perhaps making this sort of information available on the website as an online catalogue might prove useful. I think visually demonstrating what is being sought in the field would be immensely helpful.*

Responses listed by individuals not reporting data:

- *Is there a way to track the phenology of a species instead of an individual plant? Or does that obscure the whole purpose of this thing?*
- *E-mail reminders to check to progress of the plants would be helpful.*

4. "Do you have suggestions for changing or improving the online data entry system?"

All responses listed by individuals reporting data:

- *With dial up internet service every screen change is a test of patience. I wish I could do it faster.*
- *As I said, my data entry page became inaccessible, until then the process was repetitive but easy.*
- *Make it clear whether I am reporting all the data from the day of observation - even if some of it has been reported before, e.g. leaf emergence that occurs with*
- *Offer more choices than Y, N, or ? when asking for a phenophase: do you want to know if that phenophase is happening now or has it already happened before and it's already over? How do we mark this?*
- *Change to ask for indication of most recent phenophase, i.e. "all leaves colored." As it stands, it seems to call for all relevant phenophases at once, i.e. "emerging leaves," "unfolded leaves," "leaves >75% of full leaf size," etc. Thus for some of mine I've entered*

everything from ">75% of full size" to ">50% of leaves fallen," because all were literally true.

All responses listed by individuals not reporting data:

- *Since receiving the plants, this is the first communication I've had. I need to know what to observe and how & when to report.*
- *I'm not computer savvy enough to figure out the process.*
- *It seems to work fine for the plants that it recognizes. Perhaps there could be a way to nominate or vote for already-nominated plants*

5. Please provide us with any other thoughts, suggestions, or comments you would like to share.

All responses listed by individuals reporting data:

- *I tried to delete one of my plants, dandelions, and it would not remove itself from my monitoring list.*
- *I think this work is very important and I wish I could do a better job at it.*
- *National efforts of this kind are one of the best uses for computers and the internet I can think of. Thanks for the opportunity to contribute useful data.*
- *As per last box but one, concentrate on native plants of the region. My region (maritime Pacific Northwest) has a poor selection of representative natives. I was told by my correspondent on your staff that this was because the person who selected the plants is from the Northeast and not familiar with Northwest plants. I submitted a list of recommended additions, but with no result as yet. I realize this could take more time.*
- *Judging 75% growth in leaf size with no specific criteria given (75% of max. width? etc.) seemed way too subjective; it's the only phenophase observation I did not make. And, what's the rationale for using it?*
- *Is this program politically motivated or otherwise set-up to prove or disprove global warming?*
- *I think it's a really interesting program, but the plant phases were difficult to distinguish. I would really like to have some guidance, definitions or specific criteria for the phases. Also, why not include animals(frogs, bats, insects, etc)?*
- *Knowing if and how the qualitative data provided is used would be nice. I often wondered if I should bother at all entering qualitative data, suspecting that quantitative data was the factor of central importance for the study. However, dealing with qualitative data in my own research, I have come to see the value of it and so entered it either way. I think more room should be made for observations somehow in the study overall.*

All responses listed by individuals not reporting data:

- *In all my cit sci programs, I find it easiest if I develop a Word doc template. After I do this, it makes participation very easy since it's all set up for my own*
- *I am only interested in bird monitoring, so it sounds like you should drop my name.*
- *There is a forsythia in the mountains of Arizona most of the way up to Mt. Lemmon on the Mount Lemmon Highway, but it is clearly not native so I don't know if you would be interested to monitor it. Similarly, I have a variety of lilacs at my house outside Tucson, but you seem to be monitoring syringa vulgaris, and most of my plants are syringa hyacinthiflora, which grow better in this climate. I would like to contribute more but do not have the plants you seek.*
- *When I first tried to join, the web site was too confusing. I've wandered around on it now a bit and it looks like it will work for me. I participate in Cocorahs which is super easy, so needed something more along those lines. I really want to do this, as I have monitored plants on our own property for 30 or so years and find it fascinating.*

7. "Would you/have you recommended this program to friends?" (N=92)

All responses to "Why or why not?":

- *I haven't thought about mentioning it. I will try to do this next year.*
- *Most of my friends are interested in nature and ecology*
- *It's interesting to observe the changes.*
- *Involvement in monitoring good for knowledge about global warming*
- *It is an interesting and fairly light-duty activity.*
- *Interesting to participate in scientific observation*
- *The more observers, the better the data range.*
- *I know many gardeners & nature lovers who care about climate change*
- *I have recommended to school science teachers and to interested gardeners. The more data you have, the better the your analysis*
- *It's a cool program!*
- *A way to contribute to science*
- *I have a niece who is a wildlife artist who I thought might be interested*
- *Most don't care just like with the weather reporting*
- *I am just starting.*
- *It's really important, and fun*
- *Reasonable to do and scientifically important*
- *What few friends there are, are not interested in this or any program, I'm afraid*
- *I believe it's important to have as many respondents as possible in your study.*
- *Most of my friends would find this activity of interest.*
- *An interesting project for people interested in plants and concerned with environmental issues*
- *It makes one more aware of the natural world, learn new things.*
- *Don't know anyone else interested.*

- *They share my concerns about the environment*
- *Good for teaching opportunity*
- *Many of my friends are gardeners and I think one or two of them would enjoy monitoring.*
- *Many of my friends are retired and are enthusiastic volunteers. This is a project that I think many of them might enjoy.*
- *Because we believe it can be useful.*
- *We do it anyway why not contribute to a national database.*
- *It's an invaluable way to come together and help understand the problem -- and help amass data for further study to inform all*

9. "I didn't submit observations because..." (N=81). Observers were asked to select from among the provided responses or to fill in "Other" as appropriate.

All "Other" responses:

- *I didn't have the time to select the plants and figure out what phases I should observe until too late in the season.*
- *Did not hear anything after initial registration, unsure of how to proceed*
- *I'm interested in bird monitoring and have old data*
- *Did not understand submission process*
- *I didn't receive a plant variety to monitor.*
- *Was not told how or what to report*
- *I signed on late in the growing season*
- *I thought I had submitted them I will resubmit*
- *I am an experienced botanist/ecologist and plan to participate next year.*
- *I wasn't quite sure how to observe and record data. I don't remember ever seeing the intro movies. I can now feel confident to.*
- *Received plants last spring, planted them cared for them but was not asked to report, nor told what to observe.*
- *I was blindsided by the new format and never really got back to it. I will try again next year!*
- *Eventually lost 2009 data*
- *I live in an area where the plants you are observing do not grow--but I do have other plants (such as lilacs!) that grow here.*